

NOTES

1. EXTENT OF WORKS  
THE CARPARK UPGRADE ELECTRICAL WORKS INCLUDES UPGRADING THE ENERGEX PADMOUNT SUBSTATION, A NEW MAIN SWITCHBOARD, RELOCATION OF THE EXISTING GENERATOR, MODIFICATIONS TO THE EXISTING POWER DISTRIBUTION SYSTEM AND THE WORKS ASSOCIATED WITH THE CARPARKS.  
THE WORKS IS TO INCLUDE THOUGH ARE NOT LIMITED TO THE FOLLOWING:  
- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE ELECTRICAL SERVICES  
- INSPECTIONS.  
- TESTING AND COMMISSIONING.  
- MAINTENANCE.  
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.  
- POWER DISTRIBUTION.  
- SHOP DRAWINGS.  
- AS CONSTRUCTED DOCUMENTS.  
- ARRANGING WITH ENERGEX TO UPGRADE THE EXISTING PADMOUNT SUBSTATION FUSES TO 1,260 AMPS.  
- RELOCATION OF THE EXISTING GENERATOR.  
- NEW MAIN SWITCHBOARD / METER PANEL.  
- UNDERGROUND CONSUMERS MAINS.  
- UNDERGROUND GENERATOR MAINS.  
- UNDERGROUND SUBMAINS.  
- PIT AND CONDUITS.  
- CIVIL, STRUCTURAL AND BUILDING WORKS ASSOCIATED WITH THE ELECTRICAL SERVICES INSTALLATION.  
- VACUUM EXCAVATION.  
- REMOVAL OF THE EXISTING ELECTRICAL SERVICES THAT BECOME REDUNDANT.  
- NEGOTIATION AND COORDINATION WITH ENERGEX AND THE CLUBS ELECTRICITY RETAILER FOR THE UPGRADED SUPPLY AND METERING.  
- TEMPORARY WORKS.  
- SWITCHBOARDS.  
- CIRCUITS AND OUTLETS.  
- LIGHTING.  
- FIRE ALARM SERVICES.  
- COMMUNICATIONS SERVICES.  
- ALL MINOR COMPONENTS AND INCIDENTAL WORKS NOT SPECIFICALLY REFERRED TO, HOWEVER NECESSARY TO COMPLETE THE ELECTRICAL SERVICES INSTALLATION SUCH THAT IT IS HANDED OVER COMPLETE, OPERATIONAL AND FIT FOR THE INTENDED USE.

AS PART OF THE TENDER PROVIDE A PROGRAM FOR EACH OPTION INCLUDING ANY INTERRUPTIONS TO THE POWER SUPPLY AND THE DURATION OF ANY SUCH INTERRUPTION.

PRIOR TO COMMENCING WORK CONSULT SITE MANAGEMENT FOR ANY HAZARDOUS MATERIAL AND OR ASBESTOS REGISTERS AS WELL AS UNDERTAKE A THOROUGH INSPECTION OF THE SITE TO IDENTIFY ANY POTENTIAL HAZARDOUS MATERIALS, ASBESTOS AND HEALTH OR SAFETY RISKS. ADVISE THE CONTRACTOR OF ANY POTENTIAL HAZARDOUS MATERIALS, ASBESTOS AND HEALTH OR SAFETY RISKS IF IDENTIFIED AND DO NOT COMMENCE WORK UNTIL AN APPROPRIATE MANAGEMENT PLAN HAS BEEN DEVELOPED AND AGREED TO BY ALL PARTIES.

IDENTIFY ALL EXISTING UNDERGROUND SERVICES WITHIN THE SCOPE OF THE WORKS PRIOR TO UNDERTAKING ANY EXCAVATION, SUPPLY ALL LABOUR, MATERIALS, EQUIPMENT, AND ALL OTHER ITEMS, WHETHER MENTIONED IN DETAIL OR NOT, REQUIRED FOR THE SATISFACTORY COMPLETION OF THE ELECTRICAL SERVICES INSTALLATION, LEAVING IN FULL WORKING ORDER TO THE SATISFACTION OF THE PROJECT MANAGER.

ACCEPT FULL RESPONSIBILITY FOR LIASING, ARRANGING AND CO-ORDINATION OF ALL WORKS THAT HAVE AN EFFECT ON OR WILL BE AFFECTED BY THE ELECTRICAL SERVICES.

REFER TO THE EQUIPMENT SCHEDULE FOR ADDITIONAL REQUIREMENTS.

2. WORKMANSHIP

ENSURE THAT THE ELECTRICAL WORK IS PERFORMED BY THE HOLDER OF A CURRENT ELECTRICAL SUB CONTRACTOR LICENSE AND THE SERVICES COVERED BY THE ACMA IS PERFORMED BY THE HOLDER OF THE APPROPRIATE CURRENT ACMA LICENSE. ENSURE THE INSTALLATION AND ALL COMPONENTS, FIXTURES, FITTINGS, OUTLETS AND CABLES ARE SUPPLIED AND INSTALLED TO A HIGH STANDARD THROUGHOUT, AND INSTALLED IN A NEAT AND TRADESMAN LIKE MANNER, TO THE CURRENT INDUSTRY STANDARDS. ENSURE ALL MATERIALS AND COMPONENTS OF A SIMILAR TYPE ARE OF THE SAME MANUFACTURER AND INSTALLED IN A UNIFORM MANNER.

IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE INSTALLATION IS FIT FOR PURPOSE AND IS PROVIDED AS A COMPLETE WORKING INSTALLATION. IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL COMPONENTS, FITTINGS, FIXTURES, SYSTEMS, PROGRAMMING ETC IRRESPECTIVE OF THE LEVEL DETAILED IN THE DOCUMENTS SUCH THAT THE INSTALLATION IS PROVIDED AS A COMPLETE WORKING INSTALLATION.

CONCEAL ALL WIRING AND CONDUITS. EXPOSED CABLING OR CONDUITS ARE GENERALLY NOT ACCEPTABLE. IT IS NOTED THAT CHASING AND REINSTATEMENT WILL BE REQUIRED. ENSURE ALL COMPONENTS, EQUIPMENT AND MATERIALS SUPPLIED ARE NEW, UNUSED, DESIGNED AND SELECTED TO ENSURE SATISFACTORY OPERATION UNDER VARYING ATMOSPHERIC, CLIMATIC, HUMID TROPICAL CONDITIONS WITHOUT DISTORTION AND DETERIORATION IN ANY PART AFFECTING EFFICIENCY AND RELIABILITY OF THE SYSTEMS. DESIGN AND SELECT ALL EQUIPMENT TO PROVIDE THE NECESSARY SAFETY TO HUMAN LIFE AND PROPERTY DURING OPERATION AND MAINTENANCE WITH PARTICULAR ATTENTION GIVEN TO ELECTRICAL SAFETY AND SEGREGATION PRECAUTIONS.

CHECK THE FINISHED PAINTWORK AROUND THE AREA OF EACH INSTALLATION AND TOUCH UP ALL DAMAGED PARTS AND FINISHES AFTER THE INSTALLATION OF THE ELECTRICAL SERVICES.

ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE BUILDER'S PROGRAM. ENSURE ALL FINAL LOCATIONS OF OUTLETS AND FITTINGS ARE CO-ORDINATED ONSITE WITH THE ARCHITECT AND ALL OTHER SERVICES, TO THE APPROVAL OF THE PROJECT MANAGER. ALLOW TO CO-ORDINATE THE FINAL LOCATION OF ALL EQUIPMENT, FITTINGS, & OUTLETS, SUCH THAT THEY ARE INSTALLED IN ACCORDANCE WITH THE AS3000 RESTRICTED ZONES, AND ARE NOT COVERED INAPPROPRIATELY.

ENSURE THAT ALL METAL SURFACES ARE SUITABLY PROTECTED AGAINST CORROSION, AND THAT ALL PLASTIC MATERIALS ARE UV STABILISED.

PROVIDE ALL MATERIALS AS NEW, AND OF THE HIGHEST CLASS AVAILABLE FOR THEIR RESPECTIVE TYPES. ENSURE ALL ASPECTS OF THE WORK ARE OF A HIGH STANDARD THROUGHOUT, AND INSTALLED IN A NEAT AND TRADESMAN LIKE MANNER, TO THE CURRENT INDUSTRY STANDARDS.

3. STANDARDS

IRRESPECTIVE OF INFORMATION CONTAINED IN THE ELECTRICAL SERVICES DOCUMENTS OR IN INSTRUCTIONS, IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL ELECTRICAL SERVICES WORKS ARE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING. REFER ANY DISCREPANCIES BETWEEN THE REQUIREMENTS OF THE FOLLOWING AND/OR THE ELECTRICAL SERVICES DOCUMENTS AND INSTRUCTIONS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE PLACING OF ORDERS, FABRICATION OR INSTALLATION OF THE ITEMS/METHODS IN DISCREPANCY.  
- NCC BUILDING CODE OF AUSTRALIA.  
- ELECTRICITY ACT.  
- ELECTRICAL SAFETY ACT.  
- ENERGEX REQUIREMENTS.  
- THE QUEENSLAND ELECTRICITY CONNECTION MANUAL V4 (OECM).  
- NATIONAL METERING INSTALLATION REGULATIONS (NMIR).  
- AS/NZS3000.  
- AS3008.  
- WORKPLACE HEALTH AND SAFETY ACT.  
- TELECOMMUNICATIONS ACT.  
- ACMA REQUIREMENTS.  
- QUEENSLAND FIRE DEPARTMENT.  
- AS1670.1 2025.

NOTES

4. AUTHORITIES

ENSURE ALL OF THE ELECTRICAL SERVICES COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AUTHORITIES HAVING JURISDICTION OVER THE SITE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:  
- ACMA.  
- LOCAL COUNCIL.  
- LOCAL SUPPLY AUTHORITY.  
- STATE GOVERNMENT DEPARTMENT OF ENVIRONMENT AND HERITAGE.  
- QLD GOVERNMENT, DIVISION OF WORKPLACE, HEALTH AND SAFETY.  
- QLD FIRE DEPARTMENT.

5. POWER DISTRIBUTION

THE POWER DISTRIBUTION WORKS ARE TO INCLUDE THOUGH NOT BE LIMITED TO THE FOLLOWING:

- ALL SWITCHGEAR TO BE OF THE SAME MANUFACTURER FROM NHP/ TERASAKI OR SCHNEIDER.
- PROVIDE A NEW MSB METER PANEL ADJACENT THE EXISTING 1,000 KVA ENERGEX PADMOUNT SUBSTATION.
- RELOCATE THE EXISTING 1,650 KVA STANDBY GENERATOR AND PROVIDE NEW GENERATOR MAINS TO THE NEW MDB-1.
- PROVIDE A NEW MDB-1 WITH A BUMPLESS GENERATOR TRANSFER FACILITY. THE NEW MDB-1 IS TO HAVE FACILITY TO BE EXPANDED TO ACCOMMODATE A FUTURE SECOND ENERGEX SUPPLY FROM A FUTURE SECOND ENERGEX PADMOUNT SUBSTATION. PROVIDE NEW SUBMAINS FROM THE NEW MSB METER PANEL TO THE NEW MDB-2.
- OBTAIN ENERGEX'S APPROVAL OF THE BUMPLESS TRANSFER AND COMMISSION THE GENERATOR / TRANSFER ACCORDINGLY.
- EXISTING SOLAR TO BE ADVISED - UPGRADE THE DISTRIBUTION SECTION OF MDB-2 TO INCLUDE A SECOND 630 AMP 12 POLE CHASSIS. MOUNT THE SECOND CHASSIS TO THE TOP OF THE EXISTING CHASSIS AND REPLACE THE ESCUTCHEON ACCORDINGLY.
- DISCONNECT THE EXISTING BASEMENT MDB-2 FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING GAMING ROOM MEZZANINE DISTRIBUTION BOARD DB-G FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING BASEMENT DISTRIBUTION BOARD DB-K FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING DISTRIBUTION BOARD DB-FR FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE EXISTING SPARE 160 AMP MCCB IN MDB-2.
- DISCONNECT THE EXISTING DISTRIBUTION BOARD DB-4 FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE UPGRADED MDB-2.
- DISCONNECT THE EXISTING DRESSING ROOM DISTRIBUTION BOARD DB-DR FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE UPGRADED MDB-2.
- DISCONNECT THE EXISTING DRESSING ROOM DISTRIBUTION BOARD DB-B FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE UPGRADED MDB-2.
- DISCONNECT THE EXISTING ROOF MOUNTED GAMING MECHANICAL SERVICES SWITCHBOARD MSSB1 FROM THE EXISTING MDB-B AND RESUPPLY IT FROM THE NEW MDB-1.
- REMOVE THE EXISTING MDB-B AND ALL ASSOCIATED CABLING.
- DISCONNECT THE EXISTING GAMING ROOM MEZZANINE DISTRIBUTION BOARD DB-P FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING BASEMENT DISTRIBUTION BOARD DB-S FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING ROOF MOUNTED KITCHEN MECHANICAL SERVICES SWITCHBOARD MSSB2 FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING ROOF MOUNTED SPORTS BAR MECHANICAL SERVICES SWITCHBOARD MSSB3 FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING LIFT 1 FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING LIFT 2 FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING FIP FROM THE EXISTING MDB-A AND RESUPPLY IT FROM THE NEW MDB-1.
- DISCONNECT THE EXISTING CARPARK DIGITAL SIGN DISTRIBUTION BOARD DB-DS FROM THE EXISTING MSB AND RESUPPLY IT FROM THE NEW MDB-1 PROVIDE A NEW SUPPLY FROM THE NEW MDB-1 TO A NEW DISTRIBUTION BOARD DB-M IN THE MDB-1 SWITCHROOM.
- PROVIDE A NEW SUPPLY FROM THE NEW MDB-1 TO A NEW DISTRIBUTION BOARD DB-T IN THE NEW SUBTERRANEAN TANK ROOM.
- REMOVE THE EXISTING MDB-A AND ALL ASSOCIATED CABLING.
- REMOVE THE EXISTING MSB AND ALL ASSOCIATED CABLING.
- PROVIDE ALL NECESSARY CIRCUITS AND OUTLETS.

WITHIN ONE WEEK OF BEING AWARDED THE CONTRACT, UNDERTAKE AN INVESTIGATION ON SITE AND PROVIDE THE FOLLOWING INFORMATION:  
- THE SOURCE AND RATING IN AMPS OF THE SUPPLY TO DB-A.  
- THE DETAILS OF THE EXISTING MDB-2 MAIN SWITCH INCLUDING THE TRIP UNIT RANGE SETTINGS.  
- THE RATING IN AMPS OF THE EXISTING MDB-2 DISTRIBUTION CHASSIS.  
- THE FAULT CURRENT RATING OF THE EXISTING MDB-2.

DB-A TO BE ADVISED

DB-ED TO BE ADVISED

THE SUPPLY TO THE CLUB MUST BE MAINTAINED AT ALL TIMES FROM 9.00AM UNTIL 4.30AM. ANY INTERRUPTION TO ANY POWER SUPPLY MUST BE LIMITED BETWEEN 4.30AM AND 9.00AM WITH THE CLUB NOTIFIED IN WRITING 2 WEEK PRIOR. THE ENERGEX COSTS ASSOCIATED WITH MEETING THIS TIME FRAME CAN BE PASSED ONTO THE CLUB FOR PAYMENT BY THE CLUB. ENSURE ALL THREE PHASE CIRCUITS ARE PROVIDED WITH CORRECT PHASE ROTATION.

PRIOR TO THE COMMENCEMENT OF DEMOLITION / EXCAVATION DB-DS MUST BE PROVIDED WITH AN ALTERNATIVE SUPPLY AS THE EXISTING UNDERGROUND SUBMAIN FROM THE EXISTING SITE MSB RUNS THROUGH THE LOCATION OF THE PROPOSED SUBTERRANEAN TANK ROOM. ENSURE ALL OUTLETS AND ISOLATORS ARE POSITIONED SUCH THAT THEY ARE NOT COVERED BY THE EQUIPMENT.

NOTES

6. SWITCHBOARDS

PROVIDE THE NEW SITE MSB / METER PANEL AS / WITH:  
- SHOP DRAWINGS FOR APPROVAL.  
- PLINTH MOUNTED.  
- 316 STAINLESS STEEL.  
- LIGHT GREY ENCLOSURE.  
- WHITE ESCUTCHEONS WITH LIFT OFF HINGES AND 1/4 TURN LATCHES TO SECURE THE ESCUTCHEON THAT REMAIN PART OF THE ESCUTCHEON.  
- DOORS ON ALL CUBICLES.  
- IP66.  
- BOTTOM ENTRY ONLY. THE TOP OF THE SWITCHBOARD IS TO BE WELDED SEALED WITHOUT ANY PENETRATIONS.  
- SUN / RAIN HOOD.  
- DESIGN THE SWITCHBOARD TO OPERATE IN 40 DEG AMBIENT IN DIRECT SUMMER SUNLIGHT.  
- ENERGEX PADLOCK ON THE METER CUBICAL.  
- TWO ENERGEX PADLOCK KEYS AND TWO 92268 KEYS.  
- FORM 2B.  
- ENSURE ALL CABLE CONNECTIONS CAN BE THERMALLY SCANNED WITHOUT ISOLATING THE POWER.  
- EACH CUBICAL CONTAINING SWITCHGEAR IS TO CONTAIN AN AUTOMATIC TEMPERATURE CONTROLLED ANTI CONDENSATION HEATER.  
- RETAIL METERING.  
- 600 WIDE X 900 HIGH EMPTY COMPARTMENT WITH A REMOVABLE WHITE MOUNTING PAN FOR USE BY THE SOLAR INSTALLER.  
- 600 WIDE X 900 HIGH EMPTY COMPARTMENT WITH A REMOVABLE WHITE MOUNTING PAN FOR USE BY THE GENERATOR CONTROLLER INSTALLER.  
- THE MAINS SUPPLY CIRCUIT BREAKER AND EACH OF THE GENERATOR SUPPLY CIRCUIT BREAKERS ARE TO BE PROVIDED WITH AUXILIARY INPUTS TO ALLOW CONTROL BY THE GENERATOR CONTROL SYSTEM AND THE SOLAR PROTECTION RELAY. THE CIRCUIT BREAKERS ARE TO BE CONTROLLED VIA INTEGRATED MOTOR CONTROL UNITS.  
- ALL CIRCUIT BREAKER MOTOR CONTROL UNITS ARE TO BE 24 VOLT.  
- PROVIDE THE MSB WITH A UPS AND POWER SUPPLY TO PROVIDE 200 WATTS AT 24 VOLT DC FOR SIXTY SECONDS TO POWER THE GENERATOR CONTROLLERS.  
- REFER TO THE GENERATOR CONTROL SECTION FOR THE CONTROL REQUIREMENTS.

PROVIDE THE NEW BUILDING MSB / MDB-1 AS / WITH:  
- SHOP DRAWINGS FOR APPROVAL. THE SHOP DRAWINGS ARE TO INCLUDE THE FUTURE EXPANSION OF THE MDB-1 AS DETAILED ON THE SCHEMATIC.  
- PLINTH MOUNTED.  
- MILD STEEL.  
- LIGHT GREY ENCLOSURE.  
- WHITE ESCUTCHEONS WITH LIFT OFF HINGES AND 1/4 TURN LATCHES TO SECURE THE ESCUTCHEON THAT REMAIN PART OF THE ESCUTCHEON.  
- DOORS ARE NOT REQUIRED.  
- IP42.  
- BOTTOM ENTRY ONLY. THE TOP OF THE SWITCHBOARD IS TO BE WELDED SEALED WITHOUT ANY PENETRATIONS.  
- FORM AS PER THE SCHEMATIC  
- ENSURE ALL CABLE CONNECTIONS CAN BE THERMALLY SCANNED WITHOUT ISOLATING THE POWER.  
- EACH CUBICAL CONTAINING SWITCHGEAR IS TO CONTAIN AN AUTOMATIC TEMPERATURE CONTROLLED ANTI CONDENSATION HEATER.  
- THE MAINS SUPPLY CIRCUIT BREAKER AND THE GENERATOR SUPPLY CIRCUIT BREAKERS ARE TO BE PROVIDED WITH AUXILIARY INPUTS TO ALLOW CONTROL BY THE GENERATOR CONTROL SYSTEM AND THE SOLAR PROTECTION RELAY. THE CIRCUIT BREAKERS ARE TO BE CONTROLLED VIA INTEGRATED MOTOR CONTROL UNITS.  
- ALL CIRCUIT BREAKER MOTOR CONTROL UNITS ARE TO BE 24 VOLT.  
- PROVIDE THE MDB-1 WITH A UPS AND POWER SUPPLY TO PROVIDE 200 WATTS AT 24 VOLT DC FOR SIXTY SECONDS TO POWER THE GENERATOR CONTROLLERS.  
- REFER TO THE GENERATOR CONTROL SECTION FOR THE CONTROL REQUIREMENTS.  
- ALL COMPONENTS ARE TO BE LABELLED WITH NON-STICK LABELS.

PROVIDE DISTRIBUTION BOARDS DB-M AND DB-T AS FOLLOWS:

- WALL MOUNTED.
- IP44 FORM 2B1.
- LIGHT GREY ENCLOSURE WHITE ESCUTCHEON.
- 3 POINT LOCKABLE HANDLES ON ALL DOORS WITH 92268 KEYING.
- LIFT OFF HINGES ON ALL DOORS AND ESCUTCHEONS.
- 1/4 TURN LATCHES AND D HANDLES ON ALL ESCUTCHEONS.
- PROVIDE SHOP DRAWINGS FOR APPROVAL.
- ALL COMPONENTS ARE TO BE LABELLED WITH NON-STICK LABELS.

7. CABLE ACCESS

PROVIDE ALL CABLE ACCESS NECESSARY TO COMPLETE THE ELECTRICAL INSTALLATION INCLUDING THOUGH NOT LIMITED TO:  
- UNDERGROUND PITS AND CONDUITS.  
- CABLE TRAYS AND CABLE LADDERS.  
- MODIFY THE EXISTING ENERGEX PADMOUNT SUBSTATION CONCRETE AFTER OBTAINING ENERGEX'S APPROVAL TO ALLOW THE NEW CONSUMERS MAIN TO BE INSTALLED. PROVIDE ALL NECESSARY ENERGEX APPROVED OBSERVERS / SUPERVISION. REINSTATE THE CONCRETE TO ENERGEX'S APPROVAL.  
- BUILDING PENETRATIONS INCLUDING MAINTAINING THE MDB-1 ROOM 2 HOUR FIRE RATING.

THE BUILDING WORKS ARE TO INCLUDE THE MDB-1 PIT1 WHICH IS TO BE CONSTRUCTED INSITU WITH THE FOLLOWING FEATURES.  
- THE SAME LENGTH AND WIDTH AS THE MDB-1 ROOM.  
- GALVANIZED STEEL STRUCTURE MECHANICALLY FIXED TO THE PIT WALLS TO SUPPORT THE FRONT OF THE NEW MAIN SWITCHBOARD AND THE PIT LIDS.  
- 25MM THICK MARINE PLY PIT LID C/W NON SLIP FINISH IN SECTIONS NO MORE THAN 25KG PER SECTION. DO NOT MECHANICALLY FIX THE SECTIONS OF LID IN PLACE. PROVIDE EACH SECTION WITH A 30MM DIA HOLE TO ALLOW THE SECTION TO BE LIFTED.  
- AN AUTOMATIC SUMP PUMP THAT DRAINS TO STORM WATER.  
- PROVIDE FIBREGLASS SUPPORTS ON THE PIT FLOOR TO SUPPORT THE CABLING 50MM OFF THE PIT FLOOR.  
- SEAL ALL CONDUITS TO THE PIT TO PREVENT EARTH AND MOISTURE FROM ENTERING THE PIT AROUND THE OUTSIDE OF THE CONDUITS.

PROVIDE ALL CONDUITS ENTERING A PIT WITH BELL MOUTHS OR CUT THE CONDUITS OFF FLUSH WITH THE PIT WALL AND FILE THE CONDUIT EDGES SUCH THAT THEY ARE ROUNDED WITH NO SHARP EDGES OR BURRS.

PROVIDE NEW UNDERGROUND CONSUMERS MAINS CONDUITS FROM THE LV CUBICAL IN THE ENERGEX PADMOUNT TO THE NEW MSB PIT. COORDINATE THE CONDUITS WITH ENERGEX. PROVIDE NEW UNDERGROUND GENERATOR MAINS AND CONTROLS CONDUITS FROM EACH GENERATOR TO THE NEW MSB PIT. COORDINATE THE GENERATOR TURN UP POSITIONS WITH THE GENERATOR SUPPLIER. PROVIDE NEW UNDERGROUND SUB MAINS CONDUITS FROM THE NEW MSB PIT TO THE EXISTING MDB-N. IN ADDITION TO THE POWER CONDUITS PROVIDED 2 X 50 DIA COMMUNICATIONS CONDUITS C/W DRAW WIRES FROM THE NEW MSB PIT TO THE EXISTING MDB-N.

PROVIDE POWER AND COMMUNICATIONS CABLE TRAYS WITHIN THE SUBTERRANEAN TANK ROOM. PROVIDE NEW AND OR MODIFY THE EXISTING BASEMENT CABLE LADDERS TO ACCOMMODATE THE NEW SUBMAINS. COORDINATE ALL CABLE TRAYS / LADDERS WITH THE STRUCTURE AND OTHER SERVICES. SUBMIT A PLAN OF THE PROPOSED CABLE TRY / LADDER ROUTES FOR APPROVAL PRIOR TO CONSTRUCTION.

NOTES

8. GENERATOR

RELOCATE THE EXISTING 1,650 KVA GENERATOR INCLUDING THE CONSTRUCTION OF A NEW REINFORCED CONCRETE PLINTH.

UPGRADE THE GENERATOR CONTROL SYSTEM WITH AN ENERGEX APPROVED BUMPLESS TRANSFER SYNCHRONISING CONTROL SYSTEM VIA THE MDB-1 MAINS SUPPLY AND GENERATOR MAINS SUPPLY CIRCUIT BREAKERS.

THE CIRCUIT BREAKERS ARE TO BE CONTROLLED VIA INTEGRATED MOTOR CONTROL UNITS.

UPGRADE THE GENERATOR CONTROL SYSTEM TO A DEEPSA ELECTRONICS DES8610 MK11 CONTROL MODULE INTERFACED TO THE GENERATOR TO CONTROL AND MONITOR THE GENERATOR SYSTEMS. PROVIDE MDB-1 WITH A DEEP SEA ELECTRONICS DES8610 MK11 CONTROL MODULE INTERFACED TO THE GENERATOR CONTROLLER TO PROVIDE A MIMIC DISPLAY OF THE GENERATOR CONTROLLER. THE MDB-1 CONTROLLER IS TO BE PROVIDED WITH A KEY ISOLATION FACILITY TO DISABLE THE INTERFACE.

CONFIGURE THE GENERATOR CONTROL SYSTEM AND MDB-1 CHANGE OVER FACILITY TO THE FOLLOWING OPERATION:

UPON THE SITE DEMAND REACHING 1200 AMPS:

A. UPON THE SITE DEMAND REACHING 1200 AMPS, THE GENERATOR CONTROL SYSTEM IS TO COMMENCE A 15 SECOND COUNTDOWN.

B. IF THE SITE DEMAND HAS NOT BEEN DROPPED BELOW 1200 AMPS THE GENERATOR IS TO AUTOMATICALLY START AND COMMENCE THE AUTOMATIC MAINS SYNCHRONISING PROCESS.

C. THIRTY SECONDS AFTER STARTING THE GENERATOR IS TO BE SYNCHRONISED WITH THE MAINS SUPPLY AND THE SITES LOAD TRANSFERRED TO THE GENERATOR AND THE ENERGEX SUPPLY DISCONNECTED.

D. ONCE THE SITE DEMAND HAS DROPPED AND REMAINED BELOW 1000 AMPS FOR 30 MINUTES AND THE MAINS SUPPLY IS AVAILABLE THE GENERATOR IS TO BE SYNCHRONISED WITH THE MAINS SUPPLY AND THE SITES LOAD TRANSFERRED TO THE ENERGEX SUPPLY AND THE GENERATOR DISCONNECTED. THE GENERATOR IS TO CONTINUE RUNNING FOR A FURTHER 10 MINUTES BEFORE AUTOMATICALLY SHUTTING DOWN.

IF THE GENERATOR IS NOT RUNNING AND THE MAINS FAIL THE GENERATOR CONTROL SYSTEM IS TO OPERATE AS FOLLOWS:

A. UPON MAINS FAILURE, THE GENERATOR CONTROL SYSTEM IS TO COMMENCE A 15 SECOND COUNTDOWN.

B. ONCE THE SUPPLY POWER HAS NOT BEEN AVAILABLE FOR 15 SECONDS THE MAINS SUPPLY IS TO BE ISOLATED AND THE GENERATOR IS TO AUTOMATICALLY START. AFTER RUNNING FOR 15 SECONDS THE LOAD IS TO BE CONNECTED TO THE GENERATOR.

C. ONCE THE MAINS POWER HAS RETURNED UNINTERRUPTED FOR 5 MINUTES AND THE SITES DEMAND HAS REMAINED BELOW 1200 AMPS FOR 30 MINUTES THE GENERATOR IS TO BE SYNCHRONISED WITH THE MAINS SUPPLY AND THE SITES LOAD TRANSFERRED TO THE ENERGEX SUPPLY AND THE GENERATOR DISCONNECTED. THE GENERATOR IS TO CONTINUE RUNNING FOR A FURTHER 10 MINUTES BEFORE AUTOMATICALLY SHUTTING DOWN. SHOULD THE MAIN SUPPLY STATUS CHANGE DURING ANY OF THE TIMED DELAYS, THE TIMED DELAY IS TO RECOMMENCE. IF THE MAINS SUPPLY RETURNS DURING THE INITIAL 15 SECOND TIMED DELAY (STEP A) THE GENERATOR IS TO START AND AUTOMATICALLY STEP INTO (STEP C) RUN ON BEFORE AUTOMATICALLY SHUTTING DOWN. IF DURING THIS PERIOD THE SUPPLY AUTHORITY SUPPLY FAILS THE INITIAL (STEP A) 15 SECOND COUNTDOWN IS TO RECOMMENCE.

PROVIDE FACILITY TO PROVIDE THE SITES BUILDING MANAGEMENT SYSTEM WITH THE FOLLOWING SEPARATE ALARMS FROM EACH GENERATOR

- GENERATOR OPERATION STATUS.
- LOW BATTERY VOLTAGE.
- CONTROL IS NOT IN AUTO MODE.
- LOW FUEL LEVEL IN THE INTEGRAL GENERATOR SET FUEL TANK.
- EXCESS FUEL IN THE GENERATOR DRIP TRAY.
- COMMON ENGINE FAULT. INCLUDING:
  - LOW OIL PRESSURE.
  - HIGH WATER TEMPERATURE.
  - OVER SPEED.

9. BUILDING WORKS

THE FOLLOWING WILL BE PROVIDED AS PART OF THE BUILDING WORKS:

- GENERATOR SUPPORT SLAB
- MSB METER PANEL SUPPORT SLAB.
- THE PIT 1 SUPPORT SYSTEM AND LID SYSTEM.
- THE GENERATOR SLAB.
- REINSTATEMENT OF ALL EXCAVATIONS.

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