

## NOTES

### 1. EXTENT OF WORKS

THE ELECTRICAL SERVICES IS A DESIGN AND CONSTRUCT SUB-CONTRACT AND INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

- DESIGN, DOCUMENTATION AND CERTIFICATION OF THE ELECTRICAL SERVICES.
- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE ELECTRICAL SERVICES.
- CO-ORDINATION.
- INSPECTIONS.
- TESTING AND COMMISSIONING.
- MAINTENANCE.
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.
- POWER DISTRIBUTION.
- LIGHTING.
- COMMUNICATIONS CABLING.
- MODIFYING THE EXISTING ELECTRICAL INSTALLATION TO ACCOMMODATE THE WORKS.
- MAINTAINING THE ELECTRICAL SERVICES TO EXISTING INSTALLATION DURING THE WORKS.
- 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.

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.

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 ALL WORKS THAT HAVE AN EFFECT ON OR WILL BE AFFECTED BY THE ELECTRICAL SERVICES.

REMOVE ALL OF THE EXISTING ELECTRICAL SERVICES THAT BECOME REDUNDANT DUE TO THE WORKS.

### 2. WORKMANSHIP

ENSURE THAT THE WORK IS PERFORMED BY THE HOLDER OF A CURRENT ELECTRICAL SUB CONTRACTOR 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 ON SITE 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.
- AS/NZS3000.
- AS3008.
- AS1670.
- WORKPLACE HEALTH AND SAFETY ACT.
- TELECOMMUNICATIONS ACT.
- ACMA REQUIREMENTS.

### 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 AND RESCUE AUTHORITY.

### 5. CABLES

UNLESS OTHERWISE SPECIFIED, INSTALL AND TERMINATE CABLES IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS. DETERMINE THE FINAL ROUTES TO SUIT THE BUILDING STRUCTURE AND SITE CONDITIONS. UNLESS NOTED OTHERWISE, PROVIDE ALL 240 VOLT POWER AND LIGHTING WIRING AS 2.5mm<sup>2</sup> TWIN & EARTH STRANDED COPPER CONDUCTORS, PVC INSULATED 0.6/1kV V75 GRADE TO AS3174, PROTECTED BY A 20 AMP CIRCUIT BREAKER. ALL CONDUIT AND FITTINGS TO BE RIGID UPVC TO AS2053, UNLESS NOTED OTHERWISE.

## NOTES

### 6. POWER DISTRIBUTION

THE POWER DISTRIBUTION COMPONENT OF THIS CONTRACT INCLUDES THE UPGRADING OF THE EXISTING DISTRIBUTION ENERGEX SUPPLY TO A NEW MAIN SWITCHBOARD. THE NEW BUILDING IS TO BE PROVIDED WITH A NEW DISTRIBUTION BOARD DB-3 TO ACCOMMODATE THE CIRCUITS WITHIN THE NEW BUILDING 3. THE MSB ON THE NEW BUILDING IS TO BE SUPPLIED FROM THE NEW MSB. THE EXISTING BUILDING 1 AND BUILDING 3 DISTRIBUTION BOARDS ARE TO BE SUPPLIED FROM THE NEW MSB. ALL CABLING BETWEEN THE BUILDING MUST BE IN UNDERGROUND CONDUIT. PROVIDE THE NEW BUILDING WITH A 30KW PV SYSTEM.

THE POWER DISTRIBUTION COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- ARRANGING AN UPGRADED POWER SUPPLY WITH ENERGEX.
- UPGRADED ENERGEX POWER SUPPLY.
- CONSUMERS MAINS.
- MAIN SWITCHBOARD.
- NEW SUBMAINS TO THE EXISTING BUILDING 1 AND BUILDING 3 DISTRIBUTION BOARDS.
- DISTRIBUTION BOARD DB-3.
- EARTHING.
- MODIFICATION OF THE EXISTING CIRCUITS AS NECESSARY TO ACCOMMODATE THE WORKS.
- CIRCUITS.
- 30KW PV SYSTEM.
- ISOLATORS AND OUTLETS.
- TESTING AND COMMISSIONING.

ANY INTERRUPTIONS TO THE POWER SUPPLY MUST BE LIMITED TO LESS THAN FOUR HOURS BETWEEN 11.00PM AND 6.00AM AND THE OPERATOR MUST BE PROVIDED WITH FOUR WEEKS NOTICE PRIOR TO THE INTERRUPTION.

### 7. LIGHTING

ALL OF THE LIGHT FITTINGS, AND ACCESSORIES ARE TO BE PROVIDED AS PART OF THIS CONTRACT. THE LIGHTING COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- LIGHTING.
- LIGHT FITTINGS AND ACCESSORIES.
- EARTHING OF THE LIGHTING INSTALLATION.
- LIGHTING CONTROL.
- EMERGENCY AND EXIT LIGHTING.
- LIGHTING SUBCIRCUITS.
- TESTING AND COMMISSIONING.
- MODIFICATION OF THE EXISTING LIGHTING AS NECESSARY TO ACCOMMODATE THE WORKS.

PROVIDE A SINGLE POINT EMERGENCY LIGHTING SYSTEM THAT COMPLIES WITH THE LATEST ISSUE OF ALL PARTS AS2293 AND THE RELEVANT PARTS OF THE NCC BCA. INSTALL EMERGENCY LIGHT FITTINGS NOMINATED AS MAINTAINED WITH THE LAMP PERMANENTLY ON SUPPLIED VIA AN UNSWITCHED ACTIVE MAINS SUPPLY WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE, THE LAMP IS TO REMAIN ON SUPPLIED BY THE EMERGENCY PACK. SINGLE LAMP MAINTAINED EMERGENCY LIGHTS ARE NOT SWITCHED WITH THE LOCAL GENERAL AREA LIGHTING. (THE LAMP IS ALWAYS ON.)

INSTALL EMERGENCY LIGHT FITTINGS NOMINATED AS NON-MAINTAINED AS FOLLOWS:

- IF THE FITTING IS NOT BEING SWITCHED, THE LAMP IS TO REMAIN OFF WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE THE LAMP IS TO BE SWITCHED ON SUPPLIED BY THE EMERGENCY PACK. UNSWITCHED SINGLE LAMP NON-MAINTAINED EMERGENCY LIGHTS ARE NOT SWITCHED WITH THE LOCAL GENERAL AREA LIGHTING. (THE LAMP IS ON ONLY WHEN THE MAINS SUPPLY IS NOT AVAILABLE.)
- IF THE FITTING IS BEING SWITCHED, THE LAMP IS TO BE SUPPLIED AND CONTROLLED WITH THE LOCAL GENERAL AREA LIGHTING WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE THE LAMP IS TO BE SWITCHED ON, SUPPLIED BY THE EMERGENCY PACK. (THE LAMP IS ON WHEN TURNED ON WITH THE LOCAL GENERAL LIGHTING OR THE MAIN SUPPLY IS NOT AVAILABLE.)

INSTALL EMERGENCY LIGHTS SUCH THAT THE STATUS INDICATOR L.E.D. IS CLEARLY VISIBLE AND THE TEST BUTTONS ARE READILY ACCESSIBLE. LABEL EACH CIRCUIT BREAKER WHICH CONTROLS THE UNSWITCHED ACTIVE TO EXIT LIGHTS WITH A LABEL FIXED ADJACENT; ENGRAVED PLASTIC LAMINATE, GREEN BACKGROUND WITH WHITE CHARACTERS: -

WARNING  
INTERRUPTING SUPPLY WILL DISCHARGE  
EMERGENCY LIGHTING BATTERIES

PROVIDE WRITTEN EVIDENCE OF THE INITIAL COMMISSIONING AND TESTING AND TESTING FOR THE DURATION OF THE MAINTENANCE PERIOD IN ACCORDANCE WITH AS 2293.2.

THIS EVIDENCE IS TO BE IN THE FORM OF A LOG BOOK SIMILAR TO THE GENERAL LIGHTING SERVICE PTY LTD "EMERGENCY LIGHTING MAINTENANCE LOG BOOK AND MANUAL" WHICH IS TO BE PROVIDED BY THE ELECTRICAL SUB-CONTRACTOR AND HAVE ALL ENTRIES FULLY COMPLETED AND BE PRESENTED FOR INSPECTION AT PRACTICAL COMPLETION. THE LOG BOOK IS TO BE RETAINED BY THE ELECTRICAL SUB-CONTRACTOR FOR THE DURATION OF THE MAINTENANCE PERIOD, AND THE SIX MONTHLY TEST AND MAINTENANCE RESULTS ENTERED. THE LOG BOOK IS TO BE PRESENTED FOR APPROVAL AT FINAL COMPLETION (EXPIRY OF THE MAINTENANCE PERIOD) AND WILL BE FORWARDED TO THE OPERATOR FOR THEIR USE.

PROVIDE MAINTENANCE OF THE EMERGENCY AND EXIT LIGHTING INSTALLATION INCLUDING RECORDS IN ACCORDANCE WITH THE LATEST ISSUE OF ALL PARTS AS2293 AND THE RELEVANT PARTS OF THE NCC BCA. PROVIDE THE EMERGENCY LIGHTING SYSTEM WITH A SUPPLY SENSING AND TESTING FACILITY IN ACCORDANCE WITH AS 2293.1.

### 8. COMMUNICATIONS

THE COMMUNICATIONS CABLING COMPONENT OF THIS CONTRACT INCLUDES PROVIDING THE NEW BUILDING WITH A NEW COMMUNICATIONS RACK CR-3 TO ACCOMMODATE THE COMMUNICATIONS OUTLETS WITHIN THE NEW BUILDING 3. PROVIDE A 12 CORE SINGLE MODE FIBRE FULLY TERMINATED WITH FIBROT MOUNTED LC CONNECTORS BETWEEN THE EXISTING COMMUNICATIONS RACK IN BUILDING 1 AND THE NEW COMMUNICATIONS RACK CR-3 AS WELL AS BETWEEN THE EXISTING COMMUNICATIONS RACK IN BUILDING 1 AND THE EXISTING COMMUNICATIONS RACK CR-1. PROVIDE THE COMMUNICATIONS CABLING AS COMMSSCOPE CAT 6 UTP WITH A MANUFACTURERS PERFORMANCE WARRANTY.

THE COMMUNICATIONS CABLING COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- FIBRE CABLING.
- COMMUNICATIONS RACK CR-4.
- PATCH PANELS AS NECESSARY.
- CAT 6 COMMUNICATIONS OUTLETS AND CABLING.
- CABLE ACCESS WAYS.
- TESTING AND COMMISSIONING.
- MANUFACTURERS WARRANTY.
- MODIFICATION OF THE EXISTING COMMUNICATIONS SERVICES AS NECESSARY TO ACCOMMODATE THE WORKS.

ANY INTERRUPTIONS TO THE COMMUNICATIONS SERVICES MUST BE LIMITED TO LESS THAN FOUR HOURS BETWEEN 11.00PM AND 6.00AM AND THE OPERATOR MUST BE PROVIDED WITH FOUR WEEKS NOTICE PRIOR TO THE INTERRUPTION.

## NOTES

### 9. ABBREVIATIONS

- A - AMP CURRENT RATING
- AB - MOUNT ABOVE BENCH.
- AFFL - ABOVE FINISHED FLOOR LEVEL.
- BB - MOUNT BELOW BENCH.
- BH - MOUNT ON BULKHEAD.
- CEIL - MOUNT ON CEILING.
- CS - MOUNT WITHIN CEILING SPACE.
- C/W - COMPLETE WITH.
- MCB - MINIATURE CIRCUIT BREAKER.
- MSB - MAIN SWITCHBOARD.
- MSSB - MECHANICAL SERVICES SWITCHBOARD.
- N - NEON / LED INDICATOR WHEN ON.
- NTS - NOT TO SCALE.
- RCBO - CIRCUIT PROTECTED VIA A 30ma RESIDUAL CURRENT DEVICE INTEGRAL TO THE CIRCUIT BREAKER. 3-PHASE RCBO TO BE 4-POLE.
- SUS - MOUNT SUSPENDED FROM CEILING.
- UNO - UNLESS NOTED OTHERWISE.
- WP - WEATHERPROOF TO IP56 UNO.
- 500 - NUMBER DENOTES MOUNTING HEIGHT AFFL.

A	PRELIMINARY	24/11/2023
REV:	DESCRIPTION:	DATE:

DRAWING:  
**ELECTRICAL SERVICES  
NOTES**

SCALE: NOT TO SCALE AT A1	PROJECT NO: <b>C2806a</b>	DRAWING NO: <b>E07</b>	REVISION: <b>A</b>
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