DIVISION PROVINCIALE DE LA SANTE

LOCATION:
GOMA

ARCHITECT:
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0789114482

STRUCTURAL ENGINEER
BYIZERO BERTIN
0781456956

MEP ENGINEER
THEOPHANE BARINDA
0787487750

PAPIERS - A2
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Ceiling level
Upper floor lintel level
Beam level
Refer to the S.E Drawings for details

Shaped gypsum ceiling
Snake lights into gypsum ceiling
Roof cover iron sheet 28BG
Alumnium Frames and Tinted laminated glasses
Roof structures
Internal openings lintel Level
Ground Floor Level
Floor finish with 60x60 Polycerain Tiles

150mm Cement block walling double plastered and finished with external dark grey light grey wall master and internal silk venyl white paint.

50mm sand layer
250mm Hardcore Bedrock layer
DPM LAYER
60x40 metal tubes
Translucent metal sheet
Iron sheet roof cover 28BG
40x40 metal purlins spaced by 900mm
60x40mm metal Rafters spaced respectively to the structural grid on floor plan
Shaped gypsum ceiling
Hidden snake lights within the ceiling
Embedded metal gutter with goudra
400mm concrete edging

Floor finish with 60X60 Polycerain Tiles
100mm screed layer
DPM LAYER
50mm sand layer
compacted earth atleast 300mm thick

400mm concrete edging
Iron sheet roof cover 28BG
60x40 metal tubes
Translucent metal sheet
Ground Floor Level
Internal openings lintel Level
Roof structures
ELEVATIONS

Niveau de linteau

Niveau de linteau

E-05 Elevation (1) 1:100

E-09 Elevation (1) 1:100

E-07 Elevation (1) 1:100
DÉTAIL DU TOIT

DISPOSITION DES POUTRES EN ANNEAUX AVEC POUTRES 250 X 400 mm
AMÉNAGEMENT AU REZ DE CHAUSSEE
AVEC POUTRES 250 X 400 mm

AMÉNAGEMENT DU PREMIER ÉTAGE
AVEC POUTRES 300 X 500 mm
REMARQUES SUR LA CONSTRUCTION DE LA FONDATION :

1. Les dimensions des semelles ont été obtenues basé sur une capacité portante sûre supposée du sol de 300KN/m² en tenant compte que les planchers à supporter sont ceux indiqués sur les dessins architecturaux disponibles au moment de la conception structurelle.

2. Une couverture en béton de 25 mm (minimum) d'épaisseur sur l'acier renfort à prévoir et épaisseur 50mm Un aveuglement en béton de grade 15 doit être fourni sur toutes les fondations sauf indication contraire.

3. Le kicker doit avoir une hauteur de 75 mm, sauf indication contraire localement indiqués sur les plans de structure.

4. L'ingénieur de conception structurelle n'assume aucune responsabilité pour les modifications effectuées sur place sans son acceptation écrite ou consentement préalable.

NOTES DE CONSTRUCTION DE LA DALLE DE PLANCHER, DES POUTRES ET DES ESCALIERS :

1. Les poutres de palier d'escalier ont une profondeur de 250 x 350 mm et sont renforcées de 3T16 en haut et en bas et avec des liens R08 à des centres de 150 mm partout.

2. Un enrobage béton de 25 mm minimum doit être fourni à l'armature principale dans toutes les poutres partout.

3. Toutes les autres poutres de plancher non détaillées ici ont une profondeur de 300 x 500 mm et sont renforcées avec 4T16 en haut et en bas et 3T12 en support supérieur et avec maillons R08 à des centres de 200 mm partout.

4. Toutes les poutres de toit ont une profondeur de 250 x 400 mm et sont renforcées de 4T16 dans la partie supérieure et en bas et avec des liens R08 à des centres de 200 mm partout.

ABRÉVIATION.

1. T : désigne le renforcement nervuré à haut rendement de limite d'élasticité d'au moins 410 N/m².

TOC : Indique le haut du niveau de béton.

@ : Désigne l'espacement entre deux armatures.

F : désigne les semelles.
DÉTAIL DU FONDATION B 2500 X 3000 x 500mm
REZ-DE-CHAUSSEE

Nom du Dessin: Dessin d' eclairage FF  
Echelle: 1:100

PREMIER ETAGE

Nom du Dessin: Dessin d' eclairage FF  
Echelle: 1:100
Nom du Dessin: Circuit de prises GF  Echelle: 1:100

Nom du Dessin: Circuit de prises FF  Echelle: 1:100
Nom du Dessin: Systeme de sonolisation de la salle  
Echelle: 1:100

Nom du Dessin: Systeme d' allimantation electrique GF  
Echelle: 1:100
Nom du Dessin: Systeme d' allimentation electrique FF  Echelle: 1:100

Nom du Dessin: Dessin de l'alarme anti-incendie GF  Echelle: 1:100
PREMIER ETAGE

Nom du Dessin: Systeme de lute contre incendie FF    Echelle: 1:100

LEGEND

Fire hydrant
Fire extinguisher of class ABC
Semi-recessed cabinet for hose reel & CO2 fire extinguisher
Pipe risers and line, red painted
600*600 connection chamber

REZ-DE-CHAUSSEE

Nom du Dessin: Systeme de Correcte des eaux pluivable GF    Echelle: 1:100

LEGEND

Storm water Manholes
Balcon Floor drain
Rain water pipes and line
PREMIER ETAGE

Nom du Dessin: Systeme de Correcte des eaux pluivable FF   Echelle: 1:100

LEGEND
- Storm water Manholes
× Balcon Floor drain
~ Rain water pipes and line

REZ-DE-CHAUSSEE

Nom du Dessin: Systeme d' approvisionnement an eau GF   Echelle: 1:100

LEGEND
- Water Meter manhole
- Gate valve
↓ Water tap
CW Chassed in wall
Nom du Dessin: Systeme d'approvisionnement an eau FF    Echelle: 1:100

PREMIER ETAGE

LEGEND

- Water Meter manhole
- Gate valve
- Water tap
- CW Chassed in wall

Nom du Dessin: Systeme de drainage GF    Echelle: 1:100

REZ-DE-CHAUSSEE

LEGEND

- Manholes
- Gurry trap
- Waste water pipes and line
- Sewer pipes and lines
- Floor drain
- CW Chassed in wall
- RS Below slab
- SPT Septic tank
Nom du Dessin: Systeme de drainage FF  
Echelle: 1:100

Nom du Dessin: Systeme de climatisation (HVAC)  
Echelle: 1:100
## Load Calculation

<table>
<thead>
<tr>
<th>Description</th>
<th>Power (kVA)</th>
</tr>
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<tbody>
<tr>
<td>Total</td>
<td>58.79</td>
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<tr>
<td>max. simultaneous transformer load (kVA) hvac</td>
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<tr>
<td>max. simultaneous absorbed power (kW) hvac</td>
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<tr>
<td>max. simultaneous transformer load (kVA) hd</td>
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<td>max. simultaneous absorbed power (kW) hd</td>
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<tr>
<td>max. simultaneous transformer load (kVA) ups</td>
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<tr>
<td>max. simultaneous absorbed power (kW) ups</td>
<td>216.00</td>
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<tr>
<td>max. simultaneous transformer load (kVA) ps</td>
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<td>max. simultaneous absorbed power (kW) ps</td>
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<td>max. simultaneous transformer load (kVA)</td>
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<tr>
<td>max. simultaneous absorbed power (kW)</td>
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## Power Schedule

### UPS Power Sockets
- **Type of light**: LED Down light, wet area light
- **Pendant lamp light**: LED Wall mount light
- **Chandriel lamp**: LED Spotlight
- **SAFETY (20%)**: Fire fighting pump, Water pump

### Power House

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>Power Rating</th>
<th>Power</th>
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</thead>
<tbody>
<tr>
<td>light in office</td>
<td>3</td>
<td>45.00</td>
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</tr>
<tr>
<td>Lighting</td>
<td>7</td>
<td>1469.00</td>
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</tr>
<tr>
<td>Hand dryer</td>
<td>1</td>
<td>8,200.00</td>
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</tr>
<tr>
<td>UPS power sockets</td>
<td>1</td>
<td>23.32</td>
<td></td>
</tr>
<tr>
<td>Power</td>
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### PUMP HOUSE

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<tr>
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<td>UPS power sockets</td>
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<td>23.32</td>
<td></td>
</tr>
<tr>
<td>Power</td>
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<td>230/380 50HZ</td>
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### FIRST FLOOR

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<tr>
<td>UPS power sockets</td>
<td>1</td>
<td>23.32</td>
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</tr>
<tr>
<td>Power</td>
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<td>230/380 50HZ</td>
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### GROUND FLOOR

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</tr>
<tr>
<td>UPS power sockets</td>
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<td>23.32</td>
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</tr>
<tr>
<td>Power</td>
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<td>230/380 50HZ</td>
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### LIGHTING TOTAL

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
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<th>Power</th>
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<tbody>
<tr>
<td>Hand dryer</td>
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<td></td>
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<tr>
<td>UPS power sockets</td>
<td>1</td>
<td>23.32</td>
<td></td>
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<tr>
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<td>230/380 50HZ</td>
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### Power (20%)

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<th>Description</th>
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<tbody>
<tr>
<td>Fire fighting pump</td>
<td>1</td>
<td>45.00</td>
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<tr>
<td>Water pump</td>
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<td>72.00</td>
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<tr>
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### CABLE SCHEDULE

<table>
<thead>
<tr>
<th>No</th>
<th>Area of use</th>
<th>Load (kVA)</th>
<th>Length (meter)</th>
<th>Size</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>From source to ATS</td>
<td>60</td>
<td>NA</td>
<td>4*70mmsq</td>
<td>XPLE UG</td>
</tr>
<tr>
<td>2</td>
<td>From Generator to ATS</td>
<td>300</td>
<td>NA</td>
<td>PVC cable</td>
<td>PVC cable</td>
</tr>
<tr>
<td>3</td>
<td>From MCB to UPS</td>
<td>20</td>
<td>10</td>
<td>4*25mmsq</td>
<td>PVC cable</td>
</tr>
<tr>
<td>4</td>
<td>From UPS to MCB</td>
<td>100</td>
<td>NA</td>
<td>XPLE UG</td>
<td>XPLE UG</td>
</tr>
<tr>
<td>5</td>
<td>From MCB to Consumer unit 1</td>
<td>200</td>
<td>NA</td>
<td>XPLE UG</td>
<td>XPLE UG</td>
</tr>
<tr>
<td>6</td>
<td>From MCB to Consumer unit 2</td>
<td>200</td>
<td>NA</td>
<td>XPLE UG</td>
<td>XPLE UG</td>
</tr>
<tr>
<td>7</td>
<td>From MCB to Consumer unit 3</td>
<td>200</td>
<td>NA</td>
<td>XPLE UG</td>
<td>XPLE UG</td>
</tr>
</tbody>
</table>

### OTHER HOUSE

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>Power Rating</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>light in office</td>
<td>3</td>
<td>45.00</td>
<td></td>
</tr>
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<td>Lighting</td>
<td>7</td>
<td>1469.00</td>
<td></td>
</tr>
<tr>
<td>Hand dryer</td>
<td>1</td>
<td>8,200.00</td>
<td></td>
</tr>
<tr>
<td>UPS power sockets</td>
<td>1</td>
<td>23.32</td>
<td></td>
</tr>
<tr>
<td>Power</td>
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<td>230/380 50HZ</td>
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### POWER TOTAL

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>Power Rating</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>light in office</td>
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<td>45.00</td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td>7</td>
<td>1469.00</td>
<td></td>
</tr>
<tr>
<td>Hand dryer</td>
<td>1</td>
<td>8,200.00</td>
<td></td>
</tr>
<tr>
<td>UPS power sockets</td>
<td>1</td>
<td>23.32</td>
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</tr>
<tr>
<td>Power</td>
<td>1</td>
<td>230/380 50HZ</td>
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### SUMMARY

<table>
<thead>
<tr>
<th>Description</th>
<th>Power (kVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED Down light</td>
<td>17.04</td>
</tr>
<tr>
<td>Pendant lamp light</td>
<td>2.46</td>
</tr>
<tr>
<td>Chandriel lamp</td>
<td>1.00</td>
</tr>
<tr>
<td>LED Wall mount light</td>
<td>0.75</td>
</tr>
<tr>
<td>LED Spotlight</td>
<td>0.60</td>
</tr>
<tr>
<td>Chandelier</td>
<td>0.50</td>
</tr>
<tr>
<td>Total Power</td>
<td>20.00</td>
</tr>
<tr>
<td>UPS Power Total</td>
<td>262,500.00</td>
</tr>
<tr>
<td>Transformer Power Total</td>
<td>227,500.00</td>
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<tr>
<td>Power</td>
<td>220/380 50HZ</td>
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</tbody>
</table>
## CABLE SCHEDULE

<table>
<thead>
<tr>
<th>No</th>
<th>Area of use</th>
<th>Load (KVA)</th>
<th>Length(meter)</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From source to ATS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>From source to AVR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>FromATS to UPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>From AVR to UPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>From AVG to UPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>From source to consumer unit 1 UPS</td>
<td>20</td>
<td></td>
<td>10</td>
<td>PVC cable</td>
</tr>
<tr>
<td>7</td>
<td>From source to consumer unit 1</td>
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<tr>
<td>8</td>
<td>From source to consumer unit 2 UPS</td>
<td>21</td>
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</tr>
<tr>
<td>9</td>
<td>From source to consumer unit 3 UPS</td>
<td>9.18</td>
<td></td>
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<td></td>
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<tr>
<td>10</td>
<td>From source to consumer unit 2</td>
<td>4*10mmsq</td>
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</tr>
<tr>
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<td>From source to consumer unit 3</td>
<td>4*16mmsq</td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>From source to consumer unit 1 UPS</td>
<td>10</td>
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<td></td>
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</tr>
<tr>
<td>13</td>
<td>From source to consumer unit 1</td>
<td>4*25mmsq</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>From source to consumer unit 2 UPS</td>
<td>70</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>From source to consumer unit 3 UPS</td>
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<tr>
<td>16</td>
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<tr>
<td>17</td>
<td>From source to consumer unit 3</td>
<td>4*25mmsq</td>
<td></td>
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</tr>
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### I. POWER DISTRIBUTION EQUIPMENT

#### 1.1. INSTALLATION

For installation, the main LV breaker with 10kA rating capacity is installed in a box mounted in the main distribution board. Feeder circuits shall also be protected by rated circuit breakers.

#### 1.2. Protection

A main LV breaker with 10kA rupturing capacity is installed in a box mounted in the main distribution board. Feeder circuits shall also be protected by rated circuit breakers.

### II. CABLE MANAGEMENT

#### 1. Trench

Trench for LV cables must be built from power supply to the power supply. Trench dimensions is 400x600mm WxD. The trench should be backfilled with approved backfilling material. All backfill materials shall be free from cinders, ashes, slag, refuse, rubbish, vegetable or organic materials, kampfy or frozen materials, boulder, rocks or stone.

#### 2. Manhole

Manholes to be used should have sufficient workable space with earth cast iron cover and waterproofed as they are power manholes and should be openable. Manholes shall be rectangular, made in concrete with the dimensions given as per the drawings complete with openable cast iron manhole covers. Covers shall be of heavy duty cast iron with lifting hooks.

Manholes shall be plastered with 15mm thick cement plaster 1:3 mixed with waterproofing material and finished smooth with a floating coat of neat cement. External walls shall be plastered in CM 1:3 and sponge finished.

#### 3. Pipe work

Pipe work is to be done for external underground and chased in walls for internal. Externally, pipe work is from manhole to manhole underground by carrying power supply cables from main distribution board to building. Pipes must be 110mm PN10 grey pipes for underground, and 32mm PN6 heavy gauge for those chased in wall or in slab. Pipe work for services powered from the consumer unit shall be chased in wall/slab to allow for drawing box to consumer unit and to the load point so than conduits from consumer to service point are 20mm. All supply conduits shall be done from above the slab while the loops shall be done through the ground slab to the walls.

### III. DISTRIBUTION AND CONSUMER

#### 1. Distribution board

MDBs are specified in this Technical Specification as main low-voltage electrical power distribution panels. MDBs control and distribute electrical power from power house consumer unit. Generally, all outgoing feeders from MDGs are Molded Case Circuit Breakers (MCCBs). Power distribution board shall be the metal clad pattern. Enclosures shall be substantially constructed from 16SWG minimum thickness sheet steel having hinged front cover and shall be vermin and insect proof. This unit shall house MCBs/MCCBs and shall be supplied complete with bus-bars, earthing terminal, neutral bar, circuit chart and blanking plate for spare ways.

Incoming isolator switch shall be integral with the distribution board in consumer's units only, or as may specifically be requested for. All boards breakers and cables must be as per drawing.

The circuit breakers shall incorporate both terminal overload and magnetic short circuit tripping, with a tripping mechanism.

Three phase circuits shall be controlled by integrally manufactured four pole breakers, with one common operating level, single phase circuits to be controlled by double pole or single pole as per drawing. An inter-tripping mechanism shall ensure isolation of all four poles in the event of an overload or short circuit on any one phase.

Main distribution board shall be earthed in accordance with the IEE Regulations. All metalwork associated with the installation shall be earthed to comply with the Regulations currently in force.

#### 2. Consumer unit

Consumer unit shall be flush mounting enclosure with metallic door 1 rows to 12. This consumer unit is flush mounting in brick or partition walls removable chassis. For devices shoulder measurement 47mm, distance between rails 125mm, flush part made out of insulated material, frame and door manufactured from metal, reversible door with integrated handle, sealable from cover, colour RAL 9010, complete with plain door.

Enclosures shall be substantially constructed from 16SWG minimum thickness sheet steel having hinged front cover and shall be vermin and insect proof.
insect proof. Maximum current rating 100A, operating voltage:230V, 
Short circuit withstand 16kA rms with metal base Cu base manufactured from 1.2mm still. enclosure with IP55:Dimension: HxWxD(200x400x150mm). Consumer unit shall be powered by 4x6sqmm pvc copper cable0.6/1kv pulled from feeder pillar through conduit chassed in wall to draw box of 300x200x300mm and to consumer unit. Each unit shall house MCBs/MCCBs and shall be supplied complete with bus-bars, earthing terminal, neutral bar, circuit chart and blanking plate for spare ways. The incoming isolator switch shall be integral with the distribution board in consumer’s units only, or as may specifically be requested for. All boards breakers and cables must be as per drawing and All consumer units shall, unless detailed to the contrary, be mounted with the lower edge 1800mm. 
All consumer unit shall be earthed in accordance with the IEEE Regulations. All metalwork associated with the installation shall be earthed to comply with the Regulations currently in force.

IV. LIGHTING AND LIGHTING SWITCHES

Lighting shall be done as per drawing, so all lighting points to be used must be LED and all exposed cables shall not be permitted at any point. So all wiring termination shall be done at the lighting point or switch. For pipe work, conduits and boxes for lighting shall be recessed in slab/wall; supply cable from consumer unit will be pulled through in 20mm pvc heavy gauge conduits casted in slab to the light points and then all supply cable will be from above slab while the looping connection should be from hellow slab. 
Lighting future chosen are these follow 
- Surface mounted wet area light with index of protection of (IP65), rated wattage is 15W, Illuminance of 950lm LED as torch equivalent.
- Surface mounted light with rated wattage of 18W, Luminaire luminous flux of 958lm Fittings of 1x1slab module 840 W
- Luminous efficiecy 13.74lm/W Colorimetric data: CCT4000K, CR180 as torch equivalents.
- LED tube light. Linear LED tube with index of protection of (IP66), rated power is 18W, Surface mounted lighting fitting, lamp: one linear LED, the base: med bipin, length 820mm, flux 2100lumens, CCT 4100K, CRI 82, electronic driver, power factor 1. Optical system: opal diffuser
- light distribution: direct
- materials: Housing: sheet steel End caps: polystyrene
- IP65.Surface finish: White (RAL 9003) LOL:100%
- When illuminated, the panels deliver uniform light to the space and while off they appear completely 
- free of a visible light source.

Uniform illuminated surface
- No visible diodes or glare, just a soft even field of light
- Superior Performance
- Broad uniform light distribution

1. Lighting switches

All switches to be used internally will be normal switches with rated amperage of 10A,250V single pole as Legrand galea life with soft aluminum finish and all light switches looping connections shall be done from above slab except in the areas that is conflict with the max. pans. then all switches shall be mounted at 120mm AFFL unless otherwise advised by the architect.

All lights are as per specifications in drawing, and all Internal lighting shall be controlled by normal switches as specified in legend, whereas external lighting-parking light, shall be controlled by a timer switch.

Timer switch specifications are as follow:
- Programme settings: on daily or weekly basis 15 languages
- A programme consists of on and off time and their assignment to certain days
- Option to suspend the program for a specific period to set up with start and date
- Minimum programme setting: 1 s.
- High precision clock: ± 0.1 sec per day
- Particularly suited to irregular cycles:
  - security installations (access point, alarms, etc.),
  - industrial installations (pump stations, etc.)
- Programmed directly on keypad, or using program transfer key Cat.No 4 128 72
- Additional functions including random (irregular cycles), hour counters
- Power supply 230 V - 50/60 Hz
- 1 output 16 A - 250 V ~

and then router. All connections are made by a CAT7 cable. Cable manager shall be used for a proper wiring, and rack cabinets to house all those equipments.

Data equipments specifications:
- Data socket: RJ45 LCS6 Category 6 data outlets white colour as Legrand equivalent.
- Switch: Cisco Catalyst 2960-48TC-L Switch, 48/24 ports
- Patch panel: Gigabit Category 6 UTP 19" 48 Port Patch panel
- Cable: CAT7 network cable
- Cable manager: Metal covered, with no brush
- Rack cabinet: Gigabit 27U Floor Standing Network Cabinet Width 600mm Depth 600mm Mesh Door

VII. FIRE ALARM

Fire alarm system is designed for security and detection purpose. This system is composed by standalone optical heat detector radio link wireless professional battery powered and standalone optical gas detector radio link wireless battery powered. These stand-alone heat detector was designed with precise microprocessor control integrating both rate of rise and fixed temperature heat detector.

The working principle for this system is that, once standalone optical heat/gas is sensed by a heat detector/gas detector, the detector sends a signal to it’s own sounder and gives a sound alarm to evacuate.

1. Standalone optical heat detector and Gas detector

- Heat sensitivity: rate of rise function: >20F(6.7C) per minute.
- Alarm sounder level: Exceeding 95dB at 3m.
- Power supply: 9V battery; 220/230/240 AC with 50/60Hz.

VIII. CCTV

CCTV system is for control and security. They are installed to control public places. They are fixed at ceiling and others are fixed on wall corners in external to have a large coverage. All cameras have to be connected to the NVR and screen in control room which is located in server room. This is to be done as per drawing provided. External cable shall be pulled through conduit in wall to the CCTV camera points.

Equipment specifications:
- Cable: Category 7 S/FTP Solid Cable 4 Pair (AWG 23); 23AWG bare copper wire insulated with polyethylene. Two conductors twisted together to form a pair and four such pairs cabled to form the basic unit jacketed with flame retardant PVC. Plastic
cross in the middle separates pairs from each other.

- Screen: LCD Monitor

32 Accessories:
- Remo Control (AA59-00817A) & Batteries (AAA x 2)
- Samsung Smart Control (BN59-01181N) (sold separately)
- Power Cord
- Safety Guide / Quick Setup Guide (Not available in all locations)
- Data Cable (depending on the model) (BN39-00656B, BN39-01011C)
- Holder-Wire stand 1(EA)
- Assembling the Holder Wire Stand

- Bullet camera: 8 MP VF Bullet Network Camera
  - 1/1.8” Progressive Scan CMOS
  - 3840 × 2160 @ 30fps
  - 2.8 to 12 mm motor-driven lens
  - Color: 0.009 Lux @ (F1.2, AGC ON)
  - H.265, H.265+, H.264, H.264+
  - 120dB WDR
  - 3D DNR
  - IR range up to 50 m
  - Five defined streams and up to five custom streams
  - 6 behavior analyses, 2 exception detection, and face detection
  - Built-in microSD/SDHC/SDXC card slot, up to 256 GB
  - Alarm I/O
  - IP67, IK10

- POE switch: 24-Port 10/100 PoE Managed Switch with Gigabit Uplinks
- NVR: Video / Audio Input
  - 1 IP Video Input: 64-ch
  - Incoming / Outgoing Bandwidth: 512 Mbps / 512 Mbps
  - Incoming / Outgoing Bandwidth (RAID Mode): 512 Mbps / 400 Mbps
  - TLS Outgoing Bandwidth: 128 Mbps or 64 Mbps (when RAID is enabled)

- Video / Audio Decoding
  - Decoding Format: H.265, H.265+, H.264, H.264+, MPEG4, MJPEG (for Hikvision IP camera only)
  - Video Resolution: 12 MP / 8 MP / 7 MP / 6 MP / 5 MP / 4 MP / 3 MP / 1080p / UXGA / 720p / VGA / 4CIF / DCIF / 2CIF / CIF / QCIF
  - Synchronous Playback: Up to 16 channels
  - Capability: 20-ch @ 1080p

- Hard Disk
  - Interface: 16 SATA interfaces
  - Capacity: Up to 12 TB
  - Storage Extension: 1 × eSATA interface, 2 × mini SAS interface (optional)

- RAID
  - RAID Type: RAID0, RAID1, RAID5, RAID6, and RAID10

- Network Management
  - Protocol: IPv6, HTTPS, UPnP, SNMP, NTP, SADP, SMTP, NFS, SCSI, PPPoE, DDNS
  - Network Interface: 4, RJ45 10M/100M/1000M self-adaptive Ethernet

- interface External Interface
  - Two-Way Audio: 1-ch, RCA (2.0 Vp-p, 1 kΩ)
  - Serial Port: 1 RS-485, Keyboard
  - USB Interface: Front Panel: 2 × USB 2.0; Rear Panel: 2 × USB 3.0
  - Alarm Input / Output: 16/8
  - Extension Board (Optional): One extension board contains four 10M/100M/1000M optical interfaces (1.25 Gbps SFP module), eight RS-485 interfaces, and an alarm interface with 32 alarm inputs and 16 alarm outputs.

- General
  - Power Supply: 100 to 240 VAC, 550 W
  - Fan: Redundant dual ball bearing fan; speed adjustable; hot-plug
  - Consumption (without HDD): ≤ 140 W
  - Working Temperature: 32° F to 122° F (0° C to 50° C)
  - Working Humidity: 10 to 90 %
  - Chassis: 3U chassis
  - Dimensions (W x D x H): 17.4” x 19.4” x 5.7” (442 mm x 494 mm x 146 mm)
  - Weight (without HDD): ≤35.3 lbs (16 kg)

- Rack cabinet:
  - 19″ Free-Standing Network Cabinet Series for Fast & Easy Network Installations
  - Size range: 26U Height 600x1000

IX. LIGHTNING ARRESTOR

Lightning protection system and Grounding system. Air termination should locally have a dedicated testing and inspection kit to test lightning conductor without dismantling, using telescopic pole and test kit: Earth rod electrode, bonding, excavation and related services. The type of Air Termination System to be installed on the building at minimum 4m above tallest structure and are of the type ESE (Early Streamer Emission). the down conductor shall be clipped at every two meters As Gimax bland equivalent.

Features components:
- Radius of protection 15meter for building with level2 of protection zone two with maximum earth resistance of 2 Ohms.
- 25/3mm down conductor.
- Inspection chamber and testing clamp
- Copper earth electrode of 1.2m with 9mm of diameter.
- Lightning counter: - Functioning temp range: from 0º to 50ºC
- Current range: from 1KA (8/20µs) to 100KA (10/350µs)
- Counter range: from 0 to 999 strokes
- Degree of protection: IP65
- Surge arrester: - Combined lightning to low voltage discharger for networks, 380V three-phase lines.
- Peak value of lightning current (10/350µs): limp 25 kA 100 kA
- Nominal discharge current (8/20µs): In 30 kA 100 kA
- Maximum discharge current (8/20µs): 1 max 60 kA 100 kA
- Protection level: Up ≤1.50 kV
- Maximum fuse protection: 250A GL/pG
- Response time: 100 ns
- All are as Gimax equivalent