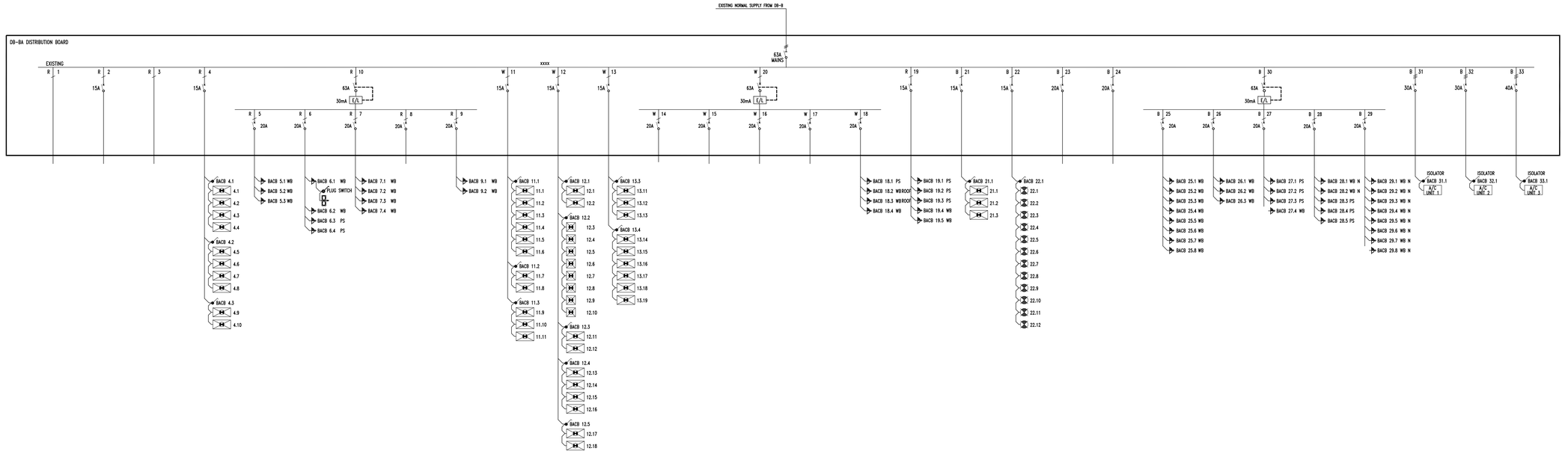
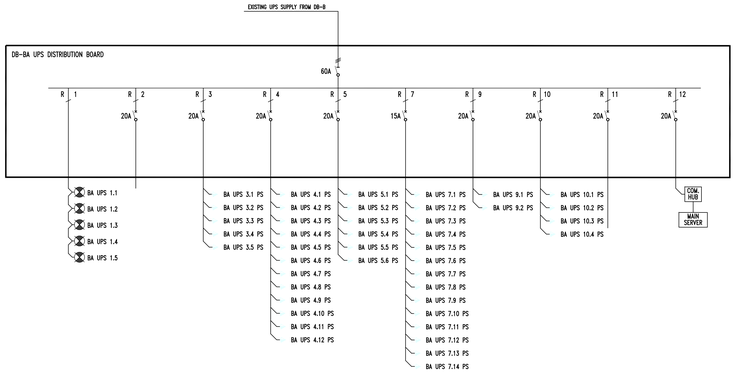
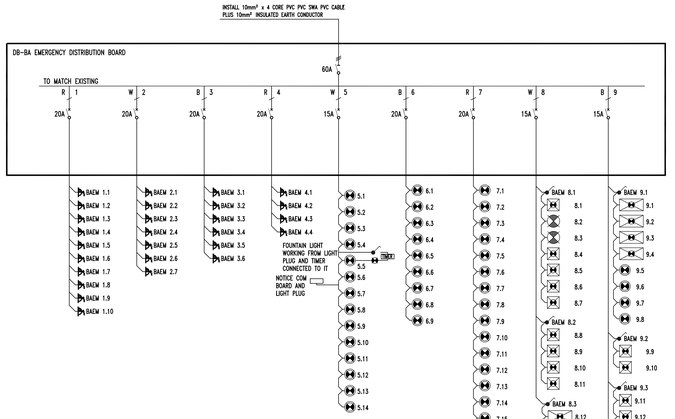
DRG. NO. 15973



WATTAGE	–	–	–	100BW	1500W	4000W	4000W		2000W	1188W	1368W	1647W		–	–	–	6000W	–	324W	432W			8000W	3000W	4000W	6000W	8000W	1000W	1000W	1000W
PHASE	–	–	–	RED	RED	RED	RED	RED	RED	WHITE	WHITE	WHITE	WHITE	–	WHITE	WHITE	WHITE	WHITE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	3 PHASE	3 PHASE	3 PHASE
CONDUCTOR SIZE mm²	–	–	–	1.5mm²	2.5mm²	2x2.5mm²	2.5mm²	2x2.5mm	2.5mm²	1.5mm²	2x2.5mm²	2x2.5mm²	2.5mm	–	2.5mm²	2.5mm²	2.5mm²	2x2.5mm²	1.5mm²	1.5mm²	1.5mm²	2.5mm²	2.5mm²	2.5mm²	2.5mm²	2.5mm²	2x2.5mm²	4mm²	4mm²	4mm²
LOCATION	SPARE	SPARE	SPARE	ROOM D101 ROOM D103 ROOM D104	KITCHEN	KITCHEN AND RECEPTION DESK	KITCHEN AND STAIRCASE PASSAGE	NOT FOUND	MEETING ROOM	ROOM D105 ROOM D106 ROOM D107	ROOM D117 ROOM D128 MEETING ROOM ROOM D125B	KITCHEN D123 MEETING ROOM	NOT FOUND	SPARE	NOR FOUND	NOT FOUND	ROOM D117	ROOM D114 ROOM D115	ROOM D115	NEW MEETING ROOM 127	NOT FOUND	NOT FOUND	PASSAGE ROOM D103	ROOM D107	ROOM D104	ROOM D105 ROOM D106	ROOM D107	OUTSIDE KITCHEN DOOR	OUTSIDE KITCHEN DOOR	OUTSIDE KITCHEN DOOR



WATTAGE	60W	–	2500W	2000W	3000W	7000W	1000W	2000W	–	–
PHASE	RED	–	RED	RED	RED	RED	RED	RED	–	RED
CONDUCTOR SIZE mm²	2.5mm²	2.5mm²	2.5mm²	4.0mm²	4.0mm²	2.5mm²	2.5mm²	2.5mm²	–	2.5mm²
LOCATION	HALLWAY LIFT	SPARE	ROOM D104 ROOM D105	ROOM D105 NEW BUILDING	ROOM D105	ROOM 115 ROOM 117	RECEPTION	ROOM D107	NOT FOUND	ROOM D105



WATTAGE	4000W	2500W	3000W	2000W	126W	81W	72W	XX	756W
PHASE	RED	WHITE	BLUE	RED	WHITE	BLUE	RED	WHITE	BLUE
CONDUCTOR SIZE mm²	2.5mm²	2.5mm²	2.5mm²	2.5mm²	1.5mm²	2.5mm²	2.5mm²	2.5mm²	2.5mm²
LOCATION	ROOM D117 ROOM D115 LECTURE HALL	ROOM D107 LECTURE HALL	ROOM D104 ROOM D105 ROOM D106	RECEPTION DESK MEETING ROOM	STAIRCASE PASSAGE	NEW BUILDING	STAIRCASE PASSAGE	MENS TOILET FIRE EXIT OFFICE HALLWAY OUTSIDE TOILET	DISABLED TOILET LADIES TOILET CLEANERS ROOM

ELECTRICAL LEGEND

DB	DISTRIBUTION BOARD WITH THREE SEPARATE COMPARTMENTS NORMAL POWER – ELECTRIC ORANGE EMERGENCY POWER – SIGNAL RED UPS POWER – SKY BLUE
	1 LEVER, 1 –WAY LIGHT SWITCH
	1 LEVER, 2–WAY LIGHT SWITCH
	2 LEVER, 1–WAY LIGHT SWITCH
	1200 x 600, 3 LAMP, 108 WATTS RECESSED SINGLE PARABOLIC FLUORESCENT LUMINAIRE
	600 x 600, 3 LAMP, 72 WATTS RECESSED SINGLE PARABOLIC FLUORESCENT LUMINAIRE
	1200mm, 1 x 36W SS FLUORESCENT LUMINAIRE
	1200mm, 2 x 36W SS FLUORESCENT LUMINAIRE
	SPICA 100, IP54 CLASS II, WATERPROOF / DUSTPROOF COMPACT SPOT LIGHT 100W/12V HALOGEN LAMP, WITH INTEGRAL 230V/50Hz TRANSFORMER AND DOUBLE INSULATION
	#200 CIRCULAR ALUMINIUM REFLECTOR DOWN LIGHTS, 9 WATTS,
	#450 CIRCULAR ALUMINIUM REFLECTOR DOWN LIGHTS, 18 WATTS
	9 WATT UPLIGHTER AND FITTED WITH INCANDESCENT TUNGSTEN HALOGEN OR ENERGY SAVING FLUORESCENT LAMPS
	12 VOLT, LOW VOLTAGE DOWNLIGHTS EMBEDDED FITTINGS FOR TWIN PLUG BULB WITH ALUMINIUM REFLECTOR, CLAMP HOLDER AND ANCHORING DEVICE. MAY BE FITTED WITH A DICHROIC LAMP 12V, 35 WATTS – G4
	3 PHASE ISOLATOR
G	GEYSER ISOLATOR
	FLU CABINETS EXTRACTOR FAN SWITCHES
	16AMP SINGLE 3 PIN NON STANDARD RED 90° FLATTENED EARTH PIN SWITCH SOCKET OUTLET (FLUSH; SURFACE & POWER SKIRTING)
	20AMP SINGLE 3 PIN NON STANDARD CIRCUIT BREAKER SWITCHED SOCKET OUTLET
	16AMP SINGLE 3–PIN STANDARD 360° EARTH PIN SWITCHED SOCKET OUTLET (FLUSH; SURFACE & POWER SKIRTING)
	16AMP SINGLE 3–PIN NON STANDARD BLACK 45° FLATTENED EARTH PIN SWITCHED SOCKET OUTLET (FLUSH; SURFACE & POWER SKIRTING)
	EXTRACTOR FAN
---------	POWER SKIRTING FINISHED TO WALL
- - - - - -	2 COMPARTMENT POWER SKIRTING SUSPENDED FROM CEILING
— — —	AIR CONDITIONING DUCTING IN ROOF
— - — - —	LIGHTING AND POWER DUCTING IN ROOF
—— —— ——	COMMUNICATION DUCTING IN ROOF
FLC	FLU CUPBOARDS
PS	POWER SKIRTING
RM	ROOF MOUNTED
WB	WALL BOX MOUNTED
WB N	WALL BOX MOUNTED WITH GLANDED NORSK CABLE CONNECTIONS

NOTES:

SCOPE OF WORK

1. TO BE REWIRED WITH CONDUCTORS LOOPED BETWEEN ELECTRICAL EQUIPMENT.
2. TRACE AND PROVE CIRCUIT. TAG LIVE, NEUTRAL AND EARTH, CONNECT TO THE CORRESPONDING OUTLET ON NEUTRAL AND EARTH BAR. LABEL OUTLETS ACCORDINGLY.
3. TRACE AND PROVE TO POINT OF SUPPLY. TAG LIVE, NEUTRAL AND EARTH, CONNECT TO THE CORRESPONDING OUTLET ON NEUTRAL AND EARTH BAR. LABEL OUTLETS ACCORDINGLY AND MARK UP ON DRAWING.
4. REPLACE 16AMP NON-STANDARD RED 90° FLATTENED EARTH PIN SOCKET OUTLET, WITH NORMAL ROUND EARTH PIN SOCKET OUTLET.
5. REPLACE 16AMP NON-STANDARD RED 90° FLATTENED EARTH PIN WITH NON-STANDARD BLACK 45° FLATTENED EARTH PIN SOCKET OUTLET.
6. REPLACE 16AMP NORMAL STANDARD ROUND EARTH PIN SOCKET OUTLET WITH NON-STANDARD 45° FLATTENED EARTH PIN SOCKET OUTLET.
7. REPLACE 16AMP NORMAL STANDARD ROUND EARTH PIN SOCKET OUTLET WITH NON-STANDARD RED 90° FLATTENED EARTH PIN SOCKET OUTLET.
8. REPLACE BARE COPPER EARTH WIRE WITH INSULATED EARTH WIRE AND CLEAR CIRCUIT FROM NORMAL EARTH.
9. REMOVE EXISTING TWIN AND EARTH CABLE AND REPLACE WITH A 3–CORE CABLE, TO MAKE PROVISIONS FOR INSULATED EARTH CONNECTIONS.
10. TRANSFER CIRCUIT FROM UPS SECTION TO EMERGENCY SECTION.
11. TRANSFER CIRCUIT FROM EMERGENCY SECTION TO SECTION 1.
12. TRANSFER CIRCUIT FROM EMERGENCY SECTION TO SECTION 2.
13. THIS MIXED CIRCUIT TO BE RE-ROUTED AND CONNECTED AT DISTRIBUTION BOARD.
14. INSTALL NEW CIRCUIT COMPLETE WITH CONDUIT, BOXES, CONDUCTORS, INSULATED EARTH WIRES CIRCUIT BREAKERS, 90° FLATTENED EARTH PIN SOCKET OUTLET.
15. PROVIDE NEW CIRCUIT BREAKER WITH M & G MULTI 9, C45 40A TYPE 2, 380V, 5kA

DB–BA BOARD MODIFICATIONS

1. DB–BA NEEDS TO BE SEPARATED INTO THREE SECTIONS, NAMELY:–
   1.1. NORMAL SECTION
   1.2. UPS SECTION
   1.3. EMERGENCY SECTION
2. * MODIFY THE EXISTING UPS INCOMER SECTION TO HOUSE ALL THE EMERGENCY REQUIREMENTS
   * MODIFY THE EXISTING UPS SECTION TO HOUSE ALL THE UPS REQUIREMENTS
   2.1. REUSE EXISTING EQUIPMENT AND CONTROL GEAR ON THE UPS SECTION. ADD NEW MAIN SWITCH (M & G MULTI 9, C45, 60A TYPE 2, 380V, 5kA MAIN SWITCH)
   2.2. PROVIDE AND INSTALL NEW EQUIPMENT ON THE EMERGENCY SECTION
   2.3. PROVIDE 20% SPARE SPACE IN ALL SECTIONS
1. DB–BA NORMAL SECTION:
   1.1 CLEARLY LABEL EXISTING EARTH LEAKAGE UNITS OF THE DISTRIBUTION BOARD AND THE NEUTRAL BAR WITH CORRESPONDING NUMBERS
   1.2 DISTRIBUTION BOARDS TO BE PROPERLY LABELLED WITH THE STATUTORY LABELS AS THE CODE OF PRACTICE
   1.3 ENSURE PANEL COVERS ARE TO BE FITTED AND SEATED PROPERLY ON THE CIRCUIT BREAKERS
   1.4 THIS SECTION OF THE DISTRIBUTION BOARD MUST BE ELECTRIC ORANGE IN COLOUR
2. DB–BA UPS SECTION:
   2.1. THE EARTH BAR IN THE UPS SECTION SHOULD BE INSULATED AND THE EARTHING SYSTEM SHOULD BE EARTHED AT THE MAIN BAR ONLY.
   2.2. CLEARLY LABEL THE UPS SECTION ON THE DEVICE PLATE.
   2.3. THE UPS SECTION OF THE DISTRIBUTION BOARD IS SKY – BLUE.
   2.4. ENSURE THAT ALL THE PANEL COVERS ARE FITTED AND SEATED PROPERLY ON THE CIRCUIT BREAKERS.
   2.5. THE DISTRIBUTION BOARDS ARE TO BE LABELLED WITH THE STATUTORY LABELS AS PER THE CODE OF PRACTICE.
3. DB–BA EMERGENCY SECTION:
   3.1. THE EARTH BAR IN THE EMERGENCY SECTION SHOULD BE INSULATED AND THE EARTHING SYSTEM SHOULD BE EARTHED AT THE MAIN BAR ONLY.
   3.2. CLEARLY LABEL THE EMERGENCY SECTION ON THE DEVICE PLATE.
   3.3. THE EMERGENCY SECTION OF THE DISTRIBUTION BOARD IS SIGNAL – RED.
   3.4. ENSURE THAT ALL THE PANEL COVERS ARE FITTED AND SEATED PROPERLY ON THE CIRCUIT BREAKERS.
   3.5 THE DISTRIBUTION BOARDS ARE TO BE LABELLED WITH THE STATUTORY LABELS AS PER THE CODE OF PRACTICE.

GENERAL NOTES

1. A CERTIFICATE OF COMPLIANCE AND A DISTRIBUTION BOARD ASSESSMENT CERTIFICATE IS REQUIRED FOR EACH DISTRIBUTION BOARD

REVISIONS

No	DATE	CHECKED	APPROVED	DESCRIPTION
0	04–02–11	H.L.	W.S.	FOR TENDER PURPOSES
1	05–06–30	H.L.	W.S.	AS BUILT

REFERENCE DRAWINGS

NUMBER	TITLE
16039	GROUND FLOOR–MICRO BIOLOGY & ORGANIC SECTIONS LIGHTING LAYOUT
16038	BLOCK A&B GROUND FLOOR–MICRO BIOLOGY AND ORGANIC SECTIONS POWER LAYOUT
16232	BLOCK A FIRST FLOOR–INORGANIC DEPARTMENT SLD FOR DB–B S1; S2; DB–D UPS & EMERG.
16231	FIRST FLOOR–ADMINISTRATION SECTION SLD FOR DB–BA, DBBA–UPS & DBDA–E
16230	BLOCK B FIRST FLOOR–HYDROBIOLOGY DEPARTMENT SLD FOR DBC–S1; S2; DBC–UPS & DBC– EMERG.
16229	GROUND FLOOR BUILDING STORES DEPARTMENT SLD FOR DB–BCS2; UPS AND EMERG.
15731	BLOCK A GROUND FLOOR–ORGANIC SECTION SLD FOR DBB–S1; S2; DBB–UPS & BBB– EMERG.
15730	BLOCK B GROUND FLOOR–MICRO BIOLOGY SECTION SLD FOR DBA–S1; S2; DBA–UPS & DBA– EMERG.
15729	FIRST FLOOR–HYDROBIOLOGY AND INORGANIC SECTIONS
15728	BLOCK A AND B FIRST FLOOR–INORGANIC AND HYDROBIOLOGY DEPARTMENTS POWER LAYOUT
R11511–1/2/3/4/5/6/7/8	ARCHITECTURAL DRAWINGS
RW–00320–AS–500	GENERAL ELECTRICAL SPECIFICATIONS

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C.M.F. HALL Pr. Eng
GENERAL MANAGER
ENGINEERING

PIK:	2004/0991	CHECKED:	
ECK:	ET01/00	SECTION HEAD:	
CONTRACT:	XXXX	APPROVED	Pr. Eng
FILE:	8/2/1/2/XXXX	CAPACITY	
DRAWN BY:	H. LANGE	DATE	
DATE:	2003–10–01		

VEREENIGING PUMPING STATION

ANALYTICAL SERVICES BUILDING
GROUND FLOOR – ADMINISTRATION SECTION
SINGLE LINE DIAGRAM FOR DB–BA AND
DBBA–UPS AND DBBA–EMERGENCY

STATION	WKS	DOC. TYPE	S
V G	# 0 1 U Y C		

SCALE: N.T.S.

DRG. NO. 15973

REVISION 1