



SCHEDULE OF TENDER (SOT)

E-tender for Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical and Allied Works at Reserve Bank of India, Mumbai

Sr No	Details	Date/ Time
1	e-Tender No.	RBI/PD-Central Office Departments/Others/20/24-25/ET/432
2	Mode Of Tender	e-Procurement System (Online Part I - Techno-Commercial Bid and Part II - Price Bid through www.mstcecommerce.com/eprocn/rbi) (To be filled only by eligible contractors)
3	Estimated Cost	₹8.23 crore
4	View tender – Date, Time on MSTC Web portal	10.09.2024 7.30 P.M.
5	Pre-Bid meeting	11:00 AM on 13.09.2024 at Premises Dept., 5th floor, Reserve Bank of India, Central Office Building, Fort, Mumbai
6	Earnest Money Deposit	₹16,46,000/- EMD in the form of Demand draft drawn in favour of Reserve Bank of India, of a Scheduled Bank or Bank Guarantee as per proforma annexed hereto shall be deposited in original at the office of tenderer inviting authority (RBI) or through NEFT/RTGS on or before 02:00 PM of 20.09.2024 . The account details for NEFT/RTGS transaction is as under: Beneficiary Name: Reserve Bank of India IFSC : RBIS0COD001 Account No.: 41861403873 Proof of remittance indicating transaction number and other details shall be uploaded on Bank's approved e-tender portal along with other tender documents. The same shall also be shared to email rgehani@rbi.org.in / manishmgaikwad@rbi.org.in on or before 02:00 PM of 20.09.2024 . Any such bid received without EMD shall be treated as non bonafide and shall be rejected from participating in the tender process.
7	Bid Start Date- Date of Starting of e-Tender for submission of online Techno-Commercial Bid and price Bid at www.mstcecommerce.com/eprocn/rbi	10:00 AM on 14.09.2024
8	Bid close Date- Date of closing of online e-tender for submission of Techno-Commercial Bid& Price Bid	02:00 PM on 20.09.2024
9.	Date & time of opening of a. Part-I (Techno-Commercial Bid)	a. 03:00 PM on 20.09.2024



	b. Part-II Price Bid: Date of opening of Part II (i.e.price bid) shall be informed separately	b. Shall be informed separately to the contractors eligible for Part II of the tender
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Note: *The firms shall pay the mandated transaction fee to MSTC payment gateway in favour of MSTC LIMITED*

**RESERVE BANK OF INDIA
PREMISES DEPARTMENT
MUMBAI**

RBI/PD-Central Office Departments /Others/20/24-25/ET/432

e-TENDER FOR

**Interior Renovation of 15th floor in Central Office Building Including Civil,
MEP, HVAC, Electrical and Allied Works at
Reserve Bank of India (RBI), Mumbai.**

Part I

(Containing Section I to Section IX)

Name of Bidder _____

Address _____

Due Date and time of
Submission of e-Tender 2:00 PM of September 20, 2024

Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

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Important Information:

Sr No	Particulars	Details
1	Name of the work	Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical and Allied Works at Reserve Bank of India (RBI), Mumbai
2	e-tender No	RBI/PD-Central Office Departments /Others/20/24-25/ET/432
3	Nature of Work	Execution of Civil, Electrical and other allied works for interior renovation. Please note that the successful bidder shall coordinate with other vendors engaged by the Bank for the captioned work for successful completion of overall work.
4	Total Time allowed for completion of the Project	4 months {Phase 1 :- 2 months; Phase 2 :- 2 Months} (to be reckoned from 7 th day of issue of award of work)
5	Estimated cost of the work	₹ 823 lakhs
6	Availability of Tender documents	Bank's website/MSTC website
7	Tendering process	1. Submission of Part I tender documents through e-tendering along with EMD, etc. 2. Submission of Price bid (Part II) by bidders.
8	Date of publishing the NIT on the Bank's website/MSTC	September 10, 2022 to September 20, 2022
9	Venue for, conducting meeting (if any)	Premises department, 5th floor, RBI, Central Office, Mumbai- 400001.
10	Mode of Submission- Part I and Part II tenders by the bidders.	e-Procurement System (Online Part I - Techno-Commercial Bid and Part II - Price Bid through www.mstcecommerce.com/eprochome/rbi)
11	Date of Starting of e-Tender by eligible bidders for submission of online Techno-Commercial Bid and price Bid at www.mstcecommerce.com/eprochome/rbi	September 14, 2024, 10:00 AM onwards
12	Date of closing of online e-tender for submission of Techno-Commercial Bid & Price Bid	September 20, 2024, till 02:00 PM

13	Date & time of opening of Part-I (i.e. Techno-Commercial Bid) Date & Time of opening of Part-II (i.e. Price Bid).	September 20, 2024, at 03:00 PM Proposed date of opening Part – II will be communicated to bidders through email.
14	Transaction Fee on MSTC portal	To be paid through MSTC Payment Gateway/NEFT/RTGS in favour of MSTC Limited or as advised by M/s MSTC Ltd.

SECTION - I

Form of Tender

To

Place:

Date:

Chief General Manager,
Reserve Bank of India,
Premises Department,
Central Office, 5th Floor,
Central Office Building,
Mumbai - 400 001

Madam,

Reserve Bank of India, through its Project Architect, inviting an Item Rate Tender, from the Interior Contractors, who have executed Civil & Interior renovation works including MEP Works for buildings, specifically for the work mentioned in the Description of work.

Having read and examined the Notice Inviting e-tender, specifications, drawings, designs, schedule of quantities, various schedules, General conditions of contract and clauses, Special conditions of contract, General rules and instructions to bidders and all other contents in the tender document for the work specified in the memorandum hereinafter set out and having examined the site of the works and having acquired the requisite information relating thereto as affecting the tender, I/We hereby offer to execute the works specified in the said memorandum within the time specified in the said memorandum at the rates mentioned in the attached schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Conditions of Contract, the Articles of Agreement, Special Instructions, Schedule of Quantities and Special Conditions of Contract and with such materials as are provided for, by and in all other respects in accordance with such conditions so far as they may be applicable.

Memorandum

(a)	Description of work	:	Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai
(b)	Estimated cost (₹)	:	As specified in Schedule 'E' of the Tender
(c)	Earnest Money (₹.)	:	As specified in Schedule 'E' of the Tender
(d)	Performance Guarantee	:	Bank Guarantee from any Scheduled Bank as per proforma at Annex 4 of this tender, for an amount

			equal to 5% of the Contract Amount by the successful bidder
(e)	Percentage, if any, to be deducted from each bill	:	5 %
(f)	Time allowed for Virtual Completion of the work	:	4 months {Phase 1 :- 2 months; Phase 2 :- 2 Months} as specified in Schedule 'E' of the Tender

2. We agree to keep the tender open for the validity period specified in **Schedule 'E' of the tender** and not to make any modification in its terms and conditions during the validity period or any other extended period as agreed mutually.
3. A sum of ₹ **16,46,000** only is hereby forwarded/uploaded in the form as specified in Schedule 'E' of the tender document as Earnest Money before submission of Part I & Part II tender documents. If I/We, fail to furnish the prescribed performance guarantee within the prescribed period, I/We agree that the Reserve Bank of India or its successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/ We agree that Reserve Bank of India or its successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender document upon the terms and conditions contained therein.
4. Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred from participation in the re-tendering process of the work.
5. I/We hereby declare that I/We shall treat the tender documents, drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived therefrom to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the Reserve Bank of India.
6. Should this tender be accepted, I/We hereby agree to abide by and fulfill the terms and provisions of the said Conditions of Contract annexed hereto so far as they may be applicable or in default thereof to forfeit and pay to the Reserve Bank of India the amount mentioned in the said conditions.
7. Our bankers are (Name and full address)

(i)	
(ii)	

The names of partners of our firm are:

(i)	
-----	--

(ii)	
------	--

Name of the partner of the firm authorized to sign	
OR	
Name of person having power of Attorney to sign the Contract (certified true copy of the Power of Attorney in the prescribed format as per Annex 5 of this tender should be attached)	

Yours faithfully,

Signature of Interior Contractor with seal

Signatures and addresses of witnesses

	Signature	Address
(i)		
(ii)		

Section II

1. SCOPE OF WORK

1.1 Description of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

1.2 The scope of proposed work shall be as per the layout plans/drawings, schedule of quantities and specifications given in this tender document.

1.3 It is not the intent to specify completely herein all details of work covered under this enquiry. Scope of work may also include such other related works as indicated in the drawings and /or schedule of quantities although they may not be specifically mentioned in the above paragraphs and all such incidental items of works not specified but reasonably implied and necessary for completion of the job as a whole, as directed by the Bank's Engineer and as directed hereunder. All works shall conform in all respects to high standards of engineering, design and workmanship and shall, fulfill the anticipated performance during the Interior Contractor's defect liability period in a manner acceptable to the Bank as specified hereunder.

1.4 Various works covered in this specification shall include but not limited to, furnishing of all materials, labour, tools, plants and equipment, transportation, fabrication, fixing, installation, supervision and execution as per schedule of quantities, technical specifications, drawings/plans, etc. as provided herein and as directed by the Bank's Engineer

1.5 The successful contractor shall co-ordinate with other vendors/contractors engaged by the Bank for successful completion of said work within stipulated time period.

I / We hereby declare that I/we have read and understood the above information.

Place

Signature of bidder

Date

Section III

General Rules and Instructions to the Bidders

The Interior Contractor, based on site visit before the tender, shall also give a project specific presentation that shall include their overall understanding of the project, critical points observed according to them, challenges envisaged & remedial measures proposed, methodologies, their strengths in handling this project within the schedule time period etc. The focus of the presentation shall be this project specific, and it shall also be accompanied with detailed work schedule/bar chart clearly specifying the timelines.

1	<p>Bids in Two bid system (e-tender through MSTC portal)</p> <p>The tender in two parts (Part I comprising of duly filled tender part I, EMD, technical bid/details, literature etc. and Part II comprising of duly filled-in tender price bid) should be submitted online as e-Tender using digital signature not later than the date and time of submission of tender/bid online (as specified in schedule 'E'). Tender inviting authority and Name of work, office is specified in schedule 'E'. No tender will be accepted after the specified date and time for submission of tender under any circumstances whatsoever.</p> <p>Bids shall be submitted online only and those received in physical form, by telegram or telex and those received late will not be entertained.</p>														
2.	<p>The eligible bidders are advised to follow the important instructions of e-Tender specified in Schedule 'H' and must have valid class III digital signature to submit the bid.</p>														
iv)	<p>Duly filled-in and digitally signed tender document consisting of:</p> <p>Part I: (Techno-Commercial Bid)</p> <table border="1"> <tr> <td>i)</td> <td>Form of Tender/Bid</td> </tr> <tr> <td>ii)</td> <td>e-tender transaction fee shall be paid as specified in schedule 'H'</td> </tr> <tr> <td>iii)</td> <td>Earnest Money Deposit (EMD)/Bid Security in approved format as specified in schedule E.</td> </tr> <tr> <td>iii)</td> <td>Power of Attorney (as per proforma annexed hereto) in favour of person signing the Bid</td> </tr> <tr> <td>iv)</td> <td>Duly filled-in and digitally signed tender document consisting of:</td> </tr> <tr> <td>a)</td> <td>Entire Tender Document Section I to Section IX</td> </tr> <tr> <td>b)</td> <td>All formats annexed hereto duly filled-in along with relevant documents</td> </tr> </table> <p>Part II: (Price Bid)</p> <p>Schedule of Quantities, duly filled-in online.</p>	i)	Form of Tender/Bid	ii)	e-tender transaction fee shall be paid as specified in schedule 'H'	iii)	Earnest Money Deposit (EMD)/Bid Security in approved format as specified in schedule E.	iii)	Power of Attorney (as per proforma annexed hereto) in favour of person signing the Bid	iv)	Duly filled-in and digitally signed tender document consisting of:	a)	Entire Tender Document Section I to Section IX	b)	All formats annexed hereto duly filled-in along with relevant documents
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a)	Entire Tender Document Section I to Section IX														
b)	All formats annexed hereto duly filled-in along with relevant documents														
4	<p>Pre-bid Clarifications</p>														

	<p>The bidders are advised to peruse the tender and visit the site. If the bidder shall have any doubt as to the meaning of any portion general rules and instructions to bidders, general conditions, or the special conditions or the scope of the work or the specifications and drawings or any other matter concerning the work, they shall in good time i.e. till 05.00 PM on September 12, 2024, put forth the particulars/queries/condition bidder wishes to include, if any thereof and submit them to the RBI along with details of bidder (viz. Name of bidder, contact no., email ID etc.), in writing through email & Cont. no. (email ID : cobrenovation@rbi.org.in & Cont. No. - 022-22602438), addressed to the Tender Inviting Authority , specified in Schedule 'E' to enable the RBI to examine and to clarify the same authoritatively. RBI's decision in the matter shall be conveyed to the bidder / all the bidders before the scheduled date of submission of the tenders. Once a tender is submitted, the matter will be decided according to tender conditions in the absence of such authentic pre-clarification. Any tender received with any deviation/ Condition is liable for rejection.</p>						
5	<p>Amendment to Tender document</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center; vertical-align: top;">i)</td> <td style="padding: 5px;">At any time prior to the deadline for the submission of tender/bids, RBI may, for any reason, whether at its own initiative or in response to a clarification or query raised by a prospective Bidder, modify any part of the tender document by an amendment and will be uploaded on RBI website.</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">ii)</td> <td style="padding: 5px;">The said amendment in the form of the addendum/ corrigendum will be made available on website of RBI to all the prospective bidders to whom the tender documents issued online and this communication will be in writing and same shall be binding on the bidders. The addendum (s), if any, issued will form part of the contract document.</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">iii)</td> <td style="padding: 5px;">In order to allow prospective Bidders reasonable time for preparing their Bids after taking into account such amendments, the RBI may, at its discretion, extend the deadline for submission of Bids.</td> </tr> </table>	i)	At any time prior to the deadline for the submission of tender/bids, RBI may, for any reason, whether at its own initiative or in response to a clarification or query raised by a prospective Bidder, modify any part of the tender document by an amendment and will be uploaded on RBI website.	ii)	The said amendment in the form of the addendum/ corrigendum will be made available on website of RBI to all the prospective bidders to whom the tender documents issued online and this communication will be in writing and same shall be binding on the bidders. The addendum (s), if any, issued will form part of the contract document.	iii)	In order to allow prospective Bidders reasonable time for preparing their Bids after taking into account such amendments, the RBI may, at its discretion, extend the deadline for submission of Bids.
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iii)	In order to allow prospective Bidders reasonable time for preparing their Bids after taking into account such amendments, the RBI may, at its discretion, extend the deadline for submission of Bids.						
6	<p>Item Rate Tender</p> <p>The Bidder should note that unless otherwise stated, the tender is strictly on item rates basis and his attention is drawn to the fact that rates for each and every item should be correct, workable and self-supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work but may vary to any extent as per conditions hereto and may even be omitted thus altering the aggregate value of the Contract.</p>						
7	<p>Preparation of bid and Cost of bidding</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center; vertical-align: top;">i)</td> <td style="padding: 5px;">The bidder must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of bidding for tender and for entering into a contract and must examine the drawings and must inspect the site of the work and acquaint himself with all local conditions, means of access to the work, nature of the work and all matters pertaining thereto.</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">ii)</td> <td style="padding: 5px;">The Interior Contractor shall be deemed to have carefully examined the work and site conditions the general and special conditions, the specifications, schedules and drawings and shall be deemed to have visited the site of work, to have fully informed himself regarding the local conditions and carried out his own investigations to arrive at the rates quoted in the tender. The rates quoted in the tender shall include all</td> </tr> </table>	i)	The bidder must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of bidding for tender and for entering into a contract and must examine the drawings and must inspect the site of the work and acquaint himself with all local conditions, means of access to the work, nature of the work and all matters pertaining thereto.	ii)	The Interior Contractor shall be deemed to have carefully examined the work and site conditions the general and special conditions, the specifications, schedules and drawings and shall be deemed to have visited the site of work, to have fully informed himself regarding the local conditions and carried out his own investigations to arrive at the rates quoted in the tender. The rates quoted in the tender shall include all		
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		charges including for packing, transport, handling, loading, unloading, delivery at site, necessary co-ordination with vendors, labour ESIC, PF, necessary stationary, any other misc. items, services required to complete the item and Overheads & profit. All tendered rates shall be inclusive of all taxes and levies etc. payable under respective statutes. GST to be shown separately after total amount.
8	Format to be used	
	The bidder must fill up and submit only the tender forms/formats issued (online) by the RBI, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates, will be liable for rejection.	
9	Filling of Rates	
	i)	Rates should be quoted for each item of work specified in the Schedule of Quantity.
	ii)	No advice of any change in rate or conditions after the opening of the tender will be entertained.
10	Earnest Money Deposit (EMD)/ Bid security	
	i)	All the bidders are required to submit Earnest Money Deposit (EMD)/ Bid Security for an amount and in the manner as specified in Schedule 'E' to participate in part I and part II tender.
	ii)	A tender, which is not accompanied by EMD, will not be considered. The Earnest Money will be refunded to the bidder if his tender is not accepted but without any interest.
	iii)	The Earnest Money Deposit paid by the successful bidder will be released after award of work on submission of Performance Bank Guarantee specified in Schedule 'F'. No interest shall be paid on the said deposit.
11	Signing of Bid, Power of Attorney	
	i)	Each of the tender documents should be digitally signed as per instruction of e-tender specified in Schedule 'H' hereto by the person or persons submitting the tender in token of his/their acquainted himself/themselves with the General Rules and Instructions to bidders including prequalification criteria, General Conditions of Contract, Specifications, Special Conditions and other terms and conditions etc. as laid down.
	ii)	The tender submitted online on behalf of a firm must be digitally signed as per instructions of e-tender specified in Schedule 'H', it must be digitally signed on his behalf by a person holding a power-of attorney authorizing him to do so, such power of attorney to be uploaded along with the tender, or it must be digitally signed by a partner who has the necessary authority on behalf of the firm to enter into the proposed contract and it must disclose that the firm is duly registered under the Indian Partnership Act, 1952. Otherwise, the tender may be rejected by RBI.
	iii)	Bidders shall submit online along with Part-I of the tender, a power of attorney, on a stamp paper of appropriate value and duly notarized, in favour of the person digitally signing the Bid documents authorizing him to sign the Bid documents, make

		corrections/ modifications thereto and interacting with Reserve Bank of India and act as the contact person. The proforma of the power of attorney shall be as annexed hereto.
12	Modification / substitution / Withdrawal of Bids	
	i)	No modification or substitution of the submitted Bid shall be allowed after the due date and time of submission of the tender.
	ii)	A Bidder may withdraw its submitted Bid, provided that written notice of the withdrawal is received by RBI before the last date and time for submission of Bids. In case a Bidder wants to resubmit his Bid, he shall submit within the due date a fresh Bid following all the applicable conditions.
	iii)	Only a single copy of the withdrawal notice shall be prepared, and each page of the notice shall be signed and stamped by the authorized signatory. The notice shall be duly marked "WITHDRAWAL".
13	Bid Due Date	
	Bids should be submitted online as specified in instructions to e-Tender on or before the stipulated time and date as specified in Schedule 'E'. Reserve Bank of India may, in exceptional circumstances, and at its sole discretion, extend the Bid due date.	
14	Opening of Bids	
	Duly filled tender Part I, accompanied by EMD, technical details, literature etc., called Part I of the tender, will be opened on e-Tender mode on the time and date, as specified in Schedule 'E', at his office, by the tender inviting authority, as specified in Schedule 'E' or his authorized representative in the presence of authorized representatives of the bidders who choose to be present. Duly filled-in tender-Part II, of those bidders, who are found qualified after scrutiny of Part I of the tender documents, only will be opened on e-Tender mode on the time and date, conveyed to qualified bidders subsequently by the RBI, in presence of the authorized representatives of the qualified bidders.	
15	Bid Validity	
	Tenders shall remain open to acceptance by the RBI for a period as specified in Schedule 'E' from the date of opening of the Part-I of the tender which period may be extended by mutual agreement and the bidder shall not cancel or withdraw the tender during this period.	
16	Clarification & Evaluation of Bids	
	RBI through its Consultant / Project Architect would subsequently examine and evaluate bids as below:	
	i)	Price Bids of only those Bidders who are technically qualified as per part I of tender shall be opened.
	ii)	The price bids of unqualified bidders will not be opened, and communication will be sent in this regard.
	iii)	Rates quoted for each item shall be considered during verification/ scrutiny.
	iv)	To assist in the examination, evaluation and comparison of the bid, RBI may ask

		Bidders individually for clarifications. The request for clarification and the response shall be in writing. No change in the price or substance of the Bid shall be sought, offered or permitted except as required to during the evaluation of Bids in accordance with tender clauses.
	v)	In the case of any tender where unit rate of any item/items appears unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation, such a tender is liable to be disqualified and rejected.
	vi)	In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more bidders is same, then such lowest bidders may be asked to submit a revised offer quoting percentage discount on their already quoted tendered amount which shall be applicable on all tender items except buy-back amount. The lowest tender shall be decided on the basis of revised offer. Further, if any such lowest bidder does not revise his bid on lower side, his original bid shall remain valid for further processing.
	vii)	If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more bidders received in revised offer is again found to be equal, then the RBI shall decide future course of action which shall be final and binding on all the bidders.
17	Acceptance of Tender and Award of Work	
	On receipt of intimation from the RBI of the acceptance of his/their tender, the successful bidder shall be bound to implement the contract and within fourteen days from the date of issue of work order thereof, the successful bidder shall sign an agreement in accordance with the draft articles of agreement.	
18	Performance Bank Guarantee	
	The Interior Contractor whose tender is accepted, will be required to furnish performance Bank guarantee of 5% (Five Percent) of the contract amount within the period specified in Schedule 'F'. This guarantee shall be from any Scheduled Bank as per the approved proforma annexed hereto (Annex 4).	
19	Insurance covers as per Schedule - F shall be submitted before commencement of work.	
20	Retention Money/ Security Deposit	
	i)	In addition to the Performance Bank Guarantee under para 20 above, as further security for the due fulfilment of the contract by the Interior Contractor, 5% of the value of the work done will be deducted by the RBI from each payment to be made to the Interior Contractor towards Retention Money. This total amount (Performance Bank Guarantee + Retention Money) will be termed as Security Deposit. Earnest Money Deposit (EMD) will be released (without any interest) after award of work and on submission of Performance Bank Guarantee (PBG). RBI will release (without any interest) the Performance Bank Guarantee after completion of work and the remaining Security Deposit after rectification of the defects pointed out during the Defects Liability Period. The amounts retained by the RBI shall not bear any interest.
	ii)	All compensation or other sums of money payable by the Interior Contractor to the Employer under the terms of this Contract may be deducted from the security deposit

		if the amount so permits and the Interior Contractor shall, unless such deposit has become otherwise payable, within ten days after such deduction make good in cash the amount so deducted.
	iii)	The security deposit of the successful bidder will be forfeited if he fails to comply with any of the conditions of the Contract.
21	Taxes/ Duties/ Levies	
	i)	Goods and service tax (GST), purchase tax, turnover tax, Excise duty or any other tax applicable in respect of this contract shall be payable by the Interior Contractor and RBI will not entertain any claim whatsoever in respect of the same.
22	Time for Completion of Work	
	Time allowed for carrying out the work as mentioned in the Schedule 'E' shall be strictly observed by the Interior Contractor and the execution of the works shall commence from such time period as mentioned in schedule F.	
23	Work Program	
	The work shall throughout the stipulated period of the contract be proceeded with all due diligence and if the Interior Contractor fails to complete the work within the specified period, he shall be liable to pay compensation as defined in the relevant clause of the General Conditions of Contract. The successful bidder shall, before commencing work, submit a detailed work program in line with the technical presentation shown, as specified in the General Conditions of Contract, which shall be approved by the Bank's Engineer.	
24	RBI\Employer's right to accept or reject any or all the bids	
	Notwithstanding anything mentioned above, RBI reserves the right to accept or reject any Bid at any time prior to award of contract without thereby incurring any liability to the affected Bidder or Bidders. The RBI/Employer shall not assign any reason for rejection of any or all Bids.	

I/We hereby declare that I/we have read and understood the above instructions.

Place

Signature of bidder

Date

Section IV

General Conditions of the Contract

Definitions	1.	The Contract means all the documents forming the tender and acceptance thereof together with any correspondence leading thereto and the formal agreement executed between the competent authority on behalf of the Employer and the Interior Contractor, together with the documents referred to therein including the General Conditions, General rules and instructions to bidders, the Technical Specifications, designs, drawings, correspondences exchanged and instructions issued from time to time by the Bank's Engineer. All these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
	2.	In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -
	i)	The expression works or work or Project shall, unless there be something either in the subject or context repugnant be construed and taken up to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional, as defined in Schedule 'F'.
	ii)	The Site shall mean the land/or other places on, into or through which work is to be executed under the contract including any building and erections thereon or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract, as defined in Schedule 'F'.
	iii)	Employer shall mean The Reserve Bank of India (as mentioned in schedule 'F') and shall include its assignees and successors.
	iv)	RBI shall mean Reserve Bank of India, having its Central Office at Shahid Bhagat Singh Road, Mumbai – 400001 and having its Regional Offices at various places.
	v)	Tender document shall mean document named as such issued/ uploaded by the Employer to the bidders for inviting Bids for the Project / work.
	vi)	Day shall mean Calendar Day
	vii)	Working day shall mean the days when Employer's office is working i.e. Days excluding Public holidays, Saturdays and Sundays.
	viii)	Month shall mean the calendar month.
	ix)	Year shall mean Calendar Year.

		x)	Bidder (s) shall mean all parties participating in the bidding process pursuant to and in accordance with the terms of the Tender document.
		xi)	The Interior Contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
		xii)	Sub-Interior Contractor means the person or persons, firm or company engaged by the Interior Contractor for executing any part or to whom any part thereof has been sub-let with the consent in writing of the Employer
		xiii)	The Bank's Engineer means the Engineer Officer employed and paid by the Employer and acting under the orders of the Employer who shall supervise and be in-charge of the work.
		xiv)	The Authorized representatives as Bank's Engineer means the Engineer officers employed and paid by the Employer and acting under the orders of the Employer who shall supervise day to day execution of work under the direction and guidance of Engineer-in-Charge.
		xv)	Contract Price or Contract Amount shall mean the total amount as calculated from quoted unit rates by the successful bidder and quantities mentioned in the Schedule of quantities (Price Bid) and as accepted by the Employer and indicated in the letter of award of work.
		xvi)	Contract Period shall mean the period specified in the tender document for execution of the contract/ completion of the work, including any authorized extended period by the Employer
		xvii)	Contract Agreement shall mean the agreement signed between the Interior Contractor and the Employer for the execution of the Project.
		xviii)	Notice in writing or written notice shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post, it would have been delivered and/or sent. The communication delivered by any accepted electronic means shall also be deemed to be a written notice.
		xix)	Act of Insolvency shall mean any act of insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any Act amending such original.

		xx)	Manufacturer refers to a person or firm who is the producer and furnisher of the material or designer and fabricator of equipment
		xxi)	Market Rate shall be the rate as decided by the Bank's Engineer based on the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule 'F' to cover all overheads and profits.
		xxii)	Net Rate/Price - If in arriving at the contract amount the Interior Contractor shall have added to or deducted from the total of the items in the Tender any sum, either as a percentage or otherwise, then the net price of any item in tender shall be the sum arrived at by adding or deducting from the actual figure appearing in the Tender as the price of that item a similar percentage or determining the percentage or proportion of the sum so added or deducted by the Interior Contractor the total amount of any Prime Cost items and provisional sums of money shall be deducted from the total amount of the tender. The expression "net rates" or "net prices" when used with reference to the contract or accounts shall be held to mean rates or prices so arrived at.
Scope and performance	3.		Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.
	4.		Headings and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
	5.		The Interior Contractor shall be furnished, free of cost one certified copy of the contract documents except Indian standard specifications and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.
Works to be carried out	6.		The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The Interior Contractor shall provide at his cost everything necessary for the proper execution of the works according to the intent and meaning of the drawings, Schedule of Quantities and Specification taken together, whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from and if the Interior Contractor finds any discrepancy in the drawings or amongst the drawings, Schedule of Quantities and Specifications, he shall immediately and in writing refer same to the Bank's Engineer who shall decide which is to be followed. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of

		<p>empties, hoisting, setting, fitting and fixing in position and all other labour necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.</p> <p>The Interior Contractor shall carry out and complete the said work in every respect in accordance with this Contract and with the directions of and to the satisfaction of the Bank's Engineer. The Bank's Engineer may in his absolute discretion and from time-to-time issue further drawings and/or written instructions, detailed directions and explanations which are hereafter collectively referred to as "Employer's Instructions" in regard to:</p> <ol style="list-style-type: none"> a) The variation or modification of the design, quality or quantity of works or the addition or omission or substitution of any work. b) Any discrepancy in the drawings or amongst the Schedule of Quantities and/or drawings and/or specification. c) The removal from the site of any material brought thereon by the Interior Contractor not fulfilling the tender specifications and the substitution of any other material therefor. d) The removal and/or re-execution of any material/works executed by the Interior Contractor but not fulfilling the tender specifications. e) The dismissal from the works of any persons employed by the Interior Contractor thereupon. f) The opening up for inspection of any work covered up. g) The amending and making good of any defects noticed and reported during Defect Liability Period. <p>The Interior Contractor shall forthwith comply with and duly execute any work comprised in such Employer's instructions provided always that verbal instructions, directions and explanations given to the Interior Contractor or his representatives upon the works by the Bank's Engineer shall, if involving a variation, be confirmed in writing by the Interior Contractor within seven days, and if the same is not approved/disapproved by the Bank's Engineer in writing within a further period of seven days, such shall be deemed to be Employer's Instructions within the scope of the Contract.</p>
Sufficiency of Tender	7.	<p>The Interior Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.</p>
Discrepancies and	9.	<p>The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in</p>

Adjustment of Errors (order of preference)		preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.
	9.1	In the case of discrepancy between the schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed: -
		i) Description of Schedule of Quantities.
		ii) Particular Specification and Special Condition, if any.
		iii) Drawings.
		iv) General Specifications.
	9.2	If there are varying or conflicting provisions made in any one document forming part of the contract, the Competent Authority as defined in the schedule 'F' shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the Interior Contractor.
	9.3	If there is a discrepancy between actual scaled drawing and written dimension (or description) on a drawing, the latter shall be followed.
	9.4	The Schedule of Quantities, unless otherwise stated shall be deemed to have been prepared in accordance with standard method of measurement. Any error in description or in quantity in Schedule of Quantities or any omission of items therefrom shall not vitiate the Contract but shall be rectified and the value thereof, as ascertained under clause 12 hereof shall be added to or deducted from the Contract amount (as the case may be) provided that no rectification or errors, if any, shall be allowed in the Interior Contractor's Schedule of rates. The above discrepancies in Schedule of Quantities shall not release the Interior Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.
Signing of Contract	10.	The successful tenderer/Interior Contractor, on acceptance of his tender by the Employer, shall, within 14 days from the stipulated date of start of the work, sign the contract consisting of : -
		i) Articles of agreement on non-judicial stamp paper/s of appropriate values (The cost of the stamp paper/s shall be borne by the Interior Contractor. One Certified copy of the agreement will be handed over to the Interior Contractor by the Employer)
		ii) the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
		No payment for the work done will be made unless contract is signed by the Interior Contractor.

CLAUSES OF CONTRACT

CLAUSE 1	
Performance Guarantee	<p>i) The Interior Contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the Contract amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of award. This period can be further extended by the Bank's Engineer up to a maximum period as specified in schedule 'F' on written request of the Interior Contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Bank's Engineer. This guarantee shall be in the form of Bank Guarantee issued by any Scheduled Bank in the approved proforma annexed hereto (Annex 4).</p>
	<p>ii) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 30 days beyond that. In case the time for completion of work gets enlarged, the Interior Contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work. After recording of the virtual completion certificate for the work by the Bank's Engineer, the performance guarantee shall be returned to the Interior Contractor, without any interest.</p>
	<p>iii) The Bank's Engineer shall not make a claim under the performance guarantee except for amounts to which the Employer is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:</p>
	<p>a) Failure by the Interior Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Bank's Engineer may claim the full amount of the Performance Guarantee.</p>
	<p>b) Failure by the Interior Contractor to pay the Employer any amount due, either as agreed by the Interior Contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Bank's Engineer.</p>
	<p>iv) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Employer.</p>

	CLAUSE 1 A	
Recovery of Security Deposit	i)	The Interior Contractor shall permit Employer at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 5% of the gross amount of each running account and final bill till the sum deducted will amount to security deposit of 5% of the Contract price of the work. Such deductions will be made and held by the Employer by way of Security Deposit till the successful completion of Defect Liability Period.
	ii)	All compensations or the other sums of money payable by the Interior Contractor under the terms of this contract may be deducted from his security deposit or from any sums which may be due to or may become due to the Interior Contractor by Employer on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions, the Interior Contractor shall within 10 days make good in cash any sum or sums which may have been deducted from his security deposit or any part thereof. The security deposit shall be collected from the running bills and the final bill of the Interior Contractor at the rates mentioned above.
	iii)	The security deposit as deducted above can be released against bank guarantee issued by a scheduled bank, on completion of the work and settlement of final bill at the request of the Interior Contractor subject to the condition that amount of such Bank guarantee is equal to security deposit amount which shall be initially valid till end of defect liability period (DLP) + 60 days. Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.
	CLAUSE 2	
Compensation for Delay		If the Interior Contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Employer on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated in schedule 'F' and as per the authority specified in schedule 'F' (whose decision in writing shall be final and binding) may decide on the amount of contract price of the work for every completed day (as applicable) that the progress remains below that specified in Clause 5 or that the work remains incomplete.
		This will also apply to items or group of items for which a separate period of completion has been specified

	i)	Compensation at the rate as specified in schedule 'F' for delay of work to be computed, provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Contract Price of work or of the Contract price of the item or group of items of work for which a separate period of completion is originally given.
	ii)	The amount of compensation may be adjusted or set-off against any sum payable to the Interior Contractor under this or any other contract with the Employer.
CLAUSE 3		
When Contract can be Determined		Subject to other provisions contained in this clause, the Bank's Engineer, may, without prejudice to his any other rights or remedy against the Interior Contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:
	i)	If the Interior Contractor has abandoned the contract
	ii)	If the Interior Contractor having been given by the Bank's Engineer a notice in writing to rectify, pull down, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workman like manner, shall omit to comply with the requirement of such notice for a period of seven days thereafter or has failed to remove the materials from the site within seven days of the written instructions of the Bank's Engineer that the same were condemned and rejected by him under these conditions .
	iii)	If the Interior Contractor has failed to commence the work or, without any lawful excuse under these conditions suspended the progress of the work for fourteen days after receiving notice from the Bank's Engineer to proceed or has failed to proceed with the work with due diligence so that in the opinion of the Bank's Engineer (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Bank's Engineer.
	iv)	If the Interior Contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Bank's Engineer.
	v)	If the Interior Contractor persistently neglects or fails to carry out his

		obligations under the contract and/ or commits default in complying with all or any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Bank's Engineer.
	vi)	If the Interior Contractor shall offer or give or agree to give to any person in Employer's service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Employer
	vii)	If the Interior Contractor shall enter into a contract with Employer in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Bank's Engineer.
	viii)	If the Interior Contractor had secured the contract with Employer as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.
	ix)	If the Interior Contractor being an individual, or if a firm, any partner thereof commits an "Act of Insolvency" or shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall suffer execution or other process of court attaching property to be issued against the Interior Contractor or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors and shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction to the Bank's Engineer that he is able to carry out and fulfill the contract and to give security therefor, if so required by the Bank's Engineer.
	x)	If the Interior Contractor being a company shall pass an effective resolution for winding up voluntarily or shall have an order for compulsory winding up made against it or shall subject to the supervision of court and the official Assignee or the liquidator in such acts of insolvency or winding up, as the case may be, or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a

		winding up order.
	xi)	If the Interior Contractor shall suffer any payment under this contract to be attached by or on behalf of any of the creditors or the Interior Contractor or shall charge or encumber this contract or any payments due or which may become due to the Interior Contractor hereunder
	xii)	If the Interior Contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.
	xiii)	<p>If the Interior Contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Bank's Engineer.</p> <p>When the Interior Contractor has made himself liable for action under any of the cases aforesaid, the Bank's Engineer on behalf of the Employer shall have powers:</p>
	a)	To determine the contract, notwithstanding any previous waiver, after giving seven days' notice in writing to the Interior Contractor, as aforesaid (of which termination notice in writing to the Interior Contractor under the hand of the Bank's Engineer shall be conclusive evidence). Upon such determination, the Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Employer.
	b)	After giving notice to the Interior Contractor measure up the work of the Interior Contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands. The action will be without thereby affecting the powers of the Bank's Engineer or the obligations and liabilities of the Interior Contractor, the whole of which shall continue in force as fully as if the Contract had not been so determined, and as if the work subsequently executed had been executed by or on behalf of the Interior Contractor. And further, the Employer by his agents or servants may enter upon and take possession of the works and all plants, tools, scaffoldings, sheds, machinery steam and other power utensils and materials lying upon the premises or the adjoining lands or roads, and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other Interior Contractor or other person or persons to complete the works, and the Interior Contractor shall

		<p>not in any way interrupt or do any act, matter or thing to prevent or hinder such other Interior Contractor or other person or persons employed for completing and finishing or using the materials and plant for the works. When the works shall be completed or as soon thereafter as convenient the Bank's Engineer shall give a notice in writing to the Interior Contractor to remove his surplus materials and plant, and should the Interior Contractor fail to do so within a period of fourteen days after receipt thereof by him, the Employer may sell the same by public auction, and give credit to the Interior Contractor for the net amount realized. The Employer shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by the Employer and expense or loss which the Employer shall have been put to in procuring the works to be completed and the amount, if any, owing to the Interior Contractor and the amount which shall be so certified shall thereupon be paid by the Employer to the Interior Contractor or by the Interior Contractor to the Employer, as the case may be, and the Certificate of the Bank's Engineer shall be final and conclusive between the parties. The Interior Contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work, if resorted to by the Employer.</p>
		<p>In the event of above courses being adopted by the Bank's Engineer, the Interior Contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the Interior Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Bank's Engineer has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.</p>
	<p>CLAUSE 3A</p>	
	a)	<p>In case, the work cannot be started due to reasons not within the control of the Interior Contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract.</p>
	b)	<p>If the payment of the amount payable by the Employer under Certificate of the Bank's Engineer shall be in arrears and unpaid for thirty days after notice in writing requiring payment of the amount as aforesaid shall have been given by the Interior Contractor to the Employer, or if the Employer</p>

		interferes with or obstructs the issue of any such Certificate, or if the Employer shall repudiate the Contract, or if the works be stopped for three months under the order of the Bank's Engineer or the Employer or by any injunction or other order of any court of Law, then and in any of the cases the Interior Contractor shall be at liberty to determine the Contract by notice in writing to the Employer, through the Bank's Engineer and he shall be entitled to recover from the Employer, payment for all works executed or materials supplied for the purpose of the Contract. In arriving at the amount of such payment, the net rates contained in the Interior Contractor's original tender shall be followed or where the same may not apply, valuation shall be made in accordance with Clause hereof.
	c)	In case Interior Contractor wants to close the contract, he shall give notice to the Employer stating the failure on the part of Employer. In such eventuality, the Performance Guarantee of the Interior Contractor shall be refunded within 30 days from the date of notice.
	CLAUSE 3B	
Termination of Contract in case of death of Interior Contractor	Without prejudice to any of the rights or remedies under this contract, if the Interior Contractor, being an individual, dies, the Employer shall have the option of terminating the contract without any liability for such termination and compensation to the Interior Contractor.	
	CLAUSE 4	
Interior Contractor liable to pay Compensation even if action not taken under Clause 3		In any case in which any of the powers conferred upon the Bank's Engineer by Clause-3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the Interior Contractor and the liability of the Interior Contractor for compensation shall remain unaffected. In the event of the Bank's Engineer putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the Interior Contractor, take possession of (at the sole discretion of the Bank's Engineer which shall be final and binding on the Interior Contractor) or use as on hire (the amount of the hire money being also in the final determination of the Bank's Engineer) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the Interior Contractor, or procured by the Interior Contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Bank's Engineer, whose certificate thereof shall be final, and binding on the Interior Contractor, clerk of the works,

		foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the Interior Contractor failing to comply with any such requisition, the Bank's Engineer may remove them at the Interior Contractor's expense or sell them by auction or private sale on account of the Interior Contractor and his risk in all respects and the certificate of the Bank's Engineer as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the Interior Contractor.
	CLAUSE 5	
Time and Extension for Delay		The time allowed for execution of the Works as specified in the Schedule 'F' or the authorized extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in schedule 'F'. If the Interior Contractor commits default in commencing the execution of the work as aforesaid, Employer shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely.
	5.1	PROGRAMME CHART
	i)	The Interior Contractor shall submit a detailed work program for the execution of work, clearly showing all activities from the start of work to completion in line with the presentation shown, within the stipulated period or earlier with the timelines indicated in presentation of successful contractor and submit the same for approval to the Engineer-in-Charge within five days of award of the contract.
	ii)	The program should include the following:
	a)	Descriptive note explaining sequence of the various activities.
	b)	Network (PERT / CPM / BAR CHART).
	iii)	If at any time, it appears to the Bank's Engineer that the actual progress of work does not conform to the approved programme referred above or after rescheduling of milestones, on his instructions, the Interior Contractor shall produce a revised programme within 7 (seven) days, showing the modifications to the approved programme to ensure timely completion of the work.
	5.2)	If the work(s) be delayed by:-
	i)	Force majeure, or
	ii)	Abnormally bad weather, or
	iii)	Serious loss or damage by fire, or
	iv)	Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

	v)	Delay on the part of other Contractors or tradesmen engaged by Engineer-in- Charge in executing work not forming part of the Contract, or
	vi)	Any other cause which, in the absolute discretion of the Bank's Engineer is beyond the Interior Contractor's control.
		then upon the happening of any such event causing delay, the Interior Contractor shall immediately give notice thereof in writing to the authority as indicated in Schedule 'F' but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Bank's Engineer to proceed with the works.
	5.3)	Request for extension of time, to be eligible for consideration with reasons, shall be made by the Interior Contractor in writing within fourteen days of the happening of the event causing delay to the competent authority as indicated in Schedule 'F'. The Interior Contractor may also, if practicable, indicate in such a request the period for which extension is desired. Hindrance register shall be maintained to record hindrances during execution of work.
	5.4)	In such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Interior Contractor by the authority as indicated in Schedule 'F' in writing. Non-application by the Interior Contractor for extension of time shall not be a bar for giving a fair and reasonable extension of time by the authority as indicated in Schedule 'F' and this shall be binding on the Interior Contractor.
	CLAUSE 6	
Measurements of Work Done	i)	Bank's Engineer shall, except as otherwise provided, ascertain and determine by measurement, the value in accordance with the contract of work done.
	ii)	<p>All measurement of all items having financial value shall be entered in Measurement Book (MB) so that a complete record is obtained of all works performed under the contract. All bills (RA & Final bill) should be in bound volume of Computerised Measurements (A4 size) to be furnished by the contractor, duly machine numbered for pages, and with MB number to be given by the Bank. – Format of Measurement and Abstract Book is attached in Annex – 11.</p> <p>The Interior Contractors shall incorporate necessary corrections in the sheets of MB as directed by Bank's Engineer. After incorporating the corrections, the Interior Contractor shall submit revised copies. All pages of the finalized, computerized MB sheets, after due check / test check measurements shall have full signature with date of the</p>

	authorized official of the Interior Contractor.
iii)	All measurements and levels shall be taken jointly by the Bank's Engineer and by the Interior Contractor or their authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Bank's Engineer and the Interior Contractor or their representative in token of their acceptance. If the Interior Contractor objects to any of the measurements recorded, a note shall be made by Bank's Engineer to that effect with reason and signed by both the parties.
iv)	If for any reason, the Interior Contractor or his authorized representative is not available and the work of recording measurements is suspended by the Bank's Engineer, the Bank's Engineer and the Employer shall not entertain any claim from Interior Contractor for any loss or damages on this account. If the Interior Contractor or his authorized representative does not remain present at the time of such measurements after the Interior Contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Bank's Engineer shall be deemed to be accepted by the Interior Contractor.
v)	The Interior Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.
vi)	Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards (IS 1200) or any other relevant code of practice and if for any item no such standard is available, then a mutually agreed method shall be followed.
vii)	The Interior Contractor shall give, not less than seven days' notice to the Bank's Engineer, before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Bank's Engineer who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Bank's Engineer's consent being obtained in

		writing, the same shall be uncovered at the Interior Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
	viii)	Bank's Engineer or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
	ix)	It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates, nor shall it relieve the Interior Contractor from liabilities from any over measurement or defects noticed till completion of the defect liability period.
CLAUSE 7		
Payment on Interim Certificate to be Regarded as Advances	i)	<p>No payment shall be made for work, cost Rs. 200.00 lakh or less till after the whole of the work shall have been completed and certificate of completion given. For works executed cost over Rs. 200.00 Lakh, the interim or running account bills shall be submitted by the Interior Contractor for the work executed on the basis of such recorded measurements on the format approved by the Employer along with supporting documents. The Interior Contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared only after the requisite progress is achieved. Bank's Engineer shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the Interior Contractor to submit the bills, Bank's Engineer shall prepare or cause to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the Interior Contractor. Payment on account of amount admissible shall be made by the Bank's Engineer certifying the sum to which the Interior Contractor is considered entitled by way of interim payment at such rates as decided by the Bank's Engineer.</p> <p>The Interior Contractor shall be paid by the Employer from time to time, by instalments under Interim Certificates to be issued by the Bank's Engineer to the Interior Contractor on account of the works executed as aforesaid in accordance with this contract, subject, however, to a retention of the percentage of such value named in the schedule 'F' as "Retention percentage for Interim Certificates" And when the works</p>

	<p>have been virtually completed and the Bank's Engineer shall have certified in writing that they have been completed, the Interior Contractor shall be paid by the Employer in accordance with the Certificate, the sum of money named in the schedule as "Instalment after Virtual Completion" being a part of the said Total Retention Money. The Interior Contractor shall be entitled to the payment of the Final Balance of the retention money in accordance with the final certificate to be issued in writing by the Bank's Engineer at the expiry of the period referred to as "the Defects Liability Period" in clause 17 or as soon as after the expiration of such period as the works shall have been finally completed and all defects made good according to the true intent and meaning hereof whichever shall last happen, provided always that the issue by the Bank's Engineer of any Certificate during the progress of the works or at or after their completion shall not relieve the Interior Contractor from his liability under this contract nor relieve the Interior Contractor of his liability in case of fraud, dishonesty or fraudulent concealment relating to the works or materials or to any matter dealt with in the certificate, and in case of all defect and insufficiencies in the works or materials which a reasonable examination would not have disclosed. No certificate of the Bank's Engineer shall of itself be conclusive evidence that any works or materials to which it relates are in accordance with the Contract neither will the Interior Contractor have a claim for any amounts which the Bank's Engineer might have certified in any interim bill and paid by the Employer and which might subsequently be discovered as not payable and in this respect the Employer's decision shall be final and binding.</p>
a)	<p>75% of the amount payable to the Interior Contractor on the RA bills will be released as an ad-hoc payment within 7 working days from the date of certification by the Bank's Engineer, pending test checking of work and verification of detailed arithmetical accuracy by Employer.</p>
b)	<p>The Employer shall have power to withhold any certificate if the works or any parts thereof are not being carried out to his satisfaction.</p>
c)	<p>No payment shall be made to the Interior Contractor if the Interior Contractor fails to ensure the works and keep them insured till the issue of the Completion Certificate.</p>
d)	<p>The amount admissible shall be paid within the specified period of honouring certificates in the schedule 'F' after the day of presentation of the bill by the Interior Contractor to the Bank's Engineer together with the account of the dismantled materials, if any and all required details/ documents. In case of delay in payment of Running Account bills after 30 days of submission of bill by the Interior Contractor, provided the bill submitted by the Interior Contractor found to be in</p>

		order, a simple interest @ 3% per annum shall be paid to the Interior Contractor from the date of expiry of prescribed time limit.
	ii)	All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Bank's Engineer relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Bank's Engineer under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract
	iii)	Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided without prejudice to the right of the Employer to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.
	CLAUSE 7A	
Unfixed materials when taken into account to be the property of the Employer		Where in any Certificate (of which the Interior Contractor has received payment), the Bank's Engineer has included the value of any unfixed materials intended for and/or placed on or adjacent to the works such materials shall become the property of the Employer and they shall not be removed except for use upon the works, without the written authority of the Bank's Engineer. The Interior Contractor shall be liable for any loss of, or damage to, such materials.
	CLAUSE 8	
Completion Certificate and Completion Plans	i)	Within ten days of the completion of the work, the Interior Contractor shall give notice of such completion to the Bank's Engineer and within thirty days of the receipt of such notice, the Bank's Engineer shall inspect the work if the work is found incomplete, the Interior Contractor shall be advised suitably. Further, in the completed work, if there is no defect, the Bank's Engineer shall furnish the Interior Contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the Interior Contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the Interior Contractor shall have removed from the premises on which the work shall be

		executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the Interior Contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Bank's Engineer. If the Interior Contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Bank's Engineer may at the expense of the Interior Contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the Interior Contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.
	ii)	The works shall not be considered as completed until the Bank's Engineer has certified in writing that they have been completed. The Defects Liability Period shall commence from the date of such certificate.
CLAUSE 8A		
Interior Contractor to Keep Site Clean		The splashes and droppings paint/polish etc. on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, or premises etc. where the work is done. The cleaning shall be carried out as soon as possible without waiting for the actual completion of all the other items of work in the contract. In case the Interior Contractor fails to comply with the requirements of this clause, the Bank's Engineer shall have the right to get this work done at the cost of the Interior Contractor through any other agency. Before taking such action, the Bank's Engineer shall give ten days' notice in writing to the Interior Contractor.
CLAUSE 8B		
As built drawings to be Submitted by the Interior Contractor	i)	The Interior Contractor shall submit as built drawings to be approved by Banks Engineer within thirty days of the completion of the work.
	ii)	The Interior Contractor shall also submit the applicable maintenance manuals and other technical literature/ warranty certificates etc.
CLAUSE 9		

<p>Payment of Final Bill</p>		<p>The final bill shall be submitted by the Interior Contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Bank's Engineer whichever is earlier. No further claims shall be made by the Interior Contractor after submission of the final bill, and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Bank's Engineer, will, as far as possible be made within the period of 03 months, the period being reckoned from the date of receipt of the bill by the Bank's Engineer complete with account of materials wherever applicable.</p>
		<p>In case of delay in payment of final bills after prescribed time limit, a simple interest @ 3% per annum shall be paid to the Interior Contractor from the date of expiry of prescribed time limit, provided the final bill submitted by the Interior Contractor found to be in order and supported with all necessary relevant documents.</p>
<p>CLAUSE 9A</p>		
<p>Payment of Interior Contractor's Bills through electronic means</p>	<p>i)</p>	<p>Payments due to the Interior Contractor shall be made to his bank through NEFT. For this purpose, the Interior Contractor shall furnish to the Bank's Engineer - (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank; to receive payments and all other required particulars in the approved format. (2) his own acceptance of the correctness of the amount made out as being due to him by Employer or his signature on the bill or other claim preferred against Employer before settlement by the Bank's Engineer of the account or claim by payment to the bank. While the NEFT transaction slip shall constitute a full and sufficient discharge for the payment, the Interior Contractor shall whenever possible, present his bills duly receipted and discharged through his bank.</p>
	<p>ii)</p>	<p>Nothing herein contained shall operate to create in favour of the bank any rights or equities vis-a- vis the Employer.</p>
<p>CLAUSE 10</p>		
<p>Materials to be provided by the Interior Contractor</p>	<p>i)</p>	<p>The Interior Contractor shall, at his own expense, provide all materials, required for the works.</p>
	<p>ii)</p>	<p>The Interior Contractor shall, at his own expense and without delay, supply to the Bank's Engineer samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Interior Contractor shall be in conformity with the specifications laid down or referred to in the contract. The materials shall</p>

		<p>be selected from the list of approved makes of materials at Section VI. The Interior Contractor shall, if requested by the Bank's Engineer furnish proof, to the satisfaction of the Bank's Engineer that the materials so comply. The Bank's Engineer shall within thirty days of supply of samples or within such further period as he may require intimate to the Interior Contractor in writing whether samples are approved by him or not. If samples are not approved, the Interior Contractor shall forthwith arrange to supply to the Bank's Engineer for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Bank's Engineer shall be issued after the test results are received.</p>
	iii)	<p>The Interior Contractor shall at his risk and cost submit the samples of materials to be tested or analysed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Bank's Engineer. The Interior Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.</p>
	iv)	<p>The Interior Contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Bank's Engineer may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Bank's Engineer and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Bank's Engineer or his authorized representative shall at all times have access to the works and to all workshops, factories or/ and other places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the Interior Contractor shall allow every facility and every assistance in obtaining the right to such access for inspections and examination and test of the materials and workmanship. No person not authorized by the employer except the representatives of public authorities shall be allowed on the works at any time.</p>
	v)	<p>The Bank's Engineer shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Bank's Engineer shall be at liberty to employ at the expense of the Interior Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Bank's Engineer shall also have full powers to require other proper materials to be substituted thereof and in case of default, the Bank's</p>

		Engineer may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Interior Contractor.
	vi)	Basic price adjustment shall be done on the measured quantities for the finished items of work with specified "Basic Prices / Rates". In addition to the difference in the Basic Price / Rate and the actual purchase Price / Rate, no other components such as wastage, transportation, handling, insurance, labour, etc. shall be taken into account.
Work to be Executed in Accordance with Specifications, Drawings, Orders etc.	CLAUSE 11	
	i)	The Interior Contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The Interior Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Bank's Engineer and the Interior Contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.
	ii)	In the case of any class of work for which there is no such specifications as referred above, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Bank's Engineer.
	iii)	The Interior Contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Interior Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.
Action in case Work not done as per Specifications	CLAUSE 11 A	
	i)	All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Bank's Engineer, his authorized subordinates in

	<p>charge of the work and all the superior officers of the Employer or any organization engaged by the Employer for Quality Assurance and of the Chief Technical Examiner's Office, and the Interior Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Interior Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Interior Contractor's agent shall be considered to have the same force as if they had been given to the Interior Contractor himself.</p>
	<p>ii) If it shall appear to the Bank's Engineer or his authorized representatives or to the Superior Officers of the employer or the officers of the organization engaged by the Employer for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the Interior Contractor shall, on demand in writing which shall be made within Defects Liability Period stated in schedule 'F' or, if not stated, then within twelve months after completion of the work, from the Bank's Engineer specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of him failing to do so within a period specified by the Bank's Engineer in his demand aforesaid, then the Interior Contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.</p>
	<p>iii) In such case the Bank's Engineer may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in Schedule 'F' may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Interior Contractor. Decision of the Bank's Engineer to be conveyed in writing in respect of the same will be final and binding on the Interior Contractor.</p>
<p>CLAUSE 12</p>	
	<p>The Bank's Engineer shall have power (i) to make alteration in,</p>

<p>Deviations/ Variations Extent and Pricing</p>		<p>omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the Interior Contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Bank's Engineer and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the Interior Contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the Interior Contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.</p> <p>The Bank's Engineer shall be the final authority to decide whether any item of work is extra/ deviation/ substitution item.</p> <p>A schedule of probable quantities in respect of the work and specifications accompany these special conditions. The schedule of probable quantities is liable to be operated by omissions, deductions or additions at all times, at the discretion of Bank. Such variation in the quantities shall not, however, vitiate the contract in any way whatsoever and Interior Contractor shall be paid for actual measured quantities of work executed by him at the rates given in the Schedule of Quantities. The quoted rates will remain unchanged till completion of project in all respect and to the satisfaction of Bank</p>
	<p>12.1</p>	<p>The time for completion of the works shall, in the event of any deviations resulting in additional cost over the Contract price sum being ordered, be extended, if requested by the Interior Contractor, as follows</p>
		<p>i) In the proportion in which the additional cost of the altered, additional or substituted work (The difference of Final completed cost of work (including the financial impact of all extra, substituted and deviated items but excluding the financial impact due to operation of price adjustment clause) and the Contract price), bears to the original Contract price plus</p>
		<p>ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Bank's Engineer.</p>
<p>Deviation - Extra Items and Pricing</p>	<p>12.2</p>	<p>A) Items that are completely new, and are in addition to the items contained in the contract</p>
		<p>Where the extra works are not of similar character and/or executed under similar conditions as aforesaid or where the omissions vary the conditions under which any remaining items</p>

			of works are carried out or if the amount of any omissions or additions relative to the amount of the whole of the contract works or to any part thereof shall be such that in the opinion of the Bank's Engineer the net rate or price contained in the Priced Schedule of Quantities or tender or for any item of the works involves loss or expense beyond that reasonably contemplated by the Interior Contractor or is by reason of such omission or addition rendered unreasonable or inapplicable, the Bank's Engineer shall fix such other rate or price as in the circumstances he shall think reasonable and proper, with the prior approval in writing of the Employer.
			Where extra work cannot be properly measured or valued, the Interior Contractor shall be allowed day work prices as the net rates stated in the tender of the Priced Schedule of Quantities or, if not so stated, then in accordance with the local day work rates and wages for the district, provided that in either case vouchers specifying the daily time (and if required by the Bank's Engineer, the workman's name) and materials employed be delivered for verification to the Bank's Engineer or his representative at or before the end of the week following that in which the work has been executed.
			In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the Interior Contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper rate analysis (CPWD method shall be followed as far as possible) worked on the "actual cost basis" plus 15% towards establishment charges, Interior Contractor's overhead and profit and the Bank's Engineer shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Interior Contractor, determine the rates on the basis of the market rates and the Interior Contractor shall be paid in accordance with the rates so determined.
Deviation - Substituted Items and Pricing		B)	Items that are taken up with partial substitution or in lieu of items of work in the contract
			In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall, wherever possible, be derived out of the rates given in priced schedule of quantities in the manner as mentioned in the following para.

		a)	The net rates or prices in the original tender shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.
		b)	The net prices of the original tender shall determine the value of the items omitted provided if omissions vary the conditions under which any remaining items of works are carried out the prices for the same shall be valued under sub-clause (A) thereof.
		c)	If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the Interior Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).
		d)	If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the Interior Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).
Deviation - Deviated Quantities and Pricing		C)	In the case of contract items, substituted items, contract cum substituted items which exceed the pre-specified limits over the tender quantity
			In the case of contract items, substituted items, contract cum substituted items, which exceed the pre-specified limits laid down in Schedule 'F', the Interior Contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper rate analysis (CPWD method shall be followed as far as possible) worked on the "actual cost basis" plus 15% towards establishment charges, Interior Contractor's overhead and profit for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Bank's Engineer shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Interior Contractor, determine the rates on the basis of the market rates and the Interior Contractor shall be paid in accordance with the rates

		<p>so determined.</p> <p>The Interior Contractor shall give prior intimation to Banks Engineer in case quantity of any item exceeds the tendered quantity.</p> <p>Prior approval is required in case quantity exceeds 20% of the tendered quantity.</p> <p>However, in case of AHR items as mentioned in Schedule 'F', limit of execution of same will be restricted to Tender quantity.</p>
		<p>The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule F, and the Bank's Engineer shall after giving notice to the Interior Contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.</p>
	12.3	<p>The prescribed time limit for finalizing rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items is 30 days.</p>
	12.4	<p>The Interior Contractor shall send to the Bank's Engineer every month, an up-to-date account giving complete details of all claims for additional payments to which the Interior Contractor may consider himself entitled and of all additional work ordered by the Bank's Engineer which he has executed during the preceding quarter failing which the Interior Contractor shall be deemed to have waived his right. However, the Employer may authorize consideration of such claims on merits.</p>
	12.5	<p>Any operation incidental to or necessarily has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.</p>
Foreclosure of contract due to Abandonment or Reduction in Scope of Work	<p>CLAUSE 13</p> <p>If at any time after acceptance of the tender, Employer shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Bank's Engineer shall give notice in writing to that effect to the Interior Contractor and the Interior Contractor shall act accordingly in the matter. The Interior Contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account</p>	

	<p>of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.</p>						
	<p>The Interior Contractor shall be paid at contract rates, full amount for works executed at site and, in addition, a reasonable amount as certified by the Bank's Engineer for the items hereunder mentioned which could not be utilized on the work to the full extent in view of the foreclosure;</p>						
	<table border="1"> <tr> <td>i)</td> <td>Employer shall have the option to take over Interior Contractor's materials or any part thereof either brought to site or of which the Interior Contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however Employer shall be bound to take over the materials or such portions thereof as the Interior Contractor does not desire to retain. For materials taken over or to be taken over by Employer, cost of such materials as detailed by Bank's Engineer shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Interior Contractor.</td> </tr> </table>	i)	Employer shall have the option to take over Interior Contractor's materials or any part thereof either brought to site or of which the Interior Contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however Employer shall be bound to take over the materials or such portions thereof as the Interior Contractor does not desire to retain. For materials taken over or to be taken over by Employer, cost of such materials as detailed by Bank's Engineer shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Interior Contractor.				
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	<p>The Interior Contractor shall, if required by the Bank's Engineer, furnish to him, books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.</p>						
<p>Carrying out part work at risk & cost of Interior Contractor</p>	<p>CLAUSE 14</p> <p>If Interior Contractor:</p> <table border="1"> <tr> <td>i)</td> <td>At any time makes default during currency of contract or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Bank's Engineer, or</td> </tr> <tr> <td>ii)</td> <td>Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Bank's Engineer, or</td> </tr> <tr> <td>iii)</td> <td>Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined and does not complete them within the period specified in the notice given in writing in that behalf by the Bank's Engineer.</td> </tr> </table> <p>The Bank's Engineer without invoking action under clause 3 may, without prejudice to any other right or remedy against the Interior Contractor which have either accrued or accrue thereafter to Employer, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:</p>	i)	At any time makes default during currency of contract or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Bank's Engineer, or	ii)	Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Bank's Engineer, or	iii)	Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined and does not complete them within the period specified in the notice given in writing in that behalf by the Bank's Engineer.
i)	At any time makes default during currency of contract or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Bank's Engineer, or						
ii)	Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Bank's Engineer, or						
iii)	Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined and does not complete them within the period specified in the notice given in writing in that behalf by the Bank's Engineer.						

	a)	Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or
	b)	Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the Interior Contractor.
<p>The Bank's Engineer shall determine the amount, if any, is recoverable from the Interior Contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the Interior Contractor. The liability of Interior Contractor on account of loss or damage suffered by Employer because of action under this clause shall not exceed 10% of the Contract price of the work.</p>		
<p>In determining the amount, credit shall be given to the Interior Contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original Interior Contractor under the terms of his contract, the value of Interior Contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the Interior Contractor. The certificate of the Bank's Engineer as to the value of work done shall be final and conclusive against the Interior Contractor provided always that action under this clause shall only be taken after giving notice in writing to the Interior Contractor. Provided also that if the expenses incurred by the Employer are less than the amount payable to the Interior Contractor at his agreement rates, the difference shall not be payable to the Interior Contractor.</p>		
<p>Any excess expenditure incurred or to be incurred by Employer in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Employer as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Employer in law or as per agreement be recovered from any money due to the Interior Contractor on any account, and if such money is insufficient, the Interior Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.</p>		
<p>If the Interior Contractor fails to pay the required sum within the aforesaid period of 30 days, the Bank's Engineer shall have the right to sell any or all of the Interior Contractors' unused materials kept at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the Interior Contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.</p>		
<p>In the event of above course being adopted by the Bank's Engineer, the Interior Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the</p>		

	execution of the work or the performance of the contract.	
Suspension of Work	CLAUSE 15	
	i)	The Interior Contractor shall, on receipt of the order in writing of the Bank's Engineer, (whose decision shall be final and binding on the Interior Contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Bank's Engineer may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons:
	a)	on account of any default on the part of the Interior Contractor or;
	b)	for proper execution of the works or part thereof for reasons other than the default of the Interior Contractor; or
	c)	for safety of the works or part thereof. The Interior Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Bank's Engineer.
	ii)	If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:
	a)	the Interior Contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and
	b)	If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the Interior Contractor shall, in addition, be entitled to such compensation as the Bank's Engineer may consider reasonable in respect of salaries and/or wages paid by the Interior Contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the Interior Contractor provided the Interior Contractor submits his claim supported by details to the Bank's Engineer within fifteen days of the expiry of the period of 30 days.
	iii)	If the works or part thereof is suspended on the orders of the Bank's Engineer for more than three months at a time, except when suspension is ordered for reason (a) in sub- para (i) above, the Interior Contractor may after receipt of such order serve a written notice on the Bank's Engineer requiring permission within fifteen days from receipt by the Bank's Engineer of the said notice, to proceed with the work or part thereof in regard to which progress has been suspended and if such permission is

		<p>not granted within that time, the Interior Contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by Employer or where it affects whole of the works, as an abandonment of the works by Employer, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Bank's Engineer. In the event of the Interior Contractor treating the suspension as an abandonment of the contract by Employer, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Bank's Engineer may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the Interior Contractor provided the Interior Contractor submits his claim supported by details to the Bank's Engineer within 30 days of the expiry of the period of 3 months.</p>
<p>Dismantled Material Employer's Property</p>	<p>CLAUSE 16</p> <p>The Interior Contractor shall treat all materials obtained during dismantling work at site (except material mentioned in Bill of quantity under buyback/rebate item and debris) etc. as Employer's property and such materials shall be disposed off as per the specific instructions in this regard or in absence of the same to the best advantage of Employer according to the instructions in writing issued by the Bank's Engineer.</p>	
<p>Interior Contractor Liable for Damages, defects during defect liability period</p>	<p>CLAUSE 17</p> <p>i) If the Interior Contractor or his working people shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage, settlement or other faults appear in the work within Defects Liability Period stated in schedule 'F' or, if none stated, then within twelve months after a certificate of virtual completion shall have been given by the Bank's Engineer as aforesaid arising out of defect or improper materials or workmanship, the Interior Contractor shall upon receipt of a notice in writing on that behalf and within such reasonable times as shall be specified therein, make the same good at his own expense or in case of default the Bank's Engineer may employ and pay other persons to amend and make good such defects, shrinkage, settlements or other faults and all damages, loss and expenses consequent thereon or incidental thereto shall be</p>	

		<p>made good and borne by the Interior Contractor and such damage, loss, expenses shall be recoverable from him by the Employer or may be deducted by the Employer, upon the Bank's Engineer's Certificate in writing, from any money due or may become due to the Interior Contractor, or the Employer may in lieu of such amending and making good by the Interior Contractor deduct from any money due to the Interior Contractor, a sum, to be determined by the Bank's Engineer equivalent to the cost of amending such work and in the event of the amount retained as Security Deposit being insufficient, recover the balance from the Interior Contractor, together with any expenses the Employer may have incurred in connection therewith. Should any defective work have been done or material supplied by any sub-Interior Contractor employed on the works who has been nominated or approved by the Employer, the Interior Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Interior Contractor and been subject to the provisions of this Clause. The Interior Contractor shall remain liable under the provisions of this Clause notwithstanding the signing of any certificate or the passing of any accounts, by the Employer. The security deposit of the Interior Contractor shall not be refunded before the expiry of the Defect Liability Period after the issue of the certificate final or otherwise, as provided elsewhere.</p>
<p>Setting out of works</p>	<p>Clause 18</p>	<p>The Interior Contractor shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions, and alignment of all parts thereof. If at any time, any error in this respect shall appear during the progress of the works or within the Defect Liability Period after completion of the works, the Interior Contractor shall, if so required, at his own expense rectify such error to the satisfaction of the Bank's Engineer.</p> <p>The checking of any setting-out or of any line or level by the Bank's Engineer or his representative shall not in any way relieve the Interior Contractor of his responsibility for the correctness thereof and the Interior Contractor shall carefully protect and preserve all bench-marks, sight rails, pegs and other things used in setting out the works.</p>
<p>All relevant Statutory Laws to be complied by the Interior Contractor</p>	<p>CLAUSE 19</p> <p>i)</p>	<p>The Interior Contractor shall obtain a valid licence under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The Interior Contractor shall also abide by the provisions of the Child Labour</p>

		(Prohibition and Regulation) Act, 1986, Minimum Wages (Central) Rules, 1950.
	ii)	The Interior Contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.
	iii)	The Interior Contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, or the modifications thereof or any other relevant laws and the rules made thereunder from time to time.
	iv)	The Interior Contractor shall comply with provisions of any other relevant law in connection with the work, as may be applicable.
	v)	Any failure to fulfil these requirements shall attract the penal provisions of the concerned Act and Interior Contractor shall be liable to face the consequences thereof in addition to any other penal provisions of this contract. The Interior Contractor shall indemnify the Employer for any loss caused due to non-compliance with any of the provisions of laws applicable.
Payment of wages:	CLAUSE 19 A	
	i)	The Interior Contractor shall pay to labour employed by him either directly or through sub-Interior Contractors, wages not less than fair wages as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
	ii)	The Interior Contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-Interior Contractors in connection with the said work, as if the labour had been immediately employed by him.
	iii)	In respect of all labour directly or indirectly employed in the works for performance of the Interior Contractor's part of this contract, the Interior Contractor shall comply with or cause to be complied with the Labour Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages, recovery of wages not paid and deductions unauthorisedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

	iv)	a)	The Bank's Engineer concerned shall have the right to deduct from the moneys due to the Interior Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.
		b)	Under the provision of Minimum Wages (Central) Rules, 1950, the Interior Contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Bank's Engineer shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the Interior Contractor.
	v)		The Interior Contractor shall indemnify as per the approved format and keep indemnified the Employer against payments to be made under and for the observance of the laws aforesaid without prejudice to his right to claim indemnity from his sub-Interior Contractors.
	vi)		The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.
	vii)		The Interior Contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered from the wage of workmen.
	viii)		The Interior Contractor shall submit payment receipts/bank statement of labours while submitting RA and Final bills for perusal of Bank's Engineer to ensure payment of minimum wages.
	CLAUSE 19 B		
	In respect of all labour directly or indirectly employed in the work for the performance of the Interior Contractor's part of this contract, the Interior Contractor shall at his own expense arrange for the safety provisions as per the Safety Code annexed and shall also at his own expense provide for all facilities in connection therewith.		
	CLAUSE 19 C		
	The Interior Contractor shall submit by the 4th and 19th of every month, to the Bank's Engineer, a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively: -		
	1. the number of labourers employed by him on the work,		

	<p>2. their working hours,</p> <p>3. the wages paid to them,</p> <p>4. the accidents that occurred during the said fortnight showing the circumstances under which they happened, and the extent of damage and injury caused by them, and</p> <p>The decision of the Employer shall be final in deducting from any bill due to the Interior Contractor, the amount levied as fine if any by relevant statutory authorities and be binding on the Interior Contractor.</p>
	<p>CLAUSE 19 D</p> <p>In respect of all labour directly or indirectly employed in the works for the performance of the Interior Contractor's part of this contract, the Interior Contractor shall comply with or cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by him/her.</p>
	<p>CLAUSE 19 E</p> <p>The Bank's Engineer may require the Interior Contractor to dismiss or remove from the site of the work any person or persons in the Interior Contractor's employment upon the work who may be incompetent or misconduct himself and the Interior Contractor shall forthwith comply with such requirements. In respect of maintenance/repair or execution works etc. where the labour has an easy access to the individual departments, the Interior Contractor shall issue identity cards to the labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour.</p>
	<p>CLAUSE 19 F</p> <p>i) It shall be the responsibility of the Interior Contractor to see that the site under execution is not occupied by anybody unauthorizedly during renovation and is handed over to the Bank's Engineer with vacant possession of the site. If such site though completed is occupied illegally, then the Bank's Engineer shall have the option to refuse to accept the said site in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, the provisions of clause 2 shall be applied by the Employer whose decision shall be final both with regard to the justification and quantum and be binding on the Interior Contractor.</p> <p>ii) However, the Employer, through a notice, may require the Interior Contractor to remove the illegal occupation any time on or before execution and handing over.</p>
Employment of skilled/se	<p>CLAUSE 19 G</p> <p>The Interior Contractor shall, at all stages of work, deploy skilled/semi-skilled tradesmen/licence holding electrician, who are qualified for the respective works.</p>

mi-skilled workers	
Contribution of EPF and ESI	<p>CLAUSE 19 H</p> <p>The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the Interior Contractor. The quoted rate shall be inclusive of these amounts. The Interior Contractor shall submit the details of registration of labour for EPF and ESI and documents evidencing these payments shall be submitted every month.</p>
Authorities and Notices	<p>CLAUSE 20</p> <p>(i) The Interior Contractor shall conform to the provisions of any Act of the Legislature relating to the work, and to the regulations and bye-laws of any authority, and of any water, electric supply and other companies and/or authorities with whose systems the structure is proposed to be connected and shall before making any variations from the Drawing or Specifications that may be necessitated by so conforming give to the Employer written notice, specifying the variation proposed to be made and the reason for making it and apply for instructions thereon.</p> <p>In case the Interior Contractor shall not within ten days receive such instructions, he shall proceed with the work conforming to the provisions, regulations or byelaws in question, and any variation so necessitated shall be dealt with under Clause 12 thereof.</p> <p>(ii) The Interior Contractor shall bring to the attention of the Employer all notices required by the said Acts, regulations or byelaws to be given to any authority and pay to such authority, or to any public office all fees that may be properly chargeable in respect of the works, and lodge the receipts with the Employer.</p>
Work not to be sublet. Action in case of insolvency	<p>CLAUSE 21</p> <p>The whole of the works included in the contract shall be executed by the Interior Contractor and the Contract or any part/share thereof or any interest therein shall not be assigned or sublet without the prior written consent of the Employer, and no undertaking shall relieve the Interior Contractor from the full and entire responsibility of the Contract or from active superintendence of the works during their progress.</p> <p>And if the Interior Contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the Interior Contractor, or any of his servants or agent to any public officer or person in the employment of the Employer in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Bank's Engineer on behalf of the Employer shall have power to adopt the course specified in Clause 3 hereof in the interest of Employer and in the event of such course being adopted, the</p>

	consequences specified in the said Clause 3 shall ensue.
Recovery of Compensation paid to Workmen	<p>CLAUSE 22</p> <p>In every case in which by virtue of the provisions of the Workmen's Compensation Act, 1923, or any statutory modification or re-enactment thereof, Employer is obliged to pay compensation to a workman employed by the Interior Contractor, in execution of the works, Employer shall be entitled to recover from the Interior Contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Employer under the provisions of the said Act, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Employer to the Interior Contractor whether under this contract or otherwise. Employer shall not be bound to contest any claim made against it under the provisions of the said Act, except on the written request of the Interior Contractor and upon his giving to Employer full security for all costs for which Employer might become liable in consequence of contesting such claim.</p>
Changes in firm's Constitution to be intimated	<p>CLAUSE 23</p> <p>Where the Interior Contractor is a partnership firm, the previous approval in writing of the Bank's Engineer shall be obtained before any change is made in the constitution of the firm. Where the Interior Contractor is an individual or a Hindu undivided family business concern, such approval as aforesaid shall likewise be obtained before the Interior Contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the Interior Contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.</p>
Interior Contractor to Supply Material, Machinery, Equipment, Tools & Plants etc.	<p>CLAUSE 24</p> <p>The Interior Contractor shall arrange at his own expense all materials (including consumables such as welding rods etc.), all tools, plant, machinery and equipment (hereinafter referred to as T&P) required for execution of the work. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, steel scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Bank's Engineer as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefor to and from the work. The Interior Contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials.</p>

	CLAUSE 25	
Settlement of Disputes & Arbitration	<p>Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:</p>	
	i)	<p>The decision, opinion, direction, certificate of payment issued by the Bank's Engineer in respect of all or any of the excepted matters as provided in the contract shall be final, conclusive and binding on the parties hereto and shall be without appeal. Such decision may be in the form of a final certificate or otherwise.</p>
	ii)	<p>All other disputes and differences of any kind whatsoever arising out of or in connection with the contract or the carrying out of the works (whether during the progress of the works or after their completion and whether before or after the determination abandonment or breach of the contract) shall be referred to and settled by the Competent Authority of the Employer as specified in the schedule 'F'. The designated authority shall state its decision in writing within 28 days from the date of receipt of reference from the Interior Contractor.</p>
	iii)	<p>But If the Competent Authority (CA) fails to give his decision within the aforesaid period or if either party be dissatisfied on any matter, it may, within 28 days after receiving notice of such decision, give a written notice to the other party requiring that the matters in dispute be arbitrated upon. Such written notice shall specify the matters, which are in dispute or difference of which such written notice has been given. If both the parties agree, a single arbitrator would be appointed for the purpose. In case there is no agreement on the appointment of arbitrator, the employer shall prepare a panel of three person's names and forward to the Interior Contractor to select one among them as arbitrator.</p> <p>The arbitrator so appointed/selected shall confine himself only to the dispute/difference referred to him while adjudicating and pronouncing his decision.</p> <p>The arbitrator shall make his or their award within one year (or such further extended time as may be decided by him or them as the case may be with the consent of the parties) from the date of entering on the reference. In case during the arbitration proceedings the parties mutually settle or compromise their dispute or difference, on the parties filing their joint memorandum of the settlement or compromise, the arbitrator or the arbitrators as the case may be, shall make an award in terms of such settlement or compromise.</p>

	<p>Upon any such reference, the decision on the cost incidental to the reference and award respectively shall be in the discretion of the arbitrator as the case may be, who may determine the amount thereof or direct the same to be taxed as between the party and party and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to arbitration within the meaning of the Indian Arbitration and Conciliation Act, 1996 or any statutory modification thereof. The award of the arbitrator shall be final and binding on the parties. It is agreed that the Interior Contractor shall not delay the carrying out of the works by reason of any such matter, question or dispute being referred to arbitration, but shall proceed with the works with all due diligence and shall until the decision of the arbitrator is given, abide by the decision of the Employer. No award of the arbitrator shall relieve the Interior Contractor of his obligations to adhere strictly to the Employer's instructions with regard to the actual carrying out of the works. The Employer and the Interior Contractor hereby also agree that arbitration under this clause shall be a condition precedent to any right of action under the contract. The place of Arbitration shall be as specified in Schedule 'F'.</p>
<p>Interior Contract or to indemnify Employer against Patent Rights</p>	<p>CLAUSE 26</p> <p>The Interior Contractor shall fully indemnify and keep indemnified the Employer against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall himself pay any royalties, licence fees etc. which may be payable in respect of any article or part thereof included in the contract or damages cost and charges of all and every sort that may be legally incurred in respect thereof. In the event of any claims made under or action brought against Employer in respect of any such matters as aforesaid, the Interior Contractor shall be immediately notified thereof and the Interior Contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefrom, provided that the Interior Contractor shall not be liable to indemnify the Employer if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Bank's Engineer in this behalf.</p>
<p>Lumpsum Provisions in Tender</p>	<p>CLAUSE 27</p> <p>When the estimate on which a tender is made includes lump sum in respect of parts of the work, the Interior Contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Bank's Engineer payable of measurement, the Bank's Engineer may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Bank's Engineer shall be final and conclusive against the Interior Contractor with regard to any sum or sums payable to him under the provisions of the clause.</p>

Nominated Sub-Interior Contractors	CLAUSE 28	
	(i)	All Specialists, Merchants, Tradesman and other executing any work of supplying and fixing any goods for which prime cost prices or provisional sums are included in the Schedule of Quantities and/or Specifications who may be nominated or selected by the Bank's Engineer are hereby declared to be Sub-Interior Contractors employed by the Interior Contractor and are herein referred to as nominated Sub-Interior Contractors.
	(ii)	No nominated Sub-Interior Contractor shall be employed on or in connection with the works against whom the Interior Contractor shall make reasonable objection or (save where the Employer and Interior Contractor shall otherwise agree) who will not enter into a Contract provided:
	a)	That the nominated Sub-Interior Contractor shall indemnify the Interior Contractor against the same obligation in respect of the Sub-Contract as the Interior Contractor is under in respect of this contract.
	b)	That the nominated Sub-Interior Contractor shall indemnify the Interior Contractor against claims in respect of any negligence by the Sub-Interior Contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant, the property of the Interior Contractor or under any Workmen's Compensation Act in force.
	c)	Payment shall be made to the nominated Sub-Interior Contractor within fourteen days of his receipt of the Bank's Engineer's Certificate provided that before any certificate is issued, the Interior Contractor shall, upon request, furnish to the Bank's Engineer proof that all nominated Sub-Interior Contractor's accounts included in previous Certificates have been duly discharged, on the default whereof, the Employer may pay the same upon a Certificate of the Bank's Engineer and deduct the amount thereof from any sum due to the Interior Contractor. The exercise of this power shall not create brevity of contract as between Employer and Sub-Interior Contractor.
Withholding and lien in respect of sum due from Interior Contractor	CLAUSE 29	
	i)	Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the Interior Contractor, the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the Interior Contractor and for the purpose aforesaid, the Employer shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Interior Contractor, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the

	<p>Interior Contractor under the same contract or any other contract elsewhere with the RESERVE BANK OF INDIA pending finalization of adjudication of any such claim.</p> <p>It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by Employer will be kept withheld or retained as such by the Employer till the claim arising out of or under the contract is determined by the arbitrator(if the contract is governed by the arbitration clause) or by the competent court, as the case may be and that the Interior Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Interior Contractor. For the purpose of this clause, where the Interior Contractor is a partnership firm or a limited company, the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.</p>
	<p>ii) Employer shall have the right to cause an audit and technical examination of the works and the final bills of the Interior Contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Interior Contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the Interior Contractor shall be liable to refund the amount of over-payment and it shall be lawful for Employer to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the Interior Contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Employer to the Interior Contractor, without any interest thereon whatsoever.</p>
<p>Lien in respect of claims in other Contracts</p>	<p>CLAUSE 29A</p> <p>Any sum of money due and payable to the Interior Contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Employer against any claim of the Employer in respect of payment of a sum of money arising out of or under any other contract made by the Interior Contractor with the Employer or RESERVE BANK OF INDIA elsewhere.</p> <p>It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Employer will be kept withheld or retained as such by the Employer or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the Interior Contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect</p>

	of any sum of money withheld or retained under this clause and duly notified as such to the Interior Contractor.	
Return of Surplus materials	CLAUSE 30	
	Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of Employer by purchases made under orders or permits or licenses issued by Government, the Interior Contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose them off without the written permission of the Employer and return it to Employer, if required by the Employer, all surplus materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Bank's Engineer shall determine having due regard to the condition of the materials. The price allowed to the Interior Contractor however shall not exceed the purchase price thereof inclusive of sales tax, octroi and other such levies paid by Interior Contractor in respect thereof. The decision of the Bank's Engineer shall be final and conclusive. In the event of breach of the aforesaid condition, the Interior Contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and/or for criminal breach of trust, be liable to Employer for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.	
Water and Electric power supply for work	CLAUSE 31	
	Bank will make available water and electricity power supply required at one point free of charge. Interior Contractor shall make their own arrangement for further extension of connection if any with safety fixtures and nothing extra will be paid for the same.	
Employer's water supply, if available	CLAUSE 32	
	Water (Drinking & construction) if available may be supplied to the Interior Contractor by the Employer at free of cost subject to the following conditions:-	
	i)	The Employer do not guarantee to maintain uninterrupted supply of water and it will be incumbent on the Interior Contractor(s) to make alternative arrangements for water at his/ their own cost in the event of any temporary break down in the water mains so that the progress of his/their work is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down. In case Interior Contractor wants to use this water, he should test the water before using.
Insurance in respect of	CLAUSE 33	
	The Interior Contractor shall be responsible for all injury or damage to persons, animals or things, and for all damage to property which may arise from any factor omission on the part of the Interior Contractor or any Sub-Interior Contractor or any	

<p>damage s to Persons and Property</p>	<p>nominated Sub-Interior Contractor or any of their employees. The liability under this clause shall cover also inter-alia any damage to structures, whether immediately adjacent to the works or otherwise, any damage to roads, streets, footpaths, bridges as well as damage caused to the building and other structures and works forming the subject matter of this contract. The Interior Contractor shall also be responsible for any damage caused to the buildings and other structures and works forming the subject matter of this contract due to rain, wind, frost or other inclemency of weather. The Interior Contractor shall indemnify and keep indemnified the Employer and hold him harmless in respect of all and any loss and expenses arising from any such injury or damage to persons or property as aforesaid and also against any claim made in respect of injury or damage, whether under any statute or otherwise and also in respect of any award or compensation or damage consequent upon such claims. The Interior Contractor shall, at his own expense, effect and maintain till issue of the virtual completion certificate under this contract, with an insurance company, IRDA registered, an All Risks Policy for Insurance for the full amount of the contract including earth quake risk in the joint names of the Employer and the Interior Contractor (the name of the former being placed first in the policy) against all risks as per the standard all risk policy for Interior Contractors and deposit such policy or policies as mentioned in Schedule 'F' with the Employer before commencing the works.</p> <p>The Interior Contractor shall reinstate all damage of every sort mentioned in this clause so as to do delivery of the whole of the works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to property or third parties.</p>
	<p>The Interior Contractor shall also indemnify and keep indemnified the Employer against all claims which may be made against the Employer by any person in respect of anything which may arise in respect of the works or in consequence thereof and shall at his own expense, effect and maintain until the virtual completion of the contract, with an Insurance Company, IRDA registered, a policy of Insurance in the joint names of the Employer and the Interior Contractor (name of the former being placed first in the policy) against such risks and deposit such policy or policies before commencement of the works.</p> <p>The minimum limit of the coverage under the policy shall be Rs.2 lakhs per person for any one accident or occurrence and Rs.5 lakhs in respect of damage to property for any one accident or occurrence. The Interior Contractor shall also indemnify the Employer against all claims which may be made upon the Employer, whether under the Workmen's Compensation Act or any other statute in force, during the currency of this contract or at Common Law in respect of any employee of the Interior Contractor or Sub-Interior Contractor and shall at his own expense effect and maintain until the Virtual Completion of the Contract with an Insurance Company, IRDA registered, a policy of Insurance against such risks and deposit such policy or policies with the Employer from time to time during the currency of this contract.</p>

	<p>In default of the Interior Contractor insuring as provided above, the Employer may so insure and may deduct the premiums paid from any money due or which may become due to the Interior Contractor.</p>
	<p>The Interior Contractor shall be responsible for any liability which may not be covered by the insurance policies referred to above and also for all other damages to any person, animal or defective carrying out of this contract, whatever, may be the reasons due to which the damage shall have been caused.</p>
	<p>The Interior Contractor shall also indemnify and keep indemnified the Employer against all and any costs, charges or expenses arising out of any claim or proceedings relating to the works and also in respect of any award of damage or compensation arising therefrom.</p> <p>Without prejudice to the other rights of the Employer against Interior Contractors in respect of such default, the Employer shall be entitled to deduct from any sums payable to the Interior Contractor the amount of any damages, compensation costs, charges and other expenses paid by the Employer, and which are payable by the Interior Contractor under this clause.</p>
	<p>The Interior Contractor shall upon settlement by the insurer of any claim made against the insurer pursuant to a policy taken under this clause, proceed with due diligence to rebuild or repair the works destroyed or damaged. In this event all the money received from the insurer in respect of such damage shall be paid to the Interior Contractor and the Interior Contractor shall not be entitled to any further payment in respect of the expenditure incurred for rebuilding or repairing of the materials or goods destroyed or damaged.</p> <p>The Interior Contractor, in case of re-building or reinstatement after damage shall be entitled to such extension of time for completion as the Bank's Engineer may deem fit, but shall, however, not be entitled to reimbursement by the Employer of any shortfall or deficiency in the amount finally paid by the insurer in settlement of any claim arising as set out herein.</p> <p>Without prejudice to his liability under this clause, the Interior Contractor shall also cause all nominated sub-Interior Contractors to effect, for their respective portions of the works similar policies of insurance in accordance with the provisions of this clause and shall produce or cause to produce to the Employer such policies. The Interior Contractor shall not permit a nominated Sub-Interior Contractor to commence work at the site unless said insurance policies are submitted. In the event of failure, of the Sub-Interior Contractor to take out such policy or policies of insurance before commencing the works at the site, the Interior Contractor shall be responsible for any claim or damage attributable to the said Sub-Interior Contractor.</p>
Employment	<p>CLAUSE 34 Interior Contractor's Superintendence, Supervision,</p>

<p>ent of Staff and employees</p>	<p>1. The Interior Contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilment of the obligations under the contract until the expiry of the “Defects Liability Period” stated in schedule ‘F’.</p> <p>The Interior Contractor shall immediately after receiving letter of award of work and before commencement of the work, intimate in writing to the Bank’s Engineer, the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the Experienced Site Supervisor or other technical representative(s), to be in-charge of the work, as specified in Schedule ‘F’. The Bank’s Engineer shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the Interior Contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the Interior Contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the Employer shall be final and binding on the Interior Contractor in this respect. Such a Site Supervisor shall be appointed by the Interior Contractor soon after receipt of the approval from Bank’s Engineer and shall be available at site before start of work.</p> <p>The Experienced Site Supervisor or other technical representative(s) shall be present at the site of work for supervision at all times when any renovation work is in progress and also present himself / themselves, as required, to the Bank’s Engineer and / or his designated representative to take instructions. Instructions given to the Experienced Site Supervisor or other technical representative(s) shall be deemed to have the same force as if these have been given to the Interior Contractor. The Experienced Site Supervisor or other technical representative(s) shall be actually available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Bank’s Engineer and shall also note down instructions conveyed by the Bank’s Engineer in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements/ checked measurements/ test checked measurements. Necessary site Registers viz. Material register, site order book, Labour Register etc. shall be strictly maintained by him on daily basis and got duly authenticated from Bank’s Engineer. Substitutes, duly approved by Bank’s Engineer of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two consecutive days.</p> <p>If the Bank’s Engineer, whose decision in this respect is final and binding on the Interior Contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (non- refundable) shall be effected from the Interior Contractor as specified in Schedule - ‘F’ and the decision of the Bank’s Engineer as recorded in the site order book and measurement recorded checked / test checked in Measurement Books shall be final and binding on the Interior Contractor.</p> <p>2. The Interior Contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen</p>
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	<p>and supervisory staff as are competent to give proper supervision to the work.</p> <p>The Interior Contractor shall provide and employ skilled, semiskilled, and unskilled labour as is necessary for proper and timely execution of the work.</p> <p>3. The Bank's Engineer shall be at liberty to object to and require the Interior Contractor to remove from the works any person who in his opinion misconducts himself or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Bank's Engineer to be undesirable. Such person shall not be employed again at works site without the written permission of the Bank's Engineer and the persons so removed shall be replaced as soon as possible by competent substitutes.</p>
Levy/Taxes payable by Interior Contractor or	<p>CLAUSE 35</p> <p>Goods and service tax (GST), Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the Interior Contractor and Employer shall not entertain any claim whatsoever in this respect.</p>
	<p>If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Employer and does not any time become payable by the Interior Contractor to the State Government/ Local authorities in respect of any material used by the Interior Contractor in the works, then in such a case, it shall be lawful to the Employer and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the Interior Contractor.</p>
Conditions for reimbursement of levy/taxes if levied after receipt of tenders	<p>CLAUSE 36</p>
	<p>i) All tendered rates shall be inclusive of all taxes and levies payable under respective statutes. However, if any further tax or levy or cess is imposed by Statute, after the last stipulated date for the receipt of tender including extensions, if any, and the Interior Contractor thereupon necessarily and properly pays such taxes/levies/cess, the Interior Contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Employer (whose decision shall be final and binding on the Interior Contractor) attributable to delay in execution of work within the control of the Interior Contractor.</p>
	<p>ii) The Interior Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the Employer and/or the Bank's Engineer and shall also furnish such other information/document as the Bank's Engineer may require from time to time.</p>
	<p>iii) The Interior Contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Bank's Engineer that the same is given pursuant to this condition, together with all necessary information relating thereto.</p>
	<p>CLAUSE 37</p>

Other Persons employed by Employer	The Employer reserves the right to use premises and any portions of the site for the execution of any work not included in this Contract which it may desire to have carried out by other persons and the Interior Contractor shall allow all reasonable facilities for the execution of such work but shall not be required to provide any plant or material for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the works included in the Contract and the Interior Contractor shall not be responsible for any damage or delay which may happen to or occasioned by such work.
If relative working with the Employer, then the Interior Contractor or not allowed to tender.	<p>CLAUSE 38</p> <p>The Interior Contractor shall not be permitted to tender for works in the office of the Employer responsible for award and execution of contracts in which his near relative is posted as an officer (in any grade) or assistant (including Junior Engineer). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Officer of the Employer. Any breach of this condition by the Interior Contractor would render him liable to be removed from the approved list of Interior Contractors of the Employer. If, however, the Interior Contractor is registered in any other organization, he shall be debarred from tendering by the Employer for any breach of this condition.</p> <p>NOTE: By the term “relatives” is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws. Interior contractor has to submit undertaking on the letter head of the interior contractor.</p>
No Employee of the Employer to work as Interior Contractor or within one year of retirement	<p>CLAUSE 39</p> <p>No Technical or other officer or assistant (including Junior Engineer) employed with the Employer shall work as an Interior Contractor or employee of a Interior Contractor for a period of one year after his retirement from the service without the previous permission of Employer in writing. This contract is liable to be cancelled if either the Interior Contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Employer as aforesaid, before submission of the tender or engagement in the Interior Contractor’s service, as the case may be. Interior contractor has to submit undertaking on the letter head of the interior contractor.</p>
Compensation	<p>CLAUSE 40</p> <p>The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings, and other things connected therewith shall</p>

<p>during warlike situations</p>	<p>be at the risk of the Interior Contractor until the work has been delivered to the Bank's Engineer and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the Interior Contractor shall when ordered (in writing) by the Bank's Engineer to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Bank's Engineer, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Bank's Engineer. The Interior Contractor shall be paid for the damages/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Bank's Engineer regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.</p> <p>Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the Interior Contractor had taken all such precautions against air raid as are deemed necessary by the Bank's Engineer (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.</p> <p>In the event of the Interior Contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Bank's Engineer.</p>
<p>Direction and approval of Bank's Engineer</p>	<p>CLAUSE 41</p> <p>All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Bank's Engineer who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.</p>
	<p>CLAUSE 42</p> <p>All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Employer without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.</p>
<p>Release of Security deposit after labour</p>	<p>CLAUSE 43</p> <p>Security Deposit of the work shall not be refunded till the Interior Contractor produces a clearance deposit after labour certificate from the Labour Officer. As soon as the work is virtually complete the Interior Contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Bank's Engineer. The Bank's Engineer, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the Interior Contractor in</p>

clearance	respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released, if otherwise due.
Non-Disclosure Pact	<p>CLAUSE 44</p> <p>The Interior Contractor shall not disclose directly or indirectly any information, materials and of the Employer's infrastructure/ system/equipment etc. which may come to the possession or knowledge of the Interior Contractor during the course of discharging its contractual obligations in connection with the agreement, to any third party and shall at all times hold the same in strictest confidence. The Interior Contractor shall treat the details of the contract as private and confidential, except to the extent necessary to carry out the obligations under it or to comply with applicable laws. The Interior Contractor shall not publish, permit to be published, or disclose any particulars of the works in any trade or technical paper or elsewhere without the previous written consent of the Employer. The Interior Contractor shall indemnify the Employer for any loss suffered by the Employer as a result of disclosure of any confidential information. Failure to observe the above shall be treated as breach of contract on the part of the Interior Contractor and the Employer shall be entitled to claim damages and pursue legal remedies.</p> <p>The Interior Contractor shall take all appropriate actions with respect to its employees to ensure that the obligations of non-disclosure of confidential information under this agreement are fully satisfied.</p> <p>The Interior Contractor's obligations with respect to non-disclosure and confidentiality will survive the expiry or termination of this agreement for whatever reason.</p>
Conflict of Interest	<p>CLAUSE 45</p> <p>Applicants shall not have a conflict of interest. All applicants found to have a conflict of interest, as mentioned below, will be disqualified. The Bank's decision in this regard will be final.</p> <ul style="list-style-type: none"> - Applicants in two or more different applications having controlling shareholders in common. <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> - The applicants that have a business or family relationship (as defined under Companies Act, 2013) with such members of the RBI Staff who are directly or indirectly involved in this project shall not be considered for selection

<p>Corrupt or Fraudulent practices</p>	<p>CLAUSE 46</p> <p>The Bank requires that applicants for selection observe the highest standards of ethics during the currency of the panel. In pursuance of this policy, RBI defines, for the purpose of these provisions, the terms as set forth below:</p> <ol style="list-style-type: none"> 1. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence decision in matters relating to this project. 2. "Fraudulent practice" means a misrepresentation of facts in order to influence the selection and award of a contract to the detriment of the Bank and includes collusive practices among Applicants (prior to or after bid submission), designed to establish bid prices at artificially non-competitive levels and to deprive the Bank of the benefits of free and open competition. 3. "Collusive practice" means a scheme or arrangement between two or more Applicants, designed to establish bid prices at artificially, non-competitive levels; and 4. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in this tender. 5. The Bank will reject a proposal for award of work if it is determined that the Applicant recommended for award of work was engaged in corrupt or fraudulent practices in competing for the work in question. The Bank's decision will be final and binding. 6. The Bank will declare an Applicant ineligible, either indefinitely or for a stated period of time from being awarded a contract / contracts, if at any time it is determined that the Applicant was engaged in corrupt or fraudulent practices in competing for the award of work/contract or in executing the contract. The Bank's decision in this regard will be final.
<p>Integrity Pact</p>	<p>CLAUSE 47</p> <ol style="list-style-type: none"> 1. The Applicants shall sign a Pre-Contract Integrity Pact (Annex - 9) and shall note that the pre-contract integrity pact submitted by them along with the application will be valid for the tenure of the contract and extension of the contract, if any, thereafter. Further, Integrity Pact is deemed as part of the contract so that the parties concerned are bound by its provisions. 2. In case of a Joint Venture, all the partners of the JV should sign the Integrity Pact. 3. The Integrity Pact shall be executed on stamp paper of ₹100 as per The Maharashtra Stamp Act. If the Integrity Pact has to be executed by an authorized signatory residing in a foreign country, the authorized signatory shall sign the

	<p>Integrity Pact in his/her country or execute Power of Attorney in favour of his / her representative in India authorizing the Power of Attorney holder to sign the Integrity Pact in India on his / her behalf. In both cases, the agreement or Power of Attorney shall either be: (i) Notarized in the country of the Applicant and be apostilled or (ii) be attested by authorized official of the concerned Indian Consulate / Embassy. The Power of Attorney shall also be stamped in India as per the Indian Stamp Act, 1899.</p>
<p>Fundamental Principles of Public Buying</p>	<p>CLAUSE 48</p> <p>Compliance with the Rule 144(xi) of GFR 2017 inserted vide Office Memorandum (OM) F. No. 6/18/2019-PPD dated July 23, 2020 issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India, the Public Procurement Orders issued in furtherance thereto, and their subsequent revisions shall be mandatory.</p> <p>In this regard, Bidder shall submit a copy of Undertaking / Declaration / Certificate on their letter head duly sealed and signed by the authorized signatory in the format given at Annex – 10</p> <p>If the Undertaking / Declaration / Certificate submitted by the bidder is found to be false, his/her/its tender / work order will be immediately terminated, and legal action in accordance with law including forfeiting of Earnest Money Deposit / Performance Bank Guarantee / Security Deposit may be initiated and the Bank may also debar the bidder from participating in the tenders invited by the Bank in future.</p>
<p>Sexual Harassment of women Act, 2013</p>	<p>CLAUSE 49</p> <p>a) The Interior Contractor / Agency shall be solely responsible for full compliance with the provisions of “the Sexual Harassment of women at work place (Prevention, Prohibition and Redressal) Act, 2013”. In case of any complaint of sexual harassment against its employee within the premises of the Bank, the complaint will be filed before the Internal Complaints Committee constituted by the Interior Contractor / Agency of the Interior Contractor / Agency shall ensure appropriate action under the said Act in respect to the complaint.</p> <p>b) Any complaint of sexual harassment from any aggrieved employee of the Interior Contractor against any employee of the Bank shall be taken cognizance of by the Regional Complaints Committee constituted by the Bank.</p> <p>c) The Interior Contractor shall be responsible for any monetary compensation that may need to be paid in case the incident involves the employees of the Interior Contractor, for instance any monetary relief to Bank’s employee, if sexual violence by the employee of the Interior Contractor is proved.</p> <p>d) The Interior Contractor shall be responsible for educating its employees about prevention of sexual harassment at workplace and related issues.</p> <p>e) The Interior Contractor shall provide a complete and updated list of its employees who are deployed within the Bank’s premises.</p>

Debarment of firms from bidding	<p>CLAUSE 50</p>
	<p>A bidder is liable for debarment/disqualification from bidding on the following grounds:</p> <ol style="list-style-type: none"> 1. If it is determined that the bidder has committed the following acts or omissions in contravention of the code of integrity: <ol style="list-style-type: none"> a) making offer, solicitation or acceptance of bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process. b) any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefit may be obtained, or an obligation avoided. c) any collusion bid rigging or anticompetitive behaviour that may impair the transparency, fairness and the progress of the procurement process. d) improper use of information provided by the procuring entity to the bidder with an intent to gain unfair advantage in the procurement process or for personal gain. e) any financial or business transactions between the bidder and any official of the procuring entity related to tender or execution process of contract: which can affect the decision of the procuring entity directly or indirectly. f) any coercion or any threat to impair or harm, directly or indirectly, any party or its property to influence the procurement process. g) obstruction of any investigation or auditing of a procurement process. h) making false declaration or providing false information for participation in a tender process or to secure a contract. i) failed to disclose conflict of interest. j) failed to disclose any previous transgressions made in respect of the provisions of sub-clause (i) with any public institution / entity in India or any other country during the last three years or of being debarred by any public procuring institution / entity. <ol style="list-style-type: none"> 2. For any actions or omissions by the bidder other than violation of code of integrity, which in the opinion of the Bank warrants debarment, for the reasons like supply of sub-standard material, non-supply of material, abandonment of works, sub-standard quality of works, failure to abide terms of the tender etc. 3. If the bidder has been convicted of an offence— (a) under the Prevention of Corruption Act, 1988; or (b) the Indian Penal Code or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract.

Place:
Date:

Signature of Interior Contractor

Section V

SPECIAL CONDITIONS OF CONTRACT

General	CLAUSE SC 1	
	i)	Special conditions of Contract shall be read in conjunction with the General Conditions of Contract, specifications of work, drawings and any other documents forming part of this contract, wherever the context so requires.
	ii)	Notwithstanding the sub-divisions of the document into separate sections, schedules, annexures etc., every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the contract so far as it may be practicable to do so.
	iii)	Where any portion of the Special Conditions of Contract is repugnant to or at variance with any provisions of the General Conditions of Contract then unless a different intention appears, the provision(s) of the Special Conditions shall be deemed to override the provision(s) of the General conditions of Contract only of the extent that such repugnance or variations cannot and shall be to the extent that such repugnance or variance cannot be reconciled with the General Conditions of Contract.
	iv)	Wherever it is stated anywhere in this tender document that such and such supply is to be affected or such and such work is to be carried out, it shall be understood that the same shall be effected / carried out by the Interior Contractor at his own cost, unless a different intention is specifically stated.
	v)	The items given in Schedule of Quantities shall be read in conjunction with materials and job specifications and relevant drawings.
Responsibilities of Interior Contractor	CLAUSE SC 2	
	i)	The Interior Contractor shall be entirely responsible for executing the work covered under this Tender document in a safe, efficient and expeditious manner as per the time schedule, specifications, drawings and work aids equipment such as transportation equipment, tools and tackles as well as teasing appliances and the necessary supervisory personnel, skilled, semi-skilled and unskilled labour shall be provided by the Interior Contractor to achieve the monthly/weekly targets and the overall time schedule.
	ii)	The Interior Contractor shall ensure that local labour, unskilled as well as skilled, to the extent possible and available from local resources are preferably employed on the work.
	iii)	All expenses towards mobilization at site and demobilization including bringing in equipment, work force, materials, dismantling the equipment, clearing the site, etc. shall be deemed to be included in the prices quoted and no separate payments on account of such expenses shall be entertained.
	iv)	It shall be entirely the Interior Contractor's responsibility to provide, operate and maintain all necessary equipment, scaffoldings and safety gadgets, lifting tackles, tools and appliances to perform the work in a

		safe and efficient manner and complete all the jobs as per time schedules.
v)		Preparing approaches and working area for the movement materials shall also be the responsibility of the Interior Contractor. The Interior Contractor shall acquaint himself with access availability etc. to provide suitable allowances in his quotation.
vi)		The procurement and supply in sequence and at the appropriate time of all materials and consumables shall be entirely the Interior Contractor's responsibility and his/her rates for execution of work will be inclusive of supply of all these items.
vii)		Responsibility for obtaining all statutory approvals (if required) related to the work lies with the Interior Contractor.
viii)		The Interior Contractor shall provide drinking water and other amenities at site for the contract workmen as per the statutory requirements at his own cost.
ix)		Interior Contractor shall take all steps to see that normal functioning of Working Office/Public life/ Public traffic is not affected/obstructed while executing the work. Stacking of materials, equipment, tools and vehicles involved in movement of equipment or materials should not make any hindrance for the movement of other vehicles and people.
x)		Interior Contractor shall be responsible for implementing the requirements of Maharashtra State Pollution Control Board (if any).
xi)		The works to be undertaken by the Interior Contractor shall inter-alia include the following:
	a)	Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
	b)	Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
	c)	Submission of Daily work progress to the Bank's Engineer.
	d)	Interior Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order of any of the services etc. These shop drawings/layout drawings shall be got approved from Bank's Engineer before implementation and this shall be binding on the Interior Contractor. The Interior Contractor shall submit material submittals along with material sample for approval of Bank's Engineer prior to delivery of material at site.
xii)		Wherever the 'basic price/rate' for the material is specified, the Interior Contractor shall furnish all the paid bills for Employer's verification. The purchase rate shall be got approved from the Bank's Engineer before purchasing. The adjustment in price shall be made only on measured quantity. No overhead and profit shall be considered on the cost difference. The rate quoted shall include transportation to site, loading, unloading, storing, and handling etc.
xiii)		The Interior Contractor shall arrange visits of authorized official of the manufacturer whose materials (costing more than Rs 1 lakh) have been selected / approved by the Employer for the work to inspect the materials supplied/ available at site and whether the materials are being used as per the Manufacturer's Specifications and specified

		consumption standards and shall be required to submit a report on the manufacturer's letterhead addressed to Employer, under official seal, indicating the genuineness or otherwise of the material and its usage methodology, if directed by Bank's Engineer to do so. No additional payment on this account shall be considered.
Role of employer	CLAUSE SC 3	
	The Employer (Reserve Bank of India, Mumbai) shall administer and directly arrange for supervision of works, to test and examine any materials to be used or workmanship employed in connection with the works, monitoring of progress, inspection, certification of bills, making payments and implementation of various terms, conditions and stipulations of the contract.	
Architect	CLAUSE SC 4	
	Bank's appointed Project Architect will provide the GFC drawings and layout plans.	
Green building requirements	CLAUSE SC 5	
	The Interior Contractor shall adopt the construction practices and materials in line with the requirements specified in schedule 'G'. The Interior Contractor shall strictly follow the instructions of Bank's Engineer in this regard.	
	CLAUSE SC 6	
Inspection of Site	The intending Tenderer shall be deemed to have visited the site and examined the Site and its surroundings and familiarized themselves thoroughly with the site conditions as to the nature of the ground and sub-soil and the form and nature of the Site before submitting the tender. Non familiarity with the site conditions will not be considered as reason either for extra claims or for not carrying out the work in strict conformity with the drawings and specifications. For site visit, the intending tenderer may contact the Employer.	
Services	CLAUSE SC7	
	The Interior Contractor shall take due and proper care during execution of work to protect Existing water/electric services from damage. In case, during the execution of work, the Interior Contractor notices some services which require re-routing, the same shall be brought to the notice of the Bank's Engineer. As per the instructions of Bank's Engineer, further action for rerouting shall be undertaken. If the Interior Contractor is advised by the Bank's Engineer to carry out the required re-routing, the work shall be treated as Extra item of work and shall be dealt as per the relevant clause of GCC.	
Handing over of site	CLAUSE SC8	
	i)	The Interior Contractor shall be required to complete the following documentation with regard to the work within fourteen days from the date of award of work:
	a)	Signing of the agreement on adequate value of Non-Judicial stamp paper as per the approved format
	b)	Obtaining and submitting all the required Insurance Policies as specified in the relevant clause of General Conditions of Contract and of specified value mentioned in schedule 'F'

		c)	Submission of the specified Bank Guarantees mentioned in Schedule 'F' or submission of documentary evidence of having instructed his Banker to prepare the specified Bank Guarantee
		d)	Obtaining and submitting the original Labour License or submitting the documentary evidence of having applied to the statutory authority in the prescribed form for Obtaining the Labour License if applicable.
		e)	Submitting the details/ documents of the Interior Contractor's site team as specified in relevant clause of General Conditions of Contract and schedule 'F' for obtaining approval of Bank's Engineer.
		f)	Submitting the detailed work programme as specified in the relevant clause of General Conditions of Contract for approval of the Bank's Engineer
	ii)		After complying to the above documentation and other statutory requirements required to be complied by the Interior Contractor before start of work, the Interior Contractor shall be handed over the possession of the site. The scheduled date of commencement of work shall be reckoned as mentioned at Schedule F. However, any delay in handing over the possession of site to the Interior Contractor on account of non-submission of the above documents/ details shall not be considered for extension of time.
Drawings	CLAUSE SC 9		
	<p>1. The Interior Contractor shall keep one copy of all drawings on the works and Employer or his representative shall at all reasonable time have access to the same. Before the issue of the final certificate to the INTERIOR CONTRACTOR he shall forthwith return to the EMPLOYER all drawings and specifications.</p> <p>2. Drawings accompanying the tender documents are indicative of the scope or work and issued for tendering purpose only.</p> <p>3. The Interior Contractor shall verify all dimensions in the drawings at the site and bring to the notice of the Bank's Engineer discrepancies, if any. The Bank's Engineer decision in this respect shall be final.</p>		
Further drawings and Instructions	CLAUSE SC 10		
	The Bank's Engineer shall have full power and authority to supply drawings to the Interior Contractor from time to time during the progress of the Works such further drawings for adequate execution and maintenance of the Works and the Interior Contractor shall carry out and be bound by the same.		
Interior Contractor's Barricades	CLAUSE SC 11		
	i)	Interior Contractor shall erect and maintain at his own cost barricades required in connection with his operation to guard or protect the entire working area including storage, etc.	
	ii)	Barricades and hazardous areas adjacent to but not located in normal routes of travel shall be marked with suitable red markers at night without any extra cost.	
	iii)	The Interior Contractor shall also comply with the provisions of Environment Protection Act with regard to air, water & noise pollution.	

	iv)	The Interior Contractor shall provide suitable construction safety nets, if applicable, to prevent damage to man / material at site without any extra cost
Site Facilities	CLAUSE SC 12	
	Interior Contractor shall arrange for storage space for keeping own tools/tackles and other materials for performance of work under this contract. Whereas space will be provided by the RBI free of cost, the safety and security including safety of materials for erection purpose as well as subsequent removal of the same on completion of 'Work' under this contract are the responsibility of the Interior Contractor.	
	Lighting - The Interior Contractor shall ensure that the entire site is provided with adequate lighting at all times when the work is in progress. He shall also make additional arrangements for lighting for carrying out work at night, whenever required. All costs in this connection shall be borne by him.	
	Compressed Air - The Interior Contractor shall make his own arrangement for Portable compressors, pumps, temporary piping for compressed air, if required, for the work including all necessary accessories, fittings etc. at his own cost for cleaning, testing, flushing etc.	
Execution work - Equipment	CLAUSE SC 13	
	The Interior Contractor shall without prejudice to his overall responsibility to execute and complete the work as per specifications and time schedule, progressively deploy adequate and appropriate equipment and tools and tackles and augment the same as decided by the Bank's Engineer depending on the requirements of the work so as to suit the work schedule. No equipment shall be supplied by the Employer. Interior Contractor shall assess the actual requirement based on the quantum and nature of work and arrange to provide the same to achieve the progress as per the approved work programme.	
Plant etc. to be exclusively for use on the works	CLAUSE SC 14	
	i)	All plants, tools and equipment and materials provided by the Interior Contractor shall when brought on to the Site be deemed to be exclusively intended for the execution of work in this document and completion of the Works and the Interior Contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the Site to another or moving it outside the site for repairs) without the previous consent in writing of the Bank's Engineer which shall not be unreasonably withheld.
	ii)	Clearance of Site on Completion: On completion of the Works, the Interior Contractor shall remove from the Site all the said Constructional Plant, tools and equipment remaining thereon and any unused materials
Care of works /plant/equipment	CLAUSE SC 15	
	From the commencement to the completion of the Works/Plant/Equipment, the Interior Contractor shall take full responsibility for the care thereof and in case	

	<p>any damage loss or injury shall happen to the Works/Plant/Equipment or to any part thereof from any cause whatsoever shall at his own cost repair and make good the same so that at completion the Works/Plant/Equipment shall be in good order and condition and in conformity in every respect with the requirements of the contract.</p> <p>Finished Flooring shall be protected by suitable means while carrying out the work either internally or externally and at no extra cost.</p> <p>Temporary used materials (e.g. Cable, pipe, valve etc) shall not be used for permanent work. All the bought-out items supplied by the Interior Contractor and billed to Employer shall be considered as Employer's Property and due care shall be taken for safety of these by the Interior Contractor till handing over of work.</p>
Works to be carried out by licensed technicians under supervision of licensed Supervisors	<p>CLAUSE SC 16</p>
	<p>a) All electrical works shall be carried out through a licensed Electrician under the supervision of licensed supervisor. The electrical connections carried out by the Interior Contractor shall meet the statutory requirements. Changes, if any, as incorporated in the statutory rules and regulations from time to time shall be applicable to the electrical works done by the Interior Contractor.</p>
Quality Assurance and Quality Control	<p>CLAUSE SC 17</p>
	<p>i) The reports of the test shall be submitted to the Bank's Engineer as and when the tests/ quality assurance & control checks are carried out as per the contract including submission of Manufacturers test certificate. The Bank's Engineer, after evaluation of the results of tests may decide to either reject or accept the respective materials/ works etc. In case of rejection, the Interior Contractor shall have to replace the defective material/ work at the earliest without any additional cost.</p>
	<p>ii) Whenever asked, interior contractor has to submit MTC (Manufacturers' Test Certificates) of the materials used at site.</p>
	<p>iii) In case the Interior Contractor fails to follow the instructions of Bank's Engineer in this regard, the Bank's Engineer may suspend the work till such time the quality of the work is ensured. No compensation for delays on account of such suspension of work shall be considered.</p>
Materials at Basic Prices/ Basic rates	<p>CLAUSE SC 18</p>
	<p>i) For carrying out certain items of work, the tender provides for procurement of certain materials at "Basic Prices/ Basic Rates" as specified in the tender document.</p>
	<p>ii) While quoting the rates, the tenderer should base their item rates at "the Basic Prices" wherever specified.</p>

	iii)	The Interior Contractor shall obtain written approval from the Bank's Engineer before procuring any material for which "Basic Price/ Basic Rate" is specified in the tender Document.
	iv)	Basic Price adjustment shall be done on the measured quantities for the finished items of work with specified "Basic Prices/Rates". In addition to the difference in the Basic Price/ Rate and the actual purchase Price/ Rate. While carrying out price adjustments, no other components such as wastage, transportation, loading, unloading, handling, insurance, labour, etc. shall be taken in to account.
	v)	The Interior Contractor shall submit copies of all tax paid vouchers (original tax paid vouchers shall be shown to the Bank's Engineer for verification as and when required by him) for full quantity for all items to the Bank's Engineer in support of their claim for adjustment in Basic Rates/Prices. In absence of these documents, his claim for adjustment in Basic rates/Prices shall not be considered.
Documents to be maintained at site	CLAUSE SC 19	
	a)	The Registers/ Documents specified at Schedule 'D' shall be maintained at site by the Interior Contractor at his own cost and updated regularly.
	b)	These documents shall be available for inspection by Employer's representative or Bank's Engineer or his representative during his site visit at all reasonable times.
	c)	After completion of work, the Interior Contractor shall submit the duly completed registers/ documents along with all the drawings issued to him for construction purpose to the Bank's Engineer before submission of the Final bill.
Progress Monitoring by the Bank's Engineer	CLAUSE SC 20	
	i)	The Interior Contractor shall submit his detailed work program which is in line with program during technical presentation for approval of Bank's Engineer within 5 days from the date of award of work as specified in the relevant clause of the General Conditions of Contract.
	ii)	On the basis of the approved program, the Bank's Engineer shall monitor/ review the progress through site meetings on monthly interval or earlier, as and when required. The meeting should be attended by the Interior Contractor himself (in case of proprietorship firm) or authorized partner/ senior official in case of partnership firm/ limited company along with Interior Contractor's site in-charge.
	iii)	For this purpose, the Interior Contractor shall prepare and submit a progress report indicating following:
	A	Progress for the previous month (duration under review) and the planning for the next month and materials received during the month (duration under review) and expected to be received during next month.

	B	The reasons for major deviations in planned schedule and the actual progress achieved along with any hindrances/ decisions required from the Employer/ Bank's Engineer.
	C	Statement of deployment of resources (men and machine) and variations, if any, from the planned schedule
	D	List of Variations / extra items if any carried out during the previous month (period under review)
Measurement, Billing and Terms of payment	CLAUSE SC 21	
	i)	The work shall be measured from time to time as provided in the General Conditions of Contract. The units of measurements shall be as defined in the specific item description in the Schedule of quantities. If for any item or part thereof, physical measurement is not practicable, measurements given in the execution drawings shall be adopted. As and when the Interior Contractor feels that the gross value of work done after adjustment of the value of work already received in any previous bill and adjustment of advances, if any, has crossed the threshold value specified in the Schedule 'F' for Running Account Bill, he may raise a bill and submit to the Bank's Engineer for payment. The bill shall invariably be accompanied with following documents:
	a)	The signed measurements, as specified in the General Conditions of Contract.
	b)	The progress reports of the concerned period.
	c)	Test certificates/ reports of any material considered for the first time in the Interior Contractor's bill
	d)	Checklist indicating validity of the all the Insurance Policies, PBGs
	e)	Documents evidencing the price of materials (e.g. Tax paid vouchers etc.) considered in the bill where Basic Rates are mentioned, as applicable.
	f)	Delivery challans of the materials.
	g)	Undertaking/Certificate ensuring minimum wages has been paid to engaged labours for the various works.
	ii)	The Bank's Engineer reserves the right to refuse to accept the Running Account bill, if any of the document as above is not submitted along with the bill.
iii)	Once the bill is received along with all the required documents, the Bank's Engineer shall arrange to process the bill and the payments due to the Interior Contractor shall be released through NEFT within the specified period for honoring the certificates.	
iv)	After completion of work and completing all the contractual responsibility, the measurement sheets shall be signed jointly by the Interior Contractor or his authorized representative and Bank's	

	Engineer or his authorized representatives. The Interior Contractor shall then submit the Final bill to the Bank's Engineer. The Final Bill shall necessarily be submitted along with the following documents:
a)	The signed measurements, as specified in the General Conditions of Contract.
b)	The copy of last progress report, evidencing the completion of work.
c)	Test certificates/ reports of any material considered for the first time in the Interior Contractor's bill
f)	Checklist indicating validity of the labour license, all the Insurance Policies, PBGs
g)	Documents evidencing the price of materials (eg. Tax paid vouchers etc.) considered in the bill where Basic Rates are mentioned, as applicable.
h)	Delivery challans for the materials
j)	All the required documents of Guarantees/ warranties (e.g. Structural stability, safety, sturdiness, and self-supportiveness etc. of system as mentioned in the specifications of respective items)
k)	"No claim" certificate by the Interior Contractor except as included in the Final bill.
l)	Completion plans/ drawings/ details as specified in the General Conditions of Contract
v)	The Bank's Engineer reserves the right to refuse to accept the Final bill, if any of the document, as above, is not submitted along with the bill.
vi)	Once the Final bill is received along with all the required documents, the Bank's Engineer shall arrange to process the bill and the payments due to the Interior Contractor shall be released through NEFT within the specified period for honouring the certificates. No revised Final Bill shall be considered by the Employer.
vii)	All statutory deductions shall be made from the payments due to the Interior Contractor.

Place :-

Signature of Interior Contractor

Date :

Special Conditions of the Contract

- 1) The work shall be carried in the Central Office of Reserve Bank of India, Mumbai. All the dismantling works have to be carried out during non-working hours as decided by the Bank's Engineer. Hence, Interior Contractor should plan the activities accordingly to ensure that work is executed without causing any hindrance/ disturbance to the occupants of the block.
- 2) Interior Contractor shall not delay debris clearance as and when instructed by the Bank's Engineer. All the staircases, corridors, passages etc. used for material and manpower movement shall be cleaned periodically every day by the Interior Contractor as instructed by the Bank's Engineer to maintain the premises clean.
- 3) Interior Contractors shall acquaint themselves of the security procedures of Central Office. They shall make necessary arrangements to obtain prior permissions and passes. Any delays in work on account of delay in obtaining such passes required for working shall be accounted as delay on Interior Contractor's part.
- 4) The intending tenderers are advised to inspect the site to acquaint themselves about the scope of work and seek clarifications regarding the drawings, provisions / specifications, etc., from the Bank's Engineer on any working day before quoting their rates.
- 5) The workmen will not be allowed to stay within the premises beyond working hours without prior permission from Engineer-in-Charge. For working at night, prior permission from Engineer-in-Charge is necessary.
- 6) The water and electricity required for the work or workmen may be taken free of cost from the available sources/points in the premises. However, the Interior Contractor has to make all necessary arrangements for taking the water or supplying power to the required locations from the available points at his own cost.
- 7) Permission, if any, required from the local bodies shall be obtained by the Interior Contractor at his cost.
- 8) The material required for the work are to be taken to the workplace through the staircase without any damages to the buildings and least disturbance to the residents.
- 9) The debris/dust or any wastage generated out of the work shall be cleaned on a day-to-day basis including staircase, passages affected/used by the labourers at no extra cost. The entire debris/waste material shall be taken out of the Employer's premises as and when directed by the Bank's Engineer. The Interior Contractor will be solely responsible if any debris is noticed by the Municipal Corporation authorities and penalty levied.
- 10) Work shall be executed using makes / brands of materials / chemicals stipulated in the tender. Wherever Interior Contractors propose to use equivalent make, the same shall be done with prior

approval of Bank's Engineer in writing. In such cases the Interior Contractor shall submit necessary documents / test reports and carry out necessary tests as required by the Bank's Engineer to prove that the proposed materials conform to the technical parameters stipulated in the tender. Any additional expenditure and time due to this shall be solely on Interior Contractor's account and no claims whatsoever shall be entertained in this regard.

- 11) The Interior Contractor shall submit a properly planned & prepared work programme to the Employer before commencement of the work so as to enable the Employer to intimate other agencies in advance for smooth working, progress and coordination and the time schedule in the work programme should be strictly adhered to.
- 12) The Interior Contractor shall be responsible for safety & security of their workers/materials / labour & fire safety at all the times as per the Safety & Fire Safety Codes provided hereof.
- 13) Any damages caused to the Employer's property by the Interior Contractor or his workers, the same shall be repaired/ rectified by the Interior Contractor at his own cost.
- 14) The work has to be done in proper coordination with the electrical Interior Contractor or any other agency engaged by the Employer.
- 15) Extreme care shall be taken by the Interior Contractor to protect existing fittings/ fixtures/ structure / finishes. Any damages caused during the execution of the work shall be made good by the Interior Contractor at his own cost.
- 16) The Interior Contractor shall use only the materials approved by the Bank's Engineer from the list mentioned in the Approved list of materials and stated in the Schedule of Quantities. The Employer will be at the liberty to choose any of the brands from the said list within the scope of the quoted rates. The Interior Contractor has to arrange for the samples of all the items required for the work to seek Bank's approval at his own cost before proceeding with bulk purchase.
- 17) Programme should be submitted before commencement of work so as to enable the Employer to intimate occupants and other agencies in advance for smooth working and better progress and the time schedule should be strictly adhered to.
- 18) Interior Contractor shall procure the required quantity of the materials before commencement of work. He shall make his own arrangements for storing of their materials at site.
- 19) The successful tenderer shall be solely responsible for safety & security of the materials. He shall also take necessary fire prevention steps at all the times.
- 20) The Interior Contractor shall employ a well experienced site supervisor to supervise day-to-day works. Such a person shall be capable of following the instructions of the Bank's Engineer and

execute the works as per the specifications laid down in the Tender.

- 21) Mode of measurement shall be as prescribed under General Specifications of Works. Wherever it is not specifically stated it shall be as per IS 1200.

Date:

Signature of Interior Contractor with seal

Place:

Name and Address:

Accepted with Digital Signature Certificate

Section VI : Technical specifications:

A GENERAL NOTES :

All basic rates to be considered as landed price at site inclusive of all applicable taxes. (Excluding applicable GST.)
Drawings supersedes the Bill of Quantity (BOQ).
All sizes specified are approximate. Contractor needs to check the actual sizes at site & before execution.
Contractor to provide samples of any material, Mock-up (any numbers) at place as desired by the Design Architect, Consultants or Banks Engineer at no extra cost. Contractor will not be paid for the same separately.
All the work to be carried out as per Drawings and as directed by the Design Consultant and Banks Engineer and up to their satisfaction.
Contractor to read the BOQ in conjunction with drawings.
Contractor to use all MR Grade ply unless otherwise specified. (From all approved makes)
Contractor to use all BWP ply / Block board for wet areas. (From all approved makes)
<u>The rate quoted by the Contractor for following items shall be inclusive of the following: Applicable for whole scope of work including plumbing works.</u>
All labour, materials, wastage, transportation, handling, use of tools, equipment's, and other items incidental to the satisfactory completion of item work at all depths, heights and at any levels.
The rate shall be inclusive of all lifts and leads at all levels.
Making shop drawings as & when required & asked by the Banks Engineer / Design consultants.
Contractor to make "As Built Drawing" for Interior work, MEPF Work, LV, Work etc. at no extra cost & to the satisfaction of Design Architect and consultant. The "As Built Drawing" to be get approved by Banks Engineer.
Contractor to provide samples of any material, Samples, Mock-ups of any items at place as desired by the Design Architect Or Banks Engineer . Contractor will not be paid for the same separately.
Curing for all types of Structural works (RCC), Civil works like masonry works, plastering works & other civil works at any level as required & as directed by the Banks Engineer and to the satisfaction of Banks Engineer .

Necessary External & Internal scaffolding (including Cup lock type scaffold including cup lock platform, cantilever platform, edge boards, cup lock staircase etc.) Mobile platforms as & when, wherever required, for any ht., at any level, on any floor including necessary working platforms, supports, cross bracings, covering with Net, Hessian cloth etc. for stability. Contractor to obtain all necessary statutory permissions, local permissions and any other permissions related to scaffoldings, mobile platform etc. No extra will be paid for External & internal scaffolding. Stability of Internal & External scaffolding will be contractors responsibility.

Anti-termite treatment to all wood works (Ply, wood, Block board etc.) (From reputed and approved agency) - Contractor to submit the guarantee in writing on bond paper in a approved format for minimum 10 years.

Protecting, Covering finished job till handing over the same to Client / PMC.

All necessary miscellaneous items to complete the item satisfactorily.

All necessary tests of materials at site OR at laboratory recommended by **Banks Engineer/** Design Consultant as and when directed.

All works to be carried out to relevant IS specifications whether so mentioned in the description of works OR not.

Contractor to obtain all necessary statutory permissions, approvals from any Authorities, If Required

The cost of taking permissions from any Local Authority to work late night or full night, during Public Holidays to be borne by the Contractors.

All Structural steel works / M.S. Works to be coated with one coats of anti-rust paint(i.e. Zinc Chromate) & two coat of enamel paint of approved make, shade as per Structural Consultant & Design Architect or with anticorrosive paint approved by Structural consultant/Architect, under the supervision of PMC.

Removing any kind of debris including loading in truck and conveying to approved dumping yard/point as designated by local Authority / Corporation, disposal of debris outside campus, unloading and spreading etc. complete including all leads and lifts. - Contractor to study location of dumping yard/point before quoting for these items. It will be the contractor's responsibility to locate the dumping areas designated by the Government/local authorities, obtain necessary permissions, pay for deposits and necessary charges to Government/local authorities. In case there is change in the dumping location by the Government/local authorities no claim will be entertained for disposal of debris at changed location.

Removal of Debris: Contractor shall make his own transporting arrangements for removal of all kinds of debris away from site strictly under SWM NOC obtained by the Contractor. Contractor shall obtain signatures on challans from approved Dumping Yard Owner and shall submit to PMC for submission in Mumbai Corporation under as a compliance of SWM NOC. Contractor shall obtain Royalty Permission which may be required for carting away all kind of debris. Employer shall reimburse any required official charges of Mumbai Corporation to contractor. Rates quoted shall be inclusive of all above. Contractor to take into account any heavy vehicle movement restrictions to and from site and make sure that any debris generated are cleared from site as required or within 48-72 hours, whichever is earlier, due to site constraints and as directed by Banks Engineer. Rate to be quoted in accordance.

Necessary tests of materials at site OR at laboratory recommended by **Banks Engineer/** Design Consultant as and when directed.

Contractor to use Potable water required for construction requirements of the tender and make necessary arrangements for supply and storage of the same at his own cost and as directed by the PMC/Bank.

Contractor to use River sand for all civil works. Sand and aggregate tests to be conducted as instructed by **Banks Engineer** and reports to be duly submitted for approval before order of material.

For all Fire Rated Doors Contractor to submit Fire Rating Certification from the concerned authority and as directed by Banks Engineer

For all waterproofing works Contractor to submit minimum 10 years Guarantee in writing in a format approved by Banks Engineer

NOTES :

Contractor to provide I cards, Photo identity to all his staff, Labours and supervisors & engineers.

Contractor and his team of Labour's, supervisors & engineers shall strictly follow/abide by all the rules, regulations and guidelines issued by the Indian Government & State Government for pandemic situation like COVID19. Contractor to make all necessary arrangements accordingly.

B - CIVIL AND INTERIOR WORKS

GENERAL PARTICULAR REQUIREMENTS

1. QUALITY ASSURANCE

1.1 Inspection of Products.

It shall be the Interior Contractor's duty to inspect all products before incorporation in the works in regard to their compliance with the Contract Documents and / or with the approved samples. Any products, which are not found to be suitable, shall be removed and replaced by the Interior Contractor' at his own expense.

1.2. Alternative Products.

If the Interior Contractor proposes to use a product which, while suitable for the intended use deviates in any way from the detailed requirements of the Contract Documents, he shall inform the Banks Engineer at least 30 days in advance prior to placing of its order so as the delivery schedule is met with. The notification should be given in writing stating the nature of such deviations, justification for proposed deviation, cost impact of this alternative product at the time the product is submitted for approval of the Banks Engineer and shall request a written approval of the deviation from the Banks Engineer. All finished products shall be approved by the Banks Engineer.

Any additional cost, or any loss or damage arising from the substitution of any product or method for those originally specified shall be borne by the Interior Contractor, notwithstanding approval or acceptance of such substitution by the Banks Engineer. If substitutions are accepted, the Interior Contractor shall have the responsibility of coordination with all other work, to ensure compatibility and fit. No additional time extension would be given in lieu with change of the product.

2. EXECUTION

Execution shall include all activities such as procurement, installation, erection, application and workmanship required to implement the works within the framework of the contract. The Interior Contractor shall carry out everything necessary for the proper execution of the works shown and described in the Contract Documents or may reasonably be inferred there from. He shall report well in advance in writing to the Banks Engineer regarding any and all conditions, which may affect the satisfactory execution of the works or endanger its permanency. The work shall be carried out strictly as per prevailing technical standards, regulations, and industry practices along with the applicable statutory norms applicable for the particular works.

3. WORKMANSHIP

All Workmanship shall be provided to the satisfaction of the Banks Engineer in the best and most modern available methods, workmanlike manner, and industry practice and any work deemed by the Banks Engineer not meeting the standards specified hereunder or in the Contract Documents shall be removed by the Interior Contractor and replaced so as to be in accordance with the approved standards, all at the Interior Contractor's expense. No extensions would be given in the final completion time, on account of any faulty works done and the time required to redo / rectify the same.

4. Manufactured Products

All manufactured products, articles, materials, and equipment, shall be supplied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturers written instructions and directions.

5. Protection of The Works.

The Contractor shall ensure safety of the workmen and the personnel visiting the site along with the materials and works. The Interior Contractor shall whenever and wherever necessary cover up and protect the works from weather and damage by his own or other workmen performing subsequent operations. He shall provide all necessary dustsheets, cover the finished items, and clear away the same at the time of completion of the work. The Interior Contractor shall take all proper steps for protection of all places on or about the works, which may be dangerous to his workmen or any other persons or to traffic. The Interior Contractor shall provide and maintain warning signs, warning lamps and barricades as necessary. The Interior Contractor shall, wherever practical, leave on electrical fittings their protective tapes, coverings, wrappings and corner protectors and the like after they have been installed until all work in the region of the fittings has been completed.

6. RESTORATION AND CLEANING

Upon completion of the works, the Interior Contractor shall restore all items covered by the contract to the satisfaction of the Banks Engineer. The Interior Contractor shall clean all areas and clearing away all rubbish and excess material that may accumulate from time to time, on completion and before handing over. Upon completion of the works, he shall obliterate all signs of temporary facilities such as work areas, excess or waste materials, as directed by the Banks Engineer. The works and site shall be left in a clean and satisfactory state for immediate use. Care shall be taken for not using any cleaning materials, which may cause damage to the surface to be cleaned.

The Interior Contractor shall also take all necessary precautions to keep the works and site free from vermin during construction and he shall leave the works vermin free on completion.

7. SUBMITTALS

7.1 Construction Program

The Interior Contractor shall, upon appointment to carry out the works, forthwith prepare and submit a full detailed program for all the Tender related Interior work (including MEPF works) representing units of work in sufficient details for the approval of the Banks Engineer.

7.2 Schedules

The Interior Contractor shall, upon appointment to carry out the works, forthwith prepare and submit the following for the approval of the Banks Engineer. A schedule listing the names and addresses of sub-Interior Contractors, suppliers and manufacturers, the trademarks, types and origin of all products, and systems he proposes to incorporate in the works, together with all descriptions and specifications that may be required in this connection before any appointments are made or orders are placed. The schedule shall anticipate and establish the interrelationship of all sub Interior Contractors and their sequence with the work.

The Interior Contractor shall also coordinate the work of sub Interior Contractors and other agencies that portions of the work are performed in a manner that minimizes interference with the progress of the work and with other trades and other contractors appointed by the Bank.

7.3. Samples and Working Specimen/samples.

The Interior Contractor shall furnish for approval, with reasonable promptness, all samples as specified or directed by the Banks Engineer and particularly samples of all internal and external finishes described in the Contract Documents. One approved sample will be retained by the Banks Engineer and the remainder returned to the Interior Contractor. All works shall then be in accordance with the approved samples.

The working specimens of the work as mentioned in the specifications shall be carried out / modified / rectified up to the satisfaction of the Banks Engineer. Working specimens for the project shall be located and protected so that they can be referred to throughout the job. No working specimen shall be concealed, damaged, or otherwise disposed of throughout the life all phases of the construction unless otherwise approved in writing by the Banks Engineer.

The specifications as well as samples, mock-ups and working specimens approved for use on the project shall set the standard for quality throughout the project. The further work shall be carried out strictly as per the working specimen in terms of finish and Tolerance.

7.4. Certificates and Test Reports

Prior to delivery, the Interior Contractor shall present, certificates confirming that the quality of products to be supplied by a particular manufacturer or company for incorporation in the works complies with the standards as required by the Contract Documents to the Banks Engineer. The Interior contractor shall submit Manufacturer's Test Certificate wherever required or as advised by Bank's Engineer.

Where specified or required by the Banks Engineer, the Interior Contractor shall carry out the necessary tests. The costs and expenses incurred will be borne by the Interior Contractor and shall be carried out by approved Laboratories / NABL accredited/Govt. institutions testing laboratory approved

by the Banks Engineer. Copies of test reports shall be submitted to the Banks Engineer. Sub-standard materials and / or work shall be removed and replaced to comply with the correct standards at the Interior Contractor's expenses.

7.5. Shop Drawings

The Interior Contractor shall produce all shop drawings and schedules required for the works or which have mentioned in the specifications in sufficient time, so as not to cause delay in the works. These submittals shall be checked and approved by the Banks Engineer and returned to the Interior Contractor. The Interior Contractor shall make any corrections advised by the Banks Engineer and resubmit further copies after the Banks Engineer have granted approval.

Interior Contractor shall prepare their own shop drawings and that to the greater scale than that of the drawings provided as working drawings / base for shop drawing preparation. Reprinting of the provided drawings as shop drawings is unacceptable and shall be rejected. The Bank's Engineer shall not be responsible for the delay caused on that part. All the shop drawings produced shall be to the scale.

The construction program and the schedules prepared by the Interior Contractor shall have adequate time provision for review and revision of shop drawings prior to approval.

Approval / comments conveyed neither relieves vendor / Interior Contractor of his contractual obligations and his responsibilities for means and methods of construction, correctness of, dimensions, materials of construction, weights, quantities, design details, assembly fits, performance requirements and conformity of the supplies with the Indian statutory Laws as may be applicable, nor does it limits the purchaser's rights under the contract.

7.6. Project Records

The Interior Contractor shall, at all times, keep on site one copy of all drawings and specifications, addendum, revisions, variation orders, approved shop drawings and approved samples together with copies of public safety codes and relevant standards applicable to the works. All such material shall be made available to the Banks Engineer. The Interior Contractor shall be responsible for the execution of the work as per latest revised drawings; any work carried out by the Interior Contractor from the old drawings shall be rectified by him at his own cost. In addition, the Interior Contractor shall, at all times, keep on site a separate set of prints, as provided by the Bank's Engineer, on which shall be noted neatly accurately and promptly as the work progresses, all significant changes between the work shown on the drawings and that which is actually constructed. Based on actually construction Interior Contractor to prepared As-built drawing and submitted to Banks Engineer for approval.

7.7 Manufacturer's Guarantees

Where special guarantees for periods exceeding the Period of Maintenance and of defects liability as mentioned in the Contract Documents, the Interior Contractor shall obtain a written guarantee, addressed to the Bank, from the manufacturer or firm supplying the materials, equipment, components and the like and / or doing the work and shall deliver same to the BANKS ENGINEER prior to the issue of the certificate of completion. The guarantee shall state that workmanship, materials, equipment, components and the like and / or installation are guaranteed for the specified period from the date of

the Maintenance Certificate and that any defects that may arise during the specified period will remain the Interior Contractor's responsibility and shall be made good at the expense of the guarantor, upon written notice from the BANKS ENGINEER to do so.

8. TEMPORARY FACILITIES

The Interior Contractor shall at his own cost, provide, erect, or install, maintain, alter as necessary, and remove on completion all temporary facilities and services including safe access as required by the Interior Contractor for the uninterrupted functioning of the work.

8.1. Waste Disposal & Debris removal.

The Interior Contractor shall make, maintain and remove on completion at his own cost such temporary provisions as may be required in order to dispose of any chemicals, fuels, oils, greases, bituminous materials, waste etc. and the like without causing pollution to either the site or the environment. The Interior Contractor at its own cost shall arrange for the statutory approval required for the subject work.

Removing any kind of debris including loading in truck and conveying to approved dumping yard/point as designated by local Authority / Corporation, disposal of debris outside campus, unloading and spreading etc. complete including all leads and lifts. - Contractor to study location of dumping yard/point before quoting for these items. It will be the contractor's responsibility to locate the dumping areas designated by the Government/local authorities, obtain necessary permissions, pay for deposits and necessary charges to Government/local authorities. In case there is change in the dumping location by the Government/local authorities no claim will be entertained for disposal of debris at changed location.

Contractor shall make his own transporting arrangements for removal of all kinds of debris away from site strictly under SWM NOC obtained by the Contractor. Contractor shall obtain signatures on challans from approved Dumping yard Owner and shall submit to PMC for submission in Mumbai Corporation under as a compliance of SWM NOC. Contractor shall obtain Royalty Permission which may be required for carting away all kind of debris. Employer shall reimburse any required official charges of Mumbai Corporation to contractor. Rates quoted shall be inclusive of all above. Contractor to take into account any heavy vehicle movement restrictions to and from site and make sure that any debris generated are cleared from site as required or within 48-72 hours, whichever is earlier, due to site constraints and as directed by Banks Engineer. Rate to be quoted in accordance.

8.2. Fire Protection

The Interior Contractor shall provide and maintain adequate fire protection in the form of barrels of water with buckets, fire bucket, tanks, fire extinguishers, or other effective means of extinguishing fire, ready for instant use, distributed around the project and in and about temporary inflammable structures during construction of the works.

Gasoline and other flammable liquids including but not limited to paint and associated thinners, solvents, and cleaners etc shall be stored in and dispensed from safety containers approved by the BANKS ENGINEER. The storage shall be done at safe location and not be within buildings.

Torch-cuttings and welding operations performed by the Interior Contractor shall have the approval of the BANKS ENGINEER before such work is started and a suitable chemical extinguisher is to be available at the location where such work is in progress.

8.3. Sample Room/Area

The Interior Contractor shall provide within the site area where directed by the Bank Engineer a sample room with appropriate shelving for the storage of a complete set of the approved samples of the project. The Interior Contractor shall dispose off and remove the samples when directed by the Bank Engineer.

8.4. Staging and Scaffolding

The Interior Contractor shall provide, erect, and maintain all staging and scaffolding required for their use during the Civil, finishing works, Interior work and MEP works. Staging and scaffolding shall be as per approved design, stable, erected and removed by experienced skilled staging sub-Interior Contractor and shall have all accident prevention devices as laid down in relevant Indian Standards.

Such staging and scaffolding shall be erected in sufficient time and in a proper sequence so as not to delay the works.

Necessary Internal scaffolding (including Cup lock type scaffold including cup lock platform, cantilever platform, edge boards, cup lock staircase etc.), Mobile platforms as & when, wherever required, for any ht., at any level, on any floor including necessary working platforms, supports, cross bracings etc. for stability. No extra will be paid for internal scaffolding. Stability of Internal scaffolding will be contractor's responsibility.

8.5. Line out

The Interior Contractor shall mark Line out as per the layout provided with drawings and the same get checked and approved from Banks Engineer.

8.6. Temporary Coverings

The Interior Contractor shall protect all finished works, surfaces including flooring, dado, jambs and soffit of openings, and MEP works etc. against possible damages during executing the other works and before handing over to the Banks Engineer.

As soon as an area of flooring is finished, it all shall be protected by the Interior Contractor from dirt and damage by covering it with approx. 3 to 4mm thk protecting sheet or by another approved method. All works shall be covered with approx. 3 to 4mm thk protecting sheet of approved make (Cello, Supreme, Astral etc.) including taping the joints as directed and the same shall be maintained, removed, cleaned and surface brought to required finish on completion.

Waterproofed surfaces shall not be subjected to traffic, nor be used for storage of material. Where some activity must take place in order to carry out the work, adequate protection, subject to approval by the Banks Engineer shall be provided.

8.7. Temporary Safety Measures

The Interior Contractor shall provide and maintain during the entire contract period all temporary safety measures necessary for the protection of people, and he shall be solely responsible for any damage to life and property caused as a result of not having taken adequate precautions against such damage.

Interior Contractor shall keep the site permanently clean and remove all the means causing harm to others during the work process.

However, the Interior Contractor shall be held fully responsible for realizing safety for people, equipment, etc.

The Interior Contractor shall install the temporary barriers to protect laborers from shafts, stairs and at all other openings.

The necessary emergency telephone numbers should be written clearly on a board placed in easily visible locations in the site, such as:

Nearest hospitals

Emergency Police

Nearest fire station.

However, the Interior Contractor shall be held fully responsible for realizing safety for people, equipment, etc

9. PROGRESS AND TECHNICAL MEETINGS

The Banks Engineer shall conduct regular meetings, which must be attended by the Interior Contractor, in which the Interior Contractor shall report to the Banks Engineer his work progress and all other matters affecting the construction. The Interior Contractor can convene meetings to deal with the outstanding technical matters if they cannot be dealt with in the regular meetings with Banks Engineer. The content of the meeting shall be recorded in the form of minutes by Banks Engineer and an up-to-date weekly progress report must be attached by the Interior Contractor.

10. SITE RECORDS

The Interior Contractor shall maintain on site a file in which records of work done, meetings, site visits, delays, particulars of the labours force, tools and equipment are recorded on a daily basis. A copy of this information shall be made available to the Banks Engineer. The Interior Contractor shall further maintain on site a separate book for the Banks Engineer site instructions.

11. DISTURBANCE

The Interior Contractor shall carry out the works with the minimum of noise and other disturbance to the other floor and other adjoining premises and occupants thereof. He shall keep the site and the like well-watered during operations to prevent dust.

12.REVIEW & APPROVAL

All shop drawings and the samples of the work to be executed shall be submitted to the Banks Engineer for their review and approval. While preparing the project schedule, the Interior Contractor shall take optimum working days into considerations as review period by the Bank's Engineer.

SECTION A : DEMOLITION WORKS

A 01. APPLICABLE CODES AND SPECIFICATIONS

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. In all cases, the latest editions including all applicable official amendments and revisions shall be referred to.

IS 1200 (Pt - XVIII) Method of Measurements of Building and Civil Engineering

Works (Part – XVIII) Demolition and Dismantling. IS 4130 Demolition of Buildings.

A 02. PRECAUTIONS: -

All materials obtained from dismantling or demolition shall be the property of the Reserve Bank of India unless otherwise specified and shall be kept in safe custody until they are handed over to the Banks Engineer.

The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the Bank's Engineer before starting the work. Due care shall be taken to maintain the safety measures prescribed in IS 4130 and construction and demolition waste management rules 2016 shall be followed.

Necessary measures to be provided to ensure the safety of the adjoining work or property before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property and if any damage occurs, the rectification shall be done by interior contractor at its own cost. Wherever required proper cloth covering shall also be provided, as directed by the Bank's Engineer. It shall be ensured that no dust is generated while demolishing. Demolition Rules – 2016 shall be followed.

Necessary steps shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Banks Engineer. Interior contractor shall arrange at its cost Helmets, goggle, safety belts etc. and should be used whenever required, as directed by the Banks Engineer. The demolition work shall be proceeded with in such a way that it causes the least damage and nuisance to the adjoining building and the public. Proper Barricading shall be provided at all necessary locations.

Dismantling shall be done in a systematic manner. All materials which are likely to be damaged by dropping from a height or by demolishing roofs, masonry etc. shall be carefully removed first. Chisels and cutters may be used carefully as directed. The dismantled articles shall be removed manually or otherwise, lowered to the ground (and not thrown) and then properly stacked as directed by the Banks Engineer.

Where existing fixing is done by nails, screws, bolts, rivets, etc., dismantling shall be done by taking out the fixing with proper tools and not by tearing or ripping off.

Any serviceable material, obtained during dismantling or demolition, shall be separated out and stacked properly as directed by the Bank's Engineer within a lead of 50 meters. All unserviceable materials, rubbish etc. shall be disposed off at authorized locations by urban local bodies as directed by the Banks Engineer.

The Interior Contractor shall maintain/disconnect existing services, whether temporary or permanent, wherever required for the work or as directed by the Banks Engineer.

Before proceeding for dismantling work especially for services, contractor to ensure that all services connections with main lines have been disconnected with the help of Banks Engineer.

Water spray shall be used to reduce dust while tearing down plaster from brick work.

Safety belts shall be used by labourers while working at higher level to prevent falling from the structure. Wherever, possible mechanized working platform shall be used.

First-aid equipment shall be made available at all demolition works of any magnitude. Dismantling items as listed in the schedule of quantities. Contractor to carefully packing and shifting the items (as listed in the schedule of quantities) existing loose furnitures in premises to place as directed by the Banks Engineer.

SECTION B: GENERAL CIVIL WORKS

B 01. APPLICABLE CODES AND SPECIFICATIONS

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. In all cases, the latest editions including all applicable official amendments and revisions shall be referred to.

IS:1077 : 1992 reaffirm Date Mar 2002	Specification for common burnt clay building bricks
IS 1542:1992 reaffirm Date Sep 2003	Specification for sand for plaster (Second revision)
IS 2116:1980 reaffirm Date Aug 2002	Specification for sand for masonry mortars (first Revision)
IS 2212:1991 reaffirm Date Feb 2005	Code of practice for brickwork (first revision)
IS 2250:1981 reaffirm Date Sep 2005	Code of practice for preparation and use of masonry mortars (First revision)
IS 3696(Part 1):1987 reaffirm Date Mar 2002	Safety code of scaffolds and ladders: Part 1 Mar 2002
IS 1200(Part 3):1976 reaffirm Date Jun 2002	Method of measurement of building and civil Engineering works: Part 3 <u>brickwork</u> (third revision)
IS 1200(Part 12):1976 reaffirm Date Jun 2002	Method of measurement of building and civil Engineering works: Part 12 plastering and pointing (third revision)

B 02. General: -

The work comprises of providing and constructing the masonry units as per required mortar mix in superstructure and substructure at all levels including racking out joints, curing and as per the detailed specifications mentioned herein.

Specification For AAC Block Masonry Work

The normal dimension of the concrete block shall be approx. 600mm x 200mm x 150mm.

The maximum variation in the length of the Autoclave Aerated Concrete Block shall not more than plus/minus 5mm and maximum variation in the height and width of Autoclave Aerated Concrete Block, not more than plus/minus 3mm.

All Autoclave Aerated Concrete Block shall be sound, free of cracks or other defects which interfere with the proper placing of block units, impair the strength or performance of the construction.

Where block units are to be used in exposed wall construction, the face or faces that are to be exposed shall be free of chips, cracks or other imperfections except that if not more than 5% of a consignment contains slight cracks or small chippings not larger than 25mm, this shall not be deemed grounds for rejection.

The Autoclave Aerated Concrete Block shall be classified in two grades according to their compressive strength as indicated in table:

Sr No	Density in oven dry condition (Kg/m ²)	Compressive Strength (Min)		Thermal Condition in Air dry condition (W/m.k)
		Grade - I (N/mm ²)	Grade - II (N/mm ²)	
1	451 to 550	2	1.5	0.21
2	551 to 650	4	3	0.24
3	651 to 750	5	4	0.3
4	751 to 850	6	5	0.37
5	851 to 1000	7	6	0.42

B 03. TESTS : -

1. Block Density- The block density shall be determined in the manner described in

IS 6441 (part-1) -1972

2. Compressive Strength- The compressive strength of block shall be determined in accordance

with IS 6441 (part-5) -1972

3. Thermal Conductivity- The thermal conductivity of block shall be determined in accordance with IS 3346 -1980

4. Drying Shrinkages -The drying shrinkage of block shall be determined in the manner described in IS 6441 (part-2) -1972

B 04. MORTAR : -

Mortar for block masonry shall consist of cement and sand and shall be prepared and applied as per IS: 2250. Mix shall be in the proportion of 1:4 for AAC Block. The sand shall be free from clay, shale, loam, alkali and organic matter and shall be of sound, hard, clean and durable particles. Sand shall be approved by Banks Engineer. If so directed by the Banks Engineer, sand shall be screened and washed till it satisfies the limits of deleterious materials.

For preparing cement mortar, the ingredients shall first be mixed thoroughly in dry condition. Water shall then be added and mixing continued to give a uniform mix of required consistency. Mixing shall be done thoroughly in a mechanical mixer, unless hand mixing is specifically permitted by the Bank's Engineer. The mortar thus mixed shall be used as soon as possible, preferably within 30 minutes from the time water is added to cement. In case, the mortar has stiffened due to evaporation of water, this may be re-tempered by adding water as required to restore consistency, but this will be permitted only up to 30 minutes from the time of initial mixing of water to cement. Any mortar which is partially set shall be rejected and shall be removed forthwith from the site. Droppings of mortar shall not be re-used under any circumstances.

The Interior Contractor shall arrange for test on mortar samples if so directed by the Banks Engineer.

All loose materials, dirt and set lumps of mortar which may be lying over the surface on which brick work is to be freshly started, shall be removed with a wire brush and surface wetted. Bricks shall be laid on a full bed of mortar, when laying, each brick shall, be properly bedded and set in position by gently pressing with the handle of trowel. Its inside face shall be buttered with mortar before the next brick is laid and pressed against it. Joints shall be fully filled and packed with mortar such that no hollow spaces are left inside the joints.

The walls shall be taken up truly in plumb or true to the required batter where specified. Location and alignment of all masonry wall shall be coordinated with concrete structures. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. Vertical joints in the alternate course shall come directly one over the other. Quoin, Jambs and other angles shall be properly plumbed as the work proceeds.

All pipe fittings and specials, spouts, hold fasts and other fixtures which are required to be built into the walls shall be embedded, as specified, in their correct position as the work proceeds unless otherwise directed by the Banks Engineer.

The face of AAC Block work may be finished flush or by pointing. In flush finishing either the face joints of the mortar shall be worked out while still green to give a finished surface flush with the face of the block work or the joints shall be squarely raked out to a depth of 1 cm while the mortar is still green for subsequently plastering. The faces of AAC Block work shall be cleaned with wire brush so as to remove any splashes of mortar during the course of rising the brick work. In pointing, the joints shall be squarely raked out to a depth of 1.5 cm while the mortar is still green and raked joints shall be brushed to remove dust and loose particles and well wetted, and shall be later refilled with mortar to give ruled finish. Some such finishes are 'flush', 'weathered', ruled, etc.

B05 Patli - 08mm dia. mild steel 4nos. reinforcements bars & stirrups @ 200mm c/c along length tied with GI wire) in M15 concrete mix as per relevant IS Code including necessary centering, shuttering, supports etc.

B06 RCC Lintel – 150mm thickness, Grade of Concrete M25, Nominal reinforcements : 10mm dia. mild steel 4nos. reinforcements bars & 8mm Dia stirrups @ 200mm c/c along length tied with GI wire) in M25 concrete mix as per relevant IS Code including necessary centering, shuttering, supports

B07.CURING: -

The block work shall be constantly kept moist on all faces for a minimum period of seven days. Block work done during the day shall be suitably marked indicating the date on which the work is done so as to keep a watch on the curing period.

B08. SCAFFOLDING: -

Scaffolding shall be strong to withstand all dead, live and impact loads, which are likely to come on them. Scaffolding shall be provided to allow easy approach to every part of the work.

B09. MEASUREMENT: -

Block work shall be measured in cubic meters unless otherwise specified. Any extra work over the specified dimensions shall be ignored. Dimensions shall be measured correct to the nearest 0.01 m i.e. 1 cm. Areas shall be calculated to the nearest 0.01 sq. mtrs and the cubic contents shall be worked out to the nearest 0.01 cubic meters.

B10. RATE: -

The rate shall include the cost of materials, and labour required for all the operations at all levels

The rate shall also include the following:

- Raking out joints or finishing joints flush as the work proceeds.
- Preparing tops of existing walls and the like for raising further new block work.
- Rough cutting and waste for forming gables, splays at eaves and the like Leaving holes for pipes up to 150-mm dia. And encasing holdfasts etc.
- Rough cutting and waste for block work curved in plan and for backing to stone or other types of facing.
- Embedding in ends of beams, joists, slabs, lintels, sills, trusses, etc.
- Bedding wall plates, lintels, sills, roof tiles, corrugated sheets, etc. in or on walls if not covered in respective items.
- Brick on edge courses, cut brick corners, splays reveals, cavity walls, brick works.

Masonry Works

General

The work comprises of providing and constructing the masonry units as per required mortar mix in superstructure and substructure at all levels including racking out joints curing and as per the detailed specifications mentioned herein.

Materials

Clay Bricks

Bricks used in the works shall conform to the requirements laid down in IS: 1077. The class of the bricks shall be as specifically indicated in the respective items of work.

The nominal size of the modular brick shall be 200mmx100mmx100mm with the permissible tolerances over the actual size of 190mmx90mmx90mm as per IS: 1077. The nominal thickness of one brick and half brick walls using modular bricks shall be considered as 200 mm and 100 mm respectively. OR In the event of use of traditional bricks of nominal size 230mmx115mmx75mm with tolerance up to ± 3 mm in each dimension, one brick and half brick wall shall be considered as 230mm and 115 mm respectively.

Bricks shall be sound, hard, and homogenous in texture, well burnt in kiln without being vitrified, hand/machine moulded, deep red, cherry or copper coloured, of regular shape and size & shall have sharp and square edges with smooth rectangular faces. The bricks shall be free from pores, cracks, flaws and nodules of free lime. Hand moulded bricks shall be moulded with a frog and those made by extrusion process may not be provided with a frog. Bricks shall give a clear ringing sound when struck and shall have a minimum crushing strength of 5N/sq.mm unless otherwise specified in the items of work. The average water absorption shall not be more than 20 percent by weight up to class 12.5 and 15 percent by weight for higher classes. Bricks which do not conform to this requirement shall be rejected. Over or under burnt bricks are not acceptable for use.

Sample bricks shall be submitted to the Banks Engineer for approval and bricks supplied shall conform to approved samples. If demanded by Banks Engineer, brick samples shall be got tested as per IS 3495 by Contractor. Bricks rejected by Banks Engineer shall be removed from the site of works.

REINFORCED CONCRETE. (PATLI & LINTEL)

Technical Specifications ABBREVIATIONS

In the technical specifications, as well as in the bill of quantities, the following abbreviations have been used:

Cu. M.	Cubic Metre
Sq. M.	Square Metre
R. M.	Running Metre
Q. R.	Quote Rate
NO.	Numbers

1.0 SPECIFICATION FOR MATERIAL

1.1 CEMENT

1.1.1 STANDARD

Cement to be used in the Works shall conform to the following standards:

33 Grade Ordinary Portland Cement	IS: 269
43 Grade Ordinary Portland Cement	IS: 8112
53 Grade Ordinary Portland Cement	IS: 12269
Rapid Hardening Portland Cement	IS: 8041
Portland Slag Cement	IS: 455
Portland Pozzolana Cement (fly ash based)	IS: 1489 (Part 1)
Portland Pozzolana Cement (Calcinated clay based)	IS: 1489 (Part 2)
Low heat Portland cement	IS: 12600
Hydrophobic Cement	IS: 8043
Sulphate resistant Portland cement	IS 12330

Other relevant standards are as follows:

Method of Sampling Hydraulic Cement	IS: 3535
Methods of Physical Tests for Hydraulic Cement	IS: 4031(Part 1 to 15)
Methods of Chemical Analysis of Hydraulic Cement	IS: 4032

1.1.2 SUPPLY

The cement to be used for the Works shall be Ordinary Portland Cement (OPC).

Unless otherwise specified, OPC or PPC shall be supplied in bags containing 50kg each. The storage cement bags should be provided by the Contractor at the site of Works at his own cost, considering IS specifications for storage.

The CONTRACTOR, if asked by the Owner or his representative to provide double locking arrangement, shall do so at his cost. If such an arrangement is made, the key of one lock shall be with the CONTRACTOR and the key of the other lock shall be with the Engineer-in-charge or his representative.

1.1.3 STORAGE

Cement shall be kept, at all times, in covered storage in an approved manner. No cement shall be kept on the site longer than three months before use. Any cement, which is stored onsite in excess of 28 days, shall be tested in accordance with relevant Standard prior to use.

Sufficient cement for one week's consumption shall at all times be available. Cement shall be consumed in the sequence in which it is received at the store.

The cement store for bagged cement shall be a weatherproof building or shed, ventilated, lit and free of dampness. The size will be sufficient to hold enough cement for continuous execution of the works. Bags for cement shall be lined in polythene or other damp-proof material.

1.1.4 SAMPLING AND TESTING OF CEMENT

The materials and proportions used in making preliminary tests shall be similar in all respects to those to be actually employed in the works. All the samples shall be made, cured and tested in accordance with IS 4031.

Facilities required for sampling materials and concrete in the field, if Engineer so desires, shall be provided by CONTRACTOR at no extra cost.

1.2 COARSE AGGREGATE

1.2.1 STANDARD

Aggregates for use in concrete (other than light-weight concrete) shall comply with the requirements of IS 383. Only natural aggregates shall be used.

Coarse aggregate shall have a specific gravity as per mix design report. Aggregate below this specific gravity shall not be used without the special permission of the Engineer.

Coarse aggregate shall consist of natural or crushed stone, angular in shape with granular or crystalline surfaces or approved river shingle or gravel, rounded in shape. All aggregate shall be clean and free from elongated, friable, flaky or laminated pieces, adherent coatings, clay lumps, mica, organic matter and any other deleterious matter that may cause corrosion of reinforcement or impair the strength and / or durability of concrete. It shall be chemically inert, hard, strong, dense, and durable against weathering.

The maximum quantities of deleterious materials in the coarse aggregate shall not exceed the limits indicated in the IS 383 when tested as per IS 2386 Part-I & Part-II "Method of Tests for Aggregate for Concrete".

1.2.2 SOURCE

Once a specific source of supply of coarse aggregate is accepted, the source shall not be changed without prior approval of the Engineer. If quality of any other source is good then it can be accepted after approval of the Engineer-in-charge.

1.2.3 STORAGE

Coarse aggregate to available sizes shall be stored at site as separate stacks over clean and well-maintained hard floor and areas not liable to flooding. Alternatively, they will be

stored in bins.

Contamination with foreign matters and earth during storage and while heaping the materials shall be avoided. It shall be kept in layers not exceeding 1.2 m in height to prevent coning or segregation.

Each type and grading of aggregate shall be stored separately in bins, in such a manner that mixing of the various size particles does not occur and shall be sloped sufficiently to ensure adequate drainage of surplus water.

Sufficient quantities of each type of aggregate shall be maintained on site at all times to ensure continuity of work.

1.2.4 USAGE

Coarse aggregate, which is not clean, shall be washed with clear fresh water before use in the job. Screening should be done, if considered necessary by the Engineer, without extra cost.

1.2.5 TRANSPORTATION

During transportation to the site, all aggregates are to be protected from wind-borne contaminants. Should these contaminants be present at the time of delivery to site, then the aggregates shall be washed with water meeting the requirements of the above clauses/gradation. Transport vehicles shall be cleaned from possible contamination due to previous use.

Note: When aggregates have been approved, the entire supply of each type shall be secured from the approved source. Testing shall be carried out at the frequently specified below to ensure that the same quality and grading of the material is being maintained.

Tests shall be carried out at the following frequency:

- Tests for clay, silt and dust, moisture content and sieve analysis shall be carried out on every 20 tonnes of fine aggregates and 40 tons of coarse aggregates or as directed by Engineer-in-charge.
- Chemical analysis shall be carried out on every 100 tonnes.

1.3 FINE AGGREGATE

1.3.1 STANDARD

Fine aggregate for different end uses (other than light-weight concrete) shall conform to the following standards:

- | | | |
|----|-------------------------|--|
| a. | For structural concrete | IS: 383 (between Grading Zones I & II) |
| b. | For mortar & grout | IS 2116 |
| c. | For plastering | IS 1542 (Class A Grading) |

Fine aggregate shall consist of natural sands or machine crushed rock/gravel. It shall be clean, sharp, hard, strong and durable and free from dust, vegetable substances, adherent coating, clay, loam, alkali, organic matter, mica, soluble sulphate, gypsum or any other

deleterious substances which can be injurious to the setting qualities / strength / durability of concrete.

The use of sea sand is prohibited.

1.3.2 SOURCE

Once a specific source of supply of fine aggregate is accepted, the source shall not be changed without prior approval of the Engineer. If quality of any other source is good, then it can be accepted after approval of the Engineer-in-charge.

1.3.3 STORAGE

Fine aggregates shall be stored at site in adequate quantity on clean and well-maintained hard floor and areas not liable to flooding. Contamination with foreign matter and earth, during storage and while heaping the materials, shall be avoided.

1.3.4 USAGE

Fine aggregate shall be thoroughly washed at site with clean fresh water such that the percentage of all deleterious matter is within the permissible limits as laid down in IS 2386 (Part-II).

Screening of sand shall be done, if necessary and as directed by the Engineer-in-charge, to remove all objectionable foreign matter and affecting any grading.

1.4 WATER

1.4.1 STANDARD

Water supplied shall conform to the various provisions detailed under Clause 5.4 of IS 456:2000. Broadly stated, water used for mixing and curing as also for cooling / washing of aggregates shall be clean and fresh, free from oils, acids, alkalies, salts, sugar, organic materials or other substances that may be deleterious to concrete or steel. Sea water or water from excavation shall not be used. And also, this water can be used for mixing grouts, rinsing aggregates.

Potable water is generally considered satisfactory for mixing concrete. As a guide, the following concentration represents the maximum permissible values:

- a. To neutralise 100ml sample of water, using phenolphthalein as an indicator, it should not require more than 5ml of 0.02N NaOH. The test shall be conducted as detailed in Cl. 8.1 of IS3025 (Part 22).
- b. To neutralise 100ml sample of water, using mixed indicator, it should not require more than 25 ml of 0.02N H₂SO₄. The test shall be conducted as detailed in Cl. 8.1 of IS 3025 (Part22). The test shall be conducted as given in Cl. 8 of IS 3025 (Part 23).
- c. Permissible limits for solids shall be as given in the table below:

No.	Type	Tested as per	Permissible max. limit
1.	Organic	IS 3025 (Part 18)	200 mg/L
2.	Inorganic	IS 3025 (Part 18)	3000 mg/L

3.	Sulphates (as SO ₃)	IS 3025 (Part 24)	400 mg/L
4	Chlorides (as Cl)	IS 3025 (Part 32)	2000 mg/L for concrete not consisting of embedded steel and 500 mg/L for reinforced concrete work
5.	Suspended matters	IS 3025 (Part 17)	2000 mg/L

1.4.2 STORAGE

Water shall be so stored that it remains free from all deleterious matter as mentioned above.

1.4.3 TESTS

No water shall be used until tested for its chemical and other impurities in accordance with IS 3025 to ascertain its suitability. Tests shall be conducted whenever the source is changed or during seasonal variation.

1.5 STEEL REINFORCEMENT

1.5.1 STANDARD

Steel reinforcing bars shall conform to the following standards:

Mild steel and medium tensile steel bars	IS 432 (Part I)
High strength deformed steel bars	IS 1786
Hard drawn steel wire fabric	IS 1566
Structural steel, Grade A	IS 2062

Binding wire shall conform to IS 280 and shall be soft drawn mild steel wire of size not less than 1.5 mm. in dia. (16 g.) soft annealed/galvanized steel wire.

All reinforcement shall be free from loose mill scales, loose rust and coats of paints, oil, mud or any other substances, which may destroy or reduce bond.

1.5.2 STORAGE

Storage of materials shall be as described in IS 4082.

2.0 SPECIFICATION FOR WORKMANSHIP

2.1 GENERAL

In case of omissions or discrepancies, the specifications mentioned in IS 456-2000 shall be final.

Surface of cast concrete and completed plaster shall be marked with the completion dates.

2.2 STANDARD

In all cases the work shall be carried out in accordance with the latest Indian Standard Specifications and the best engineering practice. In the absence of such specifications, work shall be executed in accordance with any other relevant standards issued elsewhere as approved by the Engineer or as per the instructions and directions of the Engineer.

2.3 CONSTRUCTIONAL PLANT

The CONTRACTOR shall be responsible for the supply, use and maintenance of all Constructional Plant and Equipment so as to ensure smooth and efficient working of the job. The Engineer shall have access to the Plant at all times. In case of total/partial break down of plant, stand-by/alternative arrangements be made available.

2.4 WORKMEN AND STAFF

The CONTRACTOR shall ensure that he employs only capable and experienced labour force, foremen, other tradesmen and supervisory staff on the job capable of handling the types of work they are required to handle in a workman-like and efficient manner to the satisfaction of the Engineer. He shall also ensure that his Sub-Contractors or nominated Sub-Contractors also employ all workmen and supervisory staff capable of delivering work of high standard.

For all concrete work, a fully qualified and experienced quality control engineer shall be employed by the CONTRACTOR and he shall be available on Site at all times when concreting operations are in progress. Operators for mixers, mechanical vibrators and personnel in-charge of placing of concrete shall be fully trained and experienced for their class of work.

Engineer-in-charge: PMO/Owner-designated engineer who is in charge of the site and its authorized representative(s).

Approved/Approval: Approval by the Engineer-in-charge.

2.5 CONCRETE – PLAIN AND REINFORCED

2.5.1 GRADES OF CONCRETE

Various grades of concrete shall be as per IS 456-2000 with specified characteristic compressive strength against these grades in accordance with Table 2 in the said IS. In the grade designation, letter M refers to the mix and the number to the specified characteristic compressive strength of 15-cm. cube at 28 days expressed in N/mm². The characteristic strength is defined as the strength of material below which not more than 5 percent of the test results are expected to fail.

The mix shall be designed to produce the grade of concrete having the required workability and characteristic strength not less than appropriate values given in Table 2 of IS 456:2000. The target mean strength of concrete mix should be equal to the characteristic strength plus 1.65 times the standard deviation.

2.5.2 NOMINAL MIX CONCRETE

Nominal mix concrete may be allowed by the Engineer at his discretion. The proportions of materials shall be in accordance with Table 9 of IS 456-2000. The relevant details at a glance are indicated in Table 2.

TABLE - 2

Grade of Concrete	Total quantity of dry aggregates by Mass per 50kg of Cement, to be taken as the sum of the individual Masses of Fine & Coarse Aggregate, Kg, <i>Max.</i>	Quantity of water per 50 Kg. of cement, <i>Max.</i>
M 5	800 Kg.	60 Litres
M 7.5	625 Kg.	45 Litres
M 10	480 Kg.	34 Litres
M 15	330 Kg.	32 Litres
M 20	250 kg.	30 Litres

The proportion of fine aggregate to coarse aggregate by mass shall generally be 1:2 subject to an upper limit of 1:1 ½ and lower limit of 1:2 ½.

TABLE - 3

I.S. Sieve Designation	Percentage passing for single sized aggregate of nominal size					Percentage passing for graded aggregate of nominal size			
	40 mm.	20 mm.	16 mm.	12.5 mm.	10 mm.	40 mm.	20 mm.	16 mm.	12.5 mm.
63 mm.	100	-	-	-	-	-	-	-	-
40 mm.	85-100	100	-	-	-	95-	100	-	-

						100			
20 mm.	0-20	85-100	100	-	-	30-70	95-100	100	100
16 mm.	-	-	85-100	100	-	-	-	90-100	-
12.5 mm.	-	-	-	85-100	100	-	-	-	90-100
10 mm.	0-5	0-20	0-30	0-45	85-100	10-35	25-55	30-70	40-85
4.75 mm.	-	0-5	0-5	0-10	0-20	0-5	0-10	0-10	0-10
2.36 mm.	-	-	-	-	0-5	-	-	-	-

SPECIFICATION FOR PLASTERING

B11.GENERAL: -

This section shall cover internal plastering/rendering works as shown in the drawings. Before commencing the work sample of all plaster types, finishes and colours shall be made in accordance with the specifications indicated below and got approved by Banks Engineer. The work shall be executed as per the approved samples only.

B12.WORKING SPECIMEN/SAMPLE: -

A working specimen at the actual place shall be carried out and the work shall be done up to the satisfaction of the Banks Engineer. The working specimen shall be carried out at a location with the maximum surface irregularity to establish the maximum plaster thickness and to check whether the finish shows evidence of surface cracking or delaminating over time. Based on the observations the expansion joints and crack control joints shall be determined and shall be followed for preparation of the shop drawing. The further work shall be carried out strictly as per the working specimen in terms of finish and Tolerance.

The working specimen shall be well coordinated with all other interrelated working specimens and as far as possible all such specimens shall be carried out at one location in the form of a mock up room.

Prior to working specimen a plaster sample of 300 mm X 300 mm size shall be provided for review.

The samples of glass fibre mesh and associated fasteners shall be submitted for approval.

B13.PREPARATION OF SURFACE: -

Joints of Block work shall be raked- out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scraping. Shuttering imperfections of all concrete shall be roughened by hacking with chisel and all resulting dust and loose particles cleaned and the surface shall be thoroughly hacked or bush hammered to the satisfaction of the Banks Engineer. The surface shall be thoroughly washed with water, cleaned and kept wet before plastering is commenced.

No plastering work shall be started before all conduits, pipes, fittings and fixtures clamps, hooks, doors and window frames etc. are embedded, grouted and cured and all defects removed to the satisfaction of the Banks Engineer. Special approval shall be taken from the Banks Engineer before commencing each plastering work. No cutting of finished plaster shall be allowed under any circumstance. No portion shall be left out initially to be patched up later on.

B14.APPLICATION OF PLASTER: -

Wall Cement Plaster in CM 1:4 plastering shall be started from top and gradually worked down towards floor. It shall not, at any place be thinner than as specified. To ensure even thickness and a true surface plaster of about 15 cm x 15 cm shall be first applied horizontally and vertically at not more than 2 m interval over the entire surface to serve as gauges. The mortar shall then be applied to the wall/surface between the gauges and finished even. All corners, junctions and rounding's shall be truly vertical or horizontal and finished carefully. Generally, work in an enclosure shall be completed in one day. For larger areas if the

work has to be suspended at the end of the day, plaster shall be cut clean to line. Where recommencing the plastering, edge of old work shall be scrapped, cleaned and wetted with cement putty before restarting plastering. The Contractor shall ensure the curing period to be in accordance with relevant IS code.

B15.PLASTERING AT JUNCTION: -

Glass Fiber Mesh at Junction

All junctions of Masonry wall with R.C. structure e.g. column, beam, etc. which are to be plastered, shall be reinforced by Approved Glass Fiber mesh as per IS 11551, 200mm wide with an overlapping of 100 mm centrally over the length of junction. Glass Fiber mesh of required width shall also be fixed over chasing for conduits, pipes, etc. on masonry walls before plastering is commenced. The mesh shall be nailed rigidly to the masonry with G.I. nails of suitable type at approx. 400 mm centres. The finished mesh shall be straight, rigid and laid without sagging.

B16.MEASUREMENT: -

Measurement for plastering work shall be in sq.m correct to two places of decimal. Unless a separate item is provided for grooves, mouldings, etc., these works are deemed to be included in the unit rates quoted for plastering work. The quantity of work to be paid for under these items shall be calculated by taking the projected surface of the areas plastered after making necessary deductions for openings for doors, windows, fan openings etc. The actual plaster work carried out on jambs/sills of windows, openings etc shall be measured for payment.

B17.RATE: -

The rates are inclusive of working at any level, including necessary platforms, scaffolding, all tools and plants, material and labour required for the work including the wastages Expenses, if any, for supervision and technical assistance supplied by manufacturers, Plaster work in bends rounded angles, fair edges, narrow returns, 'V' joints (revels), plays, drip mouldings, grooves/reveal, making good the metal frame junctions, jad over skirting or dado making good around pipes, boxes, conduits, railings, 200 mm wide Glass Fiber mesh at junctions of concrete and masonry or any dissimilar materials, and providing and mixing approved fibre reinforcing material as per manufacturers specification in cement mortar for all plaster items. Making good all recesses and chesses through the wall for the services. Finishing the openings left for the services after their installation and the requirements as stipulated in the specifications above.

B18. ANTITERMITE TEREATMENT: -

INJECTION PROCESS: To prevent subterranean termite infestation in the Premises holes are drilled at junctions of the walls and floors at a distance of 1 foot, then chemicals are injected, and the holes are sealed. This application creates a chemical barrier against the subterranean termites and thereafter spraying process every week up to Renovation.

Injection & Wall Treatment- Injection & Wall Treatment will be carried out in water base compound

components. Anti-Termite treatment will be executed at all the internal perimeter of the premises, the injection and wall treatment will be executed at the junctions of walls & floors to create a barrier against the said infestation.

Mode of Measurements: Only plan area will be measured & paid for.

For Plywood, wood & Block board etc. - For control of white ants in the premises, spray the appropriate chemicals not only eliminating the white ants but also protecting the structure against the white ants. This process also includes coating and injecting of chemicals to create barriers against white ants to fixed wooden furniture, wherever it is necessary.

SECTION C: - WATERPROOFING WORKS

Waterproofing treatment to be apply as per the manufacturers specifications & as approved by the Banks Engineer.

1. Single Component Polyurethane resins bonded elastomeric waterproofing liquid membrane with weather resistance properties on top of parent concrete surface in three coats. One coat of self-priming of Polyurethane resins bonded elastomeric waterproofing liquid (dilution with water in the ratio of 3:1) and two coats of undiluted Polyurethane resins bonded elastomeric waterproofing liquid at a consumption rate of 500 gm per square meter per coat with brush/roller application or as specified by manufacturer.
2. Brickbat coba - Well burnt bricks or sliced brick bats of approved size in required layers in cement mortar 1:4 (1 Cement : 4 coarse sand) mixed with approved waterproofing compound.
3. IPS finish layer in 40 mm thickness to proper slope in CM 1:3
4. Average 15 mm thick waterproof cement plaster in mortar 1:3 admixed with waterproof chemical compound
5. For all waterproofing works Contractor to submit minimum 10 years Guarantee in writing in a format approved by Banks Engineer.

C 01.METHODOLOGY

Step 1: Surface Preparation - Cleaning and Washing of the Slab with water, Sealing all Major & Minor Cracks, Removing of all the waste materials & ensure clean smooth slab

Step 2: Core Cuts and Minor Cracks to be Filled.

Step 3: Sealing the periphery and corners, edges.

Step 4: Applying PU Coating to floor and walls (One priming coat and two coats) at interval as per manufacturer.

Step 5: Air Curing as per manufacturers recommendation

Step 6: Pond Test

Step 7 Laying Brickbat coba / AAC coba

Step 8: Application of Protective Screed to protect the waterproofing membrane from physical damage.

C02. GUARANTEE :

For all waterproofing works Contractor to submit minimum 10 years guarantee in writing in a format approved by Banks Engineer

C03. RATE

The rate shall include the cost of all material and labour involved in all operations described above. Rate to include necessary curing, scaffolding etc.

SECTION D : - FLOORING WORKS

D 01. APPLICABLE CODES AND SPECIFICATIONS

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. In all cases, the latest editions including all applicable official amendments and revisions shall be referred to.

IS 1121(Part 1 to 4):1974 reaffirm dated Jul 2003	Methods of test for determination of strength properties of natural building stones:
IS 1122:1974 reaffirm dated Jul 2003	Method of test for determination of true specific gravity of natural building stones (First revision)
IS 1123:1975 reaffirm dated Jul 2003	Method of identification of natural building stones (first revision)
IS 1124:1974 reaffirm dated Jul 2003	Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones (First revision)
IS 1127:1970 reaffirm dated Jul 2003	Recommendations for dimensions and workmanship of natural building stones for masonry work (first revision)
IS 1129:1972 reaffirm dated Jul 2003	Recommendation for dressing of natural building stones (First revision)
IS 1706:1972 reaffirm dated Jul 2003	Method for determination of resistance to wear by abrasion of natural building stones (First revision)

IS 1805:1973 reaffirm dated Jul 2003	Glossary of terms relating to stones, quarrying and dressing (First revision)
IS 3316:1974 reaffirm dated Jul 2003	Specification for structural granite (first revision)
IS 4348:1973 reaffirm dated Jul 2003	Methods of test for determination of permeability of natural building stones (First revision)
IS 8348:1977 reaffirm dated Jul 2003	Code of practice for stacking and packing of stone slabs for transportation
IS 14223(Part 1):1994 reaffirm dated Sep 2001	Specification for polished building stones: Part 1 Granite
IS 8381:1977 reaffirm dated Jul 2003	Recommended practice for quarrying stones for construction purposes
IS 8759:1977 reaffirm dated Jul 2003	Code of practice for maintenance and preservation of stones in building
IS 2571:1970 reaffirm dated May 2003	Code of practice for laying in-situ cement concrete flooring (First revision)

D 02. GENERAL: -

This section shall cover all flooring and wall tiling work as shown in the drawing as mentioned in the schedule. No work under this section shall be started until specifically allowed by the Banks Engineer and until all other major works such as plastering, embedding of conduits and pipes, channels, etc. have been completed. Samples of basic materials & work of adequate size representing the nature of variation including quality, size, texture after finishing to be used in the flooring work shall be prepared for all work and got approved by the Banks Engineer sufficiently prior to ordering. The approved samples shall be retained up to the end of the project. The works shall be got done by skilled and specialized workmen experienced in the respective trade of work.

Where the cement concrete flooring is to be laid directly on the R.C.C. slab, the surface of R.C.C. slab shall be cleaned and the laitance shall be removed and a coat of cement slurry at 2 kg. of cement per sq.m. shall be applied, so as to get a good bond between R.C.C. slab and concrete floor.

D 03. Working Specimen/sample: -

A working specimen of 300mmx300mm size shall be prepared and got approved from the Banks Engineer. The stone specimen shall be carried out for and shall cover following aspects.

- Each stone type used (Colour)
- Each type of stone finish specified
- Each type of stone thickness specified
- Approved grout / sealant of the approved joint widths

D 04. Transportation and Handling: -

Special care is needed in handling and storing stone slabs to prevent bowing, cracking, chipping, and staining. The stones shall be inspected prior to loading and all such stones shall be removed immediately. Supports shall be such that to avoid over-stressing or cracking of stone panels during storage and transportation. Stress concentration due to improper handling may interconnect micro or macro fractures of geological origin which may be present in the stone slabs. Stone slabs should be properly palletized or crated on edge for safe transportation and for economic unloading and distribution. Pallets, crates, or pre-assembled panelized stones on trucks or in containers shall be carefully secured to prevent them from shifting. Pre- assembled panels for storing and shipping shall be designed so that the frame supports the stone and no load is transmitted through the connections to the stone slabs.

Report / recommendation from the adhesive / grout manufacturer for design adequacy / sufficiency of the adhesive / grout thickness for the specified stone thickness and finishes. The work shall be carried out strictly as per the report guidelines. Any change proposed to this agreed system shall be conveyed to BANKS ENGINEER and a written approval shall be obtained before proceeding.

D 05. STORAGE: -

The storage areas should be adequate, accessible, and the moving of materials of other trades should be limited.

Upon receipt at the building site and if already finished to size & finishes, stone shall remain in the factory-prepared bundles until beginning of the installation. Bundles shall be staged in an area which is least susceptible to damage from ongoing renovation activities.

The unbundled and if the stones are raw, the stone shall be stacked on timber or platforms at least 2" above the ground, and the utmost care shall be taken to prevent staining of the stone due to standing water, soil or other minerals or contaminants that may stain the stone or impact damage of the granite. If storage is to be prolonged, polyethylene or other suitable, non-staining film shall be placed between any wood and finished surfaces of the granite. Polyethylene or other suitable, non-staining film may also be required as protective covering. Any holes or slots in the granite which are capable of collecting water shall be temporarily covered or plugged. Such covers or plugs are to be removed immediately prior to installation of the piece.

D 06. SUBMITTALS: -

The Interior Contractors shall submit the following:

Samples of all types Tiles/Marbles/stones etc. along with the mortar with different types of material & proportions used in a suitable size of 300 mm X 300 mm.

- All types of material proposed for grouting.
- All types of sealants used.
- Full available color range consisting of cured samples for all proposed sealants / grouts.
- Technical data for all sealants and all products used to set all tile and stone
- Delivery schedule of all types of stones to site
- Protection methods and cleaning of the installation

D 07. Installation Methodology: -

The Interior Contractor shall ensure the installation methodology shall be as per specifications described in BOQ, if any doubts Contractor should get it clear from Banks Engineer, before proceeding the installation. The work shall be strictly carried out as per the approved procedure only. The methodology shall cover the various installations like dry / wet cladding, flooring, stair stone work, coping works for each type of stone installed. The methodology shall cover the sequencing of each type of stone installation work, equipment's used and correlation with the various services.

D 08.FINISHES: -

All edges and exposed faces of slabs shall be saw cut and shall be having the same surface finish. Saw blade marks on the edges are unacceptable. All edges of slabs shall be cut to the required chamfers, splays, quirks, and rounded, on the finished surfaces, all as per detailed approved shop drawings.

All stone slabs in any one room or space shall be of the same colour, veining, pattern and matching taken from the same block of stone.

D 09. DEFECTS: -

It shall be free from stains, sand, vents, flaws, holes, streaks, fossils, cracks, decay and weathering and of specified quality, size and thickness that would affect their appearance and durability. Any slab showing hairline cracks shall not be used, nor do slabs that have been patched up with clear epoxy resin glue.

D 10. DRESSING & FABRICATION OF STONE PANELS: -

All the stone panels shall be factory finished cut and sealed either at site or at quarry location. Factory fabrication is very critical to achieve the desired finish and for long time protection of the stone, If required the Interior Contractor shall set up a small scale factory or workshop preferably near site location to achieve the better quality. Field fabrication without a proper factory set up and prior approval from Banks Engineer is not allowed.

The Interior Contractor shall deploy the machineries such as cutting, grinding, polishing / flaming machines, gantry guarders for stone handling in required quantity based on daily production requirement and shall get it same approved from the Banks Engineer.

All stones/marbles shall be fabricated to sized and finished to required finish in the factory only. For patterned flooring actual dimensions shall be taken at the site and shop drawings in suitable scale prepared to identify correctly the sizes and shapes of all stones. The cutter blades used for cutting shall be of sufficient depth to cut the stone in one operation to avoid the handling of the stone. The at most care shall be taken to prevent damage to stone edges during all fabrication works. For special shapes the stone shall be cut such that no cutting marks projecting beyond the cut line shall be seen on the stone.

All angles and edges of the granite slabs shall be true, square or angular as required and free from chipping and the surface shall be true and plane Immediately after completion of the fabrication of the panels. it shall be treated with the protective surface sealer coat to prevent staining, dust accumulation etc. and shall be cured for required time in the factory only. The sealer coat shall be applied on the top side of the stone and on backside with the anti damp coating in case of the flooring in marbles & stones.

All marbles surfaces (floor, dado, counter etc.) to be protected from stain by applying the protective coatings from top (Teflon based coating) & bottom (Acrylic Latex).

Marble base mortar & slurry to be made using white cement.

D 11. FIXING IN GENERAL: -

Interior Contractor shall verify that the mortar bed provided in the design drawings is adequate to

accommodate the selected flooring system as well as all construction tolerances so that the final installation results in achieving the finish locations as designed. Should any changes to the structure be required, the Interior Contractor shall notify the Banks Engineer immediately in writing.

D 12. MODE OF MEASUREMENT: -

Measurements shall be in Sqm. The length and breadth of the Plan area of floor shall be measured to two places of decimals of a meter from the finished surface of the floor.

D 13. RATE: -

The rates are inclusive of working at any level, leads, including necessary tools and plants, material and labour required for the scope of work described herein including the wastages. Expenses, if any, for supervision and technical assistance supplied by manufacturers and the requirements as stipulated in the specifications above.

Specification for Vitrified Tiles Flooring

1.Material:

Vitrified tiles shall be of approved make and quality confirming to required size and colour. Samples of the tiles shall be got approved by the Bank's Engineer.

2.Workmanship:

This shall be in general conformity with clause No.2 of specification for polished Granite Stone and flooring subject to following changes:

- a. Cement Mortar has to used, the tiles should be laid on bed mortar of minimum 20mm and not exceeding 40mm.
- b. Edges of the tile shall be smeared with neat white / coloured cement slurry and fixing in cement grout floated over mortar bedding.
- c. The joints shall be grouted with white cement mixed with matching pigments.
- d. All the corner joints shall be mitered (Katra) so that the tile edges are not seen.

Specification For Glazed / Ceramic Tiles Flooring / Dado

Vitrified tiles / ceramic tiles in flooring and dado

TECHNICAL SPECIFICATIONS:

E 02. DECORATIVE PANELLING:

As per design and drawing

The wooden decorative panelling assembly shall comprise of Aluminium frame using horizontal Aluminium box sections spaced at equal interval and connected with vertical Aluminium box sections as supports. The horizontal and vertical aluminium frame shall be 50mm wide, 25 mm thick spanning to the length of the ceiling as directed in the drawings.

The frame shall be cladded with 12mm thk ply of approved make.

Ply cladded with Recon veneer in pattern as per the drawing. to receive the finishes.

Panelling is finished with N.C. Lacquer Paint of approved make, shade as per Bank's Engineer and as per the manufacturer's specification. Wooden / veneer surfaces to be scraping.

All the exposed wooden surfaces shall be treated with N.C. Lacquer of approved make, colour and shade including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturer's specifications.

All the ply shall be treated with the wood preservative coat.

The entire assembly installed shall be in exact plumb, line and level. Contractor to ensure the stability of entire structure/assembly.

Wooden moulding - 25mm x 25mm wooden moulding made using 1st Class well-seasoned Teak Wood as per drawing. The panelling is finished with N C Lacquer

SECTION – F – ACOUSTIC WORK

STC-45 PARTITION - 87mm with Plywood outer layer

Partition comprises of one layer of 12.5mm thick plain gypsum board and one layer of 6mm thick high density plywood board having density 690kg/m³, weight 8.7kg/m² fixed on the one side of stud GI frame work.

Framework includes Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.

50mm thick 60kg/m³ or higher mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.

Supply and installation of one layer of 12.5mm thick plain gypsum board and one layer of 6mm thick high density plywood board having density 690kg/m³, weight 8.7kg/m² fixed on the one side of stud GI frame work.

Ply and Gyp panels are to be staggered so there are no double joint areas.

Joints to be plastered, tapped and finished as per manufacturers instructions.

Installed partition system is then finished as per ID requirement. Partion will be performance tested.

STC-55 PARTITION - 173mm with Plywood outer layer

Partition comprises of one layer of 12.5mm thick fire rated gypsum board and outer layer of 19mm High Density Plywood having density 690kg/m³, weight 8.7kg/m² fixed on the one side of stud GI frame work.

Framework includes Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.

An air gap of 10mm to be maintained between the first half and second half in the partition system.

50mm thick 640g/m³ mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.

Supply and installation of one layer of 12.5mm thick fire rated gypsum board and outer layer of 19mm High Density Plywood having density 690kg/m³, weight 8.7kg/m² fixed on the one side of stud GI frame work.

Ply and Gyp panels are to be staggered so there are no double joint areas.

Joints to be plastered, taped and finished as per manufacturers instructions.

Installed partition system is then finished as per ID requirement.

STC-55 PARTITION on existing brick walls - 44mm + Existing Wall Thickness

Partition comprises of Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.

25mm thick 48kg/m³ mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.

One layer of high density plywood board 19mm thick should be fixed the outer side of the channels.

This is STC -55 and the vendor to confirm this can be achieved.

Installed partition system is then finished as per ID requirement.

STC 50 - SOLID ACOUSTIC DOOR

Partition comprises of 86mm thick wooden sandwiched doors to achieve design criteria value of STC - 50.

The door frame profile is 125 x 150 mm of double rebated shall be constructed out treated Teakwood. The Door frame is suitably prepared, primed and painted / polished, as per Client's requirement. SHUTTER – Fabricated from Salwood frame double rebates on vertical and top edges with provision for noise and fire rated door seal fixing in rebates. The shutters should not have visible screws or fasteners on either surface.

The shutter shall have the insulation of 50x50mm thick wooden frame @ every 400mm centers and the Air gap to be filled with Rockwool insulation 50mm thick 48 Kg /m³ density wrapped in FR grade Hessian cloth. Then 5mm thick Polymer based membrane 1900 Kg/m³ density to be adhered on the Plywood surface. 12mm thick 800 Kg/m³ density BWP plywood to be fixed to sub frame along with the Polymer based membrane. Final finish is with Veneer lamination or as per Architect's design. The shutters should have the provision for fixing automatic mechanical drop seal at the bottom edge.

Because of their extra weight, Acoustical doors usually require reinforcement of the door frame and heavy-duty mounting hardware and ball-bearing hinges. Perimeter seals should be of soft Neoprene not with foam or felt. Neoprene should retract when doors are opened.

Bottom of door leaf shall contain continuous, adjustable, gravity-activated seal that shall compress against the floor as the door is closed. Automatic door bottom seal should be fully motorized into the bottom of a door and should be very effective acoustic threshold seal when used in conjunction with appropriate head and jamb seals having durability of minimum 1,000,000 cycles. Raised sills and threshold drop seals will not be acceptable. Seals should be adjusted properly so that door closure will not be difficult. 1/2" clearance to be given if the floor is carpeted. Above the door wall has to extend till structure to avoid flanking noise between the areas.

SECTION G: - POP, FALSE CEILING & TRAP DOORS

G 01. APPLICABLE CODES AND SPECIFICATIONS

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. In all cases, the latest editions including all applicable official amendments and revisions shall be referred to.

IS 1200 (PT.IX)	Method of measurements of building and civil Engineering works Part – 9 Roof Covering (including cladding)
IS 1200 (PTX)	Method of measurements of building and civil Engineering works Part – 10 Ceiling and Lining.
IS 1367 (PT -13) fasteners	Technical supply conditions for threaded steel Pt. 13 hot dip galvanized coating on threaded fasteners.
IS 2095 (PT – 1)	Gypsum plaster boards (Pt. 1)

G 02. PLASTER OF PARIS

The plaster of Paris shall be of the calcium-sulphate semi-hydrate variety. Its fineness shall be such that when sieved through a sieve of IS sieve designation 3.35 mm for 5 minutes the residue left on it after drying shall be not more than 1% by weight. It shall not be too quick setting. Initial setting time shall not be less than 13 minutes. The average compressive strength of material determined by testing 5 cm cubes after removal from moulds, after 24 hours and drying in an oven at 40 degree C till weight of the cubes

is constant, shall not be less than 84 kg per square metre.

G 03. APPLICATIONS

The material will be mixed with water to a workable consistency. Plaster of Paris shall be applied to the underside of the laths over the rabbit wire mesh in suitable sized panels and finished to a smooth surface by steel trowels. The plaster shall be applied in such a manner that it fully fills the gaps between the laths and the thickness over the laths is as specified in the description of the item. The joints shall be finished flush to make the ceiling in one piece. The finished surface shall be smooth and true to plane, slopes or curves as required.

G 04. MEASUREMENTS

Length and breadth of superficial area of the finished work shall be measured correct to a cm. Area shall be calculated in square metre correct to two places of decimal.

The work shall be deemed to comprise of flat surfaces only unless specifically stated otherwise in the description of the item.

Any sunk or raised mouldings in the plaster shall be measured and paid for separately, deductions being made from plastering on ceiling only if the width exceeds 15 cm.

G 05. RATE

The rate shall include the cost of all materials and labour involved at all heights in all the operations described above including all scaffolding, staging etc. The rate does not include for any raised or sunk mouldings or for any patterned finishing of the surface

FALSE CEILING WORK

G 07. MATERIAL & FIXING:-

False Ceiling work

General

The scope of work under this specification section includes designing, providing and installing various false ceiling system at interior spaces of any height, as per the approved shop drawing, working specimen and methodology.

Related Sections

The works mentioned in this specification sections should be coordinated with the work described in other specification sections, including:

- General Civil Works
- Access doors in false ceiling
- All services(MEP)
- HVAC Works
- Electrical works
- IBMS Works

Design Criteria

The false ceiling system shall be designed to accommodate

- Vertical deflection of $L / 360$ or 20 mm which ever is greater
- Applicable wind pressure
- Seismic force (should take care of the seismic forces as per the applicable seismic zone)

Tolerance

Variation from plumb, level and true to line for all false ceiling line shall be 3 mm in 3 meters.

Working specimen/sample

A working specimen at the actual place of different systems mention herein as instructed by Banks Engineer shall be treated for architectural finish and the work shall be done up to the satisfaction of the Banks Engineer. The further work shall be carried out strictly as per the working specimen in terms of finish and Tolerance.

The working specimen shall be executed for a ceiling comprising of four no. of gypsum / substrate boards showing the joints and the joint finishing with the cove in gypsum on one side.

The working sample shall be coordinated and executed with working specimen for the wall plaster and interior stone cladding works .

The contractor shall furnish for approval, with reasonable promptness, all samples as specified or directed by the Banks Engineer particularly samples of all internal and external finishes described in the Contract Documents. The Banks Engineer shall check and approve all such samples. One approved sample will be retained by the Banks Engineer and the remainder returned to the Contractor. All works shall then be in accordance with the approved samples.

Certificates and Test Reports

The Contractor shall present to the Banks Engineer, prior to delivery, certificates confirming that the quality of products to be supplied by a particular manufacturer or company for incorporation in the works complies with the standards as required by the Contract Documents.

Where specified or required by the Banks Engineer, the Contractor shall carry out the necessary tests. The costs and expenses incurred will be borne by the contractor and shall be carried out by a NABL accredited or Govt. testing laboratory approved by the Banks Engineer. Copies of test reports shall be submitted to the Banks Engineer. Sub-standard materials and / or work shall be removed and replaced to comply with the correct standards at the contractor's expense.

Shop Drawings

The contractor shall produce all shop or setting out drawings and schedules required for the works or which have mentioned in the specifications in sufficient time, so as not to cause delay in the works. These submittals shall be checked and approved by the Banks Engineer and returned to the contractor. The contractor shall make any corrections requested by the Banks Engineer and resubmit further copies for approval. The construction programme and the schedules prepared by the contractor shall have adequate time provision for review and revision of shop drawings prior to approval.

The shop drawings shall include and show

Reflected ceiling plans for all false ceiling works at a scale of 1:50 or larger and shall clearly show the ceiling components / devices such as access panels/ doors, diffusers, lighting, light covers, IBMS components, expansion joints, reveals and trims.

The ceiling components shall be well coordinated with the MEP requirements.

Horizontal bracing details for the system to resist seismic loads.

Sealants used within the false ceiling system.

Manufacturer's Report & Certification

The contractor shall produce the certificate of the manufacturer for usage of his recommended material at site. The certification shall cover all the major items of the system responsible for the stability & performance of the system.

The contractor shall produce reports from the manufacturers periodically and the report shall cover following

- Inspection & observation of the material at site.
- Inspection & observations of the Installation process.
- Quantity of material supplied by the manufacturer & subsequent consumption at site.

- Confirmation of the material consumption as per standards.
- Stage wise certification for installation done at site as per manufacturers standard.

The report shall be submitted at each important stage of the installation as recommended by the manufacturer & as mentioned below but not limited to

- Installation of the metal grid system.
- Complete installation of the system with installation of the board, finishing of the joints, providing cut outs in the ceiling for ceiling devices like light fixtures, AC grills etc. before painting of the ceiling.

G 08 Gypsum Board & MR Board False Ceiling

Suspended 12.5mm thick Gypboard Plain Ceiling:

Framing : {Serrated steel section with effective thickness of 2T (2xdepth), better load carrying capacity, enhanced screw retention, improved acoustic performance, and fire resistance as Compared to plain steel section and with a load bearing capacity of 33 kg/m², Perimeter Channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} fixed along the Perimeter of existing wall/ partition with the help of PVC Anchor (6x40) at 600 mm c/c for brick wall. Ceiling Angle {Material-GI(IS513), YS-260Mpa, Finish Galvanised 150GSM(IS277)} is suspended by fixing it to the soffit cleat {GI(IS513) YS-260Mpa, Finish-Galvanised 120GSM(IS277)}. Soffit Cleat and Rawl Plug- Ø8x45mm {Material-IS 513 CR1 grade, Zinc coating (7 to 8 microns) pull out load- 6.8kN for M30 concrete grade} creating 1220mm x 1220mm grid. Intermediate channel {Material-GI(IS513), YS-260Mpa, Finish-Galvanised 150GSM(IS277)} is fixed to the Ceiling Angle with M6 x 12mm Hex Bolt & Hex Nut arrangement {Material-As per EN 10083 Finish – Zinc Plating} or with 2 Nos of Ø4.2x13 Metal to Metal screw {Material-Carbon steel EN-ISO 7049/50 Finish- Zinc Coating Thickness- 4.14micron.}. The Ceiling Section {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is then fixed to the Intermediate Channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} with the help of Connecting Clip {Material-High carbon Spring steel wire(BS970Gr.En42)-46-48HRC,Finish-Zinc plating 4-6 micron} and in direction perpendicular to the Intermediate channel at 457mm c/c.

Board : Single layer of 12.5mm thick Gypboard Plain (conforming to IS 2095 Part 1 : 2011 , ISI Mark Certified, International EPD Verified, Gypsum Board to be certified class 1 by virtue of BS-476 Part 5,6, & 7 & certified GreenPro by CII) of size 1219 x 1829mm is then screw fixed to ceiling section with 25mm drywall screws {Material-Carbon steel EN-ISO 7049/50,Finish-Case hardened Grey Phosphating as per JIS G3507-1} standard at 230mm centers. Finally, square and tapered edges of the boards are to be jointed and finished so as to have a flush look which includes filling and finishing with Jointing Compound & Joint Paper tape. Vendor to submit MTC for ordered material and Technical consultant visits are mandatory for material inspection. Rate to include cost towards cutting and making good for any electrical, FA, PA, CCTV, Networks etc., Fixtures as of any size and shape.

Vendor to submit MTC for ordered material & Gyproc technical consultant visit is mandatory for material inspection & performance certification for the system.

All system to be fixed as per manufacturers recommendations.

Mode of measurement: Any level difference for any drop/ step up will be measured in SMT

Suspended MR Ceiling:

Framing: Perimeter Channel {Material-GI(IS513),YS-260Mpa,Finish- Galvanised 150GSM (IS277)} is fixed along the perimeter of existing wall/ partition with the help of HILTI HPS - 1 (6x40) impact anchor, at 600mm centres. Ceiling Angle {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is suspended by fixing it to the soffit cleat {GI(IS513)YS-260Mpa,Finish-Galvanised 150GSM (IS277) }. Soffit Cleat and Rawl Plug- Ø8x45mm {Material-IS 513 CR2 grade, Zinc coating (7 to 8 microns) pull out load- 6.8kN for M30 concrete grade} creating 1220mm x 1220mm grid. Intermediate channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277) } is fixed to the Ceiling Angle with M6 x 12mm Hex Bolt & Hex Nut arrangement {Material-As per EN 10083 Finish – Zinc Plating} or with 2 Nos of Ø4.2x13 metal to metal screw {Material-Carbon steel EN-ISO 7049/50 Finish- Zinc Coating Thickness- 4.14micron.} The Ceiling Section {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is then fixed to the Intermediate Channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} with the help of Connecting Clip {Material-High carbon spring steel wire(BS970Gr.En42)-46-48HRC,Finish-Zinc plating 4-6 micron} and in direction perpendicular to the Intermediate channel at 457mm c/c.

Board : Single layer of 12.5mm tapered edge MR is then screw fixed to ceiling section with 25mm drywall screws {Material-Carbon steel EN-ISO 7049/50,Finish-Case hardened Grey Phosphating} at 230mm centers on ceiling section & 150mm at periphery of ceiling. Finally square and tapered edges of the boards are to be jointed and finished so as to have a flush look which includes filling and finishing with Jointing compound Air Dry (Conforms to ASTM C475), Joint Paper tape. Serrated section has effective thickness of 2T (2xdepth), better load carrying capacity, enhanced screw retention, Improved acoustic performance & fire resistance as compared to plain steel section.

Vendor to submit MTC for ordered material technical consultant visit is mandatory for material inspection & performance certification for the system.

All system to be fixed as per manufacturers recommendations.

Mode of measurement : Any level difference for any drop/ step up will be measured in SMT.

G 10. Wooden Ceiling

The wood ceiling assembly shall comprise of Aluminium frame using horizontal Aluminium box sections spaced at equal interval and connected with horizontal Aluminium box sections supports. The assembly shall be suspended from the ceiling with the dropped ceiling framing / connectors connected to the concrete slab.

The horizontal aluminium frame shall be 50mm wide, 25 mm thick spanning to the length of the ceiling as directed in the drawings.

The frame shall be clad with 12mm thk ply of approved make. Ply clad with Recon veneer in pattern as per the drawing. to receive the finishes. Ceiling is finished with N.C. Lacquer Paint of approved make, shade and as per the manufacturer's specification. Wooden / veneer surfaces to be scraping.

All the exposed wooden surfaces shall be treated with N.C. Lacquer of approved make, colour and shade including all necessary coats of primer, putty as required to make the surface smooth and

plain and as per the manufacturer's specifications. All the ply shall be treated with the wood preservative coat.

The entire assembly installed shall be in exact plumb, line and level. Contractor to ensure the stability of entire structure/assembly.

Mode of measurement:

Only Reflected plan area to be measured in square meter calculated to 2 places of decimal. Length and breadth shall be measured. Deduction shall be made for openings etc.

Mode of measurement: Any level difference for any drop/ step up will be measured in SMT.

SECTION H : DOOR FRAMES & SHUTTER & STORAGE

H 01 WOODWORK

H 01 Applicable Codes and Specifications

IS 710 : 2010	Specification of Marine Plywood
IS 1477 Part 1 Reaffirm 1995	Code of practice for painting of ferrous metals in buildings (Parts 1-Pretreatment & 2 - Painting) (First revision)
IS 1477 Part 2 Reaffirm 2000	
IS 1659 : 2004	Specification for block boards
IS 287 : 1993	Permissible Moisture Content of Timber used for different purposes.
IS 2338 Part 1 - Reaffirm 2000	Finishing of Wood and Wood Based Material
IS 2338 Part 2 - Reaffirm 2000	
IS 848 : 2006	Synthetic Resin Adhesives For Plywood
IS 1734 (Parts 1 to 20) Reaffirm 2003	Tests For Plywood
IS 1200 Part 21 Reaffirm 2002	Measurement of Building and Civil Engineering Works
IS 4021 Reaffirm 2006	Timber Door and Window
IS 1003 part 1 Reaffirm 2008	Timber Panelled and Glazed Shutter
IS 3614 Part 1 Reaffirm 2002	Metallic and Non Metallic Fire Check Doors
IS 3614 Part 2 Reaffirm 2002	
IS 2202 Part 1 & 2	Wooden Flush Door Shutters

H 02. GENERAL SCOPE

This section shall cover all woodwork, joinery and similar work in interior.

All woodwork associated with work of all other sections shall also be done generally according to these specifications unless specified otherwise.

Unless otherwise specified, Timber used in the work shall be approved quality. No woodwork shall be painted, varnished waxed or otherwise finished before specifically approved by the Banks Engineer.

1.Related sections

The work mentioned in this specifications section should be coordinated with the work described in other specification sections / other works, including

All sections of Civil Interior Works

- Masonry & plasterworks
- Flooring & stonework
- False ceiling works
- Painting works
- Services – (MEP)
- Electrical Works
- Audio Visual works.

2.Fixing Generally

All wood shall be fixed in the manner as shown in the drawings. If not shown, fixing with masonry/concrete shall be done with expansion plugs (Anchor fasteners), holdfasts, GI cut nails and screws of approved size as approved by Banks Engineer, and under no circumstances they shall be fixed by wooden plugs. Exposed fixings are not acceptable. In case fixing with partition shall be done wooden plugs & Anchor fasteners of required depth.

3.Workmanship

All work shall be done as per best trade practices by skilled workmen, as per approved shop drawings, approved methodology for works in reference with the relevant Indian Standards.

4.Samples and shop Drawings

The contractor shall before proceeding with the work, submit samples of all wood species, all proposed finishes, complete samples of the various materials including hardware and fastening devices and shop drawings and large scale details covering all joinery work and installation methods to the Banks Engineer for approval.

The shop drawings shall show the fastener layout clearly distinguishing between metal fasteners and wooden plugs proposed in the assembly.

The woodwork shall not deviate from shop drawings in any respect, including finish, dimensions, materials or method of joining.

Two sets of sample of the material as mentioned below for teak wood shall be submitted for the approval of the Banks Engineer.

300 mm x 300 mm samples illustrating the range of colours and grains for the

- Laminate
- Wood

- Veneers

SS clamps - 1No.MR Grade plywood - 300 mm X 300 mm.

The construction program and the schedules prepared by the contractor shall have adequate time provision for review and revision of shop drawings prior to approval.

Approval / comments conveyed herein neither relieves vendor / contractor of his contractual obligations and his responsibilities for means and methods of construction, correctness of, dimensions, materials of construction, weights, quantities, design details, assembly fits, performance requirements and conformity of the supplies with the Indian Indian statutory Laws as may be applicable, nor does it limits the purchaser's rights under the contract.

5 Starting of Work

Unless otherwise instructed, finishing of woodwork on trims, finished frames, etc. shall not be commenced until all interior plastering and flooring is completed and cured and area cleared of all rubbish. Whenever so required samples of actual work shall be installed at the site and got approved by the Banks Engineer.

6 Timber

The wood used for the entire project shall be of approved quality. The other wood specified shall be from the sustainable forest. The contractor shall produce the necessary certificate for the same whenever demanded by Banks Engineer.

The source of the wood and all other wooden products shall be from a sustainable source and shall be adequate to cater the wood requirement for next phase of the project. The contractor shall arrange for the source inspection and shall make Banks Engineer for sufficient availability of the wood catering the project.

The wood shall be of best quality kiln seasoned timber of its kind specified. All timber shall be treated with approved anti-termite treatment. Samples of all wood shall be got approved before ordering. Moisture content of wood shall be in accordance to IS:287-1993.

All timber shall be plain sawn, uniform in texture, free from large, loose, dead or cluster knots, waness, injurious open shaken bore holes, rot, decay discoloration, soft or spongy spots, hollow pockets, pith or center heart and all other defects and blemishes.

All timber to be used on project to have square edges and should be free of Splitting and twisting. All timber which is determined by Banks Engineer to have defects or blemish shall be rejected and may not be used.

Timber shall be well seasoned in kiln as per IS: 1141. Wood of greater moisture content shall not be used in any part of the structure.

All timber Length shall be as per the drawings / approved shop drawing.

H 03 VENEERS

The composite veneer shall be premium grade, plain sliced teak veneers. Veneers shall be flitch matched, balanced matched (having equal widths) and shall be arranged such that the veneer face containing components provides a pleasing overall appearance. The flitch shall be shuffled to have an even distribution of leaves throughout the elevation; The grains of the various components need not be matched at the joints, but shall not be widely dissimilar in character and figure. Sharp colour

contrasts at the joints of the components are not permitted. Members shall be selected so that the lighter than average colour members are not placed to darker than average members.

Veneers shall be picked from a selected range of tough premium hardwoods, shall be consistently strong and rigid complying with the selected ply & block boards.

H 04 Plywood : M.R. Grade & BWP ply for wet areas.

Construction :

Ply wood consists of plies-face, core & panels – one on top of the other. A balanced construction is adopted to achieve the dual purpose of dimensional stability & minimum of joints. The veneers are well seasoned to bring down moisture contents from at least 8 to 12% levels so that they do not warp around on drying.

The ply shall be a heavy duty engineered panel material rendering excellent bending strength and stiffness and made out of best raw material, shall be exceptionally resistant to wood boring beetles and termites, treated with vacuum pressure impregnation preservative treatment and shall comply with IS 710:1976 (for marine ply).

TECHNICAL COMPLIANCES TO IS 710 : 1976

Specific gravity	0.8	
Modulus of Rupture along the grains	45 N/mm ²	
Modulus of Rupture across the grains	27N/mm ²	
Modulus of Elasticity in bending along the grains	6700N/mm ²	
Modulus of Elasticity in bending across the grains	3600N/mm ²	
Glue adhesion in dry state(min)	1100 N	Glue
adhesion after 72 hours of boiling(min.)	800 N	

Rough Carpentry

All joints shall as far as possible is mortised and tenoned and glued with best quality approved waterproof glue. Where mortise tenoned joints are not possible, the joints shall be securely screwed with the longest screws that may be used without splitting the wood. All wood shall be pre – drilled with pilot holes of sufficient size to accommodate such screws and fasteners.

Any timber found to have splitting or have developed splitting shall be replaced and shall not be used.

Wherever it is necessary or nailing cannot form an adequate joint, the members shall be lapped or jointed by GI straps or extra wood blocks. All joints shall be done with neatness and as approved and directed by the BANKS ENGINEER. Cross bracing, solid blocking and bracing shall be provided as per the approved shop drawings.

Joinery

All finished woodwork and joinery shall be wrought and planed smooth to the correct dimensions and profiles called for in the drawings.

All joinery work shall be securely mortised and tenoned and glued with best quality glue. For all joinery work use of nails shall not be permitted, and wood screws of appropriate size and of approved make shall be used. Wherever practicable, means of fastening the various parts together shall be concealed. All work (both carpentry and joinery) shall be to the dimensions shown on the drawings.

All wood finish shall be smoothly treated and sanded at the building after erection, until all defects are entirely removed. Any materials showing splits saw, and paper or other defacing marks or other defects shall be rejected and shall be straight grained have matched grain contrast, colour and shall be approved by BANKS ENGINEER before being fabricated.

Sawing

All scantlings, planks, battens, etc. shall be sawn in straight lines, planes, uniform thickness, of full measurements from end to end and shall be sawn in the direction of grain. They shall be procured with sufficient margins in as to secure the specified dimensions, lines and planes after being wrought.

Hold fast

Hold fasts shall be made from mild steel flats not less than 5 mm thick, in accordance to IS: 7196-1974 and shall be galvanised. Heavy- duty Stainless steel/aluminium/brass hinges of appropriate size and numbers shall support the shutter.

A minimum number of three holdfasts shall be fixed on each side of door and window frames, one at center and the other two at 30mm from top and bottom of the frame. In case of window and ventilator frames shorter than one meter, two holdfasts on each side, at quarter points shall be fixed.

Hold fasts shall be fixed to the frame by steel screws only. The frames in masonry wall shall be fixed in cement concrete blocks as per drawing.

Frames

Frames should be of solid wood as specified and shall not possess any individual hard and sound knot exceeding 40mm in diameter and the aggregate area of all the knots shall be minimum. not exceed one percent of the area of the piece and shall be Best Quality well seasoned Teak wood door frames of required size & profile- max. moisture content 12% (IS 287) made out of Superior quality Teak wood as approved, kiln seasoned, antitermite treated, shaped, grooved, mitered joint arrangement.

All members of frames shall be at right angles on inside surface of the respective members. All frame members shall be straight without any warp or bow and shall be smooth and well planned on the exposed sides. The top frame members of doors, Vertical of door frames shall project about 40mm into the floor finish. The members shall be in plumb, true and square. Frames shall allow for an even space between the door shutter and frame at the top and side of the door.

The frames shall also be protected from damages during construction.

The door frames without sills while being placed in position shall be provided with temporary wooden bracings well wedged between the styles at the sill level. The sills shall be retained to keep the frames from warping during construction.

H 05. Door Shutters

The door shutters shall be as per specifications mentioned in Schedule of quantities.

Shutters (Paneled / Ledged and braced)

Thickness as mentioned in Schedule of quantities and solid core Single/Double leaf flush shutter as per drawing details confirming to IS 2202 (Part I) factory made hot pressed internally lipped, using with BWP ply and exterior quality synthetic adhesive conforming to relevant IS codes.

Shutter edges to be finished with Teakwood beading of necessary thickness and finished as per drawing (melamine polish/paint). Wooden beading to be kiln seasoned anti-termite treated fixed with exterior quality synthetic adhesive and fixed with head less nails and non ferrous counters sunk screws.

Shutter to be hinged to wooden frame with using Heavy duty Hinges (minimum 4 nos.) of approved make, size OR as recommended by the manufacturers. SS Brush finished handle, lock set with minimum 3 keys set, tower bolt, stopper as approved and as recommended by Banks Engineer

Core

The core shall be one of the following types: -

H 06. Block board core:

The block board core shall conform to the requirements specified in Indian Standard Specification IS-1659-2004 The wooden strips for the core shall not exceed 30mm in width. The length of the majority of strips shall extend to the full length of the board. But end joints are permissible provided the jointed strips are distributed between full-length strips and the joints are staggered. In any one- block board, the core strips shall be of one species of timber only. A wooden frame prepared from styles and rails of well-seasoned and treated good quality wood shall be provided for holding the core. The width of the members shall not be less than 50 mm and not more than 100 mm. Alternatively, the core shall be of solid board with slots extending for about two third depth and at approximately 20 mm spacing. The slots shall be made alternatively on two faces of the board.

H 07 Face Panel for Solid Core Board

The face panel shall be formed by gluing by hot press process on both faces of the core with either plywood or cross-bands and face veneers. The thickness of the cross-bands as such or in the plywood shall be between 1 mm and 3 mm. The thickness of the face veneer as such or in the plywood shall be between 0.5 and 1.5 mm for commercial veneers and between 0.5 mm and 1.20 mm for decorative veneers. Wherever specified, the face veneering plywood shall be with BWP Marine Grade ply conforming to IS 303-1989 and IS 710-1976.

Lipping

Lipping in teakwood shall be provided as shown in the drawing. Unless otherwise specified, internal lipping shall have a total depth not less than 25 mm. Lipping may be provided separately or as one piece with the style.

Rebating

In case of double leafed shutters, the meeting of the styles shall be rebated by one third of the

thickness of shutter. The rebating shall be either splayed or square type. Where lipping is provided, the depth of lipping at the meeting of styles shall not be less than 35 mm.

Adhesives

Adhesive used for bonding cross-band and plywood to core and face veneers to cross band, shall be phenol formaldehyde synthetic resin conforming to BWP type specified in IS: 848-1974.

Only synthetic resin adhesive shall be used for binding core members to one another including core frame, and for lipping, glazing, frame, Venetian frame and other exposed parts where such binding is done.

Plywood -

Plywood for general purposes shall be of three grades namely MR Grade, Commercial ply & BWP as per the requirement for wet areas., drawings.

Laminate

The laminate shall be minimum 0.8mm and 1.00 mm thick and shall comply with the values Specified as per IS: 2046 -1995,

Glass

Unless otherwise specified all glass shall be toughened float glass of approved make as per IS: 2553 Part I - 2020 OR as specified in Bill of quantity and drawing. Glass shall be free from blisters, stain, scratches and bubble sand flaws of every kind and shall be properly cut to fit frames and mullions. Samples of all glass types and finishes to be provided for review by Banks Engineer.

Fittings

The rate quoted for doors shall include for fixing of door shutter with 3 to 4 hinges (Brass) and the necessary screws for fixing the same. The rate shall also include providing & fixing of the following fittings as mentioned in schedule of quantities like

- Hinges (Brass finish)
- Tower bolt Brass finish
- Handle brass finished
- Lock
- stopper.
- Screws
- Hydraulic open type door closers. **Type 1** – door closure on frame with door leaf opening outside.
- Type 2** – door closure on frame with door leaf opening inside. The door closure should not be visible from outside, to be mounted on inner side.

- Specialized hinges for credenza shutters etc.
- Drawer channels telescopic / regular.
- Door stops /stoppers
- Internal Door Seal (1000mm) Brown

H 08 FIRE RATED METAL DOOR

Steel Door comprises choice of single and double leaf 120 minutes rated fireproof door sets suitable for internal and external use of approved make.

120mins. rated fireproof steel door with frame shall be certified by CBRI/ other Govt. approved laboratory for stability and integrity confirming to IS3614PART II.

1.DOOR FRAMES

- a. The door frame profile shall be 150x60 mm of double rebate construction made from 1.0 mm GI steel sheets.
- b. The Door frame shall be suitably prepared, primed and finished with paint to match with door shutter as per Bank's requirement.
- c. Frames shall be rigidly bolted at top jamb for direct installation at site.
- d. The door frame shall be fixed by adequate number of anchor fasteners on vertical and top jamb as required.

2.SHUTTERS

- a. Fire rated shutters shall be constructed out of 0.9mm thick Steel sheet.
- b. Fully flush double skin doors shall have interlocks seam arrangement at stile edges.
- c. Shutters shall have no screws or rivets on either face.
- d. The in-fill material shall be proprietary fire rated heat-insulating material suitable for stability and integrity upto 2 hours fire rating.
- e. Shutters shall be fabricated at factory with pre-punched cut outs to receive Iron Mongery.
- f. Shutters shall have predrilled hinge plates with Hinge guard covers and concealed lock box with lock fixing brackets and pre-tapped holes
- g. Shutters shall be finished with paint of colour choice as approved by Banks Engineer.
- h. The overall thickness of the shutter shall be 50mm for 2hrs rating.

3.IRON MONGERY

Various iron mongery items like door closures, locks, handles, panic exit devices etc. shall be incorporated in the door set as required by the Banks Engineer.

4.SHOP DRAWINGS

Shop drawings for each and every door showing the position of the iron mongery items clearly shall be submitted and approved from Banks Engineer prior to placing final order.

5.INSTALLATION

Fixing of fire door frames and Shutters supplied by approved manufacturer shall be done plumb and true to line in the openings as required at the site on a Single point total turnkey responsibility basis of providing and fixing of the fire/acoustic door frame sand shutters and the related hardware/ironmongery items which forms apart of Banks Engineer as per SOQ requirement.

Ironmongery

Hinges

stainless steel ball bearing of hinges of size 100 x 100 x 3mm.

Lock

Mortise locks with lever handle as approved.

Door Closers

Heavy duty standard arm type having designer cover OR as recommended by manufacturers.

Mode of Measurement

Fire Doors - Unless otherwise specified the work shall be measured on Sq.M basis for the complete assembly of door and frame and as per the item description. The visible area of the door including the frame shall be measured for the payment.

SECIALISED WOOD ELEMENTS

General

This section shall cover all woodwork and joinery to be carried out in mock up and final work. Unless otherwise specified, Timber used in the work shall be of approved quality. No woodwork shall be painted, varnished waxed or otherwise finished before specifically approved by the Banks Engineer.

Workmanship

All work shall be done as per best trade practices by skilled workmen, as per approved shop drawings, approved methodology for works in reference with the relevant Indian Standards to the satisfaction of the Banks Engineer.

Material

Stainless steel

All the stainless-steel items shall be of 304 grade and in brush finish including all necessary fasteners and accessories.

Fasteners / Plugs

Stainless Steel anchor fasteners of the approved make shall be used for the fixing. All fasteners shall have countersunk heads unless otherwise showed on the drawings. The anchor fasteners shall be of highly non corrosive and chemical anchor type. The wooden plugs of the same wood used in the work shall be used Wherever specified and as per approved shop drawing. Plugs shall installed then sanded flush and finished to match adjacent finish.

2 hours Fire Rated Glazed Openable Door

Glazed openable door comprised of tested fully glazed fire-rated unlatched double leaf door system with 120 minutes of integrity and radiation control (EW 120) with symmetrical (bi-directional) fire protection. The frames shall be made of imported cold rolled profiles. The door frames are cold rolled from 1.5 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The door shutter would have the top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The overall door opening shall be as per tested evidence and tested as per EN 1634-1 in an accredited international laboratory.

The glass shall be CONTRAFLAM LITE (14mm) clear, non-wired, toughened, interlayered, 120 minutes fire-rated glass for integrity and radiation control (EW 120) and insulation (I 20) with a light transmission of 86% and a sound reduction of 38 dB and manufactured in UL & TUV audited facility and including UL-EU Certification (File number R38101) and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested for 5000 hours of UV resistance as per EN ISO 12543-4. The glass shall be EPD (Environmental Production Declaration) verified in accordance to EN 15804 and ISO 14025 in which its life cycle assessment is performed considering Cradle to Gate system boundaries. The glass must produce a recycled content declaration committing to a pre-consumer cullet of up to 11% and post-consumer cullet less than 1%. The glass shall provide bi-directional (symmetrical) fire protection.

The shutters should be fixed to the frame using weld-on dimensions 179mm X 20mm hinges. The profiles shall have grooves to incorporate fire-resistant gaskets. The doors shall incorporate drop down seal at the bottom. The glass should be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. The beading shall be clipped on using stainless steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm thick calcium silicate setting blocks. The door should be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf should be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a TUV audited facility.

The doors shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. The door shall also be subjected to durability tests as per EN 12400 for C5 classification (200,000 cycles). The doors shall also be tested for class 5 of impact resistance when tested as per EN 13049. The doors shall also be tested for class 4 level of mechanical strength when tested as per EN13115. The doors shall have water tightness level of 8A when tested as per EN 1027.

SECTION I : - PAINTING WORKS

I01 Applicable Codes

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. In all cases, the latest editions including all applicable official amendments and revisions shall be referred to.

IS 428: 1969 IS: 110	Distemper, oil emulsion, colour as required Ready mixed paint, brushing, and gray filler, for enamels for use over primers.
IS: 5410	Cement paint, colour as required
IS: 2932	Specification for enamel, synthetic, exterior type (a) undercoating, (b) finishing
IS:3536	Specification for ready mixed paint, brushing, wood primer, pink
IS 5411-1969	Specification for plastic emulsion paint (part 1 & 2)
IS 2395(Part 1):1994 reaffirm dated Feb 2005	Code of practice for painting concrete, masonry and plaster surfaces: Part 1 Operation and workmanship (first revision)
IS 2395(Part 2):1994reaffirm dated Feb2005	Code of practice for painting concrete, masonry and plaster surfaces: Part 2 Schedule(first revision)
IS 6278:1971 reaffirm dated May 2003	Code of practice for white-washing and colour

02.BEFORE COMMENCEMENT OF WORK: -

Before starting work under this section large size samples of coating including preparation of surface shall be made at the site and approval obtained from the Banks Engineer before proceeding with the finishing works. Only after specific approval has been given to the samples, work shall commence. The actual work shall be done as per the approved samples.

03. PREPARATION OF SURFACE: -

The surface shall be thoroughly cleaned of all mortar dropping, loose pieces & scales, dirt, dust algae, grease and other foreign matter by brushing and washing. Pitting in plaster shall be made good and a coat of paint/primer shall be applied over patches.

04.APPLICATION: -

The solution shall be applied on the clean surface with brushes or spraying machine. The solution

shall be kept well stirred during the period of application. It shall be applied on the surface, which is on the shady side of the building so that the direct heat of the sun on the surface is avoided. The method of application of paint shall be as per manufacturer's specification.

The second coat shall be applied after the first coat has been set for at least 24 hours or as specified by manufacturer.

05. CLEANING: -

All rubbish waste or surplus material shall be removed from time to time, and all woodwork, hardware, floors, or other adjacent work shall be cleaned upto the satisfaction of the Banks Engineer. Hardware and other unpainted surfaces shall be cleaned using lacquer thinner or paint remover.

06. SCAFFOLDING: -

Wherever scaffolding is necessary, it shall be erected on double supports tied together by horizontal pieces, over which scaffolding planks shall be fixed. No ballies, bamboo or planks shall rest on or touch the surface, which is being painted.

Where ladders are used, pieces of old gunny bags shall be tied on their tops to avoid damage or scratches to walls.

For painting of the ceiling, proper stage scaffolding shall be erected with proper protection of the floor preventing the scratch mark on floors. Also the scaffold should be operated to prevent any damage or discoloration of the surface.

Painting shall not be started until and unless the Banks Engineer has inspected the items of work to be painted, satisfied himself about their proper quality and given his approval to commence the painting work.

The rooms should be thoroughly swept out and the entire work area should be cleaned up minimum one day in advance of the paint work being started.

However, it should be noted that approval from the Engineer shall not relieve the Interior Contractor of his responsibility and any damage to the property or any loss of life due to the negligence on this regards shall be at the Interior Contractor's account.

07. MODE OF MEASUREMENT: -

The length and breadth shall be measured to two places of decimal of a meter and area worked out in square meter.

08. RATE: -

The rates are inclusive of working at any level, including necessary platforms, scaffolding, all tools and plants, material and labour required for the work including the wastages Expenses, if any, for supervision and technical assistance supplied by manufacturers and the requirements as stipulated in the specifications above.

Painting & Colour Washing

The work of painting colour washing shall be done according to IS 2395(1966) and 1477(1959) shall be to the entire satisfaction of the Engineer.

A Interior grade emulsion paint

The paint shall be of approved manufacturer and shade.

Preparation of surface – The surface shall be scrapped thoroughly to remove existing distemper colour wash or whitewash or any other protective film. Any major patch repair or crack shall be cut out and made good as specified under Patch Repairing. Cracks may be wetted thoroughly prior to filling or priming paint may be applied to the sides of the cracks to avoid undue absorption of water and subsequent shrinkage of the filling. For filling plaster of Paris gauged with about one third of its volume of hydrated lime.

Prior to painting, fine cracks may be filled with distemper or Enamel putty depending on the proposed finish.

Distemper or lime wash shall be totally removed prior to repainting. The surfaces shall be wetted before scrapping.

Grassy or oily spots in the surface should be removed by approved method. One coat of chalk and glue may be applied before application of colour / white wash. The rates quoted shall include all the above operations.

- a. . In addition, before application of primer coat the surface shall be cleaned with water and allowed to dry.
- b. Preparation of paint – The paint shall be prepared strictly according to the approved manufacturer's specifications and directions.
- c. Application of paint - First coat of Emulsion Paint of approved brand and shade one or two tones lighter than the final approved shade shall be applied uniformly by using soft bristle brush.

(A) Enamel painting–wood and plaster surface

- (a) While preparing surface in old woodwork, accumulated dirt, grime, mould, growth due to dampness etc. shall be removed and the surface examined for defects. All projections such as glue or whiting spots shall be carefully removed with stopping knife and cleaned after which all knots shall be filled with knotting solution. Resinous or loose knots shall be removed and gaps filled with seasoned timber piece and made level with the rest of the surfaces.
- (b) Surface of previously painted woodwork, if it is smooth and in the good conditions, shall be cleaned with white spirit or other detergent. Rub surfaces with abrasive paper wash, clean, removed with fresh water and allow the surface to dry. Defective and loose putty shall be

replaced.

- (c) Where old painted surface has become badly blistered and cracked, the paint shall be completely removed either with blow lamp or with an approved quality paint remover.
- (d) In case of walls dados required to be painted with enamel paint, if the old paint is white or colour wash, distemper or oil bound distemper, the old coating shall be thoroughly scrapped off till the original plaster surface is exposed. If old paint is oil paint and in good condition, surface shall be sand papered and cleaned.
- (e) Painting shall be carried out as much as possible in dry and warm weather. Two coats of paint shall be applied to the surfaces as per schedule of work.
- (f) The paint shall be of low VOC content.

Application of paint - The enamel paint shall be of first quality unless otherwise specified. The painting work shall be carried out as per manufacturer's specification and as specified under.

- (a) Before application of primer coat, the surface shall be thoroughly dusted and then a coat of approved primer shall be applied. After allowing the surface to dry, the surface shall be sand papered lightly and indentations, unevenness etc. shall be made up by giving a coat of putty to obtain a uniform and plain surface.
- (b) First coat of oil bound distemper of approved brand and shade one or two tones lighter than the final approved shade shall be applied uniformly by using soft bristle brush.
- (c) After allowing the surface to dry for a minimum period of 18 hours, light sand papering and touching up uneven spots with putty, second coat of oil bound distemper shall be applied. This coat may be of final shade where coats of oil bound distemper is specified. Where painting is specified to be in three coats, the shade of paint of the second coat may be one tone lighter than the final shade. The third coat where specified shall be of final approved shade. The final coat of oil bound distemper shall always be finished by using rollers to obviate brush marks.

(4) Enamel painting to steel work

- (a) The work shall generally be carried out as per IS 1477 (1959), wherever applicable and as directed by the Engineer.
- (b) The surface shall be thoroughly cleaned of all scale, rust, dirt, old paint, grease and other imperfections by scrapping and brushing with steel wire brushes and if necessary, the surface shall be cleaned by chipping or any other best known methods, such as sand blasting and burning. The surface shall be made thoroughly dry.
- (c) Apply a coat of anti corrosive metal primer of approved make.
- (d) Apply a coat of putty to make the surface even and uniform.
- (e) Apply first coat of ready mixed enamel paint of approved make, quality and shade. The first coat shall be a tone lighter when compared to the final approved shade.
- (f) Apply finishing coat of approved make as directed.

(5) Painting CI,GI, Asbestos etc. pipe sand fittings

- (a) Paints – Paints, unless otherwise specified shall be first quality synthetic enamel paint of approved make and shade. The primer coat shall be red oxide or any approved suitable metallic primer ready mixed and of approved manufacture.
- (b) Preparation of surfaces – All rust and scales shall be removed by scrapping or by brushing with steel wire brushes. All dust and dirt shall be carefully and thoroughly wiped away. The surface, if wet, shall be sun dried.
- (c) Application – After preparing the surface, one coat of primer shall be applied. Care shall be taken to ensure that the surface is fully and completely covered, special attention being paid to the joints.
- (d) When the primer coat has dried up and before any moisture, dirt, dust etc. settles on the surfaces, paint of the desired shade shall be applied to pipes. Application shall be done with brushes and the paint shall be spread evenly. The Surface shall be given two or more coats and shall finally present a uniform appearance.

(6) Melamine polish

Melamine polish consist thin resin that forms a thin film like coating when applied on wood surface. Melamine polish is a closed pore polish i.e. it makes the wood non-breathable product that protects wood from mainly hot and cold surfaces placed over it. Melamine polish dries off within 20 mins.

Base preparation : Sand the seasoned wooden surface using sand/water paper along the grains. Repeat the sanding smoothly with finer grade of sand/water paper then wipe off the loose dust particles. For raw sanding in case of solid wood, coarser sandpaper to be used (Grade – 80/120 no.) whereas for veneers and MDF, finer sandpaper to be used (Grade -150/180/220 no.). Grades to be selected based on substrate smoothness. More smoother the surface, relatively finer grades of Sandpaper to be used.

Application at ambient temperature with proper spray techniques/no water and oil coming from compressor, i.e. filter working properly, proper ventilation is there, surface treatment done properly and prescribed thinners are used. Coating thickness – 30 micron

MISCELLEANOUS WORKS

SPECIFICATIONS FOR ALUMINIUM DOOR & WINDOWS

The rate for various items shall include the following:

1. All Aluminium sections shall confirm to IS(India)AlloySpecification-63400.
- Providing & Fixing at all heights / all floors with all leads 60 micron powdered coated aluminium sections for doors / windows / glazing manufactured from best extruded aluminium sections from Jindal and approved manufactures from make list confirming to IS, cut to length and joints

mitered, corners grinded with joints, water proof the outer frame and shutter frame stiffened with corner angle cleats, stiffening rod of 10mm provided for in the frame for fixing the frame to RCC columns / masonry sides, RCC lintels on top and PCC sills or floor, the framework fixed with standard approved fastenings or hinges as per details shown in drawings and specifications with all the sections pretreated for removal of any rust and prevention of any further rust all complete as per specifications and direction by the Bank's Engineer. Only exposed aluminium sections to be anodized.

- In case of alteration items of M. S. windows standard "Z" sections, M. S. rolled or fabricated sections to any shape including bending as per requirement are to be used matching to the respective aluminium sections. The windows shall be painted with minimum two coats of spray enamel paint (of approved make and shade) over zinc chromate yellow oxide and with steel putty etc. complete as per design, direction and approved sample.
- The windows and doors are to be fixed with the External finished surface (either stone cladding /external plaster) and hence all the necessary EPDM rubber or wood packing / rough ground, fasteners of fisher/Hilti, polyurethane backer rod of minimum 10mm size, neutral grade silicon weather sealant minimum 10 x 6mm (between the frame and wall or other surface all around) shall be provided within the rate quoted so as to make the junctions fully watertight/airtight as per the drawings.
- Approved make selected clear glass (clear/frosted)/wired glass of specified thickness (5 to 12mm) as mentioned in the drawings shall be used in doors. Wired glass / frosted glass louvers shall be provided wherever shown in the drawings after grinding the edges.
- Necessary hardware like locking arrangement with pin cylinder locks, dead locks, mortised locks, SS baby latch (occupied /vacant) SS push/pull or mortised handle, heavy quality hinges / pivot, concealed tower bolts, etc., of approved make & design (by Bank's Engineer) as per the drawings and as per BOQ. Floor springs and door closer shall be measured and paid as per mentioned in BOQ.
- All gaskets used shall be 100% EPDM / siliconised rubbers gaskets of approved colour for long life guarantee.
- Necessary operating device (as per design) for operation of louvers of windows, ventilators, sky lights, including necessary rods shall be provided without any extra cost.
- The rates quoted shall be inclusive of manufacture, supply and installation at Site, and inclusive of all the necessary accessories EPDM rubber strips / siliconised rubber strip, locks, rods, excise duty, taxes, VAT, transport, labour charges, insurance, storage and safe custody, etc. complete.
- The rates shall also be inclusive of providing and applying neutral grade silicone sealant of approved make weather or structural with ordinary gun or compressed air operated gun as per the requirement and making the joints around aluminium doors, windows curtain wall glazing etc. watertight, on the external periphery of the building at the junction of two different materials as directed by the Bank's Engineer.

- Necessary provision for rainwater disposal shall be done in the bottom guides/frames as directed and approved by Bank's Engineer.
- Offer must be in accordance with detailed drawings with dimensions of aluminium sections in frames and shutters as shown in drawing. It shall be accompanied by the detailed drawing if any deviation is proposed.
- The quantities are provisional and may vary to any extent. No claim will be entertained on this account for any reason.
- Double action hydraulic floor springs of approved make with minimum one year guarantee. The floor springs shall be of least possible thickness.
- Details/arrangements for after sales/maintenance services shall be furnished.
- Work shall be carried out in co-operation and in coordination with all other agencies working at Site.
- The civil work as required for fixing of floor springs, hold fast or other works required for the reaction and completion of doors/windows etc. shall be done by the Interior Contractor without any extra cost.
- Any damage, if caused to the existing work done by other agencies, shall be reinstated by the Interior Contractor to its original condition without any extra cost.
- During the course of work, the Interior Contractor shall pay due care to avoid any stains on the powder coating work and if required, the Interior Contractors shall provide necessary protective arrangement as directed by the Bank's Engineers for which no extra payments shall be made. After the installation is completed, if required by the Bank's Engineers, the aluminum work shall be washed with mild solution of non-alkali soap and water.
- The Interior Contractor shall be responsible for the windows/doors/curtain wall glazing/grills etc. being set straight, in plumb level and for their satisfactory operations after the fixing is completed.
- Wherever required and as directed strengthening of members shall be done by providing steel/M. S. concealed members without extra cost.
- Hydraulic door closer of approved make with minimum one year guarantee as and were shown in the drawings and as directed.
- Work shall be measured in clear surface area of doors / windows/ glazing etc., in sq. mtr and rates to include all cost of all the materials including wastages like aluminium sections, glass, compact sheet, wire mesh, hardware like handles, locks, hinges, aldrops, stoppers, EPDM rubber, silica gel, sealant etc., all complete as per the drawings, specifications & as per the direction of Bank's Engineer. Consolidated rate for materials, hardware & labour to be quoted. Only floor springs & hydraulic closer will be measured separately and paid in relevant tender item.

SPECIFICATIONS FOR BLINDS

A- MOTOR

Motor Specifications

Power Source Voltage	V	AC220-230±10%
Frequency	Hz	50 /60
Current	A	0.53
Power Consumption	W	121

Rated Torque	Nm	3
Rated RPM	rpm	23.5/27
Rated Running Time	min	4
Ambient Temperature	°C	-10-40

Allowable Size

Width	800-2000 mm (31-79")
Height	800-4500 mm (31-177")
Max Surface area	9 m ² (11 yd ²)

Set bar type: with Easy Snap Brackets

Product Weight

4.0 kg (8.8 lb)
(width: 2000 mm/79" without screen)

*Maximum screen weight is different by the screen fabric. Please refer to "Typical Roll-up Diameter" and Rated Torque.

B – FABRIC – ALPHALIA SILENT AW

Alphaia Silent Aw

	■ Technical properties	Standards	
Weight	620 g/m ²	EN ISO 2286-2	
Width	270 cm (Kilimandjaro 6642 in 270 cm & 135 cm)		
	■ Physical properties		
Tensile strength (warp/weft)	250/220 daN/ 5 cm	EN ISO 1421	
Tear strength (warp / weft)	25/25 daN	DIN 53.363	
Impact resistance	Class 1A (Excellent after 36 impacts at 60km/h)	EN 13964 annex D	
Micro organism resistance	Degree 0, excellent	ISO 846-A	
Extreme working temperatures	-30°C / +70°C	in static position	
	■ Flame retardancy		
Rating	B1/DIN 4102-1 – BS 7837 – Class 1 / UNI 9177 – Class A /ASTM E84 – Group 1 / AS-NZS 3837 – AS-NZS 1530.2 & 3 – IMO A65.3		
Euroclass	B-s2,d0 /EN 13501-1		
	■ Solar and light properties		
	Kilimandjaro (White)	Lux (Translucent)	
Visible reflection Rv	90%	56%	EN 14501
Visible transmission Tv	7%	41%	EN 14501
Internal Solar Factor G _{glaz}	0,31	0,41	EN 14501 (glazing C)
	■ Management systems		
quality		ISO 9001	
environment		ISO 14001	
	■ Certifications, labels, garantes		



10 year guarantee

Smart Yarn

CE Marking compliance (EN 14716) tensioned ceilings



With S+ Serge Ferrari goes further than the Standards. (consult us for further information)

C – FABRIC – OKAPI

SPECIFICATION

Tolerance : ± 0.05 mm (Actual Thickness) | ± 5% (Actual Weight)

OKAPI BLACKOUT

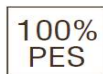
Composition : 100% Polyester
Width (mm) : 2800

Thickness (mm) : Sheer 0.27, Vane 0.53
Weight (g/m²) : 227

D – FABRIC – HONEYCOMB



Single Cell



Types of Material



Width of Fabric 366cm



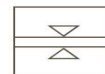
Blackout



Fabric is free of PVC



Weight of Fabric 294 g/m²



Material Thickness 0.21mm

Proforma of Performance Guarantee for Damp-Proofing and Waterproofing

Water Proofing of Bathroom for The Work Of

“Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai”

We have treated the WATER PROOFING of Bathroom, Toilet and Kitchen Mori for the work of “Interior Renovation of 15th floor in Central Office Building Including Civil , MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai “, as Interior Contractors M/S _____ the for the work. We have read and understood the scope and responsibility of the waterproofing and damp proofing work as provided for in the General Builders Work in their (M/s _____) Contract with the Reserve Bank of India and accordingly as a Proprietary Agency engaged by M/s _____ for the items of works of damp proofing and water proofing in the building, we have treated the abovementioned surface/areas as per specifications for works furnished by us to the Bank, as a Interior Contractor.

After virtual completion of work and before the ___ day of ___ month of ___ at any time or times the basement floor, roofs, water tanks and other portion treated by us M/s _____ starts leaking or in any way get damaged to the influence of seeping water including forming wet patches, dampness etc. either due to the inadequacy of the work carried out or due to any other reason whatsoever relating to the specification, workmanship etc. including the responsibility for any surface treatment and plumbing works etc. carried out by other agencies, we the M/s _____ hereby undertake and guarantee carry out necessary remedial measures **up to 10 years** from the date of virtual completion of the works to such extent and so often as may be necessary to free the premises from such leakages, dampness without any extra cost to the Employer (Reserve Bank of India). The decision of the Employer in regard to the question as to whether there is any leakage or the treatment has given way to water or moisture, shall be treated as final and binding on us. We also undertake to reinstate the surface disturbed to attend to the rectification work to its original condition after carrying out the rectification work, if necessary, by bringing new materials at no extra cost to the Employer.

Signature

M/s. _____

(Proprietary Waterproofing Agency)

Date

Place

Counter Signed by For and on behalf of

M/s. _____ (Interior Contractors)

Date

Place

Proforma of Performance Guarantee for Anti Termite Treatment
Anti-Termite Treatment for the work of

**“Interior Renovation of 15th floor in Central Office Building Including
Civil, MEP, HVAC, Electrical & Allied Works at
Reserve Bank of India (RBI), Mumbai”**

(On Rupees 100/- Stamp Paper)

Name of the firm/Company and its address: -

To,

Dear Sir,

Sub: Guarantee regarding Anti-termite treatment.

We hereby certify that all materials Cement, Steel, bricks, wood works etc., plywood, floor & dado, etc. used in the “Civil, waterproofing, wood work, plumbing works & Misc. Works “have been pre-treated by us against subterranean termite infestation in accordance with the procedure set out by the supplying agency.

We hereby guarantee that all work carried out by us at ----- of “-----
----- **at Mumbai**” all materials like cement, steel, bricks, wood works etc., plywood, Flush door shutters etc. of the said premises shall be safe against subterranean termite attack etc. for a period of **TEN YEARS** from handing over date of site _____ to _____.

In the event of the said work for the “----- **Mumbai**” all materials like wood, plywood, floor & dado being or becoming subject to subterranean termite attack or infestation at any time during the guarantee period of ten years, we agree to carry out as often as it becomes necessary, at our cost and expense, all and every treatment that may be necessary to render the said civil & interior works free from such subterranean termite attack or infestation.

The question whether the works carried out during Civil, waterproofing work, wood work etc. of ----- of “**The** ----- **at Mumbai**” become subject to subterranean termite attack or infestation and whether any anti-termite treatment is or has become necessary shall be decided by the Employer / Design Architect / PMC and we agree that their decision in this regard shall be final and binding on us.

Yours faithfully,

For

(Signature of Anti-termite Agency)

&

Stamp & Signature of Main Contractor

C: LIST OF APPROVE MAKE FOR CIVIL AND INTERIOR WORKS

LIST OF APPROVED BRANDS, MAKES & AGENCIES FOR CIVIL/ INTERIOR WORKS

1	Anti-termite treatment	Anglo Orient Insecticide Services, PCI OR Equiv. as approved by the Design Consultant.
2	Grade I - AAC Block	Ultratech, Magicrete or Equivalent as approved by the Design Consultant
3	Ready Mix Plaster	Ultratech, ACC or Equivalent as approved by the Design Consultant
4	Vitrified Tiles	LTC, RAK, Somany, Kajaria, Nitco, Johnson or Equivalent as approved by Design Consultant.
5	Glazed Tile (White or Coloured)	LTC, RAK, Somany, Kajaria, Nitco, Johnson or Equivalent as approved by Design Consultant.
6	Ceramic Tiles	LTC, RAK, Somany, Kajaria, Nitco, Johnson or Equivalent as approved by Design Consultant.
7	Stone floor (Marble)	CMC, Aakash, Stone source, Stone Casa, Nitco or Equivalent as approved by Design Consultant.
8	Engg. wooden / Solid wooden flooring	Ego, square foot, MR Carpets, or Equivalent as approved by Design Consultant.
9	Marble adhesive	RachTR, Keracol, Pidilite OR as approved by the design consultant.
10	Marble protective coat	RachTR, Proseal(Tenax) OR as approved by the Design consultant.
11	Gypsum False Ceiling	Saint Gobain, USG Boral or Equivalent as approved by Design Consultant.
12	Acoustic Ceiling (wooden finished)	EGO, Ecophon, Armstrong or Equivalent as approved by Design Consultant.
13	Plywood (MR / BWP) / block board & Flush doors, High Density ply product (as per approved ISI mark)	Greenply/Green - Commercial MR grade IS303, Century plywood, Merino - Commercial, Kutir ply. or Equivalent as approved by Design Consultant.
14	Laminates	Century, Merino, Greenlam, New Mica, Bloom or Equivalent as approved by Design Consultant.
15	Aluminium box sections	Jindal, Geeta aluminium OR Equivalent as approved by Design Consultant.

16	G.I. Studs	Saint Gobain, USG Boral or Equivalent as approved by Design Consultant.
17	Door Closer / Floor spring / Patch Fittings	Dorma, Ozone OR Hafele Equivalent as approved by Design Consultant.
18	Recon Veneer	Venzo, Green, Century or Equivalent as approved by Design Consultant.
19	Glass, Float Glass / Mirror	Saint Gobain, Asahi, Modi, Adaro, AIS or equivalent as approved by Design Consultant.
20	Fire rated Glass openable Door.	Saint Gobain- Vetrotech, or Equivalent as approved by Design Consultant.
21	Fire Rated Doors	Signature, Stairway studio, Envirotech, Navair or Equivalent as approved by Design Consultant.
22	Hardware	Hafele, DORMA, Ozone, Magnum, Yale or Equivalent as approved by Design Consultant.
23	Handle, Hinges, Tower bolt, Aldrop, Stoppe, Locks	Hafele, DORMA, Ozone, Magnum or Equivalent as approved by Design Consultant.
24	Decorative Handles (Brass half round & vertical handles)	Golden Lock or Equivalent as approved by Design Consultant.
25	Wall Coverings/ Wall Papers	Arte, Marshalls, Boho, or Equivalent as approved by Design Consultant.
26	Veneer	VENZO or Equivalent as approved by Design Consultant.
27	Fabric	Pride, D' Decor, Nextgen or Equivalent as approved by Design Consultant.
28	Teakwood	Burma Teak, Indian Teak or Equivalent as approved by Design Consultant.
29	Engg wooden / Solid wooden flooring	Ego, square foot, MR Carpets, or Equivalent as approved by Design Consultant.
30	Blinds	NBT or as approved by Design Consultant.
31	Granite, Quartz & Laminam	CMC, Akash, Heritage, Stone casa or Equivalent as approved by Design Consultant.

32	Acoustic Veneer Ceiling	Ego, OR Equivalent as approved by Design Consultant.
33	Carpet	MR Carpet, Weavers or Equivalent as approved by Design Consultant.
34	Frosted film	3M, or Equivalent as approved by Design Consultant
35	Graphics	3M, or Equivalent as approved by Design Consultant.
36	Windows	Reynaers, Studio Mercury or equivalent as approved by Design Consultant
37	Perforated Acoustical Wall Panel	EGO, or Equivalent as approved by Design Consultant.
38	Rockwool, Mineral Wool	Roxul, Knauf, Rockwool India or Equivalent as approved by Design Consultant.
39	Toughened Glass	Saint Gobain, Asahi, Modi. AIS or equivalent as approved by Design Consultant.
40	14mm Thick 2 Hr Fire Rated Glass	Saint Gobain or Equivalent as approved by Design Consultant.
41	Paints & Melamine	Asian, Nerolac, Dulux, Jenson & Nicolson, Berger or Equivalent as approved by Design Consultant.
42	Acoustic partition	Saint Gobain / USG Boral/Indian Gypsum/Green Ply/Centry Ply
43	Solid acoustic doors	Doors: Stairway Studio / Signature Interiors / Envirotech, for Seals: Lorient / Raven, for Ply: Century Ply / Green ply

Note:

Wherever applicable only I.S.I. approved 1st class materials are to be used. In other cases where I.S.I. specifications / certifications are not available the superior range quality materials are to be used and all the products get approved by the Design Consultant.

The contractors shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list. Final selection will be done with the approval of the Design Consultant.

Unless otherwise mentioned any one of the approved makes or brands shall be allowed to be used. Other specified ISI mark may be allowed to be used if approved by the Design Consultant.

Wherever applicable only I.S.I. approved 1st class materials are to be used. In other cases where I.S.I. specifications / certifications are not available the superior range quality materials are to be used and all the products get approved by the Banks Engineer.

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Unless otherwise mentioned any one of the approved makes or brands shall be allowed to be used. Other specified ISI mark may be allowed to be used if approved by the Banks Engineer.

D – PLUMBING WORKS

The I.S. referred to in the specifications is revised after the year mentioned, the latest revision shall be considered.

1.0 G. I. PIPES & SOCKETS :

1.1.1 MATERIALS

The Pipes shall be of galvanised mild steel welded and seamless screwed and socketed tubes conforming to the requirement of I.S. 1239:1982 for specified grade (light, medium or heavy). They shall be of the diameter (Nominal bore) specified in the description of the item.

The pipes and sockets shall be clean finished, well galvanised in and out, free from cracks, surface flaws, laminations, and other defects. All screw threads shall be clean and well cut. The ends shall be cut, clean and square with the axis of the tube. Unless and otherwise specified, the pipes below G. L. or concealed in walls or floors shall be 'C' Class and those supported on walls shall be of 'C' class.

All screwed tubes and sockets shall have pipe threads conforming to the requirement of IS:544:1999. Tube shall be screwed with taper threads while the sockets with parallel threads

The weight of GI pipes with plain ends in kg/meter for various classes and diameters are reproduced below for ready reference

Dia	(Light) 'A' class (Yellow Band) Kg/m	(Medium_ 'B' Class (Blue Band) Kg/m	(Heavy) 'C' Class (Red Band) (Kg/m)
15	0.952	1.22	1.45
20	1.41	1.58	1.90
25	2.01	2.44	2.97
32	2.58	3.14	3.84
40	3.25	3.61	4.43
50	4.11	5.10	6.17
65	5.80	6.51	7.90

1.1.2 Pipe Fittings

The fittings shall be of seamless wrought steel or mild steel tubulars complying with all the appropriate requirements given in para 1.1.1 or as specified. The fittings shall be designated by the respective nominal bores of the pipes for which they are intended. Fittings used for concealed work shall be of G.I. only.

The fittings shall have screw threads at the ends conforming to the requirement of IS:544;1999. Female threads on fittings shall be parallel and male threads (except on running nipples and collars of unions) shall be tapered. Fittings for G. I. pipes shall include couplings, bends, tees, reducers, nipples, unions, bushes etc.

1.1.3 DUCTING, LAYING AND JOINING

The pipes and fittings shall be inspected at site before use to ascertain that they conform to the specifications given in para 1.1.1 above. The defective pipes shall be rejected. Where the pipes have to be cut or rethreaded the ends shall be carefully filed out so that no obstruction to the bore is offered. The end of the pipes shall then be threaded conforming to the requirements of IS: 554;1999 with pipe dies and taps carefully in such a manner that it will not result in slackness of joint when two pieces are screwed together. The taps and dies shall be used only for straightening screw threads which have gone bent or damaged and shall not be used for turning of the threads of pipes and fittings and shall be protected from damage until they are fitted.

The pipes shall be cleaned and cleared of all foreign matter before being laid. In joining the pipes, the inside of the socket and the screwed end of the pipes shall be oiled and a few turns of teflon tape or spun yarn wrapped round the screwed in the socket, Tee, etc. with the pipe wrench. Care should be taken that all pipes and fitting are properly jointed so as to make the joints completely water tight and pipes are kept at all times free from dust and dirt during the fixing. Burrs from the joint shall be removed after screwing. After laying, the open ends of the pipes shall be temporarily plugged to prevent access of water, soil or any other foreign matter.

Any threads exposed after jointing shall be painted or in the case of under ground piping thickly coated with approved anticorrosive paint to prevent corrosion.

1.1.4 INTERNAL WORK

Internal work means all water supply pipes laid within the building and will include internal pipes within toilets and pantries.

Pipes inside toilets shall be cPVC SDR-11 Class 1 conforming to IS 15778 and fixed in wall chases well above the floor. No pipes shall be run inside a sunken floor as far

as possible, unless authorized by the Bank's Engineer. Where unavoidable, pipes may be buried for short distances provided adequate protection is given against damage. Where directed by the Bank's Engineer, a M. S. tube sleeve of higher diameter shall be fixed at a place a pipe is passing through a wall or floor for reception of the pipe and to allow free for expansion and contraction and other movements. Pipes embedded in walls shall be fixed to the wall with M. S. clamps so as to prevent movement before filling in and making good the chase. In case, the pipes and fittings are to run exposed outside, the surface of wall or ceiling, fixing shall be done by means of G.I. or M.S. clamps fixed to MS brackets fixed over walls, keeping the pipes about 1.5 cm clear of the wall. These clamps shall be embedded in brick work in cement mortar 1:3 (1 cement : 3 coarse sand). The clamps shall be fixed at lengths suitable distances near the fittings or as directed by the Bank's Engineer.

Contractor shall provide adequate number of unions on all pipes to enable dismantling later. All G.I. pipes above ground and exposed shall be painted with one coat of red oxide and two coats of synthetic enamel paint of approved shade and quality.

For G.I. pipes 15mm to 25mm diameter the holes in the walls and floors shall be made by drilling with chisel or jumper. However, for bigger dimension pipes the holes shall be carefully made of the smallest size as directed by the Bank's Engineer. After fixing the pipes the holes shall be made good with cement mortar 1:3 (1 cement : 3 coarse sand) and properly finished to match the adjacent surface.

1.1.4.1 CPVC Pipes

Pipes shall be SDR-11 Class 1 conforming to IS 15778. They shall be of diameter specified in the description of item. They are specified as CTS (Copper tube size) and their sizes shall be as per table given below, to follow SDR (Standard dimension ratio) of 11.

Table 1

Outside diameters and wall thicknesses for CPVC. SDR 11 Plastic Pipe

Nominal Size (in.)	Outside diameter, in. (mm)		Wall Thickness, in. (MM)	
	Average	Tolerance	Minimum	Tolerance
½	0.625 (15.9)	± 0.003(±0.08)	0.068 (1.73)	+ 0.020 (+ 0.51)
¾	0.875 (22.2)	± 0.003(±0.08)	0.080 (2.03)	+ 0.020 (+ 0.51)
1	1.125 (28.6)	± 0.003(±0.08)	0.102 (2.59)	+ 0.020 (+ 0.51)

1- ¼	1.375 (34.9)	± 0.003(±0.08)	0.125 (3.18)	+ 0.020 (+ 0.51)
1- ½	1.625 (41.3)	± 0.004(±0.10)	0.148 (3.76)	+ 0.020 (+ 0.51)
2	2.125 (54.0)	± 0.004(±0.10)	0.193 (4.90)	+ 0.023 (+ 0.58)

The pipes shall be smooth both from inside and outside and should be free from any defects. These pipes are with socketed ends and the jointing shall be solvent welded and solvent cement shall be as per cPVC pipe manufacturer's recommendation.

The pipes before laying should be properly cleaned. The pipes shall be cut to the required size by using pipe cutters ideal for CPVC pipe cutting as recommended by the manufacturer. The tube should be cut as squarely as possible to provide optimum bonding area within a joint. The joint shall be free of all burrs and filing both inside and outside. The laying and jointing for the pipes will follow the approved manufacturer's recommendation

1.1.4.2 Testing :

After laying and jointing, the pipes and fittings shall be inspected under working conditions of pressure and flow. Any joint found leaking shall be redone and all leaking pipes removed and replaced without extra cost.

The pipes and fittings after they are laid shall be tested to hydraulic pressure of 10 kg/sq.cm (100 meter). The test pump having been stopped, the test pressure should be maintained without loss for at least two hours without any drop in pressure. The pipes and fittings shall be tested in sections as the work of laying proceeds, keeping the joints exposed for inspection during testing.

1.1.4.3 Measurements:

The length shall be measured in running meter correct to 2 decimal. for the finished work, which shall include pipe and fittings such as bends, tees, elbows, reducers, crosses, plugs, sockets, nipples, unions and nuts, but exclude brass or gun metal tap (Cock), valves, lead connecting pipes and shower rose. The measurement shall be taken separately for internal and external work. The length shall be taken along the central line of the pipe fittings. All the pipes and fittings shall be classified according to their diameters, method of jointing and fixing substance, quality and finish. The diameter shall be nominal diameter of the internal bore. The length of pipe measured shall be considered as inclusive of all cuttings and wastage. In case of fittings of unequal bore, the largest bore shall be measured, length shall be inclusive of all fittings.

1.2 WATER SUPPLY FITTINGS

1.2.1. Forged Brass Ball Valve :

Ball valve is a valve with suitable means of connection for insertion in a pipe line for controlling or stopping the flow. The valve shall be operated with quarter turn lever made of aluminium alloy/mild steel. The body, bonnet and ball valve shall be of forged brass conforming to IS 6912 Gr. FLB. The body seat ring, thrust washer and gland packing shall be of PTFE. The valve shall have female threaded ends conforming to IS 554.

2.0 DRAINAGE

2.1. Soil, Waste, Rain-Water, Vent and Anti-Siphonage Pipes and Fittings :

2.1.1 All soil, waste and anti-siphonage pipes and fittings used within sunken floor areas or within plumbing shafts vertical run, shall be cast iron socket and spigot type pipe conforming to IS 3989 - 1984 or its subsequent revision. Cast Iron pipes and materials shall be of good and tough quality and dark grey on fracture. They shall be sound and nicely cast and shall be free from cracks, taps, pinholes and other manufacturing defects.

All C.I pipes shall bear the manufacturer's name and ISI mark to which it conforms. Jointing shall be done with polymer based compound having density around 1.95 gm/cc. The application is a cold mix done by homogeneously mixing the two pack system in cold condition as per manufacturer's instructions and recommendations.

2.1.2 Clean outs at the head of C.I. S/S horizontal pipes running under the floor shall be of cast brass screwed in type. Floor and wall clean outs shall be of cast brass screwed type. The connecting pieces shall be of G.I. threaded coupling to suit the clean out.

2.1.3 Where so specified in BOQ waste pipes from fittings like basins, urinals, sinks etc. can be of appropriate dia in rigid P.V.C. fittings jointed with solvent.

2.1.4. The sizes of branch waste pipes for different fittings shall be as follows :

Wash basin	-	40 dia O.D.
Urinal	-	40 dia O.D.
Sink	-	40 dia O.D.
Nahani Trap	-	75 dia I.D.

Special floor trap	-	75 or 100 dia as required With bolted aluminum grating in 25 x 25 m.s. angle
Wash troughs	-	50 dia O.D.
Canteen wash areas	-	40 mm dia O.D.

2.1.5. W.C. pan connectors shall be to suit the requirements as per drawing, with 40 dia. vent horn for connection to the anti-siphonage pipe. Pan connector shall be of C.I. or lead.

2.1.6. The floor traps for toilet blocks shall be cast iron with C.P. brass grating, bolted down design. The traps shall be provided with minimum water seals of 40 to 50 mm.

2.1.7. Where toilet slabs are sunk, the floor trap shall be of 100 x 75 heavy duty type C.I. 'P' trap, with C.P. grating.

2.2. Measurement:

All pipes shall be measured along linear length including length over the fittings. The lengths over the fittings shall be paid as extra over under relevant item. Traps, clean outs shall be enumerated.

3.0 SANITARY FITTINGS

All sanitary fittings shall be as specified in schedule of quantities and as approved by the Bank's Engineer.

3.1 Sanitary fitting include all fittings except water supply pipe and fittings, valves, drainage pipes and fittings. They will cover sanitary wares like W.C. pan. Wash basins, Urinals, Bidets as well as water supply faucets like Bib taps, stop cocks, showers, geysers, mixer faucets for showers and wash basins etc. They will also cover all accessories concerned with the above like seats for W.C.'s, traps, fixing brackets, waste couplings, flexible PVC or C.P. brass connectors pipes. Other toilet fixtures like coat hooks, towel rails, soap dish, toilet paper holders, napkin holders, mirrors, liquid soap containers etc. will also be covered under these.

3.2. All sanitary ware and CP fittings shall be conforming to IGBC Gold rating.

- 3.3. The items of sanitary fittings will be supply and fixing including all accessories
- 3.3.1 The supply items have to be complete including all accessories fixing screws, nuts and bolts, etc. The price should include all taxes, duties, insurance loading and transport charges upto delivery at site.
- 3.3.2. The contractor is required to supply the fitting, he should get the samples for approved the Bank's Engineer before ordering the same.
- 3.3.3 Every item fitting will be described in the Bills of quantities and will generally include the accessories as given in succeeding paragraphs (3.1.3.1 to 3.1.3.5) wherever reference to catalogue no is given for a sanitary fitting item it is with reference of recommended make Catalogues. In case a different make is supplied it should be equivalent to or nearer to the similar Catalogue No specified.
- 3.3.3.1 Water closet will include WC pan of specified pattern, S or P trap, seat and cover, flushing cistern or flush valve, water supply connector pipe and stop cock, flush pipe etc. as specified in the item including making water and drain connections. The closet shall be fixed with C.I. chair bracket with bolts for wall hung type.
- 3.3.3.2 Urinals will include set of Urinal of specified pattern, waste coupling, bottle traps, flush valve common flush tank and distributor pipe for a set of one, two or three urinals, stop cock and connector pipe etc.
- 3.3.3.3. Wash basin will include wash basin of specified pattern with concealed or open brackets, fancy pillar tap with trap, CP extension piece and wall flange stop cocks and connector pipes etc. including making water and drain connections. Waste pipe will be paid separately. For a counter top basin, size of counter, material and thickness shall be specified. The rate will include cutting the counter for fixing basin and making holes for pillar tap etc.
- 3.3.3.4 Sinks shall include the vitreous or stainless steel sink, with or without drain board, waste coupling, bottle trap or P trap. A stop cock, connector pipe and swan neck type pedestal tap may be included in the item. Drain pipe shall be paid separately.
- 3.4 **Water Test** : Test entire system or sections of system by closing all openings in piping except the highest opening and filling with water to the point of overflow. If the system is tested in sections, plug each opening except the highest opening of the section filled with water. Keep the water in system or in portion under test for atleast 45 minutes before inspection starts with test pressure/head lasting for two hours. The system must be tight at all joints.

3.5 **Measurement :**

Sanitary fittings shall be enumerated in Nos. and will include all the work specified in the respective items in the bill of quantities.

4.0 **HANGERS & SUPPORTS**

Hangers are provided to support water supply or drainage pipes when they run parallel to the ceiling in space

4.1 **General :** Proper solid angle iron / channel section, supports shall be provided for all pipes complete with clamps. Wherever insulations comes, wooden guide to support pipe on the angle iron hangers / supports, shall be provided. For attachment in concrete, "Dash" fasteners or Anchor plug tube inserts or equivalent shall be used. Hangers shall be provided within 90 mm of all changes in direction of main and minimum of three hangers per expansion band wherever shown in drawing. Any additional structural steel angles, channels or other members not specifically shown but are required for proper support, shall be provided.

4.2. Where necessary additional hangers to be provided to arrest water hammer or hydraulic resonance with proper rubber paddings.

4.3. Hangers, shall be spaced as noted below, except on all soil pipe which shall have a hanger of multiple fittings, sufficient no. of hangers shall be provided to maintain proper slope without sagging.

A. Pipe sizes in mm	Hanger Rod Dia
20 through 50	10 mm
65 through 125	12 mm
150 and above	15 mm

B. Pipe sizes	Spacing of supports
12 to 20 mm	1.5 m apart
25 to 40 mm	2 m apart
50 above	2 m apart

4.4 Provide floor stands, wall brackets or masonry piers etc. for all lines running near the floor or near walls as those line can be properly supported or suspended masonry

walls may be hung also by hangers carried from wall brackets as a higher level than pipes. Hanging of any pipe from another is prohibited.

- 4.5 Hanger : Clevis or band type hangers shall be provided. Hot water piping is to be provided with suspended supports as far as possible Note that strap hangers are not permitted and clamps should be of removal type.
- 4.6. Insulated Hot Water Piping : A 40 mm thick timber support for direct support of hot water line is required. Timber supports are to rest in brackets.
- 4.7. For pipes running in shafts can be also hung away from the wall by supporting on an angle projecting from the wall and the pipe fixed to the angle by `U` bolt and nut.

5.0 CLEANING OPERATION AND TESTS :

- 5.1 Plumbing equipment, fixtures, piping, etc shall be free of stamping, marking (except those required by codes) iron cuttings and other foreign materials.
- 5.2 Hot, cold and drinking water systems shall be cleaned thoroughly filled and flushed with water.
- 5.3 The entire mechanical apparatus shall operate at full capacity without objectionable noise or vibrations.
- 5.4 Test all plumbing systems in the presence of the Bank's Engineer as herein specified. Provide all equipment materials and labour necessary for inspection and tests and repair all work, which does not pass the tests. After repairs are made repeat test until the system is found satisfactory to the above authorities. Carry out tests prior to concealing, insulating or back filling over any piping. No exception will be made.
- 5.5 Test entire system of soil, waste and vent piping by water after the roughing in is completed and before the fixtures are set. After setting the fixture, provide smoke test, after sealing all traps.
- 5.9 The contractor shall arrange on his own initiative for tests during the progress of work to ensure that there are no defects in material / workmanship in portions of work to be concealed or embedded under the floor or walls in ceiling.

E: LIST OF APPROVED MAKES FOR PLUMBING WORKS

Unless otherwise mentioned any one of the approved makes or brands shall be allowed to be used. Other specified ISI mark may be allowed to be used if approved by the Bank's Engineer.

The contractors shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list. Final selection will be done with the approval of the Bank's Engineer.

APPROVED MAKES OR BRANDS:

	MATERIAL	NAME OF MANUFACTURER
1	C.I. SWR Pipes & fittings for Drainage (IS 3989)	Neco / Kapilansh/ Prince or Equivalent as approved by Bank's Engineer.
2	Polymer based compound for cast pipe jointing	Drip seal / M seal or Equivalent as approved by Bank's Engineer.
3	cPVC pipes for water supply	Ashirwad/ Ajay / Astral or Equivalent as approved by Bank's Engineer.
4	G.I. pipes	Tata / Jindal – Hissar or Equivalent as approved by Bank's Engineer.
5	C.I. Sluice valves	Kirloskar / IVC or Equivalent as approved by Bank's Engineer.
6	Ball valves	Itap / Zoloto / RB or Equivalent as approved by Bank's Engineer.
7	Butterfly valves	Itap / C&R / Audco or Equivalent as approved by Bank's Engineer.
8	Sanitary ware and CP fittings	Kohler/ Hindware/ Jaquar or Equivalent as approved by Bank's Engineer.
9	Pantry sink	Nirali/ franke/ Jaquar or Equivalent as approved by Bank's Engineer.
10	Toilet's accessories	Dolphy/ Jaquar or Equivalent as approved by Bank's Engineer.
11	Hand Dryer, Hand Sanitizer	Euronics/ Jaquar/ Dolphy or Equivalent as approved by Bank's Engineer.
12	Hair Dryer	Dolphy/euronics/ Phillips or Equivalent as approved by Bank's Engineer.
13	Show Shining Machine	Dolphy/euronics or Equivalent as approved by Bank's Engineer.

14	Water Heater	Racold/bajaj/ Parryware or Equivalent as approved by Bank's Engineer.
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F: TECHNICAL SPECIFICATIONS FOR FIRE FIGHTING

1.0 FIRE FIGHTING SYSTEM DESCRIPTION

- 1.1 The proposed work consists of renovation of 15th floor (including Digital Studio). There are existing fire shafts (2 nos) on the floor. Each fire shafts consists of wet riser, landing valve, hose reel drum and canvass hoses. The wet risers are in turn connected to fire pumps at the basement level. Entire fire system along with the fire fittings are in working condition. Hence there is no work for hydrant system envisaged for the project.
- 1.2 The existing sprinkler system is limited to upper basement, lower basement and ground floor entrance lobby. There is no sprinkler system provided for the upper floors. It is proposed to provide sprinklers inside entire 15th floor except the electrical room. The tapping for sprinkler system will be taken from the hydrant riser or sprinkler riser will be made available by the client inside the shaft.
- 1.3 The Hydrant System shall be kept pressurised all the times.
- 1.4 The automatic sprinkler system will also be under pressure all the time with sprinkler heads fixed against the outlets at appropriate places. The sprinkler heads are of fixed temperature type with a quartzoid bulb held in position by forged gunmetal yoke and a deflector. The quartzoid bulb contain liquid having high vapour pressure. Upon receiving heat, the vapour pressure inside the bulb increases rapidly and at the rated temperature, the bulb shatters and thereby opens the sprinkler head, permitting flow of water.

2.0 FIRE FIGHTING ACCESSORIES :

2.1 Piping.

- 2.1.1 Pipes of the following types (depending upon the description of item) shall be used:
- 2.1.2 G.I class 'C' pipes conforming to IS : 1239, ISI marked (Heavy grade) (for pipes of sizes 150 mm NB and below).

- 2.1.3 G.I pipes upto 50 mm dia shall have all fitting as per IS 1239, part II (heavy grade) while pipes above 150 mm dia shall be as per IS: 3589 inclusive of IS marking.
- 2.1.4 For G.I pipes upto 50 mm dia screwed jointing shall be adopted, while for pipes above 50 mm dia welded or flanged connections shall be used. Only Electro galvanized nuts/ bolts shall be used.
- 2.1.5 Hangers and supports shall be capable of carrying the sum total of all concurrently acting loads. They shall be designed to provide the required supporting effects and allow pipelines movements as necessary. All guides, anchors, braces, dampners, expansion joints and structural steel to be attached to the building / structure, trenches etc. shall be provided by the Contractor. Hangers and components for all piping shall be approved before fixing.
- 2.1.6 The piping system and components shall be capable of withstanding 150 per cent of the maximum working pressure. Pipes shall be pressure tested to hydrostatic test pressure of 14 kg /cm². The pressure shall be maintained for a period of two hours and there shall be no drop in pressure at the end of this period.
- 2.1.7 Flanged joints shall be used for connections to vessels, equipment, flanged, valves and also suitable straight lengths of pipeline lengths of pipeline of strategic points to facilitate erection and subsequent maintenance work.

2.2 Valves

- 2.2.1 Gate valves / Butterfly valves will be used for isolation of flow in pipe lines. For sizes upto 50 mm gate valves shall be used and they shall be of the outside screw rising spindle type and shall be as per IS : 778. For sizes 80 mm and above butterfly valve shall be used.
- 2.2.2 Gate valve shall be provided with a hand wheel, position indicator, bypass valve, draining arrangement of seat valve and locking facility (as required). Gate valves shall have back setting bush to facilitate gland renewal during full open condition.
- 2.2.3 Non-return valves shall be cast iron wafer swing check type. An arrow mark in the direction of flow shall be marked on the body of the valve. These valves shall conform to IS : 5312. The flap shall be cast iron and flap seat ring of loaded gun metal.
- 2.2.4 Valves below 50 mm size shall have to be screwed ends while those of 50 mm and higher sizes shall have flanged connections. Drain lines will have valves for draining.

2.3 Pressure Gauge.

- 2.3.1 The Pressure Gauge shall be constructed of die cast aluminium and stove enamel. It shall be weather proof with an IP 55 enclosure. It shall be stainless steel Bourden type Pressure Gauge glycerine filled, with a scale range from 0 to 16 Kg / CM square and shall be constructed as per IS: 3624.

2.4 Painting.

- 2.4.1 All Hydrant and Sprinkler pipe shall be painted with post office red colour paint. The pipes shall be painted with one coat of Zinc Chromate primer and two coats of enamel paint.

2.5 SPRINKLERS

- 2.5.1 Pendent type Sprinkler Head.
- 2.5.2. Sprinkler heads shall be quartzoid bulb type with bulb, valve assembly yoke and the deflector. The sprinkler shall of approved make and type with 15 mm nominal dia outlets.
- 2.5.3 The bulb shall be made of corrosion free material strong enough to withstand any water pressure likely to occur in the system. The bulb shall shatter when the temperature of the surrounding air reaches to 68 degree C.
- 2.5.4 The nominal bore shall be 15 mm dia colour of liquid shall be Red.
- 2.5.5 The Sprinkler head shall be approved by FOC/UL/FM

3.0 Codes & Standards

The following codes and standards and their subsequent modification shall be applicable.

- 3.1 IS 1648 - 1961 : - Code of practice for fire safety of buildings (general) fire fighting equipment and its maintenance.
- 3.2 IS 3844 - 1966 :- Code of practice for installation of internal Fire Hydrants in Multi-storied Buildings.
- 3.3 IS : 554 Dimensions for pipes threads where pressure tight joints are required on the threads.

- 3.4 IS : 638 Sheet rubber jointing and rubber insertion jointing.
- 3.5 IS : 778 Copper alloy gate , globe and check valves for water work purposes.
- 3.6 IS : 780 Sluice valves for water – works purposes (50 mm to 300 mm).
- 3.7 IS : 901 Couplings double male and double female, instantaneous pattern for fire fittings.
- 3.8 IS : 1239 Mild steel tubes, tubular and other wrought (Part I & II) steel fittings,
- 3.9 IS : 884 Swinging type wall mounted hose reel with drum.
- 3.10 IS : 388 Hose tubing.
- 3.11 IS : 4038 Foot valves for water – works purposes.
- 3.12 IS 5290 Landing valves.
- 3.13 IS : 10221 Anti corrosion treatments for under ground MS pipes.
- 3.14 IS : 5312 Swing check type reflux (non- return) valves.
- 3.15 IS : 636 – 1988 Fire Fighting Delivery hose.
- 3.16 IS : 903 - 1984 : Specification for Fire Hose, Delivery Coupling, Branch pipe, Nozzles.
- 3.17 IS : 12469 : Pumps
- 3.18 Rules for Automatic sprinkler installation & Tariff advisory Committee.
- 3.19 Standards as accepted by Local Fire Brigade.
- 3.20 Tariff advisory committees rules.
- 3.21 NFPA : 12 , 1993 : Standards on Carbon Dioxide Extinguishing System
- 3.22 IS : 636 : Non-percolating flexible fire fighting delivery hose
- 3.23 IS : 884 : Specification for first aid hose reel for fire fighting.
- 3.24 IS : 901 : Specification for couplings, double male and double female, instantaneous pattern for fire fighting.
- 3.25 IS : 902 : Suction hose couplings for fire fighting purposes.

- 3.26 IS : 903 : Specification for fire hose delivery couplings, branch pipe, nozzles and nozzle spanner.
- 3.27 IS : 904 : Specification for 2-way and 3-way suction collecting heads for fire fighting purposes.
- 3.28 IS : 907 : Specification for suction strainers, cylindrical type for fire fighting purposes.
- 3.29 IS : 908 : Specification for fire hydrant, stand post type.
- 3.30 IS : 909 : Specification for underground fire hydrant, sluice valve type.
- 3.31 IS : 910 : Specification for portable chemical foam fire extinguisher.
- 3.32 IS : 933 : Specification for portable chemical foam fire extinguisher.
- 3.33 IS : 1648 : Code of practice for fire safety of building (general) : Fire fighting equipment and its maintenance.
- 3.34 IS : 2171 : Specification for portable fire extinguishers dry powder (catridge type)
- 3.35 IS : 2190 : Selection, installation and maintenance of first aid fire extinguishers – Code of practice.
- 3.36 IS : 2871 : Specification for branch pipe, universal, for fire fighting purposes.
- 3.37 IS : 2878 : Specification for fire extinguishers, carbon dioxide type (portable and trolley mounted).
- 3.38 IS : 3844 : Code of practice for installation and maintenance of internal fire hydrants and hose reel on premises.
- 3.39 IS : 5290 : Specification for landing valves.

- 3.40 IS 5714 : Specification for coupling, branch pipe, nozzle, used in hose reel tubing for fire fighting.
- 3.41 IS : 8423 : Specification for controlled percolation type hose for fire fighting.
- 3.42 IS : 10658 : Specification for higher capacity dry powder fire extinguisher (trolley mounted).
- 3.43 IS : 11460 : Code of practice for fire safety of libraries and archives buildings.
- 3.44 IS : 1309 : External hydrant systems – Provision and maintenance – Code of practice.
- 3.45 IS : 5514 (Parts 1 to 7) : Reciprocating internal combustion engines : Performance.

G: LIST OF APPROVED MAKES OR BRANDS FOR FIRE FIGHTING WORKS

Unless otherwise mentioned any one of the approved makes or brands shall be allowed to be used. Other specified ISI mark may be allowed to be used if approved by the Bank's Engineer.

The contractors shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list. Final selection will be done with the approval of the Bank's Engineer.

Contractors shall specify for what brand they have quoted in case there is a large variation in the rates of different approved brands.

	MATERIAL	NAME OF MANUFACTURER
1.	Pipe	Tata, Jindal (Hissar) or Equivalent as approved by Bank's Engineer.
3.	Pipe fittings	Unik/ Jainsons or Equivalent as approved by Bank's Engineer.
4.	Ball valves	Itap / Zoloto / RB or Equivalent as approved by Bank's Engineer.
5.	Pressure switch	Indfoss, System Sensor or Equivalent as approved by Bank's Engineer.
6	Pressure Gauges	Fiebig / H. Guru or Equivalent as approved by Bank's Engineer.
7	Enamel Panting of pipes etc.	Asian (Adcolite Only) / GoodlasNerolac / ICI or Equivalent as approved by Bank's Engineer.
8	Paint Primer	Asian / Jenson Nicholson. or Equivalent as approved by Bank's Engineer.
9	Dash Fasteners	Fisher, Hilti , Shakti or Equivalent as approved by Bank's Engineer.

10	Sprinkler Heads	Tyco, HD or Equivalent as approved by Bank's Engineer.
11	Butterfly Valve	Honeywell / RB or Equivalent as approved by Bank's Engineer.
12	Fire man Axe	Newage, Safeguard or Equivalent as approved by Bank's Engineer.
13	Fire Extinguishers	Kanex / Minimax or Equivalent as approved by Bank's Engineer.
14	WELDING RODS	AdvaniOerlikon / Esab or Equivalent as approved by Bank's Engineer.

H: TECHNICAL SPECIFICATIONS FOR HVAC SYSTEMS

Tenderer shall submit the following documents received from OEM along with supply of materials specified in this section.

Operating manual.

- a. Installation manual.
- b. OEM test certificates along with drawings, installation instructions etc.
- c. Drain hose pipe/ Clamp metal/ Washer fixing plate/ Sealing pads/ Clamps/ Screws/ Washer for hanging bracket/ Insulation for fittings.
- d. Any other documents received from OEM towards supply, installation, testing and commissioning of all HVAC units.

The above documents shall be verified/ tested after delivery at site and the same shall be handed over to Bank. Spares of respective units can be used as per requirement.

1. SHEET METAL WORK

FACTORY FABRICATION AS PER SMACNA STANDARDS

1. SCOPE

The scope of this section comprises supply fabrication, installation and testing of all sheet metal / aluminium ducts, supply, installation, testing and balancing of all grilles, grills and diffusers. All to be in accordance with these specifications and the general arrangement shown on the Drawings

2. DUCT MATERIALS

1. RAW MATERIALS

Galvanizing shall be Class VII – light coating of zinc, nominal 180gm/sq.m surface area and Lock Forming Quality prime material along with mill test certificates. In addition, if deemed necessary, samples of raw material, selected at random by owner's site representative shall be subject to approval and tested for thickness and zinc coating at contractor's expense.

2. GAUGES, BRACING BY SIZE OF DUCTS

All ducts shall be fabricated from galvanized steel / aluminium of the following thickness, as indicated as below:

2.1 For Ducts with external SP upto 250 Pa

Rectangular	Pressure 250 Pa		
Ducts G. S.	Duct Section Length 1.2 m (4 ft)		
Maximum Duct Size	Gauge	Joint Type	Bracing Spacing
1-750 mm	26	C & S/ SS	Nil
751 – 1000 mm	26	4 Bolt Transverse Duct Connector- (TDC) / Slip-on E	Nil
1001 – 1200 mm	24	4 Bolt TDC / Slip-on E	Nil
1201 – 1500 mm	24	4 Bolt TDC / Slip-on F	Nil
1501 – 1800 mm	22	4 Bolt TDC / Slip-on H	Nil
1801 – 2100 mm	20	4 Bolt TDC / Slip-on I	Zeebar Stiffener 1-S
2101 – 2700 mm	18	4 Bolt TDC / Slip-on I	Zeebar Stiffener 1-S

'C'-cleat; 'S'-S cleat; 'SS'-Standing S cleat;

*Distance of reinforcement/bracing from each joint. Bracing material to be same as of material used for joining of duct sections.

For aluminium ducts material shall be one commercial gauge higher with 22 G as minimum.

3. FABRICATION STANDARDS & EQUIPMENT

All duct construction and installation shall be in accordance with SMACNA standards. In addition, ducts shall be factory fabricated utilizing the following machines to provide the requisite quality of ducts.

1. Coil (Sheet metal in Roll Form) lines to facilitate location of longitudinal seams at corners/folded edges only, for required duct rigidity and leakage free characteristics. No longitudinal seams permitted along any face side of the duct.
2. All ducts, transformation pieces and fittings to be made on CNC profile cutter for requisite accuracy of dimensions, location and dimensions of notches at the folding lines.
3. All edges to be machine treated using lock formers, flanges and rollers for turning up edges.

4. DUCT CONSTRUCTION

All ducts shall be fabricated in factory as per drawing / layout and installed in workman like manner, conforming to relevant SMACNA codes.

Ducts so identified on the Drawings shall be acoustically lined and insulated from outside as described in the section "Insulation" and as indicated in schedule of Quantities. Duct dimensions shown on drawings, are overall sheet metal dimensions inclusive of the acoustic lining where required and indicated in Schedule of quantities. The fabricated duct dimensions should be as per approved drawings and care should be taken to ensure that all connecting sections are dimensionally matched to avoid any gaps.

Ducts shall be straight and smooth on the inside with longitudinal seams shall be airtight and at corners only which shall be either Pittsburgh or snap button as per SMACNA practice, to ensure airtightness.

All ducts up to 75cms width within conditioned spaces shall have slip and drive (C & S/SS) joints. The internal ends of slip joints shall be in the direction of airflow. Care should be taken to ensure that S/SS Cleats are mounted on the longer side of the duct and Cleats on the shorter side. Ducts and accessories within ceiling spaces, visible from air-conditioned areas shall be provided with two coats of mat black finish paint.

Changes in dimensions and shape of ducts shall be gradual (between 1:4 and 1:7). Air-turns (vanes) shall be installed in all bends and duct collars designed to permit the air to make the turn without appreciable turbulence.

Ducts shall be fabricated as per details shown on Drawings. All ducts shall be rigid and shall be adequately supported and braced where required with standing seams, tees, or angles, of ample size to keep the ducts true to shape and to prevent buckling, vibration or breathing.

All sheet metal connection, partitions and plenums, required to confine the flow of air to and through the filters and fans, shall be constructed of 18-gauge GSS / 16gauge aluminium, thoroughly stiffened with 25mm x 25mm x 3mm galvanized steel angle braces and fitted with all necessary inspection doors as required, to give access to all parts of the apparatus. Access doors shall be not less than 45cm x 45cm in size.

Plenums shall be shop/factory fabricated panel type and assembled at site. Fixing of galvanized angle flanges on duct pieces shall be with rivets heads inside i.e. towards GS sheet and riveting shall be done from outside.

Self-adhesive Neoprene rubber / UV resistant PVC foam lining 5mm nominal thickness instead of felt, shall be used between duct flanges and between duct supports in all ducting installation.

5. INSTALLATION PRACTICE

All ducts shall be installed generally as per tender drawings, and in strict accordance with approved shop drawings to be prepared by the Contractor:

The Contractor shall provide and neatly erect all sheet metal work as may be required to carry out the intent of these Specifications and Drawings. The work shall meet with the approval of Bank's Engineer in all its parts and details

b) All necessary allowances and provisions shall be made by the Contractor for beams, pipes, or other obstructions in the building, whether or not the same are shown on the drawings. Where necessary to avoid beams or other structural work, plumbing or other pipes, and conduits, the ducts shall be transformed, divided or curved to one side (the required area being maintained) all as per the site requirements.

If a duct cannot be run as shown on the drawings, the contractor shall install the duct between the required points by any path available in accordance with other services and as per approval of Bank's Engineer and Architect.

All ductwork shall be independently supported from building construction. All horizontal ducts shall be rigidly and securely supported, in an approved manner, with trapeze hangers formed of galvanized steel rods and galvanized steel angle/channel or a pair of brackets, connected by galvanized steel rod under ducts. **The spacing between supports should be not greater than 2.0 meter.** All vertical ductwork shall be supported by structural members on each floor slab. Duct supports may be through galvanized steel insert plates left in slab at the time of slab casting. Galvanized steel cleat with a hole for passing the hanger rods shall be welded to the plates. Trapeze hanger formed of galvanized steel rods shall be hung through these cleats. Wherever use of metal insert plates is not feasible, duct support shall be through dash/anchor fastener driven into the concrete slab by electrically operated gun. Hanger rods shall then hang through the cleats or fully threaded galvanized rods can be screwed into the anchor fasteners.

Ducting over furred ceiling shall be supported from the slab above, or from beams after obtaining approval of Bank's Engineer and Architect. In no case shall any duct be supported from false ceiling hangers or be permitted to rest on false ceiling. All metal work in dead or furred down spaces shall be erected in time to occasion no delay to other contractor's work in the building.

Where ducts pass through brick or masonry openings, it shall be provided with 25mm thick TF quality expanded polystyrene around the duct and totally covered with fire barrier mortar for complete sealing.

All ducts shall be totally free from vibration under all conditions of operation. Whenever ductwork is connected to fans, air handling units or blower coil units that may cause vibration in the ducts, ducts shall be provided with a flexible connection, located at the unit discharge. Flexible connections shall be constructed of fire retarding flexible heavy canvas sleeve at least 10cm long securely bonded and bolted on both sides. Sleeve shall be made smooth and the connecting ductwork rigidly held by independent supports on both sides of the flexible connection. The flexible connection shall be suitable for pressure at the point of installation.

Duct shall not rest on false ceiling and shall be in level from bottom. Taper pieces shall taper from top.

6. DAMPERS

- a. Dampers: All duct dampers shall be opposed blade louver dampers of robust 16 G GSS construction and tight fitting. The design, method of handling and control shall be suitable for the location and service required.
- b. Dampers shall be provided with suitable links levers and quadrants as required for their proper operation. Control or setting device shall be made robust, easily operable and accessible through suitable access door in the duct. Every damper shall have an indicating device clearly showing the damper position at all times.
- c. Dampers shall be placed in ducts at every branch supply or return air duct connection, whether or not indicated on the Drawings, for the proper volume control and balancing of the air distribution system.
- d. Dampers shall be provided with neoprene rubber gaskets, nuts, bolts, screw linkage, flanges, supports, MS channels etc complete in all respect as per site requirement.

7. FUSIBLE LINK FIRE DAMPER

Fusible link fire damper shall be fabricated by using Galvanised Steel Sheet construction, 16G GI casing and 16G GI blades 150 mm wide, 3 V type in 165 mm casing complete with chrome plated spindles ,self-lubricating bushes,120 minutes fire rating as per UL-555, Aug 1995 certified by CBRI. The damper is held open by a replaceable fusible link rated at 74 C (U.L. stamped)

- a. Whenever a supply/return duct crosses from one fire zone to another, it shall be provided with approved fusible link fire damper of at least 2 hours fire rating as per UL555/1995 tested by CBRI (Central Building Research Institute). This shall be fusible link type fire damper.
- b. Fire damper blades shall be one piece folded high strength 16 gage galvanized steel construction. In normal position, these blades shall be gathered and stacked at the frame head providing maximum air passage and preventing passing air currents from creating noise or chatter. The blades shall be held in position through fusible link of temp 70 deg C.
- c. In case of fire, the intrinsic energy of the folded blades shall be utilized to close the opening. The thrust of the suddenly released tension shall instantly drive the blades down and keep it down without the use of springs, weights or other devices subject to failure.
- d. Fire damper sleeves and access doors shall be provided within the duct in accordance with the manufacturer's recommendation.
- e. The contractor shall also furnish to the Bank, the necessary additional fusible links (spares), as recommended by the manufacturer, at the time of commissioning of the installation.

8. SUPPLY AND RETURN AIR GRILLES – Design and placement shall be as per Architecture direction.

Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m³, with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc.

Supply & return air grilles shall be of either steel or aluminium sections as specified in schedule of quantities. Steel construction grill shall have primer Coat finish whereas extruded aluminium grilles shall be either Anodized or Powder Coated as specified in Schedule of Quantities. These grills shall have individually adjustable louvers both horizontal and vertical. Supply air grill shall be provided with key operated opposed blade extruded aluminium volume control damper anodized in matt black shade.

The grilles shall be suitable for fixing arrangement having concealed screws as approved by Architect. Linear continuous supply cum return air grill shall be extruded aluminium construction with fixed horizontal bars at 15 Deg. inclination & flange on both sides only (none on top & bottom). The thickness of the fixed bar louvers shall be minimum 5.5 mm in front and 3.8 mm in rear with rounded edges. Flanges on the two sides shall be 20 mm/30 mm wide as approved by Architect. The grills shall be suitable for concealed fixing. Volume control dampers of extruded aluminium anodized in black color shall be provided in supply air duct collars. For fan coil units horizontal fixed bar grilles as described above shall be provided with flanges on four sides, and the core shall be & suitable for clip fixing, permitting its removal without disturbing the flanges.

- a. All grills shall be selected in consultation with the Architect. Different spaces shall require horizontal or vertical face bars, and different width of margin frames. These shall be procured only after obtaining written approval from Architect for each type of grill.
- b. All grills shall have a soft continuous rubber/foam gasket between the periphery of the grill and the surface on which it has to be mounted. The effective area of the grills for air flow shall not be less than **66 percent** of gross face area.
- c. Grills specified with individually adjustable bars shall have adjustable pattern as each grille bar shall be pivot able to provide pattern with 0 to +45-degree horizontal arc and up to 30-degree deflection downwards. Bars shall hold deflection settings under all conditions of velocity and pressure.
- d. Bar longer than 45 cm shall be reinforced by set-back vertical members of approved thickness.
- e. All volume control dampers shall be anodized aluminium in mat black shade.
- f. In case of continuous grilles / diffusers, dummy grilles shall be blanked-off using GI sheet duly painted black.
- g. All square / rectangular diffusers, slot diffusers to have insulated plenum installed above dampers from OEM factory & not to be constructed at site.

9. TESTING AND BALANCING

After the installation of the entire air distribution systems completed in all respects, all ducts shall be tested for air leaks by visual inspection as per SMACNA standards.

The entire air distribution system shall be balanced using an anemometer. Measured air quantities at fan discharge and at various outlets shall be identical to or less/excess than 5 percent in excess of those specified and quoted. Branch duct adjustments shall be permanently marked after air balancing is completed so that these can be restored to their correct position if disturbed at any time. Complete air balance report shall be submitted for scrutiny and approval to Bank's Engineers and Architect. Approved copies of four copies of the approved air balance report shall be handed over to Bank after completion of the job .

shall be by means of flexible canvas Connections.

2. INSULATION

Acoustical Insulation

Acoustical Insulation for Ducts

All connecting ducts to Package Units / AHUs shall be soundproof insulated to a distance of 6 m or as specified or as shown on the design.

Acoustical insulation shall be 25 mm thick Nitrile Rubber Insulation having density of 48 kg/m³

Application

1. Clean all internal duct surfaces
2. Pre-cut the insulation to the size desired, allowing 25 mm/15 mm excess at downstream joints.
3. Install self-adhesive pins spaced along the inner face of duct. The pins should start within 75 mm of upstream transverse edges of the liner and 75 mm from longitudinal joints and should be placed at a maximum of 300 mm on centers around the perimeter of the duct, except that there may be a maximum of 300 mm from a corner break.
4. Apply coat of Foster Duct as Adhesive 81 - 22 on the duct surfaces as per manufacturer's recommendations.
5. Impale insulation through the pins and assure insulation is stuck to the adhesive.
6. Fix self-retaining washers on to the pins. Do not compress insulation more than 3 mm.
7. Bend the pins so as to prevent protrusions or tears
8. It is recommended that all exposed leading edges & joints be coated with Foster Duct as Adhesive 81 - 22.

Application

1. Fix 25 mm x 25 mm GI / Al. angle frame at 600 mm centres.
2. Fix insulation + BGT & finish with 24G perforated aluminum sheets.

3. VENTILATION

Scope:

Scope of work under this section comprises the supply, erection, testing and commissioning of the ventilation / exhaust system of the capacities set forth in the Schedule of Equipment.

All fans shall be static and dynamically balanced.

INLINE FAN

Fans shall be 'Buffalo' or equivalent, non-overloading type. The fan C.F.M. static pressure, class arrangement, width, direction of rotation, mode of discharge, etc. shall be as indicated in the Schedule of Equipment and in the applicable drawings or as required.

The scroll shall be manufactured from hot dip galvanized sheet steel with side plates of Aero-dynamic profile.

Fans shall be provided with stationary inlet vanes as a standard accessory. Movable inlet vanes shall be provided only where specified for automatic control. Movable inlet vanes shall be complete with necessary linkages for actuation by automatic controls.

Fans shall also be provided with heavy duty outlet dampers mounted in a separate frame, wherever required.

All Class I fans shall be provided with sleeves bearing with generous oil reservoir, drain plug, oil level indicator, etc. Class II and III fans shall be provided with heavy duty ball bearings pre-greased & self-aligning.

Fans shall be driven by electric motor as specified in the Schedule of Equipment. Motor ratings are only tentative and where a fan requires a higher capacity motor, the Contractor shall clearly point out the requirements and make his offer accordingly. Motor ratings shall be at least 5% over limit load plus transmission losses.

Exhaust fans handling corrosive fumes shall be made of non-corrosive materials or coated with corrosion resistant paints with epoxy of chlorinated rubber base.

AXIAL FAN

Units shall be complete factory assembled, tested and of approved manufacturers.

Fans shall be driven by an electric motor as specified in the Schedule of Equipment. Motor ratings are only tentative and where a fan requires a higher capacity motor, the Contractor shall clearly point out the requirements and make his offer accordingly. Motor ratings shall be at least 5% over transmission losses. Motor Should be IE-3.

Fan shall have limit switch with Aluminium wire guard to shut off the fan.

DOL STARTER PANEL

- starters consist of contactors & relays. The relay is directly mounted on the contactor. The colour of the sheet steel enclosure is two-toned. The box is powder coated and grey in colour. The cover is powder coated with ivory colour. The push button is flush mounted in an enclosure cover.
- Type : Electromagnetic Contactor
3 Pole + N/O Auxiliary
- Frequency: 50Hz AC
- Utilization Category: AC3 3.5 kW 230V Three-phase.
- Full load current rating: 0.4 - 16 Amps in 10 size ranges.
- Rated Insulation Voltage: Ui: 660V AC
- Single Phase protected.
- Temperature Compensated: From 0 - 35°C.
- Manual or Auto Reset.
- Manual Test Incorporated.
- Rated Insulating Voltage: 500V AC
- Rated Operational Current Ie: AC11 2A 500V

Testing and Balancing

After the installation of the entire system is completed in all respects, system shall be tested & balanced for required performance. Fan shall be tested for the performance and test results shall be furnished.

Installation

Fan shall be provided by means ceiling mounting provision in the existing fire shaft along with required hard ware materials etc based on the site requirement Vibration eliminators shall be provided with an efficiency of not less than 80%. Fan inlet and outlet connections shall be by means of flexible canvas Connections.

4. VAV TERMINAL BOXES

A.VAV Terminal Box: Heavy duty 22-gauge ,120GSM coating casing construction with circular inlet spigot. Industry standard inlet collars with rectangular outlet connection. Internally lined casing utilizing open cell elastomeric nitrile foam rubber, fibre free, super silent & micro ban resistant. Round damper blade constructed of elastomeric gasket sandwiched between two heavy duty 22-gauge galvanized steel plates, resulting low air leakage. High quality industrial polymer bearings for shaft featuring position indicator for easy identification of damper angle. Standard flange connection on discharge plenum.

B. Cross flow sensor : Multipoint averaging cross flow sensor should be designed to amplify pressure signals to improve “K” factor of VAV. This to facilitate precise air flow reading (max. tolerance +/- 5%). VAV manufacture should provide appropriate chart on demand.

C. Controller: Fully programmable Controller with 4# universal input and 4# universal output shall be suitable for BACnet/MSTP protocol . Tested & certified by BACnet Test

Laboratories (BTL). Controller shall have provision to accept signal from multiple thermostat or sensor and operate on average temperature.

D. Temperature Sensor/Thermostat:

Option i) Digital room thermostat should have backlight for LCD and button illumination. Digital temperature sensor accuracy should be ± 0.2 ° C.

Option ii) Digital room thermostat should have multicolour backlight for LCD to show different colours for cooling, heating and unoccupied mode.

E. Pressure sensor: The integral differential pressure sensor should have higher accuracy of $\pm 2\%$ with operating range of 0-500 Pa.

F. Calibration & Testing : All the VAVs should be calibrated dynamically on live wind tunnel for designed air flow rate. Air flow measuring apparatus of wind tunnel should follow ASHRAE standards with $\pm 2\%$ accuracy. Wind tunnel instrumentation should be capable of maintaining constant pressure, while testing the VAV for designed air flow rate. Manufacturer should submit VAV calibration & test report of all VAVs supplied for the project. It should consist of all the necessary information like, set air flow rate (min.& max.), actual air flow rate , system pressure, damper position etc.

3. Touchscreen:

Touch screen should have high resolution, wide-screen format, and color LCD use for interfacing. Touch-screen should be support BACnet/MSTP and BacNet/ Ethernet for communication and user created real time graphics allow the complete customized for given application, displaying acknowledge alarms. It can be wall or panel mounted in electrical room as well as public spaces.

4. System Integrator :

The Router should be fully programmable, Native BACnet® Building Controller designed for BACnet routing applications. The router should be capable of connecting BACnet networks that communicate on Twisted-Pair Ethernet using BACnet IP. Necessary hardware to transfer following 4 points (minimum) to Third party BMS software system should be considered:-

- a. Room Temperature
- b. Set Temperature
- c. Airflow
- d. Damper Position.

5. Cables: Cables used for VAV-to-VAV communication should be of 0.5 sqmm 2 core shielded. Cables must be connected to controllers in the daisy chain topology. Cable length must not be exceeding 1000 meters. A network segment consists of multiple controllers (up to 32) connected with a cable.

5. ELECTRONIC AIR FILTRATION SYSTEM

General

It is the intent of the specification to incorporate highly efficient electronic air filtration system with low pressure drops into the building AHU system.

All AHU's shall be fitted with a true electronic air cleaner system (complete with washable pre-filter, charging section and collector section) to be installed before the cooling coils. Other forms of air filtration systems such as charged media filters, dielectric media filters, or ionizers (which do not have second stage collector plates) shall not be acceptable. The electronic air cleaner (EAC) shall be capable of removing particulates as small as 0.01 microns including microscopic haze particles, smoke, dust, mould spores and bacteria.

Approvals / Code Requirements

The EAC shall be Underwriter Laboratories (UL) Listed for safety under AGGZ category. The EAC shall also be EMC (Electromagnetic compatibility) certified. Full documentation must be submitted to confirm compliance to the above requirements.

Ozone level of EACs provided must be within the acceptable limit of 0.05ppm.

Tenderers must also provide a test report to confirm conformance.

The EAC's shall have an efficiency of at-least 90% on Microbials. Tenderers must also provide a test report to confirm conformance.

Safety Provisions

Each EAC cell shall have their automatic interlock switch which disconnects power and discharges the cell when the access door is opened. In addition, the EAC shall be capable of interlocking when disconnecting the power to each individual EAC unit, or when the AHU fan is not running.

A high voltage test button shall be provided for each individual high tension power supply unit to indicate the presence of high voltage on the electronic cells. An overall test button for a group of power supply units to provide a general indication of high-tension voltage is not approved.

Performance / Reliability Requirements

The average capacity of the EAC shall be at least 1000cfm for the single cell unit and 2000cfm for the double cells unit.

The EAC filtration to be certified as MERV13 or above as per ASHRAE 52.2 from a reputed laboratory.

The solid state power supply shall provide dual voltage to the ionizer and collector section. The voltage to the ionizer shall be atleast 8000V DC to create an intense electrostatic field to allow maximum transfer of electrical charge from the ionizing wires to air particles. The voltage to the collector shall be atleast 4000V DC.

The entire Filtration system shall be washable and reusable without need for replacements. Electrostatic media filters that collect particles on disposable media pads shall not be acceptable.

The average initial pressure differential drop across the entire filtration system shall not exceed 75 pa at 2000cfm and 2.5 m/s airflow. The ionizing wires and collector plates shall be integrated within one pack. It shall be washable for repeated use. A washable aluminium mesh prefilter shall be provided at the inlet to trap all larger sized particles. Pre Media-Filter should not acceptable nor needed in filtration system of AHU.

Filter cells shall be universal to allow for a single inventory of filters as spare parts.

The EAC shall be completed with Hot- dipped Galvanized cabinet to protect against rust, heavy duty commercial used electronic cells, solid state power supply, protective screen and prefilter. A washable aluminium mesh prefilter shall be provided at the inlet to trap all larger sized particles.

The EAC shall have the capability for the optional addition of activated carbon (Charcoal) filter. The activated carbon filter shall be able to reside into the EAC cabinet as and when necessary; no modification for the initial installation shall be allowed.

Diagnostics / Interfacing to Building Management System

The EAC shall have the capability of interface with the building management system through a Solid State Performance Indicator (SSPI). Any system which uses separate DP switch for pressure across EAC's will not be accepted. The following status shall be allowed for remote monitoring by the building management system as common fault:

Any malfunction of the system that shall cause an alarm activation (CHECK)

Excessive dirt accumulation in the collector cells that could result in the reduction of the EAC performance (WASH)

The EAC shall have local LEDs at each individual unit to indicate the above status and it shall be able to provide in addition a signal to link-up with the building management system for monitoring.

Submission of Compliance Documentation

Tenderers must submit a Clause-by-Clause Compliance Summary and provide full documentation/technical literature/data sheets/reports to confirm compliance for each clause. Please also submit a project reference list.

6. VARIABLE FREQUENCY DRIVES FOR HVAC SYSTEMS

General Requirements

- a. This specification covers complete variable frequency drives (VFDs) designated on the drawing schedules to be variable speed. All standard and optional features shall be included within the VFD.
- b. The frequency converter shall not be a general-purpose product, but a dedicated HVAC engineered product.
- c. The VFD and its options shall be factory mounted and tested as a single unit under full load before dispatch.
- d. The VFD shall be tested to UL 508C. The appropriate UL label shall be applied.
- e. The VFD shall be CE marked and conform to the European Union Electro Magnetic Compatibility directive.
- f. The VFD shall be UL listed for a short circuit current rating of 100kA and labeled with this rating.

Technical Requirements

- a. The VFD shall convert incoming fixed frequency three-phase AC power into an adjustable frequency and voltage for controlling the speed of three-phase AC motors. The motor current shall closely approximate a sine wave. Motor voltage shall be varied with frequency to maintain desired motor magnetization current suitable for the driven load and to eliminate the need for motor derating.
- b. VFD shall allow the motor to produce full rated power at rated motor voltage, current, and speed without using the motor's service factor. VFDs utilizing sine weighted/coded modulation (with or without 3rd harmonic injection) must provide data verifying that the motors will not draw more than full load current during full load and full speed operation.
- c. VFD shall be installed within panel, suitable for operating conditions.
- d. The VFD shall include an input full-wave bridge rectifier and maintain a fundamental (displacement) power factor near unity regardless of speed or load.
- e. VFD shall be with chokes / harmonic filters to maintain THiD as per IEC61000-3
- f. IEEE519, 1992 recommendations shall be used for the basis of calculation of total harmonic distortion (THD) at the point of common coupling (PCC). On request VFD manufacturer shall provide THD figures for the total connected load for project electrical single line diagram. Input information like transformer rating, impedance, short circuit current, short circuit impedance, cable sizes and lengths etc. shall be made available to VFD vendor. Cost of such analysis shall be included.
- g. All VFDs shall contain integral EMC Filters to attenuate Radio Frequency Interference conducted to the AC power line. The VFDs shall comply with the emission and immunity requirements of IEC 61800-3:2004, Category C1 with 50m motor cable (unrestricted distribution). The suppliers of VFDs shall include additional external EMC filters, if required, to meet compliance with this requirement. In the case of external EMC filters, OEM shall include necessary certification from authorized laboratory. Self-certification / declaration shall not be acceptable.

- h. The VFD's full load output current rating shall meet or exceed the normal rated currents of standard IEC induction motors. The VFD shall be able to provide full rated output current continuously, 110% of rated current for 60 seconds.
- i. The VFD shall provide full motor torque at any selected frequency from 20 Hz to base speed while providing a variable torque V/Hz output at reduced speed. This is to allow driving direct drive fans without high-speed de-rating or low speed excessive magnetization, as would occur if a constant torque V/Hz curve was used at reduced speeds.
- j. A programmable flux optimization / Automatic energy optimization selection feature shall be provided as standard in the VFD. This feature shall automatically and continuously monitor the motor's speed and load to adjust the applied voltage to maximize energy savings.
- k. The VFD must be able to produce full torque at low speed to operate direct driven fans.
- l. Output power circuit switching shall be able to be accomplished without interlocking or damage to the VFD.
- m. Motor Identification algorithm shall measure motor stator resistance and reactance to optimize performance and efficiency. It shall not be necessary to run the motor or de-couple the motor from the load to perform the test.
- n. Galvanic isolation shall be provided between the VFD's power circuitry and control circuitry to ensure operator safety and to protect connected electronic control equipment from damage caused by voltage spikes, current surges, and ground loop currents. VFDs not including either galvanic or optical isolation on both analog I/O and discrete digital I/O shall include additional isolation modules.
- o. VFD shall minimize the audible motor noise through the used of an adjustable carrier frequency. The carrier frequency shall be automatically adjusted to optimize motor and VFD operation while reducing motor noise. VFDs with fixed carrier frequency are not acceptable.
- p. The VFD shall allow up to at least 100 meters of SWA (Single Wire Armour) cable to be used between the FC and the motor and allow the use of MICS (Mineral Insulated Copper Sheath) cable in the motor circuit for fire locations.

Protective Features

- a. A minimum of Class 20 1²t electronic motor overload protection for single motor applications shall be provided. Overload protection shall automatically compensate for changes in motor speed.
- b. Protection against input transients, loss of AC line phase, output short circuit, output ground fault, over voltage, under voltage, VFD over temperature and motor over temperature. The VFD shall display all faults in plain language. Codes are not acceptable.
- c. Protect VFD from input phase loss. The VFD should be able to protect itself from damage and indicate the phase loss condition. During an input phase loss condition, the VFD shall be able to be programmed to either trip off while displaying an alarm, issue a warning while running at reduced output capacity, or issue a warning while running at full commanded speed. This function is independent of which input power phase is lost.
- d. Protect from under voltage. The VFD shall provide full rated output with an input voltage as low as 90% of the nominal. The VFD will continue to operate with reduced output, without faulting, with an input voltage as low as 70% of the nominal voltage.

- e. VFD shall include current sensors on all three output phases to accurately measure motor current, protect the VFD from output short circuits, output ground faults, and act as a motor overload. If an output phase loss is detected, the VFD will trip off and identify which of the output phases is low or lost.
- f. If the temperature of the VFD's heat sink rises and approaches safe working temperature limit, the VFD shall automatically reduce its carrier frequency to reduce the heat sink temperature. It shall also be possible to program the VFD so that it reduces its output current limit value if the VFD's temperature becomes too high.
- g. In order to ensure operation during periods of overload, it must be possible to program the VFD to automatically reduce its output current to a programmed value during periods of excessive load. This allows the VFD to continue to run the load without tripping.
- h. The VFD shall have temperature-controlled cooling fan(s) for quiet operation, minimized losses, and increased fan life. At low loads or low ambient temperatures, the fan(s) may be off even when the VFD is running.
- i. Protect from output switching: The VFD shall be fully protected from switching a contactor / isolator at the output without causing tripping e.g.: for switching on/off the isolators of the AHU / ventilation fans / pumps near the motor with VFD in ON mode.
- j. The VFD shall store in memory the last 10 alarms. A description of the alarm, and the date and time of the alarm shall be recorded.
- k. When used with a pumping system, the VFD shall be able to detect no-flow situations, dry pump conditions, and operation off the end of the pump curve. It shall be programmable to take appropriate protective action when one of the above situations is detected.

Interface Features

- a. Hand, Off and Auto keys shall be provided on the control panel to start and stop the VFD and determine the source of the speed reference. It shall be possible to either disable these keys or password protection them from undesired operation.
- b. There shall be an "Info" key on the keypad. The Info key shall include "on-line" context sensitive assistance for programming and troubleshooting.
- c. The VFD shall be programmable to provide a digital output signal to indicate whether the VFD is in Hand or Auto mode. This is to alert the Building Automation System whether the VFD is being controlled locally or by the Building Automation System.
- d. Password protected keypad with alphanumeric, graphical, backlit display can be remotely mounted.
- e. All VFDs shall have the same customer interface. The keypad and display shall be identical and interchangeable for all sizes of VFDs.
- f. To set up multiple VFDs, it shall be possible to upload all setup parameters to the VFD's keypad, place that keypad on all other VFDs in turn and download the setup parameters to each VFD. To facilitate setting up VFDs of various sizes, it shall be possible to download from the keypad only size independent parameters. Keypad shall provide visual indication of copy status.
- g. Display shall be programmable to communicate in English.

- h.** A Keypad shall be three LED indication Red for fault / major alarm, Yellow for warning & Green for status.
- i.** VFD shall be provided with PID controller having feedback if indicated in schedule of quantity. This feature is to eliminate DDC panel by IBMS system vendor and use VFD itself as DDC. In such case, consultant can provide control scheme sketch to VFD manufacturer so that complete control system is fully configured in VFD.
- j.** This VFD shall be able to accept minimum 2 feedback signals. It shall be programmable to compare the feedback signals to a common set point or to individual set points and to automatically select either the maximum or minimum deviating signal as the controlling signal. It shall also be possible to calculate the controlling feedback signal as the average of all feedback signals or the difference between a pair of feedback signals.
- k.** The VFD shall be able to apply individual scaling to each feedback signal.
- l.** For fan flow tracking applications, the VFD shall be able to calculate the square root of any or all individual feedback signals so that a pressure sensor can be used to measure air flow.
- m.** The VFD's PID controller shall be able to actively adjust its setpoint based on flow. This allows the VFD to compensate for a pressure feedback sensor which is located near the output of the pump rather than out in the controlled system.
- n.** Floating point control interface shall be provided to increase/decrease speed in response to contact closures.
- o.** Five simultaneous meter displays shall be available. They shall be selectable from (at a minimum), frequency, motor current, motor voltage, VFD output power, VFD output energy, VFD temperature in degrees, feedback signals in their own units, among others.
- p.** Programmable Sleep Mode shall be able to stop the VFD. When its output frequency drops below set "sleep" level for a specified time, when an external contact commands that the VFD go into Sleep Mode, or when the VFD detects a no-flow situation, the VFD may be programmed to stop. When the VFD's speed is being controlled by its PID controller, it shall be possible to program a "wake-up" feedback value that will cause the VFD to start. To avoid excessive starting and stopping of the driven equipment, it shall be possible to program a minimum run time before sleep mode can be initiated and a minimum sleep time for the VFD.
- q.** A run permissive circuit shall be provided to accept a "system ready" signal to ensure that the VFD does not start until dampers or other auxiliary equipment are in the proper state for VFD operation. The run permissive circuit shall also be capable of initiating an output "run request" signal to indicate to the external equipment that the VFD has received a request to run.
- r.** VFD shall be programmable to display feedback signals in appropriate units, such as inches of water column (in-wg), pressure per square inch (psi) or temperature (°F). Examples can be room temperature in °C, return air temperature in °C, supply air temperature in °C, CO₂ concentration in ppm, pressure in bar, differential pressure in PSI etc.

- s. VFD shall be programmable to sense the loss of load. The VFD shall be programmable to signal this condition via a keypad warning, relay output and/or over the serial communications bus. To ensure against nuisance indications, this feature must be based on motor torque, not current, and must include a proof timer to keep brief periods of no load from falsely triggering this indication.
- t. Standard Control and Monitoring Inputs and Outputs
 - i. Four dedicated, programmable digital inputs shall be provided for interfacing with the systems control and safety interlock circuitry.
 - ii. Two terminals shall be programmable to act as either as digital outputs or additional digital inputs.
 - iii. Programmable relay outputs, 240V AC/2A shall be provided for remote indication of VFD status. These shall be configured for Run, Alarm and Trip functions.
 - iv. Each relay shall have an adjustable on delay/ off delay time.
 - v. Two programmable analog inputs shall be provided that can be either direct-or-reverse acting.
 - vi. Each shall be independently selectable to be used with either an analog voltage or current signal.
 - vii. The maximum and minimum range of each shall be able to be independently scalable from 0 to 10 V dc and 0 to 20 mA.
 - viii. A programmable low-pass filter for either or both of the analog inputs must be included to compensate for noise.
 - ix. The VFD shall provide front panel meter displays programmable to show the value of each analog input signal for system set-up and troubleshooting.
 - x. One programmable analog current output (0/4 to 20 mA) shall be provided for indication of VFD status. This output shall be programmable to show the reference or feedback signal supplied to the VFD and for VFD output frequency, current and power. It shall be possible to scale the minimum and maximum values of this output.
 - xi. It shall be possible to read the status of all analog and digital inputs of the VFD through serial bus communications.
 - xii. It shall be possible to command all digital and analog output through the serial communication bus.
- u. Optional Control and Monitoring Inputs and Outputs
 - xiii. It shall be possible to add optional modules to the VFD in the field to expand its analog and digital inputs and outputs.
 - xiv. These modules shall use rigid connectors to plug into the VFD's control card.
 - xv. The VFD shall automatically recognize the option module after it is powered up. There shall be no need to manually configure the module.
 - xvi. Modules may include such items as:

1. Additional digital outputs, including relay outputs
 2. Additional digital inputs
 3. Additional analog outputs.
 4. Additional analog inputs, including Ni or Pt temperature sensor inputs.
 5. It shall be possible through serial bus communications to control the status of all optional analog and digital outputs of the VFD.
- v. Standard programmable firefighter's override mode allows a digital input to control the VFD and override all other local or remote commands. It shall be possible to program the VFD so that it will ignore most normal VFD safety circuits including motor overload. The VFD shall display FIREMODE whenever in firefighter's override mode. Fire mode shall allow selection of forward or reverse operation and the selection of a speed source or preset speed, as required to accommodate local fire codes, standards and conditions.
- w. A real-time clock shall be an integral part of the VFD.
- xvii. It shall be possible to use this to display the current date and time on the VFD's display.
- xviii. Battery backup shall be provided for Real Time Clock, for seamless functionality during power off conditions
- xix. Ten programmable time periods, with individually selectable ON and OFF functions shall be available. The clock shall also be programmable to control starUstop functions, constant speeds, PIO parameter set points and output relays. It shall be possible to program unique events that occur only during normal workdays, others that occur only on non-work days, and others that occur on specific days or dates. The manufacturer shall provide free PC-based software to set up the calendar for this schedule.
- xx. All VFD faults shall be time stamped to aid troubleshooting.
- xxi. It shall be possible to program maintenance reminders based on date and time, VFD running hours, or VFD operating hours.
- xxii. The real-time clock shall be able to time and date stamp all faults recorded in the VFD fault log.
- xxiii. The VFD shall be able to store load profile data to assist in analyzing the system demand and energy consumption over time.
- x. The VFD shall include a sequential logic controller to provide advanced control interface capabilities. This shall include:
- xxiv. Comparators for comparing VFD analog values to programmed trigger values
- xxv. Logic operators to combine up to three logic expressions using Boolean algebra
- xxvi. Delay timer.
- xxvii. A 20-step programmable structure

- y. The VFD shall include a Cascade Controller which allows the VFD to operate in closed loop set point (PIO) control mode one motor at a controlled speed and control the operation of 3 additional constant speed motor starters.

Serial Communications

- a. The VFD shall include a standard EIA-485 communications port and capabilities to be connected to the following serial communication protocols at no additional cost and without a need to install any additional hardware or software in the VFD:
 - i. BACnet MSTP
 - ii. Metasys N2
 - iii. Modbus RTU
- b. VFD shall have standard USB port for direct connection of Personal Computer (PC) to the VFD. The manufacturer shall provide no-charge PC software to allow complete setup and access of the VFD and logs of VFD operation through the USB port. It shall be possible to communicate to the VFD through this USB port without interrupting VFD communications to the building management system.
- c. The VFD shall have provisions for an 24 VDC / 230Vac back-up power interface to power the VFD's control card. This is to allow the VFD to continue to communicate to the building automation system even if power to the VFD is lost.

Adjustments

- a. The VFD shall have a manually adjustable carrier frequency that can be adjusted in 0.5 kHz increments to allow the user to select the desired operating characteristics. The VFD shall also be programmable to automatically reduce its carrier frequency to avoid tripping due to thermal loading.
- b. Four independent setups shall be provided.
- c. Four preset speeds per setup shall be provided for a total of 16.
- d. Each setup shall have two programmable ramp up and ramp down times. Acceleration and deceleration ramp times shall be adjustable over the range from 1 to 3,600 seconds.
- e. Each setup shall be programmable for a unique current limit value. If the output current from the VFD reaches this value, any further attempt to increase the current produced by the VFD will cause the VFD to reduce its output frequency to reduce the load on the VFD. If desired, it shall be possible to program a timer which will cause the VFD to trip off after a programmed time period.
- f. If the VFD trips on one of the following conditions, the VFD shall be programmable for automatic or manual reset: external interlock, under-voltage, over-voltage, current limit, over temperature, and VFD overload.
- g. The number of restart attempts shall be selectable from 0 through 20 or infinitely and the time between attempts shall be adjustable from 0 through 600 seconds.
- h. An automatic "start delay" may be selected from 0 to 120 seconds. During this delay time, the VFD shall be programmable to either apply no voltage to the motor or apply a DC braking current if desired.

- i. Four programmable critical frequency lockout ranges to prevent the VFD from operating the load at a speed that causes vibration in the driven equipment shall be provided. Semi-automatic setting of lockout ranges shall simplify the set-up.

Optional Features

- a. All optional features shall be built and mounted by VFD manufacturer as an inbuilt factory solution. All optional features shall be UL listed by the VFD manufacturer as a complete assembly and carry a UL label.

Service Conditions

- a. Ambient temperature at full speed, full load operation with continuous drive rated output current:
 - i. -10 to 40°C for all ratings upto 90 kW without derating
 - ii. -10 to 40°C for ratings 110 kW and higher without derating
 - iii. Relative Humidity: 5 to 95%, non-condensing.
 - iv. Elevation: Up to 3,300 feet without derating.
 - v. AC line voltage variation: $\pm 10\%$ of nominal with full output.
 - vi. VFD protection: for indoor installation, it shall be IP21 suitable for mount inside metal enclosure. For outdoor installation it shall be IP55 without any additional metal enclosure
 - vii. All power and control wiring shall be done from the bottom.
 - viii. All VFDs shall be plenum rated

Quality Assurance

- a. To ensure quality, the complete VFD shall be tested by the manufacturer. The VFD shall drive a motor connected to a dynamometer at full load and speed and shall be cycled during the automated test procedure.
- b. All optional features shall be functionally tested at the factory for proper operation.

7. MODE OF MEASUREMENT

1 Sheet Metal Work

Sheet metal work shall be on the basis of measurement described below:

All Sheet metal ducting complete with ducts, supports, hangers, vibration isolation pads, turning vanes, girth angles, flanges, gaskets & food grade

sealant, access panels erected in position shall be measured externally on the finished areas of the ducting and paid per unit area.

All manual control / splitter dampers sections with operating linkages, supporting, etc shall be included in the duct area. The price of dampers shall have to be included in the sheet metal installed ducting price. No separate payment shall be admissible.

Tapered rectangular ducts width & depth shall be considered for perimeter whereas for tapered circular ducts the diameter of the section midway between large & small diameter shall be adopted. The length of tapered duct section shall be the Centre line distance between the flanges of the duct section.

The quoted unit rate for external surface of ducts shall include all wastage, allowances where specified or required, inspection chambers / access panel with splitter damper and quadrant / lever for position indication and other accessories. These accessories shall not be separately measured nor paid for.

The measurement of ducts shall be carried out before applying insulation.

2 **Insulation**

Area of external duct insulation finished as per specification shall be calculated on the basis of finished duct area before insulation including flanges (including double cover of min 200 mm over flanges), dampers, VAV boxes, installation accessories, etc and paid at unit area.

Acoustic insulation shall be calculated on basis of external duct size including nut bolt, flanges, aluminium perforated sheets, all supporting accessories and paid for per unit area.

Room acoustic insulation shall be calculated on basis of finished installed area including all accessories and paid for per unit area.

All pipe insulation shall be linear length through fittings and valves. Pipe shall be measured along the length of the pipe including flanges, coupling, gaskets and all installation accessories. It is to be clearly noted that for the insulation measurement all these accessories including cladding, valves, orifice plates & strainer shall be considered strictly by linear measurement along the Centre line of pipes and no special rates shall be applicable for insulation of any accessories, fixtures or fittings whatsoever.

3 **Grilles**

Air distribution items shall be measured by the cross-section area.

Grilles / Diffusers, Linear diffusers (to be measured in Rmt / nos.) fire dampers, shall be measured based on cross-sectional area including flanges, mounting arrangements, nuts & bolts (inspection pieces / door with electrical actuator & panel for fire damper), aluminium opposed blade volume control dampers shall form part of supply air diffusers and shall not be separately measured nor paid for. Flexible insulated fibre glass ducting to be measured in Rmt, same as sheet metal ducting with all accessories. Curvature / Round grilles to be also measured in Rmt.

Rubber mat shall be provided in front to cover the full length of all panels, where back space is provided for working from the rear of the panel, Rubber mat shall also be provided to cover the full length of panel. Cost to be included in panel cost.

4 **General Notes**

- i) Cost of painting, galvanization of all equipment, piping, etc. shall be included in each item, and no extra shall be paid.
- ii) MS Structural work
- iii) except mentioned above to be measured in Kgs.

8. LIST OF APPROVED MAKES

The Contractor shall have to obtain Consultant's approval of all makes of equipment and technical selection prior to ordering and installation. List of makes agreed during Tender negotiations supersedes all mentioned makes provided they meet specifications and are approved by consultants.

Sr.No.	Equipment / Materials	Recommended Manufacturers
1	Ventilation & Exhaust Fans	
a)	Axial Fan/Inline Fan	Dyna Air / Kruger / Greenheck / Nadi / Nicotra / System Air
2	Sheet Metal	
a)	G I Sheets Class VII - 180 gm/sq.m SMACNA Standards	Sheets -Jindal /National / TISCO / Bhushen ROLASTAR Ducting System with ROLAMATE or equivalent System Components

	b)	Factory Fabricated ducts SMACNA Standards	Rolastar / Zeco / Asawa with OEM standard flanges, fittings, bracings
	c)	Fire dampers, extended sleeves & control panels(90 minutes rating) Damper & Sleeves - painted orange	Cosmos / George Rao & Co. / Greenheck / Caryaire
3		Suspension / Support Systems (Fully galvanized for Ducts, Pipes, etc.)	
	a)	Anchor Fasteners	Hilti/ Fisher
	b)	Fully threaded rods, nuts, bolts, pipe clamps etc.	Alpha duct / Diamond / Hitech / Hilte / Perfect / Rolastar / Zeco
	c)	Channels / Angles – lengths with predrilled holes	Hitech / Hilte / Perfect / Rolastar
	d)	Duct Flanges	Alpha duct / Rolamate / Zeco / Asawa
4		Insulation	
	a)	Closed cell nitrile elastomeric Class 'O'	Aerofoam,Armaflex /Aeroflex / Eurobetex / K – Flex
	b)	Adhesives (when dry non-flammable)	Armaflex 520 / Pidilite SR 998 / Foster IIDL
5		Grilles / Diffusers (Powder coated)	
	a)	Aluminium Grill	Air-Product / Air Master /Cosmos/Caryaire
	b)	Aluminium opposed blade dampers / louvres	Air-Product / Air Master /Cosmos/Caryaire
6		VFD panel	FUJI, Siemens, L&T, Danfoss
7		VAV Boxes	Cosmos / Caryaire/Trox
8		Electricals – (IS)	
	a)	Starters	L&T / Merlin Gerlin / Siemens
	b)	ELCB's	Datar / L & T /MDS / Prok / Legrand
	c)	MCCBs, MCB's	ABB / L&T / Merlin Gerlin / MDS / Legrand
	d)	Cables	
		- Power	Polycab / RR Cable / Finolex
		- Control	Polycab / RR Cable / Finolex

List of selected makes

Contractor has to select two makes from the above approved makes

SN	Equipment		
1	Centrifugal Fans/Fan section/Plug Fans		
2	Electronic Filter		
3	Ventilation & Exhaust Fans		
a)	Axial Fan/Inline Fan		
4	VAV		
5	Sheet Metal		
a)	G I Sheets Class VII - 180 gm/sq.m SMACNA Standards		
b)	Factory Fabricated ducts SMACNA Standards		
c)	Fire dampers, extended sleeves & control panels(90 minutes rating)Damper & Sleeves - painted orange		
6	Suspension / Support Systems (Fully galvanized for Ducts, Pipes, etc.)		
a)	Anchor Fasteners		
b)	Fully threaded rods, nuts, bolts, pipe clamps etc.		
c)	Channels / Angles – lengths with predrilled holes		
d)	Duct Flanges		
7	Insulation		
a)	Closed cell nitrile elastomeric Class 'O'		
b)	Adhesives (when dry non-flammable)		
8	Grilles / Diffusers (Powder coated)		
a)	Aluminium Grill		

b)	Aluminium opposed blade dampers / louvres		
9	Flexible Duct		
10	Electricals – (IS)		
a)	Starters		
b)	ELCB's		
c)	MCCBs, MCB's		
d)	Cables		
	- Power		
	- Control		

TECHNICAL DATA FOR ALL MAJOR EQUIPEMENTS

Technical data shall be furnished By Contractor as follows:

SN	Description		
1.0	Ventilation/Exhaust Fans		
	a. Manufacturer		
	b. Fan discharge position		
	c. Speed (rpm)		
	d. Fan dia.		
	e. Fan CFM		
	f. Motor (hp) and make		
	g. Static pressure (ins. WG)		
	h. Balance (static and/or dynamic)		

SN	Description		
2.0	Insulation		
	a. Manufacturer		
	b. Material		
	c. "K" value		

SN	Description		
3.0	Controls		
	a. Manufacturer		
	b. Thermostat type		

	c. Humidistat type		
	d. Damper motor type		

SN	Description		
4.0	Electric Motor		
	a. Manufacturer		
	b. Type of motor and frame reference		
	c. Rated output (hp)		
	d. Range of working voltage		
	e. No. of phases and phase connections		
	f. Nominal frequency		
	g. Rated speed (rpm)		
	h. Rated current (amps)		
	i. Class of insulation		
	j. Temperature rise with cooling air at 40 Deg. c		
	k. Efficiency and power factor		

J : TECHNICAL SPECIFICATIONS – ELECTRICAL WORKS

The whole of the electrical installation shall be carried out by a registered licensed Electrical Contractor's Firm(sub-contractor) and valid licensed wireman only.

The electrical installation shall include for the supply of the whole of the materials and the work of fixing, necessary for the complete installation. The work shall be carried out in strict accordance with the latest edition of the Regulations for the Electrical Equipment of Buildings issued by the Institute of Electrical Engineers, I.E. rules and to the satisfaction of and in accordance with rules, regulations and requirements of the supply company and the Fire department all to the entire satisfaction of the Architect & Bank's Engineers.

The position of all points and equipment shown on the drawings shall be assumed to be correct for the purpose of tendering, but it is the main contractor's responsibility to check the exact positions on the site before commencing the works.

Note:- This specification is of the general type only and must be used in conjunction with the drawing of the particular item being made. Anything shown on the drawing and not in the specification must be compiled with, and vice versa.

Only valid licensed wiremen will be allowed to work on site. Before taking up the work or before appointing the wireman for the work, Tenderer shall submit respective wireman's valid electrical license in original with copy for verification to the Bank.

The point wiring will be paid per point . Tenderer shall study the drawing to consider the length of the wires required.

1. INTERNAL WIRING

1.1 System of Wiring

The system of wiring shall consist of PVC insulated copper conductor flexible FRLS wires in MMS PVC FRLS conduits and shall be recessed/ on wall/ceiling/beam/column as per site condition. The damaged portion has to be set right matching with the original finish.

- General

Prior to laying and fixing of conduits, the contractor shall carefully examine the working drawings and prepare shop drawings and get it approved by the Banks' Engineers. Tenderer should satisfy himself about the sufficiency of number and sizes of conduits, location of junction boxes, sizes and location of switch boxes and other relevant details. Any discrepancy found in the drawings shall be brought to the notice of the Bank' Engineers.

In laying of conduits, it is important that not more than two right angle bends are provided for each circuit as far as possible. No junction box shall be provided in the entire length of conduit run for drawing of wires. Only switch outlets, lighting fixture outlets, equipment power outlets and socket outlets shall be considered for drawing of wires.

1.2 PVC Conduit and Accessories

PVC Conduit – Medium Mechanical Stress (MMS)

PVC conduit shall be used for all surface installation. The rigid PVC conduit shall be per IS:9537:1983 Part -3 and medium gauge low smoke, fire retardant which shall be fixed with saddles, spacers, bends elbows, junction boxes, tees etc., suitably mounted on wall/ ceiling/ in concealed manner as per site requirements with all other accessories. Conduits and accessories shall conform to relevant Indian Standard and shall be heavy duty wall thickness of 2.0 mm rigid tubes which are unscrewed without coupling and with plain ends. All conduits used shall not be less than 20 mm diameter.

PVC Conduit- Accessories

Accessories such as bends, elbows, reducers, chase nipples, split couplings, plugs etc. shall be heavy duty and in accordance with complying to relevant IS code.

All accessories used shall be of standard white or black colour, identical to conduit used.

All joints shall be joined by slip type of couplers with manufacturer's standard sealing cement.

All conduit entries to outlet boxes and switchgear are to be made with adaptors female and male bushes.

PVC-switch and socket boxes with round knockouts are to be used. The colour of these boxes and the conduits shall be the same.

Standard PVC circular/ square junction boxes are to be used with conduits for intersection, Tee-junction, angle-junction and terminal. For the drawing-in of cables, standard circular through boxes shall be used.

All jointing of PVC conduit, shall be by means of adhesive jointing. Adequate expansion joints shall be allowed to take up the expansion of PVC conduits.

Samples of all accessories viz. Conduit, switch socket, PVC FRLS wires, saddles, bend, junction box etc. shall be made available for Bank's Engineer for approval before taking up the work.

1.3 Bends in Conduit, Casing capping, Race way

Where necessary, bends or diversions may be achieved by means of bends or circular PVC inspection boxes with adequate and suitable inlet, outlet screwed joints. In case of recessed system each junction box shall be provided with a cover properly secured and flush with the finished wall surface. No bends shall have radius less than 7.5 cms or three times the outside diameter of the conduits.

1.4 Fixing of Conduits, Casing capping, Race way

Conduits, run on surfaces shall be supported on 6mm thick base saddle which in turn are properly screwed to the wall or ceiling. Base saddles shall be at intervals of not more than 18". Fixing screws shall be with round or cheese head and of rust-proof materials. Exposed conduits shall be neatly run parallel or at right angles to the walls of the building.

Conduits, embedded into the walls shall be fixed by means of staples at not more than 500mm intervals. Chases in the wall shall be neatly made and refilled after laying the conduit and brought to the finish of the wall with final finish.

1.5 PVC Conduits, Casing capping, Race way

Maximum permissible number of 1100 volt grade PVC insulated wires that may be drawn into rigid nonmetallic PVC Conduits are given below:

Size of wires Nominal Cross Section Area (Sq. mm.)	Maximum number of wires within conduit size(mm)				
	20	25	32	40	50
1.5	5	10	14	--	--
2.5	5	8	12	--	--
4	3	7	10	--	--
6	2	5	8	--	--
10	--	3	5	6	--
16	--	2	3	--	6
25	--	--	2	4	6
35	--	--	--	3	5

1.6 Switch outlets and Junction Boxes

All outlet boxes for switches, sockets and other receptacles shall be of PVC having smooth external and internal surfaces to true finish. All boxes shall have adequate number of knock out holes of required. Outlet boxes shall be of a maximum depth of 65 mm.

1.7 Fish Wire

Suitable galvanized steel fish wires of not less than 0.63mm dia shall be drawn in all conduits before they are embedded. Where conduit passes through expansion joints in the building, adequate expansion fitting shall be used to take care of any relative movement.

1.8 Conductors

All PVC insulated copper conductor flexible FRLS, ISI marked wires shall conform in all respects to Standards as listed under sub-head Regulations and Standards and shall be IS approved and ISI marked.

1.9 Bunching of Wires

Wires carrying current shall be so bunched that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not run in the same

conduit. All wires shall have ferrules for identification. Lighting, UPS power and raw power circuits shall be separate.

1.10 Drawing Conductors

The drawing and jointing of PVC insulated copper conductor wires shall be executed with due regard to the following precautions. While drawing wires through conduits, care shall be taken to avoid scratches and kinks which may cause breakage of conductors. There shall be no sharp bends. Wire reel stands to be used for pulling of wires to avoid kinks.

Insulation shall be removed by insulation stripper only. Strands of wires shall not be cut for connecting terminals. The terminals shall have sufficient cross-sectional area to take all strands and connecting brass screws shall have flats ends. All looped joints shall be connected through terminal block/connectors. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. All light points shall be terminated through a connector.

Conductors having nominal cross-sectional areas exceeding 10 sq.mm shall always be provided with cable sockets. At all bolted terminals brass flat washer of large area and approved steel spring washer shall be used. Brass nuts and bolts shall be used for all connections.

All wires and cables shall bear the manufacturer's label and shall be brought to site in original packing for approval. For all internal wiring PVC insulated wires of 1100 volts grade shall be used. The sub-circuit wiring for point shall be carried out in loop system and no joints shall be allowed in the length of the conductors. No wire shall be drawn into any conduit until all work of any nature that may cause injury to wire is completed. Care shall be taken while pulling out the wires so that no damage occurs to conduits, /wire itself. The conduit shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction. The minimum size of PVC insulated copper conductor wires for all sub-circuit wiring for light points shall be minimum 1.5 sq.mm copper Separate neutral to be pulled for each circuit.

1.11 Joints

All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switches boxes only. No joints shall be made in conduit and in junction boxes. Conductors shall be continuous from outlet to inlet.

1.12 Mains and Sub-Mains

Mains and sub-mains cable or wires where called for shall be of the rated capacity FRLS XLPE ISI marked and approved make. Every main and sub main wires shall be drawn into an independent adequate size conduit. Earthing shall be in conformity with relevant IS codes. An independent earth wire of the proper rating shall be provided for every single phase sub-main. For every 3 -phase sub-main, 2 Nos. earth wires of proper rating shall be provided along with the sub-main. Where mains and sub-mains cables are connected to switchgear, sufficient extra lengths of cable shall be provided to facilitate easy connections and maintenance.

1.13 Load Balancing

Balancing of circuits in three phase installations shall be as planned by the Architect and shall be checked by the Tenderer before the commencement of wiring and shall be strictly adhered to.

1.14 Colour Code Of Conductors

Colour code shall be maintained as indicated by the Architect for the entire wiring installations. Red, yellow, blue shall be for three phases, black for neutral and green with yellow band shall be for earthing.

2. SWITCHES, RECEPTACLES (MODULAR), LIGHTING FIXTURES & LIGHTING CONTROL EQUIPMENT:

The colour of the switch, socket and all other accessories including light fittings shall be made available to Bank's Engineer / architect for approval before execution of work.

2.1 Switches

All switches shall be enclosed type flush mounted, ISI marked suitable for 240 volts AC. All switches shall be fixed inside the switch boxes leaving ample space at the back and sides for accommodating wires. Switch controlling the light point shall be connected to the phase wire of the circuit and not more than ten lights shall be connected on one circuit and load shall be restricted to 800 watts. Perfect alignment shall be maintained while fixing of the back boxes.

2.2 Wall Socket Outlet

Wall socket outlets shall be of the three pin ISI marked and shall be shuttered type. The switch controlling the socket outlet shall be on the phase wire of the circuit and not more than two socket outlets of 16 amps shall be connected on one circuit. An earth wire shall be provided along with the circuit wires and shall be connected to earthing screw inside the box. The earth terminal of the socket shall be connected to the earth terminal provided inside the box.

- a. Every socket outlet shall be controlled by an individual switch unless mentioned otherwise.
- b. The switch controlling the socket outlet shall be on the 'Live' side of the line.
- c. 6 amps and 16 amps socket outlet shall normally be fixed at any convenient height above the floor level as desired by the Architect. The switch for 6 and 16 amps, socket outlet shall be kept along with the socket outlet. However, in special case, if desired by the Architect the 6 amp. Socket outlet can be placed at the normal switch level.

16 amps socket outlet in the pantry shall be fixed at any convenient height above working platform or as specified in drawings / schedule of equipment's.

- d. Where socket outlets are placed at lower level, they shall be enclosed in a suitable metallic box with the system of wiring adopted or shutter type sockets shall be provided as specified.
- e. In an earthed system of supply, a socket outlet and plug shall be of three pin type, the third terminal shall be connected to earth.
- f. Conductors connecting electrical appliance with socket outlet shall be flexible twin cord with an earthing cord which shall be secured by connecting between the earth terminal of plug and the metallic body of the electrical appliance.

3 Lighting Fixtures & Accessories

LIGHTING INDOOR AND OUTDOOR TECHNICAL SPECIFICATIONS

The Main Contract Scope of Services take precedence over this document in the event there are duplicated conditions.

Contractor Responsibility

1. "No Deviation" Compliance statement for every line item with respect to product specification and approved brands from tender document shall be given at time to TDS submission and approval.
2. Area Wise Product wise Technical Datasheets and shop drawings compliant to tender documents which needs to be stamped GFC before execution on site.
3. Detailed lighting layout with plan, sectional and elevation details shown with necessary BIM integration (if required by the contract) where required by architect/client. Including control schedule and Looping identification for every area which needs to be stamped GFC before execution on site.
4. Deviation from the original design is not to be explored, however, only in case of some site conditions when the original design cannot be carried out, an alternative may be explored but this shall be valid only after the consent of the principal architect consultant.
5. Any change of specifications or details shall require the consent of the principal architect consultant in written form.
6. All fixtures in this project must be LED only and following consideration MUST be given to the factors below when selecting the light fixtures & drivers:
 - Only name brand LED chip should be considered in the fixture – Cree, Samsung, Nichia, Citizen, Bridgelux, Seoul Semi Conductor, Osram, LumiLED, Bega.
 - All LED shall have 5 years or 50,000 burning hours guarantee – excluding decorative light bulbs.
 - All LED fixtures in FOH areas must be SDCM ≤ 3 and Risk Group RG0 criteria unless specified otherwise.
 - All LED fixtures in BOH areas must be SDCM ≤ 5 and Risk Group RG1 or better.
 - All LED fixtures in FOH areas MUST be minimum LM80 and BOH could be upto L70 – this means that at the end of 50,000 hours the fixture should still be outputting 80% of its rated capacity. All FOH fixtures must be minimum L80 and B10 unless specified otherwise. ALL BOH (Back of House) Fixtures could be rated L70/B50 No Deviation will be permitted in this requirement.
 - All LED Luminaires should provide minimum warranty of 5 years.
 - All Led drivers/control gears should provide minimum warranty of 3 years.
 - All fixtures in FOH areas to meet minimum TM-30/CRI 80+ requirements.
 - All fixtures in BOH areas to meet minimum CRI-80 or higher.
 - UGR <19 is the minimum standard applied for glare control for all light fixtures in all FOH areas. Lower number of UGR13 or UGR9 is preferable.
 - All Specified R9 values will have to be met or improved, unless specified otherwise.
 - All LED Fittings shall be integrated LED module only – Retrofit Replaceable LED bulbs are not permitted unless pre-specified in particular in writing.
 - All LED light fixtures and LED remote/non-integrated drivers to have valid BIS certification.
 - All FOH Down lights to have minimum cutoff angle of 40 deg to minimize glare.
 - All mounting/glare control/beam shaping accessories to be considered along with the fixture.

- All underwater fixtures to be tested by a reputed NABL accredited Indian / International lab and certified IP 68 upto 10m for continuous submersion.
 - All FOH fixtures should have die-cast or extruded aluminum body wherever applicable and as applicable with a well designed heat sink. CRCA body MAY BE acceptable only for certain light fixtures in some BOH area, with specific prior approval from principal Architect Consultant.
 - All DALI drivers to be certified DALI-2 drivers.
 - All drivers/control gear to be Integrated within the fixtures unless specified otherwise as being located remotely.
 - When drivers/control gear are installed remotely, care should be taken to ensure that any audible sounds generated by driver/control gear are kept to minimum.
 - Dimmable drivers/control gear should be permitting dimming of LEDs to a minimum level of 1% without flickering.
 - All drivers to have Protective features like over temperature, short-circuit, overload, no-load, input voltage range, reduced surge amplification
 - THD<10%, The LED Driver shall be designed with a failure probability of less than 10 %.
 - Arrangements of Time setting should be provided by Digital timers at respective distribution board to switch ON and switch OFF for Pole lights.
7. All lighting layouts for Façade, Landscape, Interior to be well coordinated with the respective consultant to avoid variance.
8. Contractors Deliverables prior to work commencing:
- Detailed DBR with lux level calculations included.
 - Lighting Layout with detailed Legend.
 - Lighting Control Schedule and Layout.
 - Lighting Matrix
 - Technical Datasheets.
 - Detailed BOQ with wattages, lumens, CRI, CCT, SDCM, R value, L and B value, IP, IK mentioned

LIGHTING DESIGN CRITERIA

This design is based on Standards as below:

- Indian National Lighting Code 2010
- Indian National Building Code 2016
- Indian National Electrical Code 2012
- ECBC 2017
- Local state codes and practices if these are different from Central Codes.

Where Indian Standards are not available the following standards shall be referred to for guidance:

- AS 4282-1997 Control of Obtrusive Effects of Outdoor Lighting
- BS EN 15193:2007 Energy Performance of Buildings – Energy Requirements for Lighting
- BS EN 1838:2013 Lighting Applications – Emergency Lighting
- BS EN 50172:2004 Emergency Escape Lighting Systems
- ANSI/ESNA RP-8-14 Roadway Lighting
- ANSI/ESNA 6-1.03 Guideline on Security Lightings for People, Property and Public Spaces
- NECA/IESCA 501-06 Installing Exterior Lighting Systems
- NECA/IESCA 501-07 Installing Indoor Commercial Lighting Systems
- LEED Standards

- IGBC Standards

OUTLINE CONSTRUCTION CRITERIA

1. Tabletop Sampling for initial shortlisting from tender approved products for final live installed mockup.
2. Live installed mockup in almost actual site condition with respect to mounting heights, angle of orientation, interior detail
3. Installation methodology and installation shop drawings specially for outdoor fixtures.
4. Physical sign off by architect and consultant on every single sample of every type of light fixture to be installed on site prior to manufacturing. Exception can be made in advance in writing for highly customized light fixture if any, but for such a fixture detail shop drawing sign off will be necessary.
5. As built lighting layouts and shop drawings of installed lights.
6. Physical verification of lux levels, CRI/CCT/SDCM/R9 quality of light by using a valid calibrated spectrophotometer capable of measuring all above values shall be carried out if request by the Client/Architect.
7. As built Lighting Bible of all installed technical datasheets, installation manuals, warranty certificates, routine test certificates and BIS certificates.
8. To Read and explain the proper method of installation manual of each fitting to the actual wire man on site.
9. No Electrical tape or Silicon Tape to be used for making any sort of "water-proof" or "water-tight" connections.
10. No Silicon Sealant to be used to seal or fill IP rated fittings.
11. Proper Usage of all given Accessories, correct grommets and cable glands with cable sheathing properly stripped and all 3 cores correctly terminated. LOOP-IN and LOOP-OUT where required must be done.
12. No Temporary Wiring with taped joints that can be walked upon and pulled and twisted for spiky supply.
13. IP rated outdoor fittings are not to be Installed when it is raining and the weather is wet outside
14. Gasket & Covers to be wiped clean and dry and free of any solid debris when fit back into the luminaire.
15. Please do not use electrical wires simply pushed into construction power sockets for testing of lights on site. Please ensure that all wires that are connected for testing purposes or final connection purposes are either fitted with 3pin Plug Tops or terminated firmly into the Lighting or Automation MCB DB.
16. Please ensure that Electrical Lighting connections (temporary testing or permanent) are not made on the same Electrical Phase on which Construction equipment or Welding Equipment of any kind is on the same phase. This leads to surges and spikes in Phase which LED fittings are not able to withstand.
17. Reflectors are not to be handled with bare hands. Cotton or Plastic gloves to be worn at all times when handling reflectors.
18. Only cables are to be used for IP rated fitting where the cable outer sheathing must enter the DC cable gland and once inside the sheathing to be stripped back and cores terminated within.
19. Please also ensure that normal twisted wires are not used for wiring or cabling in IP rated luminaries.
20. All IP55+ Outdoor rated light fixtures must be installed in Dry weather conditions only.
21. All IP55+ Outdoor rated light fixtures must be installed with IP66 rated connectors wherever a cable joint is required, unless the cable is unbroken from area power source to fixture.
22. All Specular or Glareless or Darklight reflector fixtures must be installed by trained electricians wearing clean cotton hand gloves so as to NOT stain the said reflectors with fingerprints and hand

oils deposits. Cotton gloves must be changed to new ones daily to maintain the integrity of reflectors. Soiled/Scratched/Damaged Reflectors at the time of project opening will not be accepted and will have to be changed and made good by EPC Contractor at his cost & expense.

4.8 Following table gives Guaranteed Parameters of lighting fixtures:

Sr.No.	Item Description	Details
1	Input supply voltage and frequency	240V AC, 50Hz, 1phase
2	Variation in AC supply voltage and frequency	±10% and ±3%
3	Ambient temperature	50 degree C
4	L70 life	Min 50,000 hours at 35°C
5	Rated watt of lamp	As per tender mentioned elsewhere
6	Luminaire shall be marked with product information.	as per IS 16107
7	Starting	Flicker free & Instant start
8	Type of Driver	Constant Current
9	Luminaire Efficacy	As per Schedule of quantities

Lighting Management System (LMS) Specifications

Reserve Bank of Indian shall have a lighting control and energy management system that provides total light management by combining where required, lighting controls, automated window shades, digital ballasts/LED drivers, and sensors together under one software, service and support umbrella.

The control system must be processor-based and can be connected to the building network or a dedicated network for the control system. Only a single point of connection is needed on the control system network for total communication to the entire system.

The customer should be able to extract the programming database from the system if and when required.

With the appropriate security credentials, the control system should be capable of being managed from anywhere and from any device using a HTML5 compatible browser (including Internet Explorer, Chrome, and Safari) connected to the building's secure network.

The control system should provide actionable data from lights, shades and sensors via an easy to understand web-based application to enable project to maximize occupant comfort, save energy, improve operational efficiency and maximize space utilization.

The automated window shading system must be integrated with the lighting control and energy management system without the need for additional interfaces. The lighting plus shading system must optimize the

penetration of direct sunlight, maximize view, provide diffused daylight and optimize electric light energy use. The movement of shades should be governed by movement of sun.

The control system should support addressable DALI-2 for light fixtures and BACnet/IP for Building Management System (BMS) integration without the need for additional gateways.

Wireless switches shall be compatible with face plates without degradation of RF performance and the switches shall be provided with engraving.

The control system should not be reliant on an internet connection or cloud services, and performance should not be degraded when offline.

- High End Trim is an energy saving strategy that reduces the power consumption by trimming the high-end to some level that no influence comfortableness
- After-hours mode is used as an “intelligent off” setting that saves energy by automatically turning the lights off after normal working hours, while still allowing any occupants in a space to manually keep the lights on as needed. After-hours is useful in spaces that do not rely on occupancy sensors to turn lights off when a space is vacant.
- Occupancy detection is when occupancy sensors automatically turn lights on when a room becomes occupied, and off when the room is vacant. Sensors may have a preset or adjustable time-out depending on the sensor. Some systems may be programmed to go to specific light levels rather than ON and OFF.
- Daylight harvesting dims the electric lights in an area in response to available daylight. The focus of daylight harvesting in Lighting control systems is to maintain a consistent minimum light level on the work surface while saving energy. A daylight sensor will detect changing light conditions and adjust the lights automatically throughout the day.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Digital-network lighting control system and associated components:
 1. Lighting control modules
 2. DIN rail power modules.
 3. Lighting management hubs and processors.
 4. Lighting management system software.
 5. Control stations.
 6. Low-voltage control interfaces.
 7. Wired sensors.
 8. Wireless sensors.

1.02 RELATED REQUIREMENTS

- A. Motorized roller window shades, for interface with lighting control system.
- B. Building automation system, for interface with lighting control system.
- C. **Wiring Devices** -
 - 1. Finish requirements for wall controls specified in this section.
 - 2. Accessory receptacles and wallplates, to match lighting controls specified in this section.
- D. Audio-video system, for interface with lighting control system.

1.03 REFERENCE STANDARDS

- A. Nation Building Code 2016
- B. National Electrical Code
- C. National Fire Code
- D. Any local Maharashtra Codes that may apply
- E. 47 CFR 15 - Radio Frequency Devices; **current edition**.
- F. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements; **2017**.
- G. ANSI/ESD S20.20 - Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices); **2021**.
- H. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; **2019**.
- I. CSA C22.2 No. 223 – Power Supplies with Extra-low-voltage Class 2 Outputs; **2015 (Reaffirmed 2020)**.
- J. IEC 60669-2-1 - Switches for Household and Similar Fixed Electrical Installations - Part 2-1: Particular Requirements - Electronic Switches; **2021**.
- K. IEC 60929 - AC and/or DC-Supplied Electronic Control Gear for Tubular Fluorescent Lamps - Performance Requirements; **2011, with amendment (2015)**.
- L. IEC 61000-4-2 - Electromagnetic Compatibility (EMC) - Part 4-2: Testing and Measurement Techniques - Electrostatic Discharge Immunity Test; **2008**.
- M. IEC 61000-4-5 - Electromagnetic Compatibility (EMC) - Part 4-5: Testing and Measurement Techniques - Surge Immunity Test; **2014, with Amendments, 2017**.
- N. IEC 61347-2-3 - Lamp Control Gear - Part 2-3: Particular Requirements for A.C. and/or D.C. Supplied Electronic Control Gear for Fluorescent Lamps; **2011, with amendment (2016)**.
- O. IEEE 802.3 – IEEE Standard for Ethernet; **2022**.
- P. IEEE 1789 - Recommended Practice for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers; **2015**.
- Q. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; **2002 (Cor 1, 2012)**.
- R. ISO 9001 - Quality Management Systems-Requirements; **2015**.
- S. NECA 1 - Standard for Good Workmanship in Electrical Construction; **2015**.
- T. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; **2016**.
- U. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; National Electrical Manufacturers Association; **2020**.
- V. NEMA SSL 7A – Phase Cut Dimming for Solid State Lighting: Basic Compatibility; National Electrical Manufacturers Association; **2015 (Reaffirmed 2020)**.
- W. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; **1999 (Reaffirmed 2020)**.
- X. NFPA 70 - National Electrical Code; National Fire Protection Association; **Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements**.
- Y. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances; **Current Edition, Including All Revisions**.

- Z. UL 508 - Industrial Control Equipment; Underwriters Laboratories Inc.; **Current Edition, Including All Revisions.**
- AA. UL 924 - Emergency Lighting and Power Equipment; **Current Edition, Including All Revisions.**
- BB. UL 1310 – Class 2 Power Units; **Current Edition, Including All Revisions.**
- CC. UL 1472 - Solid-State Dimming Controls; **Current Edition, Including All Revisions.**
- DD. UL 1598C - Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits; **Current Edition, Including All Revisions.**
- EE. UL 2043 - Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; **Current Edition, Including All Revisions.**
- FF. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; **Current Edition, Including All Revisions.**

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate placement of wall controls with actual installed door swings.
 - 3. Coordinate placement of daylight sensors with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.
 - 4. Where motorized window treatments are to be controlled by lighting control system provided under this section, coordinate work to provide compatible products.
 - 5. Coordinate work to provide luminaires and lamps compatible with lighting controls to be installed. All DALI luminaires should be with latest DALI 2.0 standards
 - 6. Notify Architect of conflicts or deviations from contract documents to obtain direction prior to proceeding with work.

- B. Preinstallation Meeting: Conduct on-site meeting with lighting control system manufacturer prior to commencing work as part of manufacturer's standard startup services. Manufacturer to review with installer:
 - 1. Low voltage wiring requirements.
 - 2. Separation of power and low voltage/data wiring.
 - 3. Wire labeling.
 - 4. Lighting management hub locations and installation.
 - 5. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS", sensor locations to be reviewed in accordance with layout provided by Lighting Control Manufacturer. Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require deviation from locations indicated.
 - 6. Control locations.
 - 7. Computer jack locations (if applicable)
 - 8. Load circuit wiring.
 - 9. Network wiring requirements.
 - 10. Connections to other equipment.
 - 11. Installer responsibilities.

- C. Remote/On site Prewire Visit Include costs for Lighting Control Manufacturer to provide 4 to 5-hour session(s) of additional remote/on-site prewire support.

- D. Sequencing: Do not install sensors and wall controls until final surface finishes and painting are complete.

1.05 SUBMITTALS

- A. See Section **Administrative Requirements** for submittal procedures.
- B. Design Documents: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide plans indicating occupancy/vacancy and/or daylight sensor locations.
- C. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
 - 1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.
- D. Shop Drawings:
 - 1. Provide schematic system riser diagram indicating component interconnections. Include requirements for interface with other systems.
 - 2. Provide detailed sequence of operations describing system functions.
- E. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. System Performance-Verification Documentation
- G. Project Record Documents: Record actual installed locations and settings for lighting control system components.
- H. Operation and Maintenance Data: Include detailed information on lighting control system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
- I. Warranty: Provide sample of manufacturer's warranty as specified in Part 1 under "WARRANTY". Submit documentation of final execution completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70 or Equivalent Codes
- B. Maintain at project site one copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications:
 - 1. Company with not less than 20 years of experience designing, manufacturing, and servicing wireless lighting controls; manufacturers without this qualification are not acceptable.
 - 2. Maintain readily available components at local electrical distributors.
 - 3. Provide services of local factory field service engineers for service reliability; manufacturers without this qualification are unacceptable.
 - 4. Registered to ISO 9001, including in-house engineering for product design activities.
 - 5. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.
- D. Maintenance Contractor Qualifications: Manufacturer's authorized service representative.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products in clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.
 - 1. System Requirements, Unless Otherwise Indicated:
 - a. Ambient Temperature:
 - 1) Lighting Control System Components, Except Those Listed Below: Between 32 and 104 degrees F (0 and 40 degrees C).
 - b. Relative Humidity: Less than 90 percent, non-condensing.

1.09 WARRANTY

- A. Manufacturer's Standard Warranty, With Manufacturer Start-Up; Standard 2-Year Warranty: Manufacturer Lighting Control System Components, Sensors, etc.
 - a. First Two Years:
 - 1) 100 percent replacement parts coverage, 100 percent manufacturer labor coverage to troubleshoot and diagnose lighting issue.
 - 2) First-available on-site or remote response time.
 - 3) Remote diagnostics for applicable systems.
 - b. Telephone Technical Support: Available 24 hours per day, 7 days per week, excluding manufacturer holidays.

PART 2 PRODUCTS

2.01 MANUFACTURERS

Acceptable Manufacturers:

- A. Products by listed manufacturers are subject to compliance with specified requirements and prior approval of Architect; Client or Lighting Consultant
- B. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

2.02 DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS

- A. Sensor Layout and Tuning:
 - 1. Lighting Control Manufacturer to take full responsibility for wired or wireless sensor layout and performance for sensors provided by Lighting Control Manufacturer.
 - 2. Lighting Control Manufacturer to analyze reflected ceiling plans, via supplied electronic AutoCAD format, and design detailed sensor layout that provides adequate occupancy sensor coverage and ensures occupancy and daylight sensor performance per agreed upon sequence of operations. Contractor to utilize layouts for sensor placement.

3. During startup, Lighting Control Manufacturer to direct Contractor regarding sensor relocation, as required, should conditions require deviation from locations specified in drawings.
4. Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits within one calendar year from Date of Substantial Completion to fine-tune sensor calibration per agreed upon sequence of operations.
- B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. as suitable for purpose indicated.
- C. Unless specifically indicated to be excluded, provide required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for complete operating system that provides control intent indicated.
- D. Shade Control Requirements:
 1. Capable of operating shades and recalling shade presets via keypad, contact closure input, lighting management system software, or other lighting control system interface.
 2. Capable of operating any individual, group, or subgroup of shade electronic drive units within system without requiring separate group controllers.
 3. Capable of assigning and reassigning individual, groups, and subgroups of shades to any control within system without requiring additional wiring or hardware changes; systems without this capability not acceptable.
 4. Capable of controlling shade speed for tracking within plus or minus 0.125 inch (3.17 mm) throughout entire travel.
 5. Provide 10-year power failure memory for preset stops, open and close limits, shade grouping and sub grouping and system configuration.
 6. Capable of synchronizing multiple shade electronic drive units to start, stop, and move in unison; systems without this capability are not acceptable.
 7. Capable of stopping shades within accuracy of 0.125 inch (3.17 mm) at any point between open and close limits.
 8. Capable of storing up to 250 programmable stop points, including open, close, and any other position.
 9. Capable of controlling lights and shades from single wall control button.
 10. Capable of adjusting shade limits from user interface.
- E. Design lighting control equipment for 10-year operational life while operating continually at any temperature in ambient temperature range of 32 degrees F (0 degrees C) to 104 degrees F (40 degrees C) and 90 percent non-condensing relative humidity.
- F. Electrostatic Discharge Tolerance: Design and test equipment to withstand electrostatic discharges without impairment when tested according to IEC 61000-4-2.
- G. Dimming and Switching/Relay Equipment:
 1. Designed so that electrolytic capacitors operate at least 36 degrees F (20 degrees C) below capacitor's maximum temperature rating when device is under fully loaded conditions at maximum rated temperature.
 2. Inrush Tolerance:
 - a. Utilize load-handling thyristors (SCRs and triacs), field effect transistors (FETs) and isolated gate bipolar transistors (IGBTs) with maximum current rating at least two times rated operating current of dimmer/relay.
 - b. Capable of withstanding repetitive inrush current of 50 times operating current without impacting lifetime of dimmer/relay.
 3. Surge Tolerance: Designed and tested to withstand surges of 6,000 V, 200 amps according to IEEE C62.41.2 without impairment to performance.
 4. Power Failure Recovery: When power is interrupted and subsequently restored, within 3 seconds lights to automatically return to same levels, e.g. dimmed setting, full on, or full off, as prior to power interruption.
 5. Dimming Requirements:

- a. Line Noise Tolerance: Provide real-time cycle-by-cycle compensation for incoming line voltage variations including changes in RMS voltage (plus or minus 2 percent change in RMS voltage per cycle), frequency shifts (plus or minus 2 Hz change in frequency per second), dynamic harmonics, and line noise.
 - 1) Systems not providing integral cycle-by-cycle compensation to include external power conditioning equipment as part of dimming system.
 - b. Incorporate electronic "soft-start" default at initial turn-on that smoothly ramps lights up to appropriate levels within 0.5 seconds.
 - c. Utilize air gap off to disconnect load from line supply.
 - d. Control light sources in smooth and continuous manner. Dimmers with visible steps are not acceptable.
 - e. Load Types:
 - 1) Assign load type to each dimmer that will provide proper dimming curve for specific light source to be controlled.
 - 2) Provide capability of being field-configured to have load types assigned per circuit.
 - f. Minimum and Maximum Light Levels: User adjustable on circuit-by-circuit basis.
6. Switching Requirements:
- a. Rated Life of Relays: Typical of 1,000,000 cycles at fully rated 5A for all lighting loads.
 - b. Switch load in manner that prevents arcing at mechanical contacts when power is applied to and removed from load circuits.
 - c. Provide output fully rated for continuous duty for inductive, capacitive, and resistive loads.
- H. RS485 Communication Between Low-Voltage Devices:
- 1. Communicate at minimum speed of 10,000 bits per second; systems with slower communication speeds are not acceptable.
 - 2. Support low-voltage communication links up to 2,000 feet (610 m) with 12 AWG wiring with available low-voltage power supplies to extend links farther; systems without this capability are not acceptable.
 - 3. Support both wired and wireless wall controls and sensors; systems without this capability not acceptable.
- I. Device Finishes:
- 1. Wall Controls: Match finishes specified for wiring devices unless otherwise indicated; As indicated on drawings; To be selected by Architect; or Lighting consultant.
 - 2. Standard Colors: Comply with NEMA WD1 if applicable.
 - 3. Visible Parts: Exhibit ultraviolet color stability when tested with multiple actinic light sources as defined in ASTM D4674. Provide proof of testing upon request.
- J. Interface with building automation system

2.03 SHADING CONTROL PANELS

- A. Provide 24 VDC outputs for power to compatible shades, drapery drive units, keypads, and accessories.
- B. Provide self-recoverable short circuit/miswire protection on power output terminals per output; shade panels with replaceable fuses are not acceptable.
- C. Provide smart diagnostics for system verification.
- D. Provide testing capability using manual override buttons.

2.04 LIGHTING CONTROL MODULES

- A. Provide lighting control modules as indicated or as required to control loads as indicated.
- B. General Requirements:

1. Listed to UL 508 as industrial control equipment.
 2. Comply with NFPA 70 requirements for use in other spaces used for environmental air (plenum).
 3. Mounting: DIN Rail
 4. Connects to lighting management hub via RS485.
 5. LED status indicators confirm communication with occupancy sensors and daylight sensors.
 6. Distributes sensor data among multiple lighting control modules.
 7. Capable of being controlled via wireless sensors and controls.
 8. No minimum load requirement.
- C. Switching Lighting Control Modules:
1. Products:
 - a. 5 A continuous-use per channel.
 2. Switching:
 - a. Rated Life of Relay: Typical of 1,000,000 cycles at fully rated 5A for all lighting loads.
 - b. Load switched in manner that prevents arcing at mechanical contacts when power is applied to and removed from load circuits.
 - c. Fully rated output continuous duty for inductive, capacitive, and resistive loads.
 - d. Module to integrate up to four individually controlled zones.
 - e. Utilize air gap off, activated when user selects "off" at any control to disconnect load from line supply.
- D. DALI Lighting Control Modules:
1. Product: DALI Power Module; provides bus power and control for two DALI buses.
 2. Provide DALI-2 certified single master application controller.
 3. Provide testing capability using manual test buttons.
 4. Each DALI bus supports:
 - a. Control of up to 64 DALI compliant addressable loads, including any combination of static white/tunable white and device type 6/device type 8 drivers, grouped up to 64 zones.
 - b. Up to 250 mA bus power.
 5. Contact Closure Input: Directly accept contact closure input from dry contact closure or solid-state output without interface.
 6. Emergency Contact Closure Input:
 - a. Provides activation of emergency mode; turns all loads on and disables control from other devices.
 - b. UL 924 listed.

2.05 LIGHTING MANAGEMENT HUBS AND PROCESSORS

- A. Lighting Management Hubs:
1. Products: Supports connection to wired devices *via wired links*; supports connection to processors
 2. Supports outbound cloud connection when connected to Internet. Lighting management hubs that do not support cloud connectivity or that require inbound connection from cloud server are not acceptable. Manufacturers requiring on-site servers requiring annual maintenance are not acceptable. System requiring third-party servers to be pre-approved by IT department before acceptance with written approval.
 - a. App connectivity to system for control and monitoring from iOS and Android mobile devices, including creating/editing timeclock events and editing scenes.

- b. Automated firmware updates via outbound HTTPS requests.
 - c. Remote access, diagnostics, and service.
 - d. Cloud dashboard for energy and occupancy monitoring and reporting from web browser.
- 3. Signed processor firmware ensures firmware update is authentically from. Origin of unsigned processor firmware cannot be authenticated and is not acceptable.
 - 4. Supports two-way digital shade control. Lighting management hubs that do not allow two-way digital shade communication are not acceptable.
 - 5. Supports time-dependent conditional programming that allows different sensor and keypad actions at different times of day. Lighting management hubs that do not allow for time dependent conditional programming are not acceptable.
 - 6. Provided in pre-assembled NEMA listed enclosure with terminal blocks listed for field wiring.
 - 7. Connects to controls via RS485.
 - 8. Integrates control station devices, shades, and external inputs into single customizable lighting control system with:
 - a. Multiple Failsafe Mechanisms:
 - 1) Power failure detection via emergency lighting interface.
 - 2) Protection: Lights go to full on if ballast wires are shorted.
 - 3) Distributed architecture provides fault containment. Single hub failure or loss of power does not compromise lights and shades connected to other lighting management hubs.
 - b. Manual overrides.
 - c. Automatic control.
- B. Supports internet connection for automated firmware updates and remote access, diagnostics, and service.
 - C. Furnished with astronomical time clock.
 - D. Maintains backup of programming in non-volatile memory capable of lasting more than ten years without power.

2.06 LIGHTING MANAGEMENT SYSTEM SOFTWARE

- A. Provide system software and hardware that is designed, tested, manufactured, and warranted by single manufacturer.
- B. Configuration Setup Software:
 - 1. Suitable to make system programming and configuration changes.
 - 2. Windows-based, capable of running on either central server or remote client over TCP/IP connection.
 - 3. Back-Up Project Database: Allows user to back up project database that holds configuration information for system, including keypad programming, area scenes, daylighting, occupancy programming, emergency levels, night lights, and time clock.
 - 4. Publish Project Database: Allows user to send new project database to processors and devices. Project database holds configuration information for system, including keypad programming, area scenes, daylighting, occupancy programming, emergency levels, night lights, and time clock.
 - 5. Allows :
 - a. Capture system design:
 - 1) Geographical layout.
 - 2) Load schedule zoning.
 - 3) Shade grouping.
 - 4) Equipment schedule.
 - 5) Equipment assignment to lighting management hubs.
 - 6) Daylighting design.

- b. Define configuration for the following in each area:
 - 1) Lighting scenes.
 - 2) Shade group presets.
 - 3) Control station devices.
 - 4) Interface and integration equipment.
 - 5) Occupancy/after hours.
 - 6) Partitioning.
 - 7) Daylighting.
 - 8) Emergency lighting.
 - 9) Night lights.
 - c. Startup:
 - 1) Addressing.
 - 2) Daylighting.
 - 3) Provide customized conditional programming.
- C. API Integration:
- 1. Support communication, without requiring interface, between lighting control system and third-party systems via RESTful API.
 - 2. API Integration Capabilities:
 - a. Discovery:
 - 1) Areas: Area and scene names.
 - 2) Zones: Zone names, minimum and maximum light levels.
 - 3) Shade Groups: Shade group and preset names
 - b. Monitoring:
 - 1) Area Information:
 - (a) Occupancy status.
 - (b) Occupancy enabled.
 - (c) Lighting zone status.
 - (d) Active scene.
 - (e) Instantaneous and maximum lighting power.
 - 2) Zone Information:
 - (a) Light intensity.
 - (b) Switch level.
 - (c) Contact closure output status.
 - (d) Correlated color temperature, where controllable.
 - c. Control:
 - 1) Lighting Control:
 - (a) Activate scene.
 - (b) Set lighting zone level and correlated color temperature, where controllable.
 - 2) Shade Group Control:
 - (a) Set shade group level.
 - (b) Activate shade group preset.
- D. Mobile Application:
- 1. General Requirements:
 - a. Constant internet connection to processors and gateways.
 - b. Support multiple platforms and devices; runs from tablet or mobile phone.
 - c. Provide functionality listed below available via single application.
 - 2. System Navigation and Operation:
 - a. Support on-site and remote programming and control of multiple systems from iOS or Android mobile device.
 - b. Does not require LAN connection to operate. Operates locally or remotely with internet connection to device (e.g., laptop).

- c. Navigate between lighting control systems for control.
 3. Administration:
 - a. Users: Allows new user accounts to be created and existing user accounts to be edited.
 - b. Share access to lighting control system for one day, one week, or permanently.
 4. Control of Lights:
 - a. Modify lighting zone levels and activate scenes, reflected in space in real time.
 - b. Make and save adjustments to scenes.
 - c. Rename scenes and zones.
 - d. DALI-2 Device Type 8 Tunable-White Drivers:
 - 1) Control intensity and correlated color temperature reflected in space in real time.
 - 2) Save intensity and correlated color temperature to scenes reflected in space in real time.
 - e. Static-White Drivers:
 - 1) Control intensity reflected in space in real time.
 - 2) Save intensity to scenes reflected in space in real time.
 5. Control of Shades:
 - a. Modify shade group levels and activate shade group presets, reflected in space in real time.
 - b. Make and save adjustments to shade presets.
 6. Load Shedding:
 - a. Allow building manager to apply load shed reduction, thereby reducing building's power usage; load shedding triggered via mobile application, BACnet or, RESTful API integration.
 7. Scheduling: Schedule time of day and astronomic time clock events to automate functions.
 - a. Group scheduled events into timeclock groups.
 - b. Enable and disable entire timeclock groups from single place.
 - c. Create one-time or recurring scheduled events by day of week, week of month, specific date range.
 - d. Exclude scheduled events by holidays or other specific date exclusions.
 - e. Enable or disable individual scheduled events.
 - f.
- E. Data Insights Software:
 1. General Requirements:
 - a. Manufacturers requiring on-site servers requiring annual maintenance are not acceptable. System requiring third-party servers to be pre-approved by IT department before acceptance with written approval.
 - b. Web-based; runs on updated browsers including Edge, Chrome, and Safari.
 - c. Constant internet connection to all processors and gateways.
 - d. Support multiple platforms and devices; runs from tablet, desktop, laptop.
 - e. User interface supports multi-touch gestures such as pinch to zoom, drag to pan, etc.
 - f. Utilizes HTTPS (industry-standard certificate-based encryption and authentication for security).
 - g. Provide functionality listed below via single application.
 2. System Navigation and Operation:
 - a. Performed using graphical floor plan view or a generic system layout.
 - b. Graphical Floor Plan View: Utilize customized CAD based drawing of building. Pan and zoom feature allows for easy navigation; dynamically adjusts details presented based on zoom level.

- c. Operate locally or remotely with internet connection.
- d. Allow user to navigate through multiple connected lighting control systems spanning multiple buildings.
- 3. Software Updates:
 - a. Provide software feature updates, enhancements, and security patches automatically with no disruption to system or space.
- 4. Occupancy:
 - a. Capable of monitoring historical area occupancy.
 - b. Monitor energy savings due to occupancy with granularity to individual area.
- 5. Reporting: Provide reporting capability that allows building manager to gather real-time and historical information about system.
 - a. Energy Reports: Show comparison of cumulative energy used over period of time for one or more areas.
 - 1) Capable of displaying historic energy savings in kWh saved.
 - 2) Capable of displaying historical views in time periods (days, weeks, months).
 - b. Power Reports: Show power usage trend over period of time for one or more areas.
 - c. Space Utilization/Occupancy Reports: Show historical occupancy over period of time for one or more areas using graphical floor plan, generic system layout, and/or graphs and charts.
- 6. Administration:
 - a. Share user access across entire system including mobile application.

2.07 CONTROL STATIONS

- A. Provide control stations with configuration as indicated or as required to control loads as indicated.
- B. Wired Control Stations:
 - 1. General Requirements:
 - a. Power: Class 2 (low voltage).
 - b. UL listed.
 - c. Provide faceplates with concealed mounting hardware.
 - d. Borders, logos, and graduations to use laser engraving or silk-screened graphic process that chemically bonds graphics to faceplate, resistant to removal by scratching and cleaning.
 - e. Finish: As approved by Arch/Lighting consultant / Client
 - 2. Multi-Scene Wired Control:
 - a. General Requirements:
 - 1) Allows control of any devices part of lighting control system.
 - 2) Allows for easy reprogramming without replacing unit.
 - 3) Communications: Utilize RS485 wiring for low-voltage communication.
 - 4) Engrave keypads with button, zone, and scene descriptions
 - 5) Software Configuration:
 - (a) Customizable control station device button functionality:
 - (1) Buttons can be programmed to perform single defined action.
 - (2) Buttons can be programmed to perform defined action on press and defined action on release.
 - (3) Buttons can be programmed using conditional logic off of state variable such as time of day or partition status.
 - (4) Buttons can be programmed to perform automatic sequence of defined actions.

- (5) Capable of deactivating select keypads to prevent accidental changes to light levels.
 - (6) Buttons can be programmed for raise/lower of defined loads.
 - (7) Buttons can be programmed to toggle defined set of loads on/off.
- 6) Status LEDs:
- (a) Upon button press, LEDs to immediately illuminate.
 - (b) LEDs to reflect true system status. LEDs to remain illuminated if button press was properly processed or LEDs to turn off if button press was not processed.
 - (c) Support logic that defines when LED is illuminated:
 - (1) Scene logic (logic is true when all zones are at defined levels).
 - (2) Room logic (logic is true when at least one zone is on).
 - (3) Pathway logic (logic is true when at least one zone is on).
 - (4) Last scene (logic is true when spaces are in defined scenes).

2.08 LOW-VOLTAGE CONTROL INTERFACES

- A. RS232 and Ethernet Interface:
- 1. Connects to lighting management hub via RS485.
 - 2. Provide isolated Ethernet connection to local lighting control devices for audiovisual equipment, touchscreens, etc. Systems that require audiovisual equipment, touchscreens, etc. to connect to network backbone are insecure and not acceptable.
 - 3. Provide ability to communicate via Ethernet or RS232 to audiovisual equipment, touchscreens, etc. without connection to server. Systems that require connection to server or building network are not acceptable due to IT security concerns.
 - 4. Provide control of:
 - a. Light scene selections.
 - b. Fine-tuning of light scene levels with raise/lower.
 - c. Shade group presets.
 - d. Fine-tuning of shade preset levels with raise/lower.
 - e. Simulate system wall station button presses and releases.
 - 5. Provide status monitoring of:
 - a. Light scene status.
 - b. Shade group status.
 - c. Wall station button presses and releases.
 - d. Wall station LEDs.
 - e. Occupancy state (inactive, occupied, unoccupied).
 - 6. Provide ability to send custom output strings.
- B. DMX Interface:
- 1. Connects to lighting management hub via RS485.
 - 2. Provide ability to:
 - a. Map single zone intensity to single DMX512 lighting channel.
 - b. Map single zone intensity to three DMX512 channels for RGB/CMY color control.
 - c. Map a single zone intensity to a single DMX512 integration channel.
 - d. Smoothly transition from one color to another in crossfade.
 - e. Automatically sequence through variety of colors.
- C. Sensor Modules:
- 1. Products:
 - a. Sensor module with wired inputs only
 - b. Sensor module with wireless inputs only
 - 2. Connects to lighting management hub via RS485.
 - 3. Wired Modules:

- a. Provide wired inputs for:
 - 1) Occupancy sensors.
 - 2) Daylight sensors.
 - 3) Wired wall stations.
4. Wireless Modules:
 - a. Provide wireless communication inputs for:
 - 1) Occupancy sensors.
 - 2) Daylight sensors.
 - 3) Manual controls.
 - b. RF Range: 30 feet (9 m) between sensor module and compatible RF transmitting devices.
 - c. RF Frequency: 865 MHz; operates in WPC (India) governed frequency spectrum for periodic operation; continuous transmission spectrum is not permitted.
5. Communicate sensor information to wired low-voltage digital link for use by compatible devices.

2.09 WIRED SENSORS

- A. Wired Occupancy Sensors:
 1. General Requirements:
 - a. Connects directly to compatible ballasts and modules without need of power pack or other interface.
 - b. Turns off or reduces lighting automatically after reasonable time delay when room or area is vacated by last person to occupy space.
 - c. Accommodates conditions of space utilization and irregular work hours and habits.
 - d. Comply with UL 94.
 - e. Self-Adaptive Sensors: Continually adjusts sensitivity and timing to ensure optimal lighting control for any use of the space; furnished with field-adjustable controls for time delay and sensitivity to override adaptive features.
 - f. Provide capability to:
 - 1) Add additional timeout system-wide without need to make local adjustment on sensor.
 - 2) Group multiple sensors.
 - g. Power Failure Memory: Settings and learned parameters to be saved in nonvolatile memory and not lost should power be interrupted and subsequently restored.
 - h. Furnished with necessary mounting hardware and instructions.
 - i. Class 2 devices.
 - j. Ceiling-Mounted Sensors: Indicate viewing directions on mounting bracket.
 - k. Wall-Mounted Sensors: Provide swivel-mount base.
 - l. Color: White.
 2. Wired Passive Infrared Sensors:
 - a. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
 - b. Ceiling-Mounted Sensors: Provide customizable mask to block off unwanted viewing areas.
 3. Wired Ultrasonic Sensors:
 - a. Utilize an operating frequency of 32 kHz or 40 kHz, crystal-controlled to operate within plus/minus 0.005 percent tolerance.
 4. Wired Dual Technology Sensors:
 - a. Passive Infrared: Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
 - b. Ultrasonic: Utilize operating frequency of 32 kHz or 40 kHz, crystal-controlled to operate within plus/minus 0.005 percent tolerance.

- c. Ceiling-Mounted Sensors: Provide customizable mask to block off unwanted viewing areas.
- B. Wired Daylight Sensors: (If applicable)
 - 1. Digital Interior Daylight Sensor:
 - a. Use Class 2 wiring for low-voltage communication.
 - b. Can be replaced without reprogramming.
 - c. Open-loop basis for daylight sensor control scheme.
 - d. Stable output over temperature from 32 degrees F (0 degrees C) to 104 degrees F (40 degrees C).
 - e. Partially shielded for accurate detection of available daylight to prevent fixture lighting and horizontal light component from skewing sensor detection.
 - f. Provide linear response from 0 to 500 footcandles.
 - g. Integral IR receiver for personal control.
 - h. Mountable on lighting fixtures or recessed acoustical ceiling tiles.
 - i. Constructed via sonic welding.
 - j. Color: White.
- C. Infrared Partition Sensors:
 - Provide contact closure based on status of partition wall (open/close) enabling automatic linking of controls.

2.10 ACCESSORIES

- A. Provide power supplies as indicated or as required to power system devices and accessories.
 - 1. Products:
 - a. Plug-in power supply for shades, drapery drive units, keypads, and accessories, and for providing additional low voltage power to communication link with miswire protection; powered from standard receptacle using cord 6 feet (1.8 m) in length; complies with DOE Level VI regulation.
 - b. Power supply for keypads and accessories (not for shades/window treatments), and for providing additional low voltage power to communication link

2.11 SOURCE QUALITY CONTROL

- A. Quality Requirements for additional requirements.
- B. Factory Testing:
 - 1. Perform full-function factory testing on completed assemblies. Statistical sampling is not acceptable.
 - 2. Perform full-function factory testing on 100 percent of LED drivers.
 - 3. Perform factory audit burn-in of dimming assemblies and panels at 104 degrees F (40 degrees C) at full load for two hours.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that ratings and configurations of system components are consistent with indicated requirements.
- C. Verify that mounting surfaces are ready to receive system components.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 and, where applicable, NECA 130 or equivalent as applicable in project location
- B. Install products in accordance with manufacturer's instructions.
- C. Define each dimmer/relay load type, assign each load to zone, and set control functions.
- D. Sensor Locations:
 - 1. Where Lighting Control Manufacturer Sensor Layout and Tuning service under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS", locate sensors in accordance with layout provided by Lighting Control Manufacturer. Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require deviation from locations indicated. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, locate sensors in accordance with drawings.
 - 2. Sensor locations indicated are diagrammatic. Within design intent, reasonably minor adjustments to locations may be made in order to optimize coverage and avoid conflicts or problems affecting coverage, in accordance with manufacturer's recommendations.
- E. Ensure that daylight sensor placement minimizes sensor view of electric light sources. Locate ceiling-mounted and luminaire-mounted daylight sensors to avoid direct view of luminaires.
- F. System and Network Integration Consultation;
- G. Identify system components.

3.03 FIELD QUALITY CONTROL

- A. Manufacturer's Startup services will not be required.
- B. Manufacturer's Startup Services:
 - 1. Manufacturer's authorized Service Representative to conduct minimum of two site visits to ensure proper system installation and operation.
 - 2. Conduct Pre-Installation visit to review requirements with installer as specified in Part 1 under "Administrative Requirements".
 - 3. Post Wire Termination Visit
 - 4. Conduct second site visit upon completion of lighting control system to perform system startup and verify proper operation:
 - a. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS", authorized Service Representative to verify sensor locations, in accordance with layout provided by Lighting Control Manufacturer; Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require deviation from locations indicated.
 - b. Verify connection of power wiring and load circuits.
 - c. Verify connection and location of controls.
 - d. Energize lighting management hubs and download system data program.
 - e. Address devices.
 - f. Verify proper connection of panel links (low-voltage/data) and address panel.
 - g. Verify system operation control by control.
 - h. Verify proper operation of manufacturer's interfacing equipment.
 - i. Configure initial groupings of ballasts/drivers for wall controls, daylight sensors and occupancy sensors.
 - j. Provide initial rough calibration of sensors; fine-tuning of sensors is responsibility of Contractor unless provided by Lighting Control Manufacturer as part of Sensor Layout and Tuning service where specified under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS".

- k. Train Owner's representative on system capabilities, operation, and maintenance, as specified in Part 3 under "Closeout Activities".
- l. Obtain sign-off on system functions.

3.04 ADJUSTING

- A. On-Site Scene and Level Tuning **with Lighting Consultant / Architect** to make required lighting adjustments to the system for conformance with original design intent.
- B. Remote Programming Assistance
- C. Sensor Fine-Tuning: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified under "DIGITAL-NETWORK LIGHTING CONTROL SYSTEM – GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits for fine-tuning of sensor calibration. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, Contractor to provide fine-tuning of sensor calibration.

3.05 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.06 COMMISSIONING

Manufacturer must deliver commissioning support services for energy standards and codes, including system verification documentation for LEED and onsite system verification testing and demonstration.

3.07 CLOSEOUT ACTIVITIES

- A. Demonstration:
 - 1. On-Site Performance-Verification Walkthrough Lighting Control Manufacturer to provide on-site demonstration of system functionality to Client
- B. Training:
 - 1. Include services of manufacturer's authorized Service Representative to perform on-site training of Owner's personnel on operation, adjustment, and maintenance of lighting control system as part of standard system start-up services.
 - a. Include training on software to be provided:
 - 1) Configuration software used to make system programming and configuration changes.
 - 2) Control and monitor.
 - 2. Customer-Site Solution Training Visit.
 - 3. Remote Training

3.08 MAINTENANCE

- A. After system start-up to evaluate system usage and discuss opportunities to make efficiency improvements that will fit with current use of facility.

3. MEDIUM VOLTAGE 1.1 KV GRADE XLPE / PVC FRLS ARMoured CABLES

5.1 General

The MV cables shall be supplied, inspected, laid, tested and commissioned in accordance with drawings, Specifications, relevant Standard Specifications and cable manufacturer's instruction.

5.2 Material

The MV cables shall be armoured FRLS cross linked polyethylene (XLPE) insulated PVC sheathed of 1100 volts grade as detailed in schedule of quantities. Cables up to 16 sq.mm shall be with copper conductor and 25 sq.mm and above shall be with aluminium conductor.

5.3 Technical Requirements:

5.3.1 All XLPE Aluminum /Copper Power cables shall be FRLS, Armoured, 1100 Volts grade, multi core constructed as per IS : 7098 Part-I of 1988 as follows :

5.3.2 The XLPE insulated cables shall confirm to latest revision IS read along with this specifications. The Conductor shall be stranded Aluminum/Copper circular/ sector shaped and compacted. In multi core cables the core shall be identified by red, yellow, blue and black coloring of insulation.

5.3.3 The XLPE insulated 1100 Volts grade power cables shall conform to latest IS and shall be suitable for a steady conductor temperature of 70 degree centigrade. The conductor shall be stranded Aluminium/Copper as called for in the Schedule of quantities. The outer sheath shall be as per the requirement of type ST-2 of IS:5831 of 1984.

5.3.4 The cables shall be suitable for laying in racks, ducts, trenches, conduits and underground buried installation with uncontrolled back fill and chances of flooding by water.

5.3.5 Progressive automatic in line sequential marking of the length of cables in meters at every one meter shall be provided on the outer sheath of all cables.

5.4 Inspection

All cables shall be inspected by the contractor upon receipt at site and checked for any damage during transit.

5.5 Bonding of Cables

Where a cable enters any piece of apparatus, it shall be connected to the casing by means of an approved type of armour clamp and gland. The clamps must grip the armouring firmly to the gland or casing, so that no undue stress is passed on to the cable conductors.

5.6 Testing of Cables

Copies of the Routine test report of brought out cables issued by the OEM have to be submitted to Bank' engineer before execution of work.

5.7 Cable Termination

Cable termination shall be done in cable terminal box, using crimping sockets and proper size of glands of double compression type with earthing facility shall be provided

5.8 Cable Testing & Commissioning Report

Testing and commissioning report for all installed cables shall be submitted by contractor to Bank's Engineer / Architect.

4. FINAL DISTRIBUTION BOARDS(FDB's)

Final Distribution Boards (FDBs) shall be Company manufactured suitable for operation on 3 Phase/single phase, 415/240 volts, 50 cycles as per site requirement. All incoming and out going connection shall be terminated with required size copper lugs and glands.

6.1 Labels

Engraved PVC labels shall be provided on all incoming and outgoing feeder. Circuit diagram showing the arrangements of the circuit inside the distribution panels shall be pasted on inside of the panel door and covered with transparent plastic sheet.

5. CABLE FOR VOICE SYSTEM

Backbone Wiring – Inter com

General

The function of the backbone wiring shall be to provide interconnections between Telephone tag block to passage, dinning area , digital studio and pantry area as directed.

Interconnection between Telephone tag block to various telephone rosette box shall be with 4 pair telephone wire provided in suitable size PVC conduit with required hardware on wall/ beam/ column etc. as per site requirement.

6. CCTV SYSTEM

SCOPE OF WORK :

- a. Supply, laying, testing of CAT 6 cable in suitable size conduit from the existing Switch to Camera in suitable size of PVC pipe and required hardware materials on wall/ beam / column etc. as per site condition.
- b. Crimping of CAT 6 cable with RJ 45 connected at both end.
- c. Supply, installation of IO box with required accessories as directed by Bank's Engineer.
- d. Termination of CAT 6 cable one end with existing network switch and other end in IO box.
- e. Supply fixing of patch cord (CAT 6 cable with RJ 45 jack at both end) of minimum 1 meter length and fixing the same between IO box and Camera.

SN	Item	Specifications
1	Construction	Four twisted pair, ripcord and overall FR-PVC sheathed
2	Mutual Capacitance	≤ 5.6 nF/100 m
3	Propagation Delay skew	≤ 45 nS/100 m
4	DC Resistance	≤ 9.38 Ohms/100 m maximum

5	Resistance unbalance of a pair	5% maximum
6	Capacitance unbalance	$\leq 330\text{pF}/100\text{ mtr}$
7	Insertion loss at 250 MHz	$\leq 32.8\text{ db}/ 100\text{ meter}$
8	Conductors	23 AWG x 8 solid copper
9	Insulation	High Density Poly Ethelene (HDPE)
10	Sheath	FR-PVC
11	Operating Temperature	0 – 50 degree C
	Should be UL or ETL verified.	
	Each meter of the cable shall be printed with sequential length counter.	

7. INTELLIGENT FIRE ALARM AND ANNUNCIATION SYSTEM

Scope of work

Care fully removing the existing Fire alarm devices such as hooter, Response indicator, Manual call point, direction arrow with sounder, sensor etc. and retaining the same at some location during dismantling of the ceiling with temporary arrangement by hanging with GI wire/ box etc .

During renovation work required length of 2core x 1.5 sq mm Copper armoured cable FRLS 1.1KV ISI marked- Red color has to be laid from detector to detector by providing base saddles at a distance of 18" as per site condition. Re-fixing of temporary connected devices such as detector, RI, MCP, Strobe light-cum-hooter etc. have to be carried out as per drawings.

8. PUBLIC ADDRESSING SYSTEMS.

10.1 SCOPE OF WORK

The scope of work consists of supply and providing speaker as per architect's design and connect it to existing input connection including supply and wiring in 2core x 1.5 sqmm flexible, FRLS PVC braided copper wire in suitable size of PVC pipe as per site requirement and as directed.

10.2 Speaker

Speakers shall be ceiling mounted recess type as marked in the drawing and shall be complete with all mounting brackets etc. Speakers shall have a frequency response of 125-12000 Hz and the sound pressure level at 1000Hz at 1 W / 1m be not less than 97dB re. 20 M Pa.

Speakers may be connected in series parallel with the help of 2core x 1.5 sqmm flexible,

FRLS PVC braided copper wire in suitable size of PVC pipe as per site requirement and as directed
BY Bank's Engineer / Architect.

K : LIST OF APPROVED MAKES FOR ELECTRICAL WORKS

Sr. No.	Items	Approved Makes
1	MCCB, MCB, RCCB, RCBO, Change over etc.	Legrand / Schneider/ L & T / Siemens
2	Cables & Wires including Telephone, speaker wire	Polycab / RR / Havells/ Finolex
3	Cable Glands	Commet / Dowell
4	Power Distribution Board	Legrand / Panasonic / Siemens / Schneider / L & T
5	Switches, Sockets	Legrand / Panasonic / L & T
6	PVC Conduits	Precision / Polycab / Pressfit
7	Lighting Fixture	Delta / Endo / Wipro / Abby / Signify .
8	Speaker	Philips / Bosch / JBL
9	UTP CAT 6 cable FRLS/ RJ 45 jack	D – link, Tyco, Molex
10	LIGHTING MANAGEMENT SYSTEM (LMS)	Lutron Electronics Crestron Electronics Philips Dynalite

L : Comprehensive Annual Maintenance Contract (CAMC) for maintenance and services of various systems as indicated below

For smooth and efficient maintenance of various equipment's, it is necessary that the system(s) are maintained under Comprehensive AMC by respective OEM or the system integrator who has installed the system in the Bank (hereafter referred as "Service Provider"), for their minimum expected life after handing over of the systems to the Bank. The minimum expected life of these systems will be considered as given below:

S. No.	Equipment / System	Minimum Expected Life (years)
1	Power/Light Management system (DALI)	6
2	Roller blind motors	5

Instructions to the tenderer for implementing the above requirement:

- i. **Undertaking from the Service Provider:** The successful tenderer shall submit an undertaking from the OEM/System integrator from whom the above captioned works is intended to be executed in the attached format given at Annexure C.
- ii. The successful tenderer shall ensure that **A bipartite agreement** as per the format given at **annexure B**. is executed between the Bank and the Service Provider for carrying out the CAMC of referred equipment(s) **at the time taking over of the system by the Bank**.
- iii. **Submission of Bank Guarantee (BG) by Service provider:** The successful tenderer shall ensure that in addition to the bipartite agreement, service provider submits an irrevocable BG (issued by a scheduled Bank) to the Bank for the performance of CAMC of the respective system as detailed below valid for a period of 5 years from the date of start of CAMC. The BG shall be submitted to the Bank at least 15 days before the completion of DLP.
 - PLM system – Rs. 2 lakh
 - Roller blinds -Rs. 2 lakh
- iv. **Rate of comprehensive CAMC:** The rates of CAMC for the above systems for the first year shall be 5 % of the total cost of the system.

- v. **Renewal of Rate of comprehensive CAMC:** The rate of CAMC for further period till the expected minimum life as given above shall be renewed based of the following formula:

$$A_C = \frac{A_P}{100} \left(15 + 70 \times \frac{EPC}{EPP} + 15 \times \frac{WIC}{WIP} \right)$$

- A_C = The contract amount for the current year.
 A_P = The contract amount for the previous year.
 EPC = Wholesale Price Index for electrical products 6 months prior to the commencement date of contract for the current year.
 EPP = Wholesale Price Index for electrical products 6 months prior to the commencement date of contract for the previous year.
 WIC = Consumer Price Index for industrial workers (respective location of installation city) 6 months prior to commencement date of contract for the current year.
 WIP = Consumer Price Index for industrial workers respective location of installation city) 6 months prior to commencement date of contract for the previous year.

- vi. **Scope of CAMC:** During the CAMC of the above systems, the same shall be maintained by Service Provider as per the scope indicated in the Annexure A.
- vii. **Penalty provisions for non-performance of CAMC:** During the CAMC of the above systems / equipment's, the same shall be maintained as per the scope indicated in the Annexure A.
- viii. **Terms of payment during CAMC:** Quarterly payment shall be made subject to statutory deductions, penalties etc if any, by the Bank directly to the Service Provider after rendering satisfactory services during the previous quarter by the service provider subject to submission of bill along with requisite service reports etc.

Annexure A

Scope of work during Defect Liability Period and Comprehensive Annual Maintenance Contract (CAMC) period for all System.

1. Scope -

(A) The scope of work shall include the following:

- a. Comprehensive AMC of the all the systems shall include all equipment's, controllers, sensors, cabling, motors, software etc need to perform the system satisfactory.
- b. Support should be made available by the service provider for all the equipment's.
- c. **Preventive maintenance** at least once per month shall be carried out to ensure that the system is running under proper working condition during DLP & CAMC period.
- d. During the DLP and the currency of the Comprehensive Annual Maintenance Service Contract, all care shall be taken so that the downtime of the system is kept minimum and in any case, not more than the allowed time for attending to repairs as under:
 - i. Any defects in the system shall be repaired **within 24 hours** from the time of reporting complaint in writing (complaints through SMS, e-mails, fax, mobile etc. shall also be treated as complaints in writing).
 - ii. Any defects in any of the equipment's leading to complete breakdown of the system, shall be repaired **within 8 working** hours from the time of reporting complaint in writing (complaints through SMS, e-mails, fax etc. shall also treated as complaints in writing).
- e. The scope of work shall also include all the labour, tools etc. **for relocation / shifting of equipment, control device, equipment's** from one place to another within the Bank's Premises as per Bank's requirements and instructions. For such relocation or shifting, if additional cable/item is required, the cost of the additional cable/item only shall be paid as per the rates quoted by the Tenderer/ firm in the tender after applying necessary revision. For ascertaining the reasonability of the rates so arrived, current market cost of same/similar item will be submitted by the service provider and lesser of the two rates will apply.
- f. The CAMC should include for repair/replacement of the equipment in case if it develops any defect including re-loading software etc. which may need **replacement/ repairs/ reloading/ upgradation of software. In case the repair is not possible** due to any reason whatsoever, then the defective item/equipment shall be replaced with the new equipment suitable software/ upgradation of software (if required) without any additional cost to the Bank.

- g. The scope of maintenance in addition to preventive maintenance will also include attending to any number of **breakdown** calls.

(B) **Penalty for delay in service** during defect liability (DLP) and CAMC period:

If the down time exceeds the above mentioned period **during defect liability period and CAMC period**, penal recovery shall be made from any payments due to the service provider at the following rates:

- **Non-functional equipment's** – @ Rs 500/- per system and its equipment per day beyond the authorised maintenance period subjected to maximum 20% of AMC amount.

Note: Notwithstanding the above penal provisions, in addition to the penalty, the Bank reserves the right to encash the BG submitted for the due fulfilment of the terms and obligations the DLP and CAMC contract.

Annexure B

BIPARTITE AGREEMENT FOR COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT
(CAMC) FOR MAINTENANCE AND SERVICES

This agreement is made on this _____ day of _____ between **M/s.**
_____**(Name of CAMC vendor)**, having its office at
_____ hereinafter referred to as Service Provider,
the party of the **FIRST PART**, (which expression where the context admits shall this include its
successors in interest and assigns);

And

Reserve Bank of India, constituted under the Reserve Bank of India Act, 1934, having its Central
Office at Mumbai (hereinafter referred to as the "Bank"), through
_____**(Name and address of the Bank's office**
where contract is being executed), (hereinafter called the "Bank") and collectively the party of
the **SECOND PART**;

Whereas:

- (a) In terms of the Contract Agreement dated _____ between the Bank and the Tenderer for
the work of the _____, **the Service Provider** herein was
selected by the **(Name of the Main contractor)** vide Order No.
_____ DATED _____ after acceptance by Bank
for Supply, Installation, testing and commission ofsystem and entered into
an agreement with the Service Provider for the same including carrying out Comprehensive
Annual Maintenance (CAMC) for a period of minimum years (*as per expected life*
mentioned) after one year of Defect Liability Period.
- (b) The Service Provider, being the Original Equipment Manufacturer (OEM) / system integrator
of has agreed to provide Comprehensive Annual Maintenance Contract (CAMC)
for the system installed by them for the captioned project for a period of minimum 5 years (*as*
per expected life mentioned) after expiry of DLP of one year in consideration of the amount
of Rs.per Annum to be paid by the Bank subject to revision in the rates as per
the formula indicated in this agreement.

AND

- (c) Under the contract agreement with reference to agreement Dated _____ between
..... **(Name of the main contractor)** and the Bank a bipartite agreement is

required to be executed between the Bank and the Service Provider for smooth implementation of Comprehensive Annual Maintenance Contract (CAMC) of installed by it at the Bank's Central Office Building at Mumbai on the terms and conditions as contained herein.

NOW THE PARTIES TO THIS AGREEMENT BEING DESIROUS OF REDUCING TO WRITING ALL THE TERMS AND CONDITIONS AGREE AS FOLLOWS:

(A) General:

1. The parties hereto shall respectively and faithfully abide by the terms and conditions and stipulations contained in this agreement and perform/discharge their part of the obligation of the agreement accordingly.
2. The Indian laws shall apply for interpretation of this Agreement.
3. Three sets of this agreement shall be signed and one set each of this agreement shall remain with the Service Provider,(*Main Contractor*) and the Bank and the cost towards the stamp duty for all these agreements shall be borne by Service Provider.
4. The Parties hereto represent and warrant that the respective signatories are duly authorized to sign this Agreement and bind the respective parties.
5. All disputes arising out of or any way connected with this agreement and the Work Order No. _____(work order issued by Bank for this work), shall be deemed to have arisen at Mumbai and courts in Mumbai shall have jurisdiction to determine the same.
- 6. The scope of work and other terms and conditions of the CAMC shall be as per the attached annexure.**
7. The parties to this Agreement agree to settle their disputes arising under this Agreement, by mutual consultations at the first instance with the aid of an escalation matrix, failing which the parties agree to settle their disputes by way of arbitration by a sole arbitrator to be appointed by mutual consent. However, the person to be appointed as the sole arbitrator shall be one who is adequately qualified and experienced to resolve the dispute sought to be raised before the said arbitrator. The place of arbitration shall be Mumbai.
8. Where the business or undertaking of the service provider, is taken over by any other person in any legally recognized mode of take-over, then unless the service provider is entitled to continue to provide to the Bank the services contemplated under this Agreement, it shall be duty of the service provider to ensure that such other person is obligated to provide the services contemplated under this Agreement under the same terms and conditions. In case the service provider does not so ensure and consequently maintenance services are not provided, or the successor of the service provider fails to honour the terms of this Agreement, then –

- a. Any sums due to the service provider towards CAMC shall be liable to be forfeited and successors of the service provider shall not be entitled to claim any money due to the service provider; and
 - b. The Service Provider shall arrange to get the CAMC services through their successor or any other service provider mutually agreed with the Bank, at the risk and cost of the Service Provider/ successor, as the case may be.
9. The Bank shall have right to forfeit the CAMC performance Bank Guarantee submitted by the Service Provider in case of failure by the Service Provider to provided satisfactory services even after expiry of written notice period of 15 days to comply with the above.

(B) Obligations of the FIRST PARTY (SERVICE PROVIDER):

1. The FIRST PARTY shall provide all-inclusive Comprehensive Annual Maintenance for the system which includes periodic routine/preventive and breakdown maintenance and also any number of **breakdown calls** along with supply of all spares and labour involved as per Original Equipment Manufacturer's O&M Manual for the supplied/installed equipment and its accessories in order to ensure proper functioning of the system. The CAMC period will commence from expiry of defects liability period and accordingly shall be valid for a period of years (*as per expected life mentioned*).
2. The Service Provider shall make good for any direct damages/loss caused to the Bank due to the actions/omissions of persons employed by it or because of its actions/omissions during the execution of the contract.
3. The Service Provider shall submit an irrevocable BG issued to the Bank for the performance of CAMC of the respective system for an amount of **Rs. 2 lakh for PLM System, Rs. 1 lakh** for VRV system and **Rs. 4 Lakh** for Roller blinds & automatic sliding doors valid for a period of 5 years from the date of start of CAMC. The BG (issued by a scheduled Bank) shall be submitted to the Bank at least 15 days before the expiry of DLP.
4. The firm shall ensure that the required spares etc. for proper maintenance are readily available with them for the complete life span.
5. The complaints lodged by the Bank /(Name of the main Contractor) in respect of the equipment for any repair or break down (any number of breakdowns) must be attended at top most priority by the Service Provider.
6. The Complaint/Message may be sent to the address/Telephone Number/mobile number/ email of the service provider.
7. While submitting the invoice towards annual maintenance to Bank, the Service Provider has to furnish a satisfactory working service reports dully signed from the Bank. The certification given by the Bank is final and shall not be subject to any question

8. The Service Provider has to replace any defective parts with the Manufacturer's genuine parts under intimation to the Bank's authorized personnel.
9. The service provider shall be responsible to take and accordingly obtain all the insurance required for its employees carrying out the CAMC works under this agreement, such as Workmen Compensation or any other requisite and necessary insurance.
10. The Service provider shall keep the Bank indemnified in case any action is taken against them by any Authority on account of contravention by the Service Provider or its employees, of any of the provision of any act or rules made there under pertaining to maintenance of the equipment(s). If the Bank is made liable to pay or reimburse any amount due to non-observance, if any, on the part of Service Provider, of any provision stipulated in the notification by law/act/rules/regulations etc., then Bank, shall have the right to deduct any money due to the Service Provider under this Agreement.
11. The Service Provider shall deploy adequate number of qualified and duly experienced service engineers and such other skilled personnel with necessary certification wherever necessary for carrying out the services under this Agreement and considering the nature of working of the Bank, shall ensure availability of its maintenance personnel as and when required.
12. The Service Provider shall only employ its own employees for rendering the services contemplated under this Agreement. The service provider shall ensure that all the personnel deployed by it, act with proper demeanor and in case the Bank notifies the service provider that any of its personnel need to be replaced for any reason, the service provider shall promptly act upon such notice by the Bank and replace the concerned personnel.
13. The Service Provider shall familiarize itself and fully comply with the provisions of all the Acts/Rules/Regulations and orders of the State/Central Government applicable to the work, including the Payment of the Wages Acts, Workman's Compensation Acts, Contract Labour (R&A) Act etc. and shall be fully responsible and liable for due observance of the same.
14. The Service Provider shall abide by all existing or future labour related enactments and rules and regulations made there under, notifications issued, etc. by the State or Central Govt. or Local Authorities.

(C) Obligations of the SECOND PARTY (Bank):

1. **Terms of Payment:** Bank shall be responsible for making all payments to Service Provider during the CAMC period for rendering satisfactory maintenance services as per scope of works stated herein. **Quarterly payment** shall be made by the Bank to the service provider after rendering of satisfactory services during the quarter by the service provider subject to submission of bill along with requisite service reports.
2. **Renewal of Rate of comprehensive CAMC:** The rate of CAMC for further period till the expected minimum life as given above shall be renewed based of the following formula.

$$AC = \frac{AP}{100} \left(15 + 70 \times \frac{EPC}{EPP} + 15 \times \frac{WIC}{WIP} \right)$$

- AC = The contract amount for the current year.
- AP = The contract amount for the previous year.
- EPC = Wholesale Price Index for electrical products 6 months prior to the commencement date of contract for the current year.
- EPP = Wholesale Price Index for electrical products 6 months prior to the commencement date of contract for the previous year.
- WIC = Consumer Price Index for industrial workers (respective location of installation city) 6 months prior to commencement date of contract for the current year.
- WIP = Consumer Price Index for industrial workers respective location of installation city) 6 months prior to commencement date of contract for the previous year.

The parties hereto agree that the several parts of this contract have been read by all of them and having fully understood, in witness whereof the parties have hereunto set and subscribe their respective hands and seals at _____ on the date, month and year above written.

Signed and Delivered

By the said Second Party

Signature

Name:

Address: _____ :

1) Witness & Signature

Address:

By the said First Party

Signature.

Name:

Address:

Annexure C

**(To be submitted by the respective Service Provider (OEM or authorised integrator who
have installed the Programmable Lighting Management System (PLMS) / VRV System/
Roller blinds/ Automatic Sliding door on their letter head)**

Undertaking for the CAMC of

Chief General Manager
Premises Department, 5th floor
Reserve Bank Of India
Mumbai.
Dear Sir/Madam

**Supply, Installation, Testing and Commissioning of at 25th floor, C.O. RBI,
Mumbai.**

We hereby confirm that we have understood the followings in respect of the Comprehensive Maintenance Contract (CAMC) of above referred system:

1. The system provided will be maintained by us during defect liability period of one year and thereafter under Comprehensive Annual Maintenance Contract (CAMC) for a **minimum period of 5 years** excluding one year of DLP after handing over of the system to the Bank.
2. We agree to submit irrevocable **Performance Bank Guarantee of** to Bank as a performance guarantee for due fulfillment of the terms of CAMC valid for period a **minimum period of 5 years** excluding one year of DLP.
3. We have understood the **detailed scope of CAMC** and its terms and conditions and agree to abide by the same.
4. The rates for the first year of CAMC after one year of DLP will be **5 %** of the total cost of system excluding tax per annum and the rates of CAMC for further period till the expected minimum life as given above shall be renewed as per the provision indicated in the attached bipartite agreement.
5. We agree to enter into a bipartite agreement with the Bank for the execution of the said CAMC as per the enclosed draft. The cost toward the agreement (charges for stamp paper as per stamp act and other charges) shall be borne by us. A signed copy of the draft agreement in support of having accepted the terms and conditions of the CAMC is attached.

Yours faithfully,

(Seal and signature)

SCHEDULES

(A to H)

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Schedule A

Notes for Schedule of Quantities

1	The Schedule of Quantities shall be read in conjunction with the specifications, Tender drawings and bid documents. Interior Contractor shall not rely merely on the description given in the Schedule of Quantities.
2	Quantities of work indicated in the Schedule of Quantities are only approximate and are given to provide a common basis for bidding. No claim shall be entertained from Interior Contractor if the actual quantities or items of work differ from those indicated herein, except where stated otherwise. The Bank's Engineer reserves the right to modify any aspect of the scope of Tender at any time during the course of work.
3	The Interior Contractor shall fill his rates and amounts for all the items for the specified quantities indicated in Schedule of Quantity issued by the Employer.
4	Quoted Prices shall be in Indian Rupees only.
5	Rates and amounts shall be entered in online mode as per requirement. Non-compliance of these conditions may render the Bid invalid at the discretion of the Employer.
6	Unit Rates shall be submitted for all Items, and they shall be firm for the entire duration of the contract and any approved extended period.
7	The quantities of work actually carried out against each item shall be measured and paid at the rates quoted in the Schedule of Quantities where applicable or otherwise at such rates and prices as may be fixed within the terms of the Contract.

8	BIDDER shall be deemed to have allowed in his rates the provision, maintenance, and final removal of all temporary works of whatsoever nature required for the proper execution of the works, except for those temporary works for which specific items have been provided in Schedule of Quantities.		
9	Abbreviations used are as under:		
	i)	No.	Number
	ii)	Cu m	Cubic metre
	iii)	Sq m / Sqmt	Square metre
	iv)	M	Metre
	v)	LS	Lump sum
	vi)	MT	Metric Tonne
	vii)	Kg	Kilogram

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Schedule B

Material Testing and Quality assurance:

Interior Contractor shall submit the material testing and quality assurance plan for approval to the Bank. Necessary amendments, if any, advised by the Bank shall be incorporated by the Interior Contractor. Interior Contractor shall get done the material testing and quality control check as per the relevant IS codes and standards covering the entire scope of work as per schedule of quantity and specifications at his own cost as per plan approved by the Bank.

The contractor may also submit MTC of the materials used, when desired/demanded by the Employer.

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Schedule C

SAFETY CODE

1. First aid appliances including adequate supply of sterilized dressing and cotton wool shall be kept in a readily accessible place.
2. An injured person shall be taken to a public hospital without loss of time, in cases where the injury necessitates hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from the ground/floor.
4. No portable single ladder shall be over 8m in length. The width between the side rails shall not be less than 30cm (clear) and the distance between two adjacent rungs shall not be more than 30cm. When a ladder is used, an extra mazdoor shall be engaged for holding ladder.
5. The excavated material shall not be placed within 1.5m of the edge of the trench or half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.
6. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one metre.
7. No floor, roof or other part of the structure shall be so overloaded with debris or materials as to render it unsafe.
8. Workers employed on mixing and handling materials such as asphalt, cement mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.
9. Those engaged in welding works shall be provided with welder's protective eye shields and gloves.
10. No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
11. Suitable facemasks should be supplied for use by the workers when the paint is applied in the form of spray or surface having lead paint dry rubbed or scrapped.
12. Overalls shall be supplied by the Interior Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the periods of cessation of work.
13. Hoisting machines and tackle used in the works, including their attachments, anchorage and supports shall be in perfect condition.
14. The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

FIRE SAFETY CODE

1. Cutting / drilling machine and other electrically operated equipment used at site shall be plugged into correctly rated electrical outlets.
2. Only ISI marked 3 pin plug and other appliances and equipment shall be used.
3. Electrical power cables/wires used shall not have any joints and shall be properly rated.
4. All electrical appliances i.e. welding, drilling, cutting machine etc. shall be safely and securely earthed to prevent leakage current while in operation.
5. Before commencing the welding work for the first time on any day, fire section shall be informed and only after the site inspection by the Fire officers/Personnel, work shall be started.
6. Two buckets of water and sand shall be kept in an easily accessible area on the site.
7. Fire extinguishers recommended and issued by fire officers shall be kept on the site.
8. Used paint drums shall be stored in specified store only after closing them properly.
9. Personal protective equipment such as safety shoes, hand gloves, welder's mask, ear plug, etc., depending upon the requirement of the work shall be provided by the Interior Contractor to the workmen to prevent occupational health hazards.
10. The safety belt shall be provided by the Interior Contractor and used by the workmen while working from height for more than 10' from Ground level.
11. None of the passages near lift lobby and staircases shall be used for stacking / dumping any kind of materials/waste.
12. Both the staircase doors shall be normally kept closed.
13. None of the fire extinguishers shall be removed/shifted from its designated location.
14. Power supply shall be switched off from the mains when equipment is not in use.
15. Wood-shavings and saw-dust generated from the work shall be collected on daily basis, removed from site and stored at the designated place in proper manner.
16. Any debris generated from the work shall be collected on daily basis, removed from site and stored at the designated place in proper manner.
17. Battery operated emergency light/torches shall be provided by the Interior Contractor to the workmen while working beyond office hours.

Schedule D

List Of Documents to Be Maintained At Site

S. No.	Description of the Document	Remarks
1	Contract Agreement.	Certified true copies of the contracts
2	Drawings	One set of all drawings issued for the work
3	Work Programme chart	Showing item wise progress plan
4	Work instruction / Site order Book	For issue of instructions by Bank's Engineer or his representative at site in the course of day to day supervision. This book shall be in the form of Triplicate book with machine numbered pages. After recording the instructions, one copy shall be taken by Bank's Engineer or his representative, another by the Interior Contractor and the third copy shall remain in the book on which the compliance shall be recorded by Interior Contractor after taking required action.
5	Labor Report and Daily Progress Report (DPR)	To record the labour and DPR by the Interior Contractor
6	Test Reports/ certificates for Materials/ equipment	To maintain record of test reports/ certificates received from manufacturers
7	Measurement Book	To record measurements of works.
8	Progress Review reports	To maintain record of progress
9	File and Register for Extra/Variation Order	To maintain record of extra/ variation items

10	Hindrance register	For recording the details of hindrances, reasons & its clearance with time period jointly signed by the Site Engineer/ Bank's Engineer representative and the Interior Contractor's representative
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Schedule E

General Rules and Instructions to Bidders - Information

Bids in Two Bids System	2	<p>Tender Inviting Authority – Chief General Manager Reserve Bank of India Premises Department, 5th Floor, Central Office Building Shahid Bhagat Singh Marg Fort, Mumbai-400 001 E Mail id : cobrenovation@rbi.org,in</p> <p>Name of the Work – Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai</p> <p>Estimated cost of work:- ₹ 823 lakh</p> <p>Office- Premises Department, 5th Floor, Central Office Building, Reserve Bank of India, Shahid Bhat Sing Marg, Fort, Mumbai - 400001</p>
	2, 14	<p>Due Date and Time for submission of e-Tender/Bid (Bid close date) September 20, 2024 up to 2.00 PM</p> <p>Tender submission mode: e-Tender</p>
	4(iii) and 11	<p>EMD of ₹ 16,46,000 in the form of Demand Draft drawn in favour of Reserve Bank of India, of a Scheduled Bank or Bank Guarantee as per proforma annexed hereto (Annex 3) shall be deposited by the eligible bidders in original at the office of tender inviting authority on or before the due date September 20, 2024 and up to 2.00 PM. EMD can also be remitted to Reserve Bank of India Account of on or before 2.00 PM of September 20, 2024. The account details for NEFT transactions are as under:</p>
Earnest Money Deposit (EMD)		

Schedule - F
Conditions
Information

General
of the Contract -

		<p>Beneficiary Name- Reserve Bank of India</p> <p>IFSC: RBIS0COD001</p> <p>Account No: 41861403873</p> <p>Proof of remittance indicating transaction number and other details shall be uploaded on Bank's approved e-tender portal along with other tender documents.</p>
Pre-Bid Clarifications	5	Through Emails addressed to tender inviting authority mentioned above on email ID cobrenovation@rbi.org,in and Cont. No. - 022-22602438
Opening of Bids	16	Date of opening of tenders/bids (Part-I) – September 20, 2024 at 3.00 PM on e-Tender mode.
Bid validity	17	Bid validity – Three Months
Time for Completion of work	23	Time allowed to complete the work: 4 months {Phase 1 :- 2 months; Phase 2 :- 2 Months} to be reckoned from 7 th day of issue of work order.

Definitions		
	2.	
	i)	Name of the Work – Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai
	ii)	The Site – 25th floor, Central Office Building, Fort, Mumbai - 400001
	iii)	Employer – Reserve Bank of India, Central Office, Mumbai
Discrepancies and Adjustment of Errors (order of preference)	8.2	The Competent Authority – Chief General Manager, Premises Department, Reserve Bank of India, Central Office, Mumbai

CLAUSES OF CONTRACT

Performance Guarantee	CLAUSE 1	
	(i)	Time allowed for submission of Performance Guarantee from the date of award of work – 14 days
	(ii)	Maximum allowable extension of time for submission of Performance Guarantee beyond the period specified in (i) above without penalty – 7 days
	(iii)	Maximum allowable extension of time for submission of Performance Guarantee beyond the period specified in (ii) above with late fee @ 0.1% of the amount of Performance Guarantee per day – 7 days
Recovery of Security Deposit	CLAUSE 1 A	
	Retention percentage – 5% from every bill subject to 5% of the contract price	
Compensation for Delay	CLAUSE 2	
	(i) Authority for fixing compensation under clause 2: The Chief General Manager, Premises Department, Reserve Bank of India, Central Office, Mumbai.	
	(ii) Liquidated Damages (LD): The work shall throughout the stipulated period of the contract be proceeded with all due diligence and if the Interior Contractor fails to complete the work within the specified period, he/they shall be liable to pay liquidated damages subject to a maximum amount of 10% of the tendered amount. The Liquidated damages will be levied in following manner: “If the Interior Contractor fails to maintain the required progress of the works by the completion time stipulated in the Contract or within any extended time under time extension Clause and the employer certifies in writing that in his opinion the same ought reasonably to have been completed, the Interior Contractor shall pay the Employer	

	<p>the sum named as “Liquidated Damages” for the period during which the said works shall so remain incomplete and the Employer may deduct such damages from any moneys due to the Interior Contractor.</p> <p>The Interior Contractor hereby specifically agrees and authorizes the Employer to deduct such liquidated damages, if any, from any instalments of payment becoming due and payable to the Interior Contractor in terms of this contract or from the retention money.</p>
Time and Extension for Delay	<p>CLAUSE 5</p>
	<p>Date of commencement: 7th day from the date of award of work or when the site is handed over to vendor whichever is later.</p> <p>Time allowed for completion of work: 4 months {Phase 1 :- 2 months; Phase 2 :- 2 Months} from the date of commencement.</p> <p>Extension for delays shall be as per clause 5 of ‘Clauses of Contract’ in Section IV.</p>
	<p>(i) Authority for granting Extension of Time - Chief General Manager, Reserve Bank of India, Premises Department, Central Office, Mumbai</p>
	<p>(ii) Shifting of date of commencement in case of delay in handing over of site – Engineer-in-Charge</p>
Payment on Interim Certificate to be Regarded as Advances	<p>CLAUSE 7</p>
	<p>Gross value of work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment eligible for raising Running Account bill (Interim payment) - ₹ 200.00 Lakh</p>
	<p>Retention percentage for Interim Certificates – 5% from every bill</p>

	Total Security Deposit - 5% of the Contract Price (i.e., Retention Money from each bill) plus 5% Performance Bank Guarantee.
	Retention period for the Retention Money - up to successful completion of Defects Liability Period (DLP)
	Installment due after Virtual Completion - Performance Bank Guarantee submitted by Interior Contractor towards Performance
	Period of honoring interim certificates - 30 days from the date of receipt of complete bill along with all the documents as specified in Special Conditions of Contract
Deviations/ Variations Extent and Pricing	<p>CLAUSE 12</p> <p>Deviation limit beyond which clause 12.2 C shall apply - 25% beyond the tender item quantity specified in the Schedule of Quantity.</p> <p>Item rates varying beyond +/- 25% of the Bank's estimated rate, for the same item shall be called Abnormally high rates (AHR)/ Abnormally low rates (ALR) respectively.</p>
Deviation - Deviated Quantities and Pricing	
Interior Contractor Liable for Damages, defects during defect liability period	<p>CLAUSE 17</p> <p>Defects Liability Period – 12 months from the date of virtual completion and handing over the Completion Certificate to the Employer</p> <p>Competent Authority for deciding reduced rates - Chief General Manger, Reserve Bank of India, Premises Department, Mumbai</p>
Settlement of Disputes & Arbitration	<p>CLAUSE 25</p> <p>Competent Authority for referring the dispute – Chief General Manger, Reserve Bank of India, Premises Department, Mumbai.</p> <p>Place of Arbitration – Mumbai, India</p>

Insurance in respect of damages to Persons and Property	CLAUSE 33
	<p>Interior Contractor shall take following Insurance Policies:</p> <ol style="list-style-type: none"> 1) Interior Contractor's All Risk Policy for the full Contract Value for entire Contract Period till the completion of work. 2) Workmen Compensation Policy for all workmen deployed at site 3) Third Party Liability Policy as per following details: <ol style="list-style-type: none"> a) For injury to persons – ₹2 Lakh per person per accident b) For damage to property – ₹5 Lakh per accident <p>Subject to overall ceiling as per extant Insurance guidelines</p>

Sr. No.	Designation	Minimum No. of personnel	Minimum years of Relevant Experience	Rate of recovery per head per day for non-compliance
1	Experienced site supervisor (Civil, Electrical etc.) (Full time)	1	5	₹ 1000/-

^Note - Separate supervisor is required to check respective stream (Trade) works.

Schedule G

GREEN BUILDING REQUIREMENTS

Reserve Bank of India (RBI) intend to follow Indian Green Building Council (IGBC) norms for Green Interiors space while renovating office space at 25th floor, Central Office Building, Fort, Mumbai. IGBC Green Interior involves complying with the green building specification like using of certain green materials, following of sustainable procedures and certain measures during Execution/up gradation stage, as spelt out in this document. Accordingly, the Interior Contractor shall ensure to comply the material specifications/ works as per Schedule of Quantities for the respective items and all the work procedures/ processes as specified in this schedule.

To comply with Green Building requirement, wherever called for, the Interior Contractor shall provide necessary documents / shop drawings issued by the manufacturers and this document shall generally cover test certificates, Letter of authorization in terms of standards, thermal values, and relevant data, MSDS, write-ups / detailed description of the particular material / equipment, as per applicability, as stipulated by the Bank's Engineer prior to ordering the materials and after the supply of materials or at appropriate stages.

The Interior Contractor shall verify with the Bank's Engineer regarding the correctness of the green specification before ordering and procurement of materials and equipment supplied to the work.

If the material specifications, the shop drawings and the relevant documents do not meet the specified norms; it shall be the sole responsibility of the Interior Contractor to satisfy the specified Green norms by replacing the materials / equipment with the prior approval of the Bank's Engineer.

Note: The below photographs are given just for reference purpose, they do not refer to any specific brands/makes.



Ducts Wrapped with Plastic To Avoid Dust Plastic



Ducts Stored with Properly Wrapped with



Cleaning Prior To Installatin / Equipment covered during Construction Phase



Cleaning of Site on regular basis



Segregated Waste Stored on Site – Cement Bags and Scrap area on Site marked with signage



Schedule H

Important Instructions Regarding E-tender

This is an e-procurement event of RBI. The e- procurement Service Provider/Contractor is the MSTC Limited.

You are requested to read and understand the Notice Inviting Tender and subsequent corrigenda if any, before submitting your online tender.

Process of E-tender:

A) Registration: The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. **The Vendor should possess Class III signing and encryption type digital certificate.** Vendors are to make their own arrangement for bidding from a P.C. connected with Internet. RBI is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature).

SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE

SUBMITTED ON-LINE ONLY AT www.mstcecommerce.com/eproc/ (Version 3)

1) Vendors are required to register themselves online with

www.mstcecommerce.com/eproc/

Register as Vendor -- Filling up details and creating own user id and password Submit . For further details, go to Download Guide / Video / Registration

Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form . In case of any clarification, please contact RBI/MSTC, (before the scheduled time of the e- tender) .

Contact person (MSTC) For Vendors:

HO Central Help Desk: (For vendors)

Phone Number :07969066600

helpdeskho@mstcindia.in (Please mention "HO Helpdesk" as subject while sending emails)

WRO Helpdesk:7651915418/02269856817/02269856800

Availability

9:30 AM to 5:00 PM on all working days for all Technical issues e-Tenders, System settings etc.

Contact person (MSTC,WRO)

Tanmoy Sarkar, Deputy Manager Mobile:8349894664

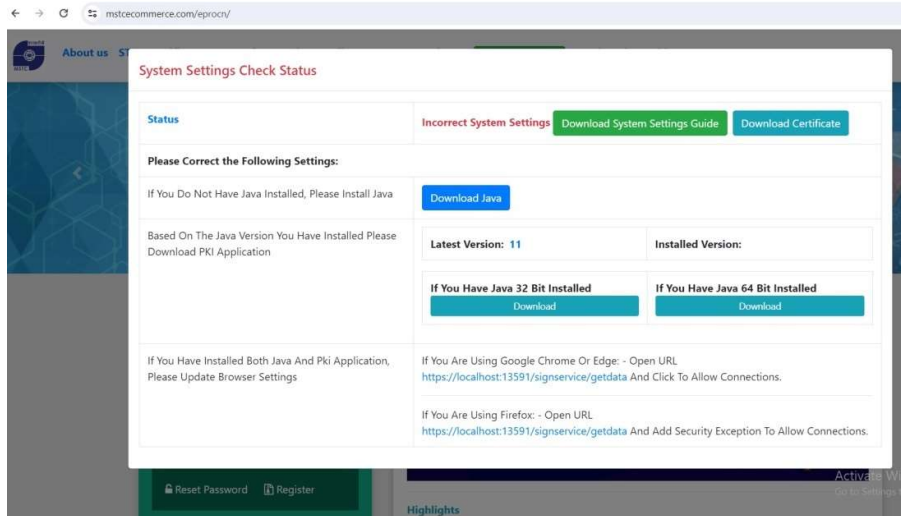
Contact person at RBI

.....

Guide .

1 System Requirement:

For details, vendor may refer to the **DOWNLOAD SYSTEM SETTING GUIDE** available <https://www.mstcecommerce.com/eprocn/>



2. Special Note towards Transaction fee: The vendors shall pay the transaction fee using “Transaction Fee Payment” Link against the specific tender in the “Bid Floor”/through the “Pay Transaction fee” in “Event catalog” through their login. Service Provider / Contractor / Vendor shall have the facility of making the payment either through NEFT or Online Payment. On selecting NEFT, Service Provider / Contractor / Vendor shall generate a challan by filling up a form. Service Provider / Contractor / Vendor shall remit the transaction fee amount as per the details printed on the challan without making change in the same. On selecting Online Payment, Service Provider / Contractor / Vendor shall have the provision of making payment using its Credit / Debit Card / Net Banking. Once the payment gets credited to MSTC’s designated bank account, the transaction fee shall be auto authorized.

Transaction fee is non-refundable. A vendor will not have the access to online e- tender without payment of the transaction fee.

NOTE: Bidders are advised to remit the transaction fee well in advance before the closing time of the event so as to give themselves sufficient time to submit the bid.

3. Information about tenders / corrigenda shall be sent by email only during the process till finalization of tender. Hence the vendors are required to ensure that their corporate email I.D. provided is valid and updated at the time of registration of vendor with the MSTC Ltd. Vendors are also requested

to ensure validity of their class III signing and encryption type of DSC (Digital Signature Certificate).

4 E-tender cannot be accessed after the due date and time mentioned in NIT (Notice inviting tender).

5 Bidding in E-tender:

Note: Vendors are instructed to use **Upload Documents** link in My menu to upload documents in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB.

Once documents are uploaded in the library, vendors can attach documents through **Attach Document** link against the particular e-Tender. Please note that if the documents are not attached to any e-Tender, the same cannot be downloaded by RBI and it will be deemed that the vendor has not submitted the documents. For further assistance please follow instructions of vendor guide.

- a) Bidder(s) need to submit necessary EMD, E-Tender fees (If ANY) and Transaction fee separately for the e-tender. Transaction fees if any are non-refundable. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by RBI.
- b) The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid.

The bidder(s) who have submitted the above fees can only submit their Techno Commercial Bids and Price Bid through internet in MSTC website

www.mstcecommerce.com → e-procurement → New Common Portal → Bid Floor Manager → live event → Selection of the live event → Transaction fee->Common terms->Attach Documents->Price Bid.

Please Note: The vendor after successful remittance of the transaction fees and EMD details, will get the attach documents and common terms tab enabled in their login. Post successful completion of this step, the vendors will be allowed to save the lot specific terms and submit their price bid against the lot through the portal or download and upload the excel file for submitting price bids, as the case may be. In case the attach documents and/or saving common

terms step is unsuccessful, the tabs for saving lot specific terms and submitting price bid would be disabled. The status of whether the same is successful/pending would be displayed in the bid status button.

- c) First the vendor needs to fill up the Commercial specification if any and save it. Then the vendor should fill up the Techno-commercial bid. After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to be filled up and then bidder should click on "save" to record their price bid. Then once both the Techno-Commercial bid & price bid has been saved, the bidder can click on the "Final Submission" button to register their bid

NOTE: - After clicking the final submission "Delete bid" option would be shown. If the vendor wants to delete the bid after final submission and re-submit the bid, then he/she should click delete bid and resubmit the same and again click final submission.

- d) In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid.
- e) During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.
- f) The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.
- g) All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply/work. Such successful tenderer shall be called hereafter **SUPPLIER/CONTRACTOR**.
- h) It is mandatory that all the bids are submitted with class III signing and encryption type of digital signature certificate otherwise the same will not be accepted by the system.
- i) Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.
- j) No deviation of the terms and conditions of the e-Tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the e-Tender.

k) Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.

I/We hereby declare that I/we have read and understood the information provided in Schedule A to Schedule H above.

Place

Signature of bidder with seal

Date

SECTION VIII

ANNEXURES

TO

**VARIOUS SECTIONS
AND SCHEDULES**

Annex 2

Draft Articles of Agreement

(On Non-Judicial Stamp Paper of appropriate value)

ARTICLES OF AGREEMENT made the _____ day of _____ between the Reserve Bank of India, Central Office, Shahid Bhagat Singh Marg, Fort, Mumbai-400001, having its Central Office at Shahid Bhagat Singh Marg , Fort, Mumbai 400001 (hereinafter called “the Employer”) of the one part and

_____ (hereinafter called “the Interior Contractor”) of the other part.

WHEREAS the Employer is desirous of carrying out the work **Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Firefighting, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai** and has caused drawings and specifications describing the works to be done.

AND WHEREAS the said drawings, the Specifications and the Schedule of Quantities have been signed by or on behalf of the parties hereto.

AND WHEREAS the Interior Contractor has agreed to execute upon and subject to the Conditions set forth herein and to the Conditions set forth in the Special Conditions and in the Schedule of Quantities and Conditions of Contract and the clauses of tender (all of which are collectively hereinafter referred to as “the said Conditions”) the works shown upon the said Drawings and/or described in the said Specification and included in the Schedule of Quantities at the Respective rate therein set forth amounting to the sum as therein arrived at or such other sum as shall become payable there under (hereinafter referred to as “the said Contract Amount”).

NOW IT IS HEREBY AGREED AS FOLLOWS:

1	In considerations of the said Contract Amount to be paid at the times and in the manner set forth in the said Conditions, the Interior Contractor shall upon and subject to the said Conditions execute and complete the work shown upon the said Drawings and described in the said Specifications and the Schedule of Quantities.
2	The Employer shall pay the Interior Contractor the said Contract Amount or such other sum as shall become payable, at the times and in the manner specified in the said Conditions.
3	The term “Architect” in the said conditions shall mean ‘Bank’s Appointed Project Architect, for the purpose of architectural planning etc. of works under this contract.
4	The Reserve Bank of India shall administer and directly arrange for supervision of works, certification of bills, making payments and implementation of various terms, conditions and stipulations of the contract.

5	The said conditions and various schedules shall be read and construed as forming part of this agreement, and the parties hereto shall respectively abide by, submit themselves to the said Conditions and perform the agreements on their part respectively in the said Conditions contained.
6	The agreement and documents mentioned herein shall form the basis of this Contract.
7	This Contract is neither a fixed Lump sum contract nor a Piece Work Contract but is a Contract to carry out the work in respect of Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai to be paid for according to actual measured quantities at the rate contained in the Schedule of rates and Probable Quantities or as provided in the said Conditions
8	The Interior Contractor shall allow every reasonable facility for the carrying out of all works relating to civil works, installation of sanitary work and fittings, permanent water supply, electrical installations, fittings, air conditioning and other ancillary works in the manner laid down in the said conditions and shall make good any damages done to walls, floors etc. after the completion of such works.
9	The Employer reserves to itself the right of altering the Drawings and nature of the work by adding to or omitting any items of work or having portions of the same carried out without prejudice to this contract.
10	Time shall be considered as the essence of this Contract and the Interior Contractor hereby agrees to commence the work soon after the site is handed over to him or from the scheduled date of commencement as provided for in the said Conditions whichever is later and to complete the entire work within 4 months {Phase 1 :- 2 months; Phase 2 :- 2 Months} subject nevertheless to the provisions for extension of time.
11	All payments by the Employer under this Contract will be made only at Mumbai.
12	All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen at Mumbai and only Courts in Mumbai shall have jurisdiction to determine the same.
13	That the several parts of this Contract have been read by the Interior Contractor and fully understood by the Interior Contractor. The Interior Contractor shall not be entitled for the payment for the quantities beyond the tendered quantities unless ordered for by specific written instructions from the Bank's Engineer.
14	The Interior Contractor shall not disclose directly or indirectly any information, materials and details of the Bank's infrastructure/systems/equipment etc., which may come to the possession or knowledge of the Interior Contractor during the course of discharging its contractual obligations in connection with this agreement, to any third party and shall at all times hold the same in strictest confidence. The Interior Contractor shall treat the details of the contract as private and confidential, except to the extent necessary to carry out the obligations under it or to comply with applicable laws. The Interior Contractor shall not publish, permit to be published, or disclose any particulars of the works in any trade or technical paper or elsewhere without the previous written consent of the Employer. The Interior Contractor shall indemnify the Employer for any loss suffered by the Employer as a result of disclosure of any confidential information. Failure to observe the

	above shall be treated as breach of contract on the part of the Interior Contractor and the Employer shall be entitled to claim damages and pursue legal remedies.
15	<p>Sexual Harassment of women Act, 2013 -</p> <ul style="list-style-type: none"> - The Interior Contractor / Agency shall be solely responsible for full compliance with the provisions of “the Sexual Harassment of women at workplace (Prevention, Prohibition and Redressal) Act, 2013”. In case of any complaint of sexual harassment against its employee within the premises of the Bank, the complaint will be filed before the Internal Complaints Committee constituted by the Interior Contractor / Agency of the Interior Contractor / Agency shall ensure appropriate action under the said Act in respect to the complaint. * - Any complaint of sexual harassment from any aggrieved employee of the Interior Contractor against any employee of the Bank shall be taken cognizance of by the Regional Complaints Committee constituted by the Bank. - The Interior Contractor shall be responsible for any monetary compensation that may need to be paid in case the incident involves the employees of the Interior Contractor, for instance any monetary relief to Bank’s employee, if sexual violence by the employee of the Interior Contractor is proved. - The Interior Contractor shall be responsible for educating its employees about prevention of sexual harassment at workplace and related issues. - The Interior Contractor shall provide a complete and updated list of its employees who are deployed within the Bank’s premises.
	<p>The Interior Contractor shall take all appropriate actions with respect to its employees to ensure that the obligations of non-disclosure of confidential information under this agreement are fully satisfied.</p> <p>The Interior Contractor's obligations with respect to non-disclosure and confidentiality will survive the expiry or termination of this agreement for whatever reason.</p>

IN WITNESS WHEREOF the Employer and the Interior Contractor have set their respective hands to these presents the day and year first hereinabove written.

IN WITNESS WHEREOF the Employer has set its hands to these presents through its duly authorized official and the Interior Contractor has caused its common seal to be affixed hereunto and has caused these presents to be executed on its behalf, the day and year first hereinabove written.

Signature Clause

If the Interior Contractor is a partnership or an individual.

If the Interior Contractor is a company.

SIGNED AND DELIVERED by the Reserve bank of India by the hand of Shri

(Name and designation)

In the presence of

(1)
Address

(2)
Address

Witness

SIGNED AND DELIVERED by

In the presence of

(1)
Address

(2)
Address

Witness

THE COMMON SEAL OF

Was hereunto affixed pursuant to the resolutions passed by its Board of Directors at the meeting held on _____ in the presence of

(1)

(2)

Directors who have signed these presents in token thereof in the presence of

(1)

(2)

SIGNED AND DELIVERED BY the Interior Contractor by the hand of Shri

_____ and duly constituted attorney.

If the party is partnership firm or an individual should be signed by all or on behalf of all the partners.

If the Interior Contractor signs under its common seal, the signature clause should tally with the sealing clause in the Articles of Association.

If the Interior Contractor is signing by hand of power of Attorney, whether a company or individual.

Annex 3

PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT/ BID SECURITY
(On Non-Judicial Stamp Paper of appropriate value)

Place: _____
Date: _____

Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam,

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

Ref.: NIT/Advt.No.

Date -

WHEREAS

The Reserve Bank of India, having its Central Office at Shahid Bhagat Singh Road, Mumbai (hereinafter called the 'RBI') has invited tenders for the captioned work (hereinafter called "the said tender") on the terms and conditions mentioned in the said tender documents.

It is one of the terms of invitation of tenders that the tenderer shall furnish a Bank Guarantee for a sum of Rs. _____ (Rupees _____ only) as Earnest Money Deposit (EMD). M/s. (Name of the Tenderer/Bidder) _____, (hereinafter called as "the Tenderer/ Bidder"), who are our Clients/Constituents intend to submit their tender/ Bid for the said work and have requested us to furnish Bank Guarantee to RBI in respect of the said sum of Rs. _____ (Rupees _____ only) in respect of EMD.

NOW THIS GUARANTEE WITNESSETH

1. We _____ (Name of the Bank) do hereby agree with and undertake to RBI, their Successors, Assigns that in the event of the RBI coming to the conclusion that the Tenderer have not performed their obligations under the said conditions of the tender or have committed a breach thereof, which conclusion shall be binding on us as well as the said Tenderer; we shall on demand by the RBI, pay without demur to the RBI, a sum of Rs. _____ (Rupees _____ only) or any lower amount that may be demanded by the RBI. Our guarantee shall be treated as equivalent to the Earnest Money Deposit for the due performance

of the obligations of the Tenderer under the said Conditions, provided, however, that our liability against such sum shall not exceed the sum of Rs. _____ (Rupees _____ only).

2. We also agree to undertake to and confirm that the sum not exceeding Rs. _____ (Rupees _____ only) as aforesaid shall be paid by us without any demur or protest, merely on demand from the RBI on receipt of a notice in writing stating that the amount is due to them, and we shall not ask for any further proof or evidence and the notice from the RBI shall be conclusive and binding on us and shall not be questioned by us in any respect or manner whatsoever. We undertake to pay the amount claimed by the RBI within a period of one week from the date of receipt of the notice as aforesaid.
3. We confirm that our obligation to the RBI under this guarantee shall be independent of the agreement or agreements or other understandings between the RBI and the Tenderer.

This guarantee shall not be revoked by us without prior consent in writing of the RBI.

We hereby further agree that –

- a) Any forbearance or commission on the part of the RBI in enforcing the conditions of the said agreement or in compliance with any of the terms and conditions stipulated in the said tender and/or hereunder or granting of any time or showing of any indulgence by the RBI to the Tenderer or any other matters in connection therewith shall not discharge us in any way and our obligation under this guarantee. This guarantee shall be discharged only by the performance by the Tenderers of their obligations and in the event of their failure to do so, by payment by us of the sum not exceeding Rs. _____ (Rupees _____ only).
- b) Our liability under these presents shall not exceed the sum of Rs. _____ (Rupees _____ only) .
- c) Our liability under this agreement shall not be affected by any infirmity or irregularity on the part of our said constituents/clients in tendering for the said work or their obligations there under or by dissolution or change in the constitution of our said constituents.
- d) This guarantee shall remain in force up to _____ (four months from the last date of submission of tender) provided that if so desired by the RBI, this guarantee shall be renewed for a further period as may be indicated by them on the same terms and conditions as contained herein.

- e) Our liability under these presents will terminate unless these presents are renewed as provided hereinabove on the _____ or on the day when our said constituents comply with their obligations, as to which a certificate in writing by the RBI alone is the conclusive proof whichever date is later. Unless a claim or suit or action is filed against us within _____ or any extended period, all the rights of the RBI against us under this guarantee shall be forfeited and we shall be released and discharged from all our obligations and liabilities hereunder.

Yours faithfully,

For and on behalf of _____ Bank.

Authorized Official (with seal)

(NB: This guarantee will require stamp duty as applicable in the state, where it is executed and shall be signed by the official whose signature and authority shall be verified).

Annex 4

PROFORMA OF BANK GUARANTEE for PERFORMANCE SECURITY DEPOSIT

(On Non-Judicial Stamp Paper of appropriate value)

Place: _____

Date: _____

Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam,

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

Whereas Reserve Bank of India, having its Central Office at Shahid Bhagat Singh Road, Mumbai, (hereinafter called "the RBI") has awarded the Contract for the captioned project (hereinafter called the "Contract") to M/s _____ (Name of the Interior Contractor) (hereinafter called "the said Interior Contractor" which expression shall include its successors and assigns).

AND Whereas the Interior Contractor is bound by the said Contract to submit to RBI a Performance Security for a total amount of ₹. _____ (Rupees _____ only) (Amount in figures and words) for the due fulfilment by the said Interior Contractor of the terms and conditions contained in the contract.

We, _____ (Name of the Bank), (hereinafter called "the Bank"), at the request of M/s _____, the Interior Contractor, do hereby undertake to pay to the RBI an amount not exceeding Rs _____ as Performance Guarantee for due fulfilment of the terms and conditions of the contract.

NOW THIS GUARANTEE WITNESSETH

1. We _____ (Name of the Bank) do hereby agree with and undertake to RBI, their Successors, Assigns that in the event of the RBI coming to the conclusion that the Interior Contractor has not performed his obligations under the said conditions of the contract or have committed a breach thereof, which conclusion shall be binding on us as well as the said Interior Contractor; we shall on demand by the RBI, pay without demur to the RBI, a sum of Rs. _____ (Rupees _____ only) or any lower amount that may be

demanded by the RBI. Our guarantee shall be treated as equivalent to the Performance Guarantee Amount for the due performance of the obligations of the Interior Contractor under the said Contract, provided, however, that our liability against such sum shall not exceed the sum of Rs. _____ (Rupees _____ only).

2. We also agree to undertake to and confirm that the sum not exceeding Rs. _____ (Rupees _____ only) as aforesaid shall be paid by us without any demur or protest, merely on demand from the RBI on receipt of a notice in writing stating that the amount is due to them and we shall not ask for any further proof or evidence and the notice from the RBI shall be conclusive and binding on us and shall not be questioned by us in any respect or manner whatsoever. The Bank shall pay to RBI any money so demanded notwithstanding any dispute/disputes raised by the Interior Contractor in any suit or proceedings pending before any Court, Tribunal or Arbitrator/s relating thereto and the liability under this guarantee shall be absolute and unequivocal. We undertake to pay the amount claimed by the RBI within a period of one week from the date of receipt of the notice as aforesaid.
3. We confirm that our obligation to the RBI under this guarantee shall be independent of the agreement or agreements or other understandings between the RBI and the Interior Contractor.
4. This guarantee shall not be revoked by us without prior consent in writing of the RBI.

We hereby further agree that –

- f) Any forbearance or commission on the part of the RBI in enforcing the conditions of the said agreement or in compliance with any of the terms and conditions stipulated in the said Contract and/or hereunder or granting of any time or showing of any indulgence by the RBI to the Interior Contractor or any other matters in connection therewith shall not discharge us in any way and our obligation under this guarantee. This guarantee shall be discharged only by the performance by the Interior Contractor of their obligations and in the event of their failure to do so, by payment by us of the sum not exceeding Rs. _____ (Rupees _____ only).
- g) Our liability under these presents shall not exceed the sum of Rs. _____ (Rupees _____ only) .
- h) Our liability under this agreement shall not be affected by any infirmity or irregularity on the part of our said constituents/clients or their obligations thereunder or by dissolution or change in the constitution of our said constituents.

- i) This guarantee shall remain in force up to _____ (30 days beyond the work completion period) provided that if so desired by the RBI, this guarantee shall be renewed for a further period as may be indicated by them on the same terms and conditions as contained herein.
- j) Our liability under these presents will terminate unless these presents are renewed as provided hereinabove on the _____ or on the day when our said constituents comply with their obligations, as to which a certificate in writing by the RBI alone is the conclusive proof whichever date is later. Unless a claim or suit or action is filed against us within _____ or any extended period, all the rights of the RBI against us under this guarantee shall be forfeited and we shall be released and discharged from all our obligations and liabilities hereunder.

In witness whereof I/We of the Bank have signed and sealed this guarantee on the ----- day of - ----- (Month) **2024** being herewith duly authorized.

For and on behalf of _____ (Name of the Bank)

Signature of authorized Bank official

Name:

Designation

Stamp/ Seal of the Bank

Signed, sealed and delivered for and on behalf of the Bank by the above named in the presence of :

Witness 1

Witness 2

Signature.....

Signature

Name

Name

Address

Address.....

.....

.....

Annex 5

FORMAT FOR POWER OF ATTORNEY FOR AUTHORIZED SIGNATORY

(On Non-Judicial Stamp Paper of appropriate value)

To,
Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam,

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

We.....(Name of the Bidder and address of their registered office) do hereby constitute, appoint and authorize Mr. / Ms.
.....(Name and residential address of Power of Attorney holder) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for the captioned Project, including signing and submission of all documents and providing information / responses to the Reserve Bank of India (RBI), representing us in all matters before RBI, and generally dealing with RBI in all matters in connection with our proposal for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Signature/(s) of the Bidder

Name/(s)

Stamp/Seal of the Bidder

Note:

Power of Attorney should be properly stamped and notarized.

Power of Attorney furnished by Interior Contractor shall be irrevocable.

Annex 7

Proforma for Indemnifying the Employer against Contract labour Rules/regulations.
(On Non-Judicial Stamp Paper of appropriate value)

To,
Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Firefighting, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

We, M/s (Name of Interior Contractor), hereby undertake that we shall comply with all the statutory rules/ regulations with regard to the employment of contract labour and their payment.

We also hereby fully indemnify and keep indemnified the Employer, i.e. Reserve Bank of India, against payments to be made to the contract labour and for the observance of the laws in this regard without prejudice to our right to claim indemnity from our sub-Interior Contractors.

Yours faithfully,

For _____

Authorised signatory

Annex 8

Proforma for Indemnifying the Employer against Patent Rights

(On Non-Judicial Stamp Paper of appropriate value)

To,

Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

We, M/s _____ (Name of Interior Contractor) hereby undertake to fully indemnify and keep indemnified the Employer i.e. Reserve Bank of India against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall ourselves pay any royalties, licence fees etc. which may be payable in respect of any article or part thereof included in the contract or damages, cost and charges of all and every sort that may be legally incurred in respect thereof.

In the event of any claims made under or action brought against Employer in respect of any such matters as aforesaid, we shall, on being notified thereof, at our own expense, settle any dispute or conduct any litigation that may arise therefrom, provided that we shall not be liable to indemnify the Employer if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Bank's Engineer in this behalf.

Yours faithfully,

For _____

Authorised signatory

NAME AND ADDRESS OF THE INTERIOR CONTRACTOR:

SIGN & SEAL OF THE INTERIOR CONTRACTOR:

Date:

Place:

Annex 9

PRE-CONTRACT INTEGRITY PACT

1. General

This pre-bid pre-contract Agreement (hereinafter called the "Integrity Pact") is made on _____ day of the month of _____ 2022 between, on one hand, the Premises Department, Reserve Bank of India acting through Chief General Manager, Premises Department, Central Office, Mumbai (hereinafter called the "PRINCIPAL", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s _____ represented by Mr / Ms _____, (Add designation of the APPLICANT) (hereinafter called the "APPLICANT" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the PRINCIPAL proposes **Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Firefighting, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai** and the APPLICANT is willing to offer/has offered the services and
WHEREAS the APPLICANT is a (please indicate category e.g., private company/public company/Government undertaking/partnership etc.) constituted in accordance with the relevant law in the matter and the PRINCIPAL is a statutory body performing its functions under the Reserve Bank of India Act, 1934 and other relevant legislations.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the PRINCIPAL to receive the desired services at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling APPLICANT to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the PRINCIPAL will commit to prevent corruption, in any form, by its officials by following transparent procedures. The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

2. Commitments of the PRINCIPAL

2.1.1 The PRINCIPAL undertakes that no official of the PRINCIPAL, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the APPLICANT, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

2.1.2 The PRINCIPAL will, during the pre-contract stage, treat all APPLICANTS alike, and will provide to all APPLICANTS the same information and will not provide any such information to any particular APPLICANT which could afford an advantage to that particular APPLICANT in comparison to other APPLICANTS.

2.1.3 All the officials of the PRINCIPAL will report to the appropriate authority any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2.2 In case any such preceding misconduct on the part of such official(s) is reported by the APPLICANT to the PRINCIPAL with full and verifiable facts and the same is prima facie found to be correct by the PRINCIPAL necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the PRINCIPAL and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the PRINCIPAL the proceedings under the contract would not be stalled.

3. Commitments of APPLICANT

3.1 The APPLICANT commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

3.1.1 The APPLICANT will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the PRINCIPAL, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.1.2 The APPLICANT further undertakes and declares/represents that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the PRINCIPAL or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the PRINCIPAL for showing or forbearing to show favour or disfavours to any person in relation to the contract or any other contract with the PRINCIPAL

3.1.3 APPLICANT shall disclose in writing the name and address of representatives and Indian APPLICANTs shall disclose their foreign principals or associates.

3.1.4 APPLICANT shall disclose in writing the payments to be made by them to any intermediary, in connection with this bid/contract.

3.1.5 The APPLICANT, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose in writing payments, if any, he has made / is committed to or intends to make to officials of the PRINCIPAL or their family members or any other intermediaries in connection with the contract or otherwise and the details of services agreed upon for such payments.

3.1.6 The APPLICANT will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.1.7 The APPLICANT will not accept any advantage in exchange for any corrupt, practice, unfair means and illegal activities.

3.1.8 The APPLICANT shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the PRINCIPAL as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier, without written consent of the PRINCIPAL. The APPLICANT also undertakes to exercise due and adequate care lest any such information is divulged.

3.1.9 The APPLICANT commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.1.10 The APPLICANT shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.1.11 If the APPLICANT or any employee of the APPLICANT or any person acting on behalf of the APPLICANT, either directly or indirectly, is a relative of any of the officers of the PRINCIPAL,

or alternatively, if any relative of an officer of the PRINCIPAL has financial interest/stake in the APPLICANT's firm, the same shall be disclosed in writing by the APPLICANT at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 2(77) of the Companies Act, 2013 of India.

3.1.12 The APPLICANT shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the PRINCIPAL.

4. Previous Transgression

4.1 The APPLICANT declares that no previous transgression/blacklist occurred in the last five years immediately before signing of this Integrity Pact, with any other company/entity in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify APPLICANT's exclusion from the tender process.

4.2 The APPLICANT agrees that if it makes incorrect statement on this subject, APPLICANT can be disqualified from the bidding process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting the Bid in the main tender, the APPLICANT shall deposit an amount as may be specified by the PRINCIPAL in the main tender (as Earnest Money/Security Deposit) with the / PRINCIPAL through instruments, the detail of which along with the amount will be notified by the PRINCIPAL in the main tender.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the APPLICANT or any one employed by it or acting on its behalf (whether with or without the knowledge of the APPLICANT) shall entitle the PRINCIPAL to take all or any one of the following actions, wherever required: -

6.1.1 To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the APPLICANT. However, the proceedings with the other APPLICANT(s) would continue.

6.1.2 The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the PRINCIPAL and the PRINCIPAL shall not be required to assign any reason, therefor.

6.1.3 To immediately cancel the contract, if already signed, without giving any compensation to the APPLICANT.

6.1.4 To recover all sums already paid by the PRINCIPAL, and in case of an Indian APPLICANT with interest thereon at 2% higher than the prevailing six months Marginal Cost of funds-based Lending Rate (MCLR) of State Bank of India, while in case of APPLICANT from a country other than India with interest thereon at 2% higher than the six months LIBOR. If any outstanding payment is due to the APPLICANT from the PRINCIPAL in connection with any other contract for any other stores, such outstanding payment could also be utilised to recover the aforesaid sum and interest.

6.1.5 To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the APPLICANT, in order to recover the payments, already made by the PRINCIPAL, along with interest.

6.1.6 To cancel all or any other Contracts with the APPLICANT. The APPLICANT shall be liable to pay compensation for any loss or damage to the PRINCIPAL resulting from such cancellation/rescission and the PRINCIPAL shall be entitled to deduct the amount so payable from the money(s) due to the APPLICANT.

6.1.7 To debar the APPLICANT from participating in future bidding processes of the PRINCIPAL for a minimum period of five years, which may be further extended at the discretion of the PRINCIPAL.

6.1.8 To recover all sums paid in violation of this Pact by APPLICANT(s) to any middleman or agent or broker or any other intermediary with a view to securing the contract. In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the PRINCIPAL with the APPLICANT, the same shall not be opened.

6.1.9 Forfeiture of Performance Bond in case of a decision by the PRINCIPAL to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The PRINCIPAL will be entitled to take all or any of the actions mentioned at para **6.1.1** to **6.1.9** of this Pact also on the commission by the APPLICANT or any one employed by it or acting on its behalf (whether with or without the knowledge of the APPLICANT), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the PRINCIPAL to the effect that a breach of the provisions of this Pact has been committed by the APPLICANT shall be final and conclusive on the APPLICANT. However, the APPLICANT can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

The APPLICANT undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU or any other unit owned by Government of India / the PRINCIPAL and if it is found at any stage that similar product/systems or sub systems was supplied by the APPLICANT to any Ministry/Department of the Government of India or a PSU or any other unit owned by Government of India / the PRINCIPAL at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the APPLICANT to the PRINCIPAL, if the contract has already been concluded.

8. Independent Monitors

8.1 The PRINCIPAL has appointed

1. Shri Nageshwar Rao Koripalli, IRS (Retd.) 38, The Trails, Manikonda, R.R. District, Hyderabad-500 089 Mobile No. 097889 19555, 08985970045 Email - knageshwarrao@gmail.com

2. Shri Pramod Shripad Phalnikar, IPS (Retd.) A-2, 602 Phase - I, Aditya Shagun, CHS, NDA-Pashan Road, Bavdhan, Pune, Maharashtra - 411 021 Mobile No. 090119 43674 Email - pramodphalnikar@gmail.com

as the Independent External monitors (IEM) (hereinafter referred to as Monitor) for this Pact.

8.2 The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitor shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitor have the right to access all the documents relating to the project, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the PRINCIPAL.

8.6 The APPLICANT(s) accepts that the Monitor has the right to access without restriction to all project documentation of the PRINCIPAL including that provided by the APPLICANT. The APPLICANT will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to sub-consultants. The Monitor shall be under contractual obligation to treat the information and documents of the APPLICANT/Sub Interior Contractor(s) with confidentiality.

8.7 The PRINCIPAL will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of PRINCIPAL within 8 to 10 weeks from the date of reference or intimation to him by the PRINCIPAL / APPLICANT and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

9.1 In case of any allegation of violation of any provisions of this Pact or payment of commission, the PRINCIPAL or its authorized agencies shall be entitled to examine all the documents including the Books of Accounts of the APPLICANT and the APPLICANT shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9.2 In the event of any dispute between the PRINCIPAL and APPLICANT where Integrity Pact is applicable, in case, both the parties are agreeable, they may try to settle dispute through mediation before the panel of IEMs in a time bound manner. In case, dispute remains unresolved even after mediation by the panel of IEMs, the PRINCIPAL may take further action as per terms and conditions of the contract. The fees/ expenses on dispute resolution shall be equally shared by both parties i.e., the PRINCIPAL and the APPLICANT.

9.3 Person signing the Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/ she will await their decision in the matter.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the PRINCIPAL, i.e., Mumbai, India.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from the date of its signing extendable up to 5 years or the complete execution of the contract to the satisfaction of both the PRINCIPAL and the APPLICANT, including warranty period/defect liability period, whichever is later. In case an APPLICANT is unsuccessful, this Integrity Pact shall expire after six months from the date of its execution.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact at _____ on _____

PRINCIPAL

Name of the Officer-
Designation-
Reserve Bank of India
Premises Department
Central Office

Witness

1. _____
2. _____

APPLICANT

Name of the Authorised Signatory
Designation
Name of the Applicant

Witness

1. _____
2. _____

Annex 10

Proforma for Undertaking / Declaration / Certificate by the Bidder regarding country sharing land border with India.

(To be submitted by bidders on their letter head duly sealed and signed by the authorized signatory)

To,

Chief General Manager
Reserve Bank of India
Premises Department,
Central Office, Mumbai-400 001

Madam,

Name of Work: - Interior Renovation of 15th floor in Central Office Building Including Civil, MEP, HVAC, Electrical & Allied Works at Reserve Bank of India (RBI), Mumbai

I / We (Name and address, including Country of location of bidder) have read and understood the contents of the Office Memorandum (OM) F. No. 6/18/2019-PPD dated July 23, 2020 and its subsequent orders / revision issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India regarding the restrictions on procurement from a bidder of a country which shares a land border with India.

2. I / We certify that (Name of the bidder)

- i. is not from a country sharing land border with India, or
- ii. is from a country sharing land border with India and has been registered with the Competent Authority, the certificate of which is enclosed, or
- iii. is from a country sharing land border with India where Government of India has extended lines of credit, or
- iv. is from a country sharing land border with India where Government of India is engaged in development projects.

(Strikeout whichever of the above is not applicable).

3. I / We further certify that (Name of bidder) fulfils all requirements in this regard and is eligible to be considered under the provision of the above referred Office Memorandum

and its subsequent orders / revision. I/We also undertake that even in case of contracts where we are permitted by the Bank/RBI to sub- contract I/we(Name of bidder) will not sub-contract any work to a Interior Contractor from country (ies) sharing land border with India, unless such Interior Contractor fulfils all the requirements contained in the above referred office memorandum / order.

4. I/We know and understand that, if this Undertaking / Declaration / Certificate submitted by us is found to be false, the Bank shall be free to reject / terminate our tender / Work Order and that the Bank shall also be free to initiate any legal action in accordance with law including forfeiting of Earnest Money Deposit / Performance Bank Guarantee / Security Deposit and / or debarring us from participating in tenders invited by the Bank in future.

Signature and name of the authorized signatory of the Bidder

with Rubber Stamp

Date:

Place:

Annex 11

FORMAT OF MEASUREMENT BOOK

M.B.No. _____

Page
No. _____

Tender Item No./ Tender Page No.	Full Description of item of work	Measurements				Quantity
		No.	L	B	D/H	

Abstract of cost for Running/Final Bill

Running Bill no:

M.B. No. _____

Page No. _____

Serial No.	Tender Item No.	Description	Quantity	Rate ₹	Unit	Amount ₹
1	2	3	4	5	6	7

Annex – 12

CURRICULUM VITAE OF KEY STAFF PROPOSED FOR THE PROJECT

(To be filled by the bidder and submitted along with Part – I)

Name of the Staff	
Designation	
Name of the firm presently employed	
Years with the firm	
Proposed position (describe degree responsibility also)	
Details of task assigned	
Man- Months budgeted for the task assigned	
Key Qualifications (Technical and General)	
Education	
Membership in professional bodies	
Experience and Training (Relevant in the context of task assigned)	

Employment Record		
Name of the Firm	Position Held	Years of Employment

NAME AND ADDRESS OF THE INTERIOR CONTRACTOR:

SIGN & SEAL OF THE INTERIOR CONTRACTOR:

Date:

Place:

Annexure 13

Undertaking to be included in tender regarding declaration of debarment by Public Institution(s):

(To be submitted by the tenderer on their letterhead)

Name of Work:.....

1. I/We (Name of the bidder) declares that

a) I/we or any of our allied firm* is/ are not debarred / suspended / blacklisted by any public institution / entity in India or any other country as on(last date of submission of bid).

b) I/ We or any of our allied firm* have not made any transgression in respect of the code of integrity (as mentioned in the tender) with any public institution / entity in India or any other country in last three years as on(last date of submission of bid).

c) we will inform the Bank in writing, in case, I/we or any of our allied firm* is/are debarred / suspended / blacklisted by any public institution / entity in India or any other country on or before award of work for the captioned work.

2. I/We(Name of the bidder) declare that I/we or our allied firm*(Name of the allied firm(s)) is/ are debarred / suspended / blacklisted by(Name and address of public institution in India or any other country) and the same effective upto(date). A copy of such letter is attached for your information and record.

(seal and signature of the bidder)

Date

Place

(Note: strike out one of the above two declarations which is not applicable)

Interior Renovation of 15th floor in Central Office
Building Including Civil, Interior, MEP, HVAC,
Electrical & Allied Works at RBI, Mumbai

*Allied firm: A firm would be termed as “allied firm” if the management is common, or substantial or majority shares are owned by the banned/ suspended firm and by virtue of this it has a controlling voice. Further all successor firms will also be considered as allied firms.

Major representative works include but not limited to

Nature of works	activities involved
Civil and Interior:	Site Marking, Blockwork & Plastering, Isolation Ceiling, Acoustic Ceiling ,Wall Paneling, Carpet Laying, Blinds, Closing Snag list
Electrical	Conduit and Cabling work, Cable tray installation, Earthing system installation, Light fittings installation, Testing and Commissioning
HVAC	Duct Installation, Copper Piping, AHU procure + Install, Fire damper and attenuator, Grills and diffusers, Testing and Commissioning
Fire Fighting	Sprinkler branches & droppings, Pressure testing, Testing and Commissioning
FA & PA	Cabling, Installation, Testing and Commissioning
IBMS	Cabling, CCTV installation, Emergency Lighting, Signages

**RESERVE BANK OF INDIA
PREMISES DEPARTMENT
MUMBAI**

e-TENDER FOR

**Interior Renovation of 15th floor in Central Office Building Including
Civil, MEP, HVAC, Electrical and Allied Works at
Reserve Bank of India (RBI), Mumbai.**

Part II (Price bid)

SR. NO.	ITEM DESCRIPTION	UNIT	QUANT ITY

A	CIVIL AND INTERIOR WORKS		
1	SECTION 01 - DEMOLITION WORK		
1.1	Charges for Carefully Breaking and Removing following items of any size, at any level, without any damage to adjacent structure/wall as directed by the Banks Engineer. Rate to quoted including carting away the debris including loading, unloading, transport, mathadi charges etc. complete. Contractor to pack the debris properly in bags and shift from site to downstairs up to debris location (assigned as Banks Location) without making any nuisance to the Bank Staff. Contractor to clean the area after the completion of work. Contractor has to remove the debris time to time and dump at municipal dumping yard as directed by Bank's Engineer.	L.S	1.00
1.1.1	Block masonry work including plaster, lintel, patli etc. complete.		
1.1.2	All Types of Flooring including bedding, carpet , skirting, Dado, wash basin, platform, counters, waterproofing, coba, PCC below floor up to parent slab etc.		
1.1.3	All Types of Walls of any size, at any level including patli, lintel, Brick masonry work, Partitions(frame+claddings) including suspenders of any material, plaster behind tile after removal, Gypsum sheets, Putty, Patli etc.		
1.1.4	All types of Cladding at any level, Panels of any material, Wallpaper, Mouldings, Framings etc.		
1.1.5	All Door Frames, Shutters, all Hardware's of any type, storage units, lintels etc.		
1.1.6	All Existing Plumbing supply lines (Concealed/Exposed), Fire Fighting Lines (Concealed/Exposed), piping's, valves, fittings, fixtures etc.		
1.1.7	All HVAC units, ducts, pipes, cables, drain pipes etc. of any diameter, dampers etc. as directed by the Banks engineer.		
1.1.8	All Electrical Services items such as wires, Cable, Fittings such as DB Board, Sockets, Lights etc. as directed by the Banks engineer.		
1.1.9	Complete including walls, panels, framing, stage, flooring, carpet, MS structure for Steps, Stage, Ramp etc.		
1.1.10	Gypsum, False ceiling with framing		

1.2	Contractor to quote for the buyback amount to be paid to Bank for the above Items taken out by him.	Job	1.00
1.3	Making Cutout of size in existing wall for doors as per new layout Rate to quoted including carting away the debris including loading, unloading, transport, mathadi charges etc. complete. Contractor to pack the debris properly in bags and shift from site to downstairs up to debris location (assigned as Banks Location) without making any nuisance to the Bank Staff. Contractor to clean the area after the completion of work. Contractor has to remove the debris time to time and dump at municipal dumping yard as directed by Bank's Engineer.	CUM	4.98
	TOTAL FOR SECTION -01 DEMOLIATION WORKS		
2	SECTION 02 - GENERAL CIVIL WORKS		
2.1	AAC Block work - Providing and constructing approx. 150mm/200mm thk Grade I - AAC Block in C.M. 1:4 walls for superstructure at any level at any height using approved quality Blocks conforming to relevant IS Code, including approx. 100mm thk patli at every approx. 1m height (including 8mm dia. mild steel 4nos. reinforcements bars & stirrups @ 200mm c/c along length tied with GI wire) in M15 concrete mix as per relevant IS Code including necessary centering, shuttering, supports etc. complete.including masonry circular & curved in plan and pillars, raking out joints, watering, curing, etc., with necessary scaffolding including all lifts and leads etc. all complete as per technical specifications, drawings & as directed by the Banks Engineer. Only Lintel will be paid separately in respective item.	CUM	18
2.2	Burnt clay brick masonry walls - Providing and constructing approx 115mm thick brick masonry walls with locally available best quality common burnt clay F.P.S. (non modular) bricks in superstructure in C.M. 1:4 (1 cement: 4 Coarse sand) including providing proper key to the adjoining structure, raking the joints, curing, cleaning, carting away debris if any outside the Bank's premises.	CUM	2

2.3	RCC Lintel - Providing and constructing RCC Lintel of approx. size 150mm x 150mm in M25 Grade concrete with Anchorage of minimum approx. 150mm on either side of the lintel in Wall/RCC. The lintel to be reinforce with nominal (4 No's of 10mm Dia with 8mm stirrups at 200mm c/c) reinforcement using Fe500, including necessary centering, supports etc. as required and as directed. The rate to be quoted including necessary reinforcement.	CUM	1.000
2.4	Dismantling & removing damaged plaster - Removing damaged plaster as directed by the Banks Engineer. Contractor to tamp all the areas as directed to detect damage areas of plaster including necessary scaffolding, tools, carting away debris, cleaning the area etc. complete.	SMT	293
2.5	Cement Plaster - Providing and applying approx. 12 mm thick (average) ready mixed cement plaster in CM 1:4, complete as per manufacturer's specifications and direction at all heights and levels. rates is inclusive of providing and mixing approved fibre reinforcing material as per manufacturers specification in cement mortar etc. complete at all heights, levels and locations. The rates shall also include moulding and grooves wherever specified, scaffolding, curing, and masonry or any dissimilar materials etc. all complete as per technical specifications, drawings & as directed by the Banks Engineer. The rate shall also include providing and fixing 200mm width glass fibre mesh (145 gsm) at junctions of column/beam and walls, before plastering the junction with cement/gypsum plaster as directed. The mesh shall be nailed rigidly to the masonry with G.I. nails of suitable type at approx. 400 mm centres.	SMT	485
2.5.1	Same as above Item No.2.5 but for Area where dado removed - Toilet	SMT	58
2.6	Dismantling & removing damaged plaster of Peripheral Wall (From inside) - Removing damaged plaster as directed by the Banks Engineer. Contractor to tamp all the areas as directed to detect damage areas of plaster including necessary scaffolding, tools, carting away debris, cleaning the area etc. complete.	SMT	134

2.7	<p>Plaster of Peripheral Wall (From inside With waterproofing compound) - Providing and applying approx. 12 mm thick (average) ready mixed cement plaster in CM 1:4, complete as per manufacturer's specifications and direction at all heights and levels. rates is inclusive of providing and mixing approved fibre reinforcing material as per manufacturers specification in cement mortar etc. complete at all heights, levels and locations. Polymeric admixture as waterproofing compound to be added in plaster as per the proportion recommended by the waterproofing compound manufacturers. The rates shall also include moulding and grooves wherever specified, scaffolding, curing, and masonry or any dissimilar materials etc. all complete as per technical specifications, drawings & as directed by the Banks Engineer. The rate shall also include providing and fixing approx. 200mm width glass fibre mesh (145 gsm) at junctions of column/beam and walls, before plastering the junction with cement/gypsum plaster as directed. The mesh shall be nailed rigidly to the masonry with G.I. nails of suitable type at approx. 400 mm centre</p>	SMT	134
2.8	<p>Anti termite treatment - Providing and applying Post Constructional anti termite treatment by drilling holes to the walls near junction of floor and walls at distance of approx. 300mm c/c to the perimeter of the floor internally, surroundings of pipes, conduits to external wall etc. injecting the chemical and sealing the hole with white cement as per approved manufacturer's instructions and recommendation, and installed by manufacturer's approved agency with a guarantee of 10 years in writing on Rs. 100 /- Stamp paper for treated areas ,in a approved format, all to the satisfaction of the Banks Engineer. Contractor to appoint approved Anti- termite treatment agency. (Plan area of respective floor to be measured & paid for).</p>	SMT	740.15

2.9	Cement Concrete Screeding - Providing and laying Cement Concrete screeding 1:2:4 finish layer in average 75 mm thickness with proper levelling by adding 10mm down aggregates and finishing the same to rough / Smooth finish as per the design and drawing to receive further treatment. Mode of Measurement - Plan Area should be measured and paid for.	CMT	30
TOTAL FOR SECTION-02 GENERAL CIVIL WORKS			
3 SECTION 03 - WATERPROOFING WORKS			
3.1	PU Coating - Providing and applying single component Polyurethane resins bonded elastomeric waterproofing liquid membrane with chemical, properties on top of well prepared parent concrete surface in three coats. One coat of self-priming of Polyurethane resins bonded elastomeric waterproofing liquid (dilution with water in the ratio of 3:1) and two coats of undiluted Polyurethane resins bonded elastomeric waterproofing liquid at a consumption rate of 500 gm per square metre per coat with brush/roller application. The operation shall be carried out after scrapping and properly cleaning the surface to remove loose particles with wire brushes, complete in all respect finish as per the manufacturers specifications and as directed by the Bank's Engineer. (The coating shall be done on walls upto 600mm above the floor level and Sunken area 600mm below floor level) Mode of Measurement - Application plain surface Area (floor and walls) should be measured and paid for.	SMT	110
3.2	Waterproof Cement Plaster - The top surface of the PU coating shall be applied with average 15 mm thick waterproof cement plaster in mortar 1:3 admixed with waterproof chemical compound from approved manufacturer equivalent as per manufacturer's specification, curing, etc. complete all as directed by the Bank's Engineer. Sunken portion shall be tested by ponding water for at least three days so as to ensure no leakages/seepages of water from the bottom of the slab.	SMT	110

3.3	Brickbat Coba - Providing, laying and filling sunken area of toilet block with well burnt bricks or sliced brick bats of approved size in required layers in cement mortar 1:4 (1 Cement : 4 coarse sand) mixed with approved waterproofing compound as per manufacturer's specifications including proper curing etc. complete all as directed by the Bank's Engineer. Mode of Measurement - Actual Volume of the Brickbat should be measured and paid for.	CUM	20
3.4	IPS Final Coat - Providing and laying top IPS finish layer in 40 mm thickness to proper slope in CM 1:3 by adding 10mm down aggregates and finishing the same to rough / Smooth finish to receive further treatment. Mode of Measurement - Plan Area should be measured and paid for.	SMT	70
	TOTAL FOR SECTION-03 WATERPROOFING WORKS		
4	SECTION 04 - FLOORING, SKIRTING, DADO, JAMBS, COUNTER WORKS		

4.1	<p>Marble Flooring - Providing and laying machine cut, mirror polished, minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over approx. 40 mm (average) thick base of cement mortar 1:4 (1 white cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Banks Engineer. The finished flooring to be covered with polypropylene protective sheet as directed by Banks Engineer till handing over, cleaning the same before handover etc. all complete as directed by Banks Engineer. Note: Contractor to make final Tin Oxide polish to achieve mirror polish or as recommended by marble supplier. The rate to be quoted shall be including providing and applying of protective coating to top & bottom surface of the marble as recommended by the marble supplier. Marble thickness to be minimum 18mm thk (tolerance +/- as per the relevant IS Code)</p>		
4.1.1	Lift Lobby and Passage- Main Flooring - Basic rate of marble is Rs.26587/Smt (2470/Sqft)	SMT	136
4.1.2	Lift Lobby - Strip at Periphery of Main Flooring - Basic rate of marble is Rs. 4252 Sqmt (Rs. 395/Sqft)	SMT	14
4.1.3	Approx. 75mm wide Inlay strip in different colour of marble - Basic rate of marble is Rs. 4252 /Sqmt (Rs. 395/Sqft)	SMT	5
4.1.4	Marble Flooring in Pattern (Using 2 types, Colours of marbles) including inlay strip as per drawing and design. - M1- Basic rate of marble is Rs.26587/Smt (2470/Sqft)., M2-Basic rate of marble is Rs. 4252 Sqmt (Rs. 395/Sqft)	SMT	59
4.1.5	Toilet Flooring including Leather Finish (Antiskid Property) - Basic Rate of marble is Rs.5328/Sqmt (Rs.495/Sqft)	SMT	29

4.2	Cladding, Skirting and Jambs - Providing and fixing machine cut, mirror/ eggshell polished , minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern. If required with marble stone slab pieces of different shapes, shades and texture but of even thickness., on 12 mm (average) thick cement mortar 1:3 (1 white cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Banks Engineer. Marble thickness to be minimum 18mm thk (tolerance +/- as per the relevant IS Code)		
4.2.2	Toilet Dado - Basic Rate Marble for dado is Rs.5328/Sqmt (Rs.495/Sqft)	SMT	150
4.2.3	Pantry - Basic Rate Quartz for dado is Rs4898/ Smt.(Rs.455 per Sqft) 150mm high band above the counter top (Backsplash) to match with quartz top of pantry counter	SMT	2
4.2.4	Lift Jamb - Basic Rate for approx. 250mm Marble Jambs is Rs 26587/Smt (Rs.2470/Sqft)	SMT	13
4.2.5	Toilet - Basic Rate for approx. 200mm Marble Skirting with moulding as per drawing is Basic Rate of marble is Rs.5328/Sqmt (Rs.495/Sqft)	SMT	13
4.2.6	Window - Basic Rate for approx. 150mm Marble Jambs is Rs 26587/Smt (Rs.2470/Sqft)	SMT	6
4.3	Dry Cladding :Providing and Fixing of minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) of approved make , colour, shade and of size as per drawing, Framing is made using 50 X 50 X 2 mm aluminium box section spaced optimum distance C/C ,cladded with 18mm thk BWP Ply .Marble (including back protective coat of approved make) is fixed as per drwing in pattern using adhesive of approved make and as per the manufacturers recomandation including making edge moulding/ champhered, mirror polishing etc. complete. Location :Lift Lobby		
4.3.1	Lift Lobby - Basic Rate Fluted Marble for dado is Rs 26587/Smt (Rs.2470/Sqft)	SMT	28
4.3.2	Lift Lobby - Basic Rate Italian Marble for dado is Rs 26587/Smt (Rs. 2470/Sqft)	SMT	33

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4.3.3	Lift Lobby - Basic Rate Italian Marble for dado is Rs 26587/Smt (Rs.2470/Sqft) 18MM out	SMT	20
4.3.4	Lift Lobby (Indicator Strip) - Basic Rate Italian Marble for dado is Rs. 8826 per Sqmt (Rs.820 per Sqft)	SMT	3
4.3.5	Lift Lobby (Skirting-200 mm) - Basic Rate Italian Marble for Skirting is Rs 26587/Smt (Rs.2470/Sqft)	SMT	3
4.3.6	Lift Lobby (Skirting-100 mm) - Basic Rate Italian Marble for Skirting is Rs 26587/Smt (Rs.2470/Sqft)	SMT	2
4.3.7	Corridor aftter lift lobby- Basic Rate Italian Marble for Skirting is Rs 26587/Smt (Rs.2470/Sqft)	SMT	6
4.3.8	Additional cost for making upto 60mm thk. Ply boxing using 12mm thk. BWP ply behind Marble Dado (Lift front Jamb /band)	SMT	4
4.3.9	Waiting area dado : - Basic rate 820 per sqft. (Rs.8827/ Smt)	SMT	12
4.4	Fluted Marble - Providing and fixing machine cut, mirror/ eggshell polished , minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern. If required with marble stone slab pieces of different shapes, shades and texture but of even thickness., on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Banks Engineer.		
4.4.1	Toilet - Basic Rate Fluted Marble for dado is Rs.5113per Smt. (Rs.475/Sqft)	SMT	21

4.5	<p>Providing and fixing approx. 600mm deep/wide Wash basin counter with top made of approx. 20 mm thick pre-polished quartz slab as per drawing. Quartz shade, sample as approved by Banks Engineer shall be laid on Approx 25-30mm thick one side polished Cudappa on a bed of cement mortar 1:4 Cudappa stones shall be properly anchored and fixed into walls with cement mortar / slurry & if required shall be supported on approx. 60 mm thick vertical sandwich Cudappa @ 900mm c/c or as directed by Banks Engineer. Providing front fascia finished in pre-polished Marble/Quartz of height approx. 400mm as per drawing. Front fascia below counter top is made with framework using Alluminium box sections of approx. size: 25mm x 50mm x 2mm, spaced approx. 400mm c/c both way, clad with 18mm thk BWP ply with balancing laminate pasted using approved adhesive and ready to receive the necessary finishing material as per drawing.</p>	SMT	4
	<p>Cost to include making necessary cut-outs for wash basin, Piller cock and pipes through counter top including moulding, rubbing polishing of cut edges etc. as per drawing. All exposed edges of finishing material to be chamfered/moulded, and machine polished to give high gloss finish etc as per drawing. Joints to be sealed and made water tight using clear sealant of approved make wherever required. (Note: Only Plan Area will be measured for Payment). (Basic rate of Quartz stone : 4898/- per Sqm)</p>		

4.6	<p>Providing and fixing approx. 600 mm wide working Counter in desired level with top finished in approx. 20 mm thick approved shade and sample pre-polished Quartz slab laid on (Approx. 30mm) thick one side polished Cudappa on a bed of cement mortar 1:4 Cudappa stones shall be properly anchored and fixed into walls with cement mortar / slurry & supported on approx. 60 mm thick vertical sandwich Cudappa @ 900mm c/c or as directed. Cost including front fascia and/or moulding using approved bonding adhesive and as per drawing. Necessary cut-outs for sink etc to be provided wherever required and All exposed edges & faces of pre-polished Quartz shall be mirror polished, chamfered/ rounded as per drawings complete to the satisfaction of Banks Engineer. (Note: Only Plan Area will be measured for Payment). -Basic Rate of Quartz Rs. 4896/- per Smt.</p>		
4.6.1	Working Counter in Pantry - 600mm	SMT	4
4.7	<p>Vitrified Flooring - Providing and laying approx 9mm thick Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer), of approved brand & manufacturer, in all colours and shade, laid on average 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, levelling system and rubber mallet for placing the tiles gently and easily etc. complete as directed by Banks Engineer. Rate to be quoted including covering the floor using polypropylene protective sheet. Basic rate of Vitrified tile : Rs 1023/- Per Sqmt</p>	SMT	68
4.7.1	Same as above 4.7 fixing of skirting of 50 mm vitrified tiles Basic rate of Vitrified tile : Rs 1023/- Per Sqmt	RMT	77

4.8	<p>Vitrified Dado - Providing and fixing approx 9mm thick Vitrified wall tiles of approved make, of approved colour, shades, of any size as approved, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete. Basic rate of Vitrified tile : Rs. 1023/- Per Sqmt.(Rs. 95/Sqft)</p>	SMT	25
4.9	<p>Ceramic Flooring - Providing and laying approx 9mm thick Ceramic Glazed tiles on floor in different sizes (thickness to be specified by the manufacturer), of approved brand & manufacturer, in all colours and shade, laid on average 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, levelling system and rubber mallet for placing the tiles gently and easily etc. complete as directed by Banks Engineer. Rate to be quoted including covering the floor using polypropylene protective sheet. Basic rate of Ceramic tile : Rs. 1292/- Sqmt.(Rs 120/Sqft)Location : Below Wooden Flooring and below carpet</p>	SMT	347
4.9.1	<p>Ceramic Dado - Providing and fixing approx 9mm thick 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, of approved colour, shades of any size as approved by Banks Engineer, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete. - Basic rate of Ceramic tile : Rs. 1292/- Sqmt.(Rs 120/Sqft)</p>	SMT	10

4.10	<p>Carpet - Supply & Installation of Approx 12mm thick Carpet of approved make, shade, texture and 0.25 minimum NRC , to be fixed with approved adhesive as per the manufacturers specifications and as per design pattern as per drawing. The Rate shall also inclusive of necessary wastage , installation, adhesive , including covering the carpet floor using polypropylene protective sheet till handing over to the client</p> <p>Conference Room-1 (carpet code Basalt 200)</p>	SMT	193
4.10.1	Same as above but for Conference Room-2 and 3 1. (carpet code Access 01)	SMT	111
4.11	<p>Wooden Flooring - Providing and laying in position Engineered wooden Flooring of approved make, shade and size as approved by Banks Engineer, laid on the smooth floor surface and laying the planks as per manufacturers specifications etc. complete. Contractor to protect the floor till handing it over to the Banks Engineer. Preparing base to receive the wooden flooring, underlay of 2mm thick foam with PVC sheet and end profile as per the flooring levels as recommended by manufacturer. In case if floor is damaged by any way or by other agencies working there, contractor has to replace the damaged floor/plank at no extra cost to the Client as directed by Banks Engineer. Rate to include necessary wastage, under layer, handling, laying in pattern as per drawing, adhesive, protecting till handing over using polypropylene protective sheet etc. complete. Rate to include self levelling coat to levelled the surface using POP OR equivalent as required. Only the laid area of flooring will be measured and paid. Basic Rate of Ego Herringbone wooden flooring - Rs. 5651/- Per Smt</p>	SMT	43

4.12	<p>Urinal Partition and vertical partition at Executive Gents Toilet Wash basin end - Providing & fixing of Urinal partition of approx size : 450mm x 2650mm, made using anodised Aluminium section (25mm x 43mm) of approved shade throughout the periphery and profile with 6mm thk frosted toughened glass of approved make including rubber gasket. 25x50x2mm thick aluminium framing shall be done above false ceiling level upto RCC Slab level. Partition shall be fixed on wall as per drawing.</p>	SMT	3
4.13	<p>Wooden Skirting - Providing & Fixing of approx. 200mm ht. wooden skirting as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The skirting is fixed using approved adhesive and screw Rate to include all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Location : Waiting area</p>	RMT	18
4.13. 1	<p>Wooden Skirting : Providing and Fixing of approx.200mm wooden skirting make , colour, shade and of size as per drawing, Framing is made using 25 X 50 X 2 mm aluminium box section spaced optimum distance C/C ,cladded with 18mm thk BWP Ply .wooden skirting is fixed as per drawing in pattern using adhesive of approved make and as per the manufacturers recomandation Rate to include all necessary hardware's, glue , melamine polish etc. complete to the satisfaction of the Banks Engineer. Location : Conferacne Room</p>	RMT	219
4.14	<p>Providing and fixing 100mm thk high counter as per drawing using MS Framing 49.5 X 49.5 X3.2 mm for top and cross supports to wall , cladded all sides with 12mm thk. BWP Ply. further finished approx 18 mm thk approved Marble. Marble joints tobe filled with pigmented white cement to match with marble shade. All MS sections tobe coated with 2 coats of anticosive + 1 coat of enamel pain Rate to include all necessary hardware's, adhesive, glue etc. , machine polishing to top and edges of marble to the satisfaction of Banks Engineer and all complete. Basic Rate of Marble Rs. 8611/- per Smt.</p>	SMT	3

4.15	False Flooring - Providing and fixing removable raised/false anti-static access flooring with system and its components of approved make for different plenum height with possible height adjustment up to 50 mm, comprising of modular load bearing floor panels supported on G.I. rectangular stinger frame work and G.I. Pedestal etc. all complete, as per manufacturers specifications as per the drawing and as directed by Banks Engineer. Basic Rate - 4573/ Sqm Rate to be quoted including covering the floor using polypropylene protective sheet.	SMT	11
	Approx. 600mmx600mmx33mm Grade 800 with top performance finish of Antistatic Laminate with ESRG Under structure system suitable for finish floor height of up to 450mm		
	Concentrated Load Capacity :- 363 kgs		
	Ultimate concentrated Load :-907 kgs		
	Uniform Distributed Load :- 1650 kgs persqmtrs		
	Rolling Load :- 180 kgs		
	Weight of System :- 48kg/m2 for FFH 450mm		
	450 mm Finished Floor Height (FFH).		
	TOTAL FOR SECTION-04 FLOORING, SKIRTING, DADO, JAMBS, COUNTER WORKS		
	SECTION 05 - PARTITION & PANELLING		
A	PANELLING FOR CORRIDOR 01 AND CORRIDOR 02		

5.1	<p>Wall Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing decorative panelling made using approx. 12mm thick ply as base and 25mm thick ply to make panelling in pattern as per drawing. All exposed surface of panelling is provided with Approx 4mm thick Recon Veneer to receive necessary finishes as per drawing. 12mm ply backside is clad with 0.8mm thk laminate before fixing over aluminium framing. The panelling is provided with approx. 25mm x 25mm wooden moulding made using superior quality well seasoned Teak Wood as per drawing. The panelling is finished with approved make & shade N C Lacquer Paint including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, N C Lacquer Paint etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wood = 4350/- Per Cft. Basic Rate of Recon Veneer Rs 1227/- Per Smt.</p>	Smt	175.00
B	PANELLING FOR 2400MM MAIN CORRIDOR		

5.2	<p>Wallpaper with Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 30mm thick ply board as base. All exposed surface of panelling shall be finished with 1 coat of primer and 1 coat of putty to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Further the panelling shall be clad with wallpaper of approve make, shade, design and which have 100% washable, scratch resistance, peel proof properties. The wall paper should give a seamless finish. 30mm thick ply board backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include all base coat, necessary hardware's, approved adhesive, wastage, handling, laying in pattern, putty, primer, protecting till handing over etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wallpaper - Rs 8554/- Per Smt</p>	Smt	102.19

5.3	<p>Veneer Finished Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 18mm thick ply as base. Further partial surface of 18mm thick ply shall be cladded with 12mm thick ply as per the design, drawing and elevation. All exposed surfaces of the ply shall be cladded with veneer of approved make & shade as per design and shall be pasted with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Elevation Area will be measured & paid for. Basic Rate of Veneer Rs 2464/- Per Smt.</p>	Smt	19.70

5.4	<p>Veneer Finished Wooden Fluted Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. 10mm x 10mm linear flutes to be made using superior quality well seasoned teak wood spaced at 20mm c/c as per design and drawing. Additional 8mm thick ply shall be cladded with veneer of approved make & shade as per design. The wooden flutes to be fixed on 8mm thick veneer finished ply and further the complete assembly (ply and flute) to be fixed on 12mm thick base ply with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The panelling is provided with 100mm band finished with veneer as per drawing. All exposed panelling surfaces (fluted and plain) to be finished with melamine polish including preparing the base, scraping etc complete. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of Measurement - Elevation Area to be measured and paid for. Basic Rate of Veneer Rs 2464/- Per Smt, Basic rate of Wood Rs 4350/- Cft.</p>	Smt	27.30
C	CONFERENCE ROOM NO 01 - 50 PAX		

5.5	<p>Veneer Finished Wooden Fluted Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. 10mm x 10mm linear flutes to be made using superior quality well seasoned teak wood spaced at 20mm c/c as per design and drawing. Additional 8mm thick ply shall be cladded with veneer of approved make & shade as per design. The wooden flutes to be fixed on 8mm thick veneer finished ply and further the complete assembly (ply and flute) to be fixed on 12mm thick base ply with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The panelling is provided with 100mm band finished with veneer as per drawing. All exposed panelling surfaces (fluted and plain) to be finished with melamine polish including preparing the base, scraping etc complete. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of Measurement - Elevation Area to be measured and paid for. Basic Rate of Veneer Rs 2464/- Per Smt, Basic rate of Wood Rs 4350/- Cft.</p>	Smt	45.00
5.6	Same as above item no 5.5 but for curve portion. Mode of Measurement - Plain area will be measured and paid for.	Smt	8.10
5.7	Same as above item no 5.5 but approx 160mm thick panelling fixed to the beam bottom using suspenders of 25mm x 50mm x 2mm at 1200mm c/c bothways. Plan area to be measured and paid for.	Smt	25.70
5.8	Same as above item no 5.5 but 25 x 25mm flutes at 75mm c/c in zigzag pattern as per design and drawing.	Smt	23.60

5.9	<p>Wallpaper with Panelling on window columns - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 30mm thick ply board as base. All exposed surface of panelling shall be finished with 1 coat of primer and 1 coat of putty to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Further the panelling shall be cladded with wallpaper of approve make, shade, design and which have 100% washable, scratch resistance, peel proof properties. The wall paper should give a seamless finish. Further edge moulding and moulding on wallpaper to be fixed as per design and to be finished with melanine polish. 30mm thick ply board backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include all base coat, necessary hardware's, approved adhesive, wastage, handling, laying in pattern, putty, primer, protecting till handing over etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wallpaper - Rs 8554/- Per Smt</p>	Smt	19.50
5.10	<p>Wallpaper with Panelling on corridor side longwall and both the short walls. Same as above item no 5.9 but 12mm base ply to be used instead of 30mm thick ply board mentioned in above item. Basic Rate of Wallpaper - Rs 8554/- Per Smt</p>	Smt	56.00
5.11	<p>Wallpaper with Panelling and veneer band on internal columns - Same as above item no 5.10 but including approx 150mm veneer band to be fixed to periphery of the wallpaper as per design and drawing. Veneer to be finished with melamine polish upto the satisfaction of Banks Engineer. Basic Rate of Veneer Rs 2464/- Per Smt. Basic Rate of Wallpaper - Rs 8554/- Per Smt. Elevation Area (including band elevation) to be measured and paid for</p>	Smt	16.80

5.12	<p>Veneer Finished Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 25mm thick ply as base. All exposed surfaces of the ply shall be clad with veneer of approved make & shade as per design and shall be pasted with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. 25mm thick ply backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Elevation Area will be measured & paid for. Basic Rate of Veneer Rs 2464/- Per Smt.</p>	Smt	3.80
5.13	<p>Wall Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling made using approx. 30mm thick ply board as base. All exposed surface of panelling is provided with Approx 4mm thick Recon Veneer to receive necessary finishes as per drawing. 30mm ply board backside is clad with 0.8mm thk laminate before fixing over aluminium framing. The panelling is finished with approved make & shade N C Lacquer Paint including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, N C Lacquer Paint etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wood = 4350/- Per Cft. Basic Rate of Recon Veneer Rs 1227/- Per Smt. Location - Window side long wall</p>	Smt	6.60
5.14	<p>Same as above item no 5.13 but 12mm ply base instead of 30mm ply board base. Location - Corridor side long wall.</p>	Smt	12.00

5.15	Aluminium Framing - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Rate to include all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Elevation Area of Framing to be measured and paid for.	Smt	10
D	PANELLING FOR CONFERENCE ROOM NO 02		
5.16	Veneer Finished Wooden Fluted Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. 10mm x 10mm linear flutes to be made using superior quality well seasoned teak wood spaced at 20mm c/c as per design and drawing. Additional 8mm thick ply shall be cladded with veneer of approved make & shade as per design. The wooden flutes to be fixed on 8mm thick veneer finished ply and further the complete assembly (ply and flute) to be fixed on 12mm thick base ply with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The panelling is provided with 100mm band finished with veneer as per drawing. All exposed panelling surfaces (fluted and plain) to be finished with melamine polish including preparing the base, scraping etc complete. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of Measurement - Elevation Area to be measured and paid for. Basic Rate of Veneer Rs 2464/- Per Smt, Basic rate of Wood Rs 4350/- Cft.	Smt	24.80

5.17	<p>Wallpaper with Panelling on window columns - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 30mm thick ply board as base. All exposed surface of panelling shall be finished with 1 coat of primer and 1 coat of putty to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Further the panelling shall be cladded with wallpaper of approve make, shade, design and which have 100% washable, scratch resistance, peel proof properties. The wall paper should give a seamless finish. Further edge moulding and moulding on wallpaper to be fixed as per design and to be finished with melanine polish. 30mm thick ply board backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include all base coat, necessary hardware's, approved adhesive, wastage, handling, laying in pattern, putty, primer, protecting till handing over etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wallpaper - Rs 2313/- Per Smt</p>	Smt	4.50
5.18	<p>Wallpaper with Panelling on entrance wall. Same as above item no 5.17 but 12mm base ply to be used instead of 30mm thick ply board mentioned in above item. Basic Rate of Wallpaper - Rs 29913/- Per Smt</p>	Smt	13.30

5.19	<p>Wall Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling made using approx. 30mm thick ply board as base. All exposed surface of panelling is provided with Approx 4mm thick Recon Veneer to receive necessary finishes as per drawing. 30mm ply board backside is clad with 0.8mm thk laminate before fixing over aluminium framing. The panelling is finished with approved make & shade N C Lacquer Paint including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, N C Lacquer Paint etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wood = 4350/- Per Cft. Basic Rate of Recon Veneer Rs 1227/- Per Smt.</p>	Smt	21.00
5.20	Same as above item no 5.19 but 12mm ply base instead of 30mm ply board base.	Smt	0.70
E	PANELLING FOR CONFERENCE ROOM NO 03		

5.21	<p>Veneer Finished Wooden Fluted Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. 10mm x 10mm linear flutes to be made using superior quality well seasoned teak wood spaced at 20mm c/c as per design and drawing. Additional 8mm thick ply shall be cladded with veneer of approved make & shade as per design. The wooden flutes to be fixed on 8mm thick veneer finished ply and further the complete assembly (ply and flute) to be fixed on 12mm thick base ply with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The panelling is provided with 100mm band finished with veneer as per drawing. All exposed panelling surfaces (fluted and plain) to be finished with melamine polish including preparing the base, scraping etc complete. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of Measurement - Elevation Area to be measured and paid for.</p> <p>Basic Rate of Veneer Rs 2464/- Per Smt, Basic rate of Wood Rs 4350/- Cft.</p>	Smt	20.20

5.22	<p>Wallpaper with Panelling on window columns - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 30mm thick ply board as base. All exposed surface of panelling shall be finished with 1 coat of primer and 1 coat of putty to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Further the panelling shall be cladded with wallpaper of approve make, shade, design and which have 100% washable, scratch resistance, peel proof properties. The wall paper should give a seamless finish. Further edge moulding and moulding on wallpaper to be fixed as per design and to be finished with melanine polish.30mm thick ply board backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include all base coat, necessary hardware's, approved adhesive, wastage, handling, laying in pattern, putty, primer, protecting till handing over etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wallpaper - Rs 2313/- Per Smt</p>	Smt	17.10
5.23	<p>Wallpaper with Panelling on entrance wall. Same as above item no 5.22 but 12mm base ply to be used instead of 30mm thick ply board mentioned in above item. Basic Rate of Wallpaper - Rs 29913/- Per Smt</p>	Smt	7.40
5.24	<p>Same as item no 5.19 (Panelling finished with N C Lacquer) but 12mm ply base instead of 30mm ply board base.</p>	Smt	12.30

5.25	<p>Veneer Finished Panelling on existing column- Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. All exposed surfaces of the ply shall be clad with veneer of approved make & shade as per design and shall be pasted with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. 12mm thick ply backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Elevation Area will be measured & paid for. Basic Rate of Veneer Rs 2464/- Per Smt.</p>	Smt	6.00
F	WAITING AREA		

5.26	<p>Veneer Finished Wooden Fluted Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 12mm thick ply as base. 10mm x 10mm linear flutes to be made using superior quality well seasoned teak wood spaced at 20mm c/c as per design and drawing. Additional 8mm thick ply shall be cladded with veneer of approved make & shade as per design. The wooden flutes to be fixed on 8mm thick veneer finished ply and further the complete assembly (ply and flute) to be fixed on 12mm thick base ply with approved adhesive as per the manufacturers specifications and to the satisfaction of the Banks Engineer. The panelling is provided with 100mm band finished with veneer as per drawing. All exposed panelling surfaces (fluted and plain) to be finished with melamine polish including preparing the base, scraping etc complete. The ply surface towards the framing side shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include melamine polish, all necessary hardware's, glue etc. complete to the satisfaction of the Banks Engineer. Mode of Measurement - Elevation Area to be measured and paid for. Basic Rate of Veneer Rs 2464/- Per Smt, Basic rate of Wood Rs 4350/- Cft.</p>	Smt	12.90

5.27	<p>Wallpaper with Panelling on window columns - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing panelling using approx. 30mm thick ply board as base. All exposed surface of panelling shall be finished with 1 coat of primer and 1 coat of putty to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Further the panelling shall be cladded with wallpaper of approve make, shade, design and which have 100% washable, scratch resistance, peel proof properties. The wall paper should give a seamless finish. Further edge moulding and moulding on wallpaper to be fixed as per design and to be finished with melanine polish. 30mm thick ply board backside shall be pasted with 0.8mm thk laminate with approved adhesive before fixing over aluminium framing. Rate to include all base coat, necessary hardware's, approved adhesive, wastage, handling, laying in pattern, putty, primer, protecting till handing over etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wallpaper - Rs 8554/- Per Smt</p>	Smt	7.30
5.28	<p>Wallpaper with Panelling on corridor side longwall and both the short walls. Same as above item no 5.27 but 12mm base ply to be used instead of 30mm thick ply board mentioned in above item. Basic Rate of Wallpaper - Rs 8554/- Per Smt</p>	Smt	8.00

5.29	<p>Wall Panelling - Providing and fixing framing using approx. 25mm x 50mm x 2mm Aluminium box sections placed approx. 600mm c/c both ways fixed on wall. The box sections are connected using approx. 25mm x 25mm aluminium L angle. Providing and fixing decorative panelling made using approx. 12mm thick ply as base and 25mm thick ply to make panelling in pattern as per drawing. All exposed surface of panelling is provided with Approx 4mm thick Recon Veneer to receive necessary finishes as per drawing. 12mm ply backside is clad with 0.8mm thk laminate before fixing over aluminium framing. The panelling is provided with approx. 25mm x 25mm wooden moulding made using well seasoned Teak Wood as per drawing. The panelling is finished with approved make & shade N C Lacquer Paint including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, N C Lacquer Paint etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of panelling will be measured & paid for. Basic Rate of Wood = 4350/- Per Cft. Basic Rate of Recon Veneer Rs 1227/- Per Smt.</p>	Smt	30.70

5.30	Boxing - Providing & Fixing boxing , made using framing approx 25mm x 50mm x 2mm Aluminium box sections placed 600mm c/c both ways, and 18mm thk. ply framing at curved area, fixed to wall and beam .The curve frame area is externally cladded with1 layer of 6mm thk bent ply. All exposed framing area is cladded with 12.5 mm thk gypsum board of approved make and as per manufacturer specification and as directed by the Banks Engineer, fixed as per drawing. The panelling is finished with approved make & Light shade N C Lacquer Paint including all necessary coats of primer, putty as required to make the surface smooth and plain and as per the manufacturer’s specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, N C Lacquer Paint etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - All sides front Elevational area of boxing will be measured up to false ceiling level & paid for. Location – Waiting area column curve portion	SMT	25
5.31	Rebate for providing and fixing of 70mm x 0.6mm box closed G.I stud at 600mm c/c instead of 25mm x 50mm x 2mm thick aluminium framing. Rate to including floor channel, ceiling channel, rawl plug, L angle, hardwares etc complete as per the manufacturers specifications.	SMT	413.30
5.32	Providing and fixing 18mm thick ply cleat of 100mm x 150mm at 600mm c/c as per the instructions of Banks Engineer. Rate to include adhesive, hardwares etc complete. Contractor to ensure the stability of the structure. Cladded area upto cleat edge to be measured and paid for.	SMT	123.99
5.33	Providing and fixing temporary partition using 25x50x2mm thick aluminium framing upto true slab cladded with 12.5mm thick gypsum board. Rate to include painting, necessary hardware, wastage, removal etc complete as per the instructions of Banks Engineer. Elevation area to be measured and paid for.	SMT	6.72

5.34	Providing and fixing of 14mm thick 2 Hours Fire rated Glass with all necessary hardware. Basic Rate of 14mm thick 2 Hours Fire Rated Glass- 28750/- Sqm. Cost of Framing with 12mm thick ply, recon veneer, Light Shade N C Lacquer Paint, Hardware etc complete shall be paid in item no 5.1. Location - VIP Lift Lobby door	SMT	2.84
5.35	Providing and fixing 12mm thick MR grade ply as required and as directed by the Banks Engineer.	SMT	10.00
TOTAL FOR SECTION-05 PARTITION AND PANELLING WORKS			
SECTION 06 - ACCOUSTIC WORK			
6.1	STC-45 PARTITION - 87mm with Plywood outer layer	SMT	11
	Supply and installation of one layer of 12.5mm thick plain gypsum board and one layer of 6mm thick high density plywood board having density 690kg/m ³ , weight 8.7kg/m ² fixed on the one side of stud GI frame work.		
	Framework includes Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.		
	50mm thick 60kg/m ³ or higher mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.		
	Supply and installation of one layer of 12.5mm thick plain gypsum board and one layer of 6mm thick high density plywood board having density 690kg/m ³ , weight 8.7kg/m ² fixed on the one side of stud GI frame work.		
	Ply and Gyp panels are to be staggered so there are no double joint areas.		
	Joints to be plastered, tapped and finished as per maufacturers instructions.		

	Mode of measurement - Actual height of partition from finished floor to structural ceiling to be measured and paid for. Rate to include hardware, adhesive, transportation, wastage etc complete		
6.2	STC-55 PARTITION - 173mm with Plywood outer layer	SMT	100
	Supply and installation of one layer of 12.5mm thick fire rated gypsum board and outer layer of 19mm High Density Plywood having density 690kg/m ³ , weight 8.7kg/m ² fixed on the one side of stud GI frame work.		
	Framework includes Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.		
	An air gap of 10mm to be maintained between the first half and second half in the partition system.		
	50mm thick 640g/m ³ mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.		
	Supply and installation of one layer of 12.5mm thick fire rated gypsum board and outer layer of 19mm High Density Plywood having density 690kg/m ³ , weight 8.7kg/m ² fixed on the one side of stud GI frame work.		
	Ply and Gyp panels are to be staggered so there are no double joint areas.		
	Joints to be plastered, tapped and finished as per manufacturers instructions. Rate to include hardware, adhesive, transportation, wastage etc complete		
	Mode of measurement - Actual height of partition from finished floor to structural ceiling to be measured and paid for. Rate to include hardware, adhesive, transportation, wastage etc complete		
6.3	STC-55 PARTITION on existing brick walls - 44mm + Existing Wall Thickness	SMT	179

	<p>Providing and fixing on existing brickwalls - Supply and installation of STC 55 Partition on existing brick walls comprising of Framework includes Floor/Head channels having thickness 0.5mm, length 3660mm, equal flanges of 32mm and web of 50mm fixed to floor and slab with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to caulk along the perimeter of the partition frame before fixing channels. Then Stud channel having thickness 0.5mm, length 3660mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers.</p>		
	<p>25mm thick 48kg/m³ mineral wool (enclosed with tissue paper) filled between the Studs and held in position by using chicken wire mesh/cross bracings/pasting on one side of the boards.</p>		
	<p>One layer of high density plywood board 19mm thick should be fixed the outer side of the channels. Rate to include hardware, adhesive, transportation, wastage etc complete</p>		
	<p>Mode of measurement - Actual height of partition from finished floor to structural ceiling to be measured and paid for. Rate to include hardware, adhesive, transportation, wastage etc complete</p>		
	TOTAL FOR SECTION-06 ACCOUSTIC WORKS		
	SECTION 07 - POP, FALSE CEILING		
7.1	<p>POP PUNNING for wall - Providing and applying 8 to 12mm thick POP Punning using Plaster of Paris of approved make and in line, level, in plumb and at right angles to plastered surfaces in all positions including making 6mm x 6mm grooves at junctions of two dissimilar materials or as shown in drawings, scaffolding, surface preparation if required, cleaning of the area on day to day basis etc. complete as directed.</p>	SMT	213

7.2	<p>Gypsum Plain Board False Ceiling- : Providing & Fixing M/F Suspended 12.5mm thick Gypsum board Plain Ceiling includes Serrated steel section with effective thickness of 2T (2xdepth), better load carrying capacity, enhanced screw retention, improved acoustic performance & fire resistance as compared to plain steel section and with a load bearing capacity of 33 kg/m², All metal components shall be Design Patented in India (325062)} Perimeter Channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} fixed along the Perimeter of existing wall/ partition with the help of PVC Anchor (6x40) at 600mm c/c for brickwall. Serrated steel section Ceiling Angle {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is suspended by fixing it to the Gypsum board soffit cleat {GI(IS513)YS-260Mpa,Finish-Galvanised 120GSM(IS277)}. Soffit Cleat and Gypsum board Rawl Plug- Ø8x45mm {Material-IS 513 CR1 grade, Zinc coating (7 to 8 microns) pull out load- 6.8kN for M30 concrete grade} creating 1220mm x 1220mm grid.Serrated steel section Intermediate channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is fixed to the Serrated steel section Ceiling Angle with M6 x 12mm Hex Bolt & Hex Nut arrangement {Material-As per EN 10083 Finish – Zinc Plating} or with 2 Nos of Ø4.2x13 Gypsum board Metal to Metal screw {Material-Carbon steel EN-ISO 7049/50 Finish- Zinc Coating Thickness- 4.14micron.}. The Serrated steel sectionCeiling Section {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} is then fixed to the Serrated steel section Intermediate Channel {Material-GI(IS513),YS-260Mpa,Finish-Galvanised 150GSM(IS277)} with the help of Gypsum board Connecting Clip {Material-High carbon spring steel wire(BS970Gr.En42)-46-48HRC,Finish-Zinc plating 4-6 micron} and in direction perpendicular to the Intermediate channel at 457mm c/c. Single layer of 12.5mm thick Gypsum Plain (conforming to IS 2095 Part 1 : 2011 ,</p>	SMT	250
	<p>Contractor to carry out testing of false ceiling, framing (setcions/grid) As directed by Bank's Engineer before fixing gypsum board.</p>		

	<p>ISI Mark Certified, International EPD Verified, Gypsum Board to be certified class 1 by virtue of BS-476 Part 5,6, & 7 1219 x 1829mm is then screw fixed to ceiling section with 25mm drywall screws {Material-Carbon steel EN-ISO 7049/50,Finish-Case hardened Grey Phosphating as per JIS G3507-1} standard at 230mm centers. Gypsumboard Shadow line bead 9x10x28x0.5mm Material-GI(IS513)YS-260Mpa FinishGalvanised 120GSM(IS277) semi-perforated galvanized section used for minimizing the appearance of non-aligned walls and ceilings by giving a clean, straight, shadow edge on installation and finishing. Finally square and tapered edges of the boards are to be jointed and finished so as to have a flush look which includes filling and finishing with Easi-Fill Jointing Compound & Joint Paper tape.</p>		
	<p>Vendor to submit MTC Material Test Certificates for ordered material and Technical consultant visits are mandatory for material inspection. Rate to include cost towards cutting, making cut-outs of required sizes as per services requirement and as directed and making good for any electrical, FA, PA, CCTV, Networks etc., Fixtures as of any size and shape. Rate to be quoted including necessary additional framing member as per services requirement. All system to be fixed as per manufacturers recommendations. Any level difference for any drop/ step up will be measured in SMT. Contractor to ensure the stability of the entire system of false ceiling.</p>		
7.2.1	<p>Same as 7.2 but Curved shaped ceiling Gypsum ceiling Location : Corridore , Conference room</p>	SMT	112

7.3	<p>Lift Lobby Ceiling - Providing & Fixing Veneer finished Ceiling made using aluminium framing using approx. 25mm x 50mm x 2mm box sections placed approx. 600mm c/c both way suspended from structural ceiling using the same box sections. Approx 300mm curve has to be made to all the long wall periphery edges of ceiling using 18 mm thick BWP Ply as support framing and the ply framing is covered with 2 layers of 6mm thick bent ply and further to be cladded with approx. 4 mm thick Veneer of Approved shade and pattern as per drawing and design. Further Aluminium framing shall be cladded with 12mm thk BWP ply and veneer of approved shade as per design and shall be pasted with approved adhesive to receive the necessary finishes as per the manufacturers specifications and to the satisfaction of the Banks Engineer. Internal Surface of Ply shall be cladded with 0.8mm Thick Balancing Laminate. Rate to include all necessary hardware's, glue, Melamine polish etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Reflected area of ceiling will be measured & paid for. Basic Rate of Veneer - Rs 2464/- Smt</p>	SMT	55
7.3.1	Same as 7.3but ceiling at loaction Waiting area	SMT	10
7.4	<p>VIP Lift Lobby Ceiling - Description same as above 7.3 without side curve and 18mm thick BWP ply for ceiling as per design, drawing and instructions of Banks Engineer. Basic Rate of Veneer - Rs 2464/- Smt</p>	SMT	9
7.5	<p>MR Grade Gypsum False Ceiling : Description same as Item No 7.2 but with 12.5mm thick MR Grade Gypsum board.</p>	SMT	48

7.6	<p>Trap Door - Providing & Fixing Double Leaf TRAP DOOR using 18mm thick BWP ply finished with laminate on one sides and 0.8mm thk laminate from inside with all edges finished with approx. 6mm thk wooden lipping including Providing, making and fixing TW frames approx. 65mm x 50mm doors made out of first quality TW as approved, Kiln-seasoned. Trap door is hanged to ceiling using aluminium box section of approx. size 25mm x 50mm X 2mm . All wood and plywood to be anti-termite treated. shaped, grooved, mitered joint arrangement including use of exterior quality approved water repellent adhesive, GI screws, pins, etc. Also the frame shall be smooth finished with melamine polish OR Paint in approved colour for all the sides and moulds including the groove in frame as per detail drg. cost to include for necessary approved hardware's like hinges, ss chains, Alen keys etc. as required and as per design. Rate to include providing and fixing edge guard (Reflected plan area of trap door to be measured & paid for) Basic Rate of Wood - 4350/- Per Cft. Basic Rate of 1mm Thk Laminate Rs 454/- Per Smt.</p>	SMT	10
7.6.1	<p>Description Same As Above but Double Leaf and external side finish with approx. 4 mm thick Veneer of Approved shade as per drawing and instructions of Banks Engineer. Basic Rate of Veneer - Rs 2464/- Smt</p>	SMT	4
7.7	<p>Access Panels - Providing & Fixing of Access panels of required sizes in false ceiling made from aluminium Powder coated frame, and MR gypsum board as per manufacturers and as per drawing locations. Rate to include all necessary supports, hardware's etc. complete.</p>	NOS	
7.7.1	300 X 300 MM	NOS	5
7.7.2	600 X 600 MM	NOS	49
7.7.3	1200 X 600 MM	NOS	2
7.8	<p>Light Fitting Supportings - Providing & Fixing of 12mm thk ply of approved make on top of Gypsum sheet of false ceiling to support Light fittings or at location as directed by the Banks Engineer as required including all necessary hardware's etc. complete. The ply is screwed on frame of false ceiling.</p>	SMT	10

7.9	POP Moulding - Providing & Fixing of POP moulding of size, shape, profile as per drawing and details fixed with necessary screws including all necessary hardware's for fixing, Mould, scaffolding etc. complete. Toilet area		
	Approx. Size : 50mm x 100mm	RMT	61
7.10	Wooden Finished Acoustic ceiling : - Providing and Fixing approved Acoustic Wooden Panel ceiling of minimum 0.75 NRC of approved make, size ,pattern and as per manufactureres specifactions. Rate to be qutoted including necessary frmng , suspnders and level adjustments etc complete. All material should be of approved make & complete as per the drawing,specification and approval of Banks Engineer. Rate is included of loading, transportation, unloading, complete installation, cleaning etc. as per instructions of Banks Engineer. All system to be fixed as per manufactureres specifications & recommendations and to the satisfaction of Banks Engineer.Basic Rate of Panel = Rs 1385/- Per Sqft	SMT	86
7.11	Veneer finished Curved shaped Ceiling: Providing & Fixing Veneer finished Ceiling made using aluminium framing using approx. 25mm x 50mm x 2mm box sections placed at optimum distance c/c both way suspended from structural ceiling using the same box sections. Approx 600mm curve has to be made to all the wall periphery edges of ceiling using 6 mm thick bent Ply as support and approx. 4 mm thick Veneer of Approved shade and pattern as per drawing and design or as per manufactureres specifications and to the satisfaction of the Banks Engineer. Rate to include all necessary hardware's, glue, Melamine polish etc. complete to the satisfaction of the Banks Engineer. Mode of measurement - Reflected area of ceiling will be measured & paid for. Basic Rate of Veneer - Rs 2464/- Smt Location : confernce -3 and waiting area	SMT	19

7.12	Wooden Moulding: Providing and Fixing of wooden moulding of approved make , colour, shade and of size as per drawing, wooden moulding is fixed as per drawing in pattern using adhesive of approved make and as per the manufacturers recomandation Rate to include all necessary hardware's, glue , melamine polish etc. complete to the satisfaction of the Banks Engineer. Location : Conference Room	RMT	196
7.12.1	Same as above but for Moulding Size 50mm X100mm Location wide corridore after Lift Lobby	RMT	84
	TOTAL FOR SECTION 07 : POP, FALSE CEILING		
	SECTION 08 - DOOR FRAME & SHUTTERS		
8.1	<p>Fire rated Openable Glass door with both side fire rated partition: Supply and installation of tested fully glazed fire rated double leaf sliding door with 120 minutes of integrity and radiation control (EW 120) and insulation for 30 minutes (EI 30) with symmetrical (Bi-Directional) fire protection, made using 14 mm clear 120 min fire rated for Integrity, Radiation control glass as per manufacturer's specifications and as approved by the Banks Engineer. The frames shall be cold rolled GI steel profiles. The door frames shall be pressed from 1.5 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The shutters should be fixed to the frame using weld on dimensions 179mm x 20mm hinges. The profile shall have grooves to incorporate fire resistant gaskets. The doors shall incorporate drop down seal at the bottom. The glass should be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. The beading shall be clipped on using stainless steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm thick calcium silicate setting blocks. The door should be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The rate to include all necessary hardware's, fittings, necessary accessories as per manufacturers specifications and necessary supporting system in M.S. using optimum size sections to hold the mechanism and shutters. Contractor to ensure the stability of the Glass shutters and its supporting system in M.S.</p>		

8.1.1	Openable Door System (Frame + Glass + Both side Fixed Glass) (Lift Lobby) including both side fixed glass and MS Structural Support as per design and drawing complete.	Sqm	11.52
8.2	<p>2 Hours Fire Rated Double Leaf Acoustic Doors - AD01, FD02- Supply and Installation of 86mm thick wooden sandwiched doors to achieve design criteria value of STC - 50.</p> <p>The door frame profile is 125 x 150 mm of double rebated shall be constructed out treated Teakwood. The Door frame is suitably prepared, primed and painted / polished, as per Client's requirement. SHUTTER – Fabricated from Salwood frame double rebates on vertical and top edges with provision for noise and fire rated door seal fixing in rebates. The shutters should not have visible screws or fasteners on either surface.</p> <p>The shutter shall have the insulation of 50x50mm thick wooden frame @ every 400mm centers and the Air gap to be filled with Rockwool insulation 50mm thick 48 Kg /m3 density wrapped in FR grade Hessian cloth. Then 5mm thick Polymer based membrane 1900 Kg/m3 density to be adhered on the Plywood surface. 12mm thick 800 Kg/m3 density BWP plywood to be fixed to sub frame along with the Polymer based membrane. Final finish is with Veneer lamination or as per Architect's design. The shutters should have the provision for fixing automatic mechanical drop seal at the bottom edge.</p> <p>Because of their extra weight, Acoustical doors usually require reinforcement of the door frame and heavy-duty mounting hardware and ball-bearing hinges. Perimeter seals should be of soft Neoprene not with foam or felt. Neoprene should retract when doors are opened.</p>	Sqm	12.96

	<p>Bottom of door leaf shall contain continuous, adjustable, gravity-activated seal that shall compress against the floor as the door is closed. Automatic door bottom seal should be fully motorized into the bottom of a door and should be very effective acoustic threshold seal when used in conjunction with appropriate head and jamb seals having durability of minimum 1,000,000 cycles. Raised sills and threshold drop seals will not be acceptable. Seals should be adjusted properly so that door closure will not be difficult. 1/2" clearance to be given if the floor is carpeted. Above the door wall has to extend till structure to avoid flanking noise between the areas.</p>		
	<p>Rate to include all necessary ironmongery/fittings items like 100x100x3mm SS Ball Bearing Hinges , Concealed door closures, Heavy duty door stopper, Dead Lock, Acoustic Gasket Package, twin bubble drop down seal etc of approved make etc. in the door as per the manufacturers specifications and approved by the Banks Engineer.</p> <p>Installation : Fixing of fire door frames and Shutters is done in plumb and true to line in the openings as required at the site on a single point total turnkey responsibility basis of providing and fixing of the fire / acoustic door frames and shutters and the related hardware / ironmongery items etc as per the instructions of Banks Engineer.</p> <p>Contractor in coordination with the manufacturer shall submit Guarantee Declaration for Acoustic & Fire rating property with all necessary documents as required by the Bank Engineer.</p>		
8.3	Same as above item no 8.2 but for single leaf doors. - AD02 & AD02A	Sqm	17.64
8.3.1	Customised Handle - Providing & Fixing of Customised Handle of approved make, Design & Size. Basic rate of Handle (Single One side) Rs. 15000/- per nos.	No's	8
8.3.2	Customised Handle - Providing & Fixing of Customised Handle of approved make, Design & Size. Basic rate of Handle (Single One side) Rs. 10000/- per nos.	No's	12

8.4.1	<p>Acoustic Door Shutter & Frame Cladding with approved make & Shade N C Lacquer - Providing & fixing of Panelling over Acoustic Door Shutter made using cladding both sides of door shutter with Approx 4 mm thick Recon veneer and 12mm thk fire resistant ply panels & wooden moulding of size, in pattern as per drawing to both sides of the door. Door Frame shall be cladded with Approx 4 mm thick Recon veneer to all sides of the frame and wooden moulding of size, in pattern to both exposed edges of the frame as per drawing . Door shutter side edges to be finished with 40 x 25 mm thick wooden beading and top and bottom with 40 x 8 mm wooden beading. Complete door shutter, edges, mouldings, frame and edge mouldings shall be finished with approved make & Shade N.C. Lacquer Paint of approved make, shade as per the manufacturers specifications including scraping, preparing surface with necessary coats of primer and putty, to receive further paint finish. Rate to include all necessary hardware's, glue etc. complete. Note - Both Side Elevation Area Shall Be Measured and Paid For. Basic Rate of Recon Veneer Rs 1227/- Per Smt.</p>	Sqm	78.48
8.4.2	<p>Acoustic Door Shutter & Frame Veneer Cladding (For Door - AD02A) - Providing & fixing of Veneer of approved make and shade, pattern as per drawing over one side of Acoustic Door Shutter and Door Frame. Door side edges to be finished with 40 x 25 mm thick wooden beading and top and bottom with 40 x 8mm wooden beading. One side of the door shutter, edges and frame shall be finished with Melamine Polish of approved make, shade as per the manufacturers specifications. Rate to include all necessary hardware's, glue, preparing the base for melamine polish etc. complete. Note - Elevation Area Shall Be Measured and Paid For. Basic Rate of Veneer - Rs 2464/- per Smt</p>	Sqm	2.52

8.5	<p>2 Hours Fire Rated Metal Doors - FD04 & FD05 - Providing and fixing of 120 min fire rated steel door with steel frame Frame material as per the manufacturers specifications and as per drawing. : Steel 1.0 mm Frame profile : 150 x 60 double rebate Frame finish : Powder coated RAL 9010 - off white Shutter material : Steel 0.9 mm Shutter thickness : 50 mm Shutter finish : Powder coated RAL 9010 - off white. Rate to include all necessary hardware's fittings etc. complete. Rate quoted shall be including Freight charges, loading, unloading, Mathadi charges, shifting of frames and shutter at all floors and levels and fixing/installation complete as directed by Banks Engineer.</p>	Sqm	12.6
	The rate is inclusive of the following		
	Hinges SS 304 Grade Ball Bearing 100mm X 75mm X3 mm		
	Concealed Door Closer		
	Dead Lock 55mm Backset wuth 70 pin cylinder both side key		
	H Pull Handle - 300mm		
	Vision Panel Fire Rated - Clear Size - 200mm x 750mm - 1 No		
8.6	<p>2 Hours Fire Rated Metal Doors - FD03 - Providing and fixing of 120 min fire rated steel door with steel frame Frame material as per the manufacturers specifications and as per drawing. : Steel 1.0 mm Frame profile : approx. 150 x 60 double rebate Frame finish : Powder coated RAL 9010 - off white Shutter material : Steel 0.9 mm Shutter thickness : 50 mm Shutter finish : Powder coated RAL 9010 - off white. Rate to include all necessary hardware's fittings etc. complete. Rate quoted shall be including Freight charges, loading, unloading, Mathadi charges, shifting of frames and shutter at all floors and levels and fixing/installation complete as directed by Banks Engineer.</p>	Sqm	3.96
	The rate is inclusive of the following		
	Hinges SS 304 Grade Ball Bearing 100mm X 75mm X 3mm		
	Concealed Door Closer		
	Dead Lock 55mm Backset with 70 pin cylinder both side key		
	H Pull Handle 300mm Long		
	Concealed Tower Bolt (Flush Bolt) 300mm		

	Vision Panel Fire Rated - Clear Size - 200mm x 750mm - 2 Nos		
8.7.1	<p>Wooden Door frames - Providing, making and fixing Best Quality well seasoned Teak wood door frames of size & profile (as per drawing) - max. moisture content 12% (IS 287) made out of Superior quality Teak wood as approved, kiln seasoned, antitermite treated, shaped, grooved, mitered joint arrangement including use of exterior quality approved water-repellent adhesive, Iron oxidized screws, pins etc. Door frame to be fixed to wall / partition using required diameter, nos. of Anchors of approved make as per the manufacturers recommendations and as per detail drawing and specification & instructions of the Banks Engineer. Door frame to be treated with two coats of wood preservative of approved make. Door frame bottoms of vertical to be provided with 1mm thk alluminium flats before fixing in position as directed. The door frame to be externally finished with melamine polish of approved make including preparing the surface, polishing etc complete. Mode of Measurement : Only exposed/visible volume of Door frame wood will be measured & paid for - Basic rate of wood RS. 8,250/- PER CFT.</p>	Cmt	0.2246 4
	<p>Supplying, drilling/cleaning hole and fixing appropriate length anchor suitable for fastenings both on concrete & masonry/aerated blocks. Length of anchor should be decided on the basis of embedment depth in base material, total frame thickness & gap between frame and base material. Anchor comprises of 10 mm diameter Polyamide PA 6 grade sleeve and of 7 mm diameter double threaded 6.8 grade countersunk head double threaded screw made of carbon steel galvanized to minimum 5 microns. CF-I 65 insulating and Filling foams (Tested for acoustic and thermal insulation) should be used to fill the gaps between frame & base material with CF-DS1 Dispenser for easy modulation of foam . Fixing methodology to be followed as per manufacturers guidelines.</p>		

8.7.2	Description same as above item no 8.7.1 but frame finished with approx 4mm thick recon veneer and N C Laquer Paint as per approved shade as per the instructions of Banks Engineer. Basic Rate of Wood Rs 4,350/- PER CFT, Basic Rate of Recon Veneer Rs 1227/- Per Smt.	Cmt	0.4422 6
8.8	Single Leaf Door Both side approved make and shade N C Laquer Finish - Providing and fixing 45mm thick solid core Single leaf flush shutter as per drawing details confirming to IS 2202 (Part I) factory made hot pressed internally lipped, using with BWP ply and exterior quality synthetic adhesive conforming to IS, shutters as manufactured by approved make, clad with Approx 4 mm thick recon veneer & finished with approved make and shade N.C. Lacquer Paint of approved make, shade as per the manufacturers specifications on both side, shutters shall be beaded on edges by 06 mm thick teak wood beading to top and bottom, 25mm thick wood beading to the sides , antitermite treated fixed with exterior quality synthetic adhesive and fixed with head less nails and non ferrous counters sunk screws. The wooden frame is fixed with moulding as per design and drawing and finished with approved shade N C Laquer. Rate to include all necessary hardware's like hinge's, handles, locks, stopper, door closure of approved make as detailed in schedule to entire satisfaction of Banks Engineer. - (Consider Basic rate for fittings i.e. Hinges, handle, lock, stopper etc. as Rs. 21475/- per single door)- Basic Rate of Recon Veneer Rs. 914/- Per SMT. Basic Rate of Wood - 4350/- Per Cft	Sqm	20.16
8.9	Description same as above item no 8.8 but door with vision panel made of 6mm toughened glass of size 200mm x 750mm.	Sqm	2.52

8.10	<p>Single Leaf Door Both side Laminate WD01, WD02 - Providing and fixing 35mm thick solid core Single leaf flush shutter as per drawing details confirming to IS 2202 (Part I) factory made hot pressed internally lipped, using with BWP ply and exterior quality synthetic adhesive conforming to IS, shutters as manufactured by approved make, cladded with 1mm thk Laminate on both side, shutters shall be beaded on edges by 06 mm thick teak wood beading to top and bottom, 25mm thick wood beading to the sides, antitermite treated fixed with exterior quality synthetic adhesive and fixed with head less nails and non ferrous counters sunk screws; including all necessary hardware's like hinge's, handles, locks, stopper of approved make as detailed in schedule to entire satisfaction of Banks Engineer. - (Consider Basic rate for fittings i.e. Hinges, handle, lock, stopper etc. as Rs. 13020/- per single door- Basic Rate of 1mm thk Laminate Rs. 554/- Per SMT. Basic Rate of Wood - 4350/- Per Cft)</p>	Sqm	11.52
8.11	<p>Non-Fire rated Doors : DD02 - Providing and fixing of Non fire rated steel door with steel frame as per the manufacturers specifications and as per the design. Rate to be quoted including all necessary hardware's fittings like Hinges SS Ball Bearing 4" x 3" x 3mm, Shaft Lock Keyed Alike , Flush pull handle , Tower Bolt SS 300mm, 8mm Toughened Glass with Frosted film 300X1950mm all as per manufacturers specifications and as approved by the Banks Engineer, Freight charges, Unloading including Mathadi Charges, Shifting of frames & shutter at all floors & levels and fixing/installation complete.</p>	Sqm	5.4
	Non fire rated steel door with steel frame		
	Frame material : Steel 1.0 mm		
	Frame profile : 100 x 50 single rebate		
	Frame finish : Powder coated RAL 9010 - off white		
	Shutter material : Steel 0.9 mm		
	Shutter thickness : 50 mm		
	Shutter finish : Powder coated RAL 9010 - off white		

8.12	Fire Rated Door : DD01 - Providing and fixing of 120 mins fire rated steel door with steel frame as per the manufacturers specifications and as per the design. Rate to be quoted including all necessary hardware's fittings like Hinges SS Ball Bearing 4" x 3" x 3mm, Shaft Lock Keyed Alike , Flush pull handle , Flush Bolt SS 300mm all as per manufacturers specifications and as approved by the Banks Engineer, Freight charges, Unloading including Mathadi Charges, Shifting of frames & shutter at all floors & levels and fixing/installation complete.	Smt.	5.4
	Frame material : GI 1.0 mm		
	Frame profile : 150 x 60 double rebate		
	Frame finish : Powder coated RAL 9010 - off white		
	Shutter material : GI 0.9 mm		
	Shutter thickness : 50 mm		
	Shutter finish : Powder coated RAL 9010 - off white		
8.13	Non Fire Rated Metal Door : DD03 - Providing and fixing steel door with steel frame as per manufacturers specifications and as per design. Rate to be quoted including all necessary hardware fittings like Hinges SS Ball Bearing 4" x 3" x 3mm, Shaft Lock Keyed Alike , Flush pull handle all as per manufacturers specifications and as approved by Banks Engineer. Rate quoted shall be including Freight charges, loading, unloading, Mathadi charges, shifting of frames and shutter at all floors and levels and fixing/installation complete as directed by Banks Engineer.	Smt	3.78
	Non fire rated steel door with steel frame		
	Frame material : Steel 1.0 mm		
	Frame profile : 100 x 50 single rebate		
	Frame finish : Powder coated RAL 9010 - off white		
	Shutter material : Steel 0.9 mm		
	Shutter thickness : 50 mm		
	Shutter finish : Powder coated RAL 9010 - off white		

8.14	<p>Shutters Below Pantry Counter - P/F Shutters below pantry counter / working platform counter hinged shutters, in 18mm thk Block Board finished with 1mm thk laminate of approved make, shade & using 0.8mm thk laminate from inside. Shutters to be hang or supported to best quality well seasoned TW frame approx. sect. 35mm x 50mm(side and intermediate frame). Wooden frame & shutter edges to be finished with paint/polish as directed. Cost to include necessary hardware's like hinges, locks, ball catch, etc. complete as per drawing and details. Shutters to be provided with profile handle of size of approved make, finish and as per drawing. (Shutters front elevational area to be measured & paid for) - Basic rate of 0.8mm thk laminate Rs. 303 per Smt. Basic rate of 1.00mm thk laminate Rs. 554 per Smt, Basic rate of Wood - 4350/- Per Cft</p>	Sqm	3.525
8.15	<p>Drawers Below Pantry Counter - Providing & Fixing of Drawers of approx.. size : 700mm W x 550mm D x 750mm H, sides made using 18mm thk ply, back in 12mm thk ply and front fascia of drawers(3 nos. drawers as per drawing) in 18mm thk ply. Drawers sides, back made using 12mm thk ply and bottom using 8mm thk ply. All edges of the pedestal and drawer edges to be finished with minimum 6mm thk wooden beading. All internal surfaces of the drawers finished with 0.8mm thk laminate of approved shade pasted using approved adhesive. Drawer pedestal externally (sides & front) finished with 1mm thk laminate of approved make, shade, colour and as per drawing. All drawers provided with soft closing telescopic drawer channels of required length and approved make, Handles of approved make,size (Consider basic rate of Handles Rs. 150 per no.) All edges finished with melamine polish to match with laminate shade and as directed. Basic rate of 0.8mm thk laminate Rs. 303 per Smt, Basic rate of 1.00mm thk laminate Rs. 554 per Smt</p>	Nos	2

8.16	<p>Hollow Column Shutters - P/F Shutters to hollow column hinged shutters, in 30mm thk Flush door externally clad with Approx 4mm thick recon veneer using approved adhesive and finished with N C. Lacquer Paint of approved make, shade and as per manufacturers specifications including required numbers of coats of putty, primer and paint and to the satisfaction of Banks Engineer. The top and bottom edges of the shutter to be finished with minimum 6mm thk wooden beading and sides with 25mm thk wooden beading. Internal surfaces finished with pasting 0.8mm thk laminate of approved make with approved adhesive . Shutters to be hang or supported to best quality well seasoned TW frame approx. sect. 35mm x 50mm(side and intermediate frame). Wooden frame & shutter edges to be finished with Paint / polish as directed. Cost to include necessary hardware's like hinges, locks, ball catch, etc. complete as per drawing and details. (Shutters front elevational area to be measured & paid for). Basic rate of 0.8mm thk laminate Rs. 303 per Smt. Basic rate of Recon veneer - Rs 914/- Per Smt Basic Rate of Wood - 4350/- Per Cft</p>	Sqm	4.59
8.17	<p>Providing and fixing aluminium louvers of size 1200mm x 1200mm for smoke damper. Rate to include necessary hardwares, transportation etc complete as per design and drawing. One side elevation area to be measured and paid for.</p>	Sqm	2.88
8.18	<p>Removing finished door shutter, frame and adjoined partition including backing, framing etc complete and refixing complete at desired location without any damage as per design, drawing and instructions of Banks Engineer. Location - Store room adjacent to podcast room. Elevation area upto false ceiling level to be measured and paid for.</p>	Sqm	5.04
SECTION 08 : DOOR FRAME & SHUTTERS- TOTAL			
SECTION 09 - STORAGES / TABLES			

9	<p>Rectangular shaped Table :Providing and Fixing Conference room table of size, in shape as per drawing : Table top : approx.50mm thk table top made using 25mm thk BWP block board, top finished with minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) fixed in pattern, design as per drawing. Underside of table top finished with 0.8mm thk laminate. Periphery of table top provided with 100mm x 50mm thk TW moulding as per drawing. Provision to be made to fix the POP-UP boxes of required size & nos. as per AV requirements. Table top wooden mouldings finished with PU polish of approved make as per manufacturers specifications including preparing the surface, to the satisfaction of Banks engineer and Design consultant. Marble top to be mirror polished to the satisfaction of the Banks engineer and design consultant. (Basic rate of marble Rs. 6500/- per Sqmt)</p>		
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	<p>Table Base: Base box framing is made using Alluminium box sections 25mm x 50mm x 2mm thk. placed vertically at optimum distance, supported with horizontal 18mm thk ply framing at top and at bottom of the base. Base is also provided with intermediate plys between top and bottom ply as required. Frame work is provided with intermediate aluminium box section 25mm x 50mm as required. Framing externally clad with 19mm thk ply and finished with veneer of approved make, shade in pattern as per drawing. Base to be provided with openable shutters(louvers) made of 18mm thk block board & wooden louvers(15mm x 65mm) to provide access for cables, wire managers, switches box etc. as per drawing. Wooden side members of size approx. 50mm x 35mm are provided to the sides of louver shutters to hang. Base openable areas sides and back are provided with 18mm thk ply and finished with 0.8mm thk laminate of approved make. All external surface of veneer, wooden louvers and wooden frame to sides of shutters to be finished with PU high gloss as per manufacturers specifications and to the satisfaction of the banks engineer and design consultant. Rate to include grooves as per drawing and all necessary pharma, mouldings, hardware's, Glu and necessary fittings (of approved make) like hinges, pull magnet, handles, locks, provision for wire manager system of approved make etc., complete as per drawing. Openable shutters to be provided as per A.V. System ventilation requirement.</p>		
9.1	Diamond shaped Table : Conference Room 50 PAX	No	1
9.2	Rectangular shaped Table : Conference Room 15 PAX	No	1

9.3	<p>Providing and Fixing Circular shaped approx. 4500mm dia. & approx. 750mm width Conference room table (20 PAX) as per drawing : Table top : approx.50mm thk table top made using 25mm thk BWP block board, top finished with minimum 18mm thk marble (tolerance +/- as per the relevant IS Code) fixed in pattern, design as per drawing. Underside of table top finished with 0.8mm thk laminate. Periphery of table top provided with 75mm x 50mm thk TW moulding as per drawing. Provision to be made to fix the POP-UP boxes of required size & nos. as per AV requirements. Table top wooden mouldings finished with PU polish of approved make as per manufacturers specifications including preparing the surface and to the satisfaction of Banks engineer and design consultant. Moulding to be match with table top laminate and to the satisfaction of Banks engineer and design consultant. Marble top to be mirror polished to the satisfaction of the Banks engineer and design consultant. (Basic rate of marble Rs. 6500/- per Sqmt)</p>	No	1
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	<p>Table Base: Base box framing is made using Alluminium box sections 25mm x 50mm x 2mm thk. placed vertically at optimum distance, supported with horizontal 18mm thk ply framing at top and at bottom of the base. Base is also provided with intermediate plys between top and bottom ply as required. Frame work is provided with intermediate aluminium box section 25mm x 50mm as required. Base to be provided with openable shutters(louvers) made of 18mm thk block board & wooden louvers(15mm x 65mm) to provide access for cables, wire managers, switches box etc. as per drawing. Wooden side members of size approx. 50mm x 35mm are provided to the sides of louver shutters to hang. Base openable areas sides and back are provided with 18mm thk ply. Framing externally clad with 6mm thk bent ply (2 layers) and fluted panels of approved make as per drawing. Base to be provided with openable shutters(louvers) made of 18mm thk block board & wooden louvers(15mm x 65mm) to provide access for cables, wire managers, switches box etc. as per drawing. Base openable storage internal ply surface finished with 0.8mm thk laminate from inside. Base all exposed surfaces to be finished with PU polish including preparing the base as per the manufacturers specifications and to the satisfaction of Banks engineer and design consultant. Cost to include grooves as per drawing and all necessary pharma, mouldings, hardware's, Glu and necessary fittings (of approved make) like hinges, pull magnet, handles, locks, provision for wire manager system of approved make etc.,. complete as per drawing. Openable shutters to be provided as per A.V. System ventilation requirement. Provision to be made for fixing of screens of sizes as required by IT. and as per design. (Contractor to be ensure the stability of the Table.</p>		
9.4	<p>OVER HEAD STORAGE ALONG WITH SHELF BELOW : Approx Size - 6230mm x 450mm D x 900mm Ht. Providing & Fixing Over Head Storage unit of approx. 450mm Deep, with hinged shutters, verticals and shelves in approx. 18 mm ply, backing in 8 mm ply, Shutter made in approx 18mm thk block board. All external surfaces finished with Laminate of approved shade as per detailed drawings. All internal surfaces finished with 0.8mm thick laminate. Rate to include grooves, mouldings, edge lipping as per drawing, necessary Glu, hardware's, like handles, soft touch / hydraulic hinges, locks, shelves pins etc. all as approved and as per drawings and details complete. (Elevational area to be measured & paid for) -Basic rate of 1mm thk laminate Rs. 454/- Per Smt. Basic Rate of Wood - 4350/- Per Cft. (Location - Pantry)</p>	SMT	4.35

9.5	Open Storage/Display Unit at Waiting Area Approx. size : 660mm x 325mm D X 1800mm Ht. sides, top ,bottom made using 25mm thk ply, back in approx 12mm thk ply as per design. All the edges of the ply to be provided with wooden edge lipping. All exposed areas clad with veneer of approved make and shade. All exposed panelling surfaces to be finished with melamine polish including preparing the base, scraping etc complete and to the satisfaction of the Banks Engineer. Rate to include all necessary hardwares, glue, Melamine Polish etc complete to the satisfaction of the Banks Engineer. Mode of measurement - Front Elevational area of storage will be measured & paid for. Basic Rate of Wood - 4350/- Per Cft. Basic Rate of Veneer - Rs 2464/- Per Smt	SMT	0.585
TOTAL FOR SECTION 09 - STORAGES / TABLES			
SECTION 10 : PAINTING			
10.1	Wall & Partitions - Providing & Apply 3 coats (Note : One coat of paint to be apply after commissioning of AC as directed by Bank Engineer) of approved make, code premium interior water based washable emulsion or approved equivalent of approved make/colour/ shade/ sample as per recommended application procedure. Rate to include preparing the surface, applying necessary coats of putty , primer as per the manufacturers recommendations, necessary scaffolding complete.	SMT	213
10.2	Ceiling - Providing & Apply 2 coats of approved make premium interior water based emulsion or equivalent as per recommended application procedure. Rate to include preparing the surface, applying necessary coats of putty , primer as per the manufacturers recommendations, necessary scaffolding complete. (Painted Plain area of ceiling will be measured in Smt including grooves & paid for).	SMT	297

10.3	Providing and applying in 3 coats Synthetic enamel paint (Matte) of approved make and shade to internal wall & partition surfaces (including grooves) to give an even shade, include. thoroughly brushing the surface free from foreign matter, sand papering smooth, filling in all holes and cracks, applying lambi / palti and rubbing down the surface, one coat of cement primer, rate to include all tools, labour, scaffolding as reqd., and finishing with roller, complete as directed. Cove light will also be paid at the same rate for plain area.	SMT	20
10.4	Providing and applying melamine polish on the wooden surface including polishing and scrapping etc. complete.	SMT	10
10.5	Providing and applying Duco paint of approved make on the wooden /veneer surface including ,preparing surface , necessary coats of primer , duco putty and scrpping etc. complete	SMT	10
TOTAL FOR SECTION 10 : PAINTING			
SECTION 11 - MISCELLEANOUS WORKS			
11.1	BLINDS		
11.1.1	ROLLER BLINDS - Providing and fixing of motorized Roller Blinds of approved make, colour, shade and size fixed on top heavy duty 44 or 50 mm aluminum pipe (as per site requirement) and at bottom powder coated aluminum section. Motor side crown & end side drive shall be made of plastic. The fabric shall be finished properly on both the sides. The fabric shall be attached to the roller tube with high quality self adhesive tape. Motor operation shall be smooth and up to the satisfaction of the Architects. Fabric - Acoustic (Pipe & Components, Aluminium Side Guide Rail and Tubular Motor shall be paid separately in respective items) Basic Rate of Blinds - Rs 4251/- Sqm	Sqm	58.18

11.1. 2	ROLLER BLINDS - Providing and fixing of motorized Roller Blinds of approved make, colour, shade and size fixed on top heavy duty 44 or 50 mm aluminum pipe (as per site requirement) and at bottom powder coated aluminum section with aluminium Headrail/valance to cover blinds pipe. Motor side crown & end side drive shall be made of plastic. The fabric shall be finished properly on both the sides. The fabric shall be attached to the roller tube with high quality self adhesive tape. Motor operation shall be smooth and up to the satisfaction of the Architects. (Pipe & Components, Aluminium Side Guide Rail and Tubular Motor shall be paid separately in respective items). Basic Rate of Blinds - Rs 5651/- Sqm	Sqm	4.66
11.1. 3	HONEYCOMB BLINDS - Providing and fixing of Honeycomb Blinds of approved make, colour, shade and size, to Control of Light, Climate and Privacy. Heat and light regulating properties. Head rail with a special cavity for the middle rail. Seamless connection between both rails. No light gap, clean design. The cords in the system always remain tense, no loops occur when the system is operated manually or motorized. Fabric - HONEYCOMB (Pipe & Components, Aluminium Side Guide Rail and Tubular Motor shall be paid separately in respective items). Basic Rate of Blinds - Rs 5113/- Sqm	Sqm	58.18
11.1. 4	Pipe & Components - Heavy duty 44 or 50 mm aluminum pipe (as per site requirement) and at bottom powder coated aluminum section. Motor side crown & end side drive shall be made of imported plastic.	Rmt	47.15
11.1. 5	Aluminium Side Guide Rail with Matching Powder Coating	Rmt	26.80
11.1. 6	Charges for Providing and Fixing of Tubular Motor to above mentioned Roller Blinds as per approved make and as per the instructions of Banks Engineer.	Nos	35.00
	Rated Torque - 3 Nm		
	Rated Rpm - 23.5 / 27 Rpm		
	Rated Running Time - 4 Mins		

11.2	P/F Mirrors for toilets, 6 mm thk mirror of size, of approved make, with 12 mm thk BWP ply backing as per design. Mirror with backing ply is fixed floated from wall as per design. Edges of ply to be finished with N C Laquer Paint of approved make, shade with necessary coats of putty and primer as per manufacturers specification. Rate to include all necessary hardware's, additional protective film to back of mirror as recommended by Mirror manufacturer complete. Rate to include to make provision to provide cove light to the periphery of mirror as directed by the Banks Engineer.	SMT	3.15
11.43	Transition profile - Providing and fixing 1-1/2" wide SS (304 Grade) "T" profile using screw at the joint of carpet & hard flooring including all necessary hardwares etc. complete.	RMT	10.00
	SECTION 11 : MISCELLEANOUS WORKS - TOTAL		
	SECTION 13 : BOUGHT OUT AND MODULAR FURNITURE		
13.1	Bought out and modular furniture (Provisional amount Rs. 64,05,553). Contractor will be paid as per the actual cost purchased by him , as per Architectural drawings, and as directed by the Banks Engineer. Plus 10% of the amount as per invoice (cost excluding GST) will be paid to contractor for Overhead and Profit, transportation, handling, lead and lift, or any other expenses essential to complete the job.	LS	1
	TOTAL FOR SECTION 13 : BOUGHT OUT AND MODULAR FURNITURE		
B	PLUMBING WORKS		
SH 1	Sanitary Installations		

1.1	Providing and fixing white vitreous china wall hung type water closet (European type W.C. pan) with polypropylene soft close/hydraulic seat cover and lid with necessary CP/brass hinges and rubber buffer, including chair bracket with SS bolts/nuts, Dual type flushing cistern with flush plate with complete support framing, 32mm dia (ID) PVC flush pipe connecting concealed flush tank to WC, 110mm OD WC connector to connect to soil pipe, with all fittings and fixtures complete, including cutting/chasing the wall by chase cutter and making good the walls and floors with CM 1:4 wherever required and as directed (Basic rate of WC - Rs. 10104/-, Basic rate of flushing cistern - Rs. 6406.83/-, Dual-flush faceplate- Rs. 961.17/-)	each	6.00
1.2	Providing and fixing under counter white Vitreous China wash basin of specified size and model, 32mm CP brass waste coupling, C.P brass bottle trap 32 mm size, extension pipes, wall flanges and concealed G.I clamps complete including MS brackets, 15mm NB uPVC 45cm length flexible pipe with brass unions. making necessary holes and other cutting in the counter top and fixing the wash basin rigidly including making good the walls wherever required all complete as per the architectural drawings and as directed. ((Including sealing the joint between wash basin and platform with white cement/clear sealant of approved make to make the joint leak proof)) all complete as per the architectural drawings and as directed by banks engineer. (Basic rate of wash basin - Rs. 3265.50/-, waste coupling - Rs. 361/-, Bottle trap - Rs. 1597.5/-)	each	6.00
1.3	Providing & fixing battery operated liquid soap dispenser including necessary accessories. (Basic rate - Rs 2092.50/-)	each	4.00
1.4	Providing and fixing 2 way bib tap with Health Faucet with metal hose in position with C.P. brass screws and necessary accessories etc. complete. (Basic rate of 2 way bib cock - Rs. 2203.33/-, health haucet with metal hose pipe - Rs.991.50/-)	each	6.00

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1.5	Providing and fixing in position SS 304 toilet paper holder with all accessories as instructed to the wall C.P. brass screws on wooden or fiber plugs etc. complete. (Basic rate - Rs. 2872/-)	each	6.00
1.6	Providing and fixing battery based infrared sensor operated Urinal as approved by Bank engineer with inbuilt sensor and C.P. dome shaped grating C.P. waste coupling, CP spreader, CP bottle trap, etc. complete (Basic rate - Rs.15115.78/-,waste coupling - Rs. 361/-, Bottle trap - Rs. 1597/-)	each	4.00
1.7	Providing and fixing in position cast iron trap with 75 dia outlet and minimum 40mm seal with M-15 cement concrete all around and below trap, including 152mm x 152mm recessed grating (for provision of fixing tile in centre) with square slit for water entry, including cockroach trap including all testing etc as directed. (base price :-4690/-)	each	10.00
1.8	Providing and fixing in position cast iron trap with 100 dia outlet and minimum 50mm seal with M-15 cement concrete all around and below trap, including 152mm x 152mm recessed grating (for provision of fixing tile in centre) with square slit for water entry, including cockroach trap including all testing etc as directed. (base rate:-460/-) cockroach trap (base price :-4690/-)	each	2.00
1.9	Providing & fixing C.P. brass single robe hook near water closets. (Basic rate - Rs. 433.44/-)	each	6.00
1.10	Supplying, Installing, testing and commissioning C.P brass battery operated based infraredsensor operated pillar cock having foam flow technology. (Basic rate - Rs.10106.67/-)	each	6.00
1.11	Providing and fixing 15mm C.P. brass Angular Stop Cock With Wall Flange for wash basins, water purifier including cutting and making good the walls wherever required all complete as directed (Basic rate - Rs.839/-)	each	7.00

1.12	Providing and fixing glossy finish single Bowl Stainless Steel sink without drain board with bowl size approx. 450 x 375 x 200 mm deep with necessary C.I. brackets, waste coupling, including connecting 40 mm dia O.D. PVC pipe to waste coupling and upto trap and stainless steel plug 40 mm, making necessary holes and other cutting in the counter top and fixing the sink rigidly including making good the walls wherever required all complete as per the architectural drawings and as directed. ((Including sealing the joint between sink and platform with white cement/clear sealant of approved make to make the joint leak proof))(Basic rate of sink- Rs. 26560/-, waste coupling - Rs. 361/-)	each	1.00
1.13	Supplying and fixing chrome plated wall mounted Sink Mixer. (Basic rate - Rs, 7106/-)	each	1.00
1.14	Fixing in position the Storage heater supplied by the bank including providing and making all inlet and outlet connections, providing brackets, coach screws, heavy duty braided connector pipes (2 nos.) etc. complete	each	1.00
1.15	Providing and fixing recessed stainless steel paper dispenser with waste bin including 800 multi fold paper towels. Volume of waste bin to be around 24 lts. Item to include cutting/chasing the wall by chase cutter and making good the walls and floors with CM 1:4 wherever required and as directed (Basic rate - Rs. 30392/-)	each	2.00
1.16	Providing and fixing to wall hair dryer in ladies toilet of 1600W including all required accessories etc.complete. (Basic rate - Rs. 2992.5/-)	each	2.00
1.17	Providing and fixing on floor automatic shoe shining machine for brown and black shoes of stainless steel body in gents and ladies toilet of 90W of height including all required accessories etc.complete. (Basic rate - Rs. 6792/-)	each	2.00
1.18	Providing and fixing to wall battery operated automatic perfume dispenser of 300 ml capacity including all required accessories etc.complete. (Basic rate - Rs. 1992/-)	each	6.00

1.19	Providing and fixing on wall stainless steel 304 matt finish automatic type electrical operated hand dryer in gents and ladies toilet of power rating 1000W, including all required accessories etc.complete. (Basic rate - Rs. 14925/-)	each	4.00
1.20	Providing and fixing Grab Bar position with all accessories as instructed to the wall C.P. brass screws on wooden or fiber plugs etc. complete. (Basic Rate 4392/-)	each	6.00
TOTAL FOR SANITARY INSTALLATIONS			
SH 2	Water Supply		
2.1	Providing and fixing in position CPVC pipes SDR-11 Class-1 conforming to IS 15778 for cold water,for sizes mentioned below with all fittings, solvent welding as per manufacturers recommendation, including chasing concealing reinstating the wall surface, fixing the pipes to walls with heavy duty G.I. clamps etc. complete including all testing as specified or directed. (For cold and hot water pipes concealed in wall)		
2.1.1	15 mm nominal bore	Metre	40.00
2.1.2	20 mm nominal bore	Metre	7.00
2.2	Providing and fixing in position CPVC pipes SDR-11 Class-1 conforming to IS 15778 for cold water,for sizes mentioned below with all fittings, solvent joint as per manufacturers recommendation, including hanging the pipes below ceiling with hangers/supports at every approx. 1.5 m interval and at bends with G.I hanger rod 6mm dia fully threaded etc. complete including all testing as specified or directed. (For cold and hot water pipes inside false ceiling)		
2.2.1	15 mm nominal bore	Metre	18.00
2.2.2	20 mm nominal bore	Metre	33.00

2.3	Providing and fixing in position G.I. Class 'C' (Heavy) pipes conforming to IS 1239 for sizes mentioned below with all fittings, inclusive of cutting the pipes to required length, threading of pipes as per IS 554 jointing the pipes with oil and spun yarn, including supporting on wall with heavy duty clamps over galvanised M.S.brackets within 1.5m interval and painting with one coat of zinc dichromate primer and two coats of approved enamel paint etc, including testing of pipes as specified or directed and make of holes in walls or floors as required and redoing the same etc. complete.(for water supply pipes inside ducts)		
2.3.1	25 mm nominal bore	Metre	3.00
2.4	providing and fixing forged brass ball valve with lever and female threaded ends of pressure rature PN 16 including all necessary accessories		
2.4.1	20 mm nominal bore	each	7.00
TOTAL FOR WATER SUPPLY			
SH 3	DRAINAGE		
3.1	Providing, fixing, testing & commisioning in position centrifugal spun Cast iron pipes conforming to I.S. 3989 including all fittings such as tees,wyes, bends, with or without door, long radius bends etc. including jointing with Bank's approved polymerbased compound all as per manufacturers recommandations or as directed by Bank's Enginner, including supporting the pipes on walls or below ceiling with heavy duty support systems at every 1.5 mts interval and at bends, including laying the pipes in slope inside sunken floor, including testing the pipes and joints for water tightness etc complete for sizes.(For pipes within toilet)		
3.1.1	75 mm dia. Nominal bore	Rmt.	27.00
3.1.2	100 mm dia. Nominal bore	Rmt.	23.00
3.2	Providing and fixing rigid PVC (10 kg/sq.cm) waste pipes conforming to IS 4985 for wash basins & sink drains including all fitting, making chases in wall/floor and reinstating the surface etc complete.		
3.2.1	40 mm nominal outer dia	Rmt.	9.00
3.2.2	50 mm nominal outer dia	Rmt.	4.00

3.3	Making connection to existing cast iron drainage downtake (soil and waste downtake) including removing of existing pipe connections from toilet and pantry, jointing new pipes, testing the joints, cutting/heating of existing pipes if required, co-ordinating shut down with client, including all required machineries and accessories etc complete. (Rate shall include all testing changes)	Each	3.00
3.4	Providing and fixing Centrifugally SCI(spun) S & S P or S trap, including supporting the pipe with hangers/supports and necessary joints filled with polymer based compound etc complete. For the following size.		
3.4.1	100 mm dia	Each	3.00
	TOTAL FOR DRAINAGE		
C	FIRE FIGHTING WORKS		
SH 1	SPRINKLER SYSTEM		
	SPRINKLER , PIPING & ACCESSORIES:		
1.1	Providing, fixing, testing and commissioning, of the following sizes of flange jointed / screwed / welded, GI pipes of Class C (heavy class) ISI marked (IS:1239) and of approved make, including accessories such as MS bracket, U clamps with Anchor fasteners, tees / elbows / reducers / couplings / unions / bends / flanges etc., and laying on the surface including painting with one coats of anticorrosive primer and two coats of approved synthetic enamel paint of required shade & testing to 15 Kg/Cm ² hydraulic pressure after installation etc. complete as required : (Rate shall include all testing changes)		
1.1.1	100 mm dia	Meter	7
1.1.2	80 mm dia	Meter	14
1.1.3	65 mm dia	Meter	14
1.1.4	50mm dia	Meter	21
1.1.5	40 mm dia	Meter	34
1.1.6	32 mm dia	Meter	42
1.1.7	25 mm dia	Meter	205
1.2	Providing and fixing ball valves including all necessary fittings, nuts, bolts etc complete for following diameters		
1.2.1	25 mm dia	Each	2

1.3	Supplying, fixing, testing and commissioning of CI butterfly valve PN 1.6, with Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, conforming to IS 13095, of following sizes as required.		
1.3.1	100 mm dia	Each	2
1.4	Providing, fixing, testing & commissioning of 15 mm size quartziod bulb of following type sprinklers of rating 68 degree C pendent with required accessories etc as required.		
1.4.1	CONCEALED SPRINKLER rated at 68 degree centigrade with quartzoid bulb 15 mm dia Orifice K factor 80(5.6) complete with powder coated twin plate sliding rosette as per specification complete etc. as required.	Each	85
1.4.2	Pendent sprinkler rated at 68 degree centigrade with quartzoid bulb 15 mm dia Orifice K factor 80(5.6) complete with powder coated twin plate sliding rosette as per specification complete etc. as required.	Each	2
1.5	Providing installing testing and commissioning of UL listed 20 mm dia flexi drops of stainless steel metallic pipe of length upto 1200 mm.. along with accessories as reqd.	Each	85
1.6	Providing and Fixing electrically operated water flow switches (Paddle type) including tamper switch and accessories, complete with tap off socket arrangement as required.	Each	2
1.7	Proving, installing, testing and commissioning automatic type fire Extinguisher containing FE-36(HFC-236FA) gas, UL listed and FM approved and fixing on wall/ceiling with necessary brackets, clamp, anchor bolts etc. complete.		
1.7.1	5 Kg	Each	1

1.8	Making connection to existing hydrant/sprinkler riser including making hole in the riser of required size, welding 100mm dia pipe into the hole, testing of joint for water tightness, applying laying on the surface including painting with one coats of anticorrosive primer and two coats of approved synthetic enamel paint of required shade complete as required :(Rate shall include all testing changes)	Each	2
1.9	Supplying, laying, testing and commissioning of 2 x 1.5 sqmm FRLS, ISI mark fire alarm armoured cable red in colour, 600/1000 V rated with annealed copper conductor having XLPE insulation steel wire armouring& FRLS outer sheath complete as required. Provided with base saddles at a distance of 18" and as per site requirement, including single compression Glands, copper lugs from 15th floor water flow switch to annunciation pannel of mezzanine floor fire shell and it testing etc. as required.	Meter	130
	TOTAL - SPRINKLER WORKS		
D	HVAC WORK		
1.1	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications (page no.02) of following sheet thickness complete as required.		
1.1.1	Thickness 0.63 mm sheet	SMT	460
1.1.2	Thickness 0.80 mm sheet	SMT	55
1.2	Supply, installation, testing and commissioning of GI volume control duct damper made of 16G GSS construction complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications page no.174	SMT	2
1.3	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications page no.175	SMT	2.5

1.4	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required page no.175	SMT	2
1.5	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m ³ , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc.	SMT	38
1.6	Supply and Installation of Aluminium Louvers with four side flanges	SMT	1
1.7	Supply and Installation of Fire retardant Flexible double canvass connections with Zipper for Axial fan, Inline Fan	Each	14
1.8	Tube Axial Fans: Supply and Installation of For ventilation Complete from OEM , non-flammable, vibration isolators, base plate, single piece rouged construction , IE- 4 motor, epoxy coated etc.The fan with 2 hours rating at 300 drg C of high temperature. (LOW NOISE) with Starter Panel & necessary cabling (For Smoke Extraction) As per specification Page no. 177		
1.8.1	7000 CFM (5 mm SP)	Each	2
1.9	Supply and Installation of Propeller fan made of Sickle Blade impellers, in conjunction with the external rotor motors,Statically and dynamically balanced to ISO 1940,Low noise with High efficiency with necessary Cabling.		
1.9.1	2768 CMH/1629 CFM (For Lift Lobby Pressurization)	Each	2
1.10	Return Air 'Z' pieces with accoustic insulation using 15 mm thick nietril rubber of density 40 Kg / cmt and GI sheet of 24 G.	SMT	50
1.11	ACOUSTICAL INSULATION		
1.11.1	25 mm Thick Open Cell Nitrile rubber insulation for ducts having density of 48 kg/m ³ As per specification Page no.176	SMT	35

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1.11. 2	15 mm Thick Open Cell Nitrile rubber insulation for ducts having density of 48 kg/m ³ As per specification Page no.176	SMT	470
1.12	Supply, Installation, Testing & commissioning of 1.5 meter length Sound Attenuators at AHU S.A. Ducts inside AHU ROOMS		
1.12. 1	16000 CFM (DUCT SIZE-1800x500)	Each	1
1.13	Supply and Installation of Inline Fans with necessary cabling ,with N/C contact to operate on IBMS with Modbus / Backnet IP Protocol. As per specification Page no.177		
1.13. 1	600 CFM (15mm SP) Exhaust air for Toilet	Each	1
1.13. 2	500 CFM (10mm SP) Exhaust air for Pantry	Each	1
1.13. 3	450 CFM (15mm SP) Exhaust air for Toilet	Each	1
1.14	Supply, installation, commissioning & testing of Flexible insulated Fibre glass ducting with supporting hangers, special clipping system, etc.		
1.14. 1	200 mm dia	M	8
1.14. 2	150 mm dia	M	14
1.15	ELECTRONIC AIR FILTRATION SYSTEM		

	<p>Supply of Electronic air cleaner system that improves the indoor air quality through reducing PM 2.5 and PM10 based on Electrostatic precipitation technology which consists three levels of filtration - firstly a washable aluminium prefilter which filters upto 10 microns, followed by a washable Electrostatic precipitation section (consisting of tungsten wires for ionizing and aluminium collector plates) where the filtration is upto 0.3 microns and third section is a carbon filter to remove odor and VOC's. Other forms of air filtration systems such as charged media filters, dielectric media filters, or ionizers (which do not have charged second stage collector plates) shall not be acceptable. The average capacity of the EAC shall be at least 1,000 CFM for the single cell unit and 2,000 CFM for the double cells unit. It should be a monobloc structured unit specifically designed for integration in Return Air path of the AHU, to centrally capture the pollutants. It should be equivalent to MERV13 or Higher efficiency with low pressure drop of not more than 75Pa @ 492fpm (as per ASHRAE 52.2). It should be UL Listed with in built provision to connect to BMS. Ozone level of units provided must be within the acceptable limit of 0.05ppm. The units shall have local LEDs at each individual unit to indicate when the units are up for wash/malfunctioning. Efficiency in reducing micro - organisms to be above 90% and needs to be supported by a test report from a reputed lab. Tenderers must submit a Clause-by-Clause Compliance Summary and provide full documentation/technical literature/data sheets/reports to confirm compliance for each clause. As per specification Page no.179 & 180</p>		
1.15.1	2000 CFM	Each	8
1.16	Supply, installation, commissioning & testing of Slot Diffusers with Vane Air Pattern Controllers including mitered corners with Butterfly Damper etc.		
1.16.1	MD - 3 slot (150 mm wide) -SA & RA	SMT	52
1.17	Supply, installation, commissioning & testing of Fusible link type Fire Damper of Galvanised Steel Sheet construction, 16G GI casing and 16G GI blades 150 mm wide, 3 V type in 165 mm casing complete with chrome plated spindles ,self lubricating bushes,120 minutes fire rating as per UL-555, Aug 1995 certified by CBRI. The damper is held open by a replaceable fusible link rated at 74 C (U.L. stamped).	SMT	2.5

1.18	Supply, installation, commissioning & testing of Pressure Independent Variable Air Volume boxes (AHRI Certified) with cross flow sensor of amplification factor 2 to 3 for accurate measurement with pressure signals, consisting of BACnet/MSTP communicable DDC controller (Fully controllable BTL certified), damper actuator, low pressure velocity transducer and temperature sensor (with digital room thermostat). VAV should be dynamically calibrated & tested in factory on live test bed as per designed CFM. As per specification Page no.178-179		
1.18.1	0 - 230 CFM	Nos	6
1.18.2	100- 520 CFM	Nos	8
1.18.3	290 -1450 CFM	Nos	5
1.18.4	420 -2100 CFM	Nos	4
1.19	VAV-to-VAV communication cable of 0.5 sqmm 2 core shielded	Rmt	900
1.20	Supply ,Installation, Commissioning of router /integrator for VAV integration with BMS system on BACnet/IP protocol (Maximum 32# VAV's in one loop)	Nos	1
1.21	Supply installation testing and commissioning of Duct static pressure sensors with integration of VFD .	Nos	1
1.22	4 Core 1.0 Sqmm shielded armored Cable for Communication and Signal of DSP TO VFD	Rmt	30
1.23	Supply ,Installation, Commissioning of touchscreen with suitable software and graphics for transforming and controlling VAV's with BACnet/MSTP protocol	Nos	1

1.24	Supply Installation Testing and Commissioning of HVAC dedicated VFDs (BMS Compatible) with IP55 protection class & built in disconnect switch, complying with the tender specifications and having: Dual limb DC Choke 5% impedance to maintain THiD 40% at rated load conditions, EMC filter complying to IEC 61800-3:2004 Category C1: 50m cable length, Interface with BMS shall be built-in standard with Modbus RTU / BacNet MSTP / Metasys N2, Built in USB for communication with Laptop / Computer PID controller feedback loops- 3nos, Alphanumeric & Graphical Display with 4 way navigation keys & 3 LED Indications for (Status, Warning & Alarms) (All other details shall be as per Tender Specification page No.182)	Nos	1
	TOTAL - HVAC WORKS		
E	ELECTRICAL WORKS		
1.0	DISTRIBUTION BOARD		
	Supply installation, testing and commissioning of company manufactured Surface/ recess mounting, vertical/ horizontal, inter connection leads with spares distribution board made up of sheet metal, dust proof, powder coated provided with inbuilt suitable size copper- neutral & earth link din bar for mounting MCBs complete in all respect. Rate shall be inclusive of all required hardware materials labour involve complete in all respect.		
A	UPS Main DB		
i)	8 way (4 + 12), Vertical Double door incomer	each	1
ii)	80A, TPN MCB Outgoings	each	1
iii)	16/20/25/32A Triple Pole MCB's	each	2
iv)	63/40A Triple Pole MCB's	each	3
iv)	6A/10/16/20/25A Single Pole MCB's	each	3
B	UPS Supply -		
i)	12 way (4 + 36), Vertical Double door (Per Phase Isolation) incomer	each	2
ii)	40A, TPN MCB	each	2

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	Sub-incomer		
iii)	40A, DP RCBO, 300mA	each	6
	Outgoings		
iv)	6A/10/16/20/25A Single Pole MCB's	each	48
E	Raw Power Main DB		
i)	8 way (4 + 12), Vertical Double door	each	1
	incomer		
ii)	80A, TPN MCB	each	1
	Outgoings		
iii)	16/20/25/32A Triple Pole MCB's	each	2
iv)	63/40A Triple Pole MCB's	each	4
F	Raw Power Supply - AC DB-1		
i)	8 way (4 + 24), Vertical Double door	each	1
	incomer		
ii)	40A, TPN MCB	each	1
	Outgoings		
iii)	10/16/20/25/32A Triple Pole MCB's	each	3
iv)	6A/10/16/20/25A Single Pole MCB's	each	9
G	Raw Power Supply - AC DB-2		
i)	8 way (4 + 24), Vertical Double door	each	1
	incomer		
ii)	40A, TPN MCB	each	1
	Outgoings		
iii)	10/16/20/25/32A Triple Pole MCB's	each	6
iv)	6A/10/16/20/25A Single Pole MCB's	each	6
H	Raw Power Supply - Pantry DB		
i)	8 way (4 + 24), Vertical Double door (Per Phase Isolation)	each	1
	incomer		
ii)	63A, TPN MCB	each	1
	Sub-incomer		
iii)	63A, DP RCBO, 300mA	each	3
	Outgoings		
iv)	6A/10/16/20/25/32A Single Pole MCB's	each	12
J	Lighting & Raw Power Supply - LPDB-1&2		
i)	12 way (4 + 36), Vertical Double door (Per Phase Isolation)	each	2
	incomer		
ii)	20A, 10KA ,TPN MCB	each	4
	Sub-incomer		

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iii)	20A, DP RCBO, 300mA	each	6
	Outgoings		
iv)	6A/10/16/20/25A Single Pole MCB's	each	48
J	Lighting & Raw Power Supply - ELDB-1&2		
i)	12 way , Double door, SPN	each	2
	incomer		
ii)	20A Single Pole MCB's	each	2
	Sub-incomer		
iii)	20A, DP RCBO, 300mA	each	2
	Outgoings		
iv)	6A/10/16/20/25A Single Pole MCB's	each	12
-	TOTAL OF DISTRIBUTION BOARDS		
2	CABLES		
2.1	Supply, Laying, Testing & commissioning of aluminium / copper armoured/ unarmoured FRLS XLPE Insulated 1.1KV ISI marked Power / control cables fixed/provided on walls, ceilings etc. as per site condition and as directed by bank's engineer/architect with required necessary hardware material etc. in all respect.		
2.1.1	3.5 Core 50 sq. mm Aluminium armoured XLPE insulated cable- A2XFY	meter	30
2.1.2	4 Core 10 sq. mm Copper armoured XLPE insulated cable- 2XFY	meter	270
2.1.3	4 Core 4 sq. mm Copper armoured XLPE insulated cable- 2XFY	meter	250
2.1.4	4 Core 2.5 sq. mm Copper armoured XLPE insulated cable- 2XFY	meter	170
2.1.5	2 Core 4 sq. mm Copper armoured XLPE insulated cable- 2XFY	meter	150
2.2	Supply, Installation, Testing and Commissioning of end termination with suitable size of brass single compression gland and Copper lugs for following size of PVC insulated, PVC sheathed XLPE aluminium/copper conductor cable of 1.1 kV grade as per site condition.		
2.2.1	3.5 Core 50 sq. mm Aluminium armoured XLPE insulated cable- A2XFY	each	4
2.2.2	4 Core 10 sq. mm Copper armoured XLPE insulated cable- 2XFY	each	10

2.2.3	4 Core 4 sq. mm Copper armoured XLPE insulated cable- 2XFY	each	14
2.2.4	4 Core 2.5 sq. mm Copper armoured XLPE insulated cable- 2XFY	each	12
2.2.5	4 Core 2.5 sq. mm Copper armoured XLPE insulated cable- 2XFY	each	4
	TOTAL OF CABLES		
3	POINT WIRING, POWER OULETS & CIRCUITS		
3.1	Wiring for Primary Light Point		
	<p>Primary Light Point - Supply, Laying, installation, testing & Commissioning of primary light point using three runs of 2.5 sq mm, 1100 volt, ISI marked, fire resistant low smoke (FRLS)PVC insulated multi stranded copper conductor wire (Neutral, and earth in looping system) to respective point outlet (partly in concealed manner / surface/ on wall) provided in suitable size of medium mechanical stress (MMS) conduit with all required accessories like coupler, bend, long bend, tee, junction box, required hardware materials etc. as per site requirement, terminated in 6 Amp modular plate type switch of approved make mounted on suitable size heavy duty PVC plate with concealed PVC back box (switch board of same make) with interconnection and also complete with outlet point either with angle/ straight holder / ceiling rose / connector etc. as directed for light point. Rate shall be inclusive of cost of circuit wiring using three runs of 2.5 sq mm 1100 volts, ISI marked stranded copper conductor PVC insulated fire resistant low smoke FRLS wire from MCB DB to respective switchboard) all required hardware materials labour involve, civil work required for concealing the pipes etc as per site requirement, complete in all respect.</p>	each	50
3.2	Wiring For Secondary Light Point		

	Supply, Laying, installation, testing & Commissioning - Wiring for Secondary Light Points using three runs of 1.5 sq mm, 1100 volt, ISI marked. fire resistant low smoke (FRLS)PVC insulated multi stranded copper conductor wire (Neutral, and earth in looping system) to respective point outlet (partly in concealed manner / surface/ on wall) provided in suitable size of medium mechanical stress (MMS) conduit with all required accessories like coupler, bend, long bend, tee, junction box, required hardware materials etc. as per site requirement, terminated in 6 Amp modular plate type switch of approved make mounted on suitable size heavy duty PVC plate with concealed PVC back box (switch board of same make) with interconnection and also complete with outlet point either with angle/ straight holder / ceiling rose / connector etc. as directed for light point. Rate shall be inclusive of cost of all required hardware materials labour involve, civil work required for concealing the pipes etc as per site requirement, complete in all respect.	each	360
3.3	Wiring for half Point on Control switch board		
	Same as item no. 3.1 above, but for supply, fixing, testing and commissioning half point wiring for 6 Amp. universal socket (2 pin + 3 pin) and switch modular type to be fixed on control switch board used for light control complete in all respect.	each	20
3.4	Wiring for 6 Amp plug point - Independent		
	Wiring for independent 6 Amps plug point with 3 x 2.5 sq mm multi stranded copper conductor FRLS wire for phase, neutral and earth PVC insulated 1100 volts grade in rigid PVC conduit of approved size along with accessories to be laid in concealed manner as specified in item no.3.1 above, along with 6 Amp modular switch, and shutter type socket (2 pin+ 3 pin) mounted independently on suitable size heavy duty PVC Box for concealed with PVC board provided on surface/ concealed type of approved make. The works are to be carried out as per site requirement and as instructed by Bank's Engineer/ Architect. Rate shall be inclusive of all required hardware materials labour involve complete in all respect.	each	25
3.5	Wiring for 2x6 Amp plug point - Independent		

	Same as 3.1 & 3.4 above but for 2 nos. of 6 Amps plug points independent using 2 x 4 sq mm + 1 x 2.5 sq mm multi stranded copper conductor FRLS wire. Rate shall be inclusive with cost of 2nos switch sockets.	each	30
3.6	Wiring for 16 Amp Plug point – Independent		
	Same as 3.1 & 3.4 above but for 16 Amps plug points independent using 3 x 4 sq mm multi stranded copper conductor FRLS wire. Rate shall be inclusive with cost of 16A switch socket.	each	30
3.7	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed HMS class PVC conduit as required, cost of conduit will be part of this scope		
3.7.1	2X1.5 SQMM + 1X1.5 SQMM EARTH WIRE	meter	200
3.7.2	2X2.5 SQMM + 1X2.5 SQMM EARTH WIRE	meter	300
3.7.3	2X4 SQMM + 1X4 SQMM EARTH WIRE	meter	200
3.8	Cable TV Wiring		
	Wiring using the RG-06 ISI marked, tinned copper video cable in suitable size PVC conduit, as detailed in 3.1 from existing TV cable splitter to TV antenna socket point. Rate shall include supply, laying, terminating etc. of video cable alongwith antenna socket & cable, complete in all respect.	each	5
3.9	Telephone Wiring		
	Wiring using the 2 core telephone wire ISI marked, in suitable size PVC conduit, as detailed in 3.1 from available telephone junction MDF box. Rate shall include supply, laying, terminating etc. of telephone cable alongwith telephone jack & cable, complete in all respect. Note : If space permits, proposed telephone wires may be laid through Lan wiring pipes.	each	4
3.10	TRUNKING & CABLE TRAYS		

	Supply and laying raceways/conduits on floor/wall. The raceways/conduits shall be fixed to the floor/Wall with clamps for finished levels as per site conditions or through partitions with all accessories, bends, pull wire etc. but excluding the mounted junction boxes, bends, pull wire etc. but excluding the floor mounted junction boxes which shall be paid separately. The metal/PVC conduits/raceways shall be earth at suitable intervals the distance between data conduits and power conduits shall be maintained at least 6" apart., floor cutting to be included in this item		
3.10.1	100mm x 38mm, 1.6mm thk GI raceway	meter	130
3.10.2	50mm x 38mm, 1.6mm thk GI raceway	meter	60
3.10.3	100mm x 50mm, 1.6mm thk GI Powder coated trunking for DB dressing	meter	40
	Supply and Installation of following sizes HMS FRLS PVC conduit embedded or surface mounted, including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good wherever called for or surface mounted including all fixing hardware as per specification.		
3.10.4	25 mm dia. ISI marked, HMS PVC conduit	Mtr	200
3.10.5	32 mm dia. ISI marked, HMS PVC conduit	Mtr	50
3.10.6	50 mm dia. ISI marked, HMS PVC conduit	Mtr	30
	Supply and installing of 2mm thick GI floor/Ceiling junction boxes for the raceway/conduites mentioned above of following sizes with cover with four nos. SS screws with proper cutouts on the sides for conduit entry and screwed top cover with rubber gasket and suitable knockouts ,as required complete in all respects.		
3.10.7	100mmx100mmx30/35mm deep 2mm thk'	Nos	10
3.10.8	150mmx150mmx30/35mm deep 2mm thk'	Nos	20
3.10.9	250mmx250mmx30/35mm deep 2mm thk'	Nos	8
3.10.10	350mmx250mmx30/35mm deep 2mm thk'	Nos	4
	CABLE TRAYS		

	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required accessories complete in all respect		
3.10.11	150 mm width X 50 mm depth X 1.6 mm thickness	Mtr	100
3.10.12	300 mm width X 50 mm depth X 2.0 mm thickness	Mtr	20
	TOTAL OF POINT WIRING, POWER OULETS & CIRCUITS		
4	TECHNICAL LUMINAIRE & LIGHTING MANAGEMENT SYSTEM		
	Instalation , fixing, testing and commissioning of the following LED light fitting / strip etc. along with required accessories to be connected with suitable size copper FRLS PVC ISI marked multistrand insulated wire of 2 or 3 core wire as per site requirement including required hard ware, connector etc. -		
4.1	LED Cove Light 10W/m, 1000 lumen/m, 4000K, DALI dimmable , CRI>80 , Dimensions: 20mm X 20mmmmX length as per drawing	Mtrs.	155
4.2	LED Cove Light 10W/m, 1000 lumen/m, 2700K-5500K, DALI dimmable DT-8 DRIVER, CRI>80 , Dimensions: 20mm X 20mmmmX length as per drawing	Mtrs.	40
4.3	Surface mounted linear led strip light 10W/m 4000K DALI dimmable CRI>80 , Dimensions: 20mm X 20mmmmX length as per drawing	Mtrs.	12
4.4	Surface mounted Flexible linear led strip light 10W/m 4000K DALI dimmable CRI>80 , Dimensions: 20mm X 20mmmmX length as per drawing	Mtrs.	30
4.5	Recessed Downlight 15W Glare less Mirror Reflector 46deg 4000K DALI dimmable, CRI>80 Dimensions: Dia- 85mm, H- 110mm, Note-Fixture needs to be with removable light engine without removing Ring.	Nos.	34
4.6	Recessed Downlight 10W Glare less Mirror Reflector 46 deg 4000K DALI dimmableCRI>80 Dimensions: Dia- 85mm, H- 110mm, Note-Fixture needs to be with removable light engine without removing Ring.	Nos.	16

4.7	Recessed Downlight 10W Glare less Mirror Reflector 12 deg 4000K DALI dimmable, CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	7
4.8	Recessed Downlight 15W Glare less Mirror Reflector 60deg 4000K DALI dimmable CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	6
4.9	Recessed Downlight 15W Glare less Mirror Reflector 60deg 4000K DALI dimmable CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	12
4.10	Recessed Downlight Diffused 15W 4000K Non dimmable ,CRI>80 Dimensions: Dia -175mm, H- 85mm Note- Fixture needs to be with removable light engine.	Nos.	14
4.11	Recessed Downlight 15W Glare less Mirror Reflector 60 deg 2700K-5500K, DALI dimmable DT-8 driver, CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	119
4.12	Recessed Downlight 15W Glare less Mirror Reflector 60 deg 4000K DALI dimmable CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	49
4.13	Recessed Downlight Diffused 15W 4000K Non dimmable, CRI>80 Dimensions: Dia -150mm, H- 100mm Note- Fixture needs to be with removable light engine.	Nos.	3
4.14	Recessed Downlight 15W Glare less Mirror Reflector 46deg 4000K DALI dimmable CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	10
4.15	Recessed Downlight 15W Glare less Mirror Reflector 60 deg 4000K, DALI dimmable, CRI>80 Dimensions: Dia- 85mm, H- 110mm Note- Fixture needs to be with removable light engine without removing Ring.	Nos.	23
4.16	Recessed Magnetic Track DALI dimmable Dimensions- L-1000mm , W- 45mm, H - 85mm Note- Fixture needs to be with removable light engine.	Nos.	5

4.17	Magnetic Track Spot 10W, 1000 Lumene, 23 deg, 4000K, DALI dimmable DT-8 driver, CRI>80, Dimensions : Dia- 45mm, H- 68mm	Nos.	10
4.18	Decorative Light - Fixture to be decided with Architect, 3000K, DALI DIMMABLE	Nos.	7
4.19	Decorative Light - Fixture to be decided with Architect, 3000K, DALI DIMMABLE	Nos.	7
4.20	Suspended Ring Type Fixture LED 78W, Diffused , 3000K , DALI dimmable Diemensions: Dia -1000mm , H- 75mm	Nos.	1
4.21	Chandelier Light- Fixture to be decided with Architect, 190W, 3000K, DALI DIMMABLE	Nos.	1
4.22	Lighting Sensors	Nos.	50
	TOTAL OF TECHNICAL LUMINAIRE & LIGHTING MANAGEMENT SYSTEM		
4A	Light Fixtures (Provisional amount Rs. 16,00,000). Contractor will be paid as per the actual cost purchased by him , as per selection of Light fixtures by design Consultant, and as directed by the Banks Engineer. Plus 10% of the amount of invoice (cost excluding GST) will be paid to contractor for Overhead and Profit, transportation, handling, lead and lift, or any other expenses essential to complete the job and to fuction the light	LS	1
	TOTAL FOR SUPPLY OF LIGHT FIXTURES		
5	PASSIVE NETWORKING		
	LAN NETWORK I/O POINTS		
5.1	Supply, Laying, installation, testing & Commissioning of CAT 6 cable ISI marked to respective I/O point (partly in concelaled manner / surface/ on wall) provided in suitable size of medium mechanical stress (MMS) conduit with all required accessories like coupler, bend, long bend, tee, junction box, required hardware materials etc. as per site requirement, terminated in I/O point with RJ45 Jack with modular plate type outlet of approved make mounted on suitable size heavy duty PVC plate with concealed PVC back box(switch board of same make) all required hardware materials labour involve, civil work required for concealing the pipes etc as per site requirement, complete in all respect.	each	80

	TOTAL OF WIFI, LAN NETWORKING & TELEPHONE WORK		
6	CCTV CABLING		
6.1	Supply, Laying, installation, testing & Commissioning of CAT 6 cable ISI marked to respective I/O point (partly in concealed manner / surface/ on wall) provided in suitable size of medium mechanical stress (MMS) conduit with all required accessories like coupler, bend, long bend, tee, junction box, required hardware materials etc. as per site requirement, terminated in I/O point with RJ45 Jack with modular plate type outlet of approved make mounted on suitable size heavy duty PVC plate with concealed PVC back box (switch board of same make) all required hardware materials labour involve, civil work required for concealing the pipes etc as per site requirement, complete in all respect.	each	8
	TOTAL OF CCTV		
7	PUBLIC ADDRESS SYSTEM.		
7.1	Supplying, installation, testing & commissioning of 1.5/3/6W ceiling speaker complete as required.	each	8
7.2	Supplying, installation, testing & commissioning of speaker wire ISI marked Fire Retardant PVC insulated copper conductor wire in suitable size PVC conduit, as detailed in 3.1. Following pairs, cores and size including connections and interconnections etc. as per site requirement, complete in all respect.		
7.3	speaker cable Two pair, 2-core, 1.5 sqmm braided copper	meter	500
7.4	speaker cable Two pair, 2-core, 2.5 sqmm braided copper	meter	220
7.5	speaker cable Two pair, 2-core, 4 sqmm braided copper	meter	70
7.6	Supplying, installation, testing & commissioning of 25 mm dia MS flexible pipe with PVC coating along with all ancillaries and accessories like coupler etc. as required.	meter	180
-	TOTAL FOR PUBLIC ADDRESS SYSTEM.		
-	-		
8	FIRE ALARM SYSTEM		

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8.1	Care fully removing the existing Fire alarm devices such as hooter, Response indicator, Manual call point, direction arrow with sounder, sensor etc. and retaining the same at some location during dismantling of the ceiling with temporary arrangement by hanging with GI wire/ box etc. Rate shall also include refixing of fire alarm devices as per old location, as directed by Bank's fire Officer/Engineer.	Lumpsum	1
-	TOTAL FOR FIRE ALARM SYSTEM.		