

Plant & Equipment (P&E) Division
Township Electrical Maintenance Office
Cluster-V, P.O.: Haldia Township, Pin – 721 607,
Dist.: Purba Medinipur, State: West Bengal, India

Tel. No. : + 91 3224-263936

Mob No. : + 91 9434031337

E-mail : ckandar.hdc@kolkataporttrust.gov.in

No.: DM(P&E)/TSEM/1014/ENQ03/2022-2023

August 05, 2022

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.....
.....

Dear Sir,

Subject: Enquiry for obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”.

Haldia Dock Complex, Syama Prasad Mookerjee Port, Kolkata [formerly Kolkata Port Trust] intends to engage a Third Party Inspection Agency (TPIA) for Appraisal & Recommendation against design, drawing, QAP, FQAP, etc. (to be submitted by the Contractor) and for Technical Inspection & Certification of major equipment / items / work (to be executed by the Contractor), in connection with the electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”, as per the attached ‘Price Schedule’ & ‘Technical Specification & Scope of Work’ of the relevant Contract [enclosed at **Annexure-VI**], related to electrical works.

You are, hereby, requested to submit your sealed quotation [duly filled up the ‘FORM OF QUOTATION’ (**Annexure-I**), on your Letter Head], in line with the instructions given at **Annexure-II** & based on the ‘PRICE SCHEDULE’ (**Annexure-III**), ‘SCOPE OF WORK’ (**Annexure-IV**) and ‘TERMS & CONDITIONS’ (**Annexure-V**) [without any addition / modification / alternation], within the closing date & time of submission of Quotation, as mentioned in the Notice Inviting Quotation (NIQ).

Your offer should be accompanied by the documents, in support of having experience of similar work, in the recent past.

Offers from bidders, as mentioned in the Notice Inviting Quotation (NIQ), will only be entertained.

Thank you,
Yours faithfully,

सी. कांडार / C. Kandara
उप. प्रबंधक (पी एण्ड ई) / Dy. Manager (P&E)
कृते महाप्रबंधक (अभियांत्रिकी) / for General Manager (Engg.)
हल्दिया गोदी परिसर / Haldia Dock Complex
श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता / Syama Prasad Mookerjee Port, Kolkata
August 05, 2022

Enclo. : Notice Inviting Quotation (NIQ), Annexure-I, Annexure-II, Annexure-III, Annexure-IV, Annexure-V & Annexure-VI.

Syama Prasad Mookerjee Port, Kolkata
HALDIA DOCK COMPLEX

NOTICE INVITING QUOTATION

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022.

Sealed Quotations / Offers are invited for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of "Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC", from the following five firms only:

1. Lloyd's Register Quality Assurance (LRQA)
2. Det Norske Veritas (DNV)
3. ABS Industrial Verification (India) Pvt. Ltd.
4. Bureau Veritas Industrial Services (India) Pvt. Ltd.,
5. IRCLASS Systems and Solutions Pvt. Ltd.

Information related to submission of offer

i)	Mode of Submission of Quotation / Offer	::	Quotations / Offers should be submitted in sealed covers , by post or by courier or by hand. <i>Bidders shall not have option of submitting their bids electronically.</i>
ii)	a) Closing date & time for submission of Quotation / Offer.	::	16.08.2022, upto 14:30 Hrs (IST)
	b) Date & time of opening of Quotation / Offer.	::	16.08.2022, 15:00 Hrs. (IST) onwards.
iii)	Address for submission of bids in sealed cover	::	Dy. Manager (P&E), Township Electrical Maintenance Office, Haldia Dock Complex, Syama Prasad Mookerjee Port, Kolkata, P.O.- Haldia Township, Dist. – Purba Medinipur, Pin- 721607. Mobile no. : + 91 94340 31337



C. Kandar,
Dy. Manager (P&E)
For General Manager (Engineering)
Haldia Dock Complex

Date : 05.08.2022

Syama Prasad Mookerjee Port, Kolkata

Annexure – I

FORM OF QUOTATION

[To be filled on Bidder's Letter Head and submitted, duly signed & stamped]

To,
General Manager (Engg.),
Haldia Dock Complex ;
Syama Prasad Mookerjee Port, Kolkata.

Subject : Enquiry for obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of "Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC".

Reference : Enquiry No. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

I,, authorised signatory of
(Name of the bidder),
(Address of the bidder), having examined the Scope of Work and read the Documents [Annexure-I, Annexure-II, Annexure-III, Annexure-IV, Annexure-V & Annexure-VI.], enclosed with the Enquiry Letter [No. DM(P&E)/TSEM/1014/ENQ03/2022-2023_ dated **August 05, 2022**], hereby submitting the Quotation / Offer and undertake to render our services as *Third Party Inspection Agency (TPIA)*, for the subject work.

I / We agree that the period for which the bid shall remain open for acceptance, shall not be less than days, from the last date of submission of bid.

WITNESS:

(Signature of authorised person of the bidder)

Signature:

Name: _____

Name:
(In Block Letters)

Designation: _____

Address:

Date: _____

Occupation:

(Office Seal)



INSTRUCTIONS TO BIDDERS (ITB)

Subject : Enquiry for obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”.

Reference : Enquiry No. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

1.1. GENERAL:

- 1.1.1. Haldia Dock Complex, Syama Prasad Mookerjee Port, Kolkata [formerly Kolkata Port Trust] intends to engage a Third Party Inspection Agency (TPIA) for Appraisal & Recommendation against design, drawing, QAP, FQAP, etc. (to be submitted by the Contractor) and for Technical Inspection & Certification of major equipment / items / work (to be executed by the Contractor), in connection with the electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”, as per the ‘Accepted Price Schedule’ & ‘Technical Specification & Scope of Work’ of the relevant Contract [enclosed at **Annexure-VI**].

The inspection would be carried out at Manufactures’ works / Contractor’s Premises and at HDC, SMPK’s site, as per approved Quality Assurance Plan (QAP) / Field Quality Assurance Plan (FQAP), based on Contract stipulations, approved Drawings, Manufacturers’ standard and relevant Indian Standards or equivalent international standards.

- 1.1.2. The above-mentioned Contract Work [vide Order No. I&CF/SDM/RZ/ET/22/81 dated May 13, 2022] has been awarded to M/s Art-E-Mide Construction Private Limited, whose address is mentioned below:

128/7, Hazra Road, Kolkata-700026

Contact Person of M/s Art-E-Mide Construction Private Limited :

Name : Mr. Sagnik Basu,

Mobile No. : +91 8217050731

E-mail Id : artemide219@gmail.com / artemide@artemideconstruction.com

1.2. Clarifications, information, etc. for bidding

1.2.1. Location of Haldia Dock Complex

Haldia Dock Complex is located at the confluence of River Haldi & River Hooghly at Latitude 22°2' North & Longitude 88°6' East, at about 130 km upstream from Sandheads and 104 km downstream of Kolkata.



(Seal & Signature of the Bidder)

INSTRUCTIONS TO BIDDERS (ITB)

Enquiry no. : DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

1.2.2. The location of the Site of Work

Residential Zone of Haldia Dock Complex, Haldia Township, Dist.: Purba Medinipur, West Bengal, Haldia-721607.

1.2.3. Access to the Site of Work**a) By Road:**

National Highway (N.H.-116) connect Haldia with Kolaghat and State Highway connect Haldia with Mecheda.

b) By Rail:

S. E. Railway Branch Line connects Haldia Railway Station with the Panskura Railway Station / Mecheda Railway Station.

c) All-weather hard top roads, approachable from National Highway (N.H.-116), State Highway & Haldia Railway Station, exist right up to the area of Work.

1.2.4. There would not be any Pre-bid meeting. However, a prospective bidder requiring any clarification of the instant Bidding Documents shall contact **Sr. Dy. Manager (P&E) / Dy. Manager (P&E), HDC**.

1.2.5. The Bidder shall be deemed to have **examined** thoroughly the instant Enquiry Documents, in full, **visited the site & surroundings** and to have **obtained all necessary information in all the matters** whatsoever that might influence while carrying out the inspection and to satisfy themselves to sufficiency of their bid, etc.

1.3. Price Schedule

1.3.1. The Bidder shall quote the rates & amounts in the 'PRICE SCHEDULE' [given at **Annexure-III**], without any condition or deviation. Price indicated anywhere else, in any other form or manner, will not be considered for evaluation.

1.3.2. *The quantities given in the "PRICE SCHEDULE" are indicative only [which may vary during execution] and are given to provide a common base for tendering and evaluation.* However, the payment will be made on the exact quantity to be executed by the Successful Bidder.

1.4. Bid Prices

1.4.1. The quoted rates [to be quoted in 'PRICE SCHEDULE' (given at **Annexure-III**) only] should include all taxes & duties of Central/ State/ Local bodies [excluding Goods and Services Tax (GST)], as applicable, travel expenses, boarding & lodging, other incidental charges, overheads & profit, etc., necessary for the complete services, as described in the 'Price Schedule' and 'Scope of Work'.

GST, as applicable, shall be paid extra against proper invoice submitted by the TPIA.

(Seal & Signature of the Bidder)

INSTRUCTIONS TO BIDDERS (ITB)

Enquiry no. : DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

The TPIA will be required to submit GST compliant invoice with all required details and also be required to file timely & proper return, so as to enable SMPK to get due credit against GST paid.

In case of any failure on the above account, GST amount, even if paid by SMPK, shall be recovered from the TPIA.

- 1.4.2. The quoted prices should remain firm during the validity period of the bid / offer (including any / all extension thereof, agreed by the bidder).

The accepted rates should remain firm till all the items / equipment / works are inspected & certified by the TPIA. No Price escalation is admissible other than statutory increase in Taxes & Duties.

- 1.4.3. The Bidder should clearly understand that they shall be strictly required to conform to all Terms & Conditions enclosed with the instant Enquiry Letter, as contained in each of its Clauses and **plea of “Customs Prevailing”** will not be, in any case, admitted as excuse on their part, for infringing any of the terms & conditions.

No request for change or variation in rates or terms & conditions of the contract shall be entertained on the ground that the Bidder has not understood the work envisaged in the instant contract.

1.5. Period of validity of bids

- 1.5.1. Bids shall remain valid for the period of **120 days** after the bid submission deadline date (considering extension thereof, if any) as mentioned in the Notice Inviting Quotation [NIQ]. A bid, valid for a shorter period, shall be rejected by SMP, Kolkata, treating the same as non-responsive.

1.6. Submission of bids

- 1.6.1. Bidders shall have to submit their bids [both **Techno-commercial Bid** and **Price Bid**] in a Sealed Envelope, at the Office of **Plant & Equipment (P&E) Division**, at the following address:

“Township Electrical Maintenance Office, Haldia Dock Complex, Syama Prasad Mookerjee Port, Kolkata, P.O.- Haldia Township, Dist. – Purba Medinipur, Pin- 721607.”

If the Office is closed on the stipulated date & time, due to unforeseen holiday / bandh, the bids will be opened, on the next working day, **15:00 Hrs. (IST)** onwards, at the same place.

- 1.6.2. One copy of the Enquiry Letter, Notice Inviting Quotation [NIQ], along with all enclosures [Annexure – I, Annexure – II, Annexure – III, Annexure – IV, Annexure – V & Annexure – VI] should be submitted (in sealed cover), duly signed and stamped on each page, as token of acceptance. The ‘Price Schedule’ (as per Annexure-II), duly incorporated the rates & amounts, should also be submitted (duly signed at appropriate places) in the aforesaid sealed cover.



(Seal & Signature of the Bidder)

INSTRUCTIONS TO BIDDERS (ITB)

Enquiry no. : DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

Before submitting the sealed envelope, the Bidder must ensure that it contains all the afore-said documents.

Bidders shall not have option of submitting their bids electronically.

The Quotation / Offer should be accompanied by the documents, in support of having experience of similar work, in the recent past.

- 1.6.3. The bid shall be typed or written in indelible ink and all pages of the bid shall be stamped and signed by a person duly authorised to sign on behalf of the Bidder.

Prices (both Unit Rates and Amounts) are to be quoted in Indian Rupees (₹) only, for all the items of the PRICE SCHEDULE.

Items against which no rate or amount is entered by the Bidder, will not be paid for, when executed and shall be deemed as covered by other rates and amounts in the Priced 'PRICE SCHEDULE'.

- 1.6.4. The Bidder shall submit complete bid and the same shall be without alterations, interlineations or erasure effect, except those to accord the instructions issued by Syama Prasad Mookerjee Port, Kolkata (SMPK) or as may be necessary to correct errors made by the bidders. Person(s) signing the bid shall have to put their signature against all such cancellations, alterations, entries or amendments.

- 1.6.5. Any overwriting should be avoided in the Quotation / Offer (including Priced 'Price Schedule'). In case alteration is required, against any mistake, the same should be clearly cut and correction should be signed by the person signing the bid, on behalf of the Bidder.

Any inter-lineation or erasure or alternation shall be valid, only if they are signed by the person signing the bid.

1.7. **Priced offer**

- 1.7.1. The rates & amounts are to be quoted by the bidder in the appropriate format, furnished in **Annexure-III**, "PRICE SCHEDULE", considering the 'Scope of Work' and 'Terms & Conditions', as detailed in **Annexure-IV & Annexure-V**, respectively.

Price indicated anywhere else, in any other form or manner, would not be considered for evaluation.

- 1.7.2. The "**Price Bid**" should not contain any extraneous condition or modification whatsoever. **Any extraneous condition imposed** therein or **modification made** therein, shall make the bid "**non-responsive**" and the same will be liable for outright rejection.



(Seal & Signature of the Bidder)

INSTRUCTIONS TO BIDDERS (ITB)

Enquiry no. : DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

1.8. Deadline for submission of bids

- 1.8.1. Bids must be submitted within the closing date & time for submission of bid [both **Techno-commercial Bid** and **Price Bid**], indicated in the Notice Inviting Quotation [NIQ].
- 1.8.2. SMP, Kolkata may, at its discretion, *extend the deadline for the submission of bids, prior to the closing date & time.*

1.9. Late Bids

Late Bids [i.e. bids received after the specified date & time for receipt of bids (as per the NIQ) or extension, if any], shall not be considered.

1.10. Withdrawal of bids

- 1.10.1. A Bidder may withdraw, substitute, or modify their bid, before the closing date and time specified (or extension, if any), but not beyond.
- 1.10.2. No bid shall be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the “**FORM OF QUOTATION**” or any extension thereof.

Withdrawal of bid during the interval between such closing time on due date and expiring of the bid validity period, may result in disqualification from bidding for any contract with HDC, SMPK for a period of three years from the date of notification.

1.11. Bid opening [including Price Bid]

- 1.11.1. The bids [including Price Bids], received within the closing date & time, will be opened on the date & time of opening of Bid, indicated in the Notice Inviting Quotation [NIQ], at the Office of **Plant & Equipment (P&E) Division**, at the following address:

“Township Electrical Maintenance Office, Haldia Dock Complex, Syama Prasad Mookerjee Port, Kolkata, P.O.- Haldia Township, Dist. – Purba Medinipur, Pin- 721607.”

If the Office is closed on the stipulated date & time, due to unforeseen holiday / bandh, the bids will be opened, on the next working day, **15:00 Hrs. (IST)** onwards, at the same place.

- 1.11.2. The authorised signatory of the bidder, who so wishes, may be present on his own or may also depute his representative at the time of opening of the bid.

1.12. Comparison & Evaluation of Price-Bid and selection of Successful Bidder

- 1.12.1. While evaluating the Price Bids, total price quoted against item **Sl. Nos. 1, 2 (a) & 2 (b)** of ‘PRICE SCHEDULE’ [excluding GST] shall be taken into account and accordingly ‘TOTAL PRICE’ [considering all items of the “Price Schedule”], will



 (Seal & Signature of the Bidder)

INSTRUCTIONS TO BIDDERS (ITB)

Enquiry no. : DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

be arrived at. Selection of the Successful Bidder will be made on the basis of overall lowest offer, thus arrived, subject to acceptance of all Terms & Conditions, enclosed with the instant Enquiry Letter.

Evaluation will be done based on the quoted rate only and no GST will be added, during evaluation.

No additional amount [except applicable GST] would be paid by SMPK to the TPIA.

- 1.12.2. In case it is found that the Total Price [arrived as per the above procedure] is same for two or more bidders and their bids become the lowest, the respective bidders will be given chance to submit their fresh Price Bid, subject to the condition that the revised "**TOTAL PRICE** [considering all items of the "**Price Schedule**"] arrived, considering the fresh quoted rates, must be less than the "**TOTAL PRICE**" arrived earlier, for the respective bidders.
- 1.12.3. It is not obligatory on the part of SMP, Kolkata to accept the lowest bid. They reserve the right to accept a bid in full or in part and / or reject a bid without assigning any reason thereof and no damage claim, whatsoever, will be payable by SMPK. Mere opening of the bid shall not construe that the Bidder is considered automatically qualified.
- 1.12.4. In the event of acceptance of tender in part, the rate(s) against each of the item(s) constituting the order shall be identical to the rate(s) for the corresponding item(s), quoted in the Price Bid and tender terms & conditions shall also remain unaltered. Irrespective of whether order is placed on part or, on the whole, no plea for subsequent withdrawal or the amendment will be entertained.

1.13. SMPK's right to accept any bid and to reject any or all bids

SMP, Kolkata reserve the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders.

- 1.14. Subject to **ITB Clause No. 1.13**, SMP, Kolkata shall award the contract to the Bidder, whose offer has been determined to be the lowest evaluated bid [as per **ITB Clause No. 1.12**] and is substantially responsive.
- 1.15. Prior to the expiration of the period of bid validity or extended validity, SMP, Kolkata shall notify the **Successful Bidder**, in writing, that their bid has been accepted. The notification letter (hereinafter called the "**Letter of Acceptance**") will be treated as "**Order Letter**" and will constitute the formation of the contract.



(Seal & Signature of the Bidder)

PRICE SCHEDULE

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022.

for

Obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”.

Preamble :

1. This ‘Price Schedule’ is to be read in conjunction with other terms & conditions, including ‘Scope of Work’, enclosed with the instant Enquiry Letter.
2. The rates and amounts are to be quoted by the bidder, at the appropriate places of the ‘Price Schedule’. The quoted rates [to be quoted in ‘PRICE SCHEDULE’ only] should include all taxes & duties of Central/ State/ Local bodies [excluding Goods and Services Tax (GST)], as applicable, travel expenses, boarding & lodging, other incidental charges, overheads & profit, etc., necessary for the complete services, as described in this ‘Price Schedule’ and ‘Scope of Work’.
3. GST, as applicable, shall be paid extra against proper invoice submitted by the TPIA.
The TPIA will be required to submit GST compliant invoice with all required details and also be required to file timely & proper return, so as to enable SMPK to get due credit against GST paid.
In case of any failure on the above account, GST amount, even if paid by SMPK, shall be recovered from the TPIA.
4. The quantities given in this ‘Price Schedule’ are indicative only, which may vary (both upward & downward) during execution and are given to provide a common base for submitting quotation & evaluation. However, the payment will be made on the exact quantity to be executed by the Successful Bidder.
5. The quoted prices should remain firm during the validity period of the bid / offer (including any / all extension thereof, agreed by the bidder).

The accepted rates should remain firm till all the items / equipment / works are inspected & certified by the TPIA. No Price escalation is admissible other than statutory increase in Taxes & Duties.



PRICE SCHEDULE

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022.

Subject : Enquiry for obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”.

Sl. No.	Description of Work	Unit	Quantity	Unit Rate (in ₹)	Amount (in ₹)
1.	Appraisal & recommendation for approval of Design, Data Sheet, Drawing (including Air Conditioning System, Data & Voice System, CCTV system, Fire Fighting System, 8 passenger Lift, LT panel etc.) Quality Assurance Plan (QAP) & Field Quality Assurance Plan (FQAP), submitted by the Contractor (for electrical works), based on ‘Technical Specification & Scope of Work’ of the Contract, relevant Standards, etc.	Lump Sum	1		
2.	Technical Inspection (for electrical works) at Manufacturer’s Works and HDC, SMPK’s work site, as per approved QAP & FQAP, and based on ‘Technical Specification & Scope of Work’ of the Contract, relevant Standards, approved Data Sheet, Drawing, etc..				
	a) At Manufacturer’s Works / Contractor’s premises	Man-day	15		
	b) At HDC, SMPK’s work site	Man-day	35		
Total Amount [excluding GST]: ₹					

Total Amount (in words) : _____
[excluding GST] _____

Bidder’s Name
(Name of the Firm) _____

WITNESS**Name:** _____**Signature:** _____**AUTHORISED PERSON OF THE BIDDER****Name:** _____**Designation:** _____**Signature:** _____**Date:** _____

(Office Seal)

SCOPE OF WORK

Subject : Enquiry for obtaining Sealed Quotations / Offers for engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”.

Reference : Enquiry No. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

4.1. Scope of Work includes -

- 4.1.1. A contract, vide Work Order no. I&CF/SDM/RZ/ET/22/81 dated 13.05.2022, has been awarded to Art-E-Mide Construction Pvt. Ltd. for the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC. The job involves both Civil and Electrical Renovation in a composite manner. The bidder has to submit their quotation / offer as Third Part Inspection Agency only for the relevant electrical part of the above mentioned Contract jobs.
- 4.1.2. Appraisal & Recommendation against design, drawing, QAP, FQAP, etc. (to be submitted by the Contractor) and for Technical Inspection & Certification of major equipment / items / work (to be executed by the Contractor), in connection with the work of *Electrical works covered under the job of “Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC”*, as per the ‘Accepted Price Schedule’ & ‘Technical Specification & Scope of Work’ of the relevant Contract [enclosed at **Annexure-VI**].
- 4.1.3. Appraisal / recommendation with respect to approval of Design, Data Sheet & Drawing of **Air Conditioning System, Data & Voice System, CCTV system, Fire Fighting System, 8 passenger Lift, LT panel** and approval of Quality Assurance Plan (QAP) & Field Quality Assurance Plan (FQAP) for electrical works [Part-I, Part-II, Part-III, Part-IV, Part-V, Part-VI & Part-VII under Electrical works of Price Schedule of the Contract Works].
- 4.1.4. Technical Inspection / Testing of various items at Manufactures Works / Contractor’s Works and at HDC, SMPK’s site, based on the approved Drawing & Quality Assurance Plan (QAP), as applicable.
- After inspection / testing at Manufacturer’s Works / Contractor’s premises, TPIA shall issue Inspection Report & Despatch Clearance of the items.
- After delivery of the aforesaid inspected items (for which despatch clearance has been given by the TPIA) at HDC, SMPK’s site, TPIA shall identify the same and issue identification report & installation clearance, for facilitating payment to the Contractor, as per the payment terms of the relevant Contract.
- 4.1.5. In case of imported material/items/equipment, the inspection shall be carried out by the TPI Agency at HDC, SMPK’s site, based on the documentation/test certificates produced by the Manufacturer/Vendor and shall issue Installation clearance after successful inspection, for facilitating payment to the Contractor, as per the payment terms of the relevant Contract.



(Seal & Signature of the Bidder)

SCOPE OF WORK

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

- 4.1.6. Technical Inspection / testing of the equipment / items & works in progress, during installation, testing & commissioning of the system, HDC, SMPK's site, based on the approved Drawing, Quality Assurance Plan (QAP) & Field Quality Assurance Plan (FQAP), as applicable.

After inspection / testing at HDC, SMPK's site, TPIA shall issue Inspection Report / Release Note at various stages, for facilitating payment to the Contractor, as per the payment terms of the relevant Contract.

After successful completion & commissioning of the work, TPIA shall issue the 'Final Completion Report/ Job completion report' and 'Commissioning Certificate', for facilitating payment as per the payment terms of the relevant Contract.

- 4.1.7. Estimated man-days (nos.) for the subject job is mentioned below:

Estimated Mandays for Inspection & Testing at Manufacturers' works / Contractors premises and at SMPK's site (HDC) :

Sl. No.	Description	Quantity	Estimated Mandays at Manufacturer's Works / Contractors premises	Estimated Mandays at SMPK's site (HDC)
1.	Passenger Lift & all accessories and installation, testing & commissioning	1 set	2	4
2.	Air-conditioners (various types) along with accessories and installation, testing & commissioning	Sets	1	5
3.	Electrical Cables and its laying, testing & commissioning	Lot	1	4
4.	Electrical LT Panel	1 set	1	3
5.	CCTV and its accessories, including installation, testing & commissioning.	Lot	1	1
6.	Fire Fighting System and accessories, including installation, testing & commissioning.	1 set	1	3
7.	Data and Voice System with accessories, including installation, testing & commissioning.	1 set	1	2
8.	Light fittings, Lamps, Fans, Wires, Switches, Sockets and accessories, for indoor including stage-wise installation, testing and commissioning.	Lot	3	6

(Seal & Signature of the Bidder)

SCOPE OF WORK

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

Sl. No.	Description	Quantity	Estimated Mandays at Manufacturer's Works / Contractors premises	Estimated Mandays at SMPK's site (HDC)
9.	Light fittings, Lamps, Wires, Switches, Sockets and accessories, for outdoor including stage-wise installation, testing and commissioning.	Lot	1	2
10.	Earthing system including materials and installation / erection, testing & commissioning.	Lot	1	2
11.	Miscellaneous items and final installation, testing and commissioning.	Lump sum	2	3
Total		:	15	35

A) Man-days (nos.) for Inspection & Testing at Manufacturers' works / Contractor's Premises : 15

B) Man-days (nos.) for Inspection & Testing at HDC, SMPK's Site : 35

Total no. of estimated man-days for Inspection & Testing at Manufacturers' : 50 works / Contractors premises and at site (HDC)

4.1.8. The items/equipment/works and estimated no. of man-days, shown in the aforesaid lists, are indicative only [which may vary] and are given to provide a common base for submitting quotation / offer and evaluation.

4.1.9. The estimated no. of man-days, mentioned in 4.1.6 above, are indicative only [which may vary] and are given to provide a common base for submitting quotation / offer and evaluation.

4.2. Other Conditions :

4.2.1. The Contractor, according to prior instructions from the TPI Agency, shall arrange all necessary facilities for inspection (viz. Instruments, Test equipment, drawings, specifications, labour, electricity, fuel, water, stores, etc.)

4.2.2. In case any item is found not acceptable as per the specification of the Contract, after delivery of the same at site, but the same item has been accepted by the Inspection Agency, the same should be replaced / rectified by the Contractor (for the Contract Work). The inspection agency will have to inspect the same without any extra cost.



(Seal & Signature of the Bidder)

TERMS AND CONDITIONS

Subject : Enquiry for obtaining Sealed Quotations / Offers for *engaging Third Party Inspection Agency (TPIA) for Electrical works covered under the job of "Internal and External renovation, Interior Decoration including Landscaping, Electrical and Fire Fighting work of HDC Guest House Campus at Haldia, HDC"*.

Reference : Enquiry No. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022.

5.1. Contract Price

5.1.1. Price charged by the Contractor for the related services performed under the contract shall not vary from the rates accepted by the Employer (Accepted Rates), based on the bid/offer of the Successful Bidder and stated in the 'Letter of Acceptance'.

5.1.2. The Accepted Rates, shown in '**ACCEPTED PRICE SCHEDULE**' of the 'Letter of Acceptance' (LOA), shall include all taxes & duties of Central/ State/ Local bodies [excluding Goods and Services Tax (GST)], as applicable, travel expenses, boarding & lodging, other incidental charges, overheads & profit, etc., necessary for the complete services, as described in the 'Price Schedule' and 'Scope of Work'.

GST, as applicable, shall be paid extra against proper invoice submitted by the TPIA.

The TPIA will be required to submit GST compliant invoice with all required details and also be required to file timely & proper return, so as to enable SMPK to get due credit against GST paid.

In case of any failure on the above account, GST amount, even if paid by SMPK, shall be recovered from the TPIA.

5.1.3. *The quantities given in the 'ACCEPTED PRICE SCHEDULE' are indicative only [which may vary (both upward & downward) during execution].* The payment will be made on the exact quantity, which would be executed by the TPIA.

5.1.4. No claim whatsoever of the Contractor for their man & material resources remaining idle for any reason or for any other expenses incurred by them due to the flow of work not being continuous or for stoppage of work, will be entertained by the Employer.

5.1.5. The Accepted Rates, shown in '**ACCEPTED PRICE SCHEDULE**' will remain firm, till all the items / equipment / works are inspected & certified by TPIA. No Price escalation is admissible, other than statutory increase in Taxes & Duties.

Changes in statutory taxes & duties [other than GST] will be adjusted, based on documentary evidence.



(Seal & Signature of the Bidder)

TERMS AND CONDITIONS

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

5.1.6. The TPIA shall have to provide (at their own expenses) all required Personal Protective Equipment (PPE) [such as Helmets, Safety Shoes, Nose Masks, Hand Gloves, etc.] & Safety Gears for all personnel engaged during the work.

5.2. Commencement and duration of work :

Immediately after the award of Contract, the TPIA shall have to commence the appraisal / recommendation work. The Inspection Agency shall have to inspect the items / equipment / works on the basis of inspection call, to be given by HDC, SMPK, time to time.

The job of TPIA, as per the Scope of Work, will be continued up to the scheduled date of completion of the Contract Work, awarded to **M/s Art-E-Mide Construction Private Limited**, i.e. upto January 12, 2023. However, in case any extension of completion period is granted to the afore-said Contractor, the Inspection Agency shall have to render their service for the extended period, without any price implication.

5.3. Payment terms:

Stage-wise payment will be made, against executed service, as indicated below.

5.3.1. Against Price Schedule Sl. No. 1

- i) 70% payment will be made after submission of necessary appraisals / recommendations for approval of Design, Data Sheet, Drawing, QAP, FQAP, etc., related to electrical works [Part-I, Part-II, Part-III, Part-IV, Part-V, Part-VI & Part-VII of 'Accepted Price Schedule' of the Contract Works of Electrical works].
- ii) 30 % payment will be made on testing & commissioning of the systems, after installation / erection / laying of all required items / equipment by the Contractor and issue of 'Commissioning Certificate' by TPIA.

5.3.2. Against Price Schedule Sl. No. 2 a)

- i) 70% payment will be made on completion of stage-wise inspection of respective item / equipment at Manufacturer's Works and identification of inspected items / equipment after delivery at HDC, SMPK's site.
- ii) 30 % payment will be made on testing & commissioning of the systems, after installation / erection / laying of all required items / equipment by the Contractor and issue of 'Commissioning Certificate' by TPIA.

5.3.3. Against Price Schedule Sl. No. 2 b)

100 % payment will be made on testing & commissioning of the systems, after installation / erection / laying of all required items / equipment by the Contractor and issue of 'Commissioning Certificate' by TPIA.



(Seal & Signature of the Bidder)

TERMS AND CONDITIONS

Enquiry no. DM(P&E)/TSEM/1014/ENQ03/2022-2023 dated August 05, 2022

- 5.3.4. Bills should be submitted, in triplicate, to Township Electrical Maintenance Office, Plant & Equipment Division, Haldia Dock Complex, along with required certification / inspection report.
- 5.3.5. Payment will be made in Indian Rupees through the banker of the Contractor (i.e. through ECS), within 30 days from the date of submission of clear & unambiguous bill, in line with the aforesaid payment stages, alongwith required documents. During submission of bill(s), the following information must be submitted by the Contractor regarding their banker:
- a) Bank Account number.
 - b) Name of the bank.
 - c) Name of the branch.
 - d) Address of the branch.
 - e) MICR code of the branch.
 - f) IFSC of the branch.
- 5.3.6. Any claim for interest will not be entertained by HDC with respect to any payment or balance which may be in HDC's hands owing to any disputes between HDC and the Inspection Agency or with respect to any delay on the part of HDC in making payment.
- 5.3.7. Income Tax, if any, as per the relevant provision of the Income Tax Act shall be deducted at source from any payment payable to the contractor.



(Seal & Signature of the Bidder)

Syama Prasad Mookerjee Port, Kolkata
हिसदा गोदा परसर
HALDIA DOCK COMPLEX
I&CF DIVISION

Tender No. I&CF/SDM/RZ/ET/22

BILL OF QUANTITIES (PRICE BID)

Work: "INTERNAL AND EXTERNAL RENOVATION, INTERIOR DECORATION INCLUDING LANDSCAPING, ELECTRICAL AND FIREFIGHTING WORK OF HDC GUEST HOUSE CAMPUS AT HALDIA, HDC".

Name of the Company	ART-E-MIDE CONSTRUCTION PVT. LTD.
Address of the Company	128/7, HAZRA ROAD, KOLKATA-700026
Phone No./Mobile no.	9831168644
Email Id	artemide@artemideconstruction.com

SLNo	Description Of Item	Unit	Quantity	Unit Rate (Rs. P.)	Total (Rs.)
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PART – I: ELECTRICAL UPGRADATION

1	SECTION:A [PointWiring]				
1.1	Distribution wiring (alongwith earth wire), with 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked), in suitable size [minimum 13 mm bore, 2 mm thick] PVC concealed pipe [complete with all accessories] embedded in wall, to light / fan / exhaust fan / call bell point [including supply & fixing of 3 terminal Ceiling Rose / Batten Holder / Angle Holder / Connector, as required], including necessary connections & making earthing attachment and mending good damages to building works. 2 X 1.5 mm2 (as phase & neutral wires) and 1 X 1.5 mm2 (as Earth Continuity Conductor), per point. with Modular type switch fixed on Modular GI switch board (with mounting plate & top cover) flushed on wall (including supply & fixing of switch & switch board).				
1.1.1	average run 8 m	200	point	650.00	130000
1.1.2	average run 10 m	300	point	850.00	255000
1.1.3	average run 12 m	300	point	1000.00	300000

1.2	Distribution wiring (alongwith earth wire), with 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked), in suitable size [minimum 13 mm bore, 2 mm thick] PVC concealed pipe [complete with all accessories] embedded in wall, to light point [including supply & fixing of 3 terminal Ceiling Rose / Batten Holder / Angle Holder / Connector, as required], including necessary connections & making earthing attachment and mending good damages to building works. 3 X 1.5 mm2 or 2 X 1.5 mm2 (as phase & neutral wires) & 1 X 1.5 mm2 (as Earth Continuity Conductor), per point. with 02 nos. 2 way Modular type switch fixed on Modular GI switch boards (with mounting plate & top cover) flushed on wall (including supply & fixing of switches & switch boards).				
1.1.1	average run 10 m	50	point	100.00	5000
1.1.2	average run 12 m	50	point	1250.00	62500
1.3	Distribution wiring (alongwith earth wire), with 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked), in suitable size [minimum 13 mm bore, 2 mm thick] PVC concealed pipe [complete with all accessories] embedded in wall, to 240 V, 6 A, 5 pin socket outlet (plug) point [including supply & fixing of 240 V, 6 A, 5 pin modular type socket outlet (plug) & 6 A modular type switch], including necessary connections & making earthing attachment and mending good damages to building works. 2 X 1.5 mm2 (as phase & neutral wires) and 1 X 1.5 mm2 (as Earth Continuity Conductor), per point.				
1.3.1	on existing GI modular Switch Board (with mounting plate & top cover) {of light & fan} flushed on wall.	50	point	450.00	22500
1.3.2	on separate 4 module GI modular Switch Board (with mounting plate & top cover) flushed on wall (including supply & fixing of switch boards)- average run 4.5 m.	100	point	650.00	65000
1.3.3	on separate 4 module GI modular Switch Board (with mounting plate & top cover) flushed on wall (including supply & fixing of switch boards)- average run 7.5 m.	250	point	750.00	187500
1.4	Supplying & Fixing MS fan clamp of two piece type, for RC ceiling, fabricated from 40 mm X 9 mm MS flat, including making good damages to building roof, with satisfactory finishing and painting.	100	no.	200.00	20000
1.5	Providing modular type 25 A motor starter (2 module) for Air-conditioners, on existing GI / PVC Modular Switch Board [with mounting plate & frame] and making necessary connections [with 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked)], as required.	60	no.	850.00	51000
1.6	Providing Modular Socket (2 Module) type fan regulator (Step type) on existing GI / PVC Modular Switch Board [with mounting plate & top cover] and making necessary connections , as required.	60	no.	420.00	25200
1.7	Providing 240 V, 25 A, 6 pin Modular type socket outlet (plug) [without switch & plug top] on separate 2 module GI modular Switch Board (with mounting plate & top cover) flushed on wall (including supply & fixing of switch boards) and making necessary connections [with suitable size 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked)], as required.	60	no.	600.00	36000
1.8	Providing 240 V, 16 A, 6 pin Modular type socket outlet (plug) & 240 V, 16 A Modular type switch [without plug top] on separate 4 module GI modular Switch Board (with mounting plate & top cover) flushed on wall (including supply & fixing of switch boards) and making necessary connections [with suitable size 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked)], as required.	200	no.	600.00	120000
1.9	Providing (after cutting the brick wall) GI Modular Switch Board complete with mounting plate & frame (having earthing attachment), flushed in wall, including mending good damages to building works.				
1.9.1	2 module	200	no.	250.00	50000
1.9.2	4 module	200	no.	350.00	70000
2	SECTION:B [FixingLightFittings/OthersMaterials]				

2.1	Fixing only bulk head type ceiling fittings / tube light fittings / round light fittings (directly on wall / ceiling / PVC or HW Block by screws / MS fastener, Ceiling plate, nipples etc., as required) or recessed type light fittings (under false ceiling, after making cut-out), complete with all accessories, including necessary connections [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable, conforming to IS: 694, with latest amendment (if any)] & mending good damages to the wall / ceiling / false ceiling.	600	no.	50.00	30000
2.2	Fixing only different light fittings / bracket lights / night lamp fittings / calling bell, complete with all accessories, directly on wall / ceiling / PVC or HW Block by screws / MS fastener, Ceiling plate, nipples etc., as required, at various locations, including necessary connections [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable, conforming to IS: 694, with latest amendment (if any)] & mending good damages to the wall / ceiling.	100	no.	300.00	30000
2.3	Fixing only Floodlight Fitting with suitable tie clamps and MS plate at various locations, including necessary connections [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable, conforming to IS: 694, with latest amendment (if any)] & mending good damages to the wall / ceiling / roof.	60	no.	200.00	12000
2.4	Fixing only ceiling fan complete with blades, canopy, rubber bush, etc. and making connection [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable, conforming to IS: 694, with latest amendment (if any)], as required.	100	no.	150.00	15000
2.5	Fixing only exhaust fan [including supply & fixing of bolts, nuts, washers, etc., as required] and making connection [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable (if required), conforming to IS: 694, with latest amendment (if any)], as required.				
2.5.1	Sweep: 200mm - 230 mm	15	no.	100.00	1500
2.5.2	Sweep: 300 mm	8	no.	120.00	960
2.5.3	Sweep: 600 mm	3	no.	140.00	420
2.6	Making hole in wall for fixing exhaust fan & making good damages to building works.				
2.6.1	Sweep: 200mm - 230 mm	15	no.	250.00	3750
2.6.2	Sweep: 300 mm	8	no.	300.00	2400
2.6.3	Sweep: 600 mm	3	no.	350.00	1050
2.7	Providing aluminium / GI louver shutter on wall, for exhaust fan, with necessary bolts, nuts & washers, etc., as required.				0
2.7.1	Sweep: 230 mm	15	no.	1850.00	27750
2.7.2	Sweep: 300 mm	8	no.	2500.00	20000
2.7.3	Sweep: 600 mm	3	no.	3000.00	9000
2.8	Fixing only Wall Fan / Cabin Fan [sweep: 300 mm to 450 mm] on wall / ceiling [including supply & fixing of bolts, nuts, washers, etc., as required] and making connection [by providing required length of 'FR' 3 C X 0.5 mm2 PVC insulated, PVC sheathed, copper conductor cable (if required), conforming to IS: 694, with latest amendment (if any)], as required.	25	no.	150.00	3750
3	SECTION: C [Supply & Installation of LV Switchgear]				
3.1	Providing double-door, sheet steel, powder painted, SPN MCB Distribution Board [IP-43 protection and complete with tinned copper bus bar, copper connecting leads, neutral bar, earth bar & din bar] on masonry wall (concealed) / iron structure & mending good the damages to original finish, including inter-connection and provision for earthing attachment. (Without MCB / RCCB / Isolator)				
3.1.1	8 way (2+8 module)	1	no.	2250.00	2250
3.1.2	10 way (2+10 module)	6	no.	2500.00	15000
3.2	Providing double-door, sheet steel, powder painted, TPN MCB Distribution board [IP-43 protection and complete with tinned copper bus bar, copper connecting leads, neutral bar, earth bar & din bar] on masonry wall (concealed) / iron structure & mending good the damages to original finish, including inter-connection and provision for earthing attachment. (Without MCB / RCCB / Isolator).				
3.2.1	6 way (8+18 module)	1	no.	8000.00	8000
3.2.2	4 way (8+12 module)	2	no.	6000.00	12000
3.3	Providing 240 V / 415 V, 50 Hz, MCB type Isolator / Disconnecter on din rail of existing DBs and necessary connection.				
3.3.1	Double Pole, 25 A	4	no.	650.00	2600

3.3.2	Double Pole, 40	4	no.	700.00	2800
3.3.3	Four Pole, 40 A	4	no.	2100.00	8400
3.3.4	Four Pole, 63 A	4	no.	2250.00	9000
3.4	Providing 240 V / 415 V, 50 Hz, MCB (C characteristics, 10 kA Breaking capacity) on din rail of existing DBs and necessary connection.				
3.4.1	Single Pole, 6 A - 32 A	242	no.	240.00	58080
3.4.2	Double Pole, 6 A - 32 A	1	no.	650.00	650
3.4.3	Double Pole, 40 A - 63 A	15	no.	700.00	10500
3.4.4	Four Pole, 6 A - 32 A	4	no.	1800.00	7200
3.4.5	Four Pole, 40 A - 63 A	4	no.	2250.00	9000
3.5	Providing Four Pole, 415V, 50Hz, MCCB (having adjustable thermal and fixed magnetic trip unit) on existing DBs and necessary connection.				
3.5.1	125 A [Breaking capacity 25 kA]	5	no.	8500.00	42500
3.6	Providing double door, sheet steel, powder painted, Vertical Three Phase Distribution Board [IP-43 protection, with provision for MCCB / MCB/ Isolator/ RCD as incomer and three phase & single phase (TP/SP) MCBs as outgoing; complete with insulated busbar arrangement, copper connecting leads, neutral bar, earth bar & din bar] on masonry wall (concealed) / iron structure & mending good the damages to original finish, including inter-connection and provision for earthing attachment. (without MCCB / MCB).				
3.6.1	4 way (4 pole MCCB+12 module), with 4 pole MCCB (upto 160A) as Incomer.	1	no.	13000.00	13000
3.6.2	8 way (4 pole MCCB+24 module), with 4 pole MCCB (upto 160A) as Incomer.	3	no.	15000.00	45000
3.7	Providing TPN Switch Disconnecter Fuse Unit, in Sheet steel enclosure, [on iron structure / hard Wood (HW) frame] (Including supply & fixing of 03 nos. suitable rating HRC Fuses)				
3.7.1	200 A	3	set	15000.00	45000
3.8	Providing sheet steel, duly painted, MCB Distribution Board on wall / iron structure & mending good the damages to original finish, including provision for earthing attachment. (Without MCB / RCCB / Isolator).				
3.8.1	4 way	8	no.	750.00	6000
3.9	Providing MCCB Distribution Board on masonry wall (concealed) / iron structure & mending good the damages to original finish, including inter-connection (Without MCCB).				
3.9.1	for 4 pole MCCB (upto 160A).	8	no.	5000.00	40000
3.10	Supply & delivery of TPN Phase Segregated Distribution Board (metal door) [IP-43 protection, with provision for MCCB / MCB/ Isolator/ RCBO as incomer] of following way (Without MCCB / MCB/ Isolator/ RCBO):				
3.10.1	8 Way (Incomer-MCB/ RCCB/ RCBO)	1	no.	8500.00	8500
3.10.2	6 Way (Incomer-MCCB)	4	no.	15000.00	60000
3.10.3	4 Way (Incomer-MCCB)	8	no.	11500.00	92000
3.11	Fixing of TPN Phase Segregated Distribution Board [IP-43 protection, with provision for MCCB / MCB/ Isolator/ RCBO as incomer] of following way:				
3.11.1	8 Way (Incomer-MCB/ RCCB/ RCBO)	1	no.	1800.00	1800
3.11.2	6 Way (Incomer-MCCB)	4	no.	1500.00	6000
3.11.3	4 Way (Incomer-MCCB)	8	no.	1200.00	9600
4	SECTION: D [Supplying&FixingWiringAccessories]				
4.1	Providing (after cutting the brick wall) CRCA sheet metal (16 SWG) Junction Box / Inspection Box (having earthing attachment) of the following sizes, flushed in wall, including painting and mending good damages to building works.				
4.1.1	150 mm X 100 mm X 50 mm	100	no.	200.00	20000
4.1.2	240 mm X 200 mm X 50 mm	50	no.	320.00	16000
4.2	Providing Bakelite / Perspex top cover (3 mm thick) on the existing sheet metal Junction Box / Inspection Box of following sizes, fixing by Brass screws: [The covers should be extended atleast 25 mm from the screw points]				
4.2.1	150 mm X 100 mm X 50 mm	100	no.	100.00	10000
4.2.2	240 mm X 200 mm X 50 mm	50	no.	200.00	10000

4.3	Providing PVC Rigid Conduit [medium mechanical stresses, 'FR'] on surface of the wall / ceiling, with aluminium / G.I. saddles and other accessories, as required and mending good damages to building works.				
4.3.1	19 mm (nominal size)	4,000	RM	40.00	160000
4.3.2	25 mm (nominal size)	2,500	RM	60.00	150000
4.4	Providing two-way CI Round box with cover concealed in ceiling / wall and mending good damages to building works.	600	no.	120.00	72000
5	SECTION: E [DistributionWiring]				
5.1	Distribution wiring in 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked) of following sizes in suitable size [minimum 13 mm bore, 2 mm thick] PVC concealed pipe [complete with all accessories] embedded in wall / floor (including mending good damages to building works) [including supply & fixing of PVC pipes & accessories] and making necessary connection, as required.				
5.1.1	3 X 1.5 mm2 (as phase & neutral wires and as Earth Continuity Conductor)	2,500	RM	120.00	300000
5.1.2	2 X 2.5 mm2 (as phase & neutral wires) and 1 X 1.5 mm2 (as Earth Continuity Conductor)	3,000	RM	140.00	420000
5.1.3	2 X 4.0 mm2 (as phase & neutral wires) and 1 X 2.5 mm2 (as Earth Continuity Conductor)	1,000	RM	240.00	240000
5.1.4	2 X 6.0 mm2 (as phase & neutral wires) and 1 X 4.0 mm2 (as Earth Continuity Conductor)	500	RM	30.00	15000
5.2	Providing 'FR' PVC insulated (unsheathed), single core, 1.1 kV grade, copper (stranded) wire (ISI marked) of the following sizes, in the pre-laid PVC pipe / PVC casing-capping and making necessary connection, as required.				
5.2.1	2 X 16.0 mm2 (as phase & neutral wires) and 1 X 10.0 mm2 (as Earth Continuity Conductor)	600	RM	600.00	360000
5.2.2	4 X 16.0 mm2 (as 3 phase & neutral wires) and 2 X 10.0 mm2 (as Earth Continuity Conductor)	600	RM	1100.00	660000
5.2.3	3 X 4.0 mm2	100	RM	220.00	22000
5.2.4	2 X 4.0 mm2 (as phase & neutral wires) and 1 X 2.5 mm2 (as Earth Continuity Conductor)	400	RM	200.00	80000
5.2.5	2 X 6.0 mm2 (as phase & neutral wires) and 1 X 4.0 mm2 (as Earth Continuity Conductor)	200	RM	300.00	60000
5.2.6	4 X 6.0 mm2 (as 3 phase & neutral wires) and 2 X 4.0 mm2 (as Earth Continuity Conductor)	200	RM	600.00	120000
6	SECTION: F [Supply&InstallationofLightningArrester]				
6.1	Providing Lightning Conductor Air-terminals, made of 15 mm dia 1500 mm long GI pipe (ISI Medium), having five prongs of 4 SWG GI (Hot Dip) wire at top, with 85 mm dia 6 mm thick GI base plate at bottom, including necessary holes, etc., duly grouted on the parapet, etc. in CC mortar (4:2:1).	8	no.	5000.00	40000
6.2	Hiring charges [per storey of building per vertical run] for scaffolding arrangement for installation of Lightning Conductor, including dismantling at the end of work & carriage.	100	storey/ vertical run	360.00	36000
6.3	Making soldered joints between conductors, conductors & air terminals for 4 SWG GI (Hot Dip) wire, including supply of jointing materials & painting with 2 (two) coats of bituminous paint.	100	no.	150.00	15000
6.4	Supply & Fixing of Testing Joints by 20 mm X 3 mm GI strip (Hot Dip), 125 mm long, grouted on wall having clearance of 6 mm from wall for making connection with thimbles at the end of 7/10 SWG GI (Hot Dip) stranded Wire and 4 SWG GI (Hot Dip) wire of vertical conductor and conductor from earth electrode, complete with supply & fixing of thimbles, GI bolts, nuts, check-nuts, spring washers, etc., as required.	8	no.	350.00	2800

6.5	Providing GI strips (Hot Dip) of size 20 mm X 3 mm, for horizontal run on the Parapet/ Roof/ Wall, with GI Saddles [spaced not exceeding 1100 mm apart], including mending good the damages to building works.	400	RM	240.00	96000
6.6	Providing GI strips (Hot Dip) of size 20 mm X 3 mm, for vertical run on wall, with GI Saddles [spaced not exceeding 1000 mm apart], including mending good the damages to building works.	400	RM	260.00	104000
7	SECTION: G [LayingofCables]				
7.1	Laying of 1.1 kV grade power cable, on wall / surface and fixing by GI / Aluminium saddling (approx. 300 mm interval), with earthing attachment in 10 SWG GI (Hot Dip) wire [including supply of materials (excepting cable), as required], as necessary, including mending good damages to building works.				
7.1.1	01 no. 3C / 3 ½ C / 4C cable, upto 25 mm2.	800	RM	60.00	48000
7.1.2	01 no. 3C / 3 ½ C / 4C cable, above 25 mm2& upto 50 mm2.	700	RM	80.00	56000
7.2	Laying of 1.1 kV grade power cable, through existing duct, open masonry trench, culvert, laid pipe (RCC, Hume, GI, etc.), riser pipe, etc.				
7.2.1	01 no. 1C / 3C / 3 ½ C / 4C cable, upto 50 mm2.	150	RM	90.00	13500
7.2.2	01 no. 3C / 3 ½ C / 4C cable, above 50 mm2& upto 400 mm2	200	RM	150.00	30000
7.3	Laying of 1.1 kV grade, power cable, in underground trench. The scope includes excavation, sand cushioning, protective top covering by bricks, tiles or slabs, refilling the trench, levelling up, restoring surface (duly rammed), etc. [including supply of materials (excepting cable), as required], as per 'Technical Specification & Scope of work'.				
7.3.1	01 no. 1C / 3C / 3 ½ C / 4C cable, upto 240 mm2 [with 16 nos. bricks per metre]	2000	RM	250.00	500000
7.4	Laying of 1.1 kV grade power cable, through existing covered masonry trench including taking out RC covers, setting them in order, mending good the damages, filling the trench with fine dry sand (including supplying sand).				
7.4.1	01 no. 1C / 3C / 3 ½ C / 4C cable, upto 150 mm2.	150	RM	250.00	37500
7.4.2	01 no. 3C / 3 ½ C / 4C cable, above 150 mm2& upto 300 mm2.	1500	RM	10.00	15000
7.5	Laying of 1.1 kV grade power cable, after cutting floor / pavement / wall and making holes, including embedding the cable at an average depth (through suitable casing pipe) and mending good the damages to original finish including removal of the rubbish.				
7.5.1	01 no. 1 C / 3C / 3 ½ C / 4C cable, 2.5 mm2 to 35 mm2, at an average depth of 75 mm.	400	RM	60.00	24000
7.5.2	01 no. 3C / 3 ½ C / 4C cable, above 35 mm2 & upto 95 mm2, at an average depth of 100 mm.	400	RM	80.00	32000
7.6	Laying of 1.1 kV grade power cable, on existing Cable Tray and fixing by GI / Aluminium saddling (approx. 300 mm interval) [including supply of materials (excepting cable), as required].				
7.6.1	01 no. 1 C / 3C / 3 ½ C / 4C cable, upto 70 mm2.	500	RM	80.00	40000
7.6.2	01 no. 3C / 3 ½ C / 4C cable, above 70 mm2 and upto 150 mm2 .	150	RM	230.00	34500
7.6.3	01 no. 3C / 3 ½ C / 4C cable, above 150 mm2 and upto 240 mm2 .	150	RM	250.00	37500
8	SECTION: H [FinishingofCablesEnds]				
8.1	Providing double compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of following XLPE insulated (1.1 kV grade), armoured cables as given below :				
8.1.1	4 C, upto 6 mm2.	600	no.	120.00	72000
8.1.2	4 C, above 6 mm2& upto 16 mm2.	40	no.	350.00	14000
8.1.3	3½ C, above 16 mm2& upto 25 mm2.	40	no.	450.00	18000
8.1.4	3½ C, above 25 mm2& upto 50 mm2.	20	no.	600.00	12000
8.1.5	3½ C, above 50 mm2& upto 120 mm2.	20	no.	700.00	14000
8.1.6	3½ C, above 120 mm2& upto 150 mm2.	20	no.	700.00	14000
8.1.7	3½ C, above 150 mm2& upto 240 mm2.	20	no.	1500.00	30000
8.2	Connecting the leads of following PVC / XLPE armoured / unarmoured cables (1.1 kV grade) with MCCBs / MCBs / SDFU/ connectors [after finishing the ends by crimping method, including supplying & fixing solderless sockets, tapes, anticorrosive paste & jointing materials], at Distribution Board / Junction Box / SDFU:				
8.2.1	4 C, upto 6 mm2.	600	no.	80.00	48000
8.2.2	4 C, above 6 mm2& upto 16 mm2.	40	no.	150.00	6000

8.2.3	3½ C, above 16 mm2& upto 25 mm2.	40	no.	220.00	8800
8.2.4	3½ C, above 25 mm2& upto 50 mm2.	20	no.	260.00	5200
8.2.5	3½ C, above 50 mm2& upto 120 mm2.	20	no.	350.00	7000
8.2.6	3½ C, above 120 mm2& upto 150 mm2.	20	no.	450.00	9000
8.2.7	3½ C, above 150 mm2& upto 240 mm2.	20	no.	650.00	13000
9	SECTION: I [Supplying&FixingExtraLowVoltageMaterials]				
9.1	Supply & Fixing Modular type RJ45 (suitable for CAT6 cable), with PVC / GI Modular Switch Board [with mounting plate & frame], on wall (or flushed in wall, after cutting the brick wall) and making necessary connections & testing, as require.	50	set	450.00	22500
9.2	Supply & Fixing Modular type Telephone Socket (RJ11), with PVC / GI Modular Switch Board [with mounting plate & frame] , on wall (or flushed in wall, after cutting the brick wall) and making necessary connections & testing, as require.	50	set	320.00	16000
9.3	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable (one run) through existing pipes / casing-capping.	500	RM	50.00	25000
9.4	Supplying and drawing FRLS PVC insulated annealed copper conductor, unarmoured, 2 pair 0.5 mm diameter, telephone cable (one run) through existing pipes / casing-capping and making necessary connections, as required.	500	RM	30.00	15000
9.5	Supply & Fixing Modular type TV Antenna Socket, with PVC / GI Modular Switch Board [with mounting plate & frame], on wall (or flushed in wall, after cutting the brick wall) and making necessary connections, as require.	50	set	120.00	6000
9.6	Supplying and drawing co-axial TV cable (one run) , RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath, through existing pipes / casing-capping and making necessary connections, as required.	500	RM	130.00	65000
9.7	Supplying & installing expansion cabinet for extension of digital hybrid EPABX to expand system by 32 ports, with programming and configuration of extensions & direct lines, with required accessories complete.	1	Lump Sum	150000.00	150000
9.8	Supplying and installing, testing & commissioning of digital (hybrid) type EPABX of 6 x 24 extensions, suitable upto 96 extensions complete.	1	Lump Sum	55000.00	55000
10	SECTION: J [Earthing]				
10.1	Excavation of soil for installation of Earth Electrode and filling & ramming.				
10.1.1	For Morrum Soil	100	m3	320.00	32000
10.1.2	For Soft Soil	100	m3	350.00	35000
10.2	Earthing with Earth Electrode [made of 3 m long Medium Galvanised Mild Steel Tubes (as per IS:1239) of nominal bore 50 mm]. 260 mm long G.I. Strip of size 50 mm X 6 mm (with 4 nos. 10 mm dia tap hole, bend to shape of pipe) to be welded at 100 mm below the top of tube for connection of Earth Strip. G.I. Funnel / Cap to be provided on top of the tube.				
10.2.1	Using Medium Galvanised Mild Steel Tubes (as per IS:1239).	20	set	6000.00	120000
10.3	Extra for providing suitable size Brick Masonry Inspection Chamber for Earth Pit, with removable RCC Cover (75 mm thick) with handle and drilling required number of 10 mm diameter holes on GI Pipe.	20	set	2000.00	40000
10.4	Extra for soil treatment of Earth Pit by using alternate layer of Charcoal and Salt.	20	Lump Sum	4000.00	80000
10.5	Providing earth busbar of galvanized (Hot Dip) MS flat 50 mm X 6 mm on wall having clearance of 6 mm from wall including providing drilled holes on the busbar complete with GI bolts, nuts, washers, spacing insulators, etc., as required.	20	set	1000.00	20000
10.6	Providing earthing, using GI (Hot Dip) wire and making connections with bolts, nuts, washers, etc., as required and mending good damages, if any.				
10.6.1	Using GI (Hot Dip) wire of size 8 SWG.	100	RM	40.00	4000
10.6.2	Using GI (Hot Dip) wire of size 10 SWG.	400	RM	35.00	14000
10.7	Connecting the earth busbar to Earthing Station or equipment body to earth busbar (with bolts, nuts, washers, etc.), including supply & laying of G.I. Strip (Hot Dip) of size 25 mm X 6 mm, using GI saddles or through PVC conduit of suitable size, including drilling holes.	50	RM	230.00	11500
10.8	Connecting the earth busbar to Earthing Station or equipment body to earth busbar (with bolts, nuts, washers, etc.), including supply & laying of G.I. Strip (Hot Dip) of size 50 mm X 6 mm, using GI saddles or through PVC conduit of suitable size , including drilling holes.	200	RM	430.00	86000

11	SECTION: K [SupplyofIndoorLight / FanFittings]				
11.1	Supply & delivery of 3 watt round recessed LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work' [Similar to Cat No. : LD80-200, Wipro].	40	no.	850.00	34000
11.2	Supply & delivery of 12 watt round recessed LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LD90-141, Wipro]	50	no.	1400.00	70000
11.3	Supply & delivery of 18 watt round recessed LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LD90-231, Wipro]	80	no.	1950.00	156000
11.4	Supply of 2ft X 2ft LED recessed luminaire [suitable for 230 V AC, 50 Hz supply system], provided with suitable Driver & necessary safety protections [complete with all accessories] and as per 'Technical Specification & Scope of Work'. System wattage of luminaire: ≤ 36 W Luminous flux: ≥ 3960 lumen. [Similar to Cat No. : CRCO10R038HP57GL, Wipro]	20	no.	2900.00	58000
11.5	Supply & delivery of 9 watt round recessed LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LD90-111, Wipro]	300	no.	950.00	285000
11.6	Supply & delivery of 12 watt round surface mounted LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LD80-101(SM), Wipro].	40	no.	2000.00	80000
11.7	Supply & delivery of 18 watt round surface mounted LED light fittings (IP 20), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LD80-171(SM), Wipro].	100	no.	1850.00	185000
11.8	Supply & delivery of 10W-12W Bulkhead surface / wall mounted LED light fittings (IP 65), suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LW07-141, Wipro].	10	no.	1900.00	19000
11.9	Supply and delivery of 1 X 4 ft (approx.) tube light fittings [Integrated LED Batten, Surface Mounted; System wattage of luminaire: ≤ 22 W; Luminous flux : ≥ 2200 lumen], complete with all accessories, driver & Lamp , suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : BN021CLED22S, Philips]	30	no.	900.00	27000
11.10	Supply and delivery of 1 X 2 ft (approx.) tube light fittings [Integrated LED Batten, Surface Mounted; System wattage of luminaire: ≤ 12 W; Luminous flux : ≥ 1200 lumen], complete with all accessories, driver & Lamp , suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : BN021CLED12S, Philips]	30	no.	720.00	21600
11.11	Supply and delivery of IP20 rated Flexible LED strip (not less than 5 m, System wattage : 28 W approx.) [using high brightness SMD LED as the light source] for indoor application [suitable for cove-lighting, decorative lighting], complete with all accessories, connector, driver & LED, suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LED Strip SKY Cove 5M, Philips].	50	no.	2400.00	120000
11.12	Supply and delivery of IP20 rated COB downlighter (System wattage : 18 W approx.), complete with all accessories, driver & LED , suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. LD98-271, Wipro]	70	no.	2250.00	157500

11.13	Supply and delivery of Outdoor type [IP 66] LED Flood Light fittings (ideal for sports lighting) [suitable for 230 V AC, 50 Hz supply system], provided with suitable Driver & necessary safety protections [complete with all accessories] and as per 'Technical Specification & Scope of Work'. System wattage of luminaire: ≤ 200 W Luminous flux: ≥ 23000 lumen. [Similar to Cat No. LF30-272, Wipro]	18	no.	2500.00	45000
11.14	Supply and delivery of 1200 mm sweep Decorative Ceiling Fan, suitable for 230 AC, 50 Hz supply system, complete with capacitor, canopy & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model : Tango Premium, Orient]	68	no.	4100.00	278800
11.15	Supply and delivery of 600 mm sweep Heavy Duty Exhaust Fan [metallic blade] suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model : Heavy Duty Exhaust, Orient]	2	no.	10000.00	20000
11.16	Supply and delivery of 300 mm sweep Exhaust Fan [metallic blade] suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model : Heavy Duty Exhaust, Orient]	7	no.	4200.00	29400
11.17	Supply and delivery of 200 mm sweep Exhaust Fan [non-metallic blade] suitable for 230 V AC, 50 Hz supply system, complete with all accessories & louver (gravity shutter system) and as per the 'Technical Specification & Scope of Work'. [Similar to Model : Ventilator HS, Orient]	14	no.	2200.00	30800
11.18	Supplying and delivery of 400 mm sweep Wall Fan, with close-mesh guards, suitable for 230 V AC, 50 Hz supply system, complete with all accessories, including necessary brackets for fixing wall fans and as per the 'Technical Specification & Scope of Work'. [Similar to Model : Tornado Wall 50, Orient]	3	no.	4515.00	13545
11.19	Supply and delivery of recess mounted fixed LED downlight [made of extruded Aluminium housing and high power LED as a light source, with clear diffuser and separate electronic driver] (System wattage : 30 W approx.), suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model : SPARKLE PRO FIX-SPARKLEPROFIXDLR30W840MOD40DWHTEEM, Havells]	15	no.	4450.00	66750
11.20	Supply and delivery of recess mounted adjustable (dimmable) driver for LED downlight (10-50 V / 800 mA), complete with all accessories, suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'. [Similar to Model : DALIDRIVERSQ 10-50/800MA10161099, Havells].	15	no.	5600.00	84000
12	SECTION: L [Supply ofOutdoorLightFittings]				
12.1	Supplying and erecting bollard (using high efficacy LEDs as the light source) [with directional reflector, asymmetric PC diffuser, powder coated aluminium extruded housing (IP 65)], complete with all accessories (including potted driver), suitable for 230 V AC, 50 Hz supply system, pre-wired up to terminal block and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. LB12-131, Wipro] (System wattage: 11 W approx.)	75	no.	5000.00	375000
12.2	Supply and delivery of 40W - 45W Decorative Post Top LED Light fittings [Post-top lantern], with IP 65 protection, suitable for 230 V AC, 50 Hz supply system, complete with suitable drive & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LP07-501 or LP02-501, Wipro]	50	no.	7500.00	375000

12.3	Supply & delivery of surface (Wall / ceiling) mounted LED light fittings (IP 54) [ABS plastic housing, with CRCA reflector and High Efficiency Translucence (HET) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LW01-101, Wipro] (System wattage: 9 W approx.)	27	no.	2000.00	54000
12.4	Supply & delivery of LED ground-light / bush-light fittings (IP 67) [polyester coated aluminium housing], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LF05-450, Wipro] (System wattage: 6 W approx.)	45	no.	8500.00	382500
12.5	Supply & delivery of LED underwater light fittings (IP 68) [marine grade stainless-steel # 316 housing], with waterproof (IP 67) Connector & Driver, suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model: KL 6762, Klite] (System wattage: 3 W approx.)	50	no.	5650.00	282500
12.6	Supply & delivery of LED High-Bay & Mid-Bay light fittings (IP 66) [Pressure Die Cast aluminium housing, powder coated, with Polycarbonate (PC) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LE07-501, Wipro] (System wattage: 35 W approx.)	17	no.	3700.00	62900
13	SECTION: M [SUPPLY OF CABLE]				
13.1	Supply of 1.1 kV grade, 4 Core X 16 mm ² , XLPE insulated, galvanised single steel wire armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	1,200	m	21.00	25200
13.2	Supply of 1.1 kV grade, 3 ½ Core X 25 mm ² , XLPE insulated, galvanised single steel strip armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	1,200	m	260.00	312000
13.3	Supply of 1.1 kV grade, 3 ½ Core X 50 mm ² , XLPE insulated, galvanised single steel strip armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	1,200	m	450.00	540000
13.4	Supply of 1.1 kV grade, 3 ½ Core X 120 mm ² , XLPE insulated, galvanised single steel strip armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	500	m	96.00	48000
13.5	Supply of 1.1 kV grade, 3 ½ Core X 150 mm ² , XLPE insulated, galvanised single steel strip armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	500	m	1000.00	500000
13.6	Supply of 1.1 kV grade, 3 ½ Core X 240 mm ² , XLPE insulated, galvanised single steel strip armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	500	m	1700.00	850000
13.7	Supply of 1.1 kV grade, 4 Core X 6 mm ² , XLPE insulated, galvanised single steel wire armoured, aluminium stranded conductor power cable (FRLS) [as per IS 7098 Part-I 1988 (with latest amendments)], as per 'Technical Specification & Scope of Work'	2,000	m	170.00	340000
14	SECTION: N [Electrical Work for Street Light]				

14.1	Supply of aesthetically designed decorative hot dipped galvanised mild steel step pole (4 m, with grey powder finish), having opening window (Plasma cut & duly chamfered) of 300 mm X 110 mm (approx.) for terminal connections & mounting accessories and compatible with post top light fittings. Window cover is fitted with allen screws to the pole. (Similar to Item Description: 4MPole, Havells)	50	no.	11500.00	575000
14.2	Erection of Minipole of height 3.25 m to 5.0 m in Cement Concrete Foundation [1:3:6; 0.46 m X 0.46 m X 0.9 m depth approx.] with hard jhama metal / stone chips, including muffing of 0.3 m X 0.3 m X 0.3 m, painting the pole with 2 coats of Aluminium paint over one coat of red oxide.	40	no.	650.00	26000
14.3	Supplying and fixing of M.S. sole plate (450 mm X 450 mm X 6 mm) at the bottom of each pole.	40	no.	750.00	30000
14.4	Distribution wiring for street light / post top light (without control switch) on pole (along with earth wire) [average run 3 m], with 'FR' PVC insulated & sheathed, single core, 1.1 kV grade, copper wire (ISI marked), in suitable size (minimum 15 mm) G.I. Pipe [ISI Marked, Medium], to light fitting [including fixing of outdoor type dispersive light fitting, supply & fixing of G.I. Pipe bracket (30.48 cm approx.), 25 mm X 6 mm galvanized MS flat clamps, bolts, nuts, etc., duly painted], including necessary connections [by providing required length of 'FR' 3 C X 0.5 mm ² PVC insulated, PVC sheathed, copper conductor cable, conforming to IS: 694, with latest amendment (if any)] & making earthing attachment.	40	point	650.00	26000
14.5	Providing & fixing weather proof Cable Junction Boxes with cover [IP 66 (with knockouts for cable entry); approx. size : 150 mm X 200 mm X 90 mm] complete with Bakelite terminal strip [rating: 16 A, 500 V] . (Similar to Cat No. KF 1616 B, Hensel)	400	no.	650.00	260000
14.6	Excavation of soil for installation of Earth Electrode and filling & ramming.				
14.6.1	For Soft Soil	150	m3	250.00	37500
14.7	Earthing with Earth Electrode [made of 3 m long Medium Galvanised Mild Steel Tubes (as per IS:1239) of nominal bore 50 mm]. 260 mm long G.I. Strip of size 50 mm X 6 mm (with 4 nos. 10 mm dia. tap hole, bend to shape of pipe) to be welded at 100 mm below the top of tube for connection of Earth Strip. G.I. Funnel / Cap to be provided on top of the tube.				
14.7.1	Using Medium Galvanised Mild Steel Tubes (as per IS:1239).	40	set	1500.00	60000
14.8	Providing earthing, using GI (Hot Dip) wire and making connections with bolts, nuts, washers, etc., as required and mending good damages, if any.				
14.8.1	Using GI (Hot Dip) wire of size 8 SWG.	40	RM	40.00	1600
14.9	Design, supply & delivery of outdoor type Feeder Pillar for street lighting / area lighting / landscape lighting, fabricated from SS316 grade sheet of 2 mm thick, as per "Technical Specification & Scope of Work".	2	set	100000.00	200000
14.10	Erection / installation, testing and commissioning of outdoor type Feeder Pillar for street lighting / area lighting / landscape lighting, as per "Technical Specification & Scope of Work".	2	set	5600.00	11200
14.11	Supplying & erecting Outdoor Type PVC / Thermoplastic TPN Distribution Board [1 Row, 18 Module, with PE + N terminals, Degree of Protection: IP 65] with door & other accessories, on wall (surface / flush mounted). [Similar to Cat No.: KV 9118 M, Hensel]	2	no.	4500.00	9000
15	SECTION: O [Supply and Installation of LT Panel]				
15.1	Design, supply, installation, testing & commissioning of indoor type LT Panel [Type-A (Non-emergency)], fabricated from CRCA sheet (minimum 2 mm thick), as per "Technical Specification & Scope of Work".	1	no.	650000.00	650000
15.2	Design, supply, installation, testing & commissioning of indoor type LT Panel [Type-B (Emergency)], fabricated from CRCA sheet (minimum 2 mm thick), as per "Technical Specification & Scope of Work".	1	no.	850000.00	850000
16	SECTION: P [Miscellaneous Item]				

16.1	Providing (supplying and fixing) following size of perforated Hot Dipped Galvanized Iron Cable Tray & its accessories 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. or supported by GI Angle support (25 mm X 25 mm X 3 mm) from below, as required.				0
16.1.1	150 mm width X 50 mm depth X 1.6 mm thickness	50	RM	700.00	35000
16.1.2	200 mm width X 50 mm depth X 1.6 mm thickness	60	RM	1150.00	69000
16.1.3	300 mm width X 50 mm depth X 1.6 mm thickness	70	RM	1450.00	101500
16.2	Supplying & laying of heavy, galvanized, mild steel tubes (including sockets) as per IS 1239 [with latest amendment].				
16.2.1	Supply				
16.2.1.1	150 mm (nominal bore)	100	m	1800.00	180000
16.2.1.2	100 mm (nominal bore)	50	m	1100.00	55000
16.2.1.3	50 mm (nominal bore)	100	m	520.00	52000
16.2.2	Lying, including joining of tubes by sockets, if required.				
16.2.2.1	Over the culvert, canal, etc. (fixing on existing structural supports) or through walls, roads, etc. (through open excavation & refilling) or with vertical structure (fixing using clamps / supports). The scope includes supply of materials, as required (excepting main support structure for crossing the canal)], as per "Technical Specification".				
i)	upto 50 mm (nominal bore)	75	RM	100.00	7500
ii)	above 50 mm (nominal bore) & upto 150 mm (nominal bore)	75	RM	150.00	11250
16.2.2.2	Through boring process.				
i)	upto 50 mm (nominal bore)	25	RM	650.00	16250
ii)	above 50 mm (nominal bore) & upto 150 mm (nominal bore)	75	RM	900.00	67500
16.3	Supplying and erecting plywood 12 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners supports, nuts bolts etc. complete.	200	m2	1300.00	260000
16.4	Dismantling of existing light / fan / bell / socket out let point on separate board / wiring and circuit with insulated wire in casing / conduit / batten, complete with fitting and accessories.	200	point	50.00	10000
16.5	Dismantling of existing socket outlet point on same board, in any system of wiring.	200	point	60.00	12000
16.6	Dismantling of the existing armoured / unarmoured cable or 2/3/4 wires of sub-main, main, in any system of wiring, including recoiling.	600	RM	40.00	24000
16.7	Dismantling of existing underground cable safely with its accessories and	600	RM	48.00	28800
16.8	Dismantling of D.F. board, D.P. switch, T.P. & T.P.N. switch or D.B. of any	100	no.	300.00	30000
16.9	Dismantling the existing ceiling / exhaust / cabin fan with complete accessories and making the site clear.	50	no.	50.00	2500
16.10	Dismantling of existing S.V / M.H / L.E.D lamp fittings, with extension bracket & clamp, from pole or wall, and making the site clear.	100	no.	50.00	5000
Sub-total (Part – I) =					16649055

PART – II : AIR CONDITIONING WORK.

1	Supply, installation, testing & commissioning of Variable Refrigerant Flow (VRF) type Air-conditioning System , suitable for cooling only, by inverter driven capacity control Compressor [compatible with eco-friendly refrigerant (R-410A)], complete with indoor & outdoor units (with individual controller, fittings, etc.), as per the 'Technical Specification & Scope of Work'.				
1.1	VRF Outdoor Units (including full charging of R-410A refrigerant gas):				
i)	20 HP ODU	4	set	420000.00	1680000
iii)	30 HP ODU	1	set	650000.00	650000
1.2	VRF Indoor Units, with Cordless Remote :				
a)	Hi-wall type Indoor Unit				
i)	0.8 TR Hi-wall type unit	1	set	24900.00	24900
ii)	1.6 TR Hi-wall type unit	1	set	27000.00	27000
iii)	2.0 TR Hi-wall type unit	2	set	32600.00	65200
iv)	2.3 TR Hi-wall type unit	1	set	31500.00	31500
v)	2.6 TR Hi-wall type unit	4	set	36480.00	145920
b)	Mid Static Pressure Duct type Indoor Unit				
i)	1.3 TR Mid Static Pressure Duct type Unit	1	set	28225.00	28225
ii)	1.6 TR Mid Static Pressure Duct type Unit	5	set	38360.00	191800
iii)	2.0 TR Mid Static Pressure Duct type Unit	4	set	30350.00	121400
iv)	2.6 TR Mid Static Pressure Duct type Unit	1	set	36250.00	36250

c)	High Static Pressure Duct type Indoor Unit				
i)	4.0 TR High Static Pressure Duct type Unit	1	set	51785.00	51785
ii)	8.0 TR High Static Pressure Duct type Unit	4	set	98500.00	394000
d)	4 Way Cassette type Indoor Unit				
i)	1.6 TR 4 Way Cassette type Unit	4	set	39250.00	157000
ii)	3.2 TR 4 Way Cassette type Unit	6	set	45530.00	273180
iii)	4.0 TR 4 Way Cassette type Unit	1	set	46860.00	46860
1.3	Accessories :				
i)	Supply & installation of "Y" Joints	33	set	4000.00	132000
ii)	Supply & fixing of Central Remote Controller to control all the Indoor units, as per "Technical Specification & Scope of Work.	1	set	68764.00	68764
2	Supply and installation refrigerant copper piping (duly insulated with closed cell elastomeric nitrile insulation), with proper support / hangers from ceiling / wall , as required, for VRF type Air Conditioning System and as per the 'Technical Specification & Scope of Work'.				
i)	Φ 41.3 mm	20	RM	3250.00	65000
ii)	Φ 38.1 mm	1	RM	3160.00	3160
iii)	Φ 31.8 mm	64	RM	2265.00	144960
iv)	Φ 28.6 mm	123	RM	2300.00	282900
v)	Φ 22.2 mm	69	RM	2070.00	142830
vi)	Φ 19.1 mm	79	RM	1880.00	148520
vii)	Φ 15.9 mm	214	RM	1300.00	278200
viii)	Φ 12.7 mm	85	RM	1200.00	102000
ix)	Φ 9.53 mm	153	RM	1100.00	168300
x)	Φ 6.35 mm	6	RM	1050.00	6300
3	Supply, installation, testing & commissioning of control cum transmission wiring of 3C X 1.5 sq. mm copper in suitable PVC conduits for interconnection between IDUs & ODUs and IDUs and Remotes.	550	RM	200.00	110000
4	Rigid PVC Drain pipe with fittings, proper supports at 600 mm interval and duly insulated with 6 mm thick closed cell nitrile rubber.				
i)	32 mm dia.	210	RM	338.00	70980
ii)	25 mm dia.	40	RM	305.00	12200
5	Topping-up of refrigerant gas (R-410A) for entire system, pressure testing with nitrogen, vacuumisation and testing & commissioning of complete VRV system, including all indoor units, outdoor units, electricals, remotes, etc.	60	kg	1450.00	87000
6	Supply & Installation of fabricated MS structure (duly galvanised) for installation of Outdoor Units of VRF system.	400	kg	148.00	59200
7	Lifting, shifting & handling of Outdoor Units & Indoor Units and minor civil works.	1	Lump sum	85000.00	85000
8	Providing Air Ducting system (rectangular ducting), made out of Galvanised Sheet Steel (GSS) of following thickness, including necessary supports / hangers, elbows, splitter, adjustable dampers, vanes, etc., complete with neoprene rubber gasket.				
i)	Made of 24 Gauge GI sheet	185	m2	1150.00	212750
ii)	Made of 22 Gauge GI sheet	35	m2	1300.00	45500
9	Providing thermal insulation on ducting with Nitrile Rubber (9 mm thick), including all materials for fixing, as per "Technical Specification & Scope of Work".	190	m2	600.00	114000
10	Providing acoustic insulation for Air Ducting system, with fibreglass rigid board (12 mm thick) & tissue paper, finished with perforated aluminium sheet, including all materials for fixing, as per "Technical Specification & Scope of Work".	35	m2	540.00	18900
11	Supply & Fixing of powder coated aluminium construction Grilles, with volume Control Dampers (VCD), for Supply Air	12	m2	10200.00	122400
12	Supply & fixing of powder coated. aluminium construction Grilles (without VCD), for Return Air.	14	m2	9350.00	130900
13	Supply & fixing of flexible canvas connection in mouth of duct unit	19	no.	2200.00	41800
Sub-total (Part – II)=					6578584
Part – III : Data & Voice System					
1	Digital EPABX system, with 1 Trunk, 2 Digital, 60 Analog Extension and 1 Digital Operator Console and as per the 'Technical Specification & Scope of Work'. [similar to NEOS 6S, SYNTEL NEOS]	1	no.	230000.00	230000
2	Providing 100 pair Main Distribution Frame (MDF), including LSA IDC module and subscriber terminal block.	1	no.	6500.00	6500

3	Providing Corded non-CLI Telephone Hand Set, including all accessories. [similar to C11, BEETEL]	20	no.	1950.00	39000
4	Providing Key Telephone System (KTS) with 12 Keys Digital Phone, including cord & all accessories. [similar to KTS24, SYNTEL]	1	no.	20500.00	20500
5	Providing 6U Wall Mount Network Service Rack [600 mm (Width) X 550 mm (Depth)], with all accessories.	1	no.	16272.00	16272
6	Supply of moulded Patch Cord [Cat 6 UTP] of length 1m.	100	no.	273.00	27300
7	Supply of moulded Patch Cord [Cat 6 UTP] of length 2m.	100	no.	300.00	30000
8	Supply of Cat 6 Keystone UTP Jack with Dust Cover.	44	no.	148.00	6512
9	Providing LAN works accessories : 15U Wall Mount Network Service Rack [19" X 500 mm (Depth)] for LAN application, with Front Tinted Glass Door (having Locking arrangement) and following accessories: Power Distribution Unit (PDU) with 6 nos. 5A socket - 01 set. Fan [90 cfm, 230V] - 01 no. Mounting Hardware (Set of 10) - 1 set. 19" 1U Rack Mount Cable Manager - 1 no.	1	set	21000.00	21000
10	Providing Stackable Ethernet Routing Switch [24 Port 10/100/1000 Mbps Layer 2 stackable Switch, with 4 Gigabit Combo Ports]. [Similar to DG-GS4528S, DIGISOL]	2	no.	180000.00	360000
11	Providing LC type 1000Base-LX Small form-factor (SFP) pluggable Transceiver. [Similar to DG-SA1030, DIGISOL]	15	no.	12500.00	187500
12	Supplying with fitting & fixing of RJ-11 Telephone jack, including making necessary connections. [Similar to Model: ARTEOR (LEGRAND) / ZENSELO (SCHNEIDER) / MURANO (CRABTREE)]	25	each	350.00	8750
13	Supplying with fitting & fixing of CAT 6 RJ-45 Computer jack, in one module, including making necessary connections. [Similar to Model: ARTEOR (LEGRAND) / ZENSELO (SCHNEIDER) / MURANO (CRABTREE)]	44	each	500.00	22000
Sub-total (Part – III)=					975334

Part – IV: CCTV System.

1	Supply, installation, testing & commissioning of IP IR Rugged Indoor / Outdoor Mini Dome Camera [1.3 Megapixel or more], as per the 'Technical Specification & Scope of Work'.	18	no.	14500.00	261000
2	Supply, installation, testing & commissioning of IP IR Outdoor Bullet Camera [1.3 Megapixel or more], as per the 'Technical Specification & Scope of Work'.	4	no.	18500.00	74000
3	Providing network recording solution for small-scale surveillance , using 24 Channel Network Video Recorder (NVR) [having 4 SATA HDD Slot & ATX Power supply], compatibility with 1.3 Megapixel IP cameras and suitable for live view, record, playback, back up & remotely control the system simultaneously, as per the 'Technical Specification & Scope of Work'.	1	no.	95000.00	95000
4	Supply, installation, testing & commissioning of 4 TB SATA Surveillance Hard Disk, etc., as required.	2	no.	22000.00	44000
5	Supply and fixing of 8 Port 10/100 POE Web Smart Switch, including connection, testing, etc, as required.	2	no.	21000.00	42000
6	Supply and fixing of 24 Port 10/100 POE Web Smart Switch, including connection, testing, etc., as required.	1	no.	60000.00	60000
7	Supply, installation, testing & commissioning of 42" indoor Professional colour digital LED display, for 24X7 display, having D-Sub, DVI and HDMI connectivity, including fixing on wall and providing requisite HDMI & power cable of required length.	2	no.	62000.00	124000
8	Supply and Fixing of 24U Rack with Front Glass Door for keeping multiple equipment modules with 3 nos. shelf, spike, computer, fan, etc. ,complete as required.	1	no.	42000.00	42000

9	Supply, installation, testing & commissioning of Mounting 4U Rack, having well ventilated front glass door (with lockable arrangement) and accessories like cable manager / cable tray, power strip & Fan.	1	no.	9500.00	9500
Sub-total (Part – IV)=					751500
Part – V: FIRE FIGHTING SYSTEM (Fire Detection System & Fire Protection System)					
1	Supplying & laying of 1.1 kV grade 2 Core, 1.5 mm2 fire alarm armoured cable, with annealed copper conductor, having XLPE insulation, single galvanised steel wire armouring & FR-LHS PVC outer sheath, complete as required.	950	m	140.00	133000
2	Supplying, installation, testing & commissioning of intelligent analogue addressable photo thermal detector, complete with mounting base, other accessories, as required.	26	no.	3000.00	78000
3	Supplying, installation, testing & commissioning of intelligent addressable thermal detector, with rate of rise cum fixed temperature thermistor, complete with mounting base, other accessories, as required.	22	no.	3250.00	71500
4	Supplying, installation, testing & commissioning of addressable manual call point, complete with all accessories, as required.	8	no.	4000.00	32000
5	Providing EXIT point directional sound speaker with voice and integral audio amplifier, with selectable sound pulse patterns.	12	no.	5600.00	67200
6	Supplying, installation, testing and commissioning of microprocessor based intelligent addressable main fire alarm panel, central processing unit , having 48 hrs back-up with 24 volt sealed maintenance free batteries (including automatic charger), facility to connect printer to printout log , facility to have seamless integration with analogue / digital voice evacuation system, complete with all accessories, as per the 'Technical Specification & Scope of Work'.	1	set	180000.00	180000
7	Providing all types of Signages, as per requirement.	1	Lump Sum	5000.00	5000
8	Supplying, installation, testing and commissioning of 9 Litre Aqueous Film Forming Foam (AFF) Fire Extinguisher .	6	no.	4500.00	27000
9	Supplying, installation, testing and commissioning of 4.5 kg CO2 Fire Extinguisher.	6	no.	10000.00	60000
10	Supplying, installation, testing and commissioning of 4 kg ABC Fire Extinguisher.	12	no.	4850.00	58200
11	Supplying, installation, testing & commissioning of 6 zone, voice alarm controller, with USB, MP3 player (including 6 zone button paging station), having seamless integration facility with main fire alarm panel for voice evacuation, including all accessories, as required. (For individual floor call as well as all call)	1	no.	65000.00	65000
12	Supplying & laying of 1.1 kV grade 2 Core, 1.5 mm2 fire survival armoured cable, with annealed copper conductor, having glass mica fire barrier tape covered by an extruded layer of Cross Linkable Ethylene Propylene Rubber (EPR) insulation and LSZH inner bedding, single galvanised steel wire armouring & LSZH outer sheath, complete as required.	280	m	160.00	44800
13	Providing speaker cable [Four pair, 2 Core, 1.5 mm2]	350	m	160.00	56000

14	Supplying, installation, testing & commissioning of main control and indicating panel made out of 16 SWG MS sheet, duly painted (powder coated), having louvers for ventilation, locking arrangement, audio & visual indication for fire alarm, public address system, monitoring system, including connections, interconnections, etc., complete as required and to accommodate the following items : i) 6 zone panel for fire alarm system. ii) 100 watt amplifier racks suitable for operation on 230V AC / 24V DC supply, complete with all Talk back master station with LED Press to Talk (PTT) Push Button and suitable for 20 nos. talk back unit -1 set. iii) Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual Amplifier change over switch for inter changing amplifier- 1 no. iv) Monitor panel for loudspeaker complete output selector ON / OFF switch, fuse visual indications, etc., complete, as required- 1 no. v) Gooseneck microphone with stand and ON/OFF switch -1 no. vi) Mains ON / OFF switch, fuse indication lamps, DC & AC voltmeters & ammeters terminal blocks, etc., complete as required -1 set. vii) Battery charger (trickle – cum- boost), to take complete load of fire alarm & PA system, complete with all accessories, including providing & fixing of 2 nos. sealed maintenance free batteries [12 V, 30 Ah each] -1 set.	1	set	165000.00	165000
15	Supplying, installation, testing & commissioning of fire fighter phone jack, complete as required.	5	no.	8500.00	42500
16	Supplying, installation, testing & commissioning of fault isolator, complete with base, as required.	4	no.	3650.00	14600
17	Fabrication, supply, installation, testing & commissioning of Electrical Control Panel of cubical construction, floor mounted type, fabricated out of 2 mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust & vermin proof, duly painted (powder coated) after 7 tank treatment process, cable alley, including inter- connection with suitable size copper conductor cable / solid copper strip, having switchgears and accessories, mountings & internal wiring, earth terminals, numbering, etc., complete in all respect, suitable for 2 nos. Buster Pump for down comer system [with both auto and manual mode].	1	set	120000.00	120000
18	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589 / IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall / ceiling with suitable clamp / support frame and painting with two or more coats of synthetic enamel paint of required shade, complete as required, of following sizes:				
18.1	150 NB	77	m	3000.00	231000
18.2	100 NB	12	m	2450.00	29400
18.3	80 NB	12	m	1850.00	22200
18.4	50 NB	12	m	1250.00	15000
19	Supplying, fixing, testing & commissioning of double flanged Sluice Valve (conforming to IS780) of rating PN 1.6 with non rising spindle, bronze / gunmetal seat, duly ISI marked, complete with nuts, bolts, washers, gaskets, etc., as required, of following sizes:				
19.1	150 NB	2	set	18500.00	37000
19.2	100 NB	2	set	10500.00	21000
20	Providing, installation, testing and commissioning of Non-return Valve (confirming to IS:5312) , complete with rubber washers, etc. , as required, of following sizes:				
20.1	100 NB	4	set	10500.00	42000
20.2	80 NB	2	set	9000.00	18000
21	Supplying, fixing, testing and commissioning of Butterfly Valve (conforming to IS 13095) of PN 1.6 rating, with bronze / gunmetal seat, duly ISI marked, complete with nuts, bolts, washers, gaskets, as required, of following sizes:				
21.1	80 NB	2	set	5000.00	10000
22	Supply, erection, testing and commissioning of H.P. or L.P. ball valve, with polythene floats [15 mm dia]				
22.1	15 NB	8	set	2120.00	16960

23	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves, complete as required.	4	set	2100.00	8400
24	Providing & fixing of pressure switch in M.S. pipe line, including connection, etc., as required.	4	no.	3400.00	13600
25	Supplying, installation, testing and commissioning of electric driven Terrace Pump [450 lpm at 35 m Head], suitable for automatic operation, complete in all respects, as required, as per the 'Technical Specification & Scope of Work'.	2	set	95650.00	191300
26	Supply, erection, testing and commissioning of circuit wiring / sub-main wiring, alongwith earth wire, with the following sizes of FRLS PVC insulated copper conductor, single core cable, in surface / recessed steel conduit. 4 X 16 mm ² + 2 X 6 mm ² earth wire.	60	RM	1200.00	72000
27	Supply, erection and fabricating G.I Plate.	40	kg	135.00	5400
28	Supply, erection, testing and commissioning of oblique type single-headed Hydrant Valve, with Cap & Chain, with instantaneous Stainless Steel coupling (of 63 mm dia) & cast iron wheel [ISI marked, conforming to IS 5290] (Type – A).	8	no.	8300.00	66400
29	Supplying and fixing 63 mm dia, 15 m long Reinforced Rubber Lined (RRL) Hose Pipe, with 63 mm dia male & female couplings [Stainless Steel (Grade 304)], duly bound with GI wire, rivets, etc., as required, conforming to IS 636 (type-A).	12	no.	6300.00	75600
30	Supplying & fixing 63 mm dia gun metal short branch pipe, with 20 mm nominal internal diameter size nozzle, conforming to IS 903, suitable for instantaneous connection to interconnect hose pipe coupling [Stainless Steel (Grade 304)], as required.	8	no.	4200.00	33600
31	Supply, erection, testing and commissioning of Fire Hydrant MS Hose Box, with front glass external type.	8	no.	6500.00	52000
32	Supplying and fixing of First-aid Hose Reel [30 m length], with MS construction, duly spray painted in post office red, conforming to IS 884, complete with the following, as required: i) 20 mm nominal internal dia water hose, thermoplastic (Textile reinforced) type -2, as per IS: 12585. ii) 20 mm nominal internal dia gun metal globe valve & nozzle. iii) Drum and brackets for fixing the equipment on wall. iv) Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe & socket.	6	no.	9500.00	57000
33	Supplying and fixing of fire brigade connection of cast iron body, with gun metal male instantaneous inlet couplings, complete with cap & chain, as required, for 3 way - 150 mm dia M.S. Pipe connection, conforming to IS 904.	2	no.	10500.00	21000
34	Supplying, fixing, testing and commissioning of Butterfly Valve (conforming to IS 13095) of PN 1.6 rating, with bronze / gunmetal seat, duly ISI marked, complete with nuts, bolts, washers, gaskets, as required, of following sizes:				
34.1	150 NB	2	set	10500.00	21000
Sub-total (Part – V) =					2279660

Part – VI : 8 Passenger Lift (Elevator)

1	Design, Manufacture, Supply, Installation, Testing & Commissioning of G+2, 8 - passenger Lift (Elevator), with VVVF drive, PM gearless motor, control panel and all accessories, having provision of Automatic Rescue Device, as per the 'Technical Specification & Scope of Work'.	1	set	1980000.00	1980000
2	Comprehensive Maintenance of 1 no. G+2, 8 - passenger Lift (Elevator), for a period of 5 years, after expiry of 12 months' Guarantee period, as per the 'Scope of Work'.				
2.1	1st year CMC	1	LS	80000.00	80000
2.2	2nd year CMC	1	LS	88000.00	88000
2.3	3rd year CMC	1	LS	100000.00	100000
2.4	4th year CMC	1	LS	110000.00	110000
2.5	5th year CMC	1	LS	120000.00	120000
Sub-total (Part – VI) =					2478000

Part – VII : Preparatory Electrical Works

	1	Providing PVC pipe of following diameters [thickness not less than 2 mm] complete with fittings, as necessary, by cutting channel of suitable size on masonry wall / floor and fixing the pipe (approx. 18 mm below the top surface of the wall / floor) by means of iron hooks / binding wire, including mending good damages to building works.				
1.1		13 mm dia	390	RM	40.00	15600
1.2		19 mm dia	225	RM	50.00	11250
	2	Providing 1100 V grade, PVC insulated, FR PVC round sheathed, Copper conductor (flexible) cable [conforming to IS: 694, with latest amendment (if any)] on existing Cable Tray / False Ceiling / masonry wall / other structure and fixing by PVC saddling / PVC Cable Tie (approx. 300 mm interval), including making necessary connections, as required.				
2.1		3 C X 0.5 mm2	120	m	85.00	10200
2.2		3 C X 1.5 mm2	100	m	170.00	17000
2.3		3 C X 2.5 mm2	5	m	265.00	1325
	3	Providing sheet steel, duly painted, MCB Distribution Board on wall / iron structure & mending good the damages to original finish, including provision for earthing attachment. (Without MCB / RCCB / Isolator).				
3.1		2 way	35	no.	550.00	19250
3.2		4 way	2	no.	750.00	1500
	4	Providing (after cutting the brick wall or fixing on wall surface) outdoor type PVC Junction Box [IP 65 with knockouts for cable entry and complete with Earth terminal & arrangement for fixing MCB inside the box] and mending good damages to building works.				
4.1		2 module (suitable for 01 no. double pole MCB)	1	no.	450.00	450
4.2		4 module (suitable for 01 no. four pole MCB)	6	no.	650.00	3900
	5	Providing 240 V / 415 V, 50 Hz, MCB (C characteristics, 10 kA Breaking capacity) on din rail of existing DBs and necessary connection.				
5.1		Double Pole, 6 A - 32 A	35	no.	950.00	33250
5.2		Four Pole, 40 A - 63 A	5	no.	3100.00	15500
	6	Providing 240 V / 415 V, 50 Hz, MCB type Isolator / Disconnecter on din rail of existing DBs and necessary connection.				
6.1		Four Pole, 100 A	2	no.	12000.00	24000
	7	Supply of 1.1 kV grade, 4 C X 16 mm2 , XLPE insulated, Galvanised steel armoured, stranded copper conductor, power cable (FRLS), conforming to IS: 7098 (Part – I), with latest amendment (if any), and as per 'Technical Specification & Scope of Work'.	65	m	815.00	52975
	8	Connecting the leads of following PVC / XLPE armoured / unarmoured cables (1.1 kV grade) with MCCBs / MCBs / SDFU/ connectors [after finishing the ends by crimping method, including supplying & fixing solderless sockets, tapes, anticorrosive paste & jointing materials], at Distribution Board / Junction Box / SDFU:				
8.1		4 C, above 6 mm2& upto 16 mm2.	15	set	650.00	9750
	9	Providing double compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of following XLPE insulated (1.1 kV grade), armoured cables as given below :				
9.1		4 C, above 6 mm2& upto 16 mm2.	15	set	800.00	12000
Sub-total (Part – VII) =						227950
[PART-I + PART-II+ PART-III + PART-IV+ PART-V+ PART-VI+ PART-VII]						29940083

TECHNICAL SPECIFICATION & SCOPE OF WORK

(For Electrical Works)

Electrical works related to renovation of HDC Guest House at Haldia Township.

A. Scope of Work:

1.1 Scope of Work includes-

- 1.1.1 Electrical works in connection with the upgradation (including internal wiring & electrical appliances) of electrical installations of SMPK Guest House in the Residential Zone of Haldia Dock Complex, SMP, Kolkata.
- 1.1.2 Supply, delivery, installation, testing and commissioning (including lifting, shifting & handling) of Variable Refrigerant Flow (VRF) type Air Conditioning System, suitable for cooling only, by inverter driven capacity control Compressor, including providing refrigerant copper piping, PVC drain piping, electrical power cabling, nitrile insulation, etc., as required.
- 1.1.3 Supply, delivery, installation, testing and commissioning (including lifting, shifting & handling) of Data & Voice System.
- 1.1.4 Supply, delivery, installation, testing and commissioning (including lifting, shifting & handling) of Closed-circuit Television (CCTV) System.
- 1.1.5 Supply, delivery, installation, testing and commissioning of Fire Detection & Fire Protection System.
- 1.1.6 Design, Manufacture, Supply, Installation, Testing & Commissioning of G+2 , 8 - passenger Lift (Elevator) [capacity 544 kg approx.], with VVVF drive, PM gearless motor, control panel and all accessories, having provision of Automatic Rescue Device.

1.2 Scope of Work includes following related works:

- 1.2.1 In connection with upgradation of electrical installations, dismantling of existing damaged electrical wirings & installations and depositing the same at Township Electrical Maintenance Office, Haldia with proper acknowledgment, is also under the scope of the Contractor. All necessary arrangement, including transportation for the above, is under the scope of the Contractor.
- 1.2.2 In connection with installation & commissioning of the VRF type Air Conditioning System, Data & Voice System, CCTV System, Fire Detection & Fire Protection System and passenger Lift, all types of preparatory electrical works, including power supply arrangement, are under the scope of the Contractor.
- 1.2.3 In connection with the electrical works, all materials, equipment, accessories, etc. shall have to be delivered at site, i.e. at SMPK Guest House. Lifting, shifting & handling of the same are under the scope of the Contractor. The aforesaid materials, equipment, accessories, etc. will be under the custody of the Contractor, till complete installation, testing, commissioning & handing over of the same.

- 1.2.4 The Contractor must make their own arrangements for delivery of all materials, as well as for careful and proper unloading at site. The responsibility for preventing damage / deterioration to the materials during transit, delivery, unloading at the designated point shall rest with the Contractor. All transit risk will be to Contractor's account.
- 1.2.5 In connection with installation & commissioning of the VRF type Air Conditioning System, Data & Voice System, CCTV System, Fire Detection & Fire Protection System and passenger Lift, necessary hardware materials shall have to be provided by the Contractor.
- 1.2.6 In connection with the aforesaid work, necessary masonry work, necessary false ceiling work, necessary mending good work, dressing of pipe & cabling work, etc., including supply of necessary hardware materials, shall have to be done by the Contractor without any extra cost.
- 1.2.7 In connection with aforesaid work transportation & handling of all materials, welding, Nitrogen Flashing, refrigerant charging, etc. should be done by the Contractor at their own risk, cost and arrangement.
- 1.2.8 Free service shall be provided against VRF type Air Conditioning System, Data & Voice System, CCTV System, Fire Detection & Fire Protection System and passenger Lift, during the Guarantee Period of 12 months from the date of complete execution of the work (commissioning & handing over). Even in case of no complaint, at least 03 (three) free services are required to be provided during the aforesaid Guarantee Period (12 months) for routine servicing of the VRF type Air Conditioning System. Similarly, at least 01 free service / checking per month is are required to be provided during the aforesaid Guarantee Period (12 months) for routine servicing of the passenger Lift.
- 1.3 Whenever required under statute, approval / completion certificate / license from the appropriate authority (local /State Government / Central Government / other statutory bodies, as the case may be) for installation, commissioning & operation of the Lift, shall be obtained and made available to HDC, SMP, Kolkata, before handing over the installation (electrical passenger lift), without any extra cost. All necessary fees / charges, payable to any authority, is to be borne by the Contractor.

B. General Requirements :

- 1.4 In connection with the instant work, the site & working areas need to be kept free from surplus materials, rubbish, offensive materials, etc. and the same are to be disposed off by the Contractor.
- 1.5 If any damage caused, to existing installation, during dismantling by the Contractor, the same shall have to be made good / repaired by the Contractor at their cost & arrangement.
- 1.6 The electrical works will be executed to comply with the General Specifications for Electrical works and conforming to the Indian Electricity Act & rules, BIS and direction of the 'Engineer'.
- 1.7 The electrical work shall be carried out by a Contractor, having **valid Electrical Contractor's Licence** issued by the competent authority [under relevant rules of the Central Electricity Authority (Measures relating to Safety and Electric Supply)

Regulations, 2010, as amended upto date], under the direct supervision of a person having a valid **Supervisor's Certificate of Competency** (SCC), issued by the appropriate statutory authority, against the relevant parts, for carrying out such type of job [i.e. Wiring for systems not-exceeding 650 V, Alternating Current (A.C.) Apparatus upto 650 V and Underground cables upto 1100 V]

- 1.8 The skilled workmen engaged by the Contractor for the electrical work must possess a valid Workman Permit (W.P.), issued or recognised by the competent authority [under relevant rules of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, as amended upto date], against the relevant parts, for carrying out such work.
- 1.9 The skilled workmen engaged by the Contractor for cable laying related electrical work [cable laying and jointing] must possess a valid Workman Permit (W.P.), issued or recognised by the competent authority [under relevant rules of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, as amended upto date], against the relevant parts, for carrying out such work.
- 1.10 The Contractor shall be liable to submit the list of aforesaid Licence / Workman Permit holder, along with the attested copies of the of the Licence / Workman Permit, during execution.
- 1.11 The entire job should be executed in accordance with the requirements of following Acts and rules, including latest amendments:
- a) Indian Electricity Rules – 1956
 - b) Electricity Laws (Amendment) Ordinance, 1997
 - c) Central Electricity Authority Rules, 1977
 - d) Central Electricity Authority Regulations, 1979
 - e) Indian Electricity Act, 2003
 - f) Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010
- 1.12 The supply, installation and commissioning of all items required for this work should be complied with the above Acts & Rules and relevant Code of Practice of the **Bureau of Indian Standard**, including **National Electrical Code (NEC)** and **National Building Code (NBC)** of India, if not specified otherwise.
- 1.13 The Contractor shall engage qualified / experienced / skilled personnel to carry out the works in all respects at their own cost. The Contractor will engage suitable qualified / experienced & licensed engineering supervisor for the electrical work and suitable skilled personnel, with required permit, for doing the erection work.
- 1.14 All materials required for the entire work and apparatus used therein, shall conform to relevant specifications of the Bureau of Indian Standard (BIS) or International Electrotechnical Commission (IEC), as applicable, if not specified otherwise in this Bidding Document.

All materials should be inspected before installation. Only accepted materials will be allowed for installation. Necessary consent should be obtained from the 'Engineer' or his representative, before using any material / equipment/ apparatus.

Nothing in this specification shall be construed to relieve the Contractor of their responsibility for providing the equipment, with all accessories, in accordance with applicable statutory regulations and safety codes in force, from the safety angle.

- 1.15 The Contractor holds responsibility for executing the entire job as per relevant specifications. If any item is left out within the schedule of work but if it is considered essential for the completion of the job, the Contractor shall have to carry out the items as extra / substituted item.

- 1.16 The Contractor should use calibrated measuring & testing instruments [having Valid Calibration Certificate] and should also ensure revalidation of such calibration as and when required. In this regard, initially the Contractor shall have to submit a list of measuring and testing instruments (mentioning the period of validity of Calibration Certificates) to be used. The photocopies of the Calibration Certificates (including the revalidations) of the said measuring and testing instruments, shall have to be submitted to the 'Engineer'.

Calibration Certificate of instruments / equipment, used for testing purpose, should be issued by an NABL accredited Laboratory. For testing equipment where NABL accreditation is not available, calibration certificate from educational institutions like IITs, NITs, J.U., C.U., B.H.U. only can be accepted, provided they demonstrate traceability.

In connection with aforesaid work, transportation and handling of all materials, welding, Nitrogen Flashing, refrigerant charging, control wiring, etc. should be done by the Contractor at their own risk, cost and arrangement.

In connection with the aforesaid work, all materials, including air-conditioner units, will be under the custody of the Contractor, till completion of work and commissioning of the same.

- 1.17 The Contractor must make their own arrangements for delivery of all materials, as well as for careful and proper unloading at HDC's site. The responsibility for preventing damage / deterioration to the materials during transit, delivery, unloading at the designated point shall rest with the Contractor. All transit risk will be to Contractor's account.

- 1.18 The Contractor shall arrange all necessary labour, tools, tackles, lifting machineries, scaffolding, temporary lighting, different vehicular transport, equipment (with fuel & operator), etc., required for satisfactory execution of the entire work, at their own risk, cost and expense. Special tools, which would be required during execution of the work, shall also have to be arranged by the Contractor, at their own risk, cost and expense.

- 1.19 The Contractor shall have to make arrangements, at their own risk & cost, for transportation of materials from the point of issue of stores to site of work, if any.

- 1.20 Electricity and water, if required, will be provided on chargeable basis, for the purpose of execution of the work at site.

- 1.21 All practical steps shall be taken to prevent danger to persons employed from the risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris of materials as to render it unsafe.
- 1.22 The Contractor shall provide necessary barriers, warning signals and other safety measures, to avoid accidents. They shall also indemnify HDC, SMP, Kolkata, against claims for compensation arising out of negligence in this respect.
- 1.23 All necessary personnel safety equipment, as per relevant statutory provisions, should be kept available for the use of the persons employed (directly or indirectly on the instant work) on the site and the Contractor should take adequate steps to ensure proper use of safety equipment by those concerned.
- 1.24 The ordinary business and work of HDC, SMP, Kolkata & others, as being carried out on & in the vicinity of the site, shall be continued during installation, testing & commissioning and maintenance. The execution of the work shall be conducted in such a way as to avoid interference with traffic of every kind by land and with any other work in progress in the vicinity.
- 1.25 Inspection / acceptance, in no way shall absolve the Contractor from supplying material as per standards / codes and other obligations under the contract.
- 1.26 Any materials brought for work which is not matching with the relevant specification will be rejected and the rejected materials shall be removed from site on the same day.
- 1.27 A register (Site Work Register with Hindrance Record) is required to be maintained by the Contractor on daily basis with details of works carried out on that particular day, where details regarding engagement of labourers, equipment, receipt of materials and cause of hindrance, if any, shall be recorded jointly [by the representatives of the Engineer & the Contractor].
- Representative(s) of the Contractor shall have to check the register for any instructions of 'Engineer' or his authorized representative and sign the same for compliance with the instructions recorded therein.
- Any instruction issued by the 'Engineer' or his authorized representative, which has been entered in the Site Work Register, shall be deemed to have been legally issued.
- This Site Work Register (s) shall be the property of HDC, SMPK and shall be returned to the representative of the 'Engineer' in good condition, after the completion of the work.
- 1.28 The Contractor shall maintain a Site Order Book at their site office. All orders and instructions issued to them from time to time by the 'Engineer' or his representative will be recorded in the Site Order Book. The authorized representative of the Contractor shall promptly sign each entry as token of having received such orders.
- Any order or instruction issued by the 'Engineer' or his authorized representative, which has been entered in the Site Order Book, shall be deemed to have been legally issued.
- This Site Order Book(s) shall be the property of HDC, SMPK and shall be returned to the representative of the 'Engineer' in good condition, after the completion of the

work. Photocopy of the same may be retained by the Contractor, for their record.

1.29 Relevant aspects of following Rules / Code of Practices should also be followed and complied with:

- a) Indian Factories Act
- b) Dock Workers (Safety, Health & Welfare) Act, 1987
- c) The Workmen's Compensation Act, 1923
- d) The Minimum Wages Act, 1948
- e) The Contract Labour (Regulation & Abolition) Act, 1970
- f) Other Local Regulations.

1.30 If during execution of work any damage takes place in the property of HDC, the same will have to be mended good by the contractor at their risk, cost and arrangement. Otherwise the same will be repaired / replaced by HDC, either departmentally or through outside agency and the cost of repairing / replacement will be **recovered from the Contractor, along with overhead charges @19.25%.**

1.31 No project surplus material will be taken over by HDC, SMP, Kolkata, after completion of the work.

C. Detailed Technical Specification:

1.32 Variable Refrigerant Flow (VRF) type Air-conditioning System:

1.32.1 The Variable Refrigerant Flow (VRF) type Air-conditioning System should be suitable for cooling only, by inverter driven capacity control compressors, complete with indoor & outdoor units with individual controller, with fittings, etc..

1.32.2 All the VRF air conditioners shall be fully factory assembled, wired, internally piped & tested. The outdoor unit shall be pre-charged with first charge of refrigerant. Additional charge shall be added as per refrigerant piping at site.

All the outdoor units shall be suitable for operation with $415\text{ V} \pm 10\%$, $50\text{ Hz} \pm 3\%$, 3 Phase supply.

All the indoor units shall be suitable for operation with $220\text{ V} \pm 10\%$, $50\text{ Hz} \pm 3\%$, 1 Phase supply .

1.32.3 *The cooling coils of indoor units and condenser coils of the outdoor units should be of copper only. The supplier should also ensure copper wound motors used in the assembly (either Indoor or Outdoor unit).*

1.32.4 Specifications of Outdoor Units :

i) The outdoor units shall be integral module with base frame & sturdy feet, weather-proof, galvanized steel plate, primed and powder coated.

The compressor(s) shall be easy access from the front panel. The modules are combined using the connection piping provided.

ii) The outdoor units shall be done with heavy anti-corrosion treatment on steel sheets, fan motors, grills, coil fins, control parts panel covers, screw nuts and basement for surface protection against

corrosive air, acid rain and saline air (e.g. for installations in coastal regions) to extend the overall useful life.

- iii) The main board and other interior electrical parts shall be coated with the moisture-proof varnish. All sheet metal parts, except for the sideboard, must be painted with the zinc coating weight of 180 g / m² or more. The motor shaft should be made of stainless steel.
- iv) The outdoor units should be supplied with full charging of R-410A refrigerant gas.
- v) Outdoors units of the VRV system shall be compact air cooled type.
- vi) The outdoor unit should comprise of Inverter controlled Twin Rotary Compressor / Scroll Compressor. All compressors shall be fitted within the outdoor unit, on anti-vibration mountings.
- vii) The outdoor units shall be capable of changing speed linearly to follow the variation in cooling requirements. Each compressor shall be equipped with multiple protection detections, such as current detection, pressure detection, temperature detection, etc.
- viii) Each module of outdoor unit must have at least 50 % of variable compressor which can work on part load suitable to operate at heat load proportional to indoor requirement.
- ix) Outdoor units should have minimum Energy Efficiency Ratio (EER) of 4.5 at 50 % Load and Indian Seasonal Energy Efficiency Ratio (ISEER) of 4.9.
- x) The outdoor units must be suitable for up to 175 m refrigerant piping between outdoor unit & the farthest indoor units, with a level difference up to 90 m between indoor units & outdoor unit, if the outdoor unit is located above the highest level indoor unit.
- xi) Allowable level difference between various indoor units connected to one out door unit shall be up to 15 m.
- xii) The outdoor units shall be suitable to operate within an ambient temperature range of 5°C to 55°C in cooling mode.
- xiii) The entire operation of outdoor units shall be through independent remotes of indoor units. No separate Start / Stop function shall be required.
- xiv) Starter for the Outdoor Unit compressor shall be —Direct on Linell type.

1.32.5 Specifications of Indoor Units :

- i) The units include pre-filter, fan section and direct expansion (DX) coil section. The housing of units shall be light weight powder coated galvanized steel. Units shall have external casing of ABS Plastic for supply and return air.
- ii) Wall Mounted indoor units :
 - (a) Wall mounted units must be compact & stylish design that does not detract from the décor of the room.

- (b) Each indoor unit must have electronic expansion valve operated by microprocessor thermostat based temperature control to deliver cooling as per the heat load of the room.
- (c) The sound pressure level of unit at the highest operating level shall not exceed 46 dB(A).
- (d) Refrigerant control in the indoor unit shall be through Electronic Expansion Valve.

iii) Duct type indoor units :

- (a) These units shall be ceiling suspended with suitable supports to take care of operating weight of the unit, without causing any excessive vibration & noise.
- (b) The cold air supplied by these units will be supplied to the area to be air conditioned, through duct system .
- (c) Each indoor unit must have electronic expansion valve operated by microprocessor thermostat based temperature control to deliver cooling as per the heat load of the room.
- (d) The Sound Pressure level of unit at the highest operating level shall not exceed 38 dB (A), at a vertical distance of 1.5 m below the units with duct connected to the unit.

iv) 4 Way Cassette type indoor units :

- (a) These units shall be installed between the bottom of finished slab & top of false ceiling.
- (b) Unit shall have provision of connecting fresh air without any special chamber & without increasing the total height of the unit (320 mm maximum).
- (c) The unit must have in built drain pump, suitable for vertical lift of 750 mm.
- (d) Unit must be insulated with sound absorbing thermal insulation material, Polyurethane foam. The sound pressure level of unit at the highest operating level shall not exceed 46 dB (A).

1.32.6 Central Remote Controller:

The Central Remote Controller should have capacity to integrated the Indoor Units. The centralized controller shall be capable of controlling & monitoring minimum 64 Indoor Units and shall have option of sequencing & scheduling of units as well. Central Remote Controller should have additional features like Group Control, Individual Control, Fan Speed Control, Mode Lock, Remote controller lock, error check, emergency start / stop, swing function, air filter cleaning reminder, system parameter querying , etc..

1.32.7 Condensate Drain Piping:

All pipes to be used for condensate drain shall be PVC pipe conforming to IS: 4985 - Class I & all joints should be Gluing or solvent cementing as per Manufacturer's recommendation.

1.32.8 Refrigerant Piping:

- (a) All refrigerant pipes and fittings shall be type 'L' hard drawn copper tubes and wrought copper fitting suitable for connection with silver solder. The thickness of wall shall be 0.7 mm to 1.5 mm.
- (b) Copper Refrigerant piping should be insulated with closed cell elastomeric nitrile insulation of 13 mm thick upto 15.9 mm OD pipe and insulation of 19 mm thick should be used for the other sizes of pipes (i.e. OD above 15.9 mm).
- (c) All joints in copper piping shall be swaged joints using low temperature brazing and / or silver solder. Before jointing any copper pipe or fittings, its interior shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be continuously kept clean of dirt etc. while construction of the joints. Subsequently, it shall be thoroughly blown out using nitrogen.
- (d) After the refrigerant piping installation has been completed the refrigerant piping system shall be pressure tested using, Freon mixed with nitrogen at a pressure of 20 kg per sq. cm. (High side) and 10 kg per sq. cm (Low side). Pressure shall be maintained on the system for 24 hours.
- (e) The system shall then be evacuated to a minimum vacuum of 70 cm of mercury and held for 24 hours, during which time change in vacuum shall not exceed 12 cm of mercury.
- (f) All refrigerant piping shall be installed strictly as per the instructions and recommendations of air conditioning equipment Manufacturers.

1.32.9 Ducts:

- (a) Ducts shall be fabricated at site or factory fabricated and shall be generally as per IS: 655 . The interior surfaces of the ducting shall be smooth.
- (b) Acoustic insulation, with 12 mm thick fibreglass rigid board of density 48 kg / m³, finished with perforated aluminium sheet (36 gauge), should be provided inside ducting.
- (c) Thermal insulation with 9 mm thick closed cell Nitrile Rubber (class 1), should be provided on ducting.

1.32.10 Make / brand of Air-conditioner units:

Air-conditioner units of following Make/ Brand will be preferred:

CARRIER / DAIKIN / HITACHI / BLUE STAR / VOLTAS.

However, Air-conditioner units of any other make may be accepted, subject to compliance of all the Technical Specifications / Scope of Work / Requirements, mentioned in the instant Bidding Documents.

All the Bidders shall have to indicate the Make / Brand of the Air-conditioner units, for which they are submitting their bid, in the Techno-commercial bid. They should also upload the Technical Details to establish compliance of all the Technical Specifications / Scope of Work / Requirements, mentioned in the Bidding Documents.

In case any Bidder submits their bid considering other Make / Brand of Air-conditioner units, they shall have to upload scanned copies of following supporting documents [duly signed & stamped by the Bidder], alongwith the Techno-commercial bid:

- a) Request for consideration of other Make / Brand of Air-conditioner units [to be specified by the Bidder], along with the Technical Details to establish compliance of all the Technical Specifications / Scope of Work / Requirements, mentioned in the Bidding Documents.
- b) Certificate from any Central Govt. Organization / Public Sector Units / CPWD / State PWD / State Govt. Organization / Govt. Port, regarding satisfactory working / performance of the Air-conditioner units (*VRF System*) of the specified Make / Brand, during the last seven years [prior to the starting date of submission of instant e-tender].

1.32.11 Entire earthing should be done in accordance with the relevant Indian Standard (IS) issued by Bureau of Indian Standard, Indian Electricity Rules & Act and Code of Practice. Colour of insulation of the copper wire, to be used for earthing purpose, will have to be preferably GREEN.

All necessary work (including supply of aforesaid cable & other required materials), for providing aforesaid earthing connection, is under the scope of the Contractor.

1.33 Data & Voice System:

1.33.1 Digital EPABX system

Digital EPABX system, with 1 Trunk, 2 Digital, 60 Analog Extension and 1 Digital Operator Console, PRI should have following features:

- Voice-Over-IP facility.
- 8 Port Auto Attendant.
- Built-in External Music Source.
- Voice Guided Menu Prompts.
- Built-in Battery Backup.
- Hotel Features with Hotel Management System Software.
- Analog , Digital and IP extensions.
- SIP extension mobility.
- Third party SIP soft clients on PC & Smartphones
- GSM-PRI gateway, SIP-PRI gateway

1.34 CCTV System:

1.34.1 IP IR Rugged Indoor / Outdoor Mini Dome Camera

IP IR Rugged Indoor / Outdoor Mini Dome Camera [1.3 Megapixel or more] should have following features:

- 3MP [20 frames per second (fps)] and Full HD 1080p (25/30 fps) image with 1/3" 3 MP sensor.
- There should be no distortion of image in 16:9 display.
- True Day & Night (TDN) capability, vivid colour pictures by day

and clear black-& white pictures at night.

- Low-light performance & 3D Noise Reduction.
- Waterproof (IP66) and vandal-resistant camera housing .
- Monitoring from anywhere using Android smart phones and tablets.
- Configurable motion detection and camera tamper detection settings, including configurable alarm notifications.
- 3-axis rotation
- Built-in power over Ethernet (PoE) .
- 12V DC inputs where PoE power is not available.

1.34.2 IP IR Outdoor Bullet Camera

IP IR Outdoor Bullet Camera [1.3 Megapixel or more] should have following features:

- 3MP [20 frames per second (fps)] and Full HD 1080 p (25/30 fps) image with 1/3" 3 MP sensor.
- There should be no distortion of image in 16:9 display.
- True Day & Night (TDN) capability, vivid colour pictures by day and clear black-& white pictures at night.
- Low-light performance & 3D Noise Reduction.
- Waterproof (IP66) and vandal-resistant camera housing.
- 2.7–12 mm F1.4 motorized focus / zoom lens.
- Monitoring from anywhere using Android smart phones and tablets.
- Built-in power over Ethernet (PoE) .
- 12V DC inputs where PoE power is not available

1.34.3 Network Video Recorder (NVR)

24 Channel Network Video Recorder (NVR) [having 4 SATA HDD Slot & ATX Power supply] should be compatible with 1.3 Megapixel IP cameras and suitable for live view, record, playback, back up & remotely control the system simultaneously and should have following features:

- **Realtime Recording Resolution (24 Channels@ 720P, 24 Channels @1080P).**
- **Realtime Local Playback (8 Channels @ 720P, 4 Channels 1080P).**
- **Multiplex Operation.**
- **H.264 High profile, BNC/VGA/HDMI output.**
- **Realtime Local Playback of all 24 Channels , in full continuation without break, matching the recording & encoding resolution of camera.**
- **DDNS, Network backup, USB HDD, USB writer, SATA writer.**
- **1 Channel Audio Input and Output,**
- **16 Channel Alarm Input and 8 Channel Alarm Output.**

1.35 FIRE FIGHTING SYSTEM

1.35.1 Main Fire Alarm Panel

Micro processor based , intelligent addressable, Main Fire Alarm Panel & central processing unit should have following facilities / features:

- Facility to connect printer to printout log , facility to have seamless integration with analogue / digital voice evacuation .
- Capable of supporting not less than 240 devices (including detectors) .
- Minimum 120 detectors per loop & loop length up to 2 km.
- Minimum 320 character graphics/ LCD display, with touch screen or other keypad.
- Minimum 4000 events history log in the non volatile memory (EPROM).
- Power supply unit suitable for $230 \pm 5\%$ V, 50 Hz.
- 48 hrs back-up with 24 volt sealed maintenance free batteries , with automatic charger.
- Compatible for IBMS system with open protocol BACnet/ Modbus over IP complete.

1.35.2 Terrace Pump

Terrace Pump [450 lpm at 35 m Head] shall be suitable for automatic operation and consisting of following, complete in all respects, as required:

- (a) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical confirming to IS : 1520.
- (b) Suitable HP squirrel cage induction motor, TEFC type ,suitable for operation on 415 V, 3 phase, 50 Hz, AC supply, with IP55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.
- (c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts, etc. , as required.
- (d) Suitable cement concrete foundation duly plastered and with anti vibration pads.

1.36 The type / model of the fans / light fittings should be selected based on the following guidelines. However, Technical Specifications (minimum requirement) must be fulfilled. In case of non-availability of a particular type / model, equivalent type / model may be selected based on the Technical Specifications (minimum requirement) indicated against the relevant item. Prior written consent is to be obtained from the 'Engineer' or his representative, before supply of the selected type / model of fans / light fittings.

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)
i)	Decorative Ceiling Fan [Sweep: 1200 mm]	Tango Premium (Orient)	Speed : 350 rpm – 400 rpm Air Delivery: $\geq 225 \text{ m}^3/\text{minute}$ Power input : $\leq 75 \text{ W}$
		Fusion (Havells)	
		Aura Prime Antidust (Crompton)	

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)
ii)	Heavy Duty Exhaust Fan [Sweep: 600 mm]	EXHD600-6-1 (Crompton)	Speed : 900 rpm – 950 rpm Air Delivery: $\geq 9400 \text{ m}^3/\text{hour}$ Power input : $\leq 550 \text{ W}$ Blade : Metallic (Four Blade)
		Heavy Duty Exhaust (Orient)	
		TURBO FORCE (Havells)	
iii)	Exhaust Fan [Sweep: 300 mm]	Heavy Duty Exhaust (Orient)	Speed : 1375 rpm – 1425 rpm Air Delivery: $\geq 1800 \text{ m}^3/\text{hour}$ Power input : $\leq 80 \text{ W}$ Blade : Metallic (Four Blade)
		VENTILAIR DB (Havells)	
iv)	Exhaust Fan [Sweep: 200 mm]	Brisk Air High Speed (Crompton)	Speed : 2100 rpm – 2400 rpm Air Delivery : $\geq 460 \text{ m}^3 / \text{hour}$ Power input : $\leq 60 \text{ W}$ Blade : Non-metallic
		Ventilator HS (Orient)	
v)	Wall Fan [Sweep: 400 mm]	PLATINA HS (Havells)	Speed : 2000 rpm – 2250 rpm Power input : $\leq 110 \text{ W}$
		High Speed (Crompton)	
		Tornado Wall 50 (Orient)	
vi)	3 watt round recessed LED light fittings (IP 20)	LD80-200-XXX-60-XX (Wipro)	Powder coated pressure die cast aluminium housing and bottom frame, with PMMA diffuser.
		S003CTR000 (Lighting Technology)	Suitable for modular ceiling system and should have provision for mounting with the help of spring loaded SS mounting clips. Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block. Power Factor: >0.95 Correlated Colour Temperature (CCT): 5700K - 6500 K

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)
vii)	9 watt round recessed LED light fittings (IP 20)	LD90-111-XXX-65-XX (Wipro)	<p>Powder coated pressure die cast aluminium housing and bottom frame, with PMMA diffuser.</p> <p>Suitable for modular ceiling system and should have provision for mounting with the help of spring loaded SS mounting clips.</p> <p>Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block.</p> <p>Power Factor: >0.95</p> <p>Correlated Colour Temperature (CCT): 5700K - 6500 K</p>
viii)	12 watt round recessed LED light fittings (IP 20)	LD90-141-XXX-65-XX (Wipro)	<p>Powder coated pressure die cast aluminium housing and bottom frame, with PMMA diffuser.</p> <p>Suitable for modular ceiling system and should have provision for mounting with the help of spring loaded SS mounting clips.</p> <p>Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block.</p> <p>Power Factor: >0.95</p> <p>Correlated Colour Temperature (CCT): 5700K - 6500 K</p>

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)
ix)	18 watt round recessed LED light fittings (IP 20)	LD90-231-XXX-65-XX (Wipro)	<p>Powder coated pressure die cast aluminium housing and bottom frame, with PMMA diffuser.</p> <p>Suitable for modular ceiling system and should have provision for mounting with the help of spring loaded SS mounting clips.</p> <p>Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block.</p> <p>Power Factor: >0.95</p> <p>Correlated Colour Temperature (CCT): 5700K - 6500 K</p>
x)	12 watt round surface mounted LED light fittings (IP 20)	LD80-101-XXX-60-SM (Wipro)	<p>Powder coated pressure die cast aluminium housing, with PMMA diffuser.</p> <p>Suitable for surface mounting.</p> <p>Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block.</p> <p>Power Factor: >0.95</p> <p>Correlated Colour Temperature (CCT): 5700K - 6500 K</p>
xi)	18 watt round surface mounted LED light fittings (IP 20)	LD80-171-XXX-60-SM (Wipro)	<p>Powder coated pressure die cast aluminium housing, with PMMA diffuser.</p> <p>Suitable for surface mounting.</p> <p>Complete with LEDs, Driver (with surge and thermal protection) and accessories prewired up to terminal block.</p> <p>Power Factor: >0.95</p> <p>Correlated Colour Temperature (CCT): 5700K - 6500 K</p>

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)
xii)	LED recessed 2ft X 2ft luminaire [IP 20] System wattage of luminaire: \leq 36 W	RC380B LED36S-6500 G4 L60 W60 PSU OD- (Philips)	Housing: CRCA Correlated Colour Temperature (CCT): 5000K - 6500 K Luminous flux: \geq 3960 lumen Colour Rendering Index (CRI): 80
		LCTLRNE-36-FO-CDL (Crompton)	
		CRCO10R038HP57GL 1 (Wipro)	
xiii)	1 X 2 ft (approx.) Integrated LED Batten System wattage of luminaire: \leq 12 W	LDL -10-CDL (Crompton)	Integrated LED Batten (PC) with efficient Diffuser Material & in-built driver. Luminous flux: \geq 1200 Correlated Colour Temperature (CCT): 5700K - 6500 K
		BN021CLED12S (Philips)	
		LL20-111-XXX-65-NE3 (Wipro)	
xiv)	1 X 4 ft (approx.) Integrated LED Batten System wattage of luminaire: \leq 22 W	LDL-20-CDL (Crompton)	Integrated LED Batten (PC) with efficient Diffuser Material & in-built driver. Luminous flux: \geq 2300 Correlated Colour Temperature (CCT): 5700K - 6500 K
		BN021CLED22S (Philips)	
		LL20-221-XXX-65-NE3 (Wipro)	
xv)	10W-12W Bulkhead surface / wall mounted LED light fittings (IP 65).	BIBWP 10W LED (Bajaj)	Housing: Die Cast Aluminium alloy housing. Inbuilt driver, upto 5 kV surge protection. IP65 protected System Efficacy: 100LPW Correlated Colour Temperature (CCT): 5700K - 6500 K
		LBHE-10-CDL (Crompton)	
		LW07-141-XXX-57-G1 (Wipro)	
xvi)	Outdoor type LED Flood Light fittings. [IP 66] System wattage of luminaire: \leq 200 W	BVP483 LED235 CW SWB PSU GR - (Philips)	Housing: Pressure die-cast Aluminium body. Drivers should have in-built protection against high voltage surge, open circuit & short circuit. Correlated Colour Temperature (CCT): 5000 - 6500 K Luminous flux: \geq 23000 lumen Power Factor: >0.95 Colour Rendering Index (CRI): 70
		LF30-272-060-57-XX (Wipro)	

Sl. No.	Items	Type / Model	Technical Specifications (minimum requirement)

1.37 Supply of 1.1 kV grade, Cross Linked Polyethylene (XLPE) Cable (FRLS) :

The cables should be generally compliance with IS 7098 (Part-1) [with latest amendment, if any] with following specifications:

- (i) Conductor materials: Aluminium / Copper.
- (ii) Shape: Stranded Compacted Shaped.
- (iii) Insulation: Cross Linked Polyethylene (XLPE).
- (iv) Armouring: Single layer, Galvanised steel flat / round strip.

1.38 Laying of 1.1 kV grade, XLPE Cable:

- 1.38.1 Before laying of Cables, cable routes should be checked properly to avoid interference with the existing cables, structures, heat sources, drains, pipelines, etc., as far as possible and minor adjustments to be done to suit the field conditions, wherever deemed necessary, without any extra cost. Considering above, cable routes should be carefully measured to ascertain the exact requirement of cable for a particular feeder. Sufficient lengths to be kept for the final connections of the cables to the terminal of the equipment.
- 1.38.2 Programme for Road Crossing, wherever required (for Casing Pipe laying etc.), shall have to be coordinated through the authorized representative of the Dy. Manager (P&E), TSEM, in advance, for having due clearance of Road Blockage. Such clearance will be given within 7 (seven) days from the date of receipt of request from the Contractor.
- 1.38.3 In case of Road or Rail Crossing, cable should be laid inside the pipes. Where cables enter into pipe sleeves, adequate beds of sand should be given so that the cables do not slack and get damaged by pipe ends.
- 1.38.4 When cables pass through foundation walls, or other underground structures, if necessary, ducts or opening shall have to be provided, by the Contractor. However, shall it become necessary to cut holes in the existing foundations or structures, the contractor should obtain permission from Dy. Manager (P&E), TSEM, before cutting is done. Cutting, if necessary and mending good of any cut portion should be done by contractor at his cost and risk.
- 1.38.5 Cables should be handled carefully during installation to prevent mechanical injury to the cables. During laying of cables, Cable Drum Lifting Jacks, sufficient number of Cable Rollers and other materials, etc.

as necessary, should be used to avoid any mechanical injury to the cables. Ends of cables leaving trenches should be coiled and provided with a protective pipe or cover, until such times, the final terminations to the equipment are completed.

1.38.6 After laying of the cables in the trench and before placement of protective covering, an Insulation Test should be carried out for each length of cable in presence of the representative of Sr. Dy. Manager (P&E), HDC. After re-filling the trench with soil, rammed and levelled, Insulation Test of the cable should also be carried out in presence of the representative of Sr. Dy. Manager (P&E), HDC.

1.38.7 All cables should be identified close to their termination points by Cable Number / Equipment Number, which will be punched on Aluminium strip/ PVC Strip (approx. 2 mm thick) securely fastened to the cable and wrapped around it. Type and size of the cable also to be punched on the straps.

1.38.8 Each underground cable should be provided with Identification Tags (made of Aluminium / PVC) securely fastened every 30 m of its underground length, with at least one tag at each end before the cable enters the ground.

Concrete Cable Markers are to be placed at every 30 m of the cable route and at cable joint locations. Size & other details / identifications should be engraved on the said Cable Markers.

1.38.9 All temporary ends of cables must be protected against dirt and moisture to prevent damage to the insulation. For this purpose, ends of the cables should be covered with PVC insulating tape.

1.38.10 Where splices or terminations are required in circuit, it is required to measure insulation resistance of each length of cable before splicing and / or terminating. It is required to repeat measurement after splices and / or terminations are completed. Before energizing, the insulation resistance of every cable shall have to be measured.

It is required to measure the Insulation Resistance of directly buried cables, before Cable Trenches are back-filled.

1.38.11 Directly buried cables should be laid in underground Cable Trenches to be excavated by the Contractor. Width of the Cable Trench should be such that all cables shall be correctly spaced and arranged. The 1.1 kV grade cables should be laid in trenches at a depth of 0.75 m.

1.38.12 **Placing & Protection of cables in trench:**

Before cables are placed, the bottom of the trenches should be filled with a layer (approx. 100 mm) of sand at the bottom of the trench, duly levelled. After laying of the cable on the sand bed bricks should be placed at both sides of the cable. The cable inside the brick walls to be covered with sand at the bottom of the trench, up to the height of wall. Bricks should also be used as protective top covering and to be placed on the top of the protective brick walls [16 no. bricks would be used in 01 m cable laying work]. Rest of the trench should be re-filled with soil, rammed and levelled.

- 1.38.13 The bricks, to be used for protective top covering & side wall, should be of class designation 10.0 (as per latest version of IS: 1077, 1992). Dimensions [non-modular size (230 mm. x 110 mm. x 70 mm)] and tolerances of the bricks should be as per latest version of IS: 1077, 1992.

1.38.14 Cable Termination of 1.1 kV grade, XLPE Cable :

Termination of XLPE aluminium conductor power cables shall be by means of compression method using brass compression gland and aluminium lugs [including supply of materials, as required], tapes, anticorrosive paste & jointing materials.

1.38.15 Straight Through cable jointing of 1.1 kV grade, XLPE Cable:

Additional length (loop) of 5 m (approx.) cable should be kept at each end of the cables near the straight through cable joints. It is required to measure the insulation resistances of the cables before and after straight through cable jointing. This scope includes supply of all required materials including complete straight through cable jointing kits, with ferrules and all other accessories.

Heat Shrinkable type straight through Cable Jointing Kits, suitable for XLPE insulated 1.1 kV grade LT cables, are to be used.

1.38.16 GI Pipe laying work:

Laying of Galvanized Mild Steel Tubes should be done wherever necessary, such as at Road Crossing, Railway Crossing, Drains, Culverts or any similar concrete structure, etc. The scope includes cutting of road, railway crossing, excavating of trenches, etc. Re-filling the trench after laying the Galvanized Mild Steel Tubes to be done by the Contractor. The Galvanized Mild Steel Tubes may also be laid by boring process, as per site requirement.

The depth of the laying should be matched with the underground cable trench, as far as possible.

Cutting of Galvanized Pipe to required length and threading, bending, jointing by Socket as required, supply and fixing of support clamps / brackets should be under the scope of Contractor.

1.39 Outdoor Feeder Pillar for street lighting / area lighting / landscape lighting:

- (i) The outdoor Feeder Pillar (for street lighting / area lighting / landscape lighting) shall be pedestal type (with top canopy), IP 65 compliant and dust, damp, vermin & weather proof, fabricated from SS316 grade sheet (2 mm thick), angle & flat [duly painted (with Siemens Grey / Smoke Grey powder coating)]. It shall be provided with double door / shutter, handle with lock and key system. The Feeder Pillar shall be designed in such a way that it should be spacious for easy maintenance.
- (ii) The aforesaid Panel Board should be CPRI / ERDA approved. Necessary supporting document, alongwith type test certificate, should be submitted by the Contractor. The design & drawing of the Feeder Pillar should be got approved from the 'Engineer', prior to manufacture.
- (iii) The Feeder Pillar shall be provided with LED indication lamps [for busbar (R, Y, B)], PVC sleeved (with colour code) electrolytic grade copper tinned

busbar (for 3 Phases and Neutral), stud type terminals for incoming & outgoing connections (as required) and supply & fixing of necessary MCBs, Power Contactor , Time Switch , CTs, etc. (including necessary connection with suitable sizes of 1.1 kV grade copper wires/ aluminium cables, with lugs).

- (iv) The Panel Board shall be provided with following busbar, MCBs, Meters and CTs:

Incomer:

4 pole, 415 V (AC), 50 Hz, 63 A, MCB (C :: 01 no.
characteristics, 10 kA Breaking capacity).

R-Y-B, ON, OFF Indication Lamp (220 V – 240 V). :: 01 set.

Busbar :

PVC sleeved (with colour code), 100 A Electrolytic grade
copper tinned busbar (for 3 Phases) and 50 A Electrolytic :: 01 set
grade copper tinned busbar (for Neutral).

Outgoing :

Digital Astronomical Time Switch . :: 03 no.

Bypass Switch (6 A) :: 03 no.

240V / 230 V, 50 Hz, T.P., power contactor, having :: 03 no.
contact block of range: 9 A-25 A, 1NO & 1NC

Three Phase 0-100 A digital type Ammeter (LED) with :: 01 no.
in-built selector switch and suitable current transformer
of class-I, 15V A burden.

0-500 V digital type Voltmeter (LED) with in-built :: 01 no.
selector switch and protective fuses.

Single Pole, 240 V (AC), 50 Hz, 6 A - 32 A, MCB (C :: 18 no.
characteristics, 10 kA Breaking capacity).

All the aforesaid component shall be mounted in the Feeder Pillar by means of suitable cadmium passivated / GI hardware. The Feeder Pillar shall be completed in all respect with detachable gland plate, interconnection using necessary PVC insulated (1.1 kV grade), single core, flexible (stranded) copper wire / aluminium cable. The Feeder Pillar shall be provided with 02 nos. SS Terminal for earthing.

- 1.40 Erection / installation of outdoor Feeder Pillar for street lighting / area lighting / landscape lighting:

- (i) The outdoor Feeder Pillar should be erected on the RCC foundation and the same should be fixed with the foundation bolts / grouted in the aforesaid RCC foundation.
- (ii) Connection of incoming and outgoing cables with the MCB / Connector is under the scope of the Contractor.

1.41 Indoor type LT Panel [Type-A (Non-emergency) and Type-B (Emergency)]:

- (i) The indoor Floor Mounted LT Panels [Type-A & Type-B] shall be of multi-cubicle or multi box factory-built air-insulated type, totally enclosed with doors for access to the interior, dust & vermin proof and suitable for use in tropical climate. LT Panels should be fabricated from CRCA Sheet, duly painted (with Siemens Grey / Smoke Grey powder coating). It shall be provided with double door, handle with lock and key system. Other construction requirements are given below:

Thickness of CRCA Sheet:

FRAME	::	2.5 mm
DOORS	::	2.0 mm
COVERS	::	2.0 mm
GLAND PLATE	::	3.0 mm

DEGREE OF PROTECTION : **IP-54** OF IS-2147, 1966

- (ii) The LT Panels shall be designed in such a way that it should be spacious for easy maintenance and shall have sufficient working space for making connections of cables, wires, etc. All doors & joints shall be suitably gasketed to make it dust & vermin proof. All doors shall be provided with concealed type hinges and captive screws, suitably earthed with 2.5 mm² copper conductor flexible cable.
LT Panels shall be easily extendible on both sides, by the addition of the vertical section after removing the end covers.
- (iii) A completely enclosed bus bar compartment shall be provided for running horizontal and vertical Tinned Copper bus bars. Bus bar chamber shall be completely enclosed with metallic portions. Bolted covers shall be provided for access to horizontal & vertical bus bars and all joints, for repair & maintenance, without disturbing the feeder compartments.
- (iv) A separate compartment shall be provided for power and control cable. Door of compartment shall be hinged. Cable compartment shall have no communication with bus bar chamber. The panels shall be designed to facilitate cable entry from the bottom through entry holes of removable gland plates provided at the bottom of the cubicle.

- (v) The aforesaid LT Panels should be CPRI / ERDA approved. Necessary supporting document, alongwith type test certificate, should be submitted by the Contractor. The design & drawing of the LT Panels should be got approved from the 'Engineer', prior to manufacture.
- (vi) The LT Panels shall be provided with LED indication lamps[for busbar (R, Y, B), ON & OFF], PVC sleeved (with colour code) electrolytic grade copper tinned busbar (for 3 Phases and Neutral), connecting arrangements for incoming & outgoing connections (as required) and supply & fixing of necessary Air Circuit Breakers, MCCBs , MCBs, Energy Meters, Multi-Function Meters, CTs, etc. (including necessary connection with suitable sizes of 1.1 kV grade copper wires / aluminium cables, with lugs).
- (vii) Bilingual Danger Notice Plates of size 200 mm X 150 mm, made from mild steel [at least 1.6 mm thick and vitreous enamelled white, with letters, figures and the conventional skull and cross-bones in signal red colour on the front side], should be provided as per requirement. The rear side of the plate shall also be enamelled. Other details shall be as per IS 2551 (1982) [with latest amendment]
- (viii) The Panel Board shall be provided with following ACBs, busbar, MCBs, Meters and CTs:

1.41.1 *Type-A (Non-emergency) LT Panel shall be comprised of*

INCOMING

415 V, 4 Pole 630 A, 50 kA Air Circuit Breaker (draw out type ACB with electrically inter locking system). The ACBs should have microprocessor release, with O/L, S/C & E/F protection. :: 03 no.

Three Phase 0-800 A digital type Ammeter (LED) with in-built selector switch and suitable current transformer of class-I, 15V A burden. :: 01 no.

0-500 V digital type Voltmeter (LED) with in-built selector switch and protective fuses. :: 01 no.

kWh meter (LED), including Current Transformer of 600-400/5A rating, Class-I, 15V A burden. :: 01 no.

R-Y-B, ON, OFF Indication Lamp (220 V – 240 V). :: 01 set

Single Pole, 240 V (AC), 50 Hz, 6 A - 32 A, MCB (C characteristics, 10 kA Breaking capacity). :: 6 no.

Surge Protection Device 15 kA Type -2 :: 01 set

OUTGOING

4 pole, 415 V (AC), 125A, MCCB (36 kA breaking :: 4 set

capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader.

kWh meter (LED), including Current Transformer of 125/5A rating, Class-I, 15V A burden. :: 01 no.

4 pole, 415 V (AC), 63A, MCCB (36 kA breaking capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader. :: 8 set

BUSBAR

PVC sleeved (with colour code), 1000 A Electrolytic grade copper tinned busbar (for 3 Phases) and 500 A Electrolytic grade copper tinned busbar (for Neutral) :: 01 set

1.41.2 *Type-B (Emergency) LT Panel shall be comprised of*

INCOMING

415 V, 4 Pole 1250 A, 50 kA Air Circuit Breaker (draw out type ACB). The ACBs should have microprocessor release, with O/L, S/C & E/F protection. :: 01 no.

415 V, 4 Pole 800 A, 50 kA Air Circuit Breaker (draw out type ACB). The ACBs should have microprocessor release, with O/L, S/C & E/F protection. :: 01 no.

Three Phase 0-1200 A digital type Ammeter (LED) with in-built selector switch and suitable current transformer of class-I, 15V A burden. :: 01 no.

0-500 V digital type Voltmeter (LED) with in-built selector switch and protective fuses. :: 01 no.

kWh meter (LED), including Current Transformer of 1200-600/5A rating, Class-I, 15V A burden. :: 01 no.

R-Y-B, ON, OFF Indication Lamp (220 V – 240 V). :: 01 set

Single Pole, 240 V (AC), 50 Hz, 6 A - 32 A, MCB (C characteristics, 10 kA Breaking capacity). :: 6 no.

Surge Protection Device 15 kA Type -2 :: 01 set

OUTGOING

415 V, 4 Pole 630 A, 50 kA Air Circuit Breaker (draw out type ACB). The ACBs should have microprocessor release, with O/L, S/C & E/F protection. :: 02 no.

- 4 pole, 415 V (AC), 315A, MCCB (36 kA breaking capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader. :: 1 set
- 4 pole, 415 V (AC), 200A, MCCB (36 kA breaking capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader. :: 3 set
- 4 pole, 415 V (AC), 125A, MCCB (36 kA breaking capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader. :: 4 set
- kWh meter (LED), including Current Transformer of 125/5A rating, Class-I, 15V A burden. :: 01 no.
- 4 pole, 415 V (AC), 63A, MCCB (36 kA breaking capacity) [Microprocessor based release with O/L & S/C Protection], including Rotary Handle & Terminal Spreader. :: 11 set
- Four pole, 415 V (AC), 50 Hz, 40 A, MCB (C characteristics, 10 kA Breaking capacity). :: 01 no.
- Double Pole, 240 V (AC), 50 Hz, 16 A, MCB (C characteristics, 10 kA Breaking capacity). :: 01 no.

BUSBAR

- PVC sleeved (with colour code), 1200 A Electrolytic grade copper tinned busbar (for 3 Phases) and 600 A Electrolytic grade copper tinned busbar (for Neutral) :: 01 set
- 1.41.3 All the aforesaid components shall be mounted in the Panel by means of suitable cadmium passivated / GI hardware. The Panel shall be completed in all respect with detachable gland plate, interconnection using necessary PVC insulated (1.1 kV grade), single core, flexible (stranded) copper wire / aluminium cable / Copper bar. The Panel shall be provided with earth busbar & 02 nos. Terminal for earthing.
- 1.41.4 Rubber Mat, Fire Bucket, First Aid Box, Shock treatment Chart (to be provided by the Contractor, without any additional cost):
- Adequate length of insulating mat (width 1 m) for electrical purpose (atleast Class – A, as per relevant IS) shall be provided by the Contractor, at the electrical Panel Room.
 - Fire Extinguisher (ISI marked) suitable, for dealing with electric fire, shall be provided by the Contractor at the Panel Room.

- c) Fire Buckets (as per relevant IS), filled with clean dry sand and ready for immediate use for extinguishing fires, shall be provided by the Contractor, which should be conspicuously marked & kept (atleast 02 nos. per room, kept on a suitable stand) in Panel Room, in convenient situation.
- d) First Aid Boxes, conspicuously marked & equipped with required contents, shall be provide by the Contractor in the Panel Rooms, so as to be readily accessible during all working hours.
- e) Instructions, in English or Hindi and Bengali, for restoration of persons suffering from electric shock, shall be provided by the Contractor for fixing in a conspicuous place in the Panel Rooms.

1.41.5 Earthing:

Complete earthing of the LT Panel shall be provided by the Contractor as per relevant Standard. Suitable size GI / Copper flat should be used for connecting the equipment / structure with the Earth Grid, made of 02 nos. Earth pit, duly interconnected.

1.41.6 Installation:

This includes installations, testing and commissioning of all components of the LT Panel, which shall be erected by using suitable size of M.S. channel, foundation bolts, including grouting of the bolts of the panel. The panel shall be connected with separate and distinct Earthing. After installation of the LT Panel, necessary test and trial are to be carried out for proper functioning of safety devices, etc. and all the tests required under relevant standard shall be carried out. The work includes all labour & materials required for installation & commissioning of the LT Panel and shall be done as directed by the representative of the 'Engineer'.

Connection of incoming and outgoing cables with the ACB / MCCB / MCB / Connector is under the scope of the Contractor.

1.42 *Technical Specification & design consideration for the Lift and Scope of Work in connection with installation of Lift:*

1.42.1 The equipment offered by the Contractor shall be complete with all components and accessories which are necessary or are usual for their efficient performance & satisfactory maintenance, under the particular operating & atmospheric conditions. Such parts shall be deemed to be within the scope of the Contractor, whether specifically included or not in the specification or in the schedules. The Contractor shall not be eligible for any charges for such accessories.

1.42.2 The design, manufacture, supply, installation, testing, commissioning & performance of the electrical / mechanical equipment under this contract shall conform to the requirements of latest editions (including latest amendments/revisions, if any) of the relevant Indian Standards, codes &

regulations. The new passenger Lift should be generally as per IS 14665 [with latest amendments, if any]. However, if the Technical Specifications stipulates additional requirements, the same shall also be satisfied.

1.42.3 The specifications mentioned in the instant Bidding Document are basic & indicative only. The design of the offered lift should fully meet the functional requirements in all respects, without sacrificing the safety, quality, efficiency and reliability, in any manner. All the materials, equipment offered and used in the execution of the work shall be suitable for sustained service in a marine atmosphere and cyclone prone environment. In the event of repeated failure of any component or material or fitting, within the Defect Liability Period, it shall be treated as design defect and the Contractor shall have to promptly rectify the same at their own cost, failing which HDC shall have the right to recover the cost from any other outstanding amount of the Contractor lying with HDC and / or any amount that may become due to the Contractor.

1.42.4 The eight passenger Lift should be provided with Variable Voltage Variable Frequency (VVVF) Drive, along with gearless motor, control panel & accessories, as per Technical Specification.

1.42.5 The Lift should also be provided with Automatic Rescue Device (ARD), for rescue operation in the event of power failure. ARD shall automatically take the Lift Car to the nearest floor and open the door to facilitate safe rescue of the stranded passengers from the lift. The batteries provided for the ARD should be of appropriate rating, to perform at least 5 rescue operations, before getting completely discharged.

The lift should be provided with proper illumination (using LED light fixtures) & ventilation inside the Lift Car. High-speed cross flow fan should be provided in the lift car. There should be provision for emergency lighting inside the Lift Car, in case of power failure.

1.42.6 The Lift shall be provided with the automatic stopping limits arrangement to take care of the over travel on either side. The terminal limit switches shall be provided in the hoist way to stop the car and prevent its travel beyond the normal operational limits.

Over speed governor with barricade to stop the Lift in case the Lift runs beyond the rated speed shall be provided.

Spring Buffer arrangement to be provided in the pit for safety.

Re-levelling function shall be provided to correct stopping errors.

Door sensors (Button) /Infra-Red Sensor/ Full Screen Sensor/prevaling Sensor to instantly stop and closing of car and landing doors on sensing an obstruction and to retract.

1.42.7 In connection with installation of the Lift, necessary civil work, viz. providing structural support for guide rails, foundation for motor & panel, providing ladder, etc., including arrangement of scaffolding (during erection of the Lift), mending good damages to the existing structure / electrical installations, shall be under the scope of the Contractor. A steel ladder shall be provided by the Contractor for access to the pit, to

facilitate lift maintenance inside the pit.

- 1.42.8 All the civil work involved in fixing of R. S. Joints for the equipment, support for buffers, all buttons, indicators etc., structural stretchers for supporting guide rails etc. in the shaft and also cutting required holes / chases in walls, floors, ceilings etc. and making good the same to match the existing surface / structure, are also under the scope of the Contractor.
- 1.42.9 The contractor is required to take all measurements on site and shall be responsible for ensuring accuracy and consistency of installation with existing site measurements and features.
- 1.42.10 The material at all stages of transportation, handling and storage shall be kept clean and free from damage and breaking, bending and distortion. While making holes, it shall be done in such a manner that it does not deform or damage the material. The structure shall be installed in place, taking care not to cause any major damage to the existing structure.
- 1.42.11 All the civil work, required to complete the full installation of the Lift, is under the scope of the Contractor, including but not limited to the following job:
- i) Removal of all the existing material in the shaft at all levels as necessary.
 - ii) Grouting for the guides, rails and any structural supports of the lift structure including cutting and making good of holes in walls etc.
 - iii) Providing and fixing of frames for landing doors including slots for door locks as may be required.
 - iv) Providing slots for landing operating panel.
 - v) Providing of Pit ladder for maintenance purpose.
 - vi) Making good of any damages related to the structural works including plastering and painting to match the existing surface.
 - vii) The Contractor shall provide all the frame work necessary for Lift car and counter weight.
 - viii) The spring buffers under the car and the counter weight shall also be provided by the Contractor. The doors and guides shall be designed to ensure effort free operation.
- 1.42.12 Necessary power and control wiring shall be done as per IE Rules and relevant Indian standards. The main power will be provided at the 2nd floor of the building, from where the Contractor shall have to draw the required power.
- Necessary earthing shall be carried out as per requirements of Indian Electricity Rules, as per relevant IS standard.
- The trailing cable shall contain ten spare cores apart from that required for actual operation.
- 1.42.13 The Lift (Elevator) shall be supplied & installed as per the specifications given below:

Item No.	Description	Specification
1	Lift type	Passenger Auto Lift with Gearless Machine (without Machine Room)
2	Capacity	8-passenger (544 kg)
3	Speed	1.25 mps (meter per second)
4	Number of stops & openings	3 Stops & 3 Openings (All openings on the same side)
5	No. of entrance	One location (front)
6	Total Lift Travel Height (Rise)	G + 2 nd Floor, 10 m (Approx.)
7	Number of Floors	3 [G+ 2 Upper Floors]
8	Floor Display Characters	0,1,2
9	Number of Landing Entrance	3 [G+2 Upper Floors]
10	Power Supply	415 V ($\pm 10\%$), 3 phase, 50 Hz, Alternating Current. [Necessary arrangement should be available for voltage regulation, in case of over voltage]
11	Location of Machine	Inside hoist way [Machine-roomless]
12	Driving Motor	Permanent Magnet Gearless Synchronous Motor.
13	Brake	Electro Magnetic type Disk Brake.
14	Drive	Microprocessor Based VVVF-Regenerative (Closed Loop).
15	Controller type	Microprocessor based.
16	Control system	Microprocessor based simplex, selective and collective control, with / without attendant.
17	Car Group	One Car (Simplex)
18	Traction Media	Flat Polyurethane-Coated Steel Belt.

Item No.	Description	Specification
		(Including Belt Monitoring Device to monitor the status of the steel belts continuously)
19	Lift Car Finish	Decorative Laminated Steel Sheet (DLSS) Rear Panel- Glass with Stainless Steel (Hairline Finish) framework.
20	Car Ceiling, Car Floor	Sleek small circular.
21	False ceiling type	Stainless Steel #4 (Hairline) with LED light fixtures.
22	Car Fittings	Regular Circular fan (Automatic on / off). LED Light Fitting, with automatic switching off, when the elevator is not in use.
23	Hand rails	Stainless Steel Mirror Finish Handrails on rear car panel.
24	Flooring	Heavy duty Vinyl Tiles.
25	Car & Hoist-way Door Type	Power Operated, Centre Opening, Automatic Sliding Door (DLSS, with glass window), with infrared caution.
26	Landing Door Frame (0,1,2)	Decorative Laminated Steel Sheet (DLSS)
27	Car Door Finish	Stainless Steel #4 (Hairline finish) with glass window.
28	Landing Door Finish	Stainless Steel #4 (Hairline finish).
29	Door Sills	SS Slot-less Bottom Sills in Lift Car and all Landings.
30	Fire rated doors	Fire rating - 60 minute.
31	Electrical Safety	<ul style="list-style-type: none"> • Limit Switch to protect against over travel. • Single phasing preventer with protection against phase sequence reversal. • Foolproof gate locks for

Item No.	Description	Specification
		landing doors. <ul style="list-style-type: none"> • Car gate switch. • Over speed governor • Over speed safety device. • Inter communication system.
32	Fire Safety	<ul style="list-style-type: none"> • Fire Emergency Return. • The Fireman's switch to be provided at Ground floor.
33	Standard Features	Anti-nuisance Car Call Protection, False Call Canceling, Overload Device, Nudging, Emergency Firemen's Service, Emergency Car Light Unit, Infrared Curtain Door Protection, Door Time Protection, Emergency Alarm Button, Extra Door Time of Lobby & Parking, Door Open / Close Button, Manual Rescue Operation [Electronic control], Belt Inspection Drive, Auto Fan Cut Off. Belt Monitoring Device.
34	Levelling accuracy	$\pm 2 \text{ mm}$
35	Pit ladder	Steel ladder
36	Car Position Indicator (CPI)	Monochrome LCD.
37	Hall fixtures	LCD Display
38	Hall fixtures face plate	Stainless Steel #4 (Hairline finish)
39	Hall Button arrangement	Hall Button with Hall Position Indicator (HPI).
40	Protection against electrical abnormalities	The controller shall include protection against the following abnormalities: <ul style="list-style-type: none"> • Over current • Under voltage • Over voltage

Item No.	Description	Specification
		<ul style="list-style-type: none"> • Single phasing • Phase Reversal • Earth leakage
41	Controls and indications inside the Lift car	<p>LCD Dot-matrix Display Scrolling Car position indicator display panels.</p> <p>Display Board should display the direction & floor numbers inside the car in a visible manner.</p>
		<p>Following arrangements should be available inside the Lift Car-</p> <ul style="list-style-type: none"> • Buttons with car call registration. • Emergency-Stop Button to be provided. • Emergency Alarm Button and Emergency light (LED), along with maintenance-free battery (with backup up to 3 hrs.) • Non-stop Button, to bypass landing calls in the Attendant mode condition. • Door open and Door close buttons. • Fire alarm button. • On / Off keys (minimum two copies). • Auto / Attendant keys for the operator's use. • Wired communication module complete with indication sign displaying instructions regarding the use of the rescue service.
42	Control on landings	<p>LCD Dot-matrix landing operating panels is to be provided at all floors to display the car direction and floor numbers along with Flush type/ surface type</p>

Item No.	Description	Specification
		Buttons for registering calls along with visual indicators.
43	Maintenance controls	On top of cabin.
44	Announcement system	To be provided with Music and floor announcement in clear and comprehensible English (India) and also with the reprogramming facility.
45	Overload Warning	Overload warning device with message displaying 'OVERLOAD' is to be provided in a visible manner. Lift should not be able to proceed with Lift overload indication ON (i.e. Door should be in open condition on that floor itself during over load).
46	Car safety Provision	<p>Emergency key opening at all Landing doors and Flywheel have to be provided for manual raising or lowering of the Lift in case of emergency.</p> <p>Following safety arrangements should be available -</p> <ul style="list-style-type: none"> • Terminal Limits. • Over speed governor with barricade. • Overload device, preventing start of journey when cabin load exceeds rated load. • Automatic Rescue Device (ARD, with Announcement system) in case of power failure. • Emergency Rescue Device (ERD), operated from cabin. • Landing gate bypass protection. • Buffers.

Item No.	Description	Specification
		<ul style="list-style-type: none"> • Earthquake sensor. • Multiple Infrared Light Beam Door Sensor / Full Screen Sensor / prevailing Sensor to instantly stop and closing of car and landing door on sensing an obstruction and to retract.
		<ul style="list-style-type: none"> • Door closing force limiter. • Suitable safety provision for bringing the car to rest in the event of rope breaking or loosening. • Motor overload and phase failure protection device.

1.42.14 The car operating panel shall be flush mounted and shall have: -

- i) A bank of vandal proof stainless steel push button, to correspond to the various landing levels being served.
- ii) An emergency stop switch for stopping the car immediately.
- iii) An emergency alarm button and emergency light to be provided along with maintenance free battery.
- iv) A switch also shall be provided inside the car for the car fan apart from its automatic function.
- v) The door open and close buttons shall be provided in the panel.
- vi) A non-stop button should be provided for bypassing landing calls, which shall remain registered till they are answered.
- vii) Hall Call shall be displayed inside the car.
- viii) Communication facilities shall be provided in the Lift cabin to call operating / maintenance staff in case of emergency.
- ix) The Auto/Attendant key shall be provided to switch between the modes.
- x) On/Off key shall be provided.

1.42.15 Car Position Indicators:

A LCD Dot Matrix Scrolling Car position indicator display panels shall be provided with Stainless steel face plate which shall indicate the landing at which the car is stopping or passing, including Up and Down scrolling indicators for indicating the direction of the car.

1.42.16 Call Registered Lights:

Each car and hall button shall be provided with registered lights which shall illuminate when corresponding button in the face plate is momentarily pressed and remain illuminated until call is answered.

1.42.17 Hall Position Indicator:

A Dot Matrix (LCD) Scrolling hall position indicator shall be provided on all landings indicating the position and direction of the car in the hoist way at all times.

1.42.18 Car Safety Provisions:

The emergency key opening should be provided at all landing floors to facilitate the forced opening of the Lift door in case of an emergency. A flywheel and mechanical brake release device shall be provided for manual movement of the car in the shaft for emergency rescue operation.

1.42.19 Make / brand of Lift (Elevator):

New Lift (Elevator) of following Make/ Brand will be preferred:

OTIS / JOHNSON / THYSSENKRUPP / MITSUBISHI / HYUNDAI / OMEGA / SCHINDLER / KONE

However, Lift (Elevator) of any other make may be accepted, subject to compliance of all the Technical Specifications/ Scope of Work / Requirements, mentioned in the Bidding Documents.

All the Bidders shall have to indicate the Make / Brand of the New Lift (Elevator), for which they are submitting their bid, in the Techno-commercial bid. They should also upload the Technical Details to establish compliance of all the Technical Specifications / Scope of Work / Requirements, mentioned in the Bidding Documents.

In case the Manufacturer of any other Make / Brand of Lift (Elevator) submits their bid, they shall have to upload scanned copies of following supporting documents [duly signed & stamped by the Bidder], alongwith the Techno-commercial bid:

- i) Request for consideration of other Make / Brand of Lift (Elevator) [to be specified by the Bidder], along with the Technical Details to establish compliance of all the Technical Specifications / Scope of Work / Requirements, mentioned in the Bidding Documents.
- ii) Certificate from any Central Govt. Organization / Public Sector Units / CPWD / State PWD / State Govt. Organization / Govt. Port, regarding satisfactory working / performance of the Lift (Elevator) of the specified Make / Brand, during the last seven years [prior to the

starting date of submission of instant e-tender].

1.43 *Scope of Work in connection with Maintenance Service during the Guarantee Period of 12 months and during the Comprehensive Maintenance Contract (CMC) period of 5 years, after expiry of the Guarantee Period, for the 08 passenger lift :*

- 1.43.1 The Scope of Work includes preventive / breakdown Maintenance Service and related work, after complete execution of the work, during the Guarantee Period of 12 months, as well as during the Comprehensive Maintenance Contract (CMC) period of 5 years, after expiry of 12 months' Guarantee Period.
- 1.43.2 Free preventive / breakdown service shall be provided against the newly installed Lift, during the Guarantee Period of 12 months from the date of taking over the Lift by HDC, SMP, Kolkata, after complete execution of the work. Preventive / breakdown service shall also be provided, during the Comprehensive Maintenance Contract (CMC) period of 5 years, after expiry of 12 months' Guarantee Period.
- 1.43.3 Contractor shall periodically examine safety devices and shall conduct an annual no load safety test on the equipment. The Contractor shall submit a safety Certificate of the Lift within 10 (ten) days of the annual inspection of the Lift. Necessary arrangement for obtaining statutory approval / Licence or renewal of the Licence, in connection with the operation of the Lift, shall be made by the Contractor, without any extra cost.
- 1.43.4 Service & maintenance of the Lift should be attained by appropriately skilled & experienced personnel, who are properly trained by the Manufacturer. They should be qualified to keep the Lift properly adjusted and maintain the same in efficient, reliable & safe operating condition. This service shall not be sub-contracted.
- 1.43.5 Painting of the components is to be done once in three years.
- 1.43.6 For smooth and trouble-free operation of the Lift, the Contractor will examine, lubricate & adjust the same and carryout planned service & maintenance in a systematic & controlled manner, at least once in a month. A tentative checklist for carrying out examinations / checking of different items / components / parts of the Lift (including power supply, drives, etc.), during routine planned maintenance, is given below:
 - i) Condition of traction media.
 - ii) Oil temperature of Gear Box.
 - iii) Oil level of Gear Box.
 - iv) Oil quality for any suspended metal particles.
 - v) Temperature of Gear & Motor.
 - vi) Motor overload trip.
 - vii) Three phase supply voltage.
 - viii) Phase reversal tripping.
 - ix) Voltage, starting current & running current.
 - x) Condition of Relays and all Relay operations.

- xi) All Limit Switch operations.
- xii) Normal operation of C. O. P. & L. O. P. Switches.
- xiii) Vibration of the Machine.
- xiv) Main driving sheave grooves.
- xv) Electro-mechanical brake application.
- xvi) All safety devices, interlocks & Governor.
- xvii) Governor lubrication and normal operation.
- xviii) Condition of Guide Shoes.
- xix) Lubrication of Guide Rails & Guide Shoes.
- xx) All Landing Gates.
- xxi) Adjustment of all Landing Gate Locks.
- xxii) Adjustment of Car Gate Switch and all types of Safety Circuits.
- xxiii) All Safety Checks.

1.43.7 The contractor shall ensure availability of their authorized representative at Haldia to receive emergency calls and take remedial actions. In case of any breakdown, the Contractor will attend the same within 5 hours (in case breakdown call is logged within 14:00 hrs of any working day) of call logging by the HDC personnel. In case the breakdown call is logged after 14:00 hrs, the same shall have to be attended within 12:00 hrs of the next working day.

1.43.8 **Penalty:**

During the CMC period of 5 years, after expiry of 12 months' Guarantee Period, a penalty @ ₹ 50.00 for every extra idle hour will be applicable, for any extra period of idle hour beyond the aforesaid allowable period. In case breakdown period of Lift continues for more than 48 hours, the service charges on pro-rata basis per day shall be deducted from the monthly bill, along with the aforesaid penalty @ ₹ 50.00 for every extra idle hour. However, total penalty amount in a month will not exceed 10 % of the monthly payable amount for the said month.

The amount of penalty shall be recovered from the bills or Security Deposit / Performance Guarantee or any other sum due to the Contractor.

If any penalty is imposed on the Contractor, for a consecutive period of 5 months during the CMC period, the same shall be construed as default of the Contractor in performing the obligations under the contract.

1.43.9 All required consumables, including lubricants, would be provided by the Contractor without any additional cost. In case replacement / renewal of parts / components [other than the parts / components mentioned under exclusions (Clause No. 6.40.11)] is required, due to occurrence of defects or to maintain an adequate factor of safety, the same will be replaced / renewed by the Contractor without any additional cost. Only genuine parts, as used in the manufacturing and installation of the original equipment shall be provided. A tentative list, but not exhaustive, of such

items is given below:

- i) Traction media.
- ii) Travelling Cable.
- iii) Conductor Cable, Hoist Way & Machine Room Lift wiring.
- iv) CPU Card.
- v) Automatic Rescue Device (ARD)
- vi) Emergency Rescue Device (ERD)
- vii) A C Drive.
- viii) All types of Landing & Car Door Panel.
- ix) Control Relays.
- x) Gate Lock moving contact.
- xi) Gate Lock Arm.
- xii) Car Operating Panel (C. O. P.) Switch.
- xiii) Landing Operating Panel (L. O. P.) Switch.
- xiv) Position Indicators.
- xv) Electromagnetic Coil.
- xvi) Main Guide Shoe Liner.
- xvii) Counterweight (CWT) Guide Shoe Liner.
- xviii) Read Switch.
- xix) Limit Switch.
- xx) Car Gate Contact.
- xxi) Door Bearings.
- xxii) Distance Pieces.
- xxiii) Buzzers
- xxiv) Brake Shoes
- xxv) Safety Switch Contact.
- xxvi) Governor Switch.
- xxvii) Governor Roller.
- xxviii) Door Shoe.
- xxix) Push Cards.
- xxx) Indicators.
- xxxi) Thrust Bearing of Machine.
- xxxii) Announcing System.
- xxxiii) Terminals.
- xxxiv) SPP Card.
- xxxv) Rectifier Card.
- xxxvi) Step-down Transformer.

- xxxvii) All Contactor in Controller.
- xxxviii) Filter
- xxxix) Machine Unit.
- xl) All types of sheave.
- xli) Door Operator for auto door.
- xlii) All types of Cabin Light.
- xlili) Cabin Fan.

1.43.10 **Exclusions:**

Following parts / components of Lift are not included in Comprehensive Maintenance Contract:

Car enclosure, door-panels, hung-ceilings, car gates, light diffusers, light bulbs, fluorescent tubes, handrails, starters, chokes, mirrors, floor coverings, carpets, other architectural features, hoist way enclosure, hoist way gates, door frames, doors, sills, batteries, security system, external wiring to Lift , hoist way & machine room.

However, replacement / repair of aforesaid items would be done by the Contractor on additional cost. The methodology of arriving the payable amount [would be charged by the Contractor to HDC, SMP, Kolkata] against replacement / repair of aforesaid parts / components, would be as follows: -

Basic Cost [manufacturing cost at factory / procurement cost (for bought out items) of the Manufacturer] + 6% of basic cost towards handling charges + 15 % of Basic Cost towards installation charges + applicable GST.

For replacement of the items under exclusions [as detailed above], a joint assessment will be carried out by representatives of the Contractor & Haldia Dock Complex and cost involvement along with break-up of prices for each assessed item [as per the methodology mentioned above] will have to be submitted by the Contractor, based on which, separate orders would be placed on them, by HDC, SMP, Kolkata.

1.44 **Earthing :**

- 1.44.1 Earth Electrode should be made of 3 m long Medium Galvanised Mild Steel Tubes (as per IS:1239) of nominal bore 50 mm. The tube shall have perforated hole of 10 mm diameter at a cross distance of 75 mm. 260 mm long G.I. Plate of size 50 mm X 6 mm (with 4 nos. 10 mm dia tap hole, bend to shape of pipe) to be welded at 100 mm below the top of tube for connection of Earth Strip. G.I. Funnel / Cap to be provided on top of the tube. Two earth electrodes are to be interconnection to from one earth grid, which will provide a common ground for Earth Busbars / Feeder Pillar Boxes/ Street Light Poles/ equipment.

Earth Electrode to be driven in the Earth Pit filled up with alternate layer of Charcoal and Salt. Earth Pit should be provided with suitable size

Brick Masonry Inspection Chamber with removable RCC Cover (75 mm thick) with handle.

Excavation of earth, back filling, masonry work and interconnection of earthing electrodes (with 50 mm X 6 mm G.I. Flat), shall be within the Scope of Work.

- 1.44.2 All connection of the G. I. Flats / G. I. Wire, with the Earth Electrode & Earth Grid, should be made by welding & welding point should be covered by black Bitumen Paint.
- 1.44.3 Entire earthing should be done in accordance with the relevant Indian Standard (IS) issued by Bureau of Indian Standard, Indian Electricity Rules & Act and Code of Practice. Colour of insulation of the copper wire, to be used for earthing purpose, will have to be preferably GREEN.
- 1.44.4 All necessary work (including supply of aforesaid cable & other required materials), for providing aforesaid earthing connection, is under the scope of the Contractor.

1.45 **LIST OF PREFERRED MAKES / BRANDS:**

Sl. No.	Items	Manufactures / Makes / Brands
i)	MCB, RCCB, MCB Type Isolator, MCCB, Power Contactor, Time Switch, Switch – Disconnecter – Fuse Unit	L&T / LEGRAND / SIEMENS / SCHNEIDER / ABB
ii)	Air Circuit Breaker (ACB)	SIEMENS / SCHNEIDER / ABB / L&T
iii)	Current Transformer (CT), Potential Transformer (PT)	KAPPA / KALPA / INSTRANS / SCHNEIDER / JYOTI / PRAGATHI/ AE/IMP / SALZER
iv)	MCCB / MCB Enclosure or Distribution Board	L&T / LEGRAND / SIEMENS / SCHNEIDER / ABB/HENSEL
v)	PVC insulated (1.1 kV grade) single / multi-core copper flexible conductor.	FINOLEX / HAVELLS / RPG / UNIFLEX / MESCAB / RR KABLES/ POLYCAB
vi)	Telephone cable, LAN Cable, TV Cable	FINOLEX / HAVELLS / MESCAB / POLYCAB
vii)	Indoor Light Fittings and Lamps, Flexible LED strip (Excluding decorative Bracket Light)	PHILIPS / WIPRO / BAJAJ / CROMPTON / LIGHTING TECHNOLOGY (LT) / HAVELLS
viii)	Outdoor Light Fittings	PHILIPS / WIPRO / BAJAJ / CROMPTON / LIGHTING TECHNOLOGY (LT)/

Sl. No.	Items	Manufactures / Makes / Brands
		SIMOCO / HAVELLS
ix)	Piano Type / Modular type Switch, Socket, Ceiling Rose, Electronic Type Fan Regulator, etc.	ANCHOR / LEGRAND / PHILIPS / PANASONIC / ABB / HAVELLS / NORTH-WEST
x)	Ceiling Fan, Exhaust Fan, Wall Fan, Pedestal Fan, etc.	CROMPTON / ORIENT / HAVELLS / ALMONARD
xi)	Calling Bell	CONA / MAX / ANCHOR / PANASONIC
xii)	LT Cable (1.1 kV grade) PVC / XLPE , including Fire Alarm Cable & Fire Survival Cable.	HAVELLS / FINOLEX / GLOSTER / UNISTAR / RPG / APAR INDUSTRIES (UNIFLEX) / POLYCAB / RR KABLE / TORRENT
xiii)	Cable Jointing Kit	3M / RAYCHEM / DENSON
xiv)	Cable Lug & Cable Gland	DOWELLS / JHONSON / RAYCHEM
xv)	Digital Multifunction Meter, Energy Meter [ac Static Watthour Meters]	CONZERV / SECURE / L&T / ABB / SIEMENS / AE / IMP / UNIVERSAL / RESHABH / KAYCEE / MECO / ENERCON / NIPPEN / YOKINS
xvi)	Electric Water Heater (Geyser)	VENUS / BAJAJ / RACOLD / HAVELLS / CROMPTON
xvii)	Outdoor Type Box , Outdoor Type Distribution Board	HENSEL / SINTEX / ABB / HAVELLS / LEGRAND PLEXO / HAGGER VECTOR
xviii)	Paints	ASIAN / BERGER / NEROLAC / SHALIMAR / DULUX
xix)	Air-Conditioners	CARRIER / DAIKIN / HITACHI / BLUE STAR / VOLTAS.
xx)	Rigid Conduit, Casing-capping, Flexible Conduit	PRECISION or other reputed make (ISI marked)
xxi)	Refrigerant Piping	RAJCO / MANDEV
xxii)	EPABX, Digital Phone	SYNTEL NEOS
xxiii)	Telephone Handset	BEETEL / SONY
xxiv)	Main Distribution Frame (MDF) -telephony	KORNE / HAVELLS / AIRTEL
xxv)	Network Service Rack	VALRACK / NETRACK
xxvi)	Patch Cord [Cat 6 UTP], Cat 6 Keystone UTP Jack.	SCHNEIDER / LEGRAND

Sl. No.	Items	Manufactures / Makes / Brands
xxvii)	Telephone jack, Computer jack	LEGRAND/ANCHOR / MK / SCHNEIDER / CRABTREE
xxviii)	CCTV Camera, Network Video Recorder (NVR)	HONEYWELL/ PANASONIC / SONY
xxix)	Hard Disk	WESTERN DIGITAL
xxx)	Ethernet Routing Switch, SFP Transceiver, Power over Ethernet (POE)	D-LINK / DIGISOL / SYROTECH
xxxi)	LED display	SAMSUNG / LG / SONY / PHILIPS
xxxii)	Fire Alarm Panel, Photo-thermal Detector, Thermal Detector, Manual Call Point.	SIMPLEX
xxxiii)	MS pipe, GI Pipe	TATA / NEZONE / BANSAL / JINDAL
xxxiv)	Sluice Valve, Non-return Valve, Butterfly Valve	CARTER / HAWA / L&T/ CRESCENT/ UPADHYA, KEYSTONE
xxxv)	Fire Extinguisher	MINIMAX/ VIJAY/ ZENITH FIRE SERVICES / DEFLAME
xxxvi)	Terrace Pump	KIRLOSKAR / KSB
xxxvii)	Hydrant Valve	SEAL FIRE
xxxviii)	Hose Pipe	BRG / CRC
xxxix)	Fire Hydrant Hose Box, First-aid Hose Reel	ZENITH / FIRESHEILD

1.46

Bidders shall submit list of makes / brands for all the major items [in line with the aforesaid list] during submission of Techno-Commercial bid. In case bidders fails to submit the list, it would be presumed that the bidder would strictly adhere to the preferred makes as indicated in the instant Bidding Document.

After issuing the Letter of Acceptance (LOA) , Successful Bidder shall be required to comply the following during engineering stage of the project:-

Any new make, other than preferred make mentioned in the instant Bidding Document, may be accepted by the 'Engineer', if the same meets the following criteria:-

- Shall meet Technical Specification of the equipment / items, as mentioned in the instant Bidding Document.
- Shall be from OEM [Original Equipment Manufacturer].
- Shall submit at least 3 Nos. Work order and Performance certificate from Central Govt./ State Govt./ PSU/ other Reputed Organisation for offered make of equipment / items.
- Shall have valid type test certificates for the offered make of equipment / items, from CPRI /ERDA /ERTL /Gov. Labs , as applicable.

In case, the new make offered by the bidder does not meet above mentioned criteria, the Successful Bidder should be required to adhere to the preferred make list , as mentioned in the instant Bidding Document..

1.47 TEST ON COMPLETION

1.47.1 On completion of the work, necessary tests shall be carried out as per relevant standards to the satisfaction of the ‘Engineer’ or his representative.

1.47.2 On successful completion of ‘Test on Completion’, the system will be declared commissioned and the same will be taken over by HDC, SMPK.

1.48 AS BUILT DRAWING

On completion of the work, “As Built” drawings, duly incorporating all the changes made during the construction / execution, shall be submitted to Haldia Dock Complex. A CD / DVD / USB flash drive, containing the “As Built” drawings and comprehensive list of the drawings, shall also be submitted by the Contractor.

8. PREAMBLE TO THE BILL OF QUANTITIES

SYAMA PRASAD MOOKERJEE PORT, KOLKATA
HALDIA DOCK COMPLEX
QUERIES AND CLARIFICATIONS

NAME OF THE WORK:

INTERNAL AND EXTERNAL RENOVATION, INTERIOR DECORATION INCLUDING LANDSCAPING, ELECTRICAL AND FIRE FIGHTING WORK OF HDC GUEST HOUSE CAMPUS AT HALDIA, HDC.

Tender No.: I&CF/SDM/RZ/ET/22

Queries made by Godrej & Boyce vide email dated 11.12.2021.

Sl. No.	Reference _Description as per Bidding Document.			Queries of the firms	HDC, SMPK's Clarifications
1.	General MEP :		Make List	Kindly share list of approved Makes for: 1. LT Panels 2. PA System 3. Lighting arrester 4. Earthing 5. Siganges 6. Drain Pipe 7. Air distribution products 8. Factory fabricated ducts 9. Insulation	All the items are to be supplied / provided by the Successful Bidder in line with the 'Description of item', under 'Price Schedule' and relevant Technical Specifications, detailed under 'Technical Specification & Scope of Work (for Electrical Works)'. In connection with Makes of the items, the Bidders are requested to follow the 'LIST OF PREFERRED MAKES / BRANDS' (Clause No. 1.45) & requirements as per Clause No. 1.46, as applicable. For the items / components, which are not covered under Clause No. 1.45, bidders are requested to submit the list

Sl. No.	Reference _Description as per Bidding Document.			Queries of the firms	HDC, SMPK's Clarifications
					of Makes / Brands, in line with Clause No. 1.46.
2.	Part I : Electrical Upgradation	Section A	1.3 Distribution Wiring	Kindly specify average run for Sr. no. 1.3.1 on existing GI modular Switch Board (with mounting plate & top cover) {of light & fan} flushed on wall.	Sl. No. 1.3.1 is related to point wiring on existing Switch Board. Hence, 'average run' is not applicable.
3.	Part I : Electrical Upgradation	Section G	7.5 Laying of cables	Kindly confirm whether to include the price of casing pipe in this line item or not?	The scope also includes the supply of Casing Pipe.
4.	Part I : Electrical Upgradation	Section I	9.7 & 9.8 EPABX	1. Please confirm whether this is the same item or different to that of one specified in Part III Data & Voice system? If it is different, then kindly give technical specifications for same. 2. Also, please confirm on UOM (As it is given Lumpsum). Kindly specify scope for these line items.	These items are different and to be supplied in line with the 'Description of item'.
5.	Part I : Electrical Upgradation	Section K	11. Supply of Indoor Light / Fan Fittings	1. Kindly confirm whether only Supply & delivery is to be considered or SITC cost to be considered? As there is mismatch in the quantities specified in Section B (Fixing Light Fittings/Others Materials) & Section K (Supply of Indoor Light / Fan Fittings).	Excepting Sl. No. 11.11, only Supply & delivery is to be considered for all other items of Sl. No. 11 (Section-K). Please refer Item Sl. No. 2.1, for installation of Item Sl. Nos. 11.01, 11.02, 11.03, 11.05, 11.06, 11.07, 11.08, 11.09 & 11.10. Please refer Item Sl. No. 2.2, for installation of Item Sl. Nos. 11.04, 11.12, 11.19 & 11.20. Please refer Item Sl. No. 2.3, for

Sl. No.	Reference _Description as per Bidding Document.			Queries of the firms	HDC, SMPK's Clarifications
					<p>installation of Item Sl. No. 11.13.</p> <p>Please refer Item Sl. No. 2.4, for installation of Item Sl. No. 11.14.</p> <p>Please refer Item Sl. No. 2.5, for installation of Item Sl. No. 11.15.</p> <p>Please refer Item Sl. No. 2.6, for installation of Item Sl. No. 11.16.</p> <p>Please refer Item Sl. No. 2.7, for installation of Item Sl. No. 11.17.</p> <p>Please refer Item Sl. No. 2.8, for installation of Item Sl. No. 11.18.</p> <p>Please see Addendum-I, for Item Sl. No. 11.11.</p> <p>The Quantities shown in the 'Price Schedule' are estimated quantities, which may vary during execution.</p>
6.	Part I : Electrical Upgradation	Section L	12. Supply of Outdoor Light Fittings	1. Kindly confirm whether only Supply & delivery is to be considered or SITC cost to be considered? As there is mismatch in the quantities specified in Section B (Fixing Light Fittings/Others Materials) & Section L (Supply of Outdoor Light Fittings).	<p>Excepting Sl. No. 12.2, SITC Cost is to be considered for all other items against Sl. No. 12 (Section L).</p> <p>Please see Addendum-I.</p>
7.	Part I : Electrical Upgradation	Section O	15. Supply and Installation of LT Panel	Kindly share SLD for LT Panels.	<p>Details of items / components have been given in the 'Technical Specification & Scope of Work (for Electrical Works)'. Necessary SLD is required to be</p>

Sl. No.	Reference _Description as per Bidding Document.			Queries of the firms	HDC, SMPK's Clarifications
					prepared by the Successful Bidder for approval of the 'Engineer'.
8.	Part – V: FIRE FIGHTING SYSTEM		7. Providing all types of Signages, as per requirement.	Kindly specify types and quantities of Signages.	Types & Quantities of Signages would be finalised during execution, based on actual the site requirement.
9.	Part – VI: 8 Passenger Lift (Elevator)		1	1. The similar line items are specified in Part – A: CIVIL WORK FOR RENOVATION Sr. No 148 & 149. Please confirm. 2. Kindly give more technical specifications like i. Clear insider shaft dimensions ii. Pit depth iii. Minimum floor to floor height iv. Headroom height	Sl. Nos. 148 & 149 under Part-A of Civil Work would not be required. SITC and CMC for Passenger Lift (Elevator) is to be considered against Part-VI, under 'Price Schedule' of Electrical Works. Please see Addendum-I. For other details, please refer attached General Arrangement Drawing of the Lift.
10.	Part – VI: 8 Passenger Lift (Elevator)		2. 5 year COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT CHARGES	CMC is only for Passenger lift or for all other packages also? Please confirm.	CMC is only for Passenger lift.

QUERIES AND CLARIFICATIONS**NAME OF THE WORK:**

INTERNAL AND EXTERNAL RENOVATION, INTERIOR DECORATION INCLUDING LANDSCAPING, ELECTRICAL AND FIRE FIGHTING WORK OF HDC GUEST HOUSE CAMPUS AT HALDIA, HDC.

Tender No.: I&CF/SDM/RZ/ET/22

Queries made by ART-E-MIDE CONSTRUCTION PVT. LTD. vide email dated 21.12.2021.

Sl. No.	Reference	Queries of the firms	HDC, SMPK's Clarifications
11.	Electrical up gradation – Section vi Passenger lift, Sl. No. 1 & 2	Specified item and the technical specification are ok but we found the lift item also in civil part- A Sl. No. 148 is this item is ok? If yes, can we consider the technical specification for the same as specified in Electrical upgradation.	Refer to HDC, SMPK's Clarifications under Sl. No. 9 of Annexure-I . Item no. 148 & 149 to be deleted.
12.	Civil part-A	Require detail specification or detail drawing, design etc. for the item no. 55,56,58 to 64, 86, 87 for quoting reasonable rates.	As per instruction and approval of Engineer on design/ drawings submitted by the successful bidder.
13.	Civil part-B	Sl. No. 68, there is no item detail, only quantities specified, what will be consider for quoting rate.	The item no. 68 may be read as: “Supplying and stacking of good earth (adequate for horticulture work) at site including royalty (earth measured in stack will be reduced by 20% for payment)”.
14.	Civil part-B	Sl. No. 73 of specified quantities not required as the quantities are specified in Sub-Item of Sl. 73 (i – xii).	Agreed.

SPECIAL NOTES

1. CIRCULAR ROOF TO BE PROVIDED AT AN INTERVAL OF EVERY 50 METERS, WHERE THE CONDUIT LENGTH WILL BE MORE THAN 75 METERS.

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

2. SPECIFIED DIMENSIONS SHALL BE FOLLOWED.

3. THIS DRAWING, IS THE PROPERTY OF M/s VAIJANATH. SHALL NOT REPRODUCED, COPIED, HANDLED OR USED TO BEYOND OR USED FOR ANY OTHER PURPOSE OTHER THAN FOR WHICH IT IS PROVIDED.

4. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO START OF WORK. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE CONSULTANT.

5. ALL DIMENSIONS SHALL NOT SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL AND SERVICES DRAWINGS. ANY DISCREPANCY NOTICED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSULTANT. THE OTHER RESPONSIBLE PARTY OF RECEIPT OF THIS DRAWING SHALL ALWAYS PRIOR TO PROCUREMENT / EXECUTION OF WORK.

7. VENDOR/CONTRACTOR TO VISIT BACK WITHIN 7 DAYS OF WORKING DAYS TO VERIFY THE DIMENSIONS OF THE DRAWING AND SERVICES. ANY DISCREPANCY OR MISUNDERSTANDING BEING, IF OTHERWISE IT WOULD BE DEEMED THAT THEY HAVE UNDERSTOOD THE DRAWING / DESIGN AND OPEN FOR RESPONSIBILITY FOR THE WORKS CARRIED OUT ACCORDINGLY.

PROJECT NAME

PROPOSED GUEST HOUSE AT BOLDIA DOCK COMPLEX

CLIENT NAME

HOLIDA HOUSE SERVICES

SYAMA PRASAD MOOKERJEE PORT, KOLKATA
HALDIA DOCK COMPLEX

ADDENDUM / CORRIGENDUM- II

CORRECTIONS / ADDITIONS / DELETIONS, ETC.

Tender No. : I&CF/SDM/RZ/ET/22

NAME OF THE WORK:

INTERNAL AND EXTERNAL RENOVATION, INTERIOR DECORATION INCLUDING LANDSCAPING, ELECTRICAL AND FIRE FIGHTING WORK OF HDC GUEST HOUSE CAMPUS AT HALDIA, HDC.

NOTE :

1. This “Addendum-II” should be read in conjunction with ‘Bidding Document’ (including Notice Inviting e-Tender).
2. Consequential changes, arising out of this Addendum-II, will be deemed to have been effected, even if the same were not incorporated specifically in the Bidding Document.
3. All other terms and conditions of the Bidding Document, will remain unchanged.

ADDENDUM-II

Tender No. I&CF/SDM/RZ/ET/22

Sl. No.	Page No.	Reference	As specified in the Bidding Document	To be read as / Remarks		
<u>BILL OF QUANTITIES</u>						
			Description of Item	Unit	Quantity	
1.	115	Part-A : CIVIL WORK FOR RENOVATION. Sl. No. 148	Supply and Erection of one no 8 persons (544 Kgs) gearless passenger MRL lift with rear side transparent glass wall.	No	1.000	To be deleted.
2.	115	Part-A : CIVIL WORK FOR RENOVATION. Sl. No. 149	5 year COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT CHARGES	No	1.000	To be deleted.
PRICE SCHEDULE for <i>Electrical works related to renovation of HDC Guest House at Haldia Township.</i>						
			Description of item			
3.	156	PART-I ELECTRICAL UPGRADATION SECTION: K [Supply of Indoor Light / Fan Fittings] Sl. No. 11.11	Supply and delivery of IP20 rated Flexible LED strip (not less than 5 m, System wattage : 28 W approx.) [using high brightness SMD LED as the light source] for indoor application [suitable for cove-lighting, decorative lighting], complete with all accessories, connector, driver & LED, suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'.	Supply, installation, testing & commissioning of IP20 rated Flexible LED strip (not less than 5 m, System wattage : 28 W approx.) [using high brightness SMD LED as the light source] for indoor application [suitable for cove-lighting, decorative lighting], complete with all accessories, connector, driver & LED, suitable for 230 V AC, 50 Hz supply system and as per the 'Technical Specification & Scope of Work'.		

Sl. No.	Page No.	Reference	As specified in the Bidding Document	To be read as / Remarks
			[Similar to Cat No. : LED Strip SKY Cove 5M, Philips].	[Similar to Cat No. : LED Strip SKY Cove 5M, Philips].
4.	158	PART-I ELECTRICAL UPGRADATION SECTION: L [Supply of Outdoor Light Fittings] Sl. No. 12.1	Supplying and erecting bollard (using high efficacy LEDs as the light source) [with directional reflector, asymmetric PC diffuser, powder coated aluminium extruded housing (IP 65)], complete with all accessories (including potted driver), suitable for 230 V AC, 50 Hz supply system, pre-wired up to terminal block and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. LB12-131, Wipro] (System wattage: 11 W approx.)	Supply, installation, testing & commissioning of bollard (using high efficacy LEDs as the light source) [with directional reflector, asymmetric PC diffuser, powder coated aluminium extruded housing (IP 65)], complete with all accessories (including potted driver), suitable for 230 V AC, 50 Hz supply system, pre-wired up to terminal block and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. LB12-131, Wipro] (System wattage: 11 W approx.)
5.	158 & 159	PART-I ELECTRICAL UPGRADATION SECTION: L [Supply of Outdoor Light Fittings] Sl. No. 12.3	Supply & delivery of surface (Wall / ceiling) mounted LED light fittings (IP 54) [ABS plastic housing, with CRCA reflector and High Efficiency Translucence (HET) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LW01-101, Wipro] (System wattage: 9 W approx.)	Supply, installation, testing & commissioning of surface (Wall / ceiling) mounted LED light fittings (IP 54) [ABS plastic housing, with CRCA reflector and High Efficiency Translucence (HET) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LW01-101, Wipro] (System wattage: 9 W approx.)
6.	159	PART-I ELECTRICAL UPGRADATION SECTION: L [Supply of Outdoor Light Fittings] Sl. No. 12.4	Supply & delivery of LED ground-light / bush-light fittings (IP 67) [polyester coated aluminium housing], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LF05-450, Wipro] (System wattage: 6 W approx.)	Supply, installation, testing & commissioning of LED ground-light / bush-light fittings (IP 67) [polyester coated aluminium housing], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LF05-450, Wipro] (System wattage: 6 W approx.)

Sl. No.	Page No.	Reference	As specified in the Bidding Document	To be read as / Remarks
7.	159	PART-I ELECTRICAL UPGRADATION SECTION: L [Supply of Outdoor Light Fittings] Sl. No. 12.5	Supply & delivery of LED underwater light fittings (IP 68) [marine grade stainless-steel # 316 housing], with waterproof (IP 67) Connector & Driver, suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model: KL 6762, Klite] (System wattage: 3 W approx.)	Supply, installation, testing & commissioning of LED underwater light fittings (IP 68) [marine grade stainless-steel # 316 housing], with waterproof (IP 67) Connector & Driver, suitable for 230 V AC, 50 Hz supply system, complete with all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Model: KL 6762, Klite] (System wattage: 3 W approx.)
8.	159	PART-I ELECTRICAL UPGRADATION SECTION: L [Supply of Outdoor Light Fittings] Sl. No. 12.6	Supply & delivery of LED High-Bay & Mid- Bay light fittings (IP 66) [Pressure Die Cast aluminium housing, powder coated, with Polycarbonate (PC) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LE07-501, Wipro] (System wattage: 35 W approx.)	Supply, installation, testing & commissioning of LED High-Bay & Mid- Bay light fittings (IP 66) [Pressure Die Cast aluminium housing, powder coated, with Polycarbonate (PC) diffuser], suitable for 230 V AC, 50 Hz supply system, complete with suitable driver & all accessories and as per the 'Technical Specification & Scope of Work'. [Similar to Cat No. : LE07-501, Wipro] (System wattage: 35 W approx.)