Project: *Gopalpur Palm Resort –*

Swosti Group

Request for Proposal:

Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam,

on

Item Rate Contract Basis

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INTRODUCTION

Background

Swosti Premium Ltd., a leading hospitality group in Odisha, the owner and developer of a hospitality project titled Gopalpur Palm Resort located at Gopalpur, Odisha(hereafter referred to as "The Client") is undertaking the development of a world-class hospitality destination under the brand **"Gopalpur Palm Resort"** at Gopalpur-on-Sea, District Ganjam, Odisha. The project envisions a premium coastal resort comprising a luxury hotel of B+G+9 storied building with 124+ keys, banquet and MICE facilities, restaurants, landscaped areas, spa & wellness, swimming pools, and associated amenities.

In pursuit of delivering a high-standard facility within a fixed timeframe, Swosti Premium Ltd. intends to select a reputed Vendor for Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a **Item Rate Contract** Basis.-

Project Summary

Pkg. No.	Name of Work	Estimated Cost	Construction Period	Maintenance Period
06	Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam,	₹ 150 Lakhs*	6(Six) Months	1 Year (DLP)+ 5 (Five) Years Paid

*Estimated Cost is exclusive of GST and based on current project planning and scope.

Scope of Work

The selected Bidder (hereafter referred to as the **"Contractor"**) shall be responsible for the following deliverables as per the terms of the Item Rate Basis contract:

- **Supply, Execution, Testing & Commissioning** based on issued GFC drawings
- **Procurement & Execution** of materials, manpower, equipment, and tools
- **MEP related facilitation with Civil Contractor in Coordination** with PMC as per client-appointed agencie's requirement.

PREAMBLE

1 The work shall be carried out strictly in compliance with this tender and design requirement. The onus of demonstrating satisfactory performance of entire system shall be sole responsibility of the contractor and supplied material shall be as per specifications and approved shop drawings. Relevant Indian Standards shall be adhered. It is to be understood that all liabilities and risks arising out of the stated conditions of contract shall be covered by contractor and Owner/Consultant shall be indemnified.

2 The unit rate for all items in the BOQ shall be quoted in Indian Rupees (INR) and include cost of equipment, wastage, accessories, tools, appliances, labour, installation, testing & commissioning upto satisfactory handover.

3 The contractor shall ensure that unit price of each item includes cost of Equipment, materials, fixing accessories, appliances, tools, plants, transport, labour and incidentals required in preparation for and in the full and entire execution, testing, balancing, commissioning and completion of work called for in the item and as per Specifications and Drawings.

4 The contractor to ensure that all waste and debris is collected and satisfactorily disposed off from site.

5 The contractor shall ensure that unit price of each item includes loading, transporting, unloading, handling/double handling, hoisting to all levels, setting, fixing in position and insurance upto satisfactory handover including security.

6 The specifications and drawings shall be read in conjunction to the Bill of Quantities. In case of conflict between Bill of Quantities and other documents including the specifications, the most stringent shall apply. The interpretation of the Architect / Consultant /Project Manager shall be final and binding

7 The quantities mentioned in the BOQ are for contractor guidance only.The actual procurement of material shall be done only after written approval of shop drawings & technical submittals. This shall also apply to the Contractor's requisition for Owner supplied materials. The contractor shall be solely responsible for material supplied at site.

9 The contractor shall ensure work is carried out in conformity with the approved shop drawings and taking cognizance of latest architectural and other displine drawings. The execution at site should be based on coordinated shop drawings or after obtaiing written approval of Project Manager/Architect/Consultant.

10 The progress of work shall be in accordance with approved pert chart which will be prepared by Contractor at the time of award of work and duly revised from time to time.

11 All shop drawings will be made on Autocad or Revit as per Project Manager requirement. Coloured prints shall be provided for site work. The shop drawings will clearly indicate requirement of hangars, supports, quantities and instructions for installation.

12 The information contained in this bid document, or any other information subsequently provided to Bidders—whether verbally, in documentary form, or by any other means—by or on behalf of the Client or any of its employees or advisers, is provided to the Bidders on the terms and conditions set out in this bid and such other terms and conditions subject to which such information is provided.

13 This bid document is not an agreement, nor is it an offer or invitation by the Client to any prospective Bidder or any other person. The purpose of this bid is to provide interested Bidders with information that may be useful in formulating their Proposals pursuant to this bid process.• This document includes statements that reflect various assumptions and assessments made by the Client in relation to the Services. Such assumptions, assessments, and statements do not purport to contain all the information that each Bidder may require. This bid may not be appropriate for all persons, and it is not possible for the Client, its employees, or advisers to consider the objectives, technical expertise, and particular needs of each party who reads or uses this bid.

14 The assumptions, assessments, statements, and information contained in this document may not be complete, accurate, adequate, or correct. Each Bidder should therefore conduct its own investigations, analysis, and due diligenG.M(B D),Swosti Premium Ltd and should check the accuracy, adequacy, correctness, reliability, and completeness of the information contained in this

bid and obtain independent advice from appropriate sources. Information provided in this bid to Bidders covers a wide range of matters, some of which depend on interpretations of law. The information provided is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Client accepts no responsibility for the accuracy or otherwise of any interpretation or opinion on the law expressed herein.

15 The Client, its employees, and advisers make no representation or warranty and shall have no liability to any person, including any Bidder, under any law, statute, rule or regulation, or under the principles of tort, restitution, or unjust enrichment, for any loss, damage, cost, or expense which may arise from or be incurred or suffered on account of anything contained in this bid or otherwise, including the accuracy, adequacy, correctness, reliability, or completeness of this document, or any assumption, statement, or information contained in or deemed to form part of this bid, or arising in any way in this selection process.

16 The issuance of this bid document does not imply that the Client is bound to select any Bidder for the provision of the Services, and the Client reserves the right to reject all or any of the Proposals without assigning any reasons whatsoever. •The Client may, in its absolute discretion—but without being under any obligation to do so—update, amend, or supplement the information, assessment, or assumptions contained in this bid.

17 The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Proposal, including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Client, or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses shall remain with the Bidder, and the Client shall not be liable in any manner whatsoever for the same or for any other costs or expenses incurred by a Bidder in the preparation or submission of the Proposal, regardless of the conduct or outcome of the selection process.

Swosti Hotels
(A Unit of Swosti Premium Ltd.)
Corporate Office: Swosti Premium,
Jaydev Vihar, Bhubaneswar – 751013, Odisha
Email: info@swostihotels.com
Website: www.swostihotels.com

File No.: PMC/SPL/GPR/2025/01
Letter No.: 002 / Gopalpur, Date: 10th March 2026

LETTER OF INVITATION

Swosti Premium Ltd, on behalf of Gopalpur Palm Resort (A Unit of Swosti Premium Ltd), invites sealed bids for the Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam on a Item Rate Contract Basis for selection of a qualified agency to whom the project may be awarded.

The bid documents will be made available from 10.04.2026 10.00 am IST to 30.04.2026 5 pm IST at designated link or upon request physically from Swosti Corporate Office, Bhubaneswar or through official mail ID .Bid document can be downloaded from the website - https://www.swostihotels.com/tenders.html

The completed proposals shall be submitted in hard copy (physical submission) at the address specified in the bid document no later than 3:00 PM on 01.05.2026.

Three days before the scheduled Pre-Bid Meeting the intending bidders are requested to visit the site for accessing bid document and submit their queries in written form via their official mail ids or through registered postal service addressed to Swosti corporate office.

The Pre-Bid Meeting will be held on 19.04.2025 at 11.00 AM via Zoom/Physical mode. Meeting link/Venue shall be shared subsequently.

All received proposals will be opened at 4:00 PM on 01.05.2026 in the presence of authorized representatives of the bidders (not mandatory), at the venue communicated via email.

Swosti Premium Ltd reserves the right to reject any or all bids without assigning any reason thereto and shall not be liable for any costs incurred by bidders in the preparation or submission of proposals.

All subsequent corrigenda, clarifications, or updates (if any) will be circulated through official communication only via:

gm.communications@swostihotels.com

pmc.swosti@arkitechno.com

Gopalpur Palm Resort

(A Unit of Swosti Hotels)

gm.communications@swostihotels.com

Swosti Premium Ltd. Gopalpur Palm Resort Project,Gopalpur,Ganjam

DATED: 10.04.2026

DETAILED TENDER NOTICE

1. Last Date & Time of issue of tender documents from 10.04.2026 to 30.04.2026
2. Last Date & Time of receipt of tender 01.05.2026 upto 3.00 p.m.

G.M(B D),SWOSTI PREMIUM LTD Swosti Premium Ltd ,Bhubaneswar on behalf of Swosti Premium Ltd invites sealed item rate tenders from eligible contractors for similar works.

Name of work: **Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System Fire Alarm & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam,**

Estimated cost of work put to tender : Rs. 150 Lacs
Time of completion : 6 Months

Earnest Money Deposit: **Rs. 1,50,000/- (Rupees One Lacs Fifty Thousand only)** is to be submitted with tender document as earnest money. The above payment shall be made in the shape of deposit at pay order/demand draft of a scheduled bank issued in favour of **Swosti Premium Ltd payable** at New Delhi.

Works to be completed in coordination with the main Civil & MEP Interior works contractor. No extra for non-availability of fronts or coordination with main agency shall be payable on account of the same.

Tender documents can be downloaded from SWOSTI PREMIUM LTD website (www.Swosti Premium Ltd .ac.in) and submitted with non-refundable DD of **Rs. 11800/-** in favour of **Swosti Premium Ltd** as cost of tender.

1) The tenders shall be placed in sealed envelopes with a name of work and due date written on the envelope and addressed to the G.M(B D),SWOSTI PREMIUM LTD SWOSTI PREMIUM LTD. Complete tender documents shall be submitted by the approved contractors in **two envelopes**. **1st envelope** shall contain the earnest money in the shape of Demand Draft / Pay Order of a scheduled Bank requisite shape as per condition & eligibility criteria and cost of tender as stated above along with "Technical Bid " and supporting documents . The 2nd sealed envelop shall contain the "Financial Bid" . Both the sealed envelops shall be contained in another envelop , sealed and super scribed with the "Name of the Work", the name and detailed address of the bidder as well as contact phone number & e-mail id. This sealed envelop has to be submitted at designated place as indicated in the bid document.

2) The eligible contractors who have carried out similar works in Reputed Private Hotel Chain/Govt Deptts/PSU/Reputed Pvt sector /MNCs are to submit the experience certificates for the works and registration certificates with Govt. Depts. if any. The said certificates along with the EMD be

enclosed in Envelope-1.

3) Experience of having successfully completed similar works during last seven years ending on the 31.12.2025. **The Similar works shall mean works of Minimum 600 TR capacity Water/Air cooled screw chiller.** The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from date of completion to last date of receipt of tenders.

Three similar works not less than 40 % of est.cost	Rs 60.00 lacs each Or
Two similar works not less than 60 % of est cost	Rs 90.00 lacs each Or
One similar work not less than 90 % of est cost	Rs 135 lacs each

The work of similar nature should have been executed under Central/State/Autonomous/Central PSU/State PSU/local authority/Reputed Hotelier Group formed under any Act in Central/State .

4) **The bidder should be Original Equipment Manufacturer or authorized dealers of OEM and certificate/corroborative documentary evidences are required be submitted along with the bid.**

5) The applications not supported with requisite experience certificates, GST registration certificate and ITCC in Envelope-1 shall not be entertained

6) Solvency certificate for Rs. 90 lacs from any nationalized /scheduled bank. The applicant shall submit the solvency certificate, not older than six months prior to 30th September 2025, issued by any scheduled bank, in original.

7) Average Annual Turnover over HVAC works should be at least Rs 300 lacs during immediate last 3 consecutive financial years ending 31st Mar 2025.

8) Should not have incurred any loss in the more than two years in the last five years ending 31st Mar 2025.

9) Company should not have been barred / blacklisted for taking up similar work in any organization- A certification to this effect on the letter head of the bidder.

10) Performance certificates issued by past employers must be submitted by the

vendors for the works, in support of their experience.

11) Bidder shall furnish list of the supervisory persons and other technical persons he wishes to deploy in this job along with their experience details.

12) Letter of Authority for signing and negotiation of bid.

13) The 2nd **envelope** shall contain the financial bids including Priced Schedule of Quantities sealed,

14) The 1st envelop should contain Form of Tender, Conditions of Tender, Articles of Agreement, Brief Specifications, Condition of contract, Drawings

all duly signed by the authorized signatory of the firms.

1st and 2nd envelopes are to be put in a single envelope duly super-scribed the name of work, and addressed to G.M(B D),SWOSTI PREMIUM LTD and with their address. Incase the tenderer does not fulfill the laid down eligibility criteria or fails to deposit the earnest money in prescribed form, financial bid shall not be opened.

Tenderers shall seal the tender after affixing their initials and put stamp on each and every page of tender document before submission. The tender of the contractor, who submits in-complete tender document or submits more than one tender for one work, shall not be considered at all.

Tenders will be received by the **G.M(B D),SWOSTI PREMIUM LTD up to 3.00 P.M on 01.05.2026** and will be opened by him or his authorized representative in the office of Registrar, SWOSTI PREMIUM LTD on the same day at **4.00 P.M.**

First the Technical Bids will be opened and screened. The bids shall be examined whether the EMD is in order and the bidder meets the minimum eligibility criteria specified above. . Those bidders whose EMD is in order, meets the minimum eligibility criteria, has submitted all the required documents and meet the technical requirements shall be considered for opening of financial bid. Conditional tenders would not be accepted. Financial bids in respect of contractors who do not fulfill above criterion shall not be opened.

15) No Xerox / certified copies of tenders shall be accepted, if submitted these tenders shall be rejected.

16) **Pre- bid meeting** - A pre bid meeting will be held as on **19th April 2026** at 11.00 AM - Any doubts or queries of the potential bidders will be addressed during the hybrid meeting. Venue: Hotel SWOSTI PREMIUM LTD /Zoom Link.

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SECTION-1 INSTRUCTION TO BIDDERS (ITB)

1. The time allowed for carrying out the construction work will be 6 months from the 7th day after the date of written orders to commence the work.

2. The site for the work is available.

3. During execution of works, because of some unforeseen circumstances to enable him to complete the work as per terms of the contract, shall not relieve the contractor from any liability or obligations under the contract and he shall be responsible for the acts, defaults and neglects of any sub-contractor, his agents or workmen as fully as if they were the acts, defaults or neglects of the contractor, his agents or workmen.

4. The Contractor shall be required to deposit an amount equal to 3% of the tendered value of the work as performance guarantee in the form of an irrevocable bank guarantee bond of any scheduled bank or State Bank of India in accordance with the form prescribed or in the form of fixed deposit receipt etc. within 15 days of the issue of letter of acceptance. The performance guarantee shall have the validity up to 31st Jan 2027.

5. Tenderers are advised to inspect and examine the site and its surrounding at their own cost and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at own cost all materials, tools and plants, water, electricity, access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contact documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specification of the work to be done, local condition and other factors having a bearing on the execution of the work.

6. The Accepting Authority -SWOSTI PREMIUM LTD does not bind himself to accept the lowest or any other tender and reserves to him/herself the authority to reject in whole or part, any or all of the tenders received without the assignment of any reason. All tenders in which any of the prescribed conditions are not fulfilled or for any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.

7. Canvassing, whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractor who resort to canvassing will be liable to rejection.

8. The Accepting Authority reserves to himself the right of accepting the whole or any part of the tender and the tender shall be bound to perform the same at the rates quoted.

9. Tenders shall remain open for acceptance for a period of 60 days from the date of opening of the tenders. If any tenderer withdraws his tender before the said period for issue of letter of acceptance, whichever is earlier or makes any modification in the terms and condition of the tender which are not acceptable to the SWOSTI PREMIUM LTD , then SWOSTI PREMIUM LTD shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely besides black listing of the tenderer.

10. The notice-inviting tender shall form a part of the contract document. The successful tenderer/contractor shall, sign the necessary contract documents consisting of the notice inviting tender, all the documents including additional conditions, specification and drawings, if any forming the tender as issued at the time of invitation of tender and acceptance thereof with any correspondence leading thereto within the time specified in the letter communicating the acceptance of the tender. In case of delay, the earnest money may be forfeited and the tender cancelled or the contract enforced as per the terms of the tender and the invitation to tender and the tenderer shall thus be bound by the condition of contract even though the formal agreement has not been executed and signed within the specified time by the tenderer.

11. The work shall be carried out as per general of conditions of contract (Tender Contract) and form part of the agreement/document.

12. Contract is liable to be terminated by the SWOSTI PREMIUM LTD without payment of any compensation, if subsequent to the acceptance of tender the contractor is black- listed by, or enters into partnership of any black listed contractor of the SWOSTI PREMIUM LTD or any other department, or Govt. or its, undertakings.

13. Cost of Bidding

    13.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

14. Clarification of Bidding Documents

    14.1 A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing/mail at the Employer's address indicated in the invitation to bid not later than 7 days before the Date of Submission of Tenders. Email- **admin-project@Swosti Premium Ltd .ac.in**

15. Currencies of Bid and Payment

15.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments will be invariably made in Indian Currency (Indian Rupees.)

16. PROTECTION OF ENVIRONMENT AND OTHER LAWS:

The contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and other local Acts/ Laws/ rules made there under, regulations, notifications and bye-laws of local authorities or any other law, bye-laws, regulations that may be passed or notification that may be issued in this respect in future by the State/ Local authority.

17. Evaluation of Bids Received : Detailed at following section

For and on behalf of the
Swosti Group of Hotels, Resorts, Travels & Educations
GM Corporate Communications.
Cell- 9938244538
Email: gm.communications@swostihotels.com

Bid Data Sheet

Bid Identification No.: SWOSTI/GPR/TENDER/CCW/06/2026-27

The Swosti Premium Ltd., invites sealed, offline bids from reputed and experienced civil construction firms for the following work on Item Rate basis contract. Project details are as under:

Tender Summary

Sl. No.	Particulars	Details
1	Name of Work	**Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis**
2	Project Location	Plot No. 182/552/617 & 184/618, Khata No. 102 (AJA), Gopalpur-on-Sea, Ganjam District, Odisha
3	Nature of Contract	Item Rate Contract
4	Estimated Project Cost	₹150 Lalhs (One Hundred Fifty Thousand Lakhs Only)
5	Time for Completion	06(Six) Calendar Months from date of LOA
6	Number of Packages	01 (One)
7	Eligibility	Reputed private sector entities having successfully completed similar scale works. **Relevant Project Experience must include**: •IT/Office Buildings •Commercial or Hospitality Projects
8	Cost of Tender Document	₹11,800/- (Including GST)(Non-refundable, to be paid via Demand Draft(DD) in favor of "Swosti Premium Ltd.")- Including GST
9	Availability of Tender Documents	From 10.04.2025 to 30.04.2025 up to 5.00 PM –. a) From the Swosti Hotels website - https://www.swostihotels.com/tenders.html
10	Seeking Queries on RFP Document(Through email/Letter)	19.04.2025 upto 3:00 PM a) E-mail id. manoj@arkitechno.com b) Address : Swosti Hotels Corporate Office: Swosti Premium, Jaydev Vihar, Bhubaneswar – 751013, Odisha
11	Pre-Bid Meeting	19.04.2025 at 11:00 AM at Swosti Corporate Office, Bhubaneswar/Zoom Link in virtual mode
12	Last Date of Submission of Bids	01.05.2025 up to 3:00 PM (Sealed Envelopes at Swosti Corporate)

Sl. No.	Particulars	Details
13	Opening of Technical Bids	01.05.2025 at 4:00 PM in presence of PMC & Client
14	Technical Presentation (By technically qualified bidders)	Not Applicable
15	Opening of Financial Bids	Exact date and time shall be informed to qualified bidders atleast 48 hours of date of opening.
16	Mode of Tender	Offline, Physical Submission – Two Envelope System (Technical + Financial)
17	Bid Validity	90 Days from Last Date of Submission of Bids
18	Communication Email	manoj@arkitechno.com pmc.swosti@arkitechno.com

The bids must be submitted in hard copy (manual mode) in two separate sealed envelopes contained in another sealed envelope, marked clearly as “Technical Bid” and “Financial Bid”, mentioning the name and address of bidder, superscribed with title of work put to bids, along with all documents as prescribed in the bid document hereunder.

The client reserves the right to cancel the bidding process and/or reject any or all bids without assigning any reason there to. Corrigendum to bidding process/bid document if issued, subsequent to pre-bid meeting, shall be shared directly with bidders seeking clarification on or before pre-bid meeting/ participating in pre-bid meeting via email provided by them.

Authorized Signatory
Mr. Nihar Ranjan Sahoo, GM Corporate Communications.

Swosti Group of Hotels, Resorts, Travels & Educations

Cell- 9938244538

Email: gm.communications@swostihotels.com

Gopalpur Palm Resort Project
On behalf of Swosti Premium Ltd.

Evaluation Criteria

(Clause 1.1 of Instructions to Bidders – Gopalpur Palm Resort Project)

INTRODUCTION

- This Evaluation Criteria outlines the method by which bidders for the bids received will be evaluated based on their technical and financial qualifications, experience, project-specific understanding, organizational setup, and resource readiness.
- The evaluation will be conducted in accordance with the Instructions to Bidders (ITB) and is applicable to **Cover-I: Technical Bid**. Only those bidders who qualify under the technical evaluation will be considered for the opening and evaluation of their **Cover-II: Financial Bid**.

EVALUATION OF TECHNICAL BID (COVER-I)

The Technical Bid will be evaluated based on the following five main criteria:

Sl. No	Evaluation Criteria	Maximum Marks
a	Financial Strength	25
b	Experience in Similar Nature of Work	25
c	Working Methodology and execution of similar nature of work(DBR)	25
d	Key Personnel	25
	Total	**100**

Criteria/Sub-Criteria of TECHNICAL EVALUATION

Financial Strength – 25 Marks

Component	Max. Marks	Evaluation Basis
(i) Annual Financial Turnover (as per Bid Data Sheet)	20	70% marks for minimum eligibility criteria; 100% for twice the minimum. In between – on pro-rata basis.
(ii) Liquid Assets (as per Clause of Bid Data Sheet)	5	70% marks for minimum eligibility criteria; 100% for twice the minimum. In between – on pro-rata basis.

Experience in Similar Nature of Work – 25 Marks

Description	Max. Marks	Evaluation Basis
Completion of Similar Projects of Bid Data Sheet)	25	70% marks for minimum eligibility; 100% for twice the minimum. In between – on pro-rata

Description	Max. Marks	Evaluation Basis
		basis.

Methodology and Work Program – 25 Marks

Bidder shall submit a detailed Design Basis Report covering approach to execution of civil works.

Assessment will be based on content, specificity, and alignment to project needs.

Component	Marks
Technical Specifications for Materials & Workmanship	10
Project Execution Schedule / Work Programme	10
Approach & Methodology (project-specific)	5
Total	**25**

Key Personnel – 25 Marks

The following key personnel must be proposed and CVs submitted:

Position	Qualifications & Experience	Max. Marks	Evaluation Basis
Project Manager(1 No)	B.E./B.Tech Mech/Elect with 10+ years	15	Graduation (5), Experience (Exp. 10 yrs-7 , Higher - 10)
Site Engineer-HVAC (1 No)	B.E. with 3 yrs/Diploma with 7+ years in Mech	5	Graduation (2),Dip- (1), Experience (Exp. 7 yrs-2 , Higher - 3)
Site Engineer-Elect (1 No)	B.E. with 3 yrs/Diploma with 7+ years in Elect	5	Graduation (2),Dip- (1), Experience (Exp. 7 yrs-2 , Higher - 3)

GENERAL NOTES

- Bidders must furnish all necessary supporting documentation for substantiating the information.
- Only those bidders who score **70 marks or more (out of 100)** in Technical Evaluation shall be considered for opening of their “Financial Proposal”

Enhancement Factors for Past Financial Years (for Turnover/Experience Updating):

Year Before	Enhancement Factor
One	1.10
Two	1.21

Three	1.33
Four	1.46
Five	1.61

SECTION-2-FORMS & FORMATS

DOCUMENTS TO BE FURNISHED BY BIDDER

1. Documents as specified in Section 1, must be submitted by the Bidder in the Formats mentioned in Section 2 along with the BID.

2. Any other document, if asked by Employer for clarification during evaluation, shall be submitted by the bidder.

CHECKLIST OF DOCUMENTS TO BE SUBMITTED IN TECHNICAL BID

	Criteria	**Document to be submitted**	**Submitted (Yes/No)**
1	Cost Of Bid Document	DD/BC	
2	EMD/ Bid Security -	In the form of BG/Bid Security fee deposit details.	
3	Written power of attorney of the signatory of the Bid to commit the Bidder(If any)	Copy of power of attorney	
4	Whether Indian firms (Y/N)	Certificate of Incorporation	
5	OEM firms with proven track record of execution of similar HVAC Projects in IT buildings, commercial complexes, hospitality projects, or high-rise structures (G+9 or above).	Relevant Certificate	
6	Constitution or legal status of Bidder	Incorporation Certificate, Partnership Deed, Trade License, MoA, AoA	
7	Place of registration	Qualification Information	
8	Principal place of business	Qualification Information	
9	Major items of construction equipment proposed to carry out the Contract	Invoices of equipment / Lease agreement/Letter of Commitment	
10	Qualifications and experience of key site management and technical personnel proposed for the Contract	Detailed CV	
11	Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five financial years	CA Certificate along with Audited Financial report for the relevant Financial Years	
12	Evidence of adequacy of working capital for this contract [access to line (s) of credit and availability of other financial resources]; Liquid assets and / or availability of credit facilities	Banker's certificate	
13	Authority to seek references from the Bidder's bankers	Bankers Details	

14	Information regarding any litigation or arbitration resulting from contracts executed by the bidder in the last five years or currently under execution	List of Litigation, if any	
15	Methodology & Programme.	To be submitted	
16	Bids from Joint venture - Bids from Joint ventures / Consortiums / Association of Parties are not acceptable	NA	
17	Annual minimum turnover	Turnover from HVAC Construction works certified by chartered Accountant	
18	The Firm should demonstrate making profit	CA/ Statutory auditor certificate	
19	Should have valid PAN and GSTIN	Scan copy of valid PAN and GSTIN	
20	Experience of successful completion of works / substantial completion of works (90% of the value of the contract to be considered as substantial completion) as referred in Bid Data Sheet C l.2.3).	Completion Certificate from Competent Authority mentioning all the details as per Bid Data Sheet/TDS Certificate for Pvt Sector Project	
21	Bid Validity Undertaking	Undertaking	
22	Affidavit	Affidavit by the bidder duly signed by the Notary Public and as specified in Section 2,	
23	Design Basis Report	NA	
24	Certificate of No Relationships	As per format given in Section-2 of the tender document	
25	Information Regarding Any Conflicting Activities and Declaration Thereof	As per format given in Section-2 of the tender document	
26	Proposal for Sub-Contract	To be mentioned	

Undertaking by Tenderer

I/We have read and examined and understood the notice inviting tender, schedules, Specifications applicable, drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, special conditions, & all other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I / We hereby tender for the execution of the work specified for the SWOSTI PREMIUM LTD within the time specified in schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in General Rules and Directions and Conditions of contract and with such materials as are provided for, by, and in respect in accordance with, such conditions so far as applicable.
We agree to keep the tender open for Ninety (90) days from the due date of its opening and not to make any modifications in its terms and condition.
A sum of Rs.....……Rupees……
…….)
has been deposited in demand draft of a scheduled bank issued by a scheduled bank as earnest money. If I / we, fail to furnish the prescribed performance guarantee within prescribed period, l / we agree that the said G.M.(BD), SWOSTI PREMIUM LTD or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if l / we fail to commence work as specified, I / we agree that Director, SWOSTI PREMIUM LTD or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, up to maximum of the 25 percentage and those in excess of that limit at the rates to be determined in accordance with the terms of contract. Further, I / We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

I / We hereby declare that I / we shall treat the tender documents drawings and other records connected with the work as secret / confidential documents and shall no communicate information / derived there from to any person other than a person to whom I / we am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated. . . . .
Witness: Signatures of Contractor
Address: Postal Address
Occupation:

LETTER OF SUBMISSION

The GM Corporate Communications.
Swosti Group of Hotels, Resorts, Travels & Educations
Cell- 9938244538
Email: gm.communications@swostihotels.com
Gopalpur Palm Resort Project
On behalf of Swosti Premium Ltd

Sir,

.I/We, the undersigned, have read and examined in detail, the specifications and all bidding documents and hereby declare that:

Price and Validity

1. All the rates quoted in our proposal are in accordance with the terms and conditions as specified in the bid document. All the prices and other terms and conditions of this proposal are valid for a period of 90 calendar days from the date of opening of bid.
2. We do hereby confirm that our bid prices include all taxes/levies. GST indicated separately.
3. We hereby declare that if any tax law is altered, we shall pay the same.
4. The quoted rates are inclusive of ESI , PF and Green Tax no extra on such heads would be payable on such account.

Earnest Money

We have enclosed EMD in the form of demand draft no…..... , dated……..favoring Swosti Premium Ltd. payable at Bhubaneswar issued / drawn on … Bank for Rs.__/- (Rupees ___Thousand only), as desired.

Deviations

We declare that all the works shall be performed strictly in accordance with the technical specifications and other tender conditions with no deviations.

Qualifying Data

We confirm that all information/data have been submitted as required in tender document.

We hereby declare that our proposal is made in good faith, without collusion for fraud and the information contained in the proposal is true and correct to the best of our knowledge and belief. I/We agree that in case any information is found to be incorrect the tender is liable to be rejected at any point of tendering process.

Bid submitted by us is properly sealed and prepared so as to prevent any subsequent alteration and replacement.

We understand that you are not bound to accept the lowest or any bid you may receive.

Thanking you,
Yours faithfully,
(Signature and seal of Tenderer with name, designation and contact no.)

NON-BLACK LISTING DECLARATION

FORMAT OF UNDERTAKING, TO BE FURNISHED ON COMPANY LETTER HEAD WITH REGARD TO BLACKLISTING/ NON- DEBARMENT, BY ORGANISATION

UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT

To,
SWOSTI
PREMIUM LTD
Bhubaneswar

We hereby confirm and declare that we, M/s ----------, is not blacklisted/ De-registered/ debarred by any Government department/ Public Sector Undertaking/ Private Sector/ or any other agency for which we have Executed/ Undertaken the works/ Services during the last 5 years.

Signature of Contractor

With stamp

.

GENERAL INSTRUCTIONS FOR SITE *VISIT*

I, , aged years, son/daughter of , presently residing at and authorized by (name of tenderer) ("Tenderer") to solemn this affidavit on behalf of the Tenderer, solemnly affirm on oath as hereunder:

The Tenderer confirms that the Tenderer has duly undertaken the visit of the proposed project site of SWOSTI PREMIUM LTD located at Gopalpur ,Ganjam

The Tenderer has inspected and examined its surroundings and has satisfied itself about the site conditions and site logistics. The Tenderer confirms that it is aware of the ground conditions and nature of the site, means of access to the site and the accommodation area required for establishing the labour camp. The Tenderer agrees and confirms it shall be solely responsible for arranging and maintaining the afore- mentioned at its own cost including all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the Work unless otherwise specifically provided for in the contract documents.

The Tenderer confirms and agrees that the submission of the tender implies that the requisite site visit has already been undertaken and that the Tenderer has acquainted itself with the local conditions and other factors having a bearing on the execution of the Work.

DEPONENT VERIFICATION

I, , aged years, son/daughter of , presently residing at and authorized by Tenderer verify that the information mentioned above is true and correct to the best of my knowledge and belief.

DEPONE

LETTER OF ACCEPTANCE

(To be issued to the successful bidder on the letterhead of Swosti Premium Ltd.)

[Date: _____]

To,
[Name and Address of the Contractor]

Subject: Letter of Acceptance for Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd., Gopalpur, Ganjam, on a Lump sum Contract Basis)

Dear Sir(s),

This is to notify you that your Bid dated _____ for execution of the following work on a Item Rate basis:

"Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd., Gopalpur, Ganjam, on a Lump sum Contract Basis)"

for the Contract Price of Rs. _____ (Rupees _____ only), as corrected and modified[1] in accordance with the Instructions to Bidders, is hereby accepted by Swosti Premium Ltd.

We note that as per your bid,
☐ You do not intend to subcontract any component of work
or
☐ You propose to employ [Insert Name of Sub-Contractor] as sub-contractor for executing [Insert Work Component]
(*Delete whichever is not applicable*)

You are hereby requested to furnish a detailed Work Programme along with milestone-wise activity chart and cash flow forecast (S-curve) as per the Bid Data Sheet within 14 (fourteen) days from the issue of this Letter of Acceptance (LoA).

Further, you are required to furnish the Performance Security as specified in the Bidding Documents for an amount of Rs. _____, in the form prescribed, within 21 (twenty-one) days of receipt of this Letter of Acceptance.

Failure to comply with the above conditions may result in actions as specified in Clause 23 and 24 of the Bid Data Sheet.

We look forward to the successful execution of the project.

Yours faithfully,

_____
Authorized Signatory
Swosti Premium Ltd.
Bhubaneswar

NOTICE TO PROCEED WITH THE WORK

(To be issued on Letterhead of Swosti Premium Ltd.)

[Date: _____]

To,
[Name and Address of the Contractor]

Subject: Notice to Proceed – Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd., Gopalpur, Ganjam, on a Lump sum Contract Basis)

Dear Sir(s),

Pursuant to your furnishing of the required Performance Security in accordance with Clause of Bid Data Sheet, and the execution of the Contract Agreement for the work titled:

"Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd., Gopalpur, Ganjam, on a Lump sum Contract Basis"

at a Bid Price of Rs. _____ (Rupees _____ only), you are hereby instructed to proceed with the execution of the said works effective immediately, in strict accordance with the terms and conditions of the contract documents.

We trust that you will mobilize your resources promptly and commence the work at site without delay as per the agreed programme and milestones.

Wishing you a successful execution.

Yours faithfully,

_____
Authorized Signatory
Swosti Premium Ltd.
Bhubaneswar

PERFORMANCE BANK GUARANTEE

To
_____[name of Client]
_____[address of Client]

WHEREAS_____[name and address of Contractor] (hereafter called "the Contractor") has undertaken, in pursuance of Contract No.___ dated _____to execute _____[name of Contract and brief description of Works] (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract;
AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:
NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of___ [amount of guarantee]*_____(in words), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of_[amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.
We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.
We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between your and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.
This guarantee shall also be operatable at our Branch at Bhubaneswar, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of Odisha Bridge & Construction Corporation Ltd details of which is as under:

Sl No.	Particulars	Details
1	Name of Beneficiary	Swosti Premium Ltd
2	Name of Bank	Union Bank Of India
3	Account No	128713100000061
4	IFSC Code	UBIN0578827

This guarantee shall be valid until 28 days from the date of expiry of the Defect Liability Period. Signature and Seal of the guarantor
Name of Bank _____ Address_____ Date _____

* An amount shall be inserted by the Guarantor, representing the percentage the Contract Price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.

BID SECURITY– Cover-IV

Bid Security (EMD): 8,50,000.00 INR

Affidavit (on Non-Judicial Stamp, attested by Notary Public)

Declaring authenticity of all submitted information and non-involvement in any corrupt or fraudulent practice.

Authorized Signature: _____
Name & Title: _____
Name of the Bidder: _____
Company Stamp/Seal

BANK CERTIFICATE

(To be issued by the Bidder's Bank on official letterhead and submitted by the Bidder in Cover-IV)

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s. [Insert Name of Bidder] is a reputed company with good financial standing and banking conduct.

If the contract for the work, namely:

"Construction of Gopalpur Palm Resort – Core Civil Works (Item Rate Package)"

is awarded to the above-mentioned firm, we confirm that we shall be in a position to provide overdraft / cash credit / fund-based credit facilities to the extent of:

₹ [Insert Amount in Figures and Words]

to meet their working capital requirements for executing the said contract.

Sl No.	Particulars	Details
1	Name of Beneficiary	Swosti Premium Ltd
2	Name of Bank	Union Bank Of India
3	Account No	128713100000061
4	IFSC Code	UBIN0578827

INFORMATION REGARDING ANY CONFLICTING ACTIVITIES AND DECLARATION THEREOF

(To be submitted on Bidder's Letterhead)

To,
The G M (B.D)

Swosti Premium Ltd.
Bhubaneswar

Subject: Declaration Regarding Conflicting Activities

Dear Sir,

I, the undersigned, hereby declare that our firm/company is not engaged in any activities that can be termed as conflicting in nature with respect to this tender for the project titled:

"Supply, Installation, Testing & Commissioning of Water Cooled Screw Chillers and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd., Gopalpur, Ganjam, on a Lump sum Contract Basis)"

I also acknowledge that in case of any misrepresentation or concealment of facts related to this declaration, our proposal and/or contract shall be liable for rejection/termination by the Client, and the decision shall be binding upon us without any claim whatsoever.

Authorized Signatory: _____
Name & Designation: _____
Name of the Bidder: _____
Stamp/Seal: _____
Date: _____
Communication Address: _____

Note:
Conflicting activities refer to any potential conflict of interest arising from prior, current, or proposed agreements, engagements, or affiliations with the Client that may impair the bidder's objectivity, integrity, or impartiality in the execution of the project.

AFFIDAVIT

[To be submitted by the bidder in a non-judicial stamp paper duly signed by the Notary Public]

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s…… … .....have abandoned any work on building in India nor any contract awarded to us by the State of Odisha for such works have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understand and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department/ project implementing agency.

_____

Authorized Signature: Name & Title of Signatory:
Name of Bidder :

SECTION-3
BOQ,SPECIFICATIONS& TENDER DRAWINGS :

These Particular are to be read in conjunction with other documents issued along with tender. In case of any discrepancy between Design drawings, General conditions or Bill of quantity, Following order of preference shall be applicable.

- BOQ
- Specification
- Tender drawings

The contractor shall refer the tender drawings attached at end of this section.

The contractor shall refer the following annexure while bidding and will read them in conjunction with specifications as well as bill of quantity

Annexure - I	:	Preamble & Design Criterion
Annexure -II	:	List of approved makes
Annexure -III	:	Codes and Standards
Annexure -IV	:	Technical Specifications
Annexure -V	:	Technical Data Sheets

PREAMBLES & TECHNICAL SPECIFICATIONS

These Particular Conditions are to be read in conjunction with other documents issued along with tender. In case of any discrepancy between Design drawings, General conditions or schedule of quantity, more stringent of the same shall be applicable.

The contractor shall refer the following drawings while bidding and will read them in conjunction with specifications as well as schedule of quantity. A part list of applicable codes & standards is mentioned as Annexure – II and the compliance will be ensured.

Annexure I	:	List of approved makes
Annexure II	:	List of Codes & Standards

1. WORK DESCRIPTION

The work shall be strictly carried out as per the scope listed in this document and in accordance with the specifications. The equipment & material supplied at site will also be selected out of the list of approved makes. Bill of quantity provided with the document is for contractor guidance. It is expected that after award of work, contractor shall prepare shop drawings for approval by the Consultant & Client representative and also submit Technical documentation duly identifying shortlisted make of material/equipment along with its data sheets. Actual ordering shall be based on approved shop drawings & documents.

The work at site shall comply with the approved shop drawings and will meet the satisfaction of Client representative. The contractor shall be required to demonstrate satisfactory operation of entire system (including client supplied equipment installed by contractor) and furnish the required labour, material & tools to install & commission the system.

The broad scope of work covered under this contract shall include supply, installation, testing & commissioning of the following works:

Fire Detection & Alarm System
Emergency Digital Voice Evacuation System

Besides above, contractor shall also be required to undertake following:

Obtain approval from Local Authorities prior & post installation for operation of system.
Minor civil works which include making openings in walls & slabs and making good of the same.
Commissioning of the plant including test reports to demonstrate satisfactory working prior to handing over.
Provide as-built drawings and handing over document comprising of list of recommended spares, catalogues and service schedule for each equipment/material.
Training of Client's staff.

SITE MANAGEMENT

The Contractor shall be required to provide following staffing for the project:

Design Engineer who will work with consultant for getting shop drawings, technical submittal and variation in quantity statement approved.

Procurement team.

Full time dedicated Engineer (minimum 10 year experience) & one supervisor posted at site.

The contractor shall submit organization chart and CV prior to starting work at site.

The Contractor shall have required stores, tools & plant, security and facility to transport materials to place of installation for speedy execution of work.

REGULATIONS & PERMITS

Prior to starting work at site, the contractor shall obtain required permits/ licenses required for satisfactory execution and operation of the installation. All receipted amounts shall be reimbursed by Client on production of proof of payment by the contractor.

The executed work shall strictly confirm to applicable laws, regulations and Indian Standards which become applicable. In case the specifications and drawings contained in this document call for higher standard than those required by prevailing regulations, then these specifications & drawings shall become applicable. However, in case of any conflict or violation between the document/drawings and prevailing laws, then the applicable laws & regulations shall be governing & binding.

SHOP DRAWINGS

A set of design drawings listed in this document are available at Consultant office and may be issued with the tender document. These design drawings are for reference of the contractor and indicate proposed arrangement and the extent of work covered in the contract. The data given in the drawings and specifications is as exact as could be procured, but its accuracy is not guaranteed. The contractor cannot execute work or scale these drawings for reference.

Following shall be the procedure followed by contractor while preparation of shop drawings:

The contractor shall refer the design drawings for understanding the scope and proposed routes to be followed during execution.

Collate latest architectural backgrounds from the Client representative/Architect/Consultant.

Examine all related services drawings but not limited to structural, plumbing, electrical, HVAC, Interior, landscape

and others including as-built works before starting the work. Any discrepancy must be report to the Client's site representative in writing and obtain approval for go-ahead.

Within one week of award of work, the Contractor shall prepare a list of shop drawing along with submission schedule for approval of Client representative/Consultant. The list of drawings must include layouts for Plant room, Pump room, Typical drawings showing exact location of supports, connections, detailed conduiting drawings showing exact location and type of supports, fittings etc; electrical panels inside/outside views, power and control wiring schematics, cable trays, supports and terminations.

Maximum headroom shall be maintained at all points and in case the same is inadequate, then written approval from Client representative must be obtained prior to execution at site.

These shop drawings shall depict information required to complete the Project as per specifications and as required by the Consultant/Client representative. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings.

Where the work under this contract is proposed to be installed in close proximity or is interfering with other trades, then based on client representative/consultant directions, the contractor shall prepare all services coordinated working drawings and sections at a suitable scale (not less than 1:50), clearly showing proposed installed in relation to the work of other trades.

The contractor shall thereafter furnish six sets of detailed shop drawings to Client representative/Consultant for obtaining comments/approval. The Contractor will make unlimited number of re-submissions of shop drawings unless Client representative/Consultant/Architect approval is obtained.

The Contractor will thereafter submit six sets of final shop drawings to the Client representative for their exclusive use and all other agencies.

No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/equipment/installation.

In case installation is carried out without following above process or obtaining a waiver to follow the procedure from Client representative, the work shall be rejected and contractor shall rectify the same at their own cost.

Shop drawings shall be submitted for approval minimum four weeks in advance of planned delivery and installation of any material to allow Client representative/Consultant ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract

TECHNICAL DOCUMENTATION

The contractor prior to supplying material at site, will submit the following documentation to Consultant/Client representative for approval:

Manufacturers drawings, catalogues, pamphlets and other documents in triplicate. Each item shall be properly labeled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in ink the items and the operating characteristics. Data of general

nature shall not be accepted.

Samples of all materials shall be submitted to the Client's site representative prior to procurement. These will be submitted in two sets for approval and retention by Client's representative and shall be kept in their site office for reference and verification till the completion of the Project. Wherever directed, a mockup or sample installation shall be carried out for approval before proceeding for further installation.

Where the contractor proposes to use an alternate make or model of equipment other than that specified, all new drawings and detailing required thereafter shall be prepared by the contractor at his own expense including any re-design required for other discipline/trade. Any delay on such account shall also be at the cost of and consequence of the Contractor.

Contractor to refer Annexure –I for list of approved makes & materials for this project.

VARIATION IN QUANTITY STATEMENT

After approval of major & relevant shop drawings, the contractor shall submit four copies of a comprehensive variation in quantity statement. This statement must be submitted prior to completing ordering of equipment and should identify imported/local materials in this contract as well as proposed spares/tools. The Consultant shall provide recommendation to Client representative for acceptance of anticipated variation in contract amounts and also advise Client to initiate action for procurement of spare parts and tools at the completion of project.

7. QUALITY ASSURANCE

The contractor to ensure that all materials and equipment supplied shall be new and of best available quality conforming to the relevant Indian Standard Specifications and to these specifications. Makes shall be strictly in conformity with list of approved manufacturers as per Annexure - I. Owners reserve the right to reject any item which in their assessment is second hand

Any deviations from above shall be clearly highlighted prior to supply and shall be brought to the notice of the Client representative/Consultant for further instructions in the matter.

Prior to starting execution work at site, the Contractor shall verify the sufficiency of the size of the shaft openings, clearances and ceiling spaces for proper installation. Failure to communicate insufficiency of any of the above, shall constitute Contractor acceptance of the same. The Contractor shall locate all equipment in fully accessible locations which can be easily serviced, operated or maintained. The exact location and size of access panels, required for each concealed, valve or other devices requiring attendance shall be finalized and communicated in sufficient time. Failing this, the Contractor shall make all the necessary repairs and changes at own expense. Access panel shall be marked.

8. WORKS NOT COVERED UNDER THIS CONTRACT

Following works are excluded from the scope under this contract. These shall be executed by respective contractor in accordance with approved shop drawings where these details must be highlighted. However, contractor shall be responsible for providing details and thereafter supervision to ensure satisfactory & timely execution of these associated items as they have a bearing on this contract.

Civil Works

Major openings in wall / floors.

HVAC Works

Provision for connecting FAS devices with HVAC system.

Electrical & LV Works

Provision for connecting FAS devices with electrical and LV system.

Plumbing & Firefighting Works

Provision for connecting FAS devices with plumbing & firefighting system.

Elevators Works

Provision for connecting FAS devices with Elevators.

9. INTEGRATION WITH BUILDING AUTOMATION SYSTEM

The scope shall include providing following for the interface to Building Automation System.

Seamless Software integration of complete Fire alarm system.
Required control relays and monitor modules in BMS room.

It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the contract requirements lies solely with the contractor.

10. TESTING, ADJUSTING AND COMMISSIONING

Entire FAS System testing shall be carried out by the contractor through a specialist team (different than erection team) as per Specifications, IS/BS codes and NFPA recommendations. Performance test shall consist of three days of 10 hour each operation of system for each season. The results for each season shall be submitted to Client representative/Consultant. The submittal shall include operational parameters marked on performance curves for each equipment along with test certificates and safety/control settings.

The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Client's site representative. All tests shall be carried out in the presence of the representatives of the Construction Manager / Architect /Consultant and Client's site representative. After commissioning, the results shall be submitted for scrutiny in quadruplicate.

The installation shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Client's site representative. In case of rotating machinery sound or vibration noticeable outside the room in which it is installed, or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense. The contractor shall guarantee that the equipment installed shall maintain the specified Noise Control levels.

11. COMPLETION CERTIFICATE

On completion of the installation, a certificate shall be furnished by the contractor, counter signed by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local authority.

The contractor shall be responsible for getting the entire installation duly approved by the local authorities concerned, and shall bear expenses if any, in connection with the same.

12. AS-BUILT DRAWINGS

Contractor shall submit following as-built drawings as and when work is completed:

Six set of hard copies of all as-built drawings duly corrected and incorporating any modifications during execution.
Two set of pen drive containing the drawings.

The drawings shall provide all layouts with detectors, devices, panels, Cable and conduit layouts, earthing, cable trays, location of all concealed accessories, wiring diagram, control diagram, Single line diagram, control schematic with detailed bill of materials, showing makes, types & description of all components & accessories and sequencing of automatic controls and other services.

13. MAINTENANCE MANUAL

Upon completion and commissioning of works, the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract. This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by Consultant and Client's site representative and two for Clients Operating Personnel. These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 4 year period of maintenance of each equipment.

The manuals shall include:

i. Description of the work carried out / installed.

ii. Operating instructions.

iii. Maintenance instructions including procedures for preventive maintenance.

iv. Manufacturers catalogues.

v. Spare parts list.

vi. Trouble shooting charts.

vii. Drawings

viii. Type and routine test certificates of major items.

Details of all the bought-out item should be part of this maintenance manual.

14. ON SITE TRAINING

Upon completion of all work and all tests, the Contractor shall furnish necessary operators, labor and helpers for operating the entire installation for such periods so as to enable the Client's staff to get acquainted with the operation of the system. During this period, the contractor shall train the Client's personnel in the operation, adjustment and maintenance of all equipment installed.

15. DEFECTS LIABILITY PERIOD

Complaints

The Contractor shall receive calls for any and all problems experienced in the operation of the system under this contract, attend to these within 10 hours of receiving the complaints and shall take steps to immediately correct any deficiencies that may exist.

Repairs

All equipment that requires repairing shall be immediately serviced and repaired. Since the period of Mechanical Maintenance runs concurrently with the defects liability period, all replacement parts and labour shall be supplied

promptly free-of-charge to the Client.

16. UPTIME GUARANTEE

The contractor shall guarantee for the installed system an uptime of 99.9%. In case of shortfall in any month during the defect's liability period, the Defects Liability period shall get extended by a month for every month having shortfall and no reimbursement shall be made for the extended period.

17. OPERATION & MAINTENACE CONTRACT

Contractor may be required to carry out the operation of the installation during and after the defect's liability period. Further, it may also be required to carry out all-inclusive maintenance of the entire system for a period of four years beyond the defects liability period.

Operation Contract:

It will involve round the clock operation for 24 hours a day wherein work will include but not limited to operation of installation, maintaining log books, complain register and summary of operation.

The terms of payment shall be monthly at the end of each month on pro-rata basis.

All Inclusive Maintenance Contract:

The work will involve routine preventive maintenance with monthly status report. Entire installation shall be painted every two years. 98% uptime of all systems is expected under this contract wherein up time shall be assessed every month and in case of shortfall during any month the contract shall be extended by a month. No reimbursement shall be payable for the extended period.

Adequate number of persons to the satisfaction of the Client representative shall be provided including relievers wherein statutory compliances such as of EPF, ESIC and other applicable labour legislations shall be to contractor account. No overtime shall be payable. Routine shut downs shall be permitted with prior permission of the Owner.

Payment shall be Quarterly at the beginning of each quarter on pro-rata basis.

18. Green Building Compliance

Following actions shall be required by Contractor:

Contractor will provide full support in complying to Green Building requirements for the desired level of Green Building Rating in the project.

Contractor shall implement the recommendations provided by Green Building Consultant and provide support during the site inspections.

Contractor shall provide respective documentation including but not limited to specification sheets, manufacturer cutsheets, Test Certificates, Brochures, purchase records, manufacturer declarations, calculations, site photographs, commissioning reports.

Contractor is encouraged to designate an individual in their existing team who will be responsible for regular coordination with respective site people to ensure implementation of required green building measures and ultimately provide the required documentation for aspired Green Building Rating.

In case of any deviations in implementing recommended green building measures and/or using specified material/equipment/system, contractor will have to inform Owners/ Services Consultant/ Green Building Consultant/ Architect as applicable for their formal approval.

In case of any additional requirement to comply with Green Building rating as identified during construction/installation/commissioning based on the actual site conditions/ construction activities, Contractor shall implement the same.

19. Smart Operation & Maintenance Implementation

Offline QR code shall be prepared and provided for following equipment and plant rooms and pasted on each MEP equipment / MEP room:
Fire Alarm Schematic layouts
Floor layouts
Cause & Effect Matrix
All Schematic drawings framed in the Fire Control Room.

Each QR code shall provide offline 3D as-built drawing with equipment, cable tray, detector schedules, detector, devices, Panel details etc. QR code shall also provide details like operation & maintenance instructions, SOPs, trouble shooting, OEM catalog etc.

ANNEXURE – I

List of Approved Makes

S. No Equipment/Material Approved Manufacturer Name

1. Fire Alarm Panel, Digital Voice Evacuation System & Two-Way Communication SystemEdwards EST
Notifier NFS2-3030
Siemens-Desigo Fire
Tyco Simplex-4100ES
Honeywell XLS 3000
Schneider
EATON
2. Music Speaker-Wall/Ceiling
Honeywell
Notifier
Edwards
Heinrich
3.Microphone & Zone Console
Honeywell
Notifier
Edwards
Heinrich
4.CD Player/LCD
Sony
Samsung
LG
5. Rack Valrack
Heinrich
Legrand
6.PA Controller & Amplifier
Honeywell
Notifier
Edwards
Heinrich
7. Wires & Cables
Polycab
Finolex
Fusion Polymer
Batra Henlay
RR Kabel
Apar Industries
8. Metal Conduit & Accessories
BEC
AKG
NIC
9. Fire Survival Cables
RR Kabel
Bonton
Fusion Polymer
Frtek
Batra Henlay
10. Accessories for Supporting system
Hilti
Fisher

Shakti
11. Cable Tray & RacewaysMEM
Sai Metal Craft
Advance Panels
Indiana Gratings
12. Monitor, Computer
HP
Dell
IBM
13. Metal Cable Lugs, Glands & earthing link
(PVC shall not be allowed) Comet
Dowells
Cosmos

ANNEXURE – II

PART LIST OF CODES & STANDARDS

The installation in entirety shall comply with latest codes/standards published by National Building Code of India, IEEE, Bureau of Indian Standards (BIS) as well as local regulations from departments like Pollution Control Board, Electrical inspectorate, Fire Authorities, Airport Authority of India (AAI), High rise committee, Indian Electricity rules etc. Some of the standards are mentioned here below for reference:

National Fire Protection Association (NFPA) - USA :

1. No. 70 National Electric Code (NEC)

2. No. 72-2019 National Fire Alarm Code

3. No. 101 Life Safety Code

4. NFPA 70 National Electric Code

Underwriters laboratories Inc. (UL) - USA :

1. UL 50 Cabinets and Boxes
2. UL 268 7th edition Smoke Detectors for Fire Protective Signaling Systems
3. UL 864 10th edition Control Units for Fire Protective Signaling Systems
4. UL 268A Smoke Detectors for Duct Applications
5. UL 521 Thermal Detectors for Fire Protective Signaling Systems
6. UL 228 Door Closers-Holders for Fire Protective Signaling Systems
7. UL 464 Audible Signaling Appliances
8. UL 38 Manually Activated Signaling Boxes
9. UL 346 Water flow Indicators for Fire Protective Signaling Systems
10. UL 1481 Power Supplies for Fire Protective Signaling Systems
11. UL 1076 Proprietary Burglar Alarm Units and Systems
12. UL 1971 Visual Notification Appliances

STANDARDS

National Building code (NBC) – 2016
BIS- 15908- 2011- Fire Alarm system
Local Fire Authority Requirements.

APPROVALS
All the equipment's shall be tested, approved, and/or listed by:

LPCB (Loss Prevention Certification Board), UK
UL (Underwriters Laboratories Inc.), US
Factory Mutual Systems (FM) Publications
Factory mutual Approval Guide

TECHNICAL SPECIFICATIONS

1. FIRE DETECTION & ALARM SYSTEM

This performance specification provides the minimum requirements for the Fire Detection and Alarm System. The system shall include, but not limited to all equipment, materials, labor, documentation and services necessary to furnish and install a complete, operational system to include but not limited to the following functions:

Smoke and fire detection and Digital public address system
Fire suppression system monitoring
Smoke control
Releasing Service
Two-way voice communication notification system

Materials & Equipment

All equipment and components shall be the approved manufacturer's current model. The materials, appliances, equipment and devices shall be listed by a internationally recognized approvals agency like UL864-10th edition for use as part of a protected premises protective signaling (fire alarm) system and smoke control system. The authorized representative of the manufacturer, to be designated as the contractor, shall be responsible for the satisfactory installation of the complete system. The contractor shall provide, from the acceptable manufacturer's current product lines, equipment and components, which comply, with the requirements of these specifications. Equipment or components, which do not provide the performance and features, required by these specifications are not acceptable, regardless of manufacturer. Strict conformance to this specification is required to ensure that the installed and programmed system will function as designed, and will accommodate the future requirements and operations of the building owner. All specified operational features must be met without exception. All equipment and components shall be the manufacturer's current model. The contractor shall be responsible for the satisfactory installation of the complete system. All control panel assemblies and connected field appliances shall be provided by the same system supplier, and shall be designed and tested to ensure that the system operates as specified. The system shall utilize electronically addressable, microprocessor-based detectors as described in this specification. The equipment to be supplied will be considered only if it meets all sections of the performance specification.

The supplier shall submit a point-by-point statement of compliance for all sections in this specification. The statement of compliance shall consist of a list of all paragraphs within these sections. Where the proposed system complies fully with the paragraph, as written, placing the word "comply" opposite the paragraph number shall indicate such. Where the proposed system does not comply with the paragraph as written, and the supplier feels the proposed system will accomplish the intent of the paragraph, a full description of the function as well as a full narrative description of how its proposal will meet its intent shall be provided. Any submission that does not include a point-by-point statement of compliance as described herein shall be disqualified. Where a full description is not provided, it shall be assumed that the proposed system does not comply. The Contractor shall furnish all labor, services and materials necessary to furnish and install a complete, functional fire alarm system (System). The System shall comply in respects with all pertinent codes, rules, regulations and laws of the Authority, and local jurisdiction. The System shall comply in all respects with the requirements of the specifications, manufacturer's recommendations and UL864/EN54/VDS listings.

It is further intended that upon completion of this work, the Owner/Consultant be provided with:

a. Complete information and drawings describing and depicting the entire system(s) as installed, including all information necessary for maintaining, troubleshooting, and/or expanding the system(s) at a future date.

b. Complete documentation of system(s) testing.

c. Certification of the entire system(s)

PANEL COMPONENTS & FUNCTIONS

The control panel(s) shall be a multi-processor based networked system designed specifically for fire, one-way and two-way emergency audio communications, smoke control, extinguishing agent releasing system if necessitated, with integration modules for BMS or any third party control/annunciation. The control panel shall be UL listed & FM

Approved The control panel shall include all required hardware, software and site specific system programming to provide a complete and operational system. The control panel(s) shall be designed such that interactions between any applications can be configured, and modified . The control panel(s) operational priority shall assure that life safety takes precedence among the activities coordinated by the control panel.

The control panel shall include the following capacities:
-The Control Panel shall have processor redundancy or shall perform all functions through loop cards in case of processor failure including receipt of signals and activation of life safety services associated with loop card.
-Support required Devices per Loop and consider 15% spare in each loop
-Support multiple communication ports and protocols
-Support maximum chronological events.

The network of control panels shall include the following features:
-Ability to download all network applications and firmware from the configuration computer from a single location on the system.
-Addressing of detectors and devices by means of electronic way /rotatory switches. No dip switch addressing

Provide an operator interface control/display that shall annunciate, command and control system functions.

Provide an internal audible signal with different programmable patters to distinguish between alarm, supervisory, trouble and monitor conditions.

Provide a discreet system control switch provided for reset, alarm silence, panel silence, drill switch, previous message switch, next message switch and details switch.

Provide system reports that provide detailed description of the status of system parameters for corrective action or for preventative maintenance programs. Reports shall be displayed by the operator interface or capable of being printed on a printer.

The control panel shall contain a standby power supply that automatically supplies electrical energy to the system upon primary power supply failure. The system shall include a charging circuit to automatically maintain the electrical charge of the battery.

Operator's Interface

The system shall be designed and equipped to receive, monitor, and annunciate signals from devices and circuits installed throughout the building. Standard LED annunciator may be combined in common enclosures provided that the groups of LED's comprising each of the required annunciator are separated from one another (Detection, Supervisory, Status, and Security) and clearly labeled. A minimum 640-character LCD/ touch screen display shall be part of the main control panel for easy alarm reading and understanding. Receipt of alarm, trouble, and supervisory signals shall activate integral audible devices at the control panel(s) and at each remote annunciation device. The integral audible devices shall produce a sound output upon activation of not less than 65 dB (A) and not more than 105 dB (A) when measured at distance of 1.5 meters.

The annunciator shall contain the following system status indicators:

LCD character Backlit Liquid Crystal Display
System Normal Indicator
System Common Alarm Indicator
System Common Trouble Indicator
System Common Supervisory Indicator
System Ground Fault Indicator
System Common Security Indicator
System Disabled Point(s) Indicator

System Reset Switch with Indicator
System Alarm Silence Switch with Indicator
System Trouble Silence Switch with Indicator
System Message Queue Scroll Switches.
Digit Keypad to Enable/Disable System and Functions.

Audio

The system shall be capable of delivering multi-channel audio messages simultaneously over copper and/or fiber media. All audio messages and live pages shall originate at the one-way audio control unit. The one-way audio control unit shall store pre-recorded audio messages digitally. These messages shall be automatically directed to various areas in a facility under program control. The system shall support remote cabinets with zoned amplifiers to receive, amplify and send messages through speakers over supervised circuits. The one-way emergency audio control shall provide control switches to direct paging messages as follows:

"All Call" to direct the page messages to all areas in the facility, overriding all other messages and tones.

"Page to Evacuation Area" to direct the message to the evacuation area(s), overriding all other messages and tones.

"Page to Alert Area" to direct page messages to the area(s) receiving the alert message and tones, overriding all other messages and tones.

"Page to Balance Building" to direct page messages to the areas) in the facility NOT receiving either the evacuation area or alert area messages.

"Page by Phone" switch to select the firefighters telephone system as the source for paging.

The system shall be capable of delivering multiple audio messages simultaneously over copper and / or fiber media. All audio messages and live pages shall originate at the one-way emergency audio control unit. The one-way emergency audio control unit shall store pre-recorded audio messages digitally. These messages shall automatically direct to various areas in a facility under program control. The system shall support remote panels with zoned amplifiers to receive, amplify and distribute messages through speakers over supervised circuits. The two-way voice communications control unit shall provide two-way communications between remotely located phones and the command center. The control unit shall provide the ability to individually select and display each two-way voice communication circuit support up to five (5) remote telephones in simultaneous two-way voice communications.

Audio Amplifiers (Multi-Channel)

100W, 70.7 VRMS, Multi-Channel, Multi-Circuit Digital Amplifiers. The amplifiers shall be of same make as that of the control panel. Amplifiers shall be fully supervised and shall have same battery and power backup as that of the control panel.

The system software shall be capable of selecting the required audio source signal for amplification. Audio amplifiers shall be power limited and protected from short circuits conditions on the audio circuit wiring. Provide a standby audio amplifier that will automatically sense the failure of a primary amplifier, and replace the function of the failed amplifier. (There should be 1No. of Back-up amplifier (1:N) for the entire amplifiers. In case any Amplifier fails alternate backup amplifier has to take-over.)

Power Supply

System power supply(s) shall provide multiple powers limited 24 VDC output circuits as required by the panel. Upon failure of normal (AC) power, the affected portion(s) of the system shall automatically switch over to secondary power without losing any system functions. Each system power supply shall be individually supervised. Power supply trouble signals shall identify the specific supply and the nature of the trouble condition.

All standby batteries shall be continuously monitored by the power supply. Low battery and disconnection of battery power supply conditions shall immediately annunciated as battery trouble and identify the specific power supply affected. All system power supplies shall be capable of recharging their associated batteries, from a fully discharged condition to a capacity sufficient to allow the system to perform consistent with the requirements of this section, in 24 hours maximum.

All AC power connections shall be to the building's designated emergency electrical power circuit and shall meet the requirements of NFPA 72. The power circuit disconnect means shall be clearly labeled FIRE ALARM CIRCUIT CONTROL and shall have a red marking. The location of the circuit disconnect shall be labeled permanently inside the each control panel the disconnect serves.

Power supply for all input & output devices to be driven from main Fire Alarm Panel.

Reports

The system shall provide the operator with system reports that give detailed description of the status of system parameters for corrective action, or for preventative maintenance programs. The system shall provide these reports via the main LCD, and shall be capable of being printed on any system printer.

The system shall provide a report that gives a sensitivity listing of all detectors that have less than 75% environmental compensation remaining. The system shall provide a report that provides a sensitivity (% Obscuration per foot) listing of any particular detector.

The system shall provide a report that gives a listing of the sensitivity of all of the detectors on any given panel in the system, or any given analog/addressable device loop within any given panel.

The system shall provide a report that gives a chronological listing of up to the last 1740 system events.

The system shall provide a listing of all of the firmware revision listings for all of the installed network components in the system.

Graphic Command Workstation

The command center shall function as the center point for all operational and administration functions required for the systems provided within the specification. The command center shall contain a console that will display and house any equipment necessary for system operation. Console space shall be provided for other equipment provided under other sections of the specifications. A single graphical workstation shall be provided that will enable primary control of the systems provided by this specification. An operator shall not have to operate multiple workstations to receive, view, process and record system events for each system provided. The graphical command workstation(s) shall display a different color text for each message type and color graphic diagrams/floor plans. Each detector has to be mapped in graphical workstation diagrams/floor plans. The graphical workstation diagrams/floor plans should have the each detector mapped. The graphical command workstation shall simultaneously display the following system event views; system event display, graphical diagram display, detailed event message/instructions, and user event log. The workstation shall be an latest personal computer which can support the all software& have enough memory to handle the data. The makes will be as per attached list.

The workstation(s) shall be capable of annunciation and control of all fire detection and smoke control points.

Operator work station with PC having intel pretium i7 or better processor including RS-485 port, USP port along with following accessories etc complete with software all as specified.

16 gigabytes (GB) of RAM memory
500 GB SSD hard disk
DVD ROM
42 inch LED 4K Monitor

Mouse with mouse pad
Keyboard
Window-11 operating system
Compatible fire alarm system control software
Laser printer A4-1

Installation of the computer or monitor can be either desktop or floor mounting or rack/panel mounting.

The workstation (software) shall be capable of storing over 100,000 network events in a history file. The history buffer allows the operator to view events in a chronological order. A filter shall be available for displaying chronological events by operator, date, time, fire alarms, troubles (including security, supervisory and system/device), disabled points/zones, system programming, operator response and operator log in/log out.

The software shall include the ability to display system information in a graphical (floor plan) form. Each view, created using standard Windows bitmap files, shall include icons created for intelligent devices. These icons shall blink and change to the appropriate programmed icon when an event occurs. When the device has been acknowledged, the icon shall become steady. Once the point has returned to normal, the normal icon is displayed. In addition to the graphical representation of the device, the user shall be able to link pictures, documents and sound files to the device.

The software shall have a flexible way of assigning operator passwords. There shall be an unlimited number of possible operators, each with specific levels of control. Each operator shall have his/her own password. Operator password and control selection shall be available to a high level "administrator" who shall have complete control over levels of control.

The software shall provide multitasking type environment that allows the user to run several applications simultaneously. The operating program shall run within a 64-bit operating system such as min Windows®-10 office/home edition XP or equivalent. These Windows applications shall run simultaneously with other programs. The mouse or Alt-Tab keys shall be used to quickly select and switch between multiple applications. The operator shall be able to work in Microsoft Word, Excel and other Windows based software packages, while concurrently annunciating on-line alarms and monitoring functions.

Equipment included in the command center shall include:
System annunciation and controls for.
Fire detection.
Fire pump status
Emergency one-way voice communications.
Standby generator status indication and controls.
Automatic transfer switch status indication and controls
Public intercom
Public telephone
Elevator monitor, status and controls

The graphic display screen shall organize and structure system events for easy user comprehension. The workstation display shall use four relational quadrants. When any event occurs:

The "list of events area" shall display the address of the alarm or off-normal point with type and description and time of the event in a prioritized color-coded event list. Highlighting an event in the event list area shall automatically cause the display of a graphical map and other three areas (described below) to display information relating to the highlighted event. The "map area" shall display color graphical representation of the area location in which the alarm or off-normal device is located. It shall be possible for the operator to manually zoom down to any portion of a vector-based graphic without aliasing, artificing, or pixilation of the image. Preset zoom levels shall not be considered equal. The "event action area" shall display a customized set of written operator instructions for every state (alarm, trouble, restore, etc.) of each point. An event log shall record all events and operator actions to history for future review. An operator's log shall record operator's comments for each event in system history with time and date. The "image area"

shall display a stored image of the device relating to the event highlighted in the event list area.

When processing fire alarm events the graphic workstation:

Shall be capable of acknowledging, silencing, and resetting all fire alarm functions.

Shall be capable of manually activating, deactivating, enabling, and disabling individual fire alarm points.

Shall be capable of generating status, maintenance and sensitivity reports for fire alarm components.

Receipt of a fire alarm shall activate an audio WAV file over the workstation speakers alerting the operator

INTELLIGENT DETECTORS:

The smoke detector shall have inbuilt microprocessor and shall be capable of taking an independent alarm decision. Total loop capacity of Fire detection and alarm Panel shall be decided/selected based on the total device and detector quantities provided in SOQ and OEM design keeping 15% spare in each loop for future uses. Each intelligent addressable smoke detector's sensitivity shall be capable of being programmed electronically from Control Panel without any extra tools as most sensitive, more sensitive, normal, less sensitive or least sensitive. In addition to the five sensitivity levels the detector shall provide a pre-alarm sensitivity setting, which shall be settable in 5% increments of the detector's alarm sensitivity value. The detector should continue to give TRUE alarms even if the loop controller on the main panel fails.

Each detector shall incorporate indicator “LED” at the detector which shall blink during normal condition and light up on actuation of the detector to locate the detector which is operated. The detector shall not be affected by the failure of the response indicator lamp. The LED shall be give 360 degree view from all possible points.

The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a magnetic switch) or initiated remotely on command from the control panel.

An alternate alarm sensitivity level shall be provided for each detector, which can be set to any of the five (5) sensitivity settings manually or automatically using a time of day event. In addition to the five alternate sensitivity levels the detector shall provide an alternate pre-alarm sensitivity setting, which shall be settable in 5% increments of the detector's alternate alarm sensitivity value The detector shall be able to differentiate between a long drift above the pre-alarm threshold and fast rise above the threshold.

The detector's sensing element reference point shall automatically adjust, compensating for background environmental conditions such as dust, temperature, and pressure. Periodically, the sensing element real-time analog value shall be compared against its reference value. The detector shall provide a maintenance alert signal that 75% to 99% compensation has been used. The detector shall provide a dirty fault signal that 100% or greater compensation has been used.

The system shall allow for changing of detector types for service replacement purposes without the need to reprogram the system. The replacement detector type shall automatically continue to operate with the same programmed sensitivity levels and functions as the detector it replaced. System shall display an off-normal condition until the proper detector type has been installed or change in the application program profile has been made.

INTELLEGENT THERMAL DETECTOR:

The heat detector shall have a thermal sensing element /circuit. The detector shall have inbuilt microprocessor, not microcontroller and shall be capable of taking an independent alarm decision. Detectors shall be rated at 15°F (9°C) per minute rate-of-rise and 135°F (57°C) fixed temperature The detector shall be capable of being addressed electronically from control panel without any extra tool. The choice of alarm reporting as a fixed temperature detector or a combination of fixed and rate-of-rise shall be made in system software and be changeable at any time without the

necessity of hardware replacement.

SMOKE DETECTOR – PHOTOELECTRIC

The detectors shall be use the photo electric (light scattering) principal to measure smoke density. Provide analog/addressable photoelectric smoke detectors at the locations shown on the drawings. The detector shall have the ability to set the sensitivity and alarm verification of each of the individual detectors on the circuit. It shall be possible to automatically change the sensitivity of individual analog/addressable detectors for the day and night periods. Each smoke detector shall be capable of transmitting pre-alarm and alarm signals in addition to the normal, trouble and need cleaning information. It shall be possible to program control panel activity to each level. Each smoke detector may be individually programmed to operate at any one of five (5) sensitivity settings. Each detector microprocessor shall contain an environmental compensation algorithm that identifies and sets ambient environmental thresholds approximately six times an hour. The microprocessor shall monitor the environmental compensation value and alert the system operator when the detector approaches 75% and 100% of the allowable environmental compensation value.

MULTI SENSOR DETECTOR:

The multi-sensor or multi-tech smoke detector which will have both photoelectric as well as thermal detection elements shall have inbuilt microprocessor, and shall be capable of taking an independent alarm decision. The scattering of smoke particles shall activate the photo sensor. Each intelligent addressable smoke detector's sensitivity shall be capable of being programmed electronically from Control Panel without any extra tools as: most sensitive, more sensitive, normal, less sensitive or least sensitive. In addition to the five sensitivity levels the detector shall provide a pre-alarm sensitivity setting, which shall be settable in 5% increments of the detector's alarm sensitivity value. The detector should continue to give TRUE alarms even if the loop controller on the main panel fails.. Alarm condition shall be based upon the combined input from the photoelectric, and thermal detection elements. Each detector shall be capable of transmitting pre-alarm and alarm signals in addition to the normal, trouble and need cleaning information. It shall be possible to program control panel activity to each level. Each smoke detector may be individually programmed to operate at any one of five (5) sensitivity settings. Each detector microprocessor shall contain an environmental compensation algorithm that identifies and sets ambient "environmental thresholds approximately six times an hour. The microprocessor shall monitor the environmental compensation value and alert the system operator when the detector approaches 75% and 100% of the allowable environmental compensation value. The sensitivity range shall be 1-4% per feet. The detector shall be capable of work in Heat only alarm mode and ignore smoke alarm when given a command from control panel. The detector shall support the use of a relay, or LED remote indicator.

Addressable Beam Detector:

The addressable optical beam detector or projected beam smoke detector shall be used for detection in large volumes and double heights. The set shall consist of a transmitter, receiver and control electronics. The transmitter shall project a modulated infrared light beam to the receiver. If there is smoke in the beam path, the receivers signal shall be reduced by the value proportional to the density of the smoke. If the signal is reduced to a level between the obscuration threshold and 93% for 8-10 seconds, the fire alarm relay shall be activated. The alarm obscuration threshold shall be set at 25%, 35% or 50% obscuration depending on the application. The typical coverage shall be equal or more than 100 m x 15.25 m.

Fire Fighter Telephone Panel

The FACP shall be equipped with Fire Fighter telephone system for two way communication between Fire Fighters from control room to field.

Fire Fighter telephone jacks shall be provided at stairs as shown in drawing. The Telephone handsets shall be provided in Fire control Room for use by fire fighters. The act of connecting the telephone hand set with telephone jack shall cause both a visual and audible signal to annunciate at the telephone zone of FACP. Lifting the hand set at FACP shall cause the automatic communication.

The FACP hand set shall be red in color and equipped with a 5-foot long strain- relieved coiled cord. Wiring connections shall be made to terminal strips. The Panel shall monitor wire and connections for any opens, shorts, or grounds which would render the system inoperable or unintelligible.

The FACP shall be equipped with a silencing switch and ring-back feature such that any audible trouble signal can be silenced and shall be so indicated by the lighting of LED. Once any trouble condition has been corrected, the LED shall be extinguished and the silencing switch shall sound again until the switch is restored to its original position.

The Fire Alarm Control Panel shall be equipped with a separate, LED annunciated switch for each telephone circuit. In addition, LEDs shall provide for the annunciation of operating and supervisory power. The loss of operating or supervisory power shall cause an audible and visual indication at the master control station and shall also cause the fire alarm trouble signal to sound on the FACP. Switches, LEDs, and controls shall be fully labeled.

Duct Smoke Detector

Location – Supply/Return air duct in AHU's / Plant room in order to avoid recirculation of smoke.
The Duct Smoke Detector shall be an intelligent digital photoelectric detector. The detector shall be mounted in a duct detector housing listed for that purpose. The duct detector shall support the use of a remote test switch, relay or LED remote indicator. The duct detector shall be supplied with the appropriate sampling tubes to fit the installation. The location of duct detector in supply air duct shall be down stream of fan and filter. The detector shall be designed after taking in to consideration the range of air velocity, temperature and humidity expected at detector when air-conditioning system is working.
Detector Bases:

The bases shall be easy to install and mount and shall be of isolator base type. The sounder base shall be used where local or group alarm signaling is required. The sounder base emits an audible alarm when there is fire. The base shall, contain no electronics and support all series detector types.
Manual Stations

Break glass type flush or surface mounted as required. Manual call points shall contain the intelligence for reporting address, identity, alarm and trouble to the fire alarm control panel. The manual call point communications shall allow the station to provide alarm input to the system and alarm output from the system within less than 4 seconds.

The manual call point shall be equipped with terminal strip and pressure style screw terminals for the connection of field wiring. Surface mounted call points shall be mounted using a Manufacturer's prescribed matching red enamel outlet box. The word FIRE shall appear on the front of the stations in raised letters, 1.75 inches (44 mm) or larger. Provision shall be made to test the MCP without operation of notification appliances in case of testing. The MCP shall be installed not less than 42 inches, or more than 48 inches above the finished floor unless otherwise specified by applicable building codes.

Speakers (UL Listed)

The low profile speaker shall not extend more than (2.5cm) past the finished wall surface, and provide a switch selectable audible output of 2W (90 dBA) at 1m. Wattage setting shall be visible with the cover installed. When the cover is installed, no mounting hardware shall be visible. In and out screw terminals shall be provided for all wiring. Sound simulation shall be performed at site to get actual tap setting of speaker to achieve required dB level at floor level through simulation software and accordingly amplifier quantities, wattages, speaker tap setting shall be provided without any cost implication.

Addressable Sounders/Hooters:

Electronic sounders shall operate on 24 VDC nominal. Electronic sounders shall be field programmable without the use of special tools, at a sound level of at least 90 dB(A) measured at 10 feet from the device and shall be flush or surface mounted as shown on plans. They shall produce broad band sound to guide occupants to safe exists even in

complete darkness. It shall consist of inbuilt amplifier which will produce a sound consisting of Low-Mid-High range of sounds in particular pattern. The noise pattern shall be such that it will be possible for occupants to find out from where the sound is coming. Equivalent alternate type will be also acceptable

Intelligent Modules

The personality of multifunction modules shall be programmable at site to suit conditions and may be changed at any time using a personality code downloaded from the Analog Loop Controller. The modules shall have a minimum of 2 diagnostic LEDs mounted behind a finished cover plate. A green LED shall flash to confirm communication with the loop controller. A red LED shall flash to display alarm status. The module shall be capable of storing up to 24 diagnostic codes, which can be retrieved for troubleshooting assistance. Input and output circuit wiring shall be supervised for open and ground faults.

Control Relay Module:

The Control Relay Module shall provide one form "C" dry relay contact rated at 2 amps @ 24 Vdc to control external appliances or equipment shutdown. The control relay shall be rated for pilot duty and releasing systems. The position of the relay contact shall be confirmed by the system firmware.
If any external relay or contact required for any remote tripping is in vendor scope.

Isolator Module:

Provide intelligent fault isolators modules. The Isolator Module shall be capable of isolating a fault from a class A data circuit while allowing the remaining data loop to continue operating. The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC loop segment or branch. If a wire-to-wire short occurs, the isolator module shall automatically open-circuit (disconnect) the SLC. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section. The isolator module shall not require address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an isolator module after its normal operation.

Monitor Module:

The Monitor Module shall be factory set to support one (1) supervised Class B Normally-Open Active Non-Latching Monitor circuit.

Water flow-Tamper Module:

The Water flow/Tamper Module shall be factory set to support two (2) supervised Class B input circuits. Channel A shall support a Normally-Open Alarm Delayed Latching Water flow Switch circuit. Channel B shall support a Normally-Open Active Latching Tamper Switch.

Power Supply

Standby power supply shall be an electrical battery with capacity to operate the system under maximum supervisory load for 48 hours and capable of operating the system for thirty (30) minutes of evacuation alarm on all devices, operating at maximum load. The system shall include a charging circuit to automatically maintain the electrical charge of the battery. The system shall automatically adjust the charging of the battery to compensate for temperature.

Sequence of Operations

General – Audio (Fire Condition)

Upon alarm activation of any area smoke detector, heat detector, manual pull station, sprinkler water flow, the following functions shall automatically occur:

The internal audible device shall sound at the control panel or command center.

Display the alarm event on the graphical workstation. The LCD Display shall indicate all applicable information associated with the alarm condition including: zone, device type, device location and time/date. All system activity/events shall be documented on the system printer. Any remote or local annunciator LCD/LED's associated with the alarm zone shall be illuminated.

The following audio messages and actions shall occur simultaneously:

An evacuation message shall be displayed in risk area and adjacent zones as per cause & Effect Matrix, approved by consultant / client. The intent of message is to advise occupants hearing this message that they are near danger and should leave the building via the stairs (nearest exit) immediately.

Activate visual strobes on the fire floors (zones) immediately above and below (adjacent to) the fire floor (zone), as per approved cause & effect matrix. The visual strobe shall continue to flash until the system has been reset. The visual strobe shall not stop operating when the "Alarm Silence" is pressed. An alert message shall be sounded on the remainder of building. It is the intent of this message to advise occupants to prepare for evacuation if necessary. An instructional message shall be sounded in the stairwells instructing occupants to move carefully and quickly down the stairs to exit the building and to exit to a safe floor if you encounter smoke in the stairwell.

An instructional message shall be sounded in the elevator cabs. It is the intent of this message to advise elevator occupants that an emergency exists, the elevator has been directed to the ground floor, and that occupants should quickly exit the building. An instructional message shall be sounded in the lobby. It is the intent of this message to advise lobby occupants to leave the lobby and clear the area for arriving firefighters. An instructional message shall be sounded in the concourses connected to the building's lobby. It is the intent of this message to prevent new entries into the lobby by advising occupants not to attempt to enter the lobby of the affected building.

Provide selective paging to each individual floor (zone). In addition to the message/channels detailed above, a dedicated page channel shall be capable of simultaneously providing live voice instructions without interrupting any of the messages listed above shall be provided.

Transmit signal to the building automation system.
Transmit signal to the central station with point identification.
Activate automatic smoke control sequences.
All automatic events programmed to the alarm point shall be executed and the associated outputs activated.
All stairwell/exit doors shall unlock throughout the building.
All self-closing fire/smoke doors held open shall be released.
Direct the closed circuit TV cameras to the alarm event and start video recording

The system shall be double knock alarm system. The system shall provide default time to allow investigation to be undertaken. The default time shall be adjustable. The default time shall be overridden in case of activation of second device. There shall be no provision for investigation on actuation of manual call point and system shall go directly in alarm mode, when MCP is activated.

The maximum elapsed time between actuation of any initiating device and its indication on FACP shall not be more than 10 seconds.

Supervisory Operation

Upon supervisory activation of any sprinkler valve supervisory switch, fire pump off-normal, clean agent fire suppression system trouble, the following functions shall automatically occur:

Visible and audible indication of self-restoring supervisory signals and visible indication to their restoration to normal shall be automatically indicated within 90 seconds.

The internal audible device shall sound at the control panel or command center.
Display the event on the graphical workstation and display a pictorial image.

The LCD display shall indicate all applicable information associated with the supervisory condition including; zone, device type, device location and time/date. All system activity/events shall be documented on the system printer.

Any remote or local annunciator LCD/LED's associated with the supervisory zone shall be illuminated. Transmit signal to the central station PC with point identification.

Trouble Operation

Upon activation of a trouble condition or signal from any device on the system, the following functions shall automatically occur:

Trouble signal and their restoration to normal shall be indicated with in 200 seconds.

The internal audible device shall sound at the control panel or command center.

Display the event on the graphical workstation and display a pictorial image.

The LCD keypad display shall indicate all applicable information associated with the trouble condition including; zone, device type, device location and time/date. All system activity/events shall be documented on the system printer.

Any remote or local annunciator LCD/LED's associated with the trouble zone shall be illuminated. Transmit signal to the central station PC with point identification.
NOTIFICATION APPLIANCE CIRCUITS
All notification appliance circuits shall have a minimum circuit output rating of: 2 amps @ 24 vdc; 50 watts @ 25V audio, and 35 watts @ 70V audio. The notification circuits shall be power limited. Non-power limited circuits are not acceptable

Network Wiring

The system supplied under this specification shall utilize node-to-node, direct-wired multi-priority peer-to-peer network operations. The backbone shall be multi-core wiring or commercial CAT6e cable or Single mode, multimode fiber cable depending on application. A Minimum of 64 ten loop panels shall be capable of being networked together and each panel shall have capability of addressing 2500 points .The system shall utilize independently addressed, smoke detectors, heat detectors and input/output modules as described in this specification. The peer-to-peer network shall contain multiple nodes consisting of the command center, main controller, remote control panels, LCD/LED annunciation nodes, and workstations. Each node is an equal, active functional node of the network, which is capable of making all local decisions and generating network tasks to other nodes in the event of node failure or communications failure between a nodes. When a network is wired in a Class B configuration, a single break or short on the network wiring isolates the system into two groups of panels. Each group continues to function as a peer-to-peer network working with their combined databases. When wired using a Class A configuration, a single break or short on the network wiring causes the system to isolate the fault, and network communication continues uninterrupted, without any loss of function. Should multiple wiring faults occur, the network re-configures into many sub-networks and continues to respond to alarm events from every panel that can transmit and receive network messages The remote control panel/network nodes shall meet the same requirements as described in control panel section and shall contain Common control switches with minimum 640 character LCD / touch screen display, as required with Integral power supply(s) with secondary stand-by power. It shall also have signaling line circuits for communications with analog/addressable devices, as required, Audio amplification, as required, Notification appliance circuits, as required and Auxiliary function circuits and operations, as required.

The network communication shall be based on a Local Area Network (LAN). The network shall use a deterministic token-passing method. Collision detection and recovery type protocols are not acceptable substitutes due to life safety

requirements. In addition, there shall be no master, polling computer, central file computer, display controller or other central element (weak link) in the network which, on failure, may cause complete loss of network communications or cause major degradation of network capability. There shall be no cascading of CPUs or master-slave relationships at the network level to facilitate network communications. Failure of any node shall not cause failure or communication degradation of any other node or change the network communication protocol among surviving nodes located within distance limitations. Each node/panel shall communicate on the network as per the NFPA response requirement (10 second).

SYSTEM OPERATION – FUNCTIONAL SPECIFICATIONS & PRODUCTS

General: The system shall be integrated into a comprehensive system, to provide the functional performance described as follows:

The fire detection and alarm system shall monitor and display the activation of each device in the system, such as heat detector, smoke detector, manual break-glass unit, sprinkler water flow switch, sprinkler valve tamper switch, hose reel water flow switch and hose reel valve tamper switch or any other input device which may be required.

The system shall initiate output functions such as automatic alarm annunciation via speakers, fans shutdown, automatic notification to the Fire main control PC and activation of audible hooters/directional sounders/strobes.

The system shall be of the addressable intelligent type, completely supervised, such that a break in any wire (loop) shall not prevent any device from operating. The system shall be of the type such that each device connected to the system shall be provided with unique address and separately identified at the Main control panel (MCP).

The wiring shall be monitored against faults such as opens, shorts, earth's or data transmission failure. Detection addressable loops, capable of handling minimum of 250 addressable points shall return to the control panel.

Emergency Paging And Voice Alarm

The system shall permit communication in the form of paging from the main control panel and telephone switchboard to any floor or group of floors simultaneously. The system shall be capable of manual operation or automatic operation initiated by the fire alarm system. Speakers shall be located as required to achieve acceptable audibility in all Communication addressable loops will be supervised and therefore return to the control panel.

Emergency Telephone

The emergency telephone system shall provide two way communications capability between the main control panel and jacks for emergency telephone handsets. The emergency telephone handsets shall be furnished as part of the overall system.

Scope

The Main control panel shall be located in the main control room now called the Fire Command Centre (FCC) as located in the drawings. The appropriate authorities shall approve the exact location.

A active & networkable remote repeater panel shall also be installed at designated places and shall repeat all alarm functions displayed at the main control panel.

Graphics software shall be loaded on the PC in the FCC and capable of displaying all information graphically. It shall be capable of uploading drawings in the AutoCAD format and pop up alarms or silence them.

Photoelectric type smoke detector shall be with integral microprocessor and shall be capable of taking an independent alarm decision. In case of the failure of the main loop controller the detector shall be capable of operating in standalone mode or degrade mode and continue to take decisions

Heat detectors of the fixed temperature (57 deg.C) type or rate of rise of temperature type shall be used in areas

environmentally unsuited for smoke detectors.

Manual fire alarm stations shall be located on the occupied side of the door to each exit stair and at intermediate locations as required (Maximum distance between pull stations shall not exceed 45 m).

Sprinkler, Hose reel water flow switch and valve tamper switch shall be provided at each sprinkler system valve location (the flow and tamper switches shall be generally furnished and mounted by the sprinkler system installer and wired by the fire detection alarm system installer).

Magnetic hold open devices shall be provided where required for the automatic release of smoke / fire doors.

System Operation

The system shall be arranged for categories of alarm inputs and provide output functions appropriate to each of the categories;

Supervisory Monitor input: The following inputs shall be considered supervisory monitoring functions:

Sprinkler system shut off valve tamper switch.

Hose Reel cabinet tamper switch

Removal of a smoke detector from its base.

Fire / Sprinkler pump status (i.e. power available, malfunction).

Wiring faults.

Activation of a supervisory monitoring device shall provide the following indications:

The Main Control Panel and remote annunciators shall indicate shall indicate an audible and visual "SUPERVISORY" condition. In addition, the "Supervisory alarm" shall be displayed on the graphic display unit for the type of alarm.

Printer shall print clear next message on the event log indication the device, which initiated a trouble alarm.

An alarm signal shall be automatically sent to the local control room as well as REMOTE control room if designed This may be accomplished by means of an web server /Netcom/ digital dialer.

In case of fire all lift call and door buttons and signals shall become inoperative, lifts serving that floor shall be signaled to immediately return to the ground floor or as designated by the local Fire department and be held for the exclusive use of the Fire Brigade. Should such an alarm occur on the ground floor / designated floor, the lifts shall be signaled to return to an alternate floor which is not in alarm.

Signals shall be sent directly to heating, ventilating and air conditioning fan motor controllers for status monitoring circuits to confirm the operation of the fan systems.

The details of the fan control sequence shall be as follows (in compliance with approved cause & effective matrix):

All fans serving the areas affected by the alarm condition shall shutdown.

Smoke extraction fan system shall have to be started

Stair pressurization fans shall be started.

Signals shall be transmitted to the paging system to display zone in alarm.

The printer shall print a clear text message on the event log printer The printer shall print the device information indicating clearly in plain language which device is in alarm, the time, and the date associated with the alarm. The printer shall print all follow-up information regarding this alarm, such as acknowledge, reset etc.

All access control doors shall be released in case of fire condition shall allow graphics for more than one floor at a time to be displayed on the screen.

The automatic voice evacuation alarm shall be initiated from the fire alarm system upon activation of an alarm. The alarm shall consist of a "slow whoop" alarm tone for a maximum of fifteen (15) seconds followed by an automatic preselected voice evacuation message. At the end of each message the 'slow whoop' shall continue for fifteen (15) seconds followed again by the automatic voice evacuation signal. This sequence of alarm shall sound until the signal silence switch is operated at the main fire alarm control panel or the fire alarm has been reset as described previously. The voice evacuation signal shall be distinct, authoritative without any inflection and shall be repeated in several languages as agreed with the fire brigade.

The alert tone shall consist of an introductory pulse tone for fifteen (15) seconds followed by an alert message to advise that this floor is not in alarm but the floors that are in alarm shall be stated. The message shall also state that the occupants shall be prepared to evacuate the building when the evacuation alarm is given. The alert tone shall be distinctly different from that of the evacuation alarm.

Each stairwell shall receive a voice message without a fire alarm tone. The message shall state that there is an emergency in the building anyone presently in the stairwell shall not re-enter any floors but should proceed immediately to the ground floor exit level. Zone circuits shall be designed for this activity

During the automatic transmission of the fire alarm and alert tones, it shall be possible at the main fire alarm panel to permit selective voice paging. Upon activation of manual controls switches and the microphone push-to-talk switch, it shall be possible to transmit a message to the selected areas. The activation of any such switches and microphone switch shall initiate the "slow whoop' alarm tone for fifteen (15) seconds followed by an announcement or message. The message shall follow the 'slow whoop and the person making the announcement be cued when to start the announcement by a red indicator located adjacent to the microphone. When the microphone button is released, the "slow whoop' shall sound for fifteen (15) seconds, after which the system shall return to the automatic voice evacuation or alert mode until reset as mentioned above.

It shall be possible to load a variety of prerecorded message plus combinations of floor fire alarms prerecorded message, which shall all be selected by the system software. Amendments to the prerecorded message and any reprogramming of the operating system shall be accomplished by front panel operated push buttons, selector switches and a keypad.

It shall be possible to transmit an alarm tone to speakers in one zone while sending a voice message to another zone while the rest of the building is receiving alert tone, all at the same time.

Each speaker zone (with dual circuits) shall be connected to its own amplifier. It shall therefore be possible to have as many channels as there are speaker zone. A minimum of three (3) channels shall be supplied; an ALERT channel, an EVAC channel and a PAGE channel.

Zoning of speaker circuit shall be as indicated in the drawings.
Each level should have minimum two zone. One for common areas and one for other area.

The emergency evacuation and voice alarm system amplification equipment shall be sized to accommodate the total quantity of speakers for each channel (total of three) plus 25% spare reserve capacity in each channel.

The system shall be provided with redundant amplifiers arrange in such a manner that failure of an amplifier shall not result in loss of acceptable audibility in any area of the building.

Emergency Telephone System: All remote emergency telephones will communicate with the emergency telephone control panel at the main control room:

The insertion of any telephone handset into its jack will cause the appropriate phone location indicator to flash and a distinctive audible pulsing sound to be heard in the fire command center. The subsequent picking-up of the master phone and operation of that phone selector switch will silence the pulsing tone, cause the phone location.

The emergency telephone system will provide the capacity to handle simultaneous use of multiple remote phones (minimum five). All phone jacks will be annunciated and monitored against fault or tampering (i.e. supervised).

The removal of all remote telephone handsets from their jacks will cause the restoration of all normal supervisory functions. If any remote phone is not removed, then the appropriate phone zone indicator will flash and the pulsing tone will resume in the fire command Centre.

Cables

Cabling for Fire Alarm System shall be LSZH armoured All wiring for Fire Alarm System shall be fire survival cable (600/1000V) with class-2 copper conductor having Mineral insulation (MI) according to BS-60702 and requirement as per clause NO 6.2.1 (e) IS 15908 : 2011 and low smoke zero halogen (LSZH) inne and outer sheath. Cable should meet fire performance circuit integrity test as per BS 6387 & 8434 CWZ for 2 hours and enhanced test. .Outer sheath should be red in colour with anti-rodent including end terminations

The cables used shall be exclusively for Fire Detection System. The multi-core cables shall not be shared for other low voltage or high voltage circuits.

The cables connected to detectors shall be given S –loop on both the sides of the detectors which shall be properly clamped to the ceiling. Loop shall also be left where cables connects sounders, panels, dampers etc. Appropriate glands shall be provided where the cables enters the junction box.

Cables shall be laid by skilled and experienced workmen. Care shall be taken while laying cables to avoid kinks. At all the changes in direction (vertical and horizontal planes) the cables shall be bent smooth with a radius as recommended by the manufacturers.

No joints shall be allowed between two points. The sleeve at joints shall be shaved off like a pencil and shall not be cut square to avoid cutting of conductors.

Cabling scope shall be supply and laying of FS cables of core sizes minimum size 2 core 1.5 sq mm copper conductor FRLS Cables. Depends on the length of the loop, contractor has to select the core sizes. However the core sizes should not be less than 1.5 Sq.mm dia.

All cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system. Loop wiring shall be of 1.5 sq mm 600/1000 Volts.

Fire Alarm System and PA speaker cables should not have the same color code. Both should have separate colors to identify easily.

All field wiring shall be completely supervised. No cables more than two nos. should be saddled directly in to wall /ceiling. Contractor should use cable tray/trunking for wherever more than two cables are to be layed.

All Hooter cum Strobe and telephone circuits shall be not less than 2.5mm2, 600 / 1000 volts copper conductor LSZH cables.

Cabling shall be completely installed, field connections made and tested for stray voltage, short circuits, and ground faults prior to connection to the intelligent modules.

All loop cabling shall be identified by ins and outs. It is defined as coming from the panel.

Red and Black must be used for 24 VDC panel power circuit. Audio visual indicating circuits shall be colour coded. Colour code shall not be duplicated in the same panel.

No voltage supply from any other source than the primary power 230 VAC and the panel 24 VDC power supply shall be utilized.

Intelligent loop circuits shall be labeled at all junction locations by the panel number and loop number.

Intelligent loop circuits shall be provided with adequate junction boxes be expandable and provide a means for connecting to the loop in the junction box.

Control and other panels shall be mounted with sufficient clearance for observation and testing. Fire alarm junction boxes shall be clearly marked for distinct identification..

All fire alarm junction boxes should be mounted in approved locations for ease of maintenance from floor level.

All junction boxes shall be made up in a uniformly and orderly manner.

Fire Alarm Control Panels and GA (GRPAHICS node) – OPERATIONAL SPECS

Each network FIRE ALARM CONTROL PANLEL now called FACP shall contain a microprocessor-based central processing unit (CPU). The FACP shall communicate with and control the following types of equipment used to make up the system: intelligent detectors, addressable modules, local and remote operator terminals, printers, annunciators, emergency voice communication systems, public address system, building management system, and other system controlled devices. The Fire Alarm System shall include all required hardware and system programming to provide a complete and operational system, capable of providing the protected premises with the following functions.

Modular systems manufacture with a layered application concept, including an “operational layer” and a “human interface layer”, to allow maximum flexibility at the system with a minimum physical size requirement.

All system operational software is to be stored in FLASH memory.

System response to any alarm condition must occur within 3 seconds, regardless of the size and the complexity of the installed system.

Each FACP on the network shall perform the following functions:

Supervise and monitor all intelligent/addressable detectors and modules connected to the system for normal, trouble and alarm conditions.

Supervise all initiating signaling and notification circuits throughout the facility. Voice evacuation speakers to be monitored by the public address system.

Detect the activation of any initiating device and the location of the alarm condition. Operate all notification appliances and auxiliary devices as programmed.

Visually and audibly annunciate any trouble, supervisory or alarm, condition on operator's terminal, panel display, and annunciators.

Visually display sprinkler valve and water flow detectors.

Visually display status of emergency power.

Shall have controls for unlocking stairway doors.

Graphically display all zones.

Trouble alarm for public address system.

Trouble Alarm for Building Management System.

System status LEDs for Test status, CPU Fail status, Ground Fault status, Disable status

Common control switches for reset, Alarm silence, panel silence, drill silence.

Other operator control switches such as previous message switch. Next message switch, and more details switch.

Each FACP node shall include a full featured operator interface control and annunciation panel which shall include individual, colour coded system status LEDs, and an alpha-numeric keypad for field programming and control of the node.
All programming or editing of the existing programming in the system shall be achieved without special equipment or interrupting the alarm monitoring functions of the fire alarm control panel.

Each FACP node shall be capable of providing the following features:

Block Acknowledge for Trouble Conditions

Rate Charger Control

Control-By-Time (Delay, Pulse, time of day, etc.)

Automatic Day/Night Sensitivity Adjust (high/low)

Environmental Drift Compensation (selectable ON or OFF)

Smoke Detector Pre-alarm Indication at Control Panel

NFPA 72 Smoke Detector Sensitivity Test

System Status Reports

Alarm Verification, by device, with tally

Multiple Printer Interface

Multiple CRT Display Interface

Non-Fire Alarm Module Reporting

Automatic NFPA 72 Detector Test

Programmable Trouble Reminder

Upload/Download System Database to PC Computer

One-Man Walk Test

Smoke Detector Maintenance Alert

Security Monitor Points

Alpha-numeric Pager Interface

On-line or Off-line programming

Interface with security system, Building Management System public address system.

Ground fault detection.

Fire Alarm Central Processing Unit

"The proposed Fire Alarm System shall be from a single UL listed manufacturer for complete compatibility of the proposed large peer-to-peer networked system. Master-Slave network will not be acceptable. Each occupant shall have its own Fire Alarm Control Panel as a Node in the Network complete with its own Network.

Peer-to-Peer Fire Alarm Network

Peer-to-Peer Fire Alarm Network is the interface with allows intelligent Fire Alarm Control Panels to form a network. Each local control panel (network node) maintains its own area of protection, while monitoring and controlling other areas (other network nodes).

Local information shall be displayed at each network node. In areas such as a security office, where the entire network must be monitored, network annunciators shall be required.

Network Control Annunciator(Repeater Panel)

The Network Control Annunciator (NCA) shall be a 168 or higher- character backlit LCD display with operator keypad for the network. As a remote node on a network, it provides both system control and display capabilities for all network nodes.

The NCA shall have display for the fire control panels. When mounted in the control cabinet and connected to a stand-alone panel, it provides system control and display capabilities for a stand-alone panel. When connected to a networked panel as a primary display, it can provide network control and status/history display capabilities.

BACnet Gateway

The BACnet Gateway shall provide an interface between fire panel network and a network using the BACnet/IP/eqv communication protocol. BACnet protocol is an American National Standard (ANSI/ASHRAE 135-1995). With the Gateway interface, devices on fire alarm control panels are represented as BACnet objects to the BACnet client. The user subscribes to Event Notification objects per FACP, and the BACnet device receives events from objects on the FACP as a result of this subscription. Panel s must be suitable for fiber network peer to peer connection.

Loop Controller (LC)

Loop Control boards shall be provided to monitor and control each of the Signaling Line Circuit (SLC) loops in the network node. The loop Control board shall contain its own microprocessor and shall be capable of operating in local mode in the case of a failure in the main CPU of the control panel. In local mode, the loop interface board shall detect alarms and activate output devices on its own SLC loop.

The LIB shall not require any jumper cuts or address switch settings to initialize SLC Loop operations.

The loop interface board shall provide power to, and communicate with, all of the intelligent detectors and

addressable modules connected to its SLC Loop over a single pair of wires. This SLC Loop shall be capable of operation as NFPA Style 7.

The loop interface board shall receive information from all intelligent detectors and shall process this information to determine whether normal, alarm, or trouble conditions exist for that particular detector. The loop interface board software shall include software to automatically adjust and compensate for dust accumulation to maintain detector performance as it is affected by environmental factors. The analog information may also be used for automatic detector testing and for the automatic determination of detector maintenance requirements.

The LCB shall communicate with each intelligent addressable detector and addressable module on its SLC loop and verify proper device function and status.

Enclosures

Control panels shall be housed in FM/UL-listed cabinets suitable for surface or semi-flush mounting. Cabinets shall be corrosion protected, given a rust-resistant prime coat, and the manufacturer's standard finish. The back box and door shall be constructed of 1.5mm steel with provisions for electrical cable connections into the sides and bottom. The door shall provide a key lock and include a transparent opening for viewing all indicators. For convenience, the door shall have the ability to be hinged on either the right or left-hand side. The control unit shall be modular in structure for ease of installation, maintenance, and future expansion.

Field Programming

The system shall be programmable, configurable and expandable in the field without the need for special tools or electronic equipment and shall not require field replacement of electronic integrated circuits.

All local FACP node programming shall be accomplished through the FACP keyboard or through a portable laptop.

All field defined programs shall be stored in non-volatile memory.

The programming function shall be enabled with a password that may be defined specifically for the system when it is installed. Multi-levels of password protection shall be provided in addition to a key-lock cabinet. One level is used for status level changes such as zone disable or manual on/off commands. A second (higher-level) is used for actual change of program information.

Specific System Operations

Smoke Detector Sensitivity Adjust: Means shall be provided for adjusting the sensitivity of any or all intelligent detectors in the FACP node from each system keypad or from the keyboard of the video terminal. Sensitivity range shall be within allowed UL limits.

Alarm Verification: Each of the intelligent addressable detectors in the system may be independently selected and enabled for alarm verification. Each FACP shall keep a count of the number of times each detector has entered the verification cycle. These counters may be displayed and reset by the proper operator commands.

System Point Operations

All devices in the FACP node may be enabled or disabled through the local keypad or video terminal.

Any FACP node output point may be turned on or off from the local system keypad or the video terminal.

Point Read: The FACP node shall be able to display the following point status diagnostic functions without the need for peripheral equipment. Each point shall be annunciated for the parameters listed:

Automatic Detector Maintenance Alert: Each FACP node shall automatically interrogate each intelligent system

detector and shall analyze the detector responses over a period of time.

If any intelligent detector in the system responds with a reading that is below or above normal limits, then the system shall enter the trouble mode, and the particular intelligent detector shall be annunciated on the system display, network display and printed on the optional system printer. This feature shall in no way inhibit the receipt of alarm conditions in the system, nor shall it require any special hardware, special tools or computer expertise to perform.

Batteries and External Charger

Battery
Batteries shall be 24 volt, VRLA type or better and shall not be hazardous to humans or environment

The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills and leakage shall not be required.

Battery shall be heavy duty type of life span of minimum 5 years.

Installation

Installation shall be in accordance with the IFC, NEC, NFPA 72, local codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

All cables ,junction boxes, cable supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.

All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.

Manual Pull Stations shall be suitable for surface mounting or semi flush mounting as shown on the plans, and shall be installed not less than 1 m nor more than 1.2 m above the finished floor.

Typical Operation

Actuation of any manual station, smoke detector, heat detector or water flow switch shall cause the following operations to occur unless otherwise specified:

Activate all programmed speaker circuits in a zone or throughout.
Actuate strobe units until the panel is reset in a zone or throughout.
Light the associated indicators corresponding to active speaker circuits.
Release all magnetic door holders to doors to adjacent zones on the floor from which the alarm was initiated.

Where required, return all elevators to the primary or alternate floor of egress.

A smoke detector in any elevator lobby shall, in addition to the above functions, return all elevators to the primary or alternate floor of egress.

Smoke detectors in the elevator machine room shall return all elevators in to the primary floor. Heat detectors installed to shut down elevator power shall do so in accordance with ANSI A17.1 requirements and be coordinated with the electrical installation. Smoke detectors at the primary level elevator lobby shall return elevation to an alternate level.

Activation of any sprinkler system low pressure switch, on valve tamper switch, shall cause a system supervisory

alarm indication.

Commissioning

Commissioning shall include pre-testing, troubleshooting, acceptance testing, and punch list.

The service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment shall be provided to technically supervise and participate during all of the adjustments and tests for the system. The Contractor shall pre-test the system before the final acceptance testing and shall submit a pretest report to the Engineer:

Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

Close each sprinkler system flow valve and verify proper supervisory alarm at the FACP.

Verify activation of all flow switches.

Open initiating device circuits and verify that the trouble signal actuates.

Open signaling line circuits and verify that the trouble signal actuates.

Open and short notification appliance circuits and verify that trouble signal actuates.

Open and short (wire only) network communications and verify that trouble signals are received at network annunciators or reporting terminals.

Ground initiating device circuits and verify response of trouble signals.

Ground signaling line circuits and verify response of trouble signals.

Ground notification appliance circuits and verify response of trouble signals.
Check alert tone and prerecorded voice message to all alarm notification devices.

Check installation, supervision, and operation of all intelligent smoke detectors using smoke test.

Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.

When the system is equipped with optional features, the manufacturer's manual should be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

Check each zone smoke control sequence under “automatic,” “on” and “off” operation.

Perform the following tests for the public address/fire alarm system:

Simulate a fire condition using each of the following initiating devices in each zone: 1) manual pull station – water flow switch 2) area smoke detector - projected beam smoke 3) heat detector - detector 4) duct smoke detector

After alarm verification time has exceeded ensure that proper voice institution messages are transmitted to the proper zone.

Simulate live voice announcements in all zones using All Call, All Call Minus, Page to Evac., and Page to Alert functions to ensure that proper voice instruction messages are transmitted to the proper zones. Stairways shall be on

an independent zone separate from all other zones.

Test & Inspection

All intelligent analog addressable devices shall be tested for current address, sensitivity, and user defined message. All wiring shall be tested for continuity, shorts, and grounds before the system is activated. All test equipment, the installing contractor, shall make instruments, tools and labor required to conduct the tests available.

The system including all its sequence of operations shall be demonstrated to the Owner, his representative, and the local fire inspector. In the event the system does not operate properly, the test shall be terminated. Corrections shall be made and the testing procedure shall be repeated until it is acceptable to the Owner, his representatives and the fire inspector.

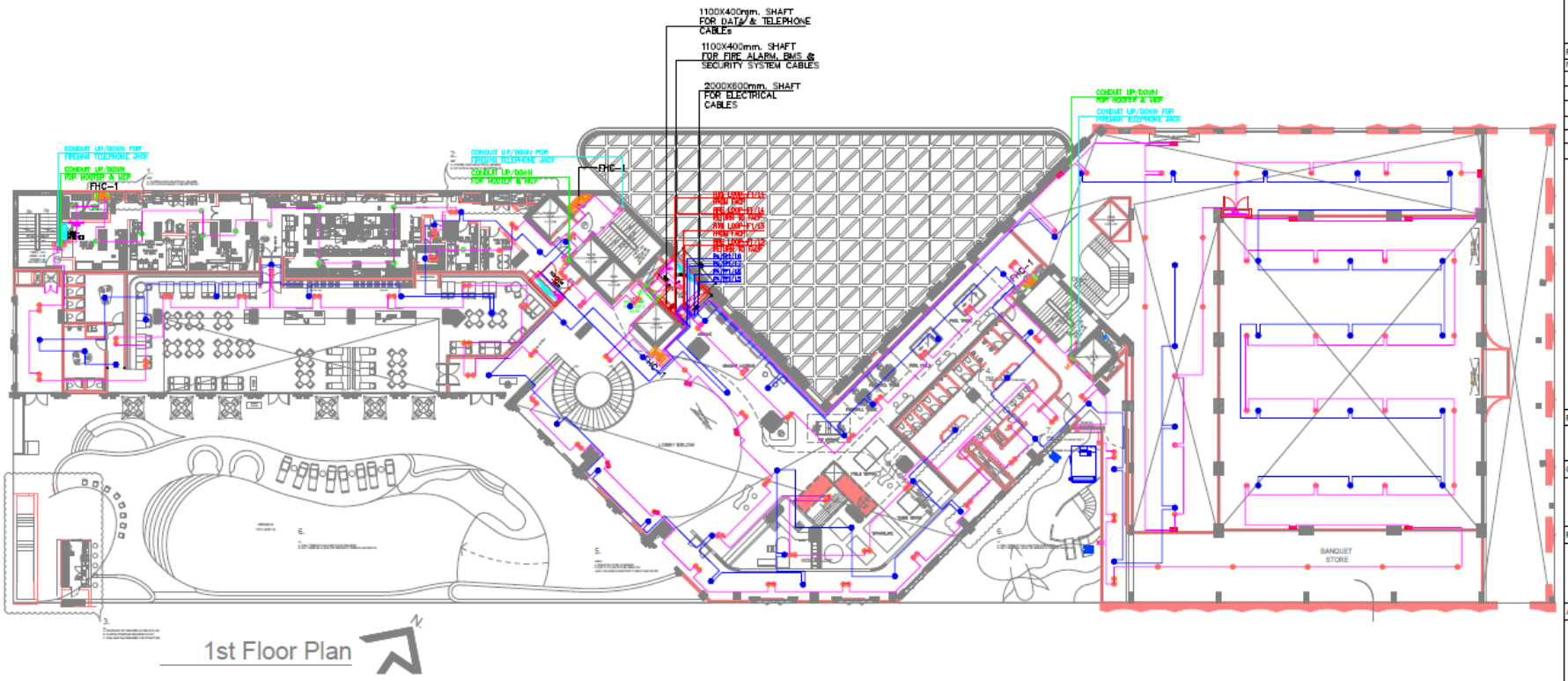
At the final test and inspection, a factory-trained representative of the system manufacturer shall demonstrate that the system functions properly in accordance with these specifications. The representative shall provide technical supervision, and participate during all of the testing for the system.

A letter from the Contractor certifying that the system is installed entirely in accordance with the system manufacturer's recommendations and that the system is in proper working order.

DRAWINGS

The contractor shall refer the tender drawings attached in this section.

A. 1st FLOOR PLAN-FAS
B. 2nd FLOOR PLAN-FAS
C. 3rd FLOOR PLAN-FAS
D. 4th & 6th FLOOR PLAN-FAS
E. 5th & 7th ST FLOOR PLAN-FAS
F. 8th FLOOR PLAN-FAS
G. 9th FLOOR PLAN-FAS
H. Terrace FLOOR PLAN-FAS
I. Ground FLOOR PLAN-FAS
J. Duct FLOOR PLAN-FAS



1st Floor Plan

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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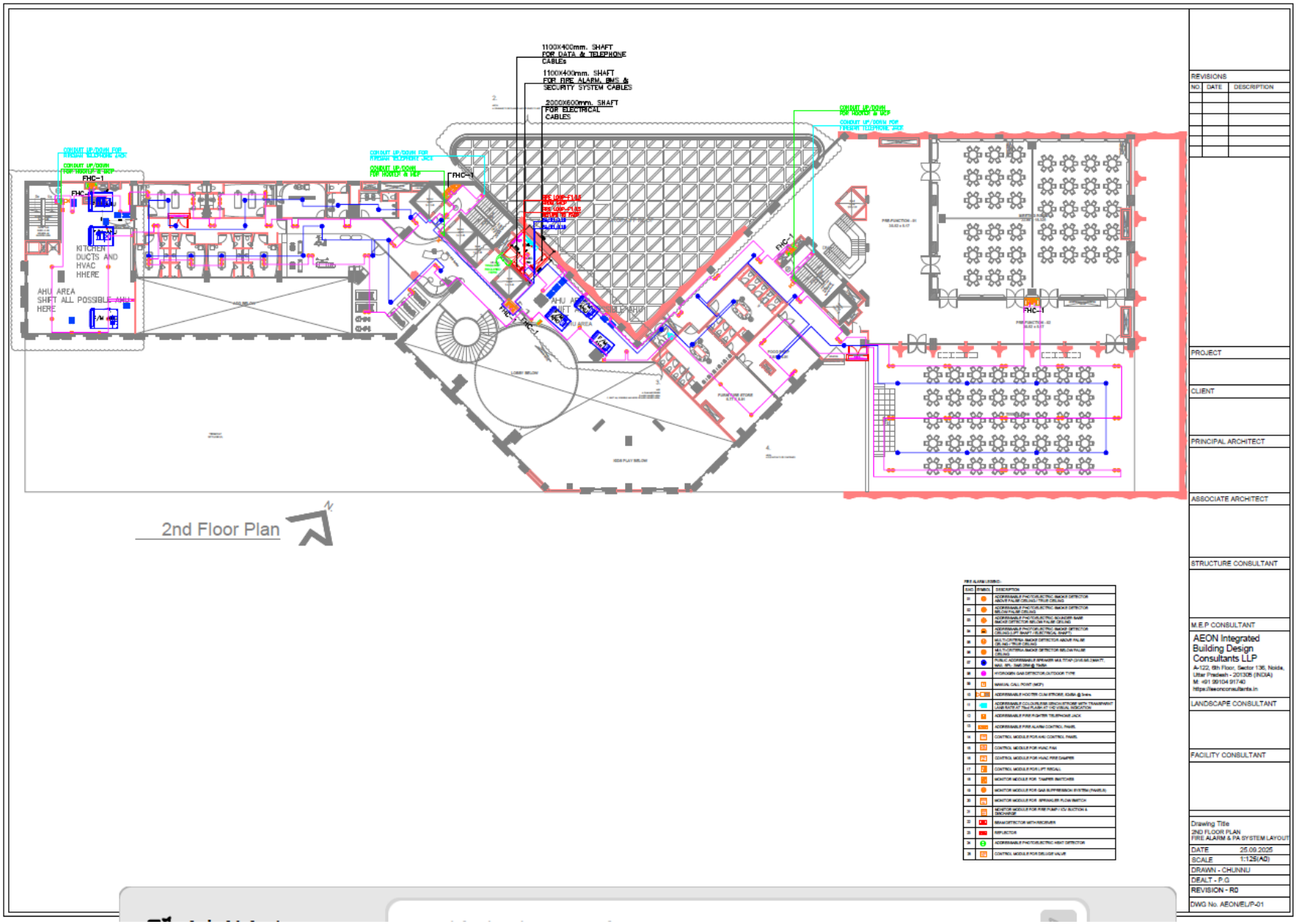
https://aeonconsultants.in

LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
1ST FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No.	AEON/EL/P-01



NO	DATE	DESCRIPTION

REVISIONS

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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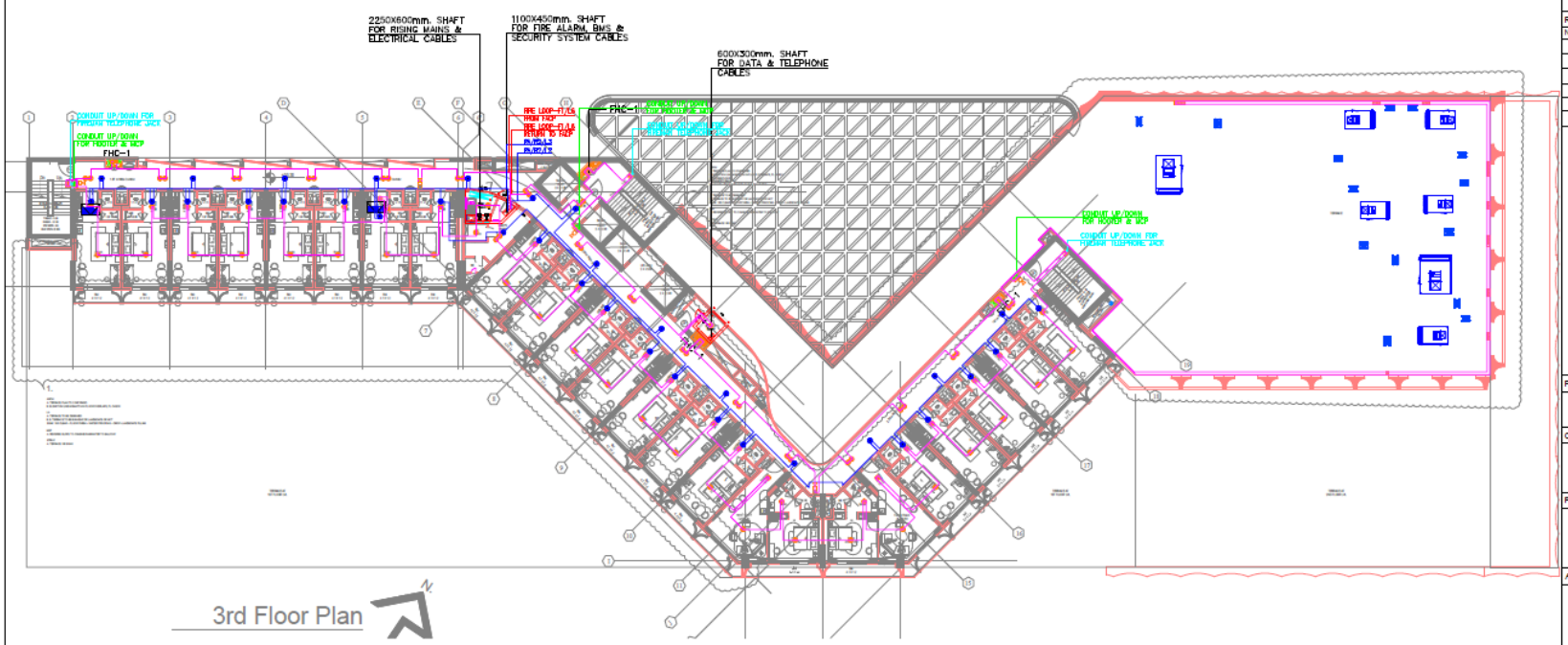
LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
2ND FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/EUP-01	



3rd Floor Plan

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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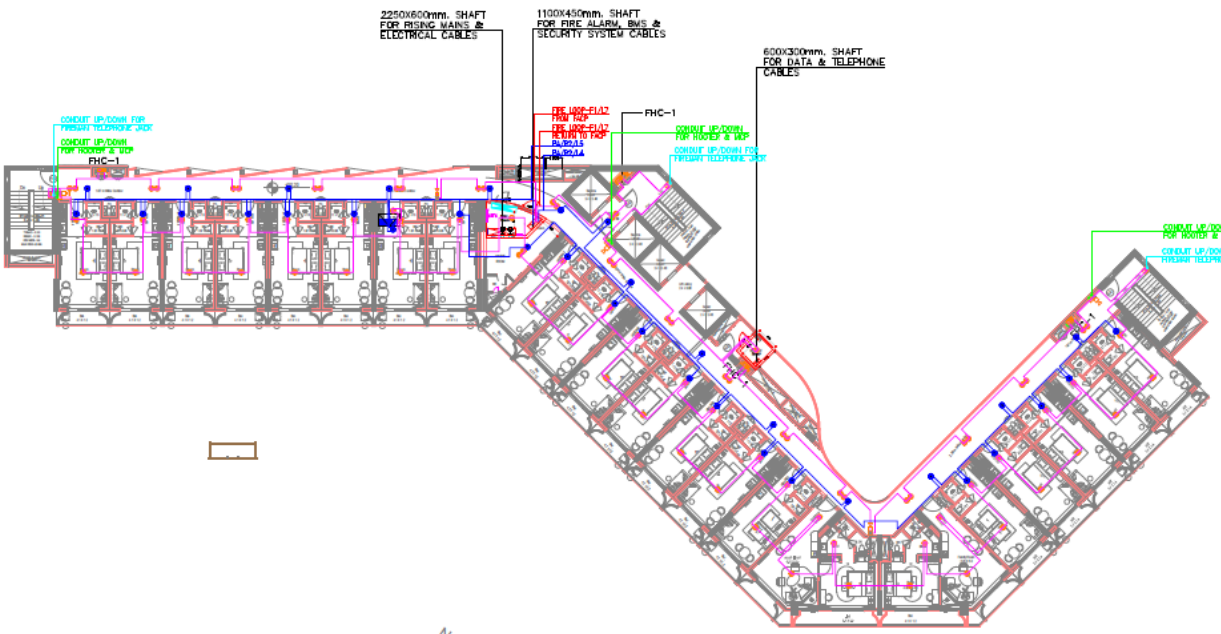
LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
3RD FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/ELP-01	



4th & 6th Floor Plan

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

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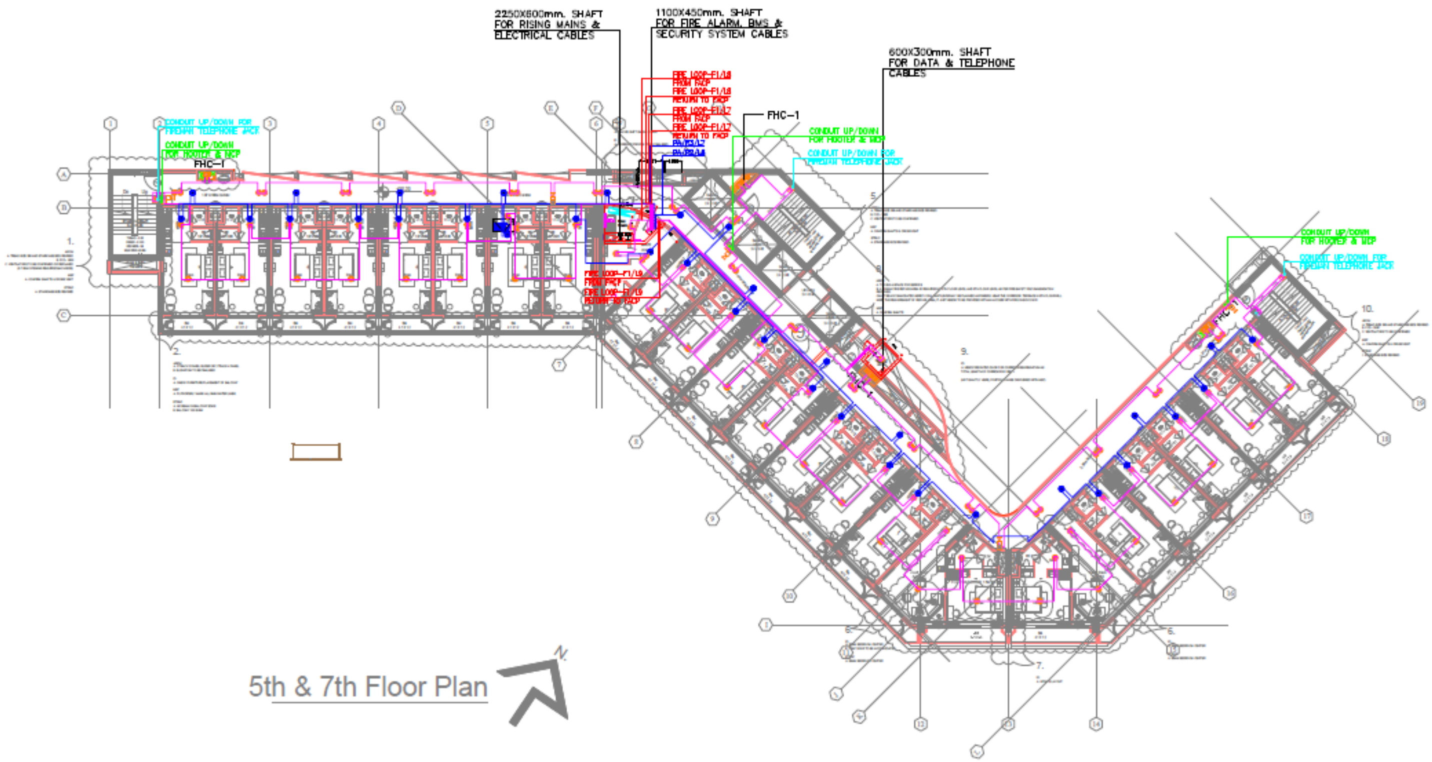
LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
4TH & 6TH FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/EL/P-01	



5th & 7th Floor Plan

FIRE ALARM LEGEND:-

S.NO.	SYMBOL	DESCRIPTION
01		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
02		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR BELOW FALSE CEILING
03		ADDRESSABLE PHOTOELECTRIC SOUNDER BASE SMOKE DETECTOR BELOW FALSE CEILING
04		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR CEILING (LIFT SHAFT / ELECTRICAL SHAFT)
05		MULTI-CRITERIA SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
06		MULTI-CRITERIA SMOKE DETECTOR BELOW FALSE CEILING
07		PUBLIC ADDRESSABLE SPEAKER MULTITAP (3/1.5/0.75)WATT, MAX. SPL: 3W/0.75W @ 75dBA
08		HYDROGEN GAS DETECTOR,OUTDOOR TYPE
09		MANUAL CALL POINT (MCP)
10		ADDRESSABLE HOOTER CUM STROBE, 85dBA @ 3mtrs.
11		ADDRESSABLE COLOURLESS XENON STROBE WITH TRANSPARENT LENS RATE AT 75cd FLASH AT 1HZ VISUAL INDICATION
12		ADDRESSABLE FIRE FIGHTER TELEPHONE JACK
13		ADDRESSABLE FIRE ALARM CONTROL PANEL
14		CONTROL MODULE FOR AHU CONTROL PANEL
15		CONTROL MODULE FOR HVAC FAN
16		CONTROL MODULE FOR HVAC FIRE DAMPER
17		CONTROL MODULE FOR LIFT RECALL
18		MONITOR MODULE FOR TAMPER SWITCHES
19		MONITOR MODULE FOR GAS SUPPRESSION SYSTEM (PANELS)
20		MONITOR MODULE FOR SPRINKLER FLOW SWITCH
21		MONITOR MODULE FOR FIRE PUMP / ICV SUCTION & DISCHARGE
22		BEAM DETECTOR WITH RECEIVER
23		REFLECTOR
24		ADDRESSABLE PHOTOELECTRIC HEAT DETECTOR
25		CONTROL MODULE FOR DELUGE VALVE

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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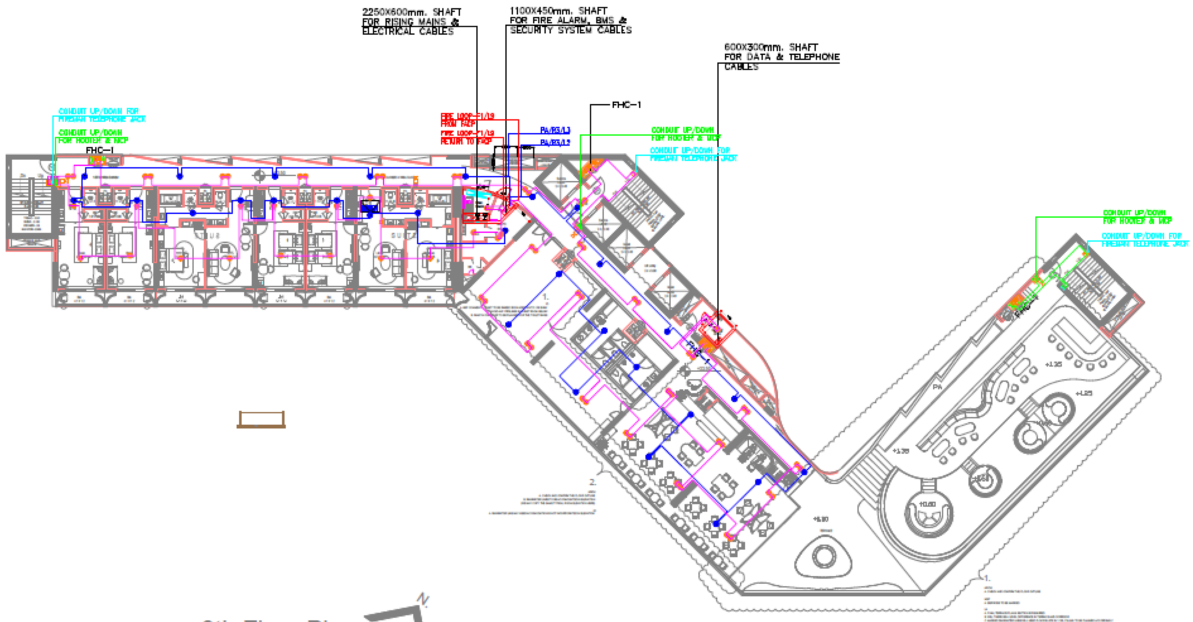
LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
5TH & 7TH FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE 25.09.2025
SCALE 1:125(A0)
DRAWN - CHUNNU
DEALT - P.G
REVISION - R0
DWG No. AEON/EL/P-01



8th Floor Plan

FIRE ALARM LEGEND:-

S.NO.	SYMBOL	DESCRIPTION
01		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
02		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR BELOW FALSE CEILING
03		ADDRESSABLE PHOTOELECTRIC SOUNDER BASE SMOKE DETECTOR BELOW FALSE CEILING
04		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR CEILING (LIFT SHAFT / ELECTRICAL SHAFT)
05		MULTI-CRITERIA SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
06		MULTI-CRITERIA SMOKE DETECTOR BELOW FALSE CEILING
07		PUBLIC ADDRESSABLE SPEAKER MULTITAP [illegible]
08		HYDROGEN GAS DETECTOR,OUTDOOR TYPE
09		MANUAL CALL POINT (MCP)
10		ADDRESSABLE HOOTER CUM STROBE, 85dBA @ 3mtrs.
11		ADDRESSABLE COLOURLESS XENON STROBE WITH TRANSPARENT LENS RATE AT 75cd FLASH AT 1HZ VISUAL INDICATION
12		ADDRESSABLE FIRE FIGHTER TELEPHONE JACK
13		ADDRESSABLE FIRE ALARM CONTROL PANEL
14		CONTROL MODULE FOR AHU CONTROL PANEL
15		CONTROL MODULE FOR HVAC FAN
16		CONTROL MODULE FOR HVAC FIRE DAMPER
17		CONTROL MODULE FOR LIFT RECALL
18		MONITOR MODULE FOR TAMPER SWITCHES
19		MONITOR MODULE FOR GAS SUPPRESSION SYSTEM (PANELS)
20		MONITOR MODULE FOR SPRINKLER FLOW SWITCH
21		MONITOR MODULE FOR FIRE PUMP / ICV SUCTION & DISCHARGE
22		BEAM DETECTOR WITH RECEIVER
23		REFLECTOR
24		ADDRESSABLE PHOTOELECTRIC HEAT DETECTOR
25		CONTROL MODULE FOR DELUGE VALVE

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

AEON Integrated
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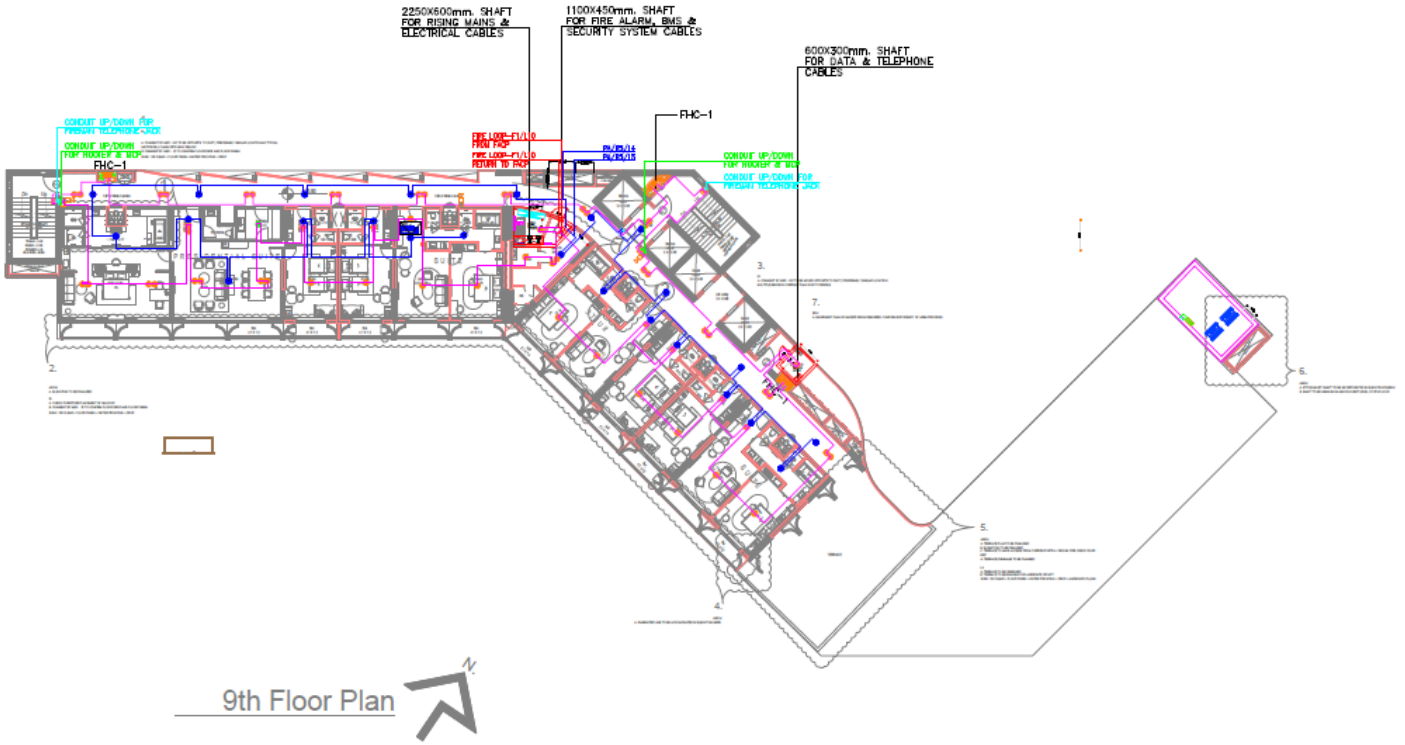
https://aeonconsultants.in

LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
8TH FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE 25.09.2025
SCALE 1:125(A0)
DRAWN - CHUNNU
DEALT - P.G
REVISION - R0
DWG No. AEON/EL/P-01



9th Floor Plan

N

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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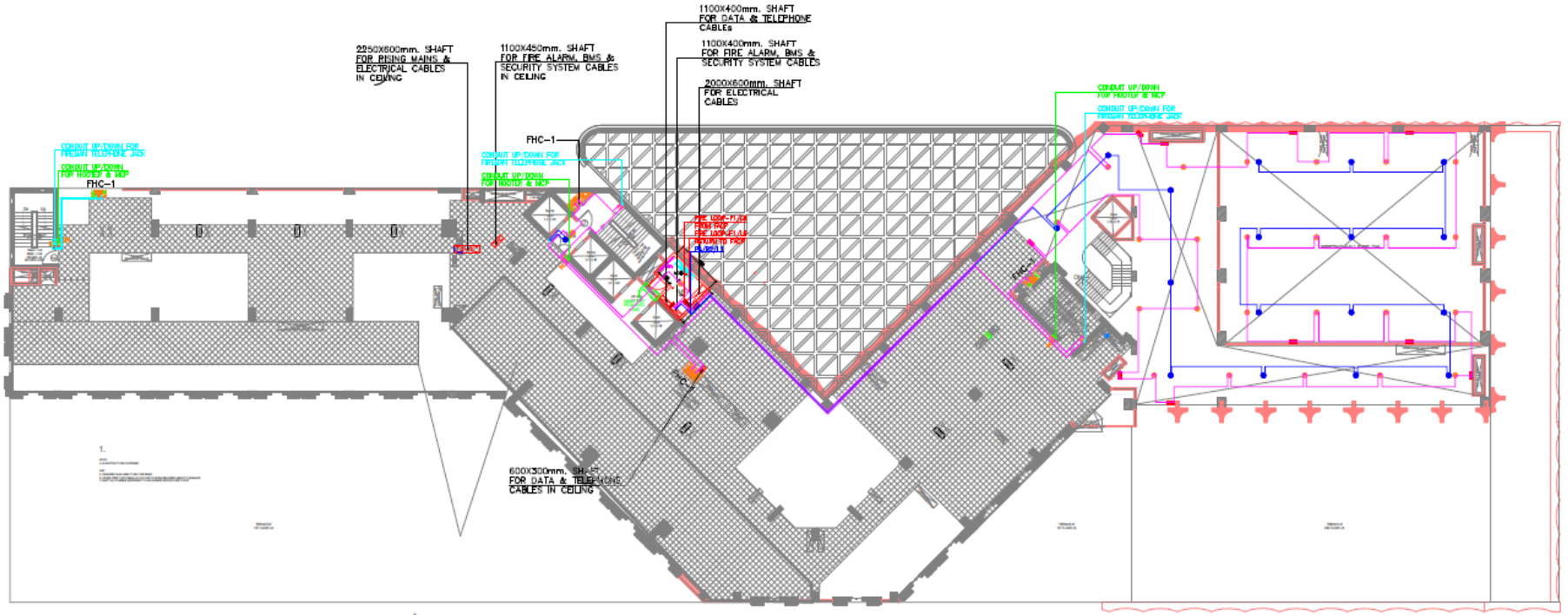
LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
9TH FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/EL/P-01	



DUCT Floor Plan

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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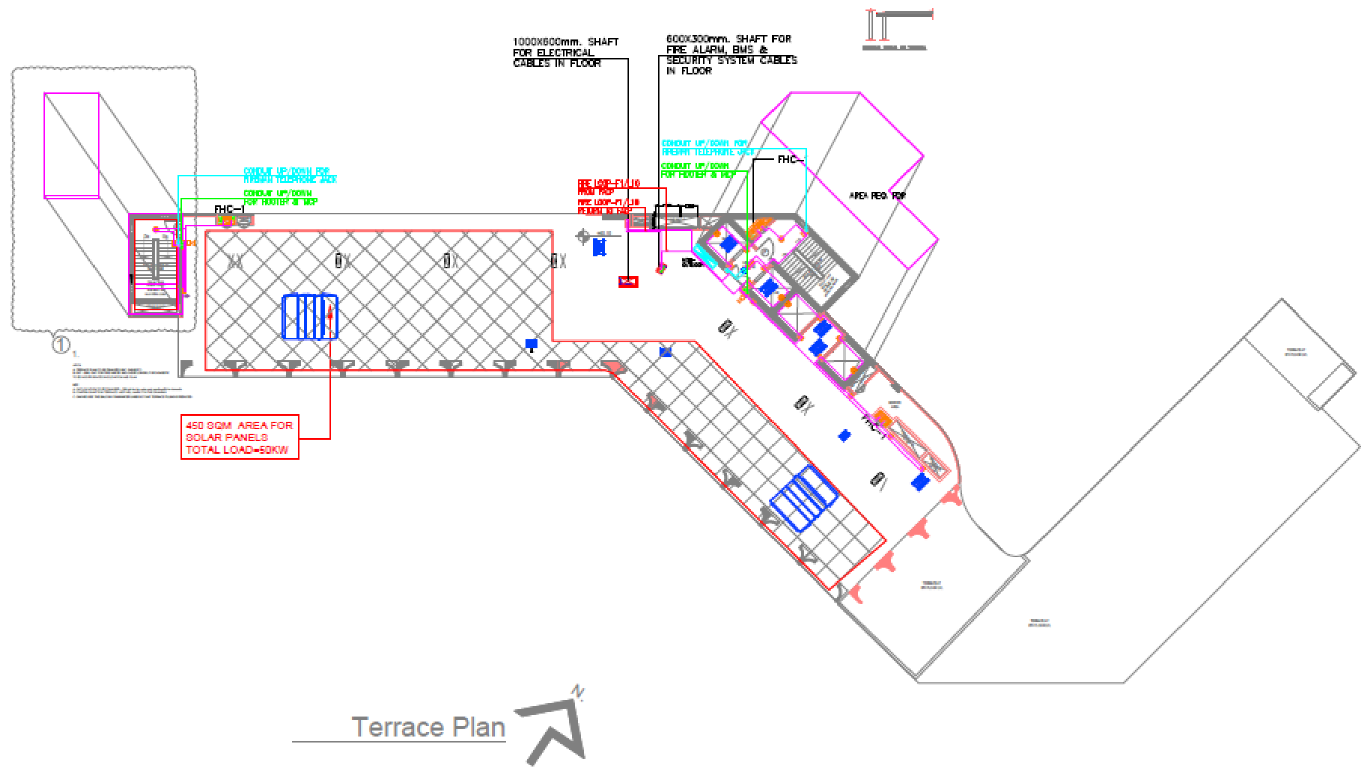
https://aeonconsultants.in

LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
DUCT FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/EL/P-01	



FIRE ALARM LEGEND:

S.NO.	SYMBOL	DESCRIPTION
01		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
02		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR BELOW FALSE CEILING
03		ADDRESSABLE PHOTOELECTRIC SOUNDER BASE SMOKE DETECTOR BELOW FALSE CEILING
04		ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR CEILING (LIFT SHAFT / ELECTRICAL SHAFT)
05		MULTI-CRITERIA SMOKE DETECTOR ABOVE FALSE CEILING / TRUE CEILING
06		MULTI CRITERIA SMOKE DETECTOR BELOW FALSE CEILING
07		PUBLIC ADDRESSABLE SPEAKER MULTITAP (3/1.5/0.75WATT, MAX. SPL. 3dB/0.25W @ 75dBA
08		HYDROGEN GAS DETECTOR,OUTDOOR TYPE
09		MANUAL CALL POINT (MCP)
10		ADDRESSABLE HOOTER CUM STROBE, 10dBA @ 3mtrs.
11		ADDRESSABLE COLOURLESS XENON STROBE WITH TRANSPARENT LENS RATE AT 1Hz FLASH AT 180° VISUAL INDICATION
12		ADDRESSABLE FIRE FIGHTER TELEPHONE JACK
13		ADDRESSABLE FIRE ALARM CONTROL PANEL
14		CONTROL MODULE FOR AHU CONTROL PANEL
15		CONTROL MODULE FOR HVAC FAN
16		CONTROL MODULE FOR HVAC FIRE DAMPER
17		CONTROL MODULE FOR LIFT RECALL
18		MONITOR MODULE FOR TAMPER SWITCHES
19		MONITOR MODULE FOR GAS SUPPRESSION SYSTEM (PANELS)
20		MONITOR MODULE FOR SPRINKLER FLOW SWITCH
21		MONITOR MODULE FOR FIRE PUMP / ICV SUCTION & DISCHARGE
22		BEAM DETECTOR WITH RECEIVER
23		REFLECTOR
24		ADDRESSABLE PHOTOELECTRIC HEAT DETECTOR
25		CONTROL MODULE FOR DELUGE VALVE

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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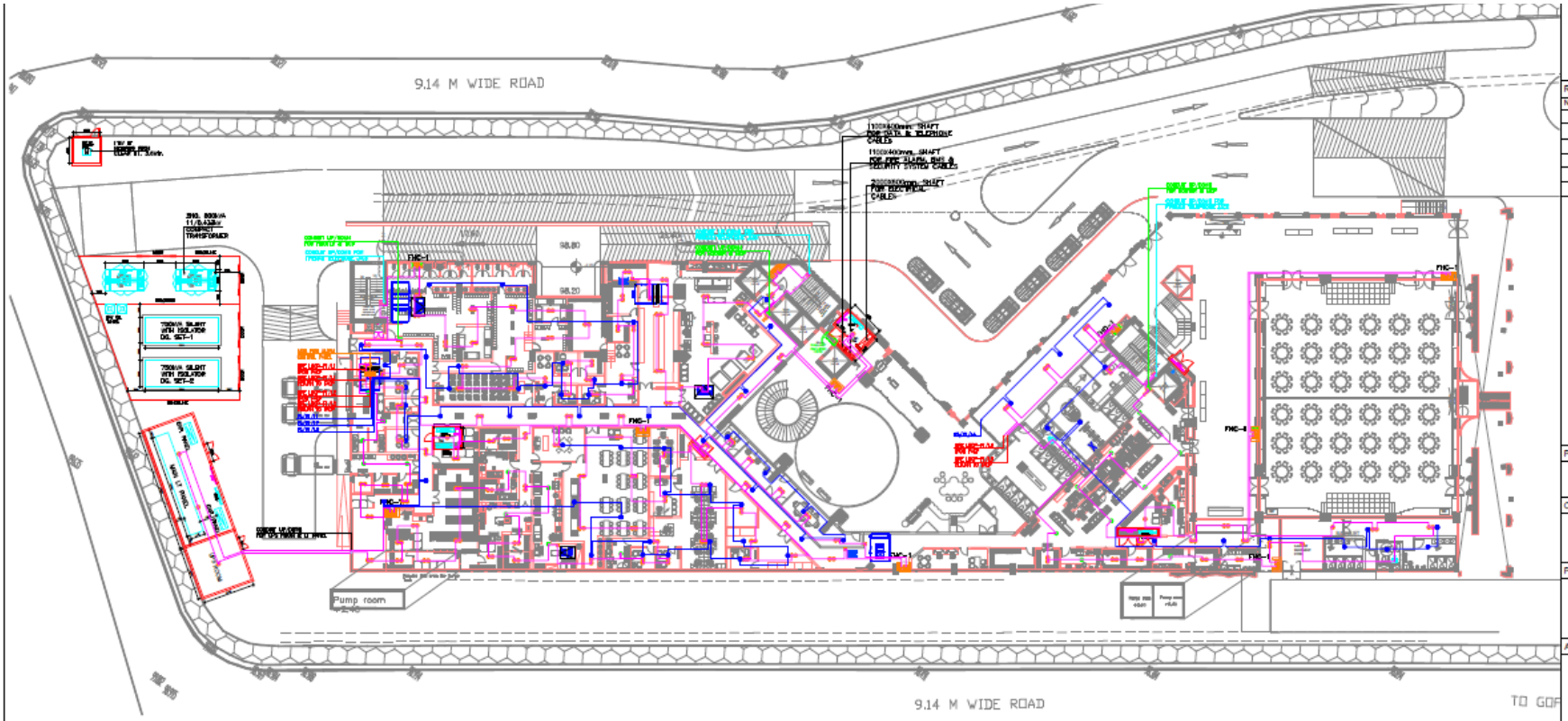
A-122, 6th Floor, Sector 136, Noida, Uttar Pradesh - 201305 (INDIA)
M: +91 99104 91740
https://aeonconsultants.in

LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
TERRACE FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE 25.09.2025
SCALE 1:125(A0)
DRAWN - CHUNNU
DEALT - P.G
REVISION - R0
DWG No. AEON/EL/P-01



REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT

CLIENT

PRINCIPAL ARCHITECT

ASSOCIATE ARCHITECT

STRUCTURE CONSULTANT

M.E.P CONSULTANT

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https://aeonconsultants.in

LANDSCAPE CONSULTANT

FACILITY CONSULTANT

Drawing Title
GROUND FLOOR PLAN
FIRE ALARM & PA SYSTEM LAYOUT

DATE	25.09.2025
SCALE	1:125(A0)
DRAWN - CHUNNU	
DEALT - P.G	
REVISION - R0	
DWG No. AEON/ELP-01	

SECTION-4

FINANCIAL PROPOSAL SUBMISSION FORM

(To be submitted in separate sealed Envelop)

{Location, Date}

To

The General Manager (Communications)
Swosti Premium Ltd.
Gopalpur Palm Resort Project
Email: gm.communications@swostihotels.com ear Sirs:

We, the undersigned, offer to provide the construction services for "Supply, Installation, Testing & Commissioning of Fire Alarm & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis", in accordance with your Request for Proposal dated and our Technical Proposal.

"We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery. We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act, 1988 (as updated from time to time)."

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)}{Insert amount(s) in words and figures}, *"excluding" of all indirect local taxes as in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as indicated above.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in the Data Sheet.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: _____ Name and Title of Signatory: _____

In the capacity of: _____
Address: _____

E-mail:

BOQ FOR

Supply, Installation, Testing & Commissioning of Fire Alarm & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis

Item	Description	Unit	Qty.	Rate	Amount
A.	**ANALOGUE ADDRESSABLE TYPE FIRE DETECTION AND ALARM SYSTEM**				
1	Supply installation, Testing & commissining of Microprocessor based intelligent analogue addressable, modular, expandable, networkable, UL and FM listed fire alarm control panel ,with minimum 10 inch character LCD/touch display. The panel should be equiped of **sufficient number of loops** capacity to take entire intelligent addressable detectors & devices. Four access levels,capable of taking protocol devices, graphic display, sufficient numbers of programmable relay controls for controlling AHUs, Pressurization fans, ventilation fans, fire pump, monitoring of fire sprinkler, fire hydrant pump, ICV, elevators, access control, fire suppression system etc 240 volts AC power supply, automatic battery charger 24 volts VRLA batteries sufficient for 24 hours normal operation and capable of operating 30 minutes at the full capacity (entire system) during emergency condition as required. It shall also able to connect with BACNET/MODBUS/ Open protocol gateway for BMS complete as required. Panel shall be UL-864 10th edition and FM approved . The panel shall have a built-in integrated voice command center with suitable amplifiers capacity for **sufficient number of speaker** and two way communication system. Suitable for accommodate sufficient No. telephone jack and Fire fighter's telephone handsets including all required accessories shall be provided. capacities of 24 VDC Power supply and battery charger shall be calculated and provided by contractor for all type of notification appliances mention below 10% spare capacity in each loop for future uses	Lot	1		
2A	Supply, installation, Testing & commissining of the Graphic interface Unit (GUI) based main network fire detection must be capable of graphically representing each facility being monitored with floor plans and icon depicting the actual locations of the various systems, and sensors locations, locations , import building floor plan CAD drawings (as a dxf, wmf, bmp, jpg or gif etc), support dual monitor, minimum global zoom level for devices (0-100%) secure access. The GUI software shalll be located in control room in one of the floor room and shall be monitors all the floor fire detection device & detectors. The software shall be capable of monitoring the 100 nodes. The software shall provide the facility monitor ,control all 2 way communication system from fire command centre using voice signals over fire network along with the fire detection signal.The software shall be capable of broadcasting on voice over IP. GUI shall be UL 9th edition approved and NFPA compliant,With Operator work station. Workstation details below.				

	Operator work station with PC having intel pretium i7 or better processor including RS-485 port, with 16 gigabytes (GB) of RAM memory, 500 GB SSD hard disk, DVD rom, 1 no 42 inch LED 4K monitor, mouse, with pad, key board window-11 or latest, compatible fire alarm control software, a laser printer A4, munlti user free license , a UPS suitable for complete opertion as mentioned in line item no.1 etc complete in all respect as required and technical specification.With1 kVa UPS.	No.	1		
3	Supply, installation, testing and commissioning of the Network Repeater panel with 5 inch/640 character back lit LCD display with complete system function keys for programming and control like system reset, Alarm Acknowledge, Alarm Silence, Trouble Acknowledge etc.as per specification. Note: Cabling Between Main Panel and repeator panel shall be included.	No	1		
4	Supply, installation,Testing & commissining of Intelligent Addressable Photoelectric Smoke detector with base, 1.2 mm thick GI back Box. The sensor element shall have multiple selectable sensitivity levels in Obs/ft ,LED, electronic/rotory switch addressing feature to programme the detectors, self adhesive sticker indicating loop number. Detector must comply UL 268 7th Edition **(Must be suitable for true false ceiling installation)** (UL listed and FM approved)	No.	500		
5	Supply, installation, Testing & commissining of Analogue Addressable Photoelectric Smoke detector with LED base and 1.2 mm thick GI back Box including PVC gland.The sensor element shall have multiple selectable sensitivity levels in Obs/ft, electronic/rotory switch addressing feature to programme the detectors, self adhesive sticker indicating loop number. Detector must comply UL 268 7th Edition **(Must be suitable for below false ceiling installation)** (UL listed and FM approved)	No.	620		
6	Supply, installation, Testing & commissining of Intelligent Addressable Photoelectric Smoke detector with sounder base (85 dBA at 10 feet, minimum of 75 dBA “at the pillow) and junction box. The sensor element shall have multiple selectable sensitivity levels from 0.2% Obs/ft to 3.7% Obs/ft. The detector shall have operating temperature range from -9°C to 50°C and humidity tolerance range up to 95% RH, Non-Condensing.(UL listed and FM approved) Detector must comply UL 268 7th Edition	No.	150		
7	Supply, installation, Testing & commissining of Intelligent Addressable Multi-Sensor (Photoelectric Smoke + Heat) detector with LED base , and 1.2 mm thick GI back Box. The sensor element shall have multiple selectable sensitivity levels in Obs/ft. Multis-sensor detector shall have a configuration mode that gives separate alarms for smoke detection and heat detection and shall indicate the cause of alarm (smoke or heat). Also the multi-sensor shall have combined configuration mode of smoke and heat detection that gives only one evaluated alarm from a multi-sensor detector in case of a fire event electronic/rotory switch addressing feature to programme the detectors, self adhesive sticker indicating loop number. Detector must comply UL 268 7th Edition (UL listed and FM approved) (must be suitable for true ceiling installation)	No.	205		

8	Supply, installation, Testing & commissining of intelligent Addressable spot type heat detector , LED base, 1.2 mm thick GI back Box (fixed cum rate of rise) with fixed temperature range upto 57 deg C and ROR detection element shall have selectable rate of rise setting of 8°C per minute & 11°C per minute .The sensor element shall have multiple selectable sensitivity levels in Obs/ft , electronic/rotory switch addressing feature to programme the detectors, self adhesive sticker indicating loop number. Detector must comply UL 268 7th Edition (must be suitable for true/false ceiling installation)(UL listed and FM approved)	No.	40
9	Supply, installation, Testing & commissining of intelligent Addressable manual call point (break glass type) complete with input module, push botton,enclosed in box with provision for cable or conduit coupling, self adhesive sticker indicating loop number and address. The unit to be painted fire red outside, white inside and written '' in case break glass'' complete as required to be installed in 1.2 mm thick GI back box etc complete as require by technical specifications. Sample to be provided prior installations. (UL listed and FM approved)	No.	45
10	Supply,Installation,Testing & Commissioning of addressable Hooter cum Strobe rated at 82 dBA @ 3m for Audible annunciation and 75 cd flashing at 1 Hz for visual indication , power supply, in 1.2 mm thick GI back Box. The additional power supply as required for these hooters cum strobe shall be included in this item rate only. The strobs shall be synchronized for better evacuation as per specification .(UL listed and FM approved).	No.	65
11	Supply, installation, Testing & commissining of 2 way communication fire fighter's telephone jack in 1.2 mm thick GI box required complete in all respects as per technical specifications.(UL listed and FM approved)	No.	45
12	Supply, installation, Testing & commissining of 2 way communication fire fighter's handset complete with all accessories as per specification. (UL listed and FM approved)	No.	2
13	Supply, installation, Testing & commissining of interface module complete with mounting arrangement including north america 1.2 mm thick GI back Box complete as per all necessary requirements of technical specification.		
A	Analogue Addressable Monitor module having Rotary, decimal addressing system for monitoring the field devices & shall be capable of providing DPDTcontact rated at 24V DC, 2A. (sprinkler flow switch, deludge valve switch, pumps etc.) (UL listed and FM approved)	No.	140
B	Intelligent Addressable Potential-free, Form-C, SPDT contact based relay/control module to trigger 3rd party utilities like AHU shut-off, Pressurization fan activation, Special notification activation etc. The contact shall be rated for 2A@24Vdc (Resistive) & 1A @ 24Vdc (Inductive). (UL listed and FM approved)	No.	95
14	Supply, installation, Testing & commissining of Intelligent Addressable, Supervised Short-Circuit Isolator. (UL listed and FM approved)	No.	60

15	Supply, installation, Testing & commissining of response indicator (metal clade) for all detectors located above false ceiling and in closed rooms which consists of steady glowing LED. This LED shall be mounted within a MS box and connected in parallel to the built in indication of the detector as per specification. The RI shall come ON as soon as the detector activates complete in all respects as per technical specification.	No.	305
16	Supply,Installation,Testing & Commissioning of addressable colourless xenon strobe with transparent lens rated at 75 cd flashing at 1 Hz for visual indication, power supply and 1.2 mm thick GI back Box. The required control modules and power supply as required for these strobe should be included in this item rate only. The strobs shall be synchronized for better evacuation as per specification.(UL listed and FM approved) (disable toilet)	No.	5
17	Supply,Installation,Testing & Commissioning of addressable beam detector having photoelectric transmitter and receiver combined in a single, compact housing. An infrared beam is reflected from a matching prism with the reflected light analyzed by an on-board microprocessor. Operating range covers 8 m to 100 m. Modular design with easy fit mounting system and LASER assisted prism mounting provides convenient mounting and adjustment. Auto-Align beam alignment operation conveniently rotates beam to align to the prism center during installation. auto optimise operation automatically maintains alignment for reliable operation. The detector shall be IP-55 compliant.Listed to UL 268 and ULC-S529	RM	5
18	Supply , Laying, Testing and commissioning of 2C x 1.5 sq. mm Red colour 1.1kV grade FR-LSH PVC sheathed, PVC insulated, multistranded Copper conductor, Armoured cables including terminations,connections with metal gland & shall be as per relevant IS standards & ISI mark. Armoured cable to be saddled at every 300mm run.	RM	1407 0
19	Supply and laying of UPT 4 pair CAT-6a data cable in surface/reccesed existing conduit as required per specification.	RM	RO
20	Supply, installation, testing and commissioning of PANIC SWITCH - Micro switch technology, In-built tamper switch, Sturdy Japanese brushed steel finish.	No	RO
21	Supply, installation, testing and commissioning of vibrational Sensor including addressing module for disabled room on bed complete in all respect as required.	No	RO
22	Supply, installation, testing and commissioning of Outdoor duty Industrial type PNG/LPG Gas detectors including addressing module complete in all respect as required.For Gas bank.	No	1
23	Supply, installation, Testing & commissining of PRM/Disabled Toilet(Handicap) Alarm (DPTA/EAA) integration with FAS panel.	NO	RO
24	Supply, installation, Testing & commissining of Addressable type hydrogen gas detector, range: 0 to 100% LEL, Sensor- Catalytic type, equipped with cast aluminum housing, IP66 protection rating, power supply: 24 VDC, Output- 3 wire, 4 to 20mA & Pot. Free Relays, With Non-intrusive calibration facility, PESO & ATEX approved, suitable for zone-1 application complete as required, loop	No	1

	cable, GI flexible conduit complete as require by technical specifications. For Battery Room.		
25	Supply & fixing of 2C x 2.5 sq. mm, Red colour 1.1kV grade FR-LSH PVC sheathed, PVC insulated, multistranded Copper conductor, Armoured cablesexisting conduit For Strobe cum hooter complete as per specifications.	RM	1415
26	Supply & fixing of recessed 25 mm dia 2 mm thick, MS Conduit including all accessories, cutting & chiping and make good, elbow, bend, junction box etc complete as required and as per specifications, for MCP,HOTTER & TJ.	RM	1415
27	Supply & fixing of Aluminium 3.0 mm thick Trunking with cover of the following sizes complete with angle iron supports/hanging arrangement etc. & shall be as per relevant IS standards & ISI mark. All Bends / Tees for cable trays shall be factory fabricated and not site fabricated, as per relevant IS standards.		
	300 x 50 x 2 mm	RM	200
	200 x 50 x 2 mm	RM	150
	100 x 100 x 2 mm	RM	100
	TOTAL CARRIED TO SUMMARY		
B.	**PUBLIC ADDRESS SYSTEM**		
1	Supply, installation, testing & commissioning of EN-54 certified Call Station with built in numerical keypad, Multilanguage LCD Touchscreen display , gooseneck microphone with supervised electret microphone suitable for 50 zone Selection Keys and pop shield and permanent monitoring, integrated loudspeaker for system sounds. suitable no of menu/function keys, customizable function and speed dial buttons. Possible to use keys for Zone select, source select, level control, emergency on/off, message on/off, failure acknowledge/reset, select scheduled events, scheduled event on/off. Call Station is supervised by system controller can be expanded by connecting additional extention keypads etc complete as per technical technical specification and system requirement.	No	1
2	Supply, Installation, Testing and Commissioning of EN54-16 Certified PA/VA System 8 Zone Controller expandable up to 50 Zones for the Music, Pre-recorded, Broadcasting and Emergency evacuation detection and indication of failure in all emergency functions, Integration with fire alarm control panels (Supervised integration with Fire alarm System), pre-recorded evacuation messages, phased evacuation, emergency log, loudspeaker line supervision, A+B connection (16 lines), Input - (5 Audio Inputs, 8 Loudspeaker Output, 8 Supervised Fire Alarm Input, Cobranet Port / Ethernet Port), Output - (8 Audio Output, Volume Override Output, Fault output, Record Out), Internal Memory capable to store Messages, Built in DSP, Loudness, Sound Enhancement, Volume Control.The Controller shall be able to play different music in different zones simultaneously, built in matrix to program any music to any zone, able to select different music source for different zones and one zone announcement shall not stop music in other zones, capable to integration with BMS etc complete as per technical technical specification and system requirement.	No.	1

3	Supply, Installation, Testing and Commissioning of EN54-16 Certified PA/VA System 16 Zone Controller expandable up to 50 Zones for the Music, Pre-recorded, Broadcasting and Emergency evacuation detection and indication of failure in all emergency functions, Integration with fire alarm control panels (Supervised integration with Fire alarm System), pre-recorded evacuation messages, phased evacuation, emergency log, loudspeaker line supervision, A+B connection (16 lines), Input - (5 Audio Inputs, 8 Loudspeaker Output, 8 Supervised Fire Alarm Input, Cobranet Port / Ethernet Port), Output - (8 Audio Output, Volume Override Output, Fault output, Record Out), Internal Memory capable to store Messages, Built in DSP, Loudness, Sound Enhancement, Volume Control.The Controller shall be able to play different music in different zones simultaneously, built in matrix to program any music to any zone, able to select different music source for different zones and one zone announcement shall not stop music in other zones, capable to integration with BMS etc complete as per technical technical specification and system requirement.	No.	RO
4	Supply, Installation, Testing and Commissioning of EN54-16 Certified PA/VA 8 Channel Expander / Router with 500W Class D digital amplification @ 100 V for the Broadcasting and Emergency evacuation,inbuilt fan for temperature control, 8 pre-amp outputs for external PA amplifiers connection for external amplifier connection, built in DSP, loudness, sound enhancement, volume control, Integrated frontal loudspeaker for monitoring, 8 supervised contact relays for integration with Fire Alarm Control Panel, 8 Zone Loudspeaker Supervision module. The Router / Extension shall have minimum 4 Pre-Amp Audio Output for the Integration with Audio Visual System. The router shall have capability to connect over TCP/IP (either Cobranet / Dante) to integrate with Third Party System etc complete as per technical technical specification and system requirement.	No	1
5	Supply, installation, testing & commissioning of EN-54/CE certified 500W Class D, single channel,4 Output, high efficiency amplifier, capable of delivering 100V, 500 W RMS power output, built-in auto fan for temperature control,built in line matching transformer, automatic selectable audio inputs on RJ 45, complete supervision including DC, short circuit, mains undervoltage protection, DC supply undervoltage protection, inrush current limiter, ground fault etc complete as per technical technical specification and system requirement.	No	5
6	Supply, installation, testing & commissioning of EN-54/CE certified 250W Class D, single channel,4 Output high efficiency amplifier, capable of delivering 100V, 250 W RMS power output, built-in auto fan for temperature control,built in line matching transformer, automatic selectable audio inputs on RJ 45, complete supervision including DC, short circuit, mains undervoltage protection, DC supply undervoltage protection, inrush current limiter, ground fault etc complete as per technical technical specification and system requirement.	No	RO

7	Supply, installation, testing & commissioning of EN-54/CE certified 120W Class D, single channel,4 Output high efficiency amplifier, capable of delivering 100V, 250 W RMS power output, built-in auto fan for temperature control,built in line matching transformer, automatic selectable audio inputs on RJ 45, complete supervision including DC, short circuit, mains undervoltage protection, DC supply undervoltage protection, inrush current limiter, ground fault etc complete as per technical technical specification and system requirement.	No	RO
8	Supply, Installation, testing and commissioning of multisource two channel player CD/USB and FM/AM Radio turnner, Integrated multisource player with CD player and USB interface. It supports Mp3 files. Independent CD/USB and FM/AM lines outputs. It can play music at two zones at the same time. It supports USB 2.0 high speed. Power Supply 110-240V AC 50 Hz etc complete as per system requirement.	No	1
9	Supply, installation, testing and commissioning of the 6 watt multi tap Speaker suitable for wall /ceiling mounting, frequency response of 80Hz-20 KHz, and providing/fixing 1.2 mm thick GI box with grid plates with earthing complete in all respect as required (must be suitable for true ceiling and false ceiling)	No.	455
10	Supply, installation, testing and commissioning of the multi tap 15W Weatherproof horn speakers with complete metal grille and line matching transformer 100/70V line. effective frequency range 250-18kHz , SPL@1m/1W=102dB, Peak SPL 112dB complete with necessary all mounting hardware & accessories on wall or colunm etc.and providing/fixing 1.2 mm thick GI box with grid plates with earthing complete in all respect as required	No	RO
11	Supplying, installing, testing and commissioning of 2C x 1.5 sq. mm, FRLS Red color unarmoured copper cable in surface mounted 16 gauge 20 mm dia. GI conduit including cost of junction boxes, bends, elbows, sockets, tees glands for end termination should comply to the relevant IS codes etc complete as per specifications.	RM	4520
12	Supply and laying of UPT 4 pair CAT-6a data cable in surface including IP/OP port, saddles, clamps with screws etc fixing on wall/ true ceiling in 16 gauge 25 mm dia MS conduit complete as per specification.	RM	50
13	Supply, Installing, Testing & Commissioning of Floor mounted **33U high Rack 19" width, 650 mm Depth** with Pre-configured, pre-assembled & per-wired tested for Mounting PA Equipment. Made of aluminium channels complete side and rear panels made of 16 SWG powder coated steel sheet, front transparent perspex door with Tamper Switch for monitoring, minimum 2nos PDU (1U Rack Mount Outlet 10 output each Max 6 & 16 Amp), , Power manager strip at both sides, Lockable doors, Cantilever Shelf minimum 4Nos, cable manager, Hardware Screws, Dual exhaust fans with proper ventilated and open able doors from all sides, with casters and with cooling fans as above complete with necessary mounting hardware & accessories. Rack arrangement to house the PA system components including PA Controller, Router,CD player, Amplifiers etc. Size & quantity of rack to be decided by vendor. 20% Spare Space required	NO	1
	TOTAL CARRIED TO SUMMARY		

Supply, Installation, Testing & Commissioning of Fire Alarm & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis

SUMMARY OF COSTS

S. No.	Description	Amount	
A.	ANALOGUE ADDRESSABLE TYPE FIRE DETECTION AND ALARM SYSTEM	RS.	
B.	PUBLIC ADDRESS SYSTEM	RS.	
	GRAND TOTAL	**RS.**	**-**

OPERATION & MAINTENANCE

YEAR	OPERATION	MAINTENANCE
First Year	PART OF DLP	PART OF DLP
Second Year		
Third Year		
Forth Year		
Fifth Year		

Note:-

1. Above Prices will not be part of Tender Evaluation
2. It will not be binding on SWOSTI PREMIUM LTD for entering into above Comprehensive Annual Maintenance Contract
3. If SWOSTI PREMIUM LTD decides to enter into the above Comprehensive Annual Maintenance Contract, a separate Contract Agreement shall be made, which will not be part of this Contract
4. Tenderers are expected to quote Reasonable Prices.

PAYMENT TERMS:

Mobilization Advance:

- Contractor will be paid any mobilization advance as indicated in contract data.

PAYMENT SCHEDULE

The stage-wise payment to the Contractor shall be released based on the items of work executed as contained in the Bills of Quantities and rates agreed to thereto. Upon completion that item of work. Detail procedure are as below :

Preparation of R/A Bills :

- After satisfactory completion of each item of work, the bill shall be submitted with detailed measurements and invoice.
- Final bill along with no claim certificate should be submitted within 2 months from date of completion of work.
- Upon clearing the site of all debris, materials, temporary structures and machinery.
- Payments for supply/work done will be made in R/A bill based on monthly progress or work, verified with measurement by PMC/Authorised Engineer.
- R/A bills will be certified against final amounts as in contract.

Withholding of Payments:

- Payment may be withheld if contractor fails to meet contractual obligations.
- Failure to pay workers' wages or bills of contractor.

SECURED ADVANCE :

Any request for a secured advance may be requested for by Contractor along with invoice/ original shipping document copy of invoice and duly signed payment invoice. This may be considered by the Employer(Client) upon assessment by PMC/Engineer-in-Charge for items of non-perishable, non-fragile & non-consumable in nature and required for the work and in accordance with contract (Conditions & Technical Specifications), which have been brought to the site in connection with execution (having reference to an item of work in BOQ) and are adequately stored and/or protected against damage by weather or other causes and have not been incorporated in the work earlier. The amount of such advance shall be deducted from next/final payment. However, any secured advance for any material/equipment lying unutilized after 3 months/completion of work shall be recovered fully from the next/final bill.

Note:

Each payment shall be certified by the Engineer based on physical progress at site against the approved GFC drawings.

No advance payment shall be made unless specifically agreed in the contract data or special conditions.

All payments are subject to retention, tax deduction at source, and recoveries as per the contract.

. SECTION 5: CONTRACT DATA,CONTRACT FORM

&

CONDITIONS OF CONTRACT

CONTRACT DATA

Clause	Description
1. Name of Work	Supply, Installation, Testing & Commissioning of Fire Alarm & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis
2. Name of the Client	Swosti Group
3. Client's Representative	Project Management Consultant (PMC) – [Insert PMC Firm Name]
4. PMC Contact Details	Name: Designation: Project Manager – PMC Email: [Insert] Phone: [Insert]
5. Site Location	Gopalpur-on-Sea, Ganjam District, Odisha – 761002
6. Scope of Work	Supply, Installation, Testing & Commissioning of Fire Detection & Fire Alarm System & Public Address System and Allied Works at Gopalpur Palm Resort for Swosti Premium Ltd.,Gopalpur, Ganjam, on a Item Rate Contract Basis as per drawings and specifications.
7. Estimated Contract Value	₹ [Insert Amount] (Inclusive of all costs except GST)
8. Tender Type	Item Rate-Fixed Price Contract
9. Contract Type	Item Rate
10. Time for Completion	[Insert duration – e.g., 6 months] from the date of Letter of Acceptance (LoA)
11. Date of Commencement	Within 7 (seven) days from issuance of LoA or handing over of site, whichever is later
12. Defects Liability Period (DLP)	12 months from the date of issuance of Completion Certificate
13. Performance Security	2% of Contract Value in the form of Bank Guarantee to be submitted within 7 days of LoA
14. Retention Money	3% of Running Account Bills; to be released after successful completion of the Defects Liability Period
15. Mobilisation Advance	No
16. Schedule of Payments	Item-based payments linked to actual progress of works (Refer to Section – Payment Terms)
17. Liquidated Damages (LD)	0.2 % **per day** of the value of balance work delayed **beyond the stipulated date of completion**, subject to a **maximum of 10% of Contract Value**
18. Arbitration	In accordance with the Arbitration and Conciliation Act, 1996; sole arbitrator to be mutually appointed
19. Governing Law and Jurisdiction	Laws of India; jurisdiction: Bhubaneswar, Odisha
20. Insurance	Contractor to provide insurance for Works, Workmen Compensation, Equipment, and Third-Party Liability to indemnify the Client from damage/Claims arising out all such items including loss arising out of natural calamity.
21. Taxes and Duties	Quoted price is inclusive of all taxes and duties except GST; GST shall be paid

Clause	Description
	extra as applicable
22. Sub-contracting	Permitted only with prior written approval of the Client / PMC
23. Safety & Compliance	Contractor to comply with safety regulations, labor laws, and site protocols
24. Force Majeure	As per General Conditions of Contract
25. Advance Payment	10% of Contract Value, against submission of Bank Guarantee of 100% of amount; recoverable in equal instalments from running bills
26.Secured Advance	To be considered on request

AGREEMENT

AN AGREEMENT is made this----------BETWEEN the SWOSTI PREMIUM LTD ,Bhubaneswar, which expression shall include its successor, unless repugnant to or Excluded by the contract here of and assignees of and represented by its ……(the first party (hereinafter called the Authority) and by…… its sole proprietor/partners/Director and having registered office at (which expression shall be including his / its successor's heirs executors, representative and or assignees of the second party (hereinafter called the contractor}.

WHEREAS the Authority has, under tender Notification No. ----------

WHEREAS the contractor has submitted tender for carrying out the work as above as per the tender document page ---- to ----- and has represented that in conformity with his / its obligation contained in the tender as modified by the correction slips and corrigendum contained he / it shall carryout the same truly, faithfully and honestly.

THE SAME has been accepted by both the parties on the terms and conditions, corrections, corrigendum contained in the tender as modified as well as the letter of acceptance , at a total Contract Price of Rs. Crores (Rupees Crores) excluding GST (To be paid extra as applicable) as Issued party No.1 annexed here to as.

The same shall be binding on both the parties.

IN WITNESS WHEREOF, the parties have signed the deed of agreement on the date, month and year referred to above.

Date: At

New Delhi.

Signed by

Party No.1 Party No.2

WITNESS

1. Party No.1

2. Party No.2

Conditions of Contract

Conditions of Contract

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GENERAL

Terms,which are defined in the Contract Data and not defined in the Conditions of Contract shall keep their defined meanings. Capital initials are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities;

Compensation Events are those defined in Document;

The **Completion Date** is the date of completion of the Works as certified by the Engineer.

The **Contract** is the contract between the Client and the Contractor to execute, complete and maintain the Works.

The **Contract Data** defines the documents and other information, which comprise the Contract;

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Client [obligations of the Contractor mentioned in the Contract Data].;

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Client and includes Technical and Financial bids;

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract;

Days are calendar days; months are calendar months;

A **Defect** is any part of the Works not completed in accordance with the Contract;

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date;

The **Client** is the party who will employ the Contractor to carry out the Works; [As mentioned in the Contract Data].

The Engineer is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor’s work, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, recommending extensions of time, and valuing the Compensation Events;

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works;

Initial Contract Price is the Contract Price listed in the Client's Letter of Acceptance;

Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Client by issuing an extension of time;

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works;

Plant is any integral part of the Works, which is to have a mechanical, electrical, electronic or chemical or biological function;The **Site** is the area defined as such in the Contract Data;

Site Investigation Reports are those, which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site;

Specification means the Specification of the works included in the Contract and any modification or addition made or approved by the Client;

The **Start Date / Date of Commencement** is given in. the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates;

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site;

Temporary Works are works designed, constructed, installed, and removed by the Contractor, which are needed for construction or installation of the Works;

A **Variation or Change in Scope** is an instruction given by the Client, which varies and change the scope of Works;

Works are what the Contract requires the Contractor to construct, install, and turn over to the Client, as defined in the Contract Data;

Year may be understood as financial year;

"Approved Make" means makes of items as specified in the "List of Approved Makes/Approved Manufacturers" in this RFP. However, a higher or equivalent make can be utilized after obtaining prior approval of "Engineer-In-Charge" in writing.

Interpretation

In interpreting the Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their general meaning under the language of the Contract unless specifically defined. The Client will provide instructions clarifying queries about the Conditions of Contract.

If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).

The documents forming the Contract shall be interpreted in the following order of priority:

(a) Agreement

(b) Letter of Acceptance, notice to proceed with the works

(c) Contractor's Bid

(d) Contract Data

(e) Conditions of Contract including Additional & Special Conditions of Contract

(f) Specifications

(g) Drawings

(h) Bill of quantities (optional) and

(i) Any other document listed in the Contract Data as forming part of the Contract.

Languages and Law

The language of the Contract and the law governing the Contract are stated in the Contract Data.

Engineer's Decisions:

Except where otherwise specifically stated, the Engineer will decide contractual matters between the Client and the Contractor in the role representing the Client as per the provision of the contract.

Delegation:

The Engineer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

Communications:

Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

Sub-contracting:

The Contractor may sub-contract any portion of work, up to a limit of 10% of contact value, with the approval of the Engineer but may not assign the Contract without the approval of the Client in writing. Sub-contracting does not alter the Contractor's obligations.

Other Contractors:

The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Client between the dates given in the Schedule of other Contractors. The Contractor shall as refer to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Client may modify the schedule of other contractors and shall notify the contractor of any such modification.

Personnel:

The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data besides those as listed to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

Client's and Contractor's Risks:

The Client carries the risks which this Contract states are Client's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

Client's Risks:

The Client is responsible for the excepted risks which are in so far as they directly affect the execution of the Works in India, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive.

Contractor's Risks:

All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

Insurance:

The Contractor shall provide, in the joint names of the Client and the Contractor, insurance cover ***for the period as stated below against the events and*** in the amounts and deductibles stated in the Contract Data for the following events, which are due to the Contractor's risks:

A) From the starting date to the end of defect liability period:

(a) Loss of or damage to the works

B) From the start date till completion of the work as per agreement:

(a) Loss of or damage to plant, materials and equipment,

(b) Loss of or damage of property (except the works, plant, materials and equipment) in connection with the contract, and

(c) Personal injury or death.

If all the items as listed above can be combined / grouped under one insurance cover like Contractor's, All Risks (CAR) Policy **covering all-natural calamities as per local conditions.**

Prior to seven days before the start date, the Contractor shall furnish to the Engineer notarized true copies of the certificates of insurance, copies of insurance policies and premia payment receipts in respect of such insurance for the Client's approval. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

If the contractor does not provide any of the policies and certificates required, the Client may affect the insurance which the contractor should have provided and recover the premiums the Client has paid from payments otherwise due to the contractor or, if no payment is due, the payment of the premiums shall be a debt due.

Alterations to the terms of insurance shall not be made without the approval of the Client.

Both parties shall comply with any conditions of the insurance policies.

Site Investigation Reports:

The Contractor, in preparing the Bid, may rely on any site Investigation Reports referred to in the Contract Data, which are indicative and not exhaustive. The Client shall provide all available details to the Contractor (Bidder) for his information, if requested by him at least one week prior to the bid submission date. The bidder shall be responsible for interpreting all such data. After award of work, the Contractor shall carryout detail survey and investigation for preparation of detail designs as per the scope of work and time period stipulated.

To the extent which was practicable (taking account of cost and time), the Contractor (Bidder) shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor (Bidder) shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

(a) the form and nature of the Site, including sub-surface conditions,

(b) the climatic conditions,

(c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,

(d) the Laws, procedures and labour practices of the Country, and

(e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

(f) availability of required materials

Queries about the Contract Data:

The Client will clarify queries on the Contract Data if any during the Pre-bid references.

Contractor to Construct the Works:

The Contractor shall construct and install the Works in accordance with the approved specification and drawings. All designs, drawings and specifications to be furnished by the contractor shall be approved by the Client before execution.

The Works to be completed by the Intended Completion Date:

The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

Approval by the Engineer:

The Contractor shall be provided Specifications and Drawings showing the proposed Temporary Works by the Engineer.

The Contractor shall be responsible for design of Temporary Works.

The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

The Contractor shall be provided approved design, drawings and specifications of all components of the building and all allied infrastructure works, except those for the temporary works.

Safety:

The Contractor shall be responsible for the safety of all activities on the Site.

Possession of the Site:

The Client shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Client is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

Access to the Site:

The Contractor shall allow the Client and any person authorized by the Client access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

Instructions:

The Contractor shall carry out all instructions of the Engineer pertaining to works, which comply with the applicable laws where the Site is located.

The Contractor shall permit the Client to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Client, if so, required by the Client.

Disputes:

That for the purpose of jurisdiction in the event of disputes if any of the Contract would be deemed to have been entered in to within the State of Odisha and it is agreed that neither party to the Contract will be competent to bring a suit in regard to the matter by this Contract at any place outside the State of Odisha.

Procedure for Settlement of Disputes:

In case of Dispute or difference arising between the Client and the contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled mutually.

TIME CONTROL

Programme:

Within **7 days of issue of letter of award**, the successful bidder shall submit to the Client detail work programme for approval showing the general methods, arrangements, order and timing for all the activities in the Works along with monthly cash flow forecast. The agreed work programme / milestones during such contract negotiation shall form part of the agreement.

An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.

The contractor shall submit to the Client, for approval, an updated Programme at intervals no longer than 15days. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue programme has been submitted.

The Client's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Client again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

Extension of the Intended Completion Date:

The Client shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.

The Client shall decide whether and by how much to extend the Intended Completion Date within 15 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

The Engineer shall within 7 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Client his recommendation. The Client shall in not more than 15 days communicate to the Engineer the Client's decision.

Delays Ordered by the Engineer:

The Client may instruct the Contractor to delay the start or progress of any activity within the Works.

Management Meetings:

Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Client. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

Early Warning:

The Contractor is to warn the Client/Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the work resulting delay in the execution. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Completion Date.

The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

QUALITY CONTROL

Identifying Defects:

The Engineer shall check the Contractor's work regularly and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for defects and to uncover and test any work that the Engineer considers may have a Defect

Tests:

If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

Correction of Defects:

The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

Every time notice of a Defect is given; the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

Uncorrected Defects:

If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

COST CONTROL

Changes in the Quantities:(OPTIONAL)

Change of Scope (Variations) and Procedure for change of Scope:

The Client may, require the Contractor to make modifications/alterations to the works before the issue of the completion certificate either by giving an instruction or by requesting the contractor to submit a proposal for change of scope involving additional cost or reduction in cost. Any such change of scope shall be made and valued in accordance with the provisions of this contract and the contractor, in that event, will have no further claim on the ground that had it been known / disclosed earlier he would have made such charges in other connected work in their design, construction which would have saved him some cost and given him other consequential benefits.

Change in scope may include;

(a) Change in specifications of any item of works

(b) omission/ deletion of any item of work from the scope of work

(c) any additional work (such as addition of extra plinth area) which are not included in the scope of work including any additional test on completion

In the event of the Client determining that a change of scope is necessary, it shall issue notice to the contractor a notice specifying in reasonable detail the works contemplated there under (“Change in scope notice”)

Upon receipt of change in scope notice, the contractor shall with due diligence, provide to the Client through the Engineer within seven days time such information as is necessary together with documentation in support of;

(a) the impact, of any, which the change in scope is likely to have on the completion of the work

(b) the options for implementing the proposed change of scope and the effect, if any, each on the cost and time thereof including the following details;

i. break down of quantities, unit rates and cost for different items of work

ii. proposed design for the change of scope

iii. proposed modifications, if any, to the construction period with updated work programmes (all

Variations shall be included in updated programmes produced by the Contractor).

Any change in scope shall be calculated on the basis of the following priority:

The total value of all change of scope of work shall not exceed 10% of total contract price for the construction work.

Payments for Change of Scope (Variations):

The Client shall assess the change in scope proposal and Contractor's quotation at the time of bidding in financial form and upon reaching an agreement; the Client shall issue the Change of Scope Order requiring the contractor to proceed with the performance thereof.

If the Contractor's quotation is unreasonable, the Client may order the Variation and make a change to the Contract Price which shall be based on Client's own forecast of the effects of the Variation on the Contractor's costs.

If the Client decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event, subject to condition that such variation shall not exceed 10% of the total contract price for the contract work.

The Contractor shall not be entitled to additional payment for costs, which could have been avoided by giving early warning.

Payment Certificates:

The Contractor shall submit to the Engineer statements of the value of the work completed.

The Engineer shall check the Contractor's statement within 15 days and certify the amount to be paid to the Contractor as per contract payment schedule after taking into account any credit or - debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth, including adjustment of advance.

The value of work executed shall be determined by the Engineer.

The value of work executed shall comprise the value of the quantities of the items as per the BoQ and work programme attached to the contract.

The value of work executed shall include the valuation of Change in Scope (Variation) and Compensation Events, if any.

The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

Payments:

Payments shall be adjusted for deductions for retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The Engineer shall pay the Contractor the amounts as per the items of work executed and agreed rates thereto as well as payment schedule attached to the contract.

Tax:

The rates quoted by the Contractor shall be deemed to be exclusive of the GST and inclusive of Royalty, Income Tax, Labour CESS and all other statutory taxes that the Contractor will have to pay for the performance of this Contract. The Client will perform such duties in regard to the deduction of such taxes at source as per applicable law.

Currencies:

All payments shall be made-in Indian Rupees.

Retention:

The Client shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the works or settlement of final payment.

On completion of the whole of the works and issue of the completion certificate the performance security shall be repaid to the contractor. The retention amount shall be paid after the Defects Liability Period has passed and the Engineer has certified that all defects notified by the Engineer to the contractor before the end of the period have been corrected.

Liquidated Damages:

The Contractor shall pay liquidated damages to the Client at the rate as stated in the Contract Data that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Client may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not relieve the contractor from his / her / their obligation to complete the works or from any other duties, obligations or responsibilities which he / she / they may have under the contract.

If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate.

Bonus Payment:

Deleted

Advance Payment:

The Client may make advance payment to the Contractor for mobilization and cash flow support of the amounts stated in the Contract Data by the date stated in the Contract Data, only against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a Bank acceptable to the Engineer in amounts and currencies equal to 110% of the advance payment.

The Advance Payment shall not be released until the camp setup, mobilisation of key personnel, equipment and labour at site.

The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. The contractor shall ensure that the Bank Guarantee remain enforceable until the advance payment has been fully repaid and accordingly renew it, from time to time, until the advance payment has been fully repaid.

If the terms of guarantee specify its expiry date, and the advance payment has not been re-paid by the date then 28 days prior to the expiry date, the contractor shall extend the validity of the guarantee until the advance payment has been fully repaid.

The advance payment shall be repaid through percentage deductions from the interim payments as follows:

Securities:

The Performance Security shall be provided to the Client no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employee

The performance security shall be denominated in Indian Rupees. The Performance Security shall remain valid up to the period as defined in the Contract Data.

Cost of Repairs:

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions including the situation as stipulated in the RFP.

FINISHING THE CONTRACT

Completion:

The Contractor shall request the Engineer to issue a Certificate of Completion of the Works and the Engineer will do so upon deciding that the Work is completed.

Taking Over:

The Client shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

Final Account:

The Contractor shall supply to the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Client shall decide on the amount payable to the Contractor and issue a payment certificate, within 30 days of receiving the Contractor's revised account.

Termination:

The Client may terminate the Contract if the other party causes a fundamental breach of the Contract.

Fundamental breaches of Contract include, but shall not be limited to the following:

(a) the Contractor stops work for 15 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;

(b) the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(c) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;

(d) the Contractor does not maintain a security which is required;

(e) the Contractor has delayed the completion of works by the number of days for which the maximum number of liquidated damages can be paid as defined in the Contract data; and

(f) if the Contractor, in the judgment of the Client has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition."

When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub Clause 54.2 above, the Engineer shall decide whether the breach is fundamental or not.

Notwithstanding the above, the Client may terminate the Contract for convenience.

If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site, as soon as reasonably possible.

Payment upon Termination:

If the-Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done fewer advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Client exceeds any payment due to the Contractor, the difference shall be a debt payable to the Client.

If the Contract is terminated at the Client's convenience, the Engineer shall issue a certificate for the value of the work done, less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law. No extra cost will be paid by the Client for expenditure towards removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works and the Contractor's costs of protecting and securing the Works.

Property:

All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Client, if the Contract is terminated because of a contractor’s default.

Release from Performance:

If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Client or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

ADDITIONAL CONDITIONS OF CONTRACT

1.WORK DESCRIPTION

The work shall be strictly carried out as per the scope listed in this document and in accordance with the specifications. The equipment & material supplied at site will also be selected out of the list of approved makes. Bill of quantity provided with the document is for contractor guidance. It is expected that after award of work, contractor shall prepare shop drawings for approval by the Consultant & Client representative and also submit Technical documentation duly identifying shortlisted make of material/equipment along with its data sheets. Actual ordering shall be based on approved shop drawings & documents.

The work at site shall comply with the approved shop drawings and will meet the satisfaction of Client representative. The contractor shall be required to demonstrate satisfactory operation of entire system (including client supplied equipment installed by contractor) and furnish the required labour, material & tools to install & commission the system.

The broad scope of work for proposed HVAC system covered under this contract shall include supply, installation, testing & commissioning of the following:

Water cooled chiller (free supply)
Constant primary & Variable secondary Pumping system.
Smart Air handling units (AHU's).
FRP Cooling towers.
VFD's.
Dedicated outdoor air system including heat recovery wheel.
Mechanical ventilation systems.
Chilled, Condenser and Drain piping with associated fittings, valves etc.
Air distribution system.
Associated electrical works.
Kitchen ventilation.
Basement car parking ventilation.
Testing Adjusting & Balancing of the entire HVAC and mechanical ventilation installation.

Besides above, contractor shall also be required to undertake following:

Obtain fire approval from Local Authorities prior & post installation for operation of system by the land owner. Coordination for submission of required documents & demonstration of systems to obtain the Approval by the Contractor.
Minor civil works which include making openings in walls & slabs and making good of the same.
Commissioning of the plant including test reports to demonstrate satisfactory working prior to handing over.
Provide as-built drawings and handing over document comprising of list of recommended spares, catalogues and service schedule for each equipment/material.
Training of Client's staff.
Documents related LEED requirement

2.SITE MANAGEMENT

The Contractor shall be required to provide following staffing for the project:

Design Engineer who will work with Consultant for getting shop drawings, technical submittal and variation in quantity statement approved.

Procurement team.

Full time dedicated 1 manager (minimum 15 year experience) and Engineer (minimum 10 year experience) & one supervisor posted at site.

The contractor shall submit organization chart and CV prior to starting work at site.

The Contractor shall have required stores, tools & plant, security and facility to transport materials to place of installation for speedy execution of work.

3.REGULATIONS & PERMITS

Prior to starting work at site, the contractor shall obtain required permits/ licenses required for satisfactory execution and operation of the installation. All receipted amounts shall be reimbursed by Client on production of proof of payment by the contractor.

The executed work shall strictly confirm to applicable laws, regulations and Indian Standards which become applicable. In case the specifications and drawings contained in this document call for higher standard than those required by prevailing regulations, then these specifications & drawings shall become applicable. However, in case of any conflict or violation between the document/drawings and prevailing laws, then the applicable laws & regulations shall be governing & binding.

4.SHOP DRAWINGS

A set of design drawings listed in this document are available at Consultant office and may be issued with the tender document. These design drawings are for reference of the contractor and indicate proposed arrangement and the extent of work covered in the contract. The data given in the drawings and specifications is as exact as could be procured, but its accuracy is not guaranteed. The contractor cannot execute work or scale these drawings for reference.

Following shall be the procedure followed by contractor while preparation of shop drawings:

The contractor shall refer the design drawings for understanding the scope and proposed routes to be followed during execution.

Collate latest architectural backgrounds from the Client representative / Architect / Consultant.

Examine all related services drawings but not limited to structural, plumbing, electrical, HVAC, Interior, landscape and others including as-built works before starting the work. Any discrepancy must be report to the Client's site representative in writing and obtain approval for go-ahead.

Within one week of award of work, the Contractor shall prepare a list of shop drawing along with submission schedule for approval of Client representative/Consultant. The list of drawings must include layouts for Plant room, Pump room, Typical drawings showing exact location of supports, flanges, bends, tee connections, reducers, detailed piping drawings showing exact location and type of supports, valves, fittings etc; electrical panels inside/outside views, power and control wiring schematics, cable trays, supports and terminations.

Maximum headroom shall be maintained at all points and in case the same is inadequate, then written approval from Client representative must be obtained prior to execution at site.

These shop drawings shall depict information required to complete the Project as per specifications and as required by the Consultant/Client representative. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings.

Where the work under this contract is proposed to be installed in close proximity or is interfering with other trades, then based on client representative/consultant directions, the contractor shall prepare all services coordinated working drawings and sections at a suitable scale (not less than 1:50), clearly showing proposed installed in relation to the work of other trades.

The contractor shall thereafter furnish 6 sets of detailed shop drawings to Client representative/Consultant for obtaining comments/approval. The Contractor will make unlimited number of re-submissions of shop drawings unless Client representative/Consultant/Architect approval is obtained.

The Contractor will thereafter submit 6 sets of final shop drawings to the Client representative for their exclusive use and all other agencies.

No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/equipment/installation.

In case installation is carried out without following above process or obtaining a waiver to follow the procedure from Client representative, the work shall be rejected and contractor shall rectify the same at their own cost.

Shop drawings shall be submitted for approval minimum four weeks in advance of planned

delivery and installation of any material to allow Client representative/Consultant ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.

5.TECHNICAL DOCUMENTATION

The contractor prior to supplying material at site, will submit the following documentation to Consultant/Client representative for approval:

Manufacturers drawings, catalogues, pamphlets and other documents in triplicate. Each item shall be properly labeled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in ink the items and the operating characteristics. Data of general nature shall not be accepted.

Samples of all materials shall be submitted to the Client's site representative prior to procurement. These will be submitted in two sets for approval and retention by Client's representative and shall be kept in their site office for reference and verification till the completion of the Project. Wherever directed, a mockup or sample installation shall be carried out for approval before proceeding for further installation.

Where the contractor proposes to use an alternate make or model of equipment other than that specified, all new drawings and detailing required thereafter shall be prepared by the contractor at his own expense including any re-design required for other discipline/trade. Any delay on such account shall also be at the cost of and consequence of the Contractor.

Contractor to refer Annexure –II for list of approved makes & materials for this project.

6.VARIATION IN QUANTITY STATEMENT

After approval of major & relevant shop drawings, the contractor shall submit four copies of a comprehensive variation in quantity statement. This statement must be submitted prior to completing ordering of equipment and should identify imported/local materials in this contract as well as proposed spares/tools. The Consultant shall provide recommendation to Client representative for acceptance of anticipated variation in contract amounts and also advise Client to initiate action for procurement of spare parts and tools at the completion of project.

7. QUALITY ASSURANCE

The contractor to ensure that all materials and equipment supplied shall be new and of best available quality conforming to the relevant Indian Standard Specifications and to these specifications. Makes shall be strictly in conformity with list of approved manufacturers as per Annexure -II. Owners reserve the right to reject any item which in their assessment is second hand

Any deviations from above shall be clearly highlighted prior to supply and shall be brought to the notice of the Client representative/Consultant for further instructions in the matter.

Prior to starting execution work at site, the Contractor shall verify the sufficiency of the size of the shaft openings, clearances and ceiling spaces for proper installation. Failure to communicate insufficiency of any of the above, shall constitute Contractor acceptance of the same. The Contractor shall locate all equipment in fully accessible locations which can be easily serviced, operated or maintained. The exact location and size of access panels, required for each concealed, valve or other devices requiring attendance shall be finalized and communicated in sufficient time.

Failing this, the Contractor shall make all the necessary repairs and changes at own expense. Access panel shall be marked.

8. WORKS NOT COVERED UNDER THIS CONTRACT

Following works are excluded from the scope under this contract. These shall be executed by respective contractor in accordance with approved shop drawings where these details must be highlighted. However, contractor shall be responsible for providing details and thereafter supervision to ensure satisfactory & timely execution of these associated items as they have a bearing on this contract.

9. EXCLUDED FROM SCOPE OF WORK

ASSOCIATED CIVIL WORKS

Following civil works associated with HVAC installation are excluded from the scope of this contract. These shall be executed by other agencies in accordance with approved shop drawings of and under direct supervision of the air conditioning contractor.

i. RCC foundation for water chilling machine's pumps & centrifugal fans with angle iron frame work at the edges to protect these from damage.

ii. RCC basin & supports & MS Joists for cooling towers.

iii. PCC foundation blocks with angle iron frame work edging for all motor control center.

iv. PCC foundation for pot strainers.

v. PCC foundation blocks for all air handling units.

vi. Air-tight fire doors with minimum one hour fire rating for plant room, AHU rooms, fan rooms and other equipment rooms.

vii. Water proofing of floors of AHU rooms, air washer rooms and fan rooms.

viii. Masonry drain channels and sumps with CI gratings in AC plant room including provision for sump pump and disposal.

ix. Supply and fixing of G.I./wooden frame for mounting of grilles in masonary walls.

x. Supply and fixing of GSS frame for mounting of grilles / diffusers in false ceiling / boxing.

xi. Thermal insulation of terraces above air-conditioned areas exposed to sun.

xii. Making of trenches and back filling the same after laying / pressure testing etc. of pipes.

ELECTRICAL SERVICES WORKS

All associated ELECTRICAL WORKS listed below are excluded from the scope of this contract. These shall be installed by other agencies in accordance with approved shop drawings of, and under direct supervision of the air conditioning contractor.

Providing power supply with earthing at the incoming of control panel in A/C plant room.

ii. Providing power supply and earthing at the incoming MCCB in each air handling unit room.

iii. Providing power and earthing at the incoming MCCB in each centrifugal fan panel and pump panel at locations called for on air conditioning Contractor's shop drawings.

iv. Providing 15 amps power outlet within 2 meter reach of each fan coil unit and VAV boxes at locations called for on air conditioning Contractor's shop drawings.

v. Providing 15 amps power outlet within 2 meter reach of each single phase propeller fan/inline fan at locations called for on air conditioning contractor's shop drawings.

vi. Providing wiring and earthing for sump pumps in air conditioning plant room.

PLUMBING SERVICES WORKS

All associated PLUMBING WORKS listed below are excluded from the scope of this contract. These shall be installed by other agencies, in accordance with approved shop drawings of, and under direct supervision, of the air conditioning contractor.

Providing soft water (Commercial hardness 0 ppm and PH 7+1) at air washers, humidifiers and at chilled water expansion tank.

Providing make up water for cooling tower as per RO water quality

iii. Disposal of condensate drain from fan coil units / ceiling suspended units beyond the condensate drain riser.

Providing sump pumps and necessary piping for drainage of air conditioning plant room and other machine rooms located below ground level.

Providing floor drains in cooling tower area and in air handling unit rooms.

Note : Preparation of shop drawings defining the Foundation details to civil contractor will be under HVAC Contractor scope of work.

10. INTEGRATION WITH BUILDING AUTOMATION SYSTEM

The scope shall include providing following for the interface to Building Automation System.

Sockets /Nipples including shut-off valve for mounting sensors/transmitters on pipe lines.
Space in electrical panel for running of LV cables.
CT of 15 VA burden with potential free taps.
Auto/manual changeover switch with potential free contact at manual position.
Installation of motorized control valves with provision of counter flanges
Installation of current transformer & Transducer along with wiring between Current Transformer & Transducer up to the terminal block
Provision for mounting BAS sensors.
15 Amps. Power supply with MCB in all AHU panels and 32 Amps MCB on HVAC plant room panel for power supply to DDC Panel.

It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the contract requirements lies solely with the contractor.

11. TESTING, ADJUSTING AND BALANCING

Air and water balancing shall be carried out by the contractor through a specialist team (different than erection team) as per Specifications and ASHRAE Guidelines. Performance test shall consist of three days of 10 hour each operation of system for each season. The results for each season shall be submitted to Client representative/Consultant. The submittal shall include operational parameters marked on performance curves for each equipment along with test certificates and safety/control settings.

The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Client's site representative. All tests shall be carried out in the presence of the

representatives of the Construction Manager/Architect /Consultant and Client's site representative. After commissioning, the results shall be submitted for scrutiny in quadruplicate.

All equipment installation shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Client's site representative. In case of rotating machinery sound or vibration noticeable outside the room in which it is installed, or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense. The contractor shall guarantee that the equipment installed shall maintain the specified Noise Control levels.

12. COMPLETION CERTIFICATE

On completion of the installation, a certificate shall be furnished by the contractor, counter signed by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local authority engineer in-charge.

The contractor shall be responsible for getting the entire installation duly approved by the local authorities Engineer in Charge concerned, and shall bear expenses if any, in connection with the same.

13. AS-BUILT DRAWINGS

Contractor shall submit following as-built drawings as and when work is completed:
6 set of hard copies of all as-built drawings duly corrected and incorporating any modifications during execution.
Two set of pen drive containing the drawings.

The drawings shall provide plant room layouts, piping layouts, location of all concealed accessories/piping, wiring diagram, control diagram, Single line diagram, control schematic with detailed bill of materials, showing makes, types & description of all components & accessories and sequencing of automatic controls and other services.

14. MAINTENANCE MANUAL

Upon completion and commissioning of works, the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract. This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by Consultant and Client's site representative and two for Clients Operating Personnel. These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 4 year period of maintenance of each equipment. The manuals shall include:

i. Description of the work carried out / installed.
ii. Operating instructions.
iii. Maintenance instructions including procedures for preventive maintenance.
iv. Manufacturers catalogues.
v. Spare parts list.
vi. Trouble shooting charts.
vii. Drawings
viii. Type and routine test certificates of major items.

Details of all the bought out item should be part of this maintenance manual.

15. ON SITE TRAINING

Upon completion of all work and all tests, the Contractor shall furnish necessary operators, labor

and helpers for operating the entire installation for such periods so as to enable the Client's staff to get acquainted with the operation of the system. During this period, the contractor shall train the Client's personnel in the operation, adjustment and maintenance of all equipment installed.

16. DEFECTS LIABILITY PERIOD

Complaints

The Contractor shall receive calls for any and all problems experienced in the operation of the system under this contract, attend to these within 10 hours of receiving the complaints and shall take steps to immediately correct any deficiencies that may exist.

Repairs

All equipment that requires repairing shall be immediately serviced and repaired. Since the period of Mechanical Maintenance runs concurrently with the defects liability period, all replacement parts and labour shall be supplied promptly free-of-charge to the Client.

17. UPTIME GUARANTEE

The contractor shall guarantee for the installed system an uptime of 98%. In case of shortfall in any month during the defects liability period, the Defects Liability period shall get extended by a month for every month having shortfall and no reimbursement shall be made for the extended period.

18. OPERATION & MAINTENACE CONTRACT

Contractor may be required to carry out the operation of the installation during and after the defects liability period. Further, it may also be required to carry out all-inclusive maintenance of the entire system for a period of four years beyond the defects liability period.

Operation Contract:

It will involve round the clock operation for 24 hours a day wherein work will include but not limited to operation of installation, maintaining log books, complain register and summary of operation.

The terms of payment shall be monthly at the end of each month on pro-rata basis.

All Inclusive Maintenance Contract:

The work will involve routine preventive maintenance with monthly status report. Entire installation shall be painted every two years. 98% uptime of all systems is expected under this contract wherein up time shall be assessed every month and in case of shortfall during any month the contract shall be extended by a month. No reimbursement shall be payable for the extended period.

Adequate number of persons to the satisfaction of the Client representative shall be provided including relievers wherein statutory compliances such as of EPF, ESIC and other applicable labour legislations shall be to contractor account. No overtime shall be payable. Routine shut downs shall be permitted with prior permission of the Owner.
Payment shall be Quarterly at the beginning of each quarter on pro-rata basis.

19 BIM Implementation

It is expected that Contractor, if required shall prepare all shop drawings in latest version of Revit

only and coordinate with other contractors to provide a clash free model. Thereafter, all shop drawings shall be provided in PDF, 2D CAD plans and critical sections in 3D. The drawings shall be submitted in hard copy in A0/A1 size at 1:100 scale including all annotations, heights, bottom of duct/pipe/tray etc complete in all respect as required.

20. GREEN BUILDING COMPLIANCE

Actions required by Contractor:

Contractor will provide full support in complying to Green Building requirements for the desired level of Green Building Rating in the project.
Contractor shall implement the recommendations provided by Green Building Consultant and provide support during the site inspections.
Contractor shall provide respective documentation including but not limited to specification sheets, manufacturer cutsheets, Test Certificates, Brochures, purchase records, manufacturer declarations, calculations, site photographs, commissioning reports.
Contractor is encouraged to designate an individual in their existing team who will be responsible for regular coordination with respective site people to ensure implementation of required green building measures and ultimately provide the required documentation for aspired Green Building Rating.
In case of any deviations in implementing recommended green building measures and/ or using specified material/ equipment/ system, contractor will have to inform Owners/ Services Consultant/ Green Building Consultant/ Architect as applicable for their formal approval.

In case of any additional requirement to comply with Green Building rating as identified during construction/ installation/ commissioning based on the actual site conditions/ construction activities, Contractor shall implement

21 PERFORMANCE GUARANTEE

The contractor shall carry out the work in accordance with the Approved shop drawings, Specifications, Schedule of Quantities and other documents forming part of the Contract. Contractor shall carry out heat load calculation, Ventilation calculation & Smoke calculation & submit the same for client / consultants approvals. The contractor shall be fully responsible for the performance of the selected equipment (installed by him) at the specified parameters and for the efficiency of the installation to deliver the required end result.

The contractor shall guarantee that the HVAC system as installed shall maintain the inside conditions in the air-conditioned spaces as described under “Basis of Design” in the specifications.

Complete set of architectural drawings is available in the Architect/Consultant’s office and reference may be made to same for any details or information. The contractor shall also guarantee that the performance of various equipment individually, shall not be less than the quoted capacity; also actual power consumption shall not exceed the quoted rating, during testing and commissioning, handing over and guarantee period.

LABOUR:

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

COMPLIANCE WITH LABOUR REGULATIONS:

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to the construction industry are given below. The Contractor shall keep the Client indemnified in case any action is taken against the Client by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Client is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/Client shall have the right to deduct any money due to the Contractor including his amount of performance security. The Client/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Client.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Client at any point of time.

SPECIAL CONDITIONs OF CONTRACT

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

a) Workmen Compensation Act 1923: - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

c) Employees P.F. and Miscellaneous Provision Act 1952: - The Act Provides for monthly contributions by the Client plus workers @ 10% or 8.33%. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.

(ii) Deposit linked insurance on the death in harness of the worker.

(iii) Payment of P.F. accumulation on retirement/death etc.

d) Maternity Benefit Act 1951: -The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

e) Contract Labour (Regulation & Abolition) Act 1970: - The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the

Contractor fails to provide, the same are required to be provided, by the Principal Client by Law. The Principal Client is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Client if they employ 20 or more contract labour.

f) The Code on Wages, 2019: This code consolidates the Laws relating to Wages and Bonus and matters connected therewith or incidental thereto.

g) Industrial Disputes Act 1947: - The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

h) Industrial Employment (Standing Orders) Act 1946: - It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Client on matters provided in the Act and get the same certified by the designated Authority.

i) Trade Unions Act 1926: - The Act lays down the procedure for registration of trade unions of workmen and Clients. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

j) Child Labour (Prohibition & Regulation) Act 1986: - The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.

k) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: - The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter- State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home up to the establishment and back, etc.

l) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996: - All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Client of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Client to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

m) Factories Act 1948: -The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

SPECIAL CONDITIONS

1.It must be understood that the work has to be completed as per the time provided in the contract and as such time is the essence of the contract.

2.The quantities furnished in the bills of quantities are only probable quantities liable to alternation by omission, deduction or addition, and it would be clearly understood that the contract is not a lump sum contract and the SWOSTI PREMIUM LTD do not, in any way, assure the tenderer or guarantee that the said probable quantities are correct or that the work would correspond thereto. Payments will be regulated on the actual quantities of work authorizedly done and measured at the accepted rates. No claims due to change in quantities (+ or -) will be entertained. The drawings, forming parts of complementary installations work specifications and the bills of quantities, of the contract, are explanatory of and are to one another, representing together the works / to be carried out. If neither the drawings nor the specifications nor the accepted bills of quantities include any part/parts the intention to include which is nevertheless clearly inferred and which are obviously necessary for the proper completion of the works/ installations, all such parts shall be supplied and executed by the contractor at no extra charge. Anything contained in one or another of (a) the drawings, (b) the specifications and (c) the accepted bills of quantities and not found in the others will be equally binding as if it were contained in each of them.

3.No alterations, that might have been made by the tenderer in the drawings, specifications, conditions or probable quantities accompanying this notice will be recognized and if any such alterations are made the tender, will be invalid. Conditional tenders will however be liable for rejection.

4.The tenderer must obtain for himself on his own responsibility and at his own expense all the information necessary, including risks, contingencies and other circumstances to enable him to make a proper tender and to enter into a contract with the SWOSTI PREMIUM LTD . He must examine the drawings, specifications, conditions and so on and must inspect the site of work, examine the nature of the ground and the subsoil (so far as is practicable) and acquaint himself with local conditions, means of access to the work, storage facilities or areas for staff colony, the nature of the work, in fact all matters pertaining thereto before he submits his tender.

5.The tender accepted shall not be entitled to make any claim for increase in the rates quoted and accepted excepting in pursuance of any specific provision in the contract.

6.Only approved agencies/ skilled workers shall be deployed to carry out requisite specialized items of work. The Officer/ Engineer in charge’s decision in consultation with Architect's/ in this regard shall be binding to all the parties concerned.

7. The rates shall be firm and not be subject to any variations in exchange rates, in taxes, duties etc. in railway freight and the like including labour conditions, etc. The rates are not subject to escalation.

8.It will be the sole responsibility of the contractor to procure all the equipments/ materials and other materials required for the work.

9.The SWOSTI PREMIUM LTD further reserves the right to delete or reduce at any time, any section of the bills of quantities with out assigning any reasons whatsoever there for and no claim will be entertained in this regard.

10.The tenderer whose tender is accepted is bound to execute formal agreement with the SWOSTI PREMIUM LTD within one week of the date of intimation of award of work in

accordance with the draft agreement which will include conditions of tender, form of tender (general conditions of contract & Special Condition of Contract), Articles of Agreement, Bills of quantities, Conditions of contract, Special conditions if any, the drawings and specifications, but his liability under the contract shall commence from the date of written order to commence work whether the formal agreement is drawn or not.

The Contractor shall bear all expenses in connection with the execution of the said agreement including fees for stamping and registration of documents as required.

11.The Security Deposit will bear no interest what so ever until the date of release.

12.

(a)The contractor, upon award of work, shall submit a memorandum of procedure giving the outline of his general scheme, programme and time table, in the form of a chart that shall be scrutinized and approved (with modifications as necessary), which shall become the approved programme for execution. The approved programme shall be the basis for assessment of comparative progress under the relevant conditions of contract.

(b). Over and above, the contractor has to supply programme chalked out showing important milestones to be achieved and the progress actually achieved compared with, the target of the same in the programme and shortfall, if any planned for being made up in the programme for next month.

13.The work in general shall conform to the Specifications provided.

(a)In case items not covered by the general specifications referred above, reference shall be made to the appropriate I.S. Code.

(b)Should there be any difference in the particular specifications of individual item of work and the description of item as given in the Schedule of quantity, the latter shall prevail, which will be as per the relevant drawing.

(c)In case of any work for which there is no specification in I.S. specifications or in the specifications forming part of tender documents or in case there is any variation, such work shall be carried out in all respects in accordance with the instructions to be issued by the Engineer in charge.

14.The work of any part of it shall not be transferred, assigned or sublet without the written consent of the SWOSTI PREMIUM LTD .

15.The Contractor shall be required to co-operate and work in co-ordination with and afford reasonable facilities for such other agencies / specialists / interior designers/ consultants as may be employed by the Architects / Project Management Consultant/ Officer in Charge on other works / sub-works in connection with the project/scheme of which this work forms a part.

16.The Contractor shall get the necessary insurance done for their personal employed/ Swosti Premium Ltd third party insurance in name of G.M(B D),Swosti Premium Ltd and for all other risk insurance or any other insurance as required.

17.The Contractor shall make arrangements of carrying water and electricity .

18.The Contractor is required to comply with all Acts of Government relating to labour, safety, environment and other Rules and Regulations made there under from time to time

and to submit at the proper times all particulars and statements required to be furnished to the appropriate Authorities.

19.Contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other Contractor or other person or persons employed for completing and finishing or using the materials and plant for the Work. When the Work shall be completed or as soon thereafter as convenient the Architect shall give a notice in writing to the Contractor to remove his surplus materials and plant, and should the Contractor fail to do so within a period of 14 days after receipt thereof by him, Owner shall sell the same, and shall give credit to the Contractor for the amount realized. The Architect shall thereafter ascertain and certify in writing what (if anything) shall be due or payable to or by the Owner for the value of the said plant and materials so taken possession of by the Owner and the expense or loss which the Owner shall have been put to in procuring the works to be completed, and the amount, if any, owing to the Contractor and the amount which shall be so certified shall thereupon be paid by the Owner to the Contractor or by the Contractor to the Owner, as the case may be, and the certificate of the Architect shall be final and conclusive between the parties.

20.If at any time after the commencement of the work the Owner shall for any reason whatsoever not require the whole thereof, as specified in the tender, to be carried out, but need to abridge the Contract, the Owner shall give notice in writing of the fact to the Contractor who shall have no claim to any payment or compensation which he might have derived from the execution of the work in full, but which he did not derive in consequence of the whole amount of the work not having been carried out. The Contractor shall in this case, however, be entitled to payment for the work already executed by him in accordance with the agreed rates. The Owner shall also take over all building materials as might have been ordered for the work, but orders for which cannot be canceled, if delivered within a reasonable time, and shall pay for them at cost price. The Contractor shall also be allowed to remove his tools and plants from the site.

Contractor Responsibility Matrix

Work Element / Activity	Contractor	Client (Swosti)	PMC (You)	Architect / Consultants
1. Mobilisation & Site Establishment	**R**	A	C	-
2. Setting Out and Site Survey	**R**	C	C	C
3. Site Safety & Housekeeping	**R**	C	C	-
4. Approvals from Local Authorities (as applicable)	**C**	A	R	C
5. Scaffolding, Centering, and Shuttering	**R**	I	C	-
6. Quality Control & Testing	**R**	I	C	C
7. Coordination with MEP teams	C	I	C	C
8. Materials Procurement (Cement, Steel, Bricks, etc.)	**R**	I	C	-
9. Submission of Progress Reports & MIS	**R**	I	A	-
10. Adherence to Timeline / Work Schedule	**R**	I	C	-
11. Rectification of Defects During DLP	**R**	A	C	-
11. Final Handover & Completion Report	**R**	A	C	-

Legend:

- **R = Responsible** – Main executor.
- **A = Accountable** – Final decision-maker or owner.
- **C = Consultative** – Provides input and coordination.
- **I = Informed** – Kept in the loop, but not involved in execution.

Management Meetings

- Either the Engineer or the Contractor may call for a management meeting.
- These meetings are held to review progress plans and handle issues flagged under the early warning system.
- The Engineer shall record meeting proceedings and circulate to attendees and the Client.
- Action items shall be assigned and communicated in writing.

Quality Control

- The Engineer shall regularly inspect the Contractor's work and identify any defects. Instructions may be issued to uncover or test work suspected to be defective.
- **Tests** If the Engineer instructs tests not specified in the specifications, and the work is found defective, the Contractor shall bear the cost of tests. If no defect is found, it will be treated as a Compensation Event.

Payments & Liquidated Damages Payments

- Payments shall be adjusted for deductions for retention, other recoveries in terms of the contract and taxes at source, as applicable under the law.
- The Engineer shall pay the Contractor the amounts as per the payment schedule attached to the contract.

Retention

- The performance security obtained at the time of signing of contract shall be retained till successful conclusion of project completion and issue of completion certificate.
- The Client shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the works or settlement of final payment.
- On completion of the whole of the works half the total amount retained is repaid to the contractor and half when the Defects Liability Period has passed, and the Engineer has certified that all defects notified by the Engineer to the contractor before the end of the period have been corrected.

Milestone

Milestone No.	To be Achieved	Timeline
Milestone 1-	**60 % of value of contract**	**Upto 120 Days**
Milestone 2-	**100 % of value of contract**	**Upto 180 Days**

Liquidated Damages

- The Contractor shall pay liquidated damages to the Client at the rate 0.2%/day on the value of balance work beyond stipulated date of completion as per following milestones of execution subject to a maximum of 10% of contract value.
  a) Up to end of 120 days of signing of contract – 60 % of value of contract
  b) Up to end of 180 days of signing of contract –100 % of value of contract