ELECTRICAL & ELV INSTALLATION

i) For the Full description of materials & workmanship refer "Specifications", "Preambles" and "Drawings".

ii) Supply, wire, install & commissioning of the following items as per the latest Edition of the IEE Wiring Regulations

iii) All Materials and accessories shall be of high quality type subject to the approval of the Engineer.

GENERAL

iv) The Tenderers are requested to refer the General notes, Drawings and study the taxes, safety procedures, site conditions before the pricing. The Tenderer shall provide all dimensions, and technical information, of all builders work to the Engineer/Consultants.

PREAMBLES NOTES

1 Notwithstanding Preamble notes of the standard method of Measurement of Building Works, the Bidder shall refer to the specification and Drawings for full particulars and descriptions of workmanship and shall include prices for the full intent and meaning thereof in.

2 Prices are deemed to include for the following, unless specifically excluded or provided seperately;

3 Prices for the panels boards deemed to include for finished enclosures, bus bars , panels locks , legend plates , danger boards , DB's , ACB's , MCB's and the required fixing materials like coach screws , bolts & nuts and foundations etc.

4 Prices of Distribution boards deemed to include for finished enclosures, MCB's, ELCB's, Neutral links dummy plates if any and the required chipping, fixing of DB in walls etc.

5 Prices of Cable running in the cable trays deemed to include for cable clamps, tags and cable ferrules.

6 Prices for Under Ground Cable deemed to include for excavation, protection of cable with tiles, warning tapes, refilling with excavated earth, consolidation / compaction etc.
Prices for Cable termination deemed to include for double compression glands, accessories for crimping / soldering, earth tags and earth connection lugs etc.

Prices for Cable termination deemed to include all required structural steel members, welding, screws, bolts & nuts required for fixing etc including one coat of primer and two coats of paint.

Prices deemed to include for screws, nails, bolts, nuts, nipples, standard cable fixing or supporting clips, saddles brackets, straps, rivets, plugs and similar items and all incidental accessories.

Prices for Earth pits deemed to include for excavation, backfilling, compaction, cable covers, warning tapes, GI/Cu pipes, charcoal, salt and other required materials etc.

Prices deemed to include for interviewing and connections between components and control gear within the board.

Prices deemed to include for cutting and jointing cable for carriers at fittings together with cutting or forming openings in cable carriers for conduits, entries from equipment and control gear and similar items; cradles, pin racks for support.

Prices for conduits deemed to include for standard junction boxes and fittings and fixing conduits to or through all building surfaces.

Prices deemed to include for all cable supports and fixings; providing draw wires, draw cables and similar items for drawing or hoisting cables.

Prices deemed to include for all items listed for conduits, cables and conduit sleeves; all cable joints and skinning ends and connecting cables to switches, outlets, accessories, light fittings and similar items.

Prices are also deemed to include the following unless specifically excluded or provided separately.

Any additional costs in complying with the programme such as staging and/or phasing, access limitations working in or adjacent occupied areas and maintenance of existing services as set out in the Bid Documents;

Co-ordination of works between contractor and subcontractors and/or Principal
Strict control to minimize the effects of noise, vibration, dust, mud, smoke, fumes, interruption or hindrance of access and other nuisance which could adversely affect the occupants of adjacent buildings;

Rectification and making good to services disturbed during construction; and chased walls plaster

All chasings in walls, beams, column, slabs wherever required.

Complying with the relevant Acts, By-laws and regulations.

Testing all installations as required and specified.

Submit notices, obtaining permits and completion certificates, paying fees and charges in connection with the relevant installations.

Obtaining and submitting all guarantees and warranties as specified.

Quality Assurance and control as specified.

**A ELECTRICAL INSTALLATION**

**MAIN DISTRIBUTION BOARDS.**

a.1 Main Distribution board **DB-P**

a.2 Sub Distribution board **DB-U** (UPS power).

a.3 Sub Distribution board **DB-L1**

a.4 Sub Distribution board **DB-L2**

a.5 Sub Distribution board **DB-L3**

**B FEEDER CABLES**

Supply and installation of 600/1000V feeder cables in cable tray/conduit, XLPE insulated or PVC insulated, PVC sheathed, copper conductor cable with three core/single core & earth cable.

Rate to include for supply and installation of cable terminations at both ends and necessary glands.

b.1 Power cable from **DB-P** to **DB-L1** : 2C-6sqmm Cu/PVC/PVC + 1C-6Sqmm Cu/PVC Earth. In PVC
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>b.2</td>
<td>Power cable from <strong>DB-P</strong> to <strong>DB-L2</strong>: 2C-6sqmm Cu/PVC/PVC + 1C-6Sqmm Cu/PVC Earth. In PVC Conduit.</td>
</tr>
<tr>
<td>b.3</td>
<td>Power cable from <strong>DB-P</strong> to <strong>DB-L3</strong>: 2C-6sqmm Cu/PVC/PVC + 1C-6Sqmm Cu/PVC Earth. In PVC Conduit.</td>
</tr>
<tr>
<td>C</td>
<td>POINT WIRING  PVC CONDUITING</td>
</tr>
<tr>
<td>c.1</td>
<td>Wiring of Lamp Point using 2x1Cx<strong>1.5sqmm</strong> Cu/PVC/PVC and 1Cx1.5 sqmm PVC/Cu earth cable in PVC conduits, PVC deep sunk box and controlled by a 10A PVC Switch. (Clipsal/MK equivalent).</td>
</tr>
<tr>
<td>c.2</td>
<td>13A switched socket outlet (Raw) wired using 2x1Cx2.5Sqmm Cu/PVC/PVC and 1Cx2.5Sqmm Cu/PVC Earth in Radial circuit with PVC conduits, deep PVC sunk box c/w all conduit, 13A Socket outlet and fixing accessories. (Clipsal/Legrand equivalent).</td>
</tr>
<tr>
<td>c.3</td>
<td>13A <strong>UPS Red coloured</strong> switched socket outlet wired using 2x1Cx2.5Sqmm Cu/PVC/PVC and 1Cx2.5Sqmm Cu/PVC Earth in Radial circuit with PVC conduits, deep PVC sunk box c/w all conduit, 13A Red coloured Socket outlet and fixing accessories. (Clipsal/Legrand equivalent).</td>
</tr>
<tr>
<td>c.4</td>
<td>Wiring of <strong>Room AC point</strong> using 2Cx2.5sqmm Cu/PVC/PVC and 1Cx2.5 sqmm PVC/Cu earth cable in PVC conduits with 25A 2Pole isolator with Enclosure.</td>
</tr>
<tr>
<td>c.5</td>
<td>Wiring of emergency light point with <strong>40W battery pack</strong> (2hr Bakup) 3x1Cx1.5sqmm Cu/PVC/PVC and 1Cx2.5 sqmm PVC/Cu earth cable in PVC conduits.</td>
</tr>
<tr>
<td>c.6</td>
<td>Wiring of Exit Lamp Point using 2Cx1.5sqmm Cu/PVC/PVC and 1Cx1.5 sqmm PVC/Cu earth cable in PVC conduits with 13A Socket outlet.</td>
</tr>
<tr>
<td>c.7</td>
<td>Supply and installment of LED type Exit Lamp, 230V, 50Hz, Including 3Hrs backup time, Moulded Fire Retardant ABS housing with Acrylic diffuser. (with 3years warranty)</td>
</tr>
<tr>
<td>c.8</td>
<td>Supply &amp; Installation of Daylight &amp; Occupancy controller with Daylight &amp; Occupancy Sensor c/w auto manual overide</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>c.8.1</td>
<td>Conference Room</td>
</tr>
<tr>
<td>c.8.2</td>
<td>Printer Area</td>
</tr>
<tr>
<td>c.8.3</td>
<td>Pantry</td>
</tr>
<tr>
<td>c.8.4</td>
<td>Toilet</td>
</tr>
</tbody>
</table>

### D  TELEPHONE POINT WIRING.

- **d.1** Supply, installation, testing and commissioning of 50 pair Intermediate Distribution Frame (MDF) including krone type modules, installed near to ELV Rack with plastic enclosure, labeling, connectors and all necessary accessories and ancillary works and materials required for complete installation as specified in drawings Specification.  
  
- **d.2** Supply & Wiring of Telephone outlets using 2 pair 0.5 mm telephone cable in rigid PVC conduits from MDF to each outlet complete with RJ11 Telephone outlet, including Back Boxes, Face Plates, Keystones with all other necessary accessories and consumables. Rates shall include chipping of walls/concretes, concreting, back filling, & etc.  
  
- **d.3** Supply and installation of Type-03 surge protectors for main SLT Incoming lines.  
  
- **d.4** Supply and Installation and wiring and termination of 4x10 pair 0.5 mm cable from MDF to EXISTING PABX  

### E  SUPPLY & POINT WIRING OF DATA OUTLET

- **e.1** Supplying, wiring, installation, terminating, testing and commissioning of CAT 6 cable from patch panels to RJ 45 outlet, in 25mm dia. PVC conduit, including Back Boxes, face plates, Keystones and all other necessary accessories and consumables. (With FLUKE On Site Testing Report)  
  Data Points 35  
  
- **e.2** Supply and installation of 21U Wall mount type (600Wx1000Hx600D)  

### F  SUPPLY & INSTALLATION OF LAMP FITTINGS

Supply & Installation of the following lighting fixtures with all accessories.  

- **f.1** TYPE-01 (with 3-Years warranty) 35.0  
- **f.2** TYPE-02 (with 3-Years warranty) 13.0  
- **f.3** TYPE-3A (with 3-Years warranty) 5.0  
- **f.4** TYPE-3B (with 3-Years warranty) 8.0  
- **f.5** TYPE-04 2400mm (with 3-Years warranty) 2.0
<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE-04</td>
<td>1200mm (with 3-Years warranty)</td>
<td>4.0</td>
</tr>
<tr>
<td>TYPE-05</td>
<td>LED STRIP with Control driver (with 3-Years warranty)</td>
<td>21.0</td>
</tr>
</tbody>
</table>

**G** SURFACE MOUNTED PVC TRUNKING SYSTEM

Skirting trunking PVC-U range size 167 x 50 mm with 3 compartments complete with based unit extension, main compartment lifts, angle covers, square cover, cable retainers, couplers, end caps, external brackets, flat angle, tees and required socket plates in accordance with drawings. (Brand: Legrand Snap-on Trunking System)

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skirting trunking</td>
<td>PVC-U range size 167 x 50 mm with 3 compartments</td>
</tr>
<tr>
<td>Based unit extension</td>
<td></td>
</tr>
<tr>
<td>Main compartment lifts</td>
<td></td>
</tr>
<tr>
<td>Angle covers</td>
<td></td>
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<tr>
<td>Square cover</td>
<td></td>
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<tr>
<td>Cable retainers</td>
<td></td>
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<tr>
<td>Couplers</td>
<td></td>
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<tr>
<td>End caps</td>
<td></td>
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<tr>
<td>External brackets</td>
<td></td>
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<tr>
<td>Flat angle</td>
<td></td>
</tr>
<tr>
<td>Tees</td>
<td></td>
</tr>
<tr>
<td>Required socket plates</td>
<td></td>
</tr>
</tbody>
</table>

**H** Speaker Wiring

**h.1** Wiring of Twin twisted speaker wire 24/0.1mm dia. Including PVC conduit and hanging accessories for speaker wiring. (Wire loop from Existing Nearest Speaker point)

**h.2** Supply and installation Flush Mounting ceiling speaker (6W) with tapping transformer and all required accessories.

**I** FINAL DOCUMENT FOR ELECTRICAL INSTALLATION

**i.1** Preparation of Shop Drawings, as-built drawings, operation and Maintenance Manuals.

**i.2** Obtain a Chartered Electrical Engineer’s Certificate for the final testing and commissioning report as per the requirement

**RECOMMENDED ELECTRICAL PRODUCTS** - Supplier can quote for similar or better

<table>
<thead>
<tr>
<th>Description</th>
<th>Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables</td>
<td>ACL/kelani/Sierra</td>
</tr>
<tr>
<td>PVC Conduite</td>
<td>Anton/Polychrome</td>
</tr>
<tr>
<td>MCCB/RCCB</td>
<td>ABB/Schneider/Eaton</td>
</tr>
<tr>
<td>Power Analyzer</td>
<td>Schneider/Circutor/Siemens</td>
</tr>
<tr>
<td>Switches</td>
<td>Schneider/Legrand/Orange</td>
</tr>
<tr>
<td>13A Socket outlet</td>
<td>Schneider/Legrand/Orange</td>
</tr>
<tr>
<td>ELR/PFR</td>
<td>Mikro/Delab</td>
</tr>
<tr>
<td>Power Panels</td>
<td>Magline/Pubudu/Power Panels</td>
</tr>
<tr>
<td>Cable Trays/Ladders</td>
<td>Magline/Pubudu/Power Panels</td>
</tr>
<tr>
<td>Motorized Changeover 60A,4Pole</td>
<td>Socomec/ABB</td>
</tr>
<tr>
<td>Deep Sunk Box</td>
<td>Polychrom</td>
</tr>
</tbody>
</table>

**RECOMMENDED CLV PRODUCTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data cables</td>
<td>CAT-6</td>
</tr>
<tr>
<td></td>
<td>3M/Beldon/Amp</td>
</tr>
<tr>
<td>Item</td>
<td>Item</td>
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</tbody>
</table>

RECOMMENDED ELECTRICAL PRODUCTS - Supplier can quote for similar or better standard products