

# ELECTRICAL COVER SHEET

## ELECTRICAL DRAWING LIST

DOC No.	DESCRIPTION	SCALE	REVISION
E-000	ELECTRICAL COVER SHEET	NTS	C4 - 03/6/13
E-001	ELECTRICAL DRAWING KEY	1:50	C4 - 03/6/13
E-100	ELECTRICAL SITE PLAN	1:100	C4 - 03/6/13
E-200	ELECTRICAL POWER PLAN	1:50	C4 - 03/6/13
E-300	ELECTRICAL LIGHTING PLAN	1:50	C4 - 03/6/13
E-400	ELECTRICAL COMMUNICATIONS PLAN	1:50	C4 - 03/6/13
E-500	ELECTRICAL GENERATION ROOF PLAN	1:50	C4 - 03/6/13
E-600	ELECTRICAL EQUIPMENT ELEVATIONS	1:25	C4 - 03/6/13
E-900	ELECTRICAL SCHEMATIC	NTS	C4 - 03/6/13
E-901	ELECTRICAL SOLAR SCHEMATIC	NTS	C4 - 03/6/13
E-902	ELECTRICAL BOARD AND SWITCH DETAILS	NTS	C4 - 03/6/13

## GENERAL NOTES

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND PLUMBING DRAWINGS
- ELECTRICAL DRAWINGS REFERENCE TO ELECTRICAL SPECIFICATIONS:
  - DIVISION 11 - EQUIPMENT
  - DIVISION 25 - INTEGRATED AUTOMATION
  - DIVISION 26 - ELECTRICAL
  - DIVISION 27 - COMMUNICATIONS
  - DIVISION 33 - UTILITIES
  - DIVISION 48 - ELECTRICAL POWER GENERATION
- "AFFL" REFERS TO "ABOVE FINISHED FLOOR LEVEL"
- "JOINERY" REFERS TO FINISHES WITHIN THE HOUSE THAT ARE SEPARATE BUT ATTACHED TO THE MAIN STRUCTURE, SUCH AS KITCHEN BENCHES AND CUPBOARD, BATHROOM VANITY, BUILT IN SHELVES AND ENTERTAINMENT UNIT
- "N.T.S" REFERS TO "NOT TO SCALE"
- NUMERICAL FIGURES SHOWN IN THE FORMAT ## ## ## REFER TO ACCOMPANYING SPECIFICATION DIVISION REFERENCES



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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### Amendments

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C3	Final Submission	15.3.13
C4	As Built Issue	03.6.13

Lot Number #303

Drawn By: M. Whitehouse

Checked By: M. Whitehouse



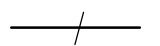







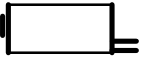



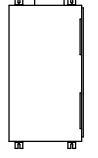








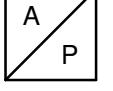





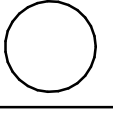





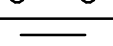





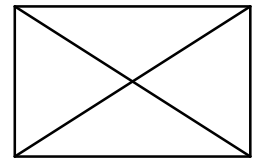
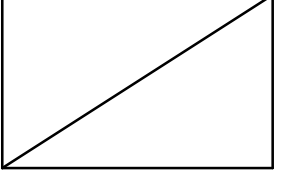
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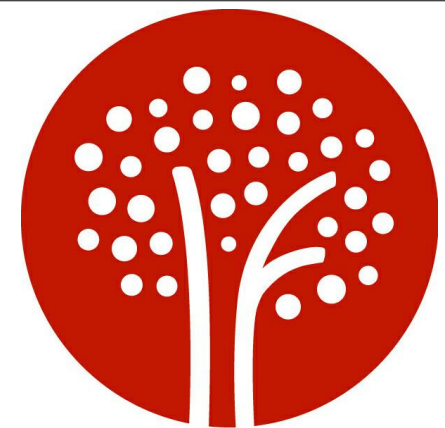
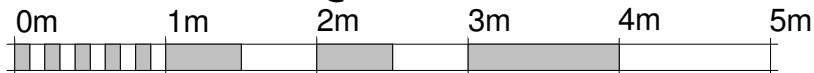
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**Electrical Cover Sheet**

**E-000**

SYMBOL.	DESCRIPTION	SYMBOL.	DESCRIPTION
	ELECTRICAL POINT OF CONNECTION		26 10 07 TYPE F3 - LED INGROUND LIGHT
	SINGLE PHASE 220V AC 2 CORE AND EARTH POWER CABLE		26 10 07 TYPE F4 - SURFACE MOUNTED / PENDANT
	26 10 03 SURFACE MOUNTED SWITCH BOARD		26 10 07 TYPE F5 - MINI RECESSED LED SHELF
	48 10 03 AURORA PVI-5000-OUTD PHOTOVOLTAIC INVERTER (5000W)		26 10 07 TYPE F6 - RECESSED LED STRIP
	COMMUNICATIONS HEAD END ROUTER		26 10 07 TYPE F7 - RECESSED LED WALL LIGHT 150mm UP FROM FFL
	23 10 01 LG B24AWYUGMH (7.10kW) OUTDOOR AIR CONDITIONING UNIT		26 10 07 TYPE F8 - LED RECESSED PANEL 300X300
	HYDRAULIC PUMP		26 10 07 TYPE F9 - 12V POST MOUNTED LED SPOT LIGHT
	23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT		26 10 07 TYPE F10 - 12V LED GARDEN UP-LIGHT
	26 10 05 CLIPSAL 4025 DOUBLE POWER POINT		25 10 18 DAVIS 6162C VANTAGE PRO2 PLUS WEATHER STATION
	26 10 05 CLIPSAL C2025 DOUBLE POWER POINT AT HEIGHT NOMINATED		26 10 07 TYPE F11 3W LED DECK MOUNTED BUTTON LIGHT
	26 10 05 CLIPSAL 4025 DOUBLE POWER POINT ABOVE BENCH 1000mm AFFL		21 10 03 CLIPSAL 755PSMA PHOTO ELECTRIC SMOKE DETECTOR
	26 10 05 CLIPSAL C2025 DOUBLE POWER POINT RECESSED IN JOINERY		600X600 AIR TIGHT ACCESS PANEL
	26 10 05 CLIPSAL C2015 SINGLE POWER POINT		CAT6 DATA OUTLET - NUMBER DENOTES NUMBER OF POINTS AVAILABLE
	26 10 05 CLIPSAL WSC227/2 WEATHERPROOF DOUBLE POWER POINT		FANTECH PCD354DD CENTRIFUGAL FAN (300l/s) UNLESS OTHERWISE NOTED AS A DIFFERENT FAN
	SWITCH POINT - TYPE AND SIZE VARIES - REFER TO E-902 FOR DETAILS		22 10 10 THERMANN 315LMID HOT WATER STORAGE TANK
	SWITCH GROUP / CONTROL WIRING LINE / EARTH		23 10 11 MECHANICAL BARREL DAMPER
	26 10 07 TYPE F1 - RECESSED DOWNLIGHT		48 10 05 WEATHER PROOF DC ISOLATOR
	26 10 07 TYPE F1 - TILTED RECESSED DOWNLIGHT		26 10 10 CIRCUIT CONTACTOR
	26 10 07 TYPE F2 - EXTERIOR WALL LIGHT		EARTH ZERO POTENTIAL POINT
	26 10 08 PHASE LINE AND NEUTRAL BREAKER		AUDIO SPEAKER
	26 10 09 RCD PROTECTED CIRCUIT BREAKER		48 10 01 TRINA TSM-250PC05A (250W) POLYCRYSTALLINE PANEL
			48 10 02 SOLOPOWER SP3S220 (220W) CIGS SOLAR PANEL

VISUAL SCALE 1:50 @ A3



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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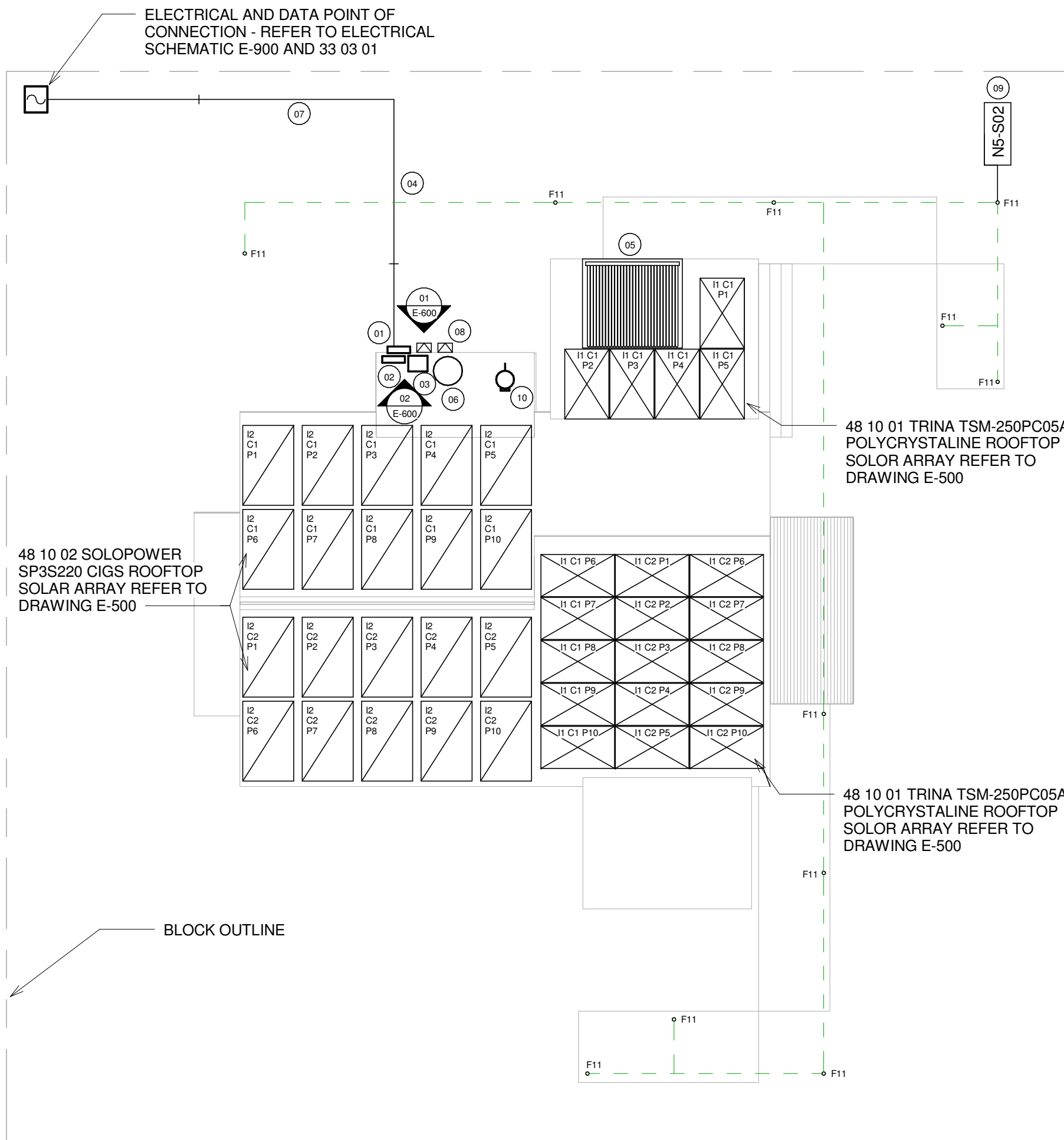
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**Electrical Drawing**  
**Key**

**E-001**



ELECTRICAL AND DATA POINT OF CONNECTION - REFER TO ELECTRICAL SCHEMATIC E-900 AND 33 03 01

48 10 02 SOLOPOWER SP3S220 CIGS ROOFTOP SOLAR ARRAY REFER TO DRAWING E-500

48 10 01 TRINA TSM-250PC05A POLYCRYSTALLINE ROOFTOP SOLAR ARRAY REFER TO DRAWING E-500

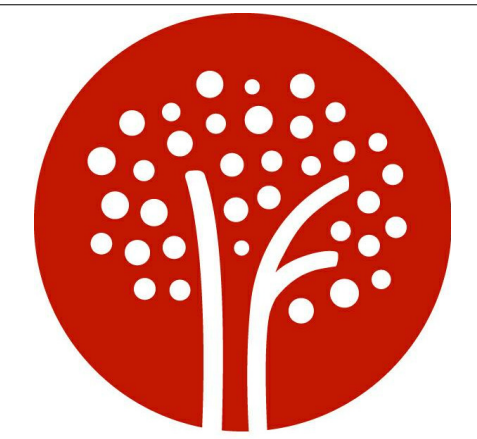
48 10 01 TRINA TSM-250PC05A POLYCRYSTALLINE ROOFTOP SOLAR ARRAY REFER TO DRAWING E-500

BLOCK OUTLINE

NOTES:

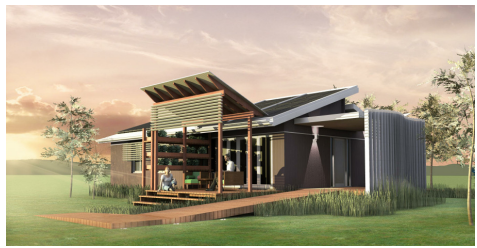
- 01 26 10 03 MAIN SWITCHBOARD
- 02 MAIN SUB-BOARD AND CLIPSAL COLTROL EQUIPMENT
- 03 ETHERNET ROUTER AND COMMUNICATION EQUIPMENT
- 04 POWER AND CAT6 CABLES TO BE HOUSED IN SEPARATE HEAVY DUTY CONDUIT AND RUN ACROSS GROUND WITH MECHANICAL AND TRIP PROTECTION COVER OVER CONDUITS
- 05 22 10 10 THERMANN 30 TUBE EVACUATED TUBE SOLAR THERMAL COLLECTORS
- 06 22 10 10 THERMANN 315LMID 315 LITRE ELECTRIC BOOSTED SOLAR HOT WATER STORAGE TANK
- 07 220V 50hz SINGLE PHASE ELECTRICAL SUPPLY TO HOUSE VIA 16mm TWIN AND EARTH DOUBLE INSULATED CABLE AND CAT6 COMMUNICATION SUPPLY
- 08 48 01 01 - 2 X 5kW AURORA PVI-5000-OUTD SOLAR INVERTERS ADJACENT TO MAIN SWITCH BOARD REFER TO IF-E-900
- 09 DECK LIGHTING CIRCUIT - REFER TO E-902 FOR DETAILS
- 10 25 10 18 DAVIS 6162C VANTAGE PRO2 PLUS WEATHER STATION MOUNTED ON POD ROOF

# C# P# I# = I1 FOR INVERTER 1 I2 FOR INVERTER 2  
 C# = C1 FOR CHANNEL 1 C2 FOR CHANNEL 2  
 P# = PANEL NUMBER



**TEAM UOW AUSTRALIA**  
Illawarra Flame

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 Address: UNIVERSITY OF WOLLONGONG WOLLONGONG NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au www.illawarraflame.com.au



Client: P.R China National Energy Administration  
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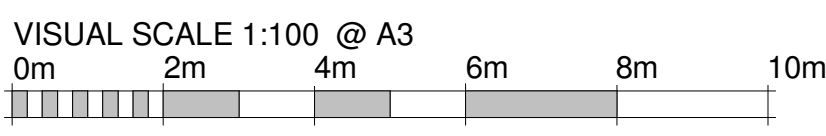


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 Scale: 1 : 100 @ A3

**Electrical Site Plan**

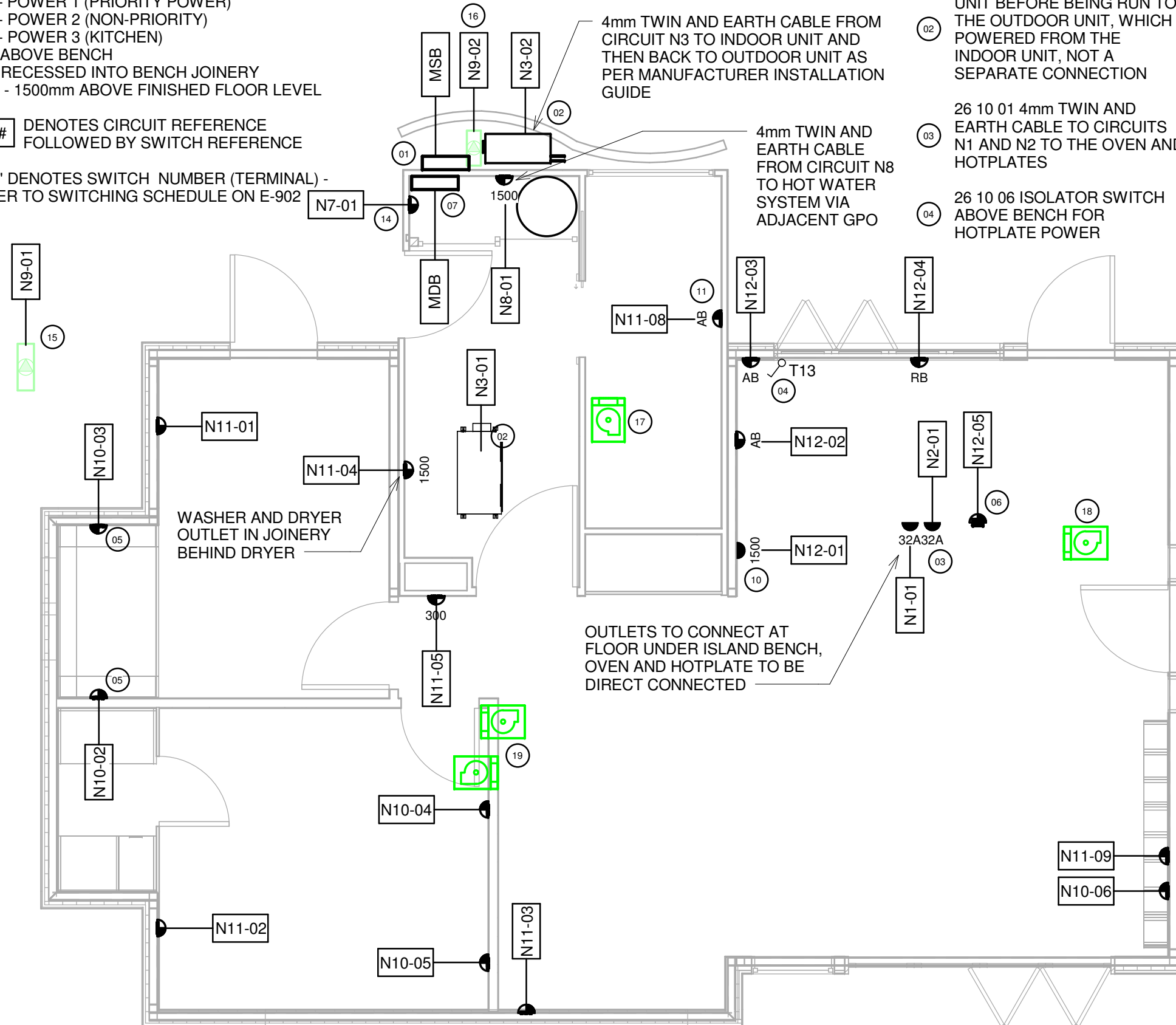




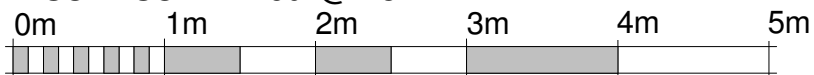
- N1 - OVEN
- N2 - COOKTOP
- N3 - AIRCON
- N4 - FANS
- N5 - LIGHTS
- N6 - C-BUS
- N7 - POWER 4
- N8 - HOT WATER
- N9 - PUMPS
- N10 - POWER 1 (PRIORITY POWER)
- N11 - POWER 2 (NON-PRIORITY)
- N12 - POWER 3 (KITCHEN)
- AB - ABOVE BENCH
- RB - RECESSED INTO BENCH JOINERY
- 1500 - 1500mm ABOVE FINISHED FLOOR LEVEL

### DENOTES CIRCUIT REFERENCE FOLLOWED BY SWITCH REFERENCE

"T##" DENOTES SWITCH NUMBER (TERMINAL) - REFER TO SWITCHING SCHEDULE ON E-902



VISUAL SCALE 1:50 @ A3



NOTES:

01 MAIN SWITCHBOARD WITH WEATHERPROOF DOUBLE GPO UNDER - REFER TO DETAIL 2 ON E-600

02 POWER IS CONNECTED TO THE AIR CONDITION INDOOR UNIT BEFORE BEING RUN TO THE OUTDOOR UNIT, WHICH IS POWERED FROM THE INDOOR UNIT, NOT A SEPARATE CONNECTION

03 26 10 01 4mm TWIN AND EARTH CABLE TO CIRCUITS N1 AND N2 TO THE OVEN AND HOTPLATES

04 26 10 06 ISOLATOR SWITCH ABOVE BENCH FOR HOTPLATE POWER

05 OUTLET TO BE MOUNTED AT 900mm ABOVE FINISHED FLOOR LEVEL TO SIT IN JOINERY

06 MICROWAVE OUTLET TO BE IN JOINERY AT REAR OF MICROWAVE HOUSING

07 26 10 04 MAIN DISTRIBUTION BOARD

08 POWER OUTLETS TO BE 300mm ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE NOTED

09 SOFT WIRING JUNCTIONS FOR LIGHTING AND HARD WIRED JUNCTION BOXES FOR POWER TO BE USED BETWEEN SEPARATING MODULES

10 FRIDGE OUTLET TO BE AT REAR OF FRIDGE OPENING AT 1500mm ABOVE FINISHED FLOOR LEVEL

11 BATHROOM OUTLET TO BE 1100mm ABOVE FINISHED FLOOR LEVEL AND 300mm TO LEFT OF BASIN TO MEET REQUIREMENTS OF AS3000

12 ALL WIRING RUN EXTERNAL TO BE RUN IN ELECTRICAL DUCT AND SECURED UNDER HOUSE OR DECK OR IN ROOF CAVITY

13 POWER WIRING TO BE CONCEALED IN CAVITY WALLS

14 26 10 05 12 POWER OUTLETS BELOW MDB ON CIRCUIT N7 TO SERVE COMMUNICATION AND CONTROL EQUIPMENT - REFER TO DETAIL 2 ON E-600

15 22 10 11 RAINBANK WATER SUPPLY PUMP REFER TO P-202 FOR DETAILS

16 GREY WATER PUMP REFER TO P-204

17 23 10 14 TOILET EXHAUST FAN TO CONNECT TO LIGHTING CIRCUIT N5

18 23 10 08 KITCHEN EXHAUST FAN TO CONNECT TO KITCHEN CIRCUIT N12

19 23 10 17 PVT AND PCM FANS AND VSD DRIVES TO PVT CIRCUIT N4



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**Electrical Power Plan**



**E-200**

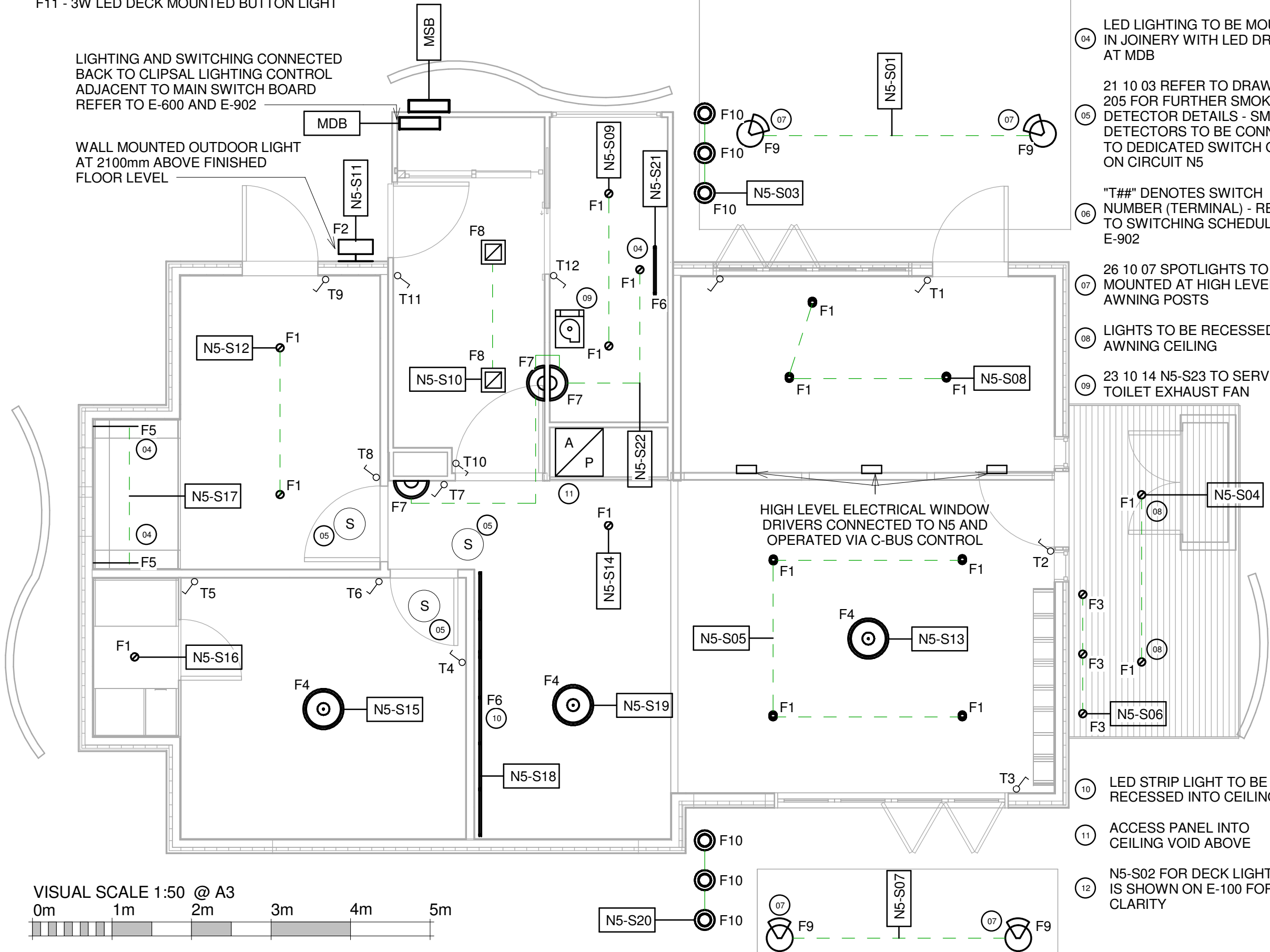


LIGHT FITTING TYPES TABLE (REFER TO E-902 AND 26 10 07 FOR SWITCHING DETAILS):

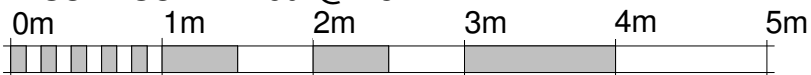
- F1 - IN CEILING RECESSED DOWNLIGHT
- F2 - EXTERIOR WALL LIGHT
- F3 - LED INGROUND UP LIGHTS
- F4 - SURFACE MOUNTED PENDANT LIGHT (REFER TO E-902)
- F5 - MINI RECESSED LED SHELF
- F6 - RECESSED LED STRIP
- F7 - RECESSED LED WALL LIGHT 150mm UP FROM FINISH FLOOR LEVEL
- F8 - LED RECESSED PANEL 300X300
- F9 - 12V POST MOUNTED LED SPOT LIGHT
- F10 - 12V LED GARDEN UP-LIGHT (TO HIGHLIGHT VERTICLE GARDEN)
- F11 - 3W LED DECK MOUNTED BUTTON LIGHT

LIGHTING AND SWITCHING CONNECTED BACK TO CLIPSAL LIGHTING CONTROL ADJACENT TO MAIN SWITCH BOARD REFER TO E-600 AND E-902

WALL MOUNTED OUTDOOR LIGHT AT 2100mm ABOVE FINISHED FLOOR LEVEL



VISUAL SCALE 1:50 @ A3



NOTES:

- 01 TAG DENOTES CIRCUIT NUMBER "N#-" FOLLOWED BY SWITCHING NUMBER "S#":
- 02 MOUNT SWITCHES AT 1100mm ABOVE FINISHED FLOOR LEVEL
- 03 "F##" DENOTES LIGHT TYPE - REFER TO TABLE "LIGHT FITTING TYPE"
- 04 LED LIGHTING TO BE MOUNTED IN JOINERY WITH LED DRIVER AT MDB
- 05 21 10 03 REFER TO DRAWING P-205 FOR FURTHER SMOKE DETECTOR DETAILS - SMOKE DETECTORS TO BE CONNECTED TO DEDICATED SWITCH GROUP ON CIRCUIT N5
- 06 "T##" DENOTES SWITCH NUMBER (TERMINAL) - REFER TO SWITCHING SCHEDULE ON E-902
- 07 26 10 07 SPOTLIGHTS TO BE MOUNTED AT HIGH LEVEL ON AWNING POSTS
- 08 LIGHTS TO BE RECESSED INTO AWNING CEILING
- 09 23 10 14 N5-S23 TO SERVE TOILET EXHAUST FAN

- 10 LED STRIP LIGHT TO BE RECESSED INTO CEILING
- 11 ACCESS PANEL INTO CEILING VOID ABOVE
- 12 N5-S02 FOR DECK LIGHTS IS SHOWN ON E-100 FOR CLARITY



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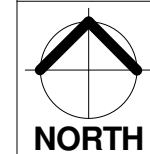


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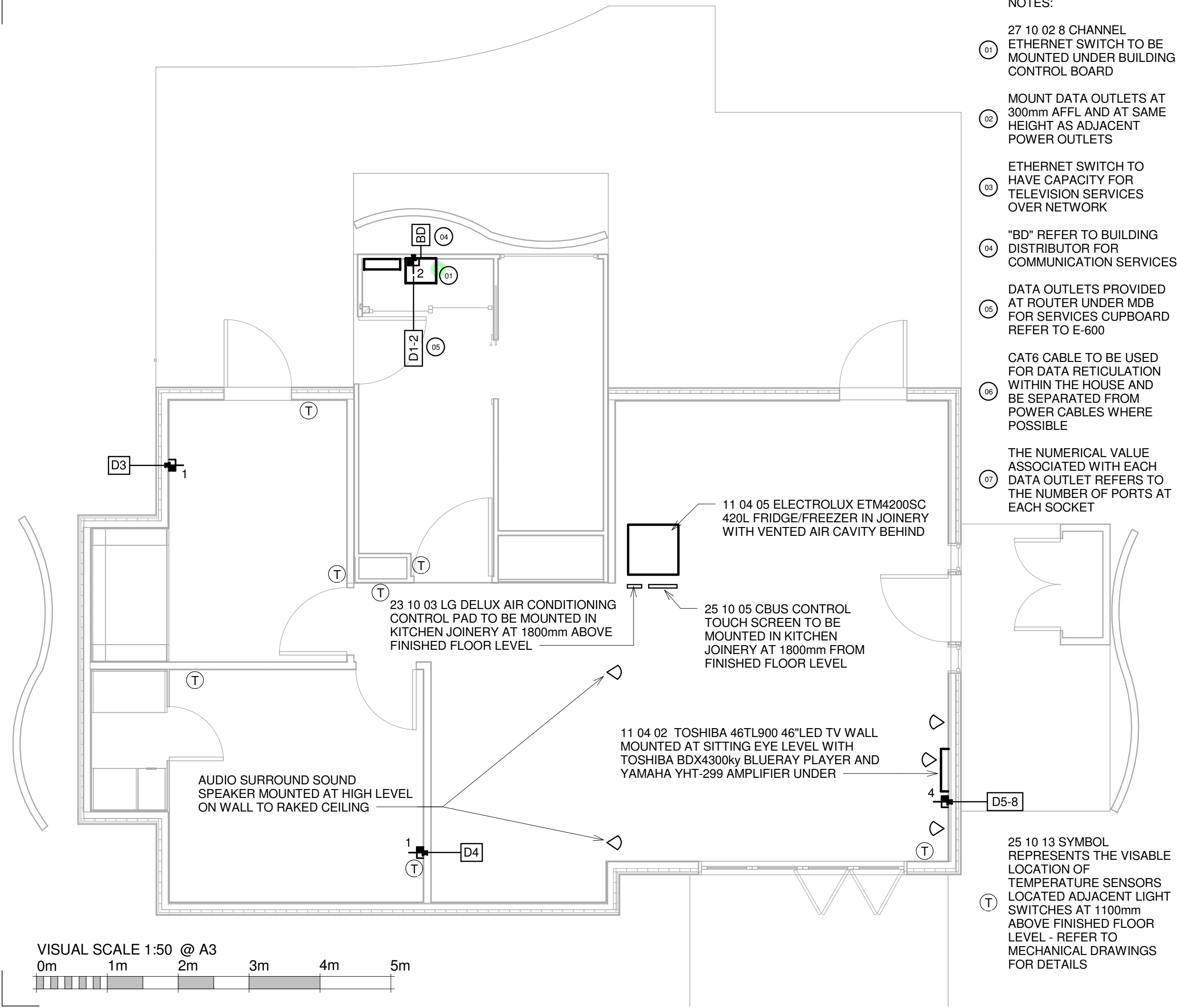
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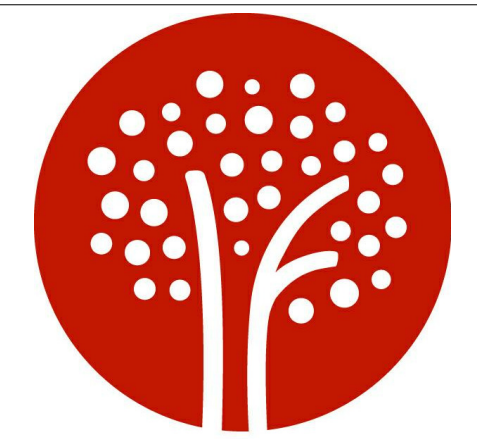
**Electrical Lighting Plan**



**E-300**



- NOTES:
- 01 27 10 02 8 CHANNEL ETHERNET SWITCH TO BE MOUNTED UNDER BUILDING CONTROL BOARD
  - 02 MOUNT DATA OUTLETS AT 300mm AFFL AND AT SAME HEIGHT AS ADJACENT POWER OUTLETS
  - 03 ETHERNET SWITCH TO HAVE CAPACITY FOR TELEVISION SERVICES OVER NETWORK
  - 04 "BD" REFER TO BUILDING DISTRIBUTOR FOR COMMUNICATION SERVICES
  - 05 DATA OUTLETS PROVIDED AT ROUTER UNDER MDB FOR SERVICES CUPBOARD REFER TO E-600
  - 06 CAT6 CABLE TO BE USED FOR DATA RETICULATION WITHIN THE HOUSE AND BE SEPARATED FROM POWER CABLES WHERE POSSIBLE
  - 07 THE NUMERICAL VALUE ASSOCIATED WITH EACH DATA OUTLET REFERS TO THE NUMBER OF PORTS AT EACH SOCKET



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 Contact: sd2013@uow.edu.au www.illawarraflame.com.au



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Amendments

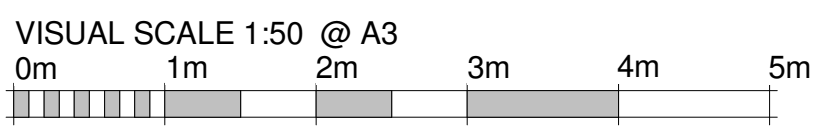
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C4	As Built Issue	03.6.13

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 Date: 03/06/13  
 Scale: 1 : 50 @ A3

**Electrical Communications Plan**

NORTH

**E-400**



NOTES:

- 01 LOCKABLE WEATHER PROOF AC AND DC ISOLATORS - REFER TO E-600
- 02 26 10 03 MAIN SWITCH BOARD ADJACENT INVERTERS
- 03 48 10 03 TWO X AURORA PVI-5000-OUTD 5kW PHOTOVOLTAIC INVERTERS
- 04 48 10 02 CIGS SOLAR PANELS SOLOPOWER SP3S220 (220W) FITTED TO PROPRIETARY ROOF MOUNTING
- 05 ALL PANLES TO BE GROUNDED TO EARTH BAR IN MAIN SWITCH BOARD - REFER TO E-901
- 06 48 10 01 POLYCRYSTALLINE PANELS TRINA TSM-250PC05A (250W) - ON MANUFACTURERS MOUNTING - REFER TO 48 05 05
- 07 48 10 05 LOCKABLE WEATHER PROOF DC ISOLATORS MOUNTED ON SIDE OF ROOF FLASHING
- 08 DOUBLE INSULATED DC WIRING BETWEEN PANELS, ISOLATORS AND INVERTERS
- 09 22 10 10 THERMANN 30 TUBE EVACUATED TUBE SOLAR THERMAL COLLECTORS



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Illawarra Flame

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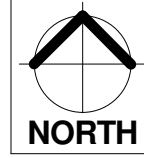


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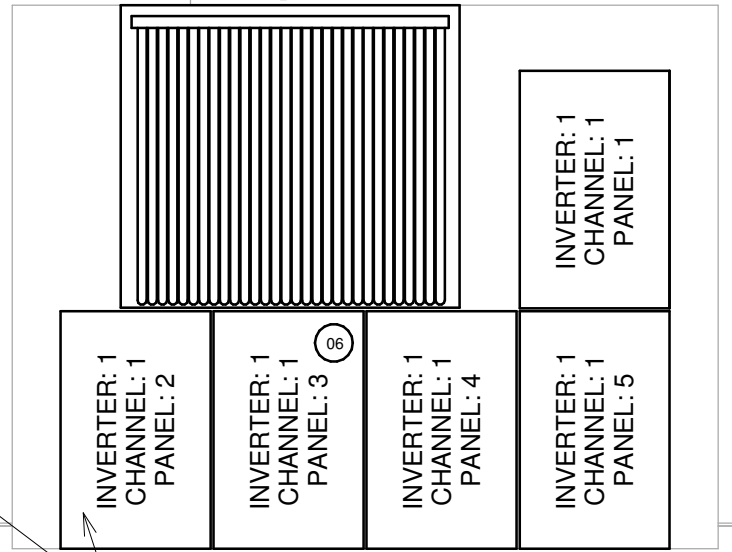
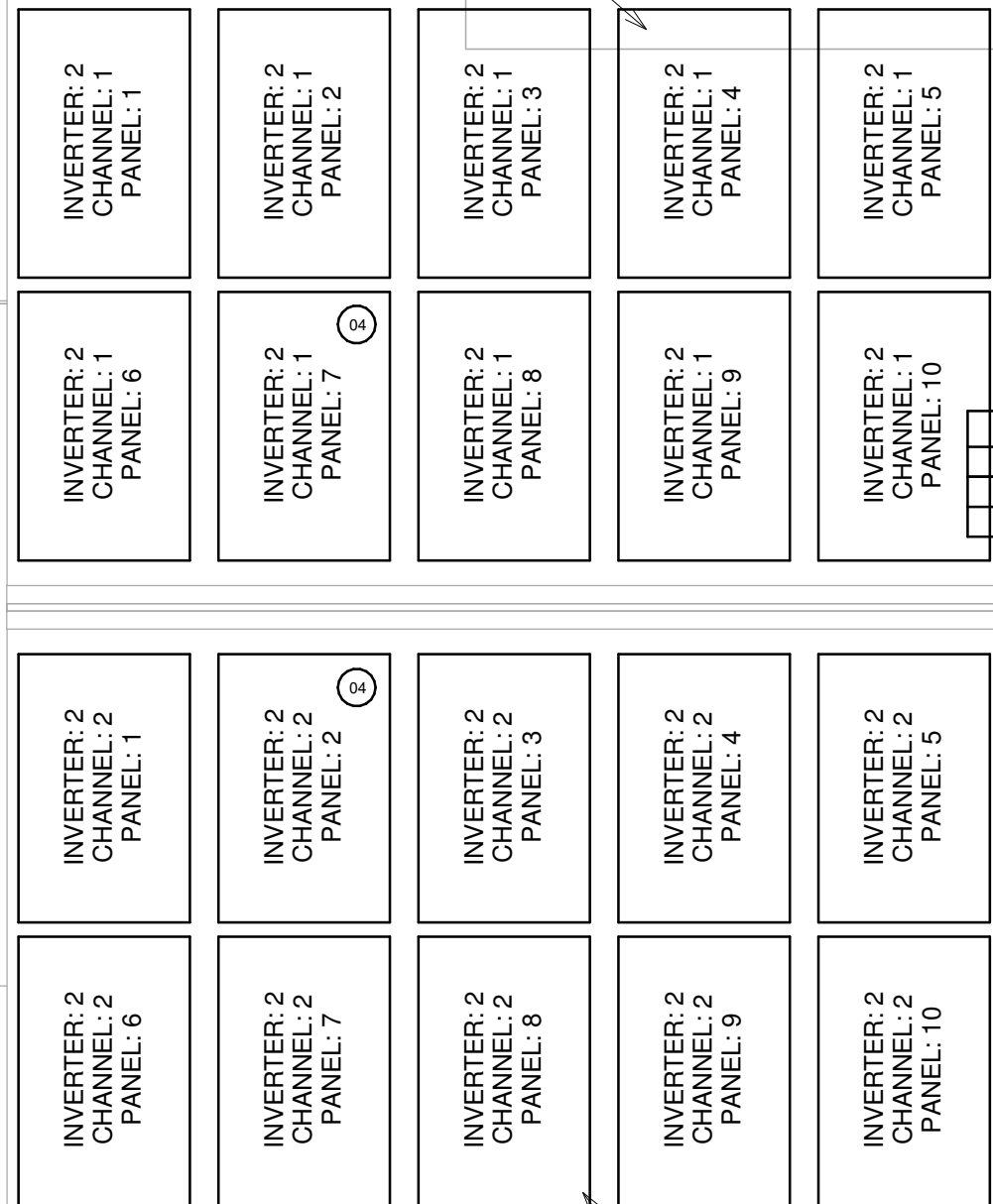
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**Electrical Generation Roof Plan**



**E-500**

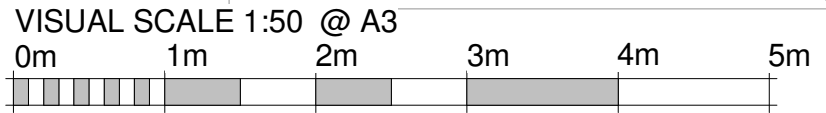
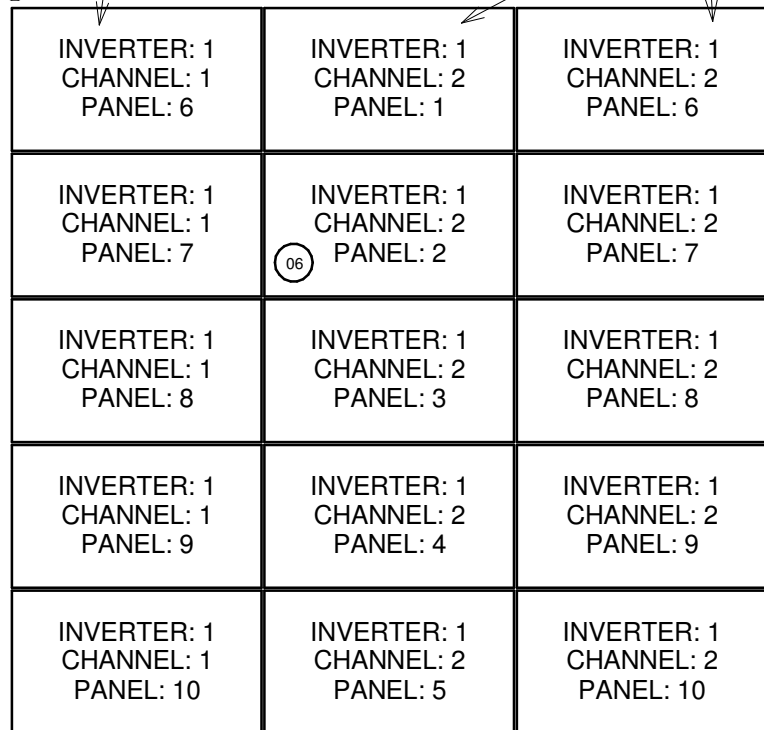
CIGS PANELS TO BE WIRED IN 2 PARALLEL STRINGS OF 5 PANELS IN SERIES - REFER TO E-901



AWNING PANEL CABLE TO RUN FROM AWNING AND DROP IN FLASHING CAVITY TO UNDER FLOOR

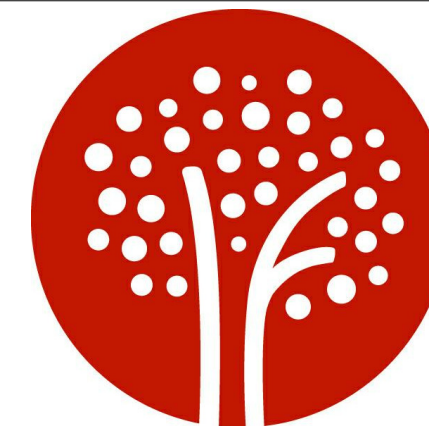
FIRST ROW OF 5 POLYCRYSTALLINE PANELS TO BE IN SERIES WITH 5 PANELS ON AWNING

SECOND 2 ROWS OF 5 POLYCRYSTALLINE PANELS TO BE IN SERIES WITH EACH OTHER



CIGS PANELS TO BE WIRED IN 2 PARALLEL STRINGS OF 5 PANELS IN SERIES - REFER TO E-901





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Illawarra Flame

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www.illawarraflame.com.au



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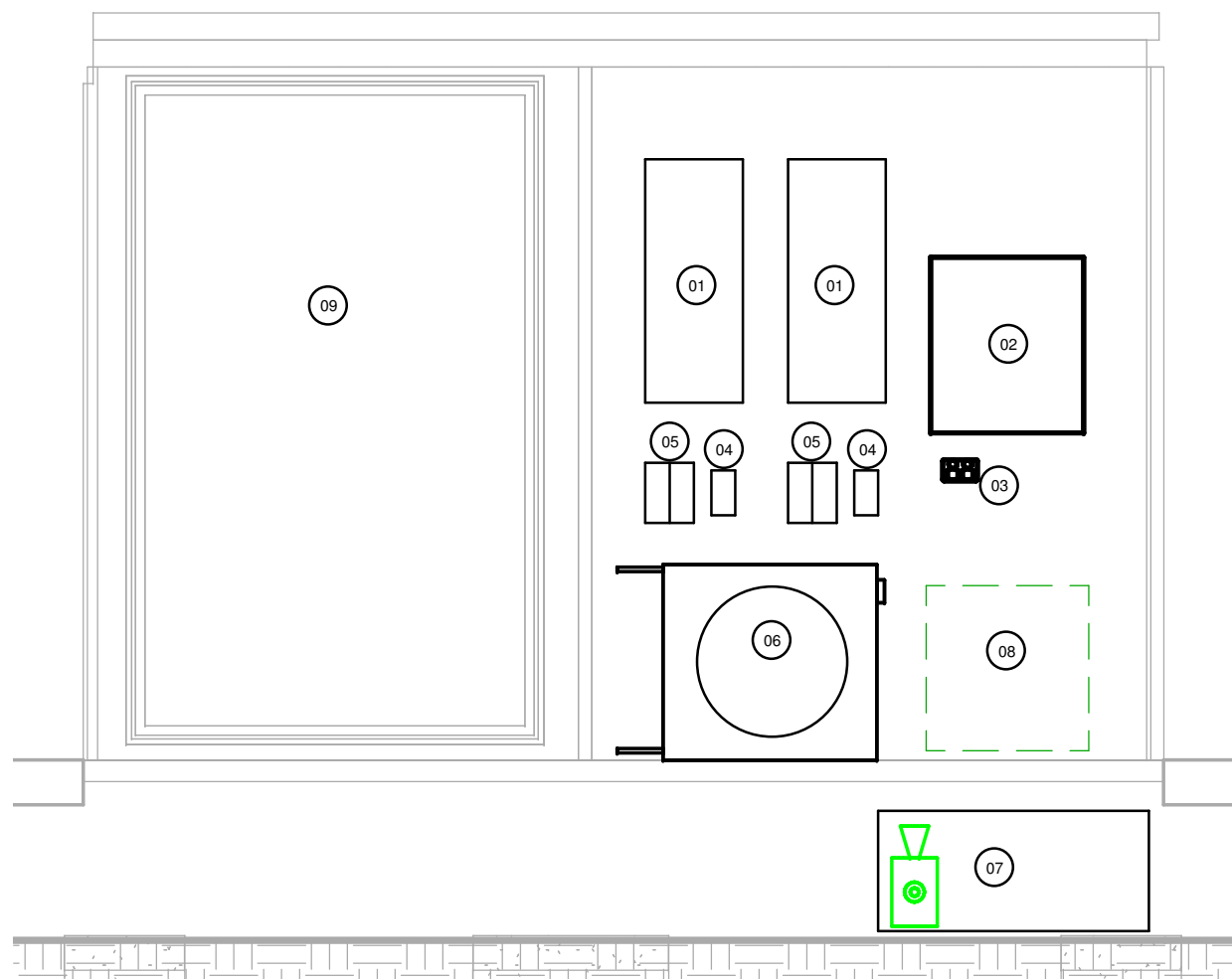
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**Electrical  
Equipment  
Elevations**

**E-600**

**NOTES:**

- 01 48 10 03 AURORA PVI-5000-OUTD PHOTOVOLTAIC INVERTER 5kW EACH
- 02 26 10 03 MAIN SWITCH BOARD - REFER TO E-902 FOR CIRCUIT SCHEDULE
- 03 26 10 05 WEATHERPROOF DOUBLE GPO CONNECT TO CIRCUIT BREAKER IN MAIN SWITCH BOARD SEPARATE OF MAIN DISTRIBUTION BOARD
- 04 48 10 04 LOCKABLE WEATHERPROOF AC ISOLATORS FOR EACH SOLAR INVERTER
- 05 48 10 05 LOCKABLE WEATHERPROOF DC ISOLATORS FOR ALL 4 SOLAR ARRAY CHANNELS CONNECTED TO ROOFTOP DC ISOLATORS
- 06 23 10 01 LG B24AWYUGMH (7.1kW) OUTDOOR AIR CONDITIONING UNIT
- 07 SUBMERSIBLE GREY WATER PUMP IN GREY WATER COLLECTION SUMP
- 08 SPRINKLER CONTROL ASSEMBLY AND HYDRAULIC WATER METERS - REFER TO DETAIL 1 ON P-200
- 09 OUTSIDE SURFACE OF BATHROOM WINDOW
- 10 CBUS CONTROL, NETWORK, OUTPUT AND CURRENT MEASUREMENT
- 11 CBUS INPUT UNITS
- 12 26 10 04 MAIN DISTRIBUTION BOARD - REFER TO E-902 FOR CIRCUIT SCHEDULE

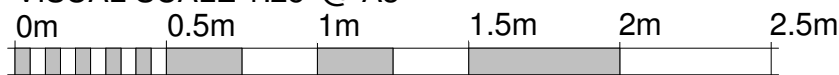


**Detail 1 E-600**

1  
1 : 25

- 13 CBUS DIMMERS AND REPLAY UNITS
- 14 23 10 17 VARIABLE SPEED DRIVES FOR PVT AND PCM FANS
- 15 22 10 10 THERMANN SOLAR HOT WATER CONTROL INTERFACE
- 16 22 10 10 THERMANN SOLAR HOT WATER CIRCULATION PUMP
- 17 22 10 10 THERMANN 315LMID HOT WATER STORAGE TANK
- 18 26 10 05 HOT WATER GPO TO SUPPLY HOT WATER EQUIPMENT FOR CIRCUIT BREAKER N8 ON E-200
- 19 ELECTRICAL DUCT
- 20 26 10 05 GPO OUTLETS TO SUPPLY COMMUNICATION AND CONTROL EQUIPMENT ON CIRCUIT BREAKER N7 ON E-200
- 21 26 10 10 ALL OFF SWITCH MECHANICAL CONTACTOR
- 22 COMMUNICATION HEAD END, ROUTER AND SOLAR DECATHLON ORGANISED EQUIPMENT ZONE
- 23 25 10 10 CBUS EXTRA LOW VOLTAGE RELAYS
- 24 INSIDE SURFACE OF BATHROOM WINDOW

VISUAL SCALE 1:25 @ A3



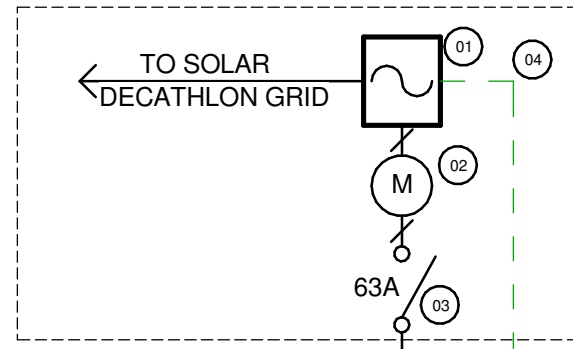
**2** **Detail 2 E-600**  
1 : 25



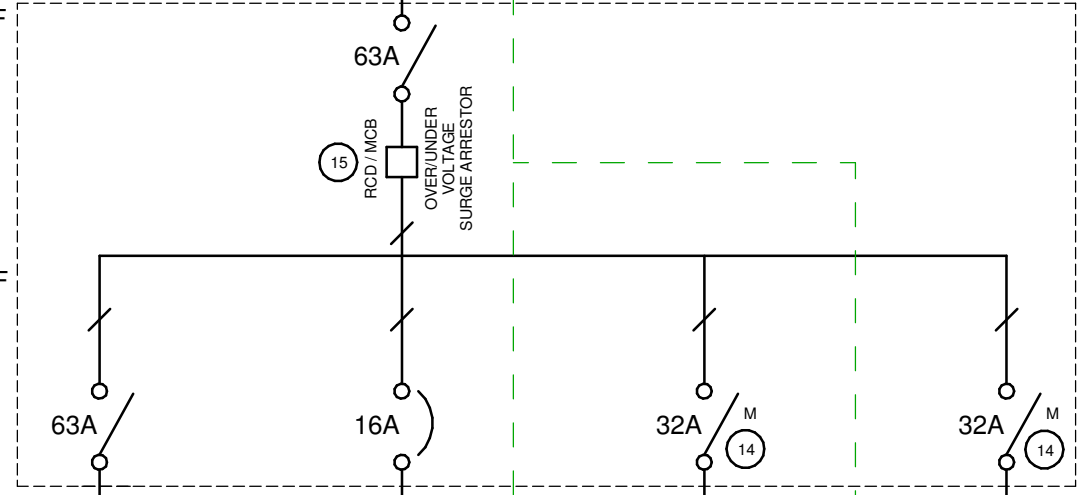
NOTES:

- 01 33 03 01 SOLAR DECATHLON EVENT PROVIDED POINT OF ELECTRICAL CONNECTION
  - 02 33 03 01 SOLAR DECATHLON EVENT PROVIDED BI-DIRECTIONAL DIRECT IN-LINE ENERGY METER
  - 03 33 03 01 SOLAR DECATHLON EVENT PROVIDED 63A SERVICE PROTECTION FUSE
  - 04 26 10 13 EARTH ELECTRODE EARTHED AT HOUSE AND SOLAR DECATHLON EVENT SUPPLIED EARTH
  - 05 26 10 10 32A CONTACTOR FOR AIR CONDITIONING SUPPLY
  - 06 26 10 10 63A MECHANICAL CONTACTOR FOR NON-PRIORITY LINE (ALL-OFF CONTROL)
  - 07 26 10 06 AC MECHANICAL ISOLATOR IN KITCHEN TO ISOLATE COOKTOP POWER IN THE EVENT OF A COOKING FIRE
  - 08 REFER TO E-902 FOR ELECTRICAL BOARD CIRCUIT BREAKER ELEVATIONS
  - 09 48 10 04 LOCKABLE WEATHERPROOF AC MECHANICAL ISOLATORS FOR SOLAR INVERTERS
  - 10 48 10 05 LOCKABLE WEATHERPROOF DC MECHANICAL ISOLATORS FOR SOLAR PANELS AT MSB
  - 11 48 10 05 LOCKABLE WEATHERPROOF DC MECHANICAL ISOLATORS FOR SOLAR PANELS ON ROOF
  - 12 REFER TO E-500 AND E-901 FOR ADDITIONAL SOLAR PANEL INSTALLATION DETAILS
  - 13 220V 50hz SINGLE PHASE ELECTRICAL SUPPLY TO HOUSE VIA 16mm TWIN AND EARTH DOUBLE INSULATED CABLE
  - 14 26 10 08 PHASE LINE AND NEUTRAL 2 POLE CIRCUIT BREAKER
  - 15 OVER AND UNDER VOLTAGE SURGE ARRESTOR AND RCD / MCB PROTECTION
- M CT METERING CONNECTED TO C-BUS SYSTEM

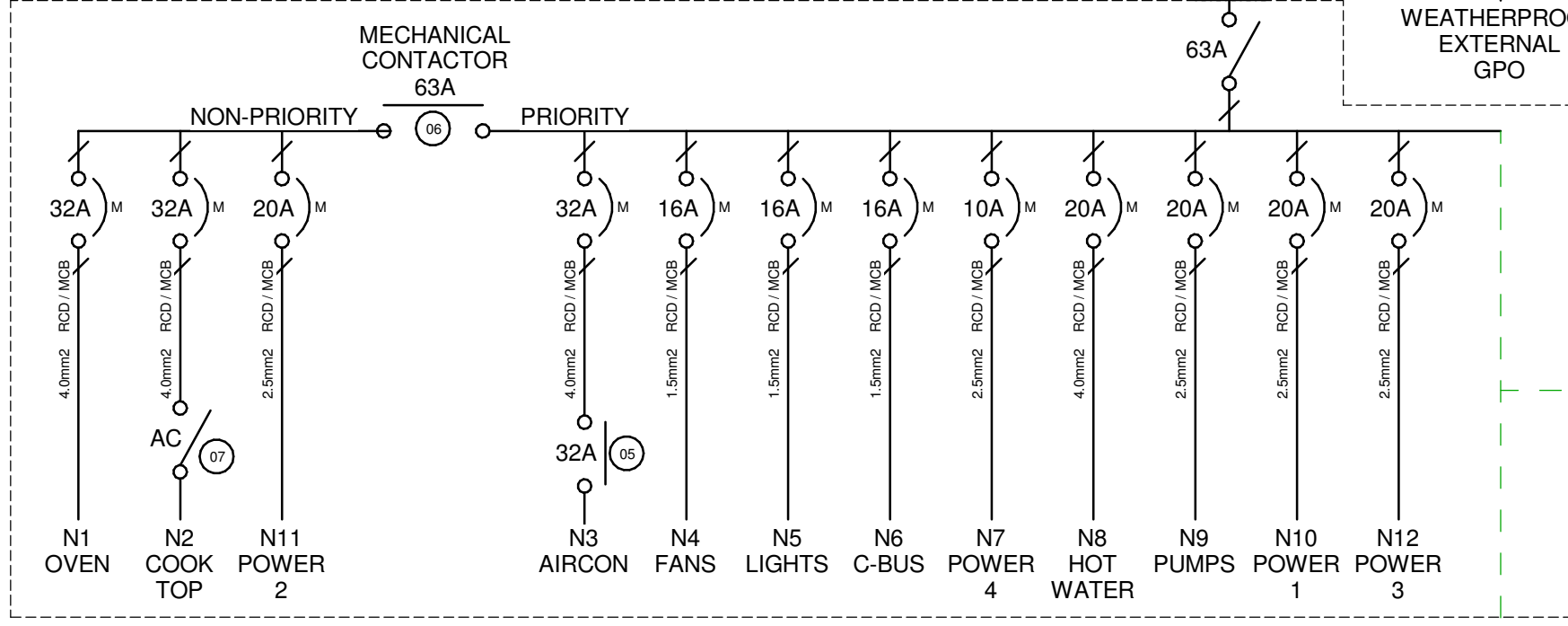
SOLAR DECATHLON EVENT SUPPLIED EQUIPMENT



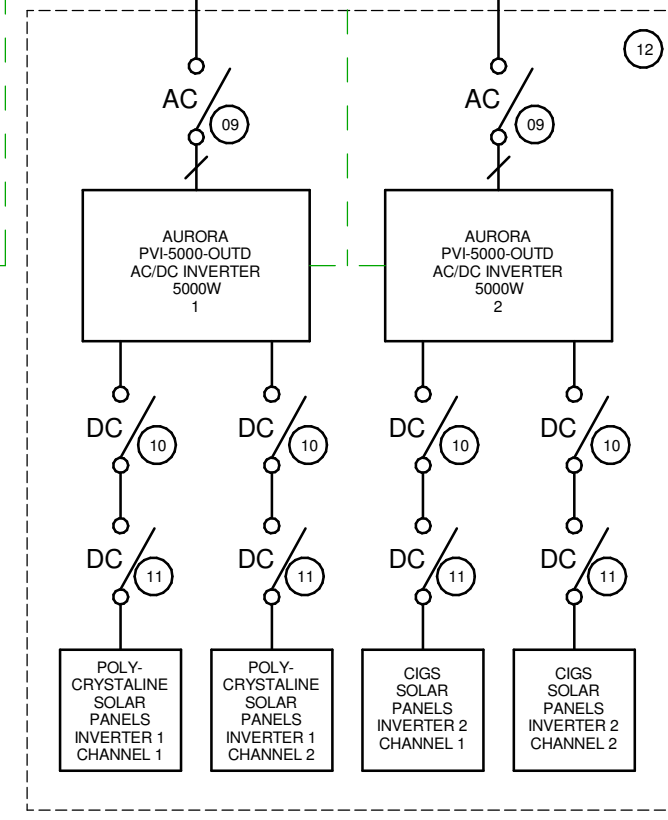
MAIN SWITCH BOARD



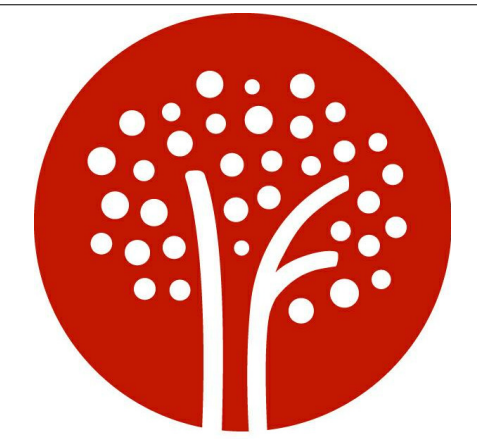
MAIN DISTRIBUTION BOARD



WEATHERPROOF EXTERNAL GPO



SOLAR INSTALLATION - REFER TO E-901



**TEAM UOW AUSTRALIA**  
Illawarra Flame

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WOLLONGONG  
NSW, AUSTRALIA 2522

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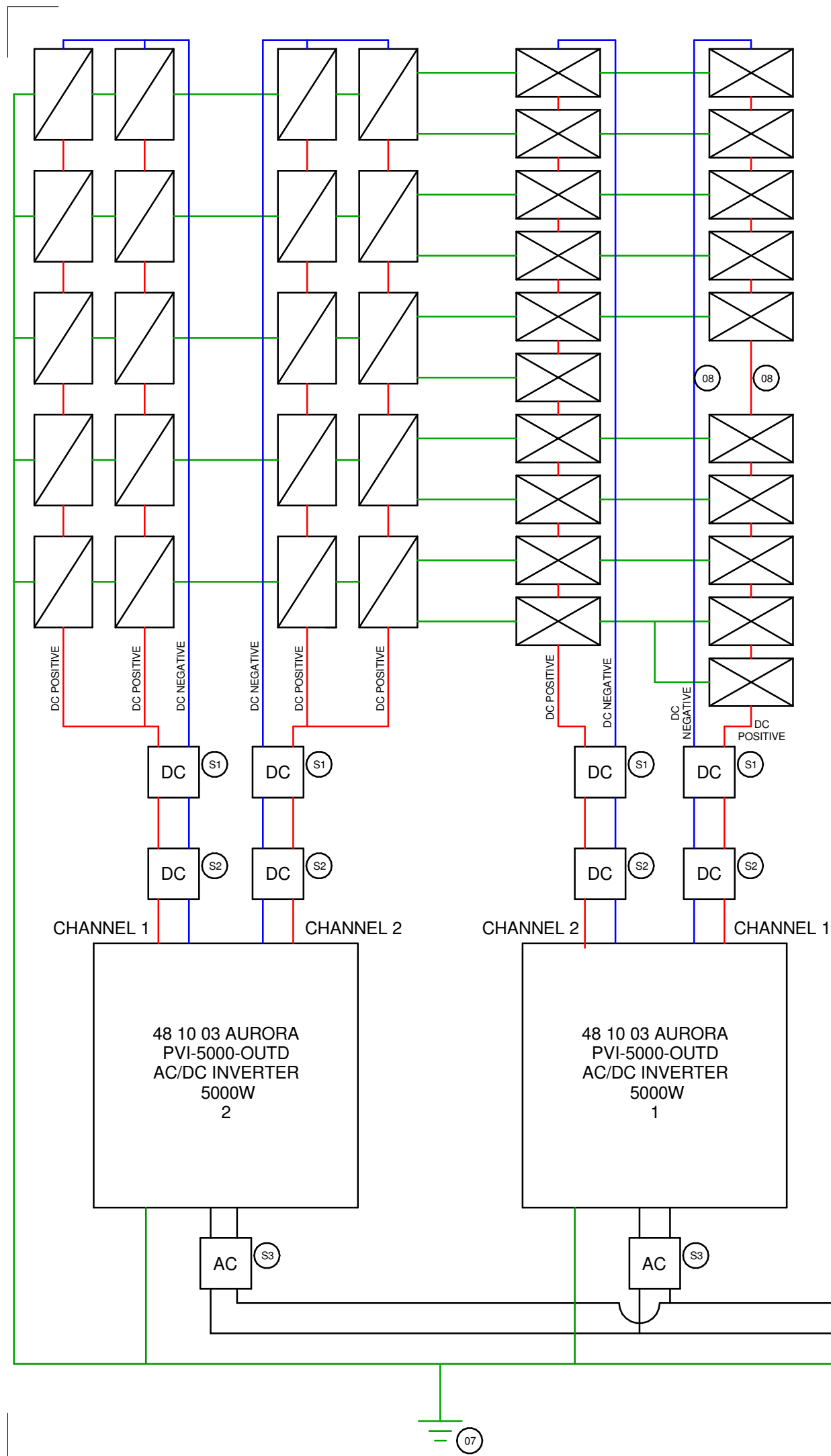
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Scale: N.T.S

Electrical Schematic

**E-900**



**SOLAR ARRAY 1:**  
 MODULE QUANTITY: 20  
 MODULE MODEL: TRINA TSM-PC05A (250W)  
 DUAL MPPT AT INVERTER: A,B  
 STRING CONFIGURATION: A: (1x10), B: (1x10)  
 MAX. STRING CURRENT (Isc): A: 8.90A, B: 8.90A  
 MAX. STRING VOLTAGE (Voc): A: 378V, B: 378V  
 MAX. TOTAL POWER: 5.00kW

**SOLAR ARRAY 2**  
 MODULE QUANTITY: 20  
 MODULE MODEL: SOLOPOWER SP3S220 (220W)  
 DUAL MPPT AT INVERTER: A,B  
 STRING CONFIGURATION: A: (2x5), B: (2x5)  
 MAX. STRING CURRENT (Isc): A: 8.80A, B: 8.80A  
 MAX. STRING VOLTAGE (Voc): A: 413V, B: 413V  
 MAX. TOTAL POWER: 4.40kW

**GRID CONNECTED INVERTER**  
 INVERTER MODEL: AURORA PVI-5000-OUTD  
 MAX. POWER: 5.00kW X 2  
 VOLTAGE: 220V / 50Hz

**NOTES:**

- (S1) 48 10 05 1000V TFV5022 DC ISOLATOR IN WEATHERPROOF ROOF-MOUNTED ENCLOSURE, AS CLOSE AS POSSIBLE TO PV ARRAY
- (S2) 48 10 05 1000V TFV5022 DC ISOLATOR IN WEATHERPROOF ROOF-MOUNTED ENCLOSURE, AS CLOSE AS POSSIBLE TO INVERTER
- (S3) 48 10 04 35A AC ISOLATOR (LOCKABLE IN OFF POSITION)
- (01) ALL DC AND EARTH CABLE SHALL BE 4mm<sup>2</sup> PER CONDUCTOR
- (02) ALL AC CABLE SIZES SHALL BE 4mm<sup>2</sup> PER CONDUCTOR
- (03) THE INSTALLATION SHALL BE COMPLETED BY A LICENCED ELECTRICAL CONTRACTOR AS PER RELEVANT AUSTRALIAN STANDARDS
- (04) ALL CABLES AND ELECTRICAL COMPONENTS SHALL BE DESIGNED AND INSTALLED AS PER RELEVANT AUSTRALIAN STANDARDS
- (05) ALL SAFETY RELATED ISSUES SHALL BE ADDRESSED AS PER RELEVANT AUSTRALIAN STANDARDS
- (06) DESIGN IS COMPLIANT WITH AS5033:2012
- (07) LV EARTH ELECTRODE AND BONDING TO SITE EARTHING SYSTEM
- (08) DC CONNECTION BETWEEN FRONT ROOF AND PANELS ON REAR AWNING
- (09) 26 10 03 MAIN SWITCH BOARD - REFER TO E-900 and E-902 FOR MORE DETAILS
- (10) REFER TO 48 11 00 FOR SWITCH BOARD AND SOLAR SYSTEM LABELLING REQUIREMENTS



**TEAM UOW AUSTRALIA**  
 Illawarra Flame

Team Name: TEAM UOW  
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**Electrical Solar Schematic**

**E-901**





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Illawarra Flame

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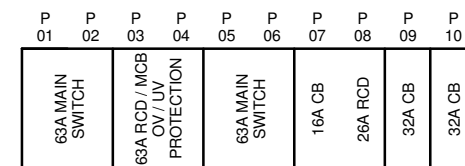
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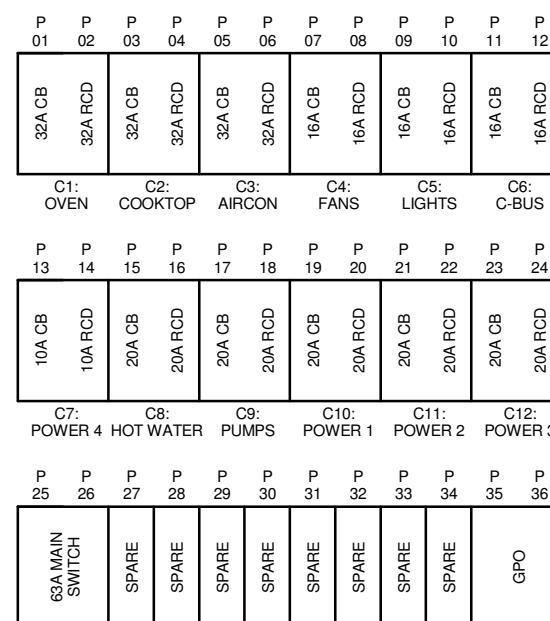
**Electrical Board  
And Switch Details**

**E-902**

**MAIN SWITCH BOARD DIAGRAM**



**MAIN DISTRIBUTION BOARD DIAGRAM**



**SWITCHING SCHEDULE**

SWITCH REF	NO. POINTS ON SWITCH	LIGHTING SWITCH GROUPS
T1	4	S01, S03, S08, S02
T2	7	S02, S04, S05, S06, S08, S13, ALL OFF
T3	4	S05, S07, S13, S20
T4	4	S15, S16, S22, ALL OFF
T5	2	S15, S16
T6	2	S15, S22
T7	4	S14, S18, S19, S22
T8	4	S11, S12, S17, S22
T9	2	S11, S12
T10	2	S10, TOILET EXHAUST
T11	2	S10, S11
T12	4	S09, S21, S22, TOILET EXHAUST
T13	1	COOKTOP ISOLATOR

**MAIN SWITCH BOARD SCHEDULE**

POLE	CIRCUIT REFERENCE	DEVICE	SERVICING
01	MAIN SWITCH	63A PHASE AND NEUTRAL CIRCUIT BREAKER	MAIN SWITCH FOR HOUSE
02			
03	63A UV / OV PROTECTION	63A RCD/MCB AND UNDER/OVER VOLTAGE PROTECTION	HOUSE PROTECTION DEVICE
04			
05	MDB 1	63A PHASE AND NEUTRAL CIRCUIT BREAKER	SUPPLY TO MAIN DISTRIBUTION BOARD
06			
07	MSB 1	16A CIRCUIT BREAKER	WEATHERPROOF GPO UNDER MAIN SWITCH BOARD
08	MSB 1	16A RCD PROTECTION	
09	INVERTER 1	32A CIRCUIT BREAKER	SOLAR INVERTER 1
10	INVERTER 2	32A CIRCUIT BREAKER	SOLAR INVERTER 2

**MAIN SWITCH BOARD SCHEDULE**

POLE	CIRCUIT REFERENCE	DEVICE	SERVICING
01	C1	32A CIRCUIT BREAKER	DIRECT CONNECT OVEN IN KITCHEN
02	C1	32A RCD PROTECTION	
03	C2	32A CIRCUIT BREAKER	DIRECT CONNECT COOKTOP VIA ISOLATOR IN KITCHEN
04	C2	32A RCD PROTECTION	
05	C3	32A CIRCUIT BREAKER	HVAC INDOOR UNIT, OUTDOOR UNIT AND CONTROLLER
06	C3	32A RCD PROTECTION	
07	C4	16A CIRCUIT BREAKER	PVT AND PCM FAN IN ROOF AND VSD DRIVES
08	C4	16A RCD PROTECTION	
09	C5	16A CIRCUIT BREAKER	ALL LIGHTS
10	C5	16A RCD PROTECTION	
11	C6	16A CIRCUIT BREAKER	ADJACENT C-BUS BOARDS
12	C6	16A RCD PROTECTION	
13	C7	10A CIRCUIT BREAKER	CONTROL EQUIPMENT VIA LOCAL GPO OUTLETS
14	C7	10A RCD PROTECTION	
15	C8	20A CIRCUIT BREAKER	HOT WATER SYSTEM VIA GPO ADJACENT HOT WATER
16	C8	20A RCD PROTECTION	
17	C9	20A CIRCUIT BREAKER	GREY WATER AND RAIN WATER PUMP EXTERNAL TO BUILDING
18	C9	20A RCD PROTECTION	
19	C10	20A CIRCUIT BREAKER	PRIORITY POWER CIRCUIT
20	C10	20A RCD PROTECTION	
21	C11	20A CIRCUIT BREAKER	NON-PRIORITY POWER CIRCUIT
22	C11	20A RCD PROTECTION	
23	C12	20A CIRCUIT BREAKER	KITCHEN POWER OUTLETS
24	C12	20A RCD PROTECTION	
25	MDB 2	63A PHASE AND NEUTRAL CIRCUIT BREAKER	MAIN SUPPLY FROM MSB
26			
27	SPARE		
28	SPARE		
29	SPARE		
30	SPARE		
31	SPARE		
32	SPARE		
33	SPARE		
34	SPARE		
35	GPO	GENERAL PURPOSE OUTLET	OUTLET FOR LOCAL CONTROL EQUIPMENT FROM C6
36			

# MECHANICAL COVER SHEET

## MECHANICAL DRAWING LIST

DOC No.	DESCRIPTION	SCALE	REVISION
M-000	MECHANICAL COVER SHEET	NTS	C4 - 03/6/13
M-001	MECHANICAL DRAWING KEY	1:50	C4 - 03/6/13
M-100	MECHANICAL MAJOR EQUIPMENT	1:50	C4 - 03/6/13
M-200	MECHANICAL SUPPLY AIR PLAN	1:50	C4 - 03/6/13
M-201	MECHANICAL EXHAUST AIR PLAN	1:50	C4 - 03/6/13
M-202	MECHANICAL PVT PLAN	1:50	C4 - 03/6/13
M-203	MECHANICAL PCM PLAN	1:50	C4 - 03/6/13
M-204	MECHANICAL CONDENSER PLAN	1:50	C4 - 03/6/13
M-300	MECHANICAL PHASE CHANGE DETAILS	1:10	C4 - 03/6/13
M-900	MECHANICAL AIR SCHEMATIC	NTS	C4 - 03/6/13

## GENERAL NOTES

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND PLUMBING DRAWINGS
- MECHANICAL DRAWINGS REFERENCE TO MECHANICAL SPECIFICATIONS:
  - DIVISION 23 - HEATING, VENTILATION AND AIR CONDITIONING (HVAC)
  - SECTION 10.7 - ADVANCED HVAC SYSTEM COMPONENTS AND CONTROL
- "S/A" REFERS TO SUPPLY AIR                      - "R/A" REFERS TO RETURN AIR
- "T/E" REFERS TO TOILET EXHAUST              - "K/E" REFERS TO KITCHEN EXHAUST
- "O/A" REFERS TO OUTSIDE AIR
- "PCM" REFER TO THE PHASE CHANGE MATERIAL SYSTEM
- "PVT" REFER TO THE PHOTOVOLTAIC THERMAL SYSTEM
- "N.T.S" REFERS TO "NOT TO SCALE"
- NUMERICAL FIGURES SHOWN IN THE FORMAT ## ## ## REFER TO ACCOMPANYING SPECIFICATION DIVISION REFERENCES



**TEAM UOW AUSTRALIA**  
Illawarra Flame

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NSW, AUSTRALIA 2522

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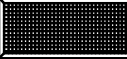








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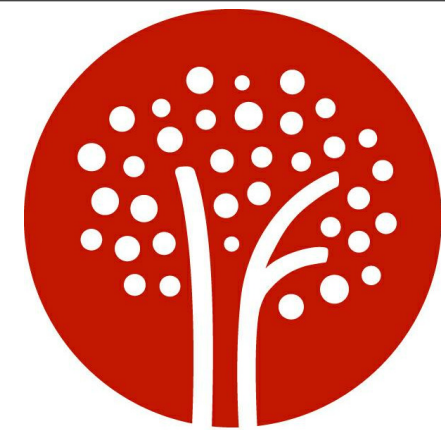
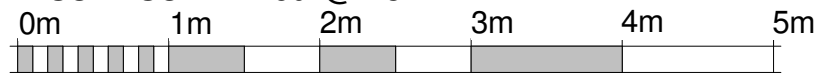
Scale: N.T.S

**Mechanical Cover Sheet**

**M-000**

SYMBOL.	DESCRIPTION	SYMBOL.	DESCRIPTION
	SOLID DUCTWORK BEND		OUTSIDE AIR RISER
	23 10 11 MOTORISED BARREL DAMPER 24VAC		TEMPERATURE SENSOR
	23 10 11 150 x 150 EGG CRATE EXHAUST GRILLE		SUPPLY AIR FLEXIBLE DUCT
			FLEXIBLE DUCT TAKE OFF
	23 10 04 300 X 300 3-WAY SUPPLY AIR DIFFUSER		FLEXIBLE DUCT 4 WAY CONNECTOR
			PERFORATED PLATE
			SOLID DUCT TRANSITION
	23 10 15 FANTECH PCD35400 CENTRIFUGAL FAN (300l/s) + VACO VP10 VSD DRIVE AT MDB - REFER TO E-600		DIGITAL TEMPERATURE SENSOR
			AIR VELOCITY METER
			PRESSURE SENSOR
	23 10 08 HIGHLAND CHH9013 ISLAND BENCH KITCHEN RANGEHOOD (340l/s)		PVT AIR INTAKE SYSTEM
			PVT RIDGE AIR PLENUM
	SOLID DUCTWORK 4 WAY CONNECTOR		
	WALL MOUNTED SWITCH BOARD		
	23 10 05 DOUBLE DEFLECTION SIDE BLOW DIFFUSER		
	23 10 07 900 X 400 R/A EGGCRATE GRILLE WITH REMOVABLE FILTER AND PLENUM BEHIND		
	SOLID DUCTWORK 3 WAY CONNECTOR		
	23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT		
	SUPPLY AIR SOLID DUCTWORK		
	RETURN/OUTSIDE AIR SOLID DUCTWORK		
	EXHAUST AIR SOLID DUCTWORK		
	FLEXIBLE DUCT TAKE OFF IN TOP OR BOTTOM OF DUCT		
	EXHAUST AIR FLEXIBLE DUCT		
	RETURN/OUTSIDE AIR FLEXIBLE DUCT		

VISUAL SCALE 1:50 @ A3



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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Lot Number #303

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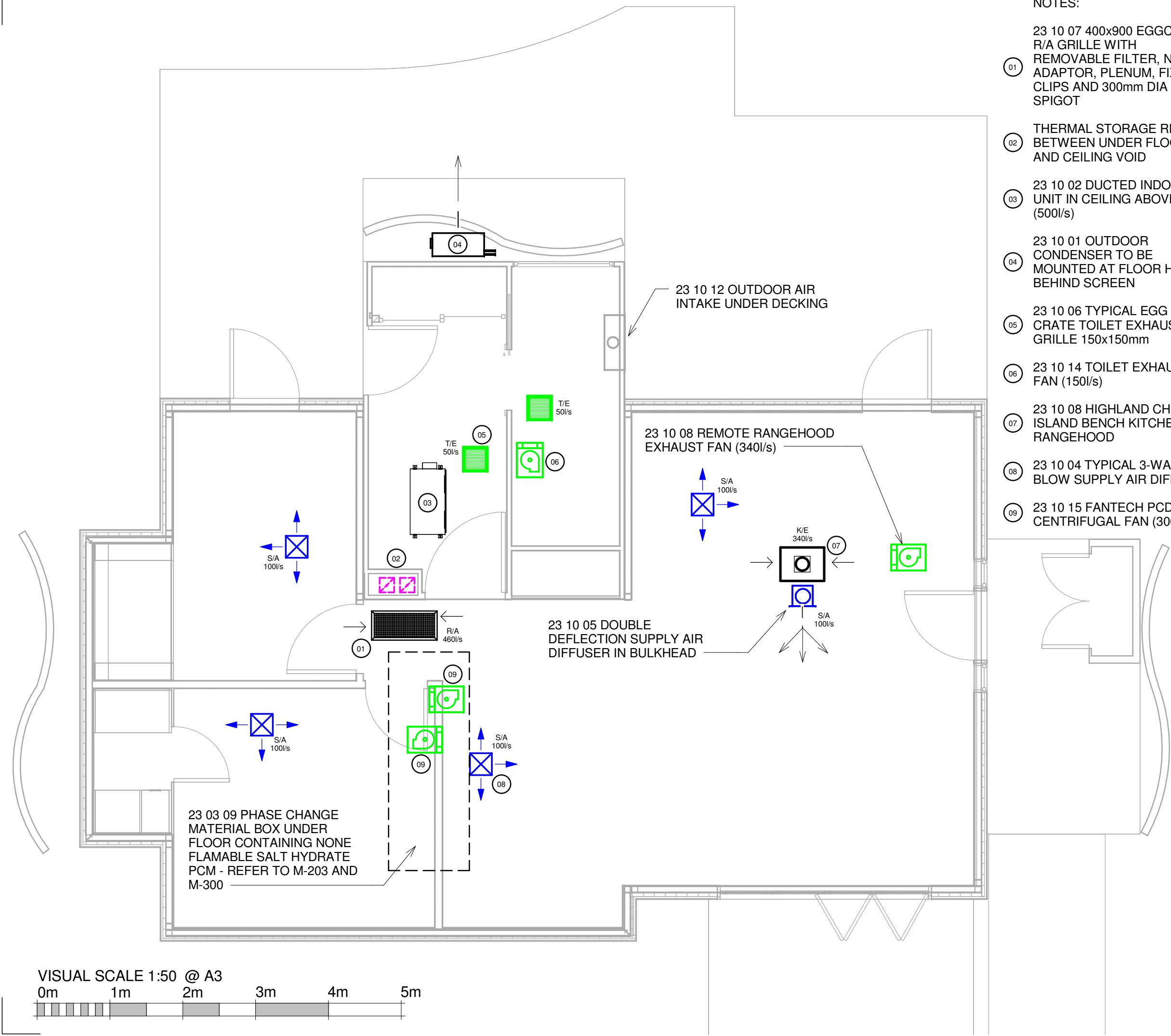
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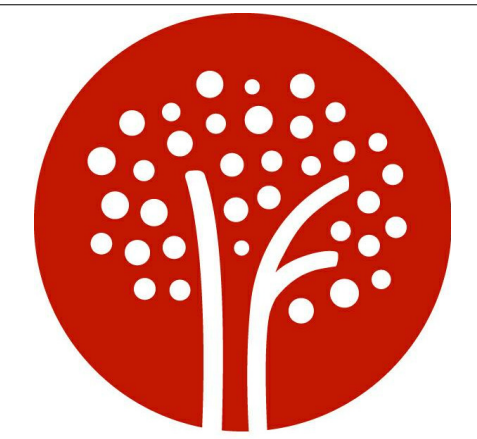
**Mechanical  
Drawing Key**

**M-001**





- NOTES:
- 01 23 10 07 400x900 EGGCRATE R/A GRILLE WITH REMOVABLE FILTER, NECK ADAPTOR, PLENUM, FIXING CLIPS AND 300mm DIA SPIGOT
  - 02 THERMAL STORAGE RISERS BETWEEN UNDER FLOOR AND CEILING VOID
  - 03 23 10 02 DUCTED INDOOR UNIT IN CEILING ABOVE (500l/s)
  - 04 23 10 01 OUTDOOR CONDENSER TO BE MOUNTED AT FLOOR HEIGHT BEHIND SCREEN
  - 05 23 10 06 TYPICAL EGG CRATE TOILET EXHAUST GRILLE 150x150mm
  - 06 23 10 14 TOILET EXHAUST FAN (150l/s)
  - 07 23 10 08 HIGHLAND CHH9013 ISLAND BENCH KITCHEN RANGEHOOD
  - 08 23 10 04 TYPICAL 3-WAY BLOW SUPPLY AIR DIFFUSER
  - 09 23 10 15 FANTECH PCD35400 CENTRIFUGAL FAN (300l/s)



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Illawarra Flame

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 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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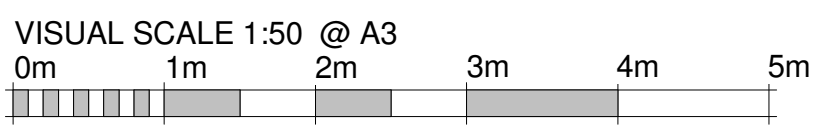
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**Mechanical Major Equipment**

**M-100**





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Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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**Mechanical Supply Air Plan**



**M-200**

**NOTES:**

01 23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT (500l/s)

02 23 10 09 FLEXIBLE DUCT TAKE-OFFS INCLUDING BALANCING DAMPERS

03 23 10 09 INTERNALLY INSULATED SUPPLY AIR PLENUM OFF FRONT OF INDOOR UNIT

04 23 10 19 TYPICAL INSULATED FLEXIBLE DUCT WITH SIZES NOMINATED ON DRAWINGS

05 23 10 07 400x900 EGGCRATE R/A GRILLE WITH REMOVABLE FILTER, NECK ADAPTOR, PLENUM, FIXING CLIPS AND 300mm DIA SPIGOT

06 D6 RETURN AIR TO INDOOR UNIT SHUT OFF DAMPER 300mm DIAMETER

07 D7 PCM RISER SHUT OFF DAMPER 200mm DIAMETER

08 REFER TO M-900 FOR AIR SCHEMATIC AND DAMPER CONTROL DETAILS

09 THERMAL STORAGE RISERS BETWEEN UNDER FLOOR AND CEILING VOID

10 23 10 04 TYPICAL 3-WAY BLOW SUPPLY AIR DIFFUSER

11 23 10 10 INTERNALLY INSULATED RETURN AIR PLENUM

FLEXIBLE DUCT FITTING 300mm IN TO 3 x 200mm OUT

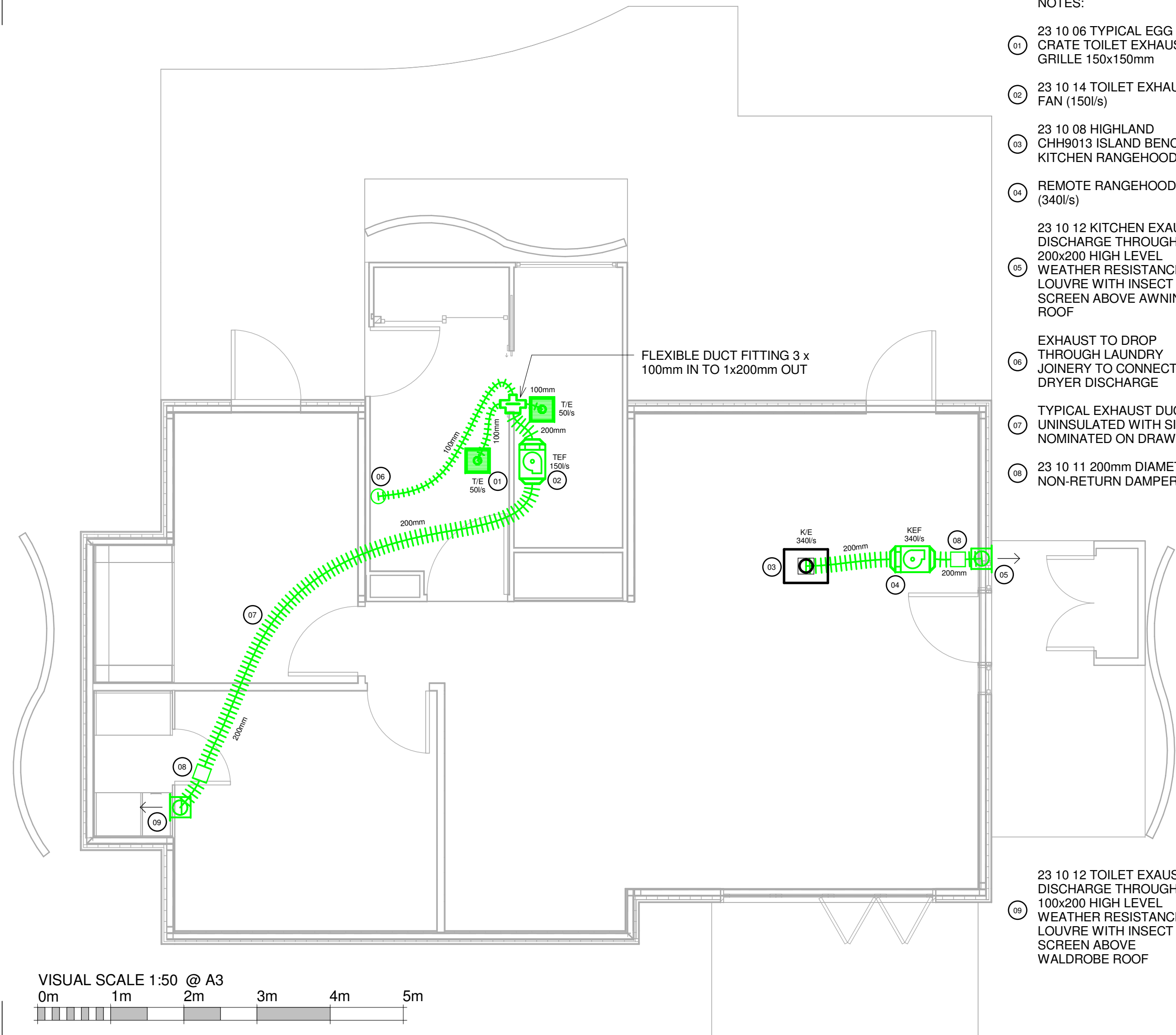
23 10 05 DOUBLE DEFLECTION SUPPLY AIR DIFFUSER IN BULKHEAD

FLEXIBLE DUCT FITTING 300mm IN TO 200mm AND 300mm OUT

OUTLINE OF RAKED CEILING AREA ABOVE

VISUAL SCALE 1:50 @ A3

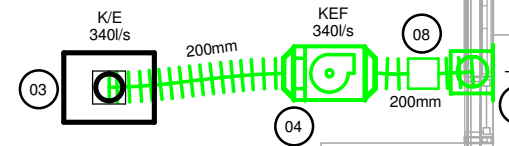




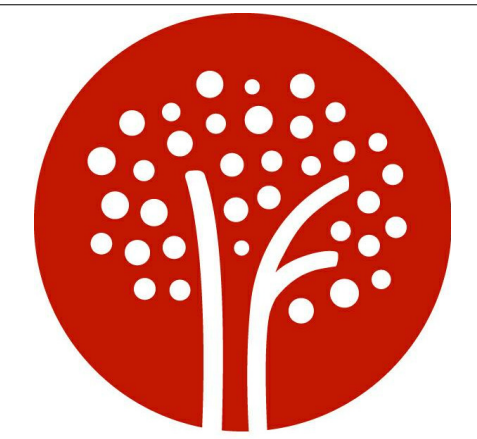
NOTES:

- (01) 23 10 06 TYPICAL EGG CRATE TOILET EXHAUST GRILLE 150x150mm
- (02) 23 10 14 TOILET EXHAUST FAN (150l/s)
- (03) 23 10 08 HIGHLAND CHH9013 ISLAND BENCH KITCHEN RANGEHOOD
- (04) REMOTE RANGEHOOD FAN (340l/s)
- (05) 23 10 12 KITCHEN EXHAUST DISCHARGE THROUGH 200x200 HIGH LEVEL WEATHER RESISTANCE LOUVRE WITH INSECT SCREEN ABOVE AWNING ROOF
- (06) EXHAUST TO DROP THROUGH LAUNDRY JOINERY TO CONNECT TO DRYER DISCHARGE
- (07) TYPICAL EXHAUST DUCT UNINSULATED WITH SIZES NOMINATED ON DRAWINGS
- (08) 23 10 11 200mm DIAMETER NON-RETURN DAMPER

FLEXIBLE DUCT FITTING 3 x 100mm IN TO 1x200mm OUT



(09) 23 10 12 TOILET EXHAUST DISCHARGE THROUGH 100x200 HIGH LEVEL WEATHER RESISTANCE LOUVRE WITH INSECT SCREEN ABOVE WALDROBE ROOF



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au  
 www.illawarraflame.com.au



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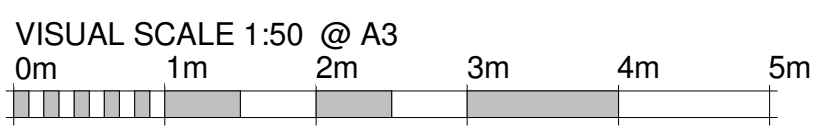
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**Mechanical Exhaust Air Plan**



**M-201**







**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au  
 www.illawarraflame.com.au



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**Mechanical PVT Plan**

NORTH

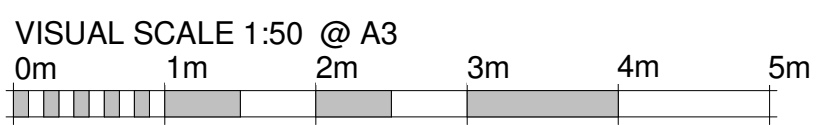
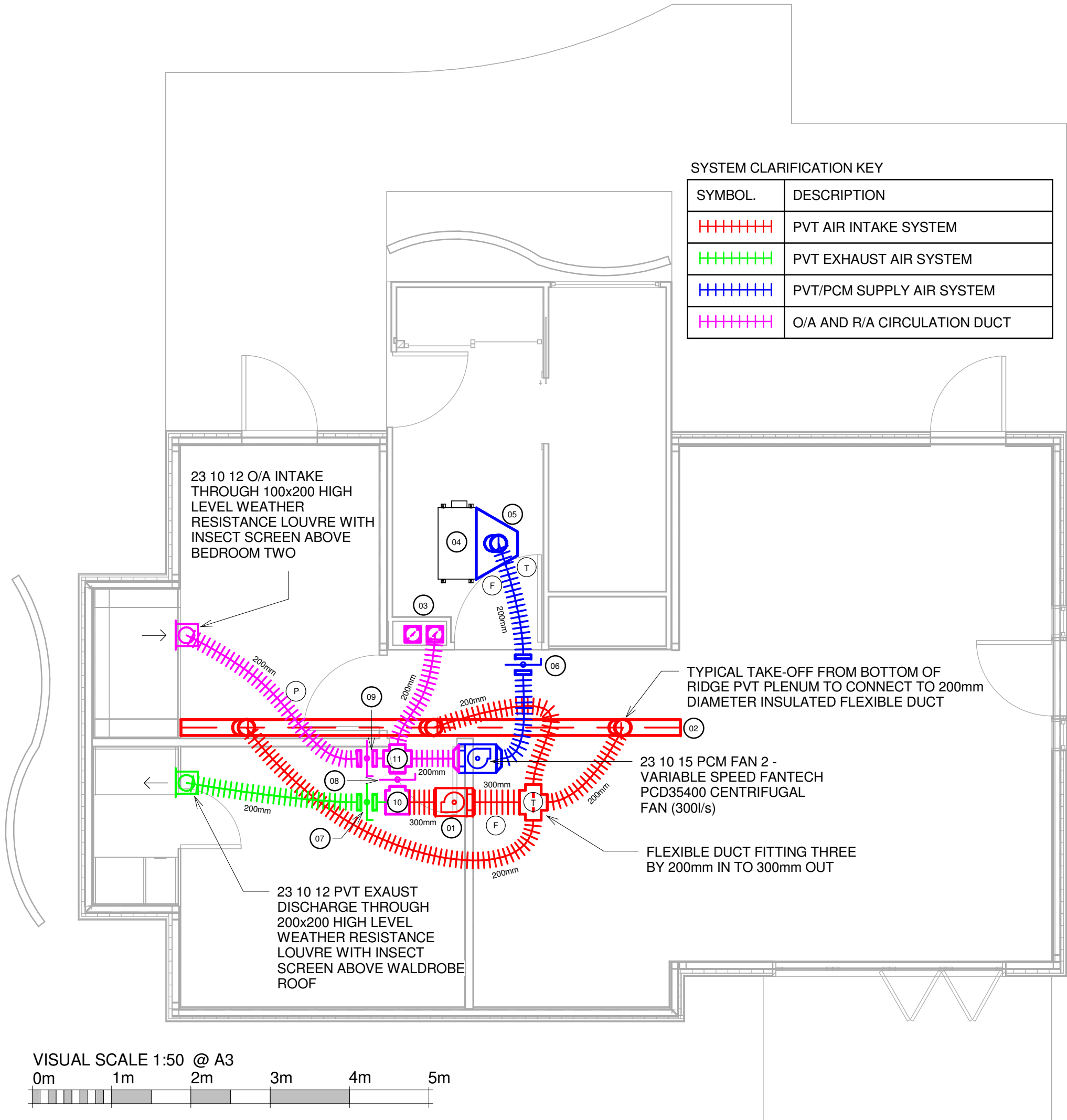
**M-202**

NOTES:

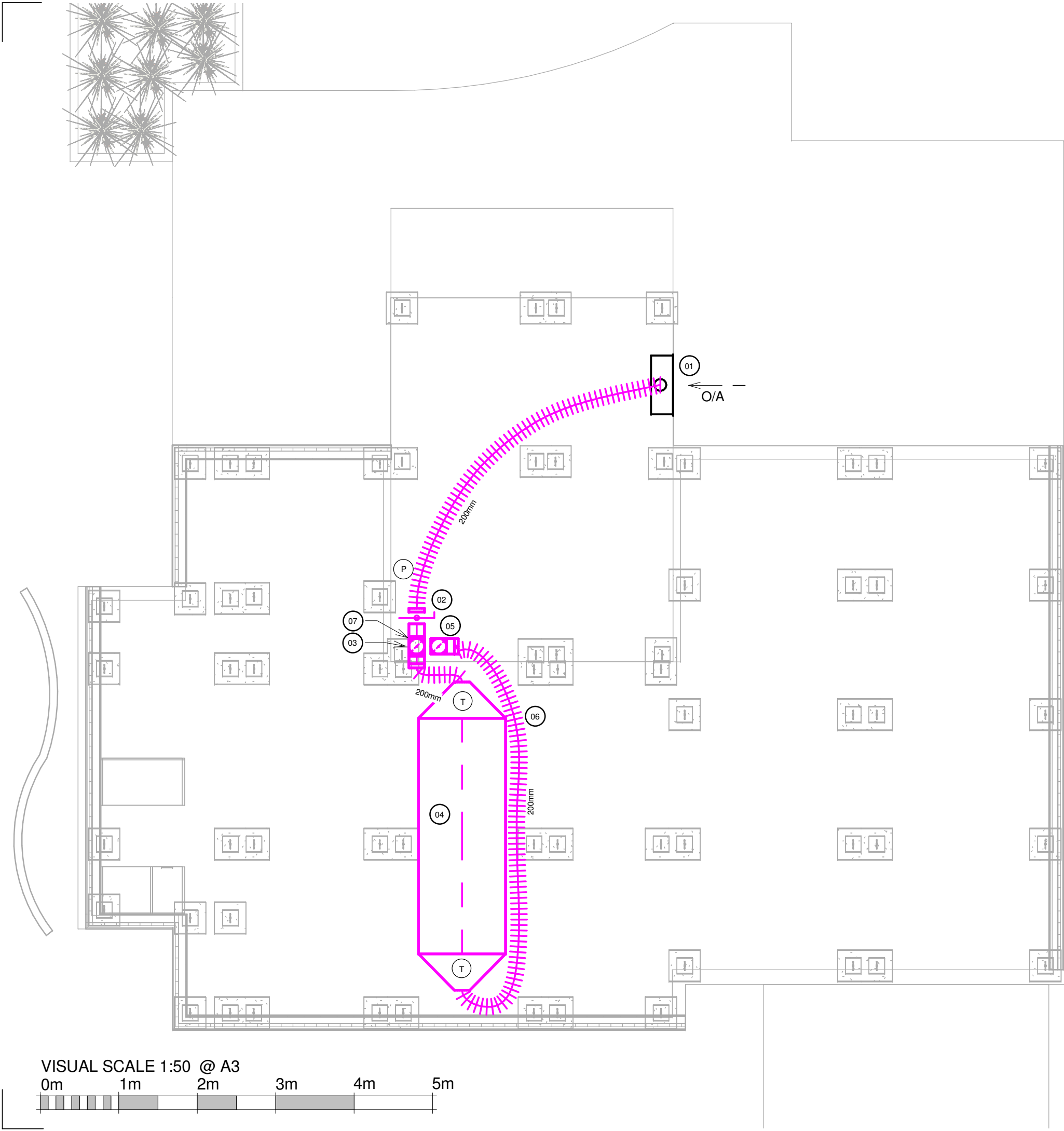
- 01 23 10 15 PVT FAN 1 - VARIABLE SPEED FANTECH PCD35400 CENTRIFUGAL FAN (300l/s)
- 02 PHOTOVOLTAIC THERMAL AIR PLENUM AT HIGH LEVEL
- 03 RISER FROM ROOF PHOTOVOLTAIC THERMAL SYSTEM TO PHASE CHANGE MATERIAL SYSTEM UNDER FLOOR INCLUDING FLEXIBLE DUCT TAKE OFF AT TOP AND TWO BY 200x200mm INSULATED SOLID DUCTS
- 04 23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT (500l/s)
- 05 23 10 09 SPIGOT INTO INSULATED S/A PLENUM FOR PVT/PCM SYSTEM AIR DISTRIBUTION
- 06 D2 PVT/PCM SYSTEM SUPPLY AIR SHUT-OFF DAMPER 200mm DIAMETER
- 07 D4 PVT EXHAUST TO OUTSIDE DAMPER 200mm DIAMETER
- 08 D1 PVT SUPPLY DAMPER 200mm DIAMETER

SYSTEM CLARIFICATION KEY

SYMBOL.	DESCRIPTION
+++++	PVT AIR INTAKE SYSTEM
+++++	PVT EXHAUST AIR SYSTEM
+++++	PVT/PCM SUPPLY AIR SYSTEM
+++++	O/A AND R/A CIRCULATION DUCT

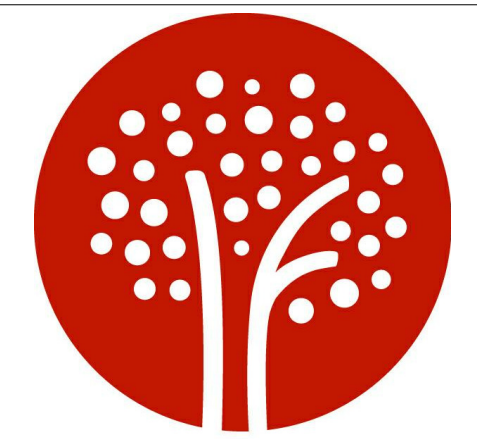


- 09 D3 OUTSIDE AIR INTAKE VARIABLE DAMPER 200mm DIAMETER
- 10 FLEXIBLE DUCT FITTING 300mm IN TO TWO BY 200mm OUT
- 11 FLEXIBLE DUCT FITTING 200mm IN TO THREE BY 200mm OUT



NOTES:

- 01 23 10 12 100x200 OUTSIDE AIR GRILLE WITH INSECT SCREEN
- 02 D5 OUTSIDE AIR INTAKE VARIABLE DAMPER 200mm DIAMETER
- 03 PVT RISER DRAWING AIR FROM SOLAR PANELS ABOVE - REFER TO M-202
- 04 23 10 13 PHASE CHANGE MATERIAL BOX UNDER FLOOR REFER TO DETAIL 1 ON M-300 - BOX CONTAINS NON-FLAMMABLE SALT HYDRATE PCM
- 05 RISER FROM RETURN AIR PLENUM ABOVE - REFER TO M-200
- 06 TYPICAL INSULATED FLEXIBLE DUCT 200mm IN DIAMETER
- 07 THREE-WAY SOLID DUCT TEE 200x200 ON EACH THREE DIRECTIONS



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au  
 www.illawarraflame.com.au



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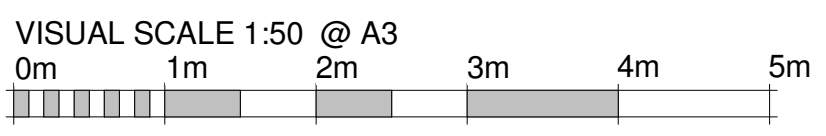


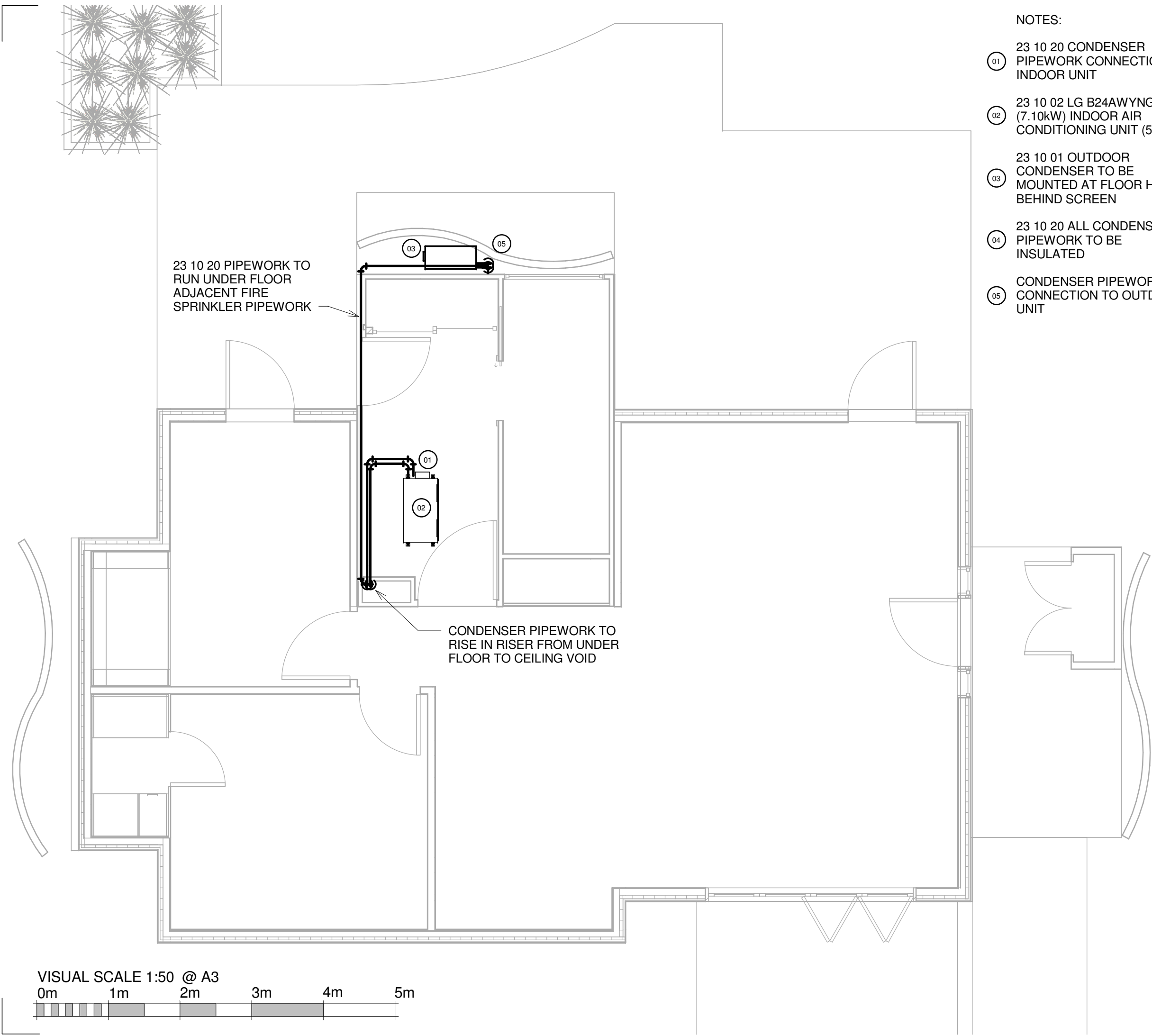
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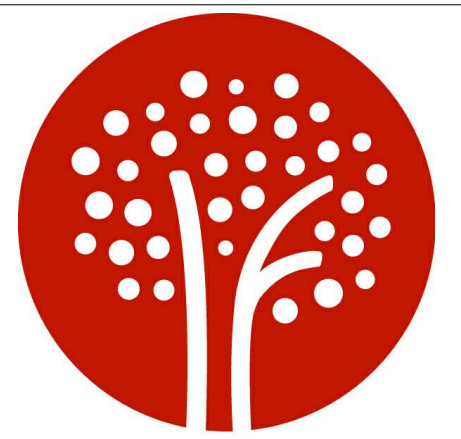
**Mechanical PCM Plan**





NOTES:

- (01) 23 10 20 CONDENSER PIPEWORK CONNECTION TO INDOOR UNIT
- (02) 23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT (500l/s)
- (03) 23 10 01 OUTDOOR CONDENSER TO BE MOUNTED AT FLOOR HEIGHT BEHIND SCREEN
- (04) 23 10 20 ALL CONDENSER PIPEWORK TO BE INSULATED
- (05) CONDENSER PIPEWORK CONNECTION TO OUTDOOR UNIT



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au  
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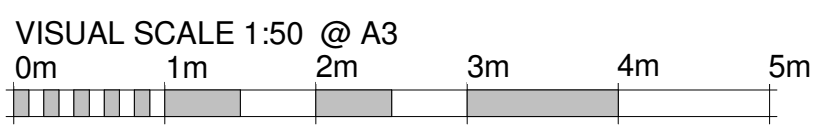


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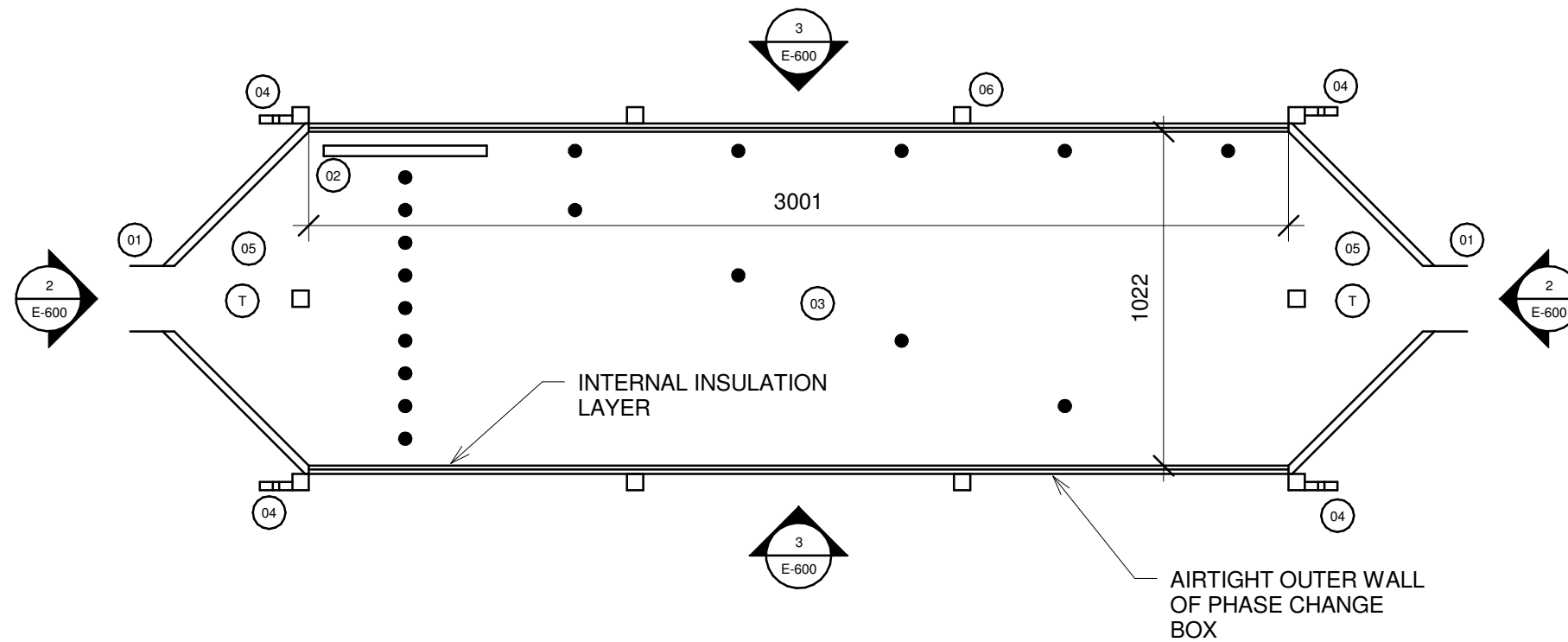
**Mechanical  
 Condenser Plan**



**M-204**



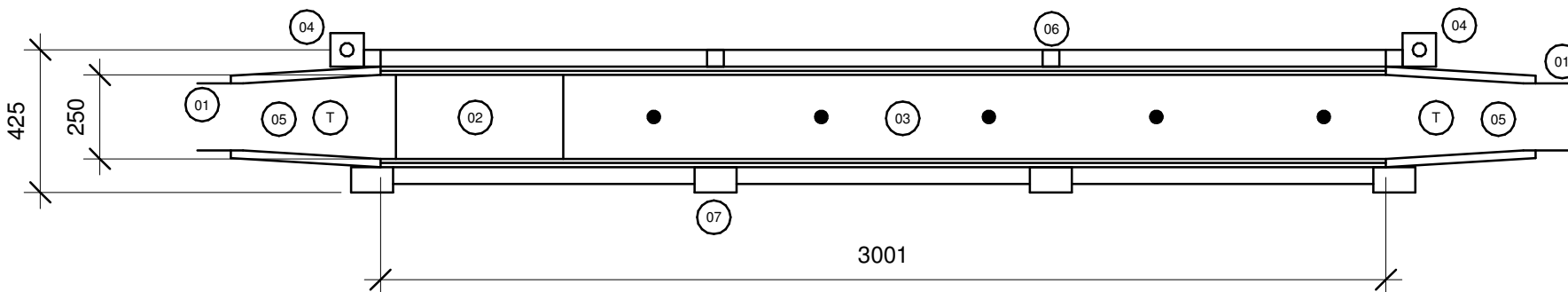
Detail 1 - Phase Change Box Midpoint Section



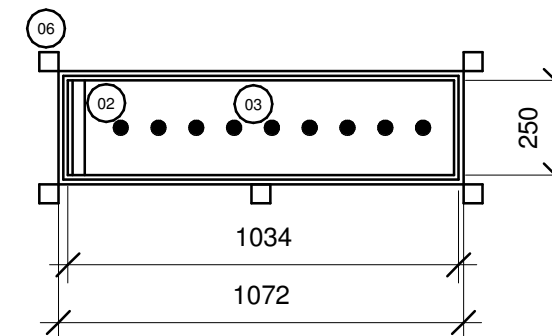
NOTES:

- 01 200mm DIAMETER SPIGOT FOR CONNECTION TO FLEXIBLE DUCT
- 02 23 10 13 SEALED PLASTIC PCM CONTAINER WITH NONE FLAMMABLE SALT HYDRATE PHASE CHANGE SUBSTANCE WITHIN
- 03 PCM CONTAINERS TO BE SPACED EVENLY IN PCM STORAGE BOX 1 HIGH X 6 LONG X 20 ACROSS
- 04 PCM BOX LIFTING POINTS
- 05 PCM BOX TO 200mm DIAMETER FLEXIBLE DUCT TRANSITION AIR PLENUM WITH 25mm INSULATION
- 06 TYPICAL METAL FRAME SECTION 50x50mm
- 07 TYPICAL METAL FRAME SECTION 125x75mm

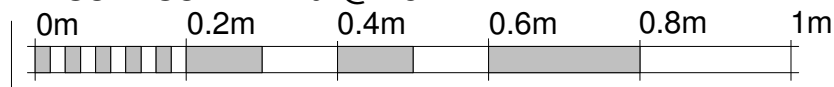
Detail 2 - Phase Change Box Length Section



Detail 3 - Phase Change Box Cross Section



VISUAL SCALE 1:10 @ A3



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Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
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Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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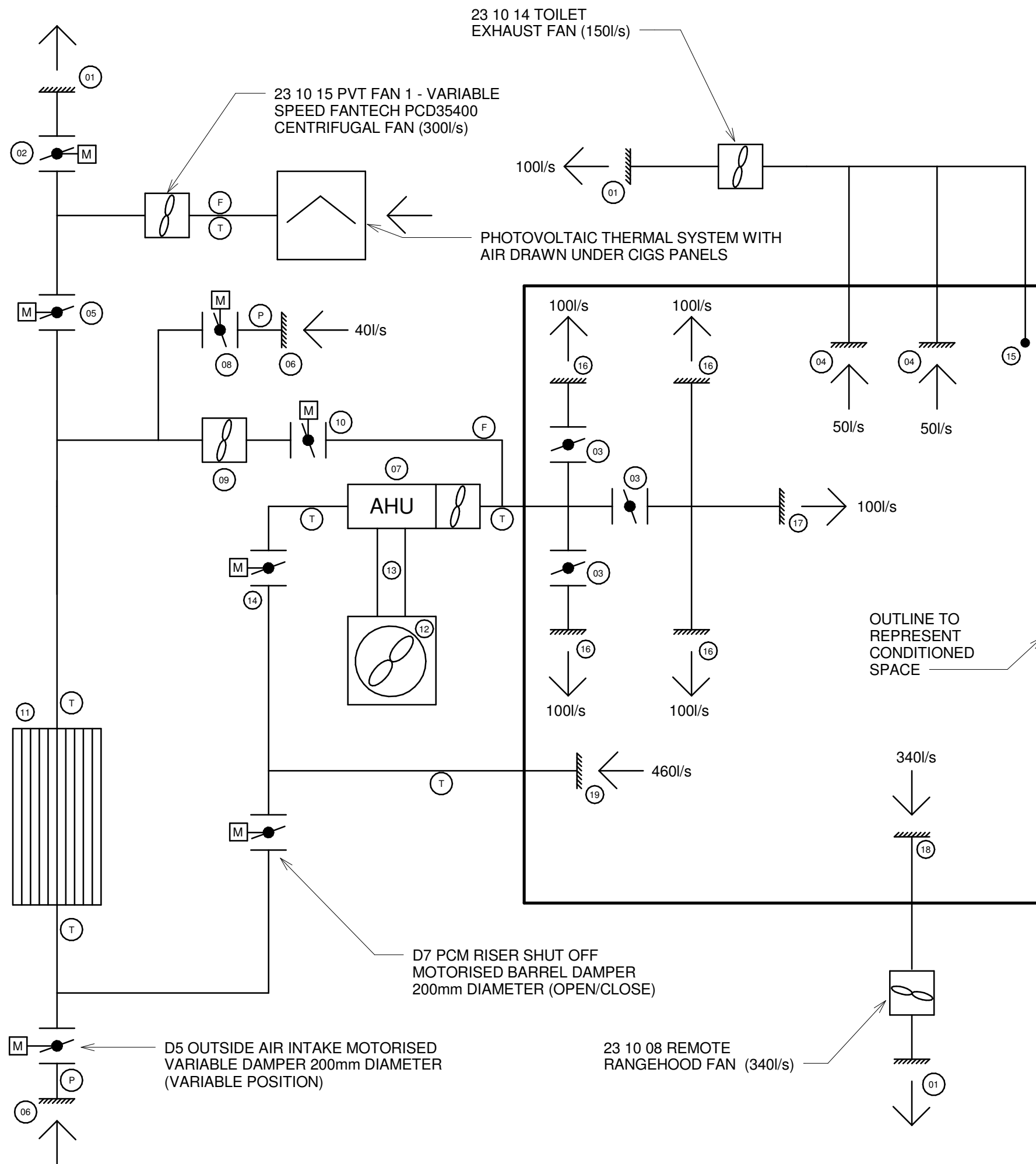
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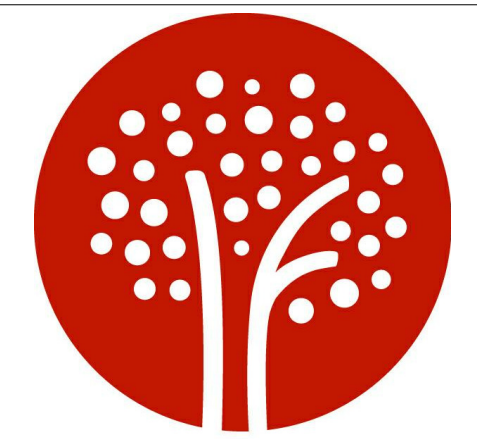
Phase Change  
Details

**M-300**



NOTES:

- 01 23 10 12 WEATHER PROOF EXHAUST GRILLE WITH INSECT SCREEN
- 02 D4 PVT EXHAUST TO OUTSIDE MOTORISED BARREL DAMPER 200mm DIAMETER (OPEN/CLOSE)
- 03 23 10 09 BALANCING DAMPERS WITH LOCK NUT IN SUPPLY AIR PLENUM
- 04 23 10 06 TYPICAL EGG CRATE TOILET EXHAUST GRILLE 150x150mm
- 05 D1 PVT SUPPLY MOTORISED BARREL DAMPER 200mm DIAMETER (OPEN/CLOSE)
- 06 23 10 12 WEATHER PROOF INTAKE GRILLE WITH INSECT SCREEN AND FILTER
- 07 23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT (500l/s)
- 08 D3 OUTSIDE AIR INTAKE MOTORISED VARIABLE DAMPER 200mm DIAMETER (VARIABLE POSITION)
- 09 23 10 15 PCM FAN 2 - VARIABLE SPEED FANTECH PCD35400 CENTRIFUGAL FAN (300l/s)
- 10 D2 PVT/PCM SYSTEM SUPPLY AIR SHUT-OFF MOTORISED BARREL DAMPER 200mm DIAMETER (OPEN/CLOSE)
- 11 23 03 09 PHASE CHANGE MATERIAL BOX CONTAINING NONE FLAMMABLE SALT HYDRATE PCM
- 12 23 10 01 LG B24AWYUGMH (7.10kW) OUTDOOR AIR CONDITIONING UNIT
- 13 23 10 20 CONDENSER PIPEWORK FLOW AND RETURN
- 14 D6 RETURN AIR TO INDOOR UNIT SHUT OFF MOTORISED BARREL DAMPER 300mm DIAMETER (OPEN/CLOSE)
- 15 TOILET EXHAUST CONNECTION TO DRYER (50l/s)
- 16 23 10 04 TYPICAL 3-WAY BLOW SUPPLY AIR DIFFUSER
- 17 23 10 05 DOUBLE DEFLECTION SUPPLY AIR DIFFUSER
- 18 23 10 08 HIGHLAND CHH9013 ISLAND BENCH KITCHEN RANGEHOOD (340l/s)
- 19 23 10 07 400x900 EGGCRATE R/A GRILLE WITH REMOVABLE FILTER, NECK ADAPTOR, PLENUM, FIXING CLIPS AND 300mm DIA SPIGOT



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
Address: UNIVERSITY OF WOLLONGONG WOLLONGONG NSW, AUSTRALIA 2522  
Contact: sd2013@uow.edu.au www.illawarraflame.com.au



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**Mechanical Air Schematic**

**M-900**

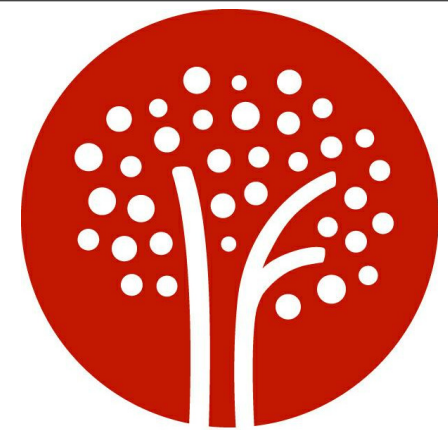
# PLUMBING (HYDRAULIC) AND FIRE COVER SHEET

## PLUMBING DRAWING LIST

DOC No.	DESCRIPTION	SCALE	REVISION
P-000	PLUMBING COVER SHEET	NTS	C4 - 03/6/13
P-001	PLUMBING DRAWING KEY	1:50	C4 - 03/6/13
P-100	PLUMBING SITE PLAN	1:100	C4 - 03/6/13
P-200	PLUMBING DOMESTIC COLD WATER PLAN	1:50	C4 - 03/6/13
P-201	PLUMBING HOT WATER PLAN	1:50	C4 - 03/6/13
P-202	PLUMBING GREY WATER PLAN	1:50	C4 - 03/6/13
P-203	PLUMBING SEWER PLAN	1:50	C4 - 03/6/13
P-204	PLUMBING RAIN WATER PLAN	1:50	C4 - 03/6/13
P-205	PLUMBING FIRE EQUIPMENT PLAN	1:50	C4 - 03/6/13
P-206	PLUMBING FIRE SPRINKLER PLAN	1:50	C4 - 03/6/13
P-900	PLUMBING SCHEMATICS	NTS	C4 - 03/6/13
P-901	PLUMBING HOT WATER SCHEMATIC	NTS	C4 - 03/6/13

## GENERAL NOTES

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS
- PLUMBING DRAWINGS REFERENCE TO PLUMBING SPECIFICATIONS:
  - DIVISION 11 - EQUIPMENT
  - SECTION 21 - FIRE SUPPRESSION
  - DIVISION 22 - PLUMBING
  - DIVISION 33 - UTILITIES
  - DIVISION 35 - WATERWAYS AND MARINE CONSTRUCTION
- "N.T.S" REFERS TO "NOT TO SCALE"
- NUMERICAL FIGURES SHOWN IN THE FORMAT ## ## ## REFER TO ACCOMPANYING SPECIFICATION DIVISION REFERENCES



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

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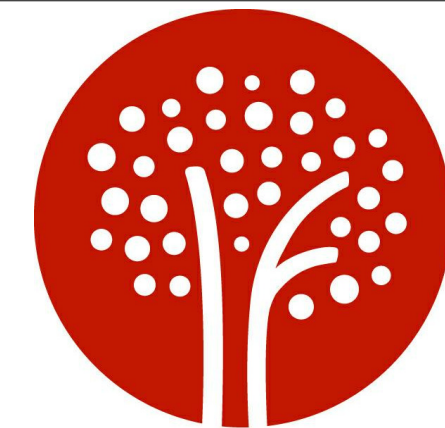
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Plumbing Cover  
Sheet

**P-000**



SYMBOL.	DESCRIPTION	SYMBOL.	DESCRIPTION
	WATER METER AND ISOLATION	---	INSULATED SOLAR HOT WATER PIPEWORK
	DOMESTIC COLD WATER PIPEWORK		33 03 04 SOLAR DECATHLON EVENT SUPPLIED SEWER WELL
	HOT WATER PIPEWORK		23 10 02 LG B24AWYNGMH (7.10kW) INDOOR AIR CONDITIONING UNIT
	SEWER AND GREY WATER PIPEWORK		
	STORM/RAIN/FIRE WATER PIPEWORK		
	PIPEWORK REDUCER		
	PIPEWORK 3 WAY CONNECTOR		
	PIPEWORK BEND IN HORIZONTAL PLANE		
	PIPEWORK BEND		
	ISOLATION VALVE		
	PIPEWORK 4 WAY CONNECTOR		
	22 10 10 TEMPERING VALVE		
	FLOOR WASTE		
	FIRE EXTINGUISHER / FIRE BLANKET		
	PLUMBING PUMP		
	21 10 05 FIRE SPRINKLER HEAD		
	22 10 13 GREY WATER COLLECTION TANK		
	22 10 19 SLOW SAND FILTER		
	22 10 10 THERMANN 315LMID HOT WATER STORAGE TANK		
	23 10 01 LG B24AWYUGMH (7.10kW) OUTDOOR AIR CONDITIONING UNIT		



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
www.illawarraflame.com.au



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C4	As Built Issue	03.6.13

Lot Number #303

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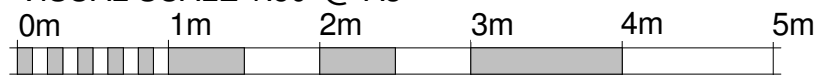
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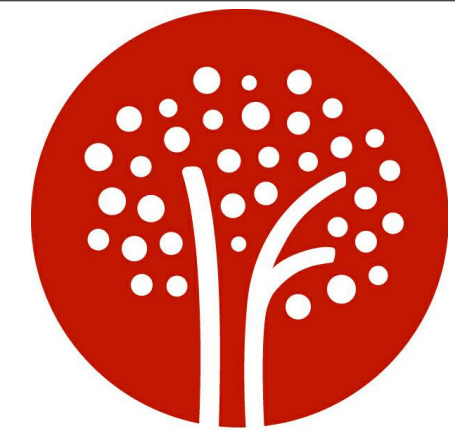
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**Plumbing Drawing**  
Key

**P-001**

VISUAL SCALE 1:50 @ A3





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Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

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www.illawarraflame.com.au



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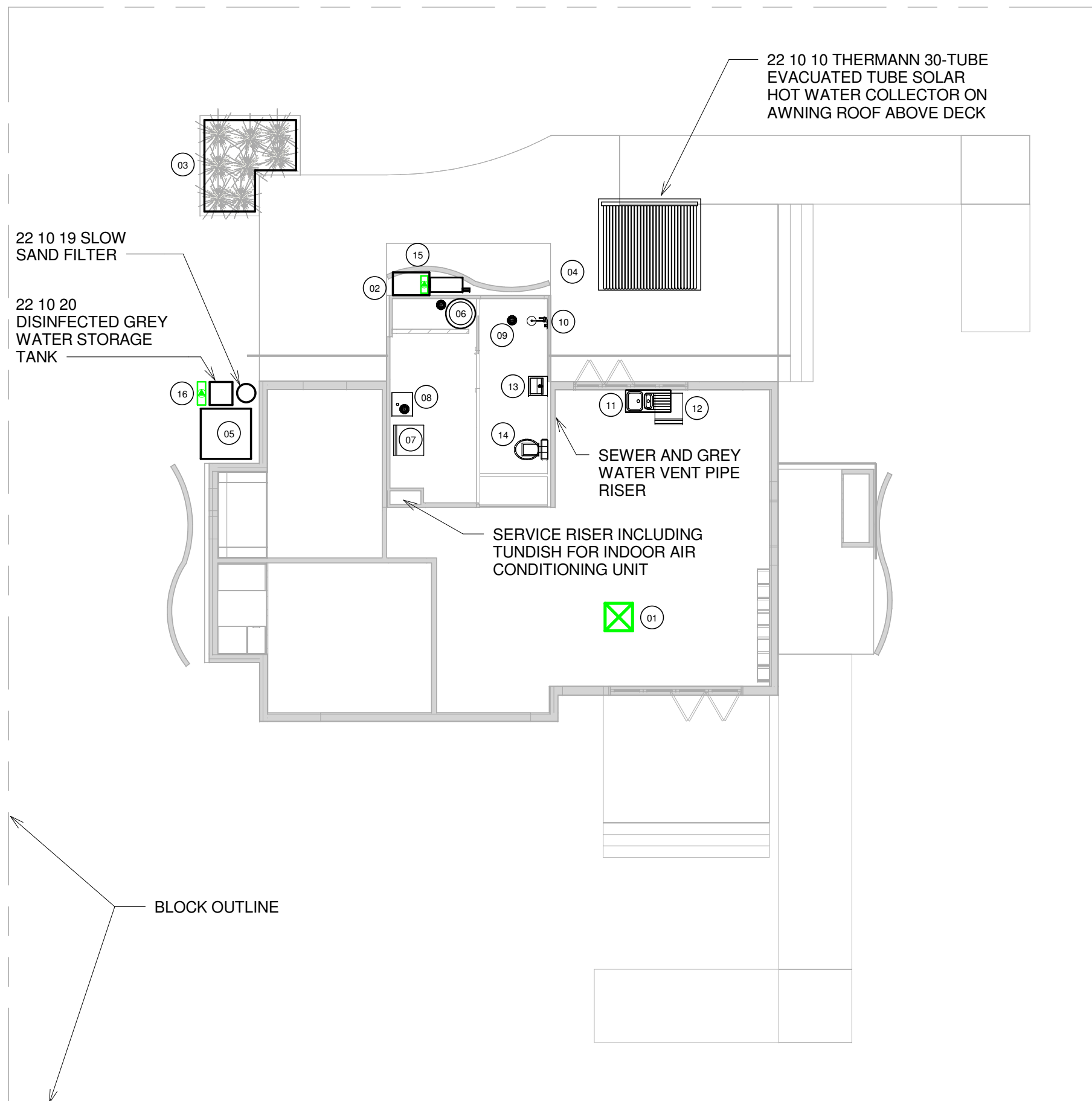
## Plumbing Site Plan



# P-100

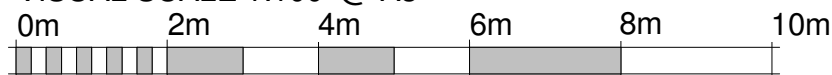
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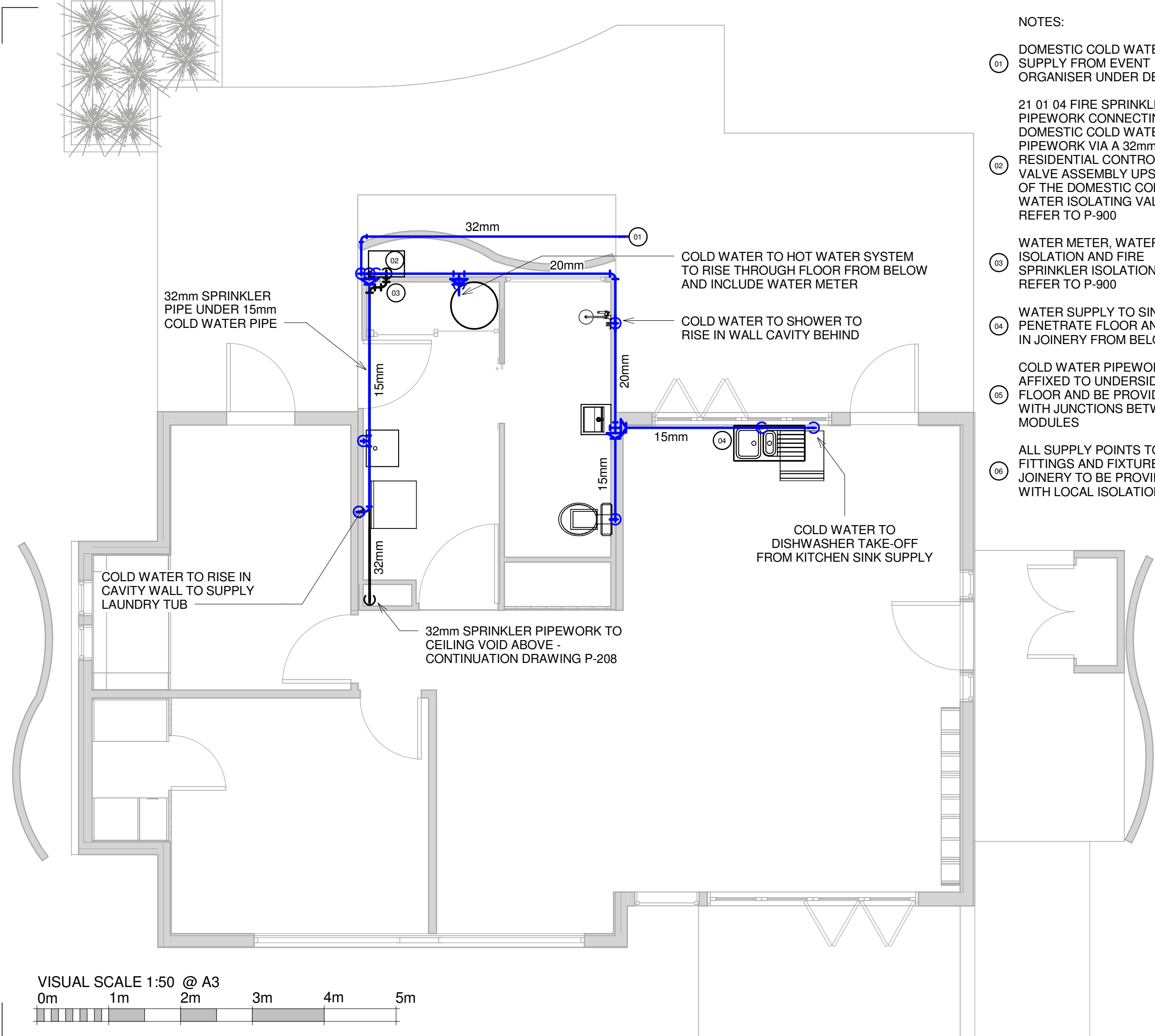
- 01 33 03 04 100mm DIAMETER SEWER DISCHARGE POINT TO TURN DOWN INTO EVENT ORGANISER SUPPLIED SEWER WELL UNDER HOUSE
- 02 FIRE SPRINKLER CONTROL ASSEMBLY, WATER VALVES AND METERS - REFER TO P-900
- 03 22 10 18 GREY WATER FILTRATION REED BED REFER TO P-900
- 04 32mm COLD WATER POINT OF CONNECTION VIA SCREW THREAD FLEXIBLE HOSE
- 05 22 10 12 RAIN WATER STORAGE TANK 2020mm HIGH 1100x1100mm
- 06 22 10 10 THERMANN 315L MID 315 LITRE ELECTRIC BOOSTED SOLAR HOT WATER STORAGE TANK
- 07 11 04 03 TOP LOAD WASHING MACHINE FISHER AND PAYKEL MW513 UNDER DRYER IN JOINERY
- 08 22 10 06 LAUNDRY TUB CONCEALED IN JOINERY CUPBOARD WITH FLOOR WASTE UNDER
- 09 TYPICAL FLOOR WASTE
- 10 22 10 04 AND 05 MILLI GLANCE SHOWER MIXER AND NIKLES PURE 140 SHOWER RAIL AND HEAD 9L/MIN FLOW
- 11 22 10 08 AND 09 KITCHEN SINK AND PULL OUT HEAD KITCHEN MIXER/TAP
- 12 11 04 01 FISHER AND PAYKEL DISHWASHER DRAWER DD60SCX7 SEVEN PLACE SETTING CAPACITY
- 13 22 10 01 AND 03 KADO LUX ABOVE COUNTER BASIN AND MILLI GLANCE BASIN MIXER
- 14 22 10 02 ROCA THE GAP CLOSE COUPLED TOILET SUIT - CAPPED OFF SEWER AND DISCONNECTED FOR DISPLAY
- 15 22 10 13 GREY WATER COLLECTION TANK AND PUMP UNDER DECK
- 16 22 10 11 80L/MIN DAVEY HP45-05 RAINBANK WATER PRESSURISATION PUMP



BLOCK OUTLINE

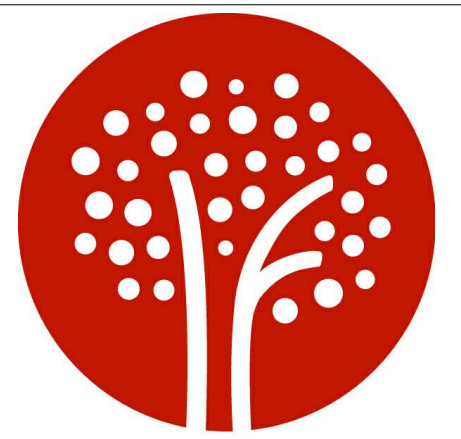
VISUAL SCALE 1:100 @ A3





NOTES:

- 01 DOMESTIC COLD WATER SUPPLY FROM EVENT ORGANISER UNDER DECK
- 21 01 04 FIRE SPRINKLER PIPEWORK CONNECTING TO DOMESTIC COLD WATER PIPEWORK VIA A 32mm RESIDENTIAL CONTROL VALVE ASSEMBLY UPSTREAM OF THE DOMESTIC COLD WATER ISOLATING VALVE - REFER TO P-900
- 02 WATER METER, WATER ISOLATION AND FIRE SPRINKLER ISOLATION - REFER TO P-900
- 03 WATER SUPPLY TO SINK TO PENETRATE FLOOR AND RISE IN JOINERY FROM BELOW
- 04 COLD WATER PIPEWORK BE AFFIXED TO UNDERSIDE OF FLOOR AND BE PROVIDED WITH JUNCTIONS BETWEEN MODULES
- 05 ALL SUPPLY POINTS TO FITTINGS AND FIXTURES IN JOINERY TO BE PROVIDED WITH LOCAL ISOLATION TAP
- 06



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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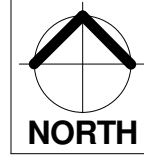


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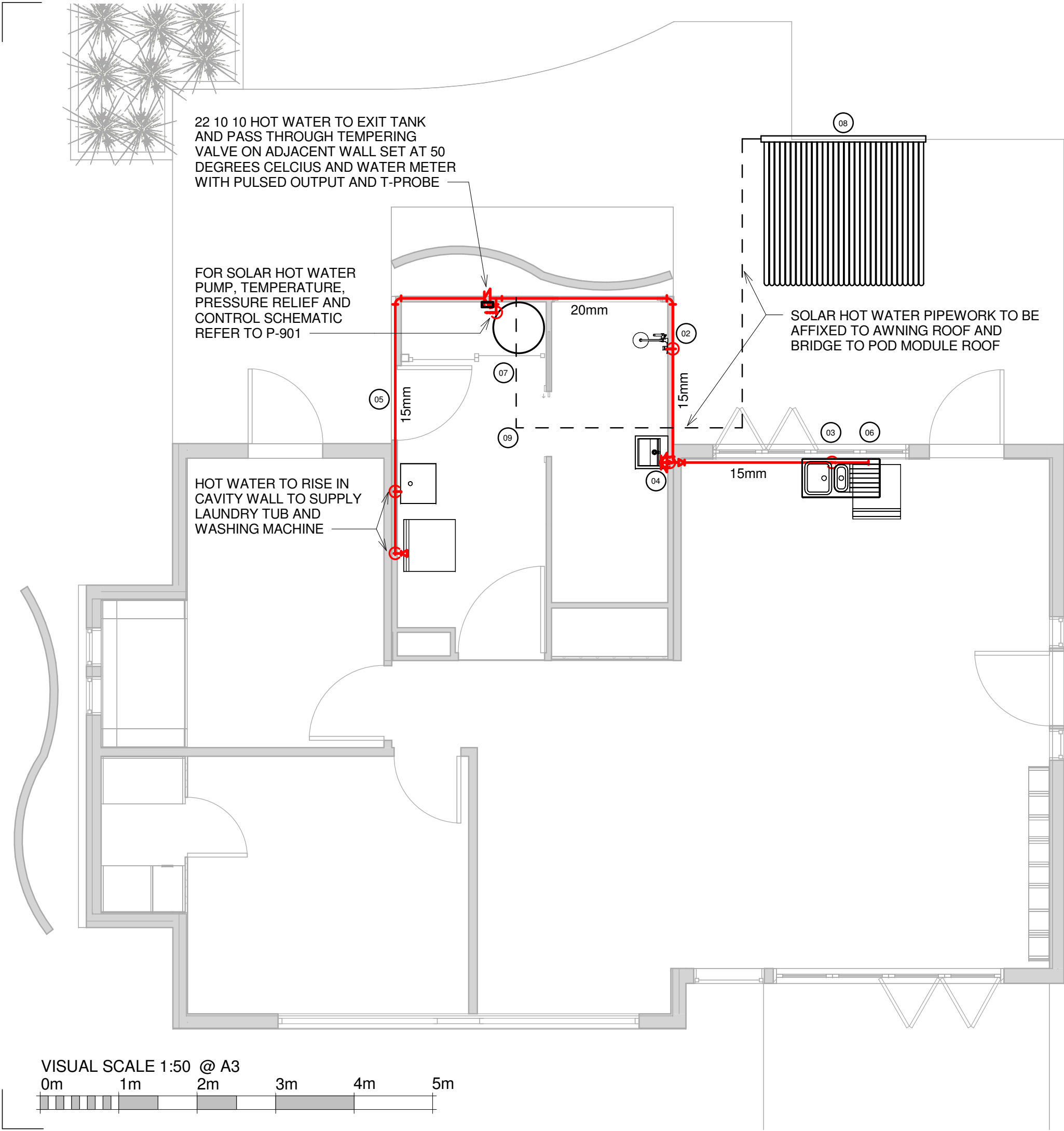
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**Plumbing Domestic Cold Water Plan**



**P-200**





22 10 10 HOT WATER TO EXIT TANK AND PASS THROUGH TEMPERING VALVE ON ADJACENT WALL SET AT 50 DEGREES CELCIUS AND WATER METER WITH PULSED OUTPUT AND T-PROBE

FOR SOLAR HOT WATER PUMP, TEMPERATURE, PRESSURE RELIEF AND CONTROL SCHEMATIC REFER TO P-901

HOT WATER TO RISE IN CAVITY WALL TO SUPPLY LAUNDRY TUB AND WASHING MACHINE

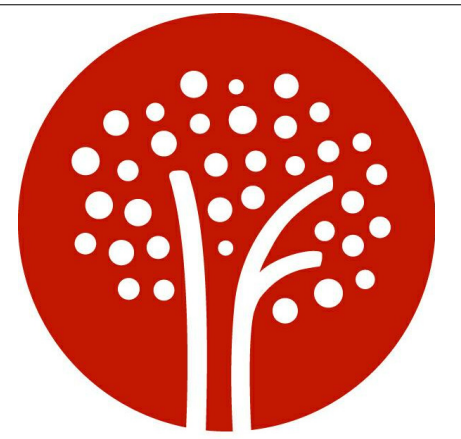
SOLAR HOT WATER PIPEWORK TO BE AFFIXED TO AWNING ROOF AND BRIDGE TO POD MODULE ROOF

NOTES:

- 01 ALL HOT WATER SUPPLY POINTS TO FITTINGS AND FIXTURES IN JOINERY TO BE PROVIDED WITH LOCAL ISOLATION TAP
- 02 HOT WATER TO SHOWER TO RISE IN WALL CAVITY BEHIND
- 03 HOT WATER SUPPLY TO SINK TO PENETRATE FLOOR AND RISE IN JOINERY FROM BELOW
- 04 HOT WATER SUPPLY TO SINK TO PENETRATE FLOOR AND RISE IN CAVITY WALL TO AN ISOLATION VALVE UNDER SINK
- 05 HOT WATER PIPEWORK BE AFFIXED TO UNDERSIDE OF FLOOR AND BE PROVIDED WITH JUNCTIONS BETWEEN MODULES
- 06 HOT WATER TO DISHWASHER TAKE-OFF FROM KITCHEN SINK SUPPLY TO DISHWASHER ISOLATION TAP
- 07 SOLAR PIPEWORK TO RUN IN ROOF CAVITY AND DROP TO WATER STORAGE TANK

08 22 10 10 THERMANN 30-TUBE EVACUATED TUBE SOLAR HOT WATER COLLECTOR ON AWNING ROOF ABOVE DECK

09 SOLAR COLLECTOR PIPEWORK TO PENETRATE ROOF IN WATER TIGHT FLASHING



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
Address: UNIVERSITY OF WOLLONGONG WOLLONGONG NSW, AUSTRALIA 2522  
Contact: sd2013@uow.edu.au www.illawarraflame.com.au



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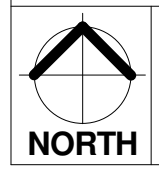


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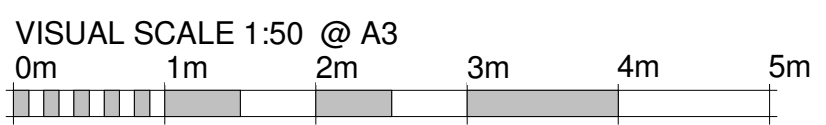
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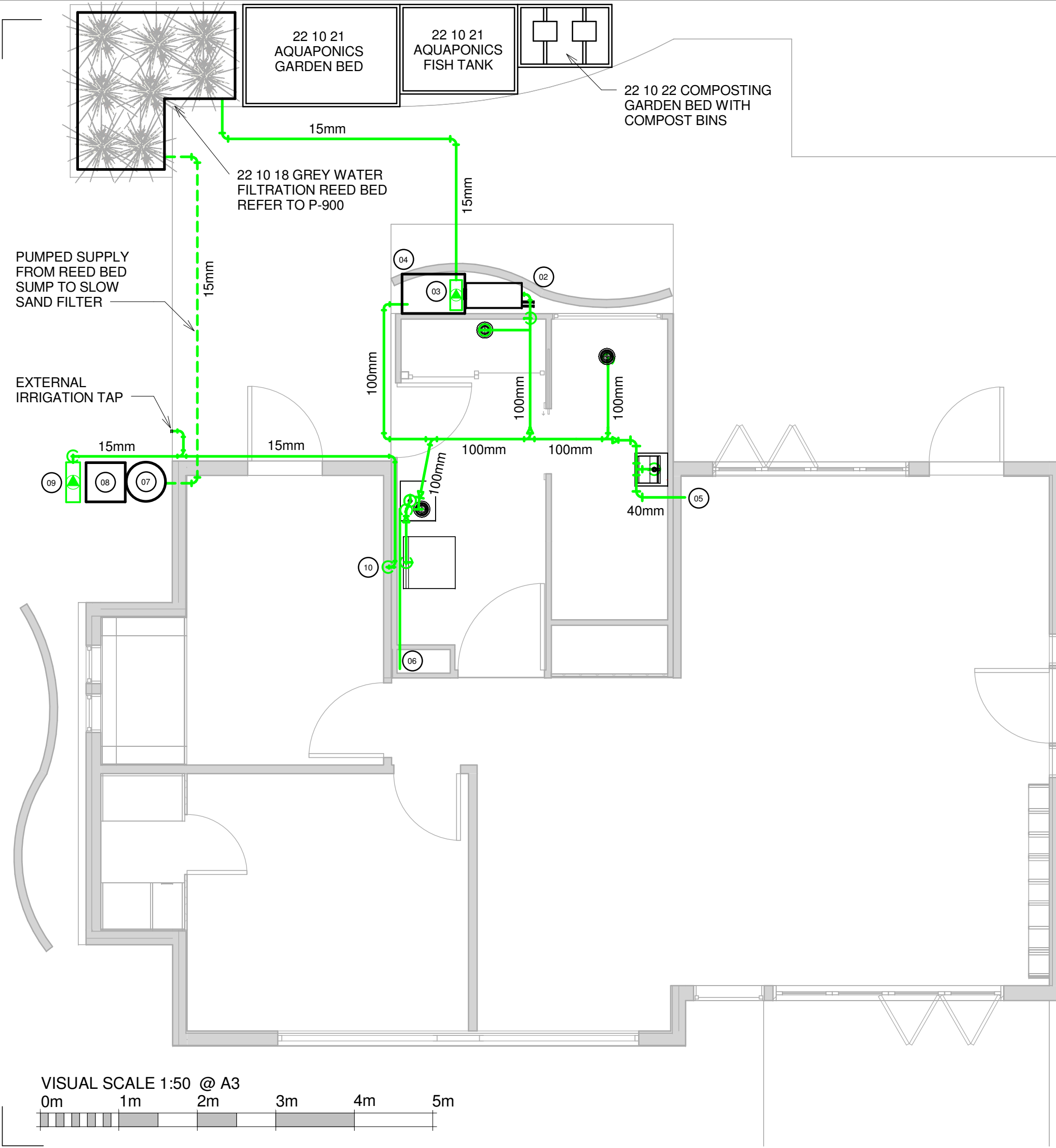
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**Plumbing Hot Water Plan**



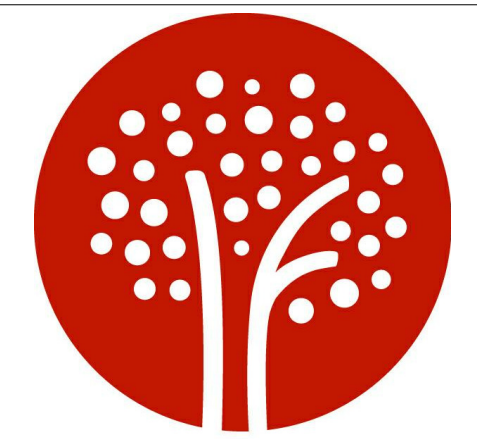
**P-201**





- NOTES:
- 01 FOR ADDITIONAL DETAILS REFER TO GREY WATER SCHEMATIC ON P-900
  - 02 GREY WATER COLLECTION FROM AIR CONDITIONING OUTDOOR UNIT TUNDISH
  - 03 22 10 18 SUBMERSIBLE GREY WATER COLLECTION PUMP TO REED BED
  - 04 22 10 13 SEALED HOUSE GREY WATER COLLECTION TANK WITH OVERFLOW TO SEWER - REFER TO P-203
  - 05 GREY WATER VENT PIPE TO RISE IN CAVITY WALL AND CONNECT WITH SEWER VENT PIPE
  - 06 GREY WATER COLLECTION FROM AIR CONDITIONING INDOOR UNIT TUNDISH IN SERVICES RISER
  - 07 22 10 19 SLOW SAND FILTER WITH OVERFLOW TO SEWER
  - 08 22 10 20 FILTERED GREY WATER COLLECTION TANK
  - 09 22 10 11 80L/MIN DAVEY HP45-05 RAINBANK WATER PRESSURISATION PUMP

- 10 GREY WATER SUPPLIED TO SEPARATE GREY WATER TAP AT WASHING MACHINE NOT USED DURING COMPETITION TO COMPLY WITH RULE 9-3
- 11 GREY WATER PIPEWORK TO RUN UNDER HOUSE SECURED TO UNDERSIDE OF FLOOR



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
 Contact: sd2013@uow.edu.au  
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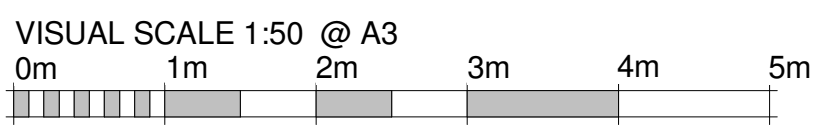
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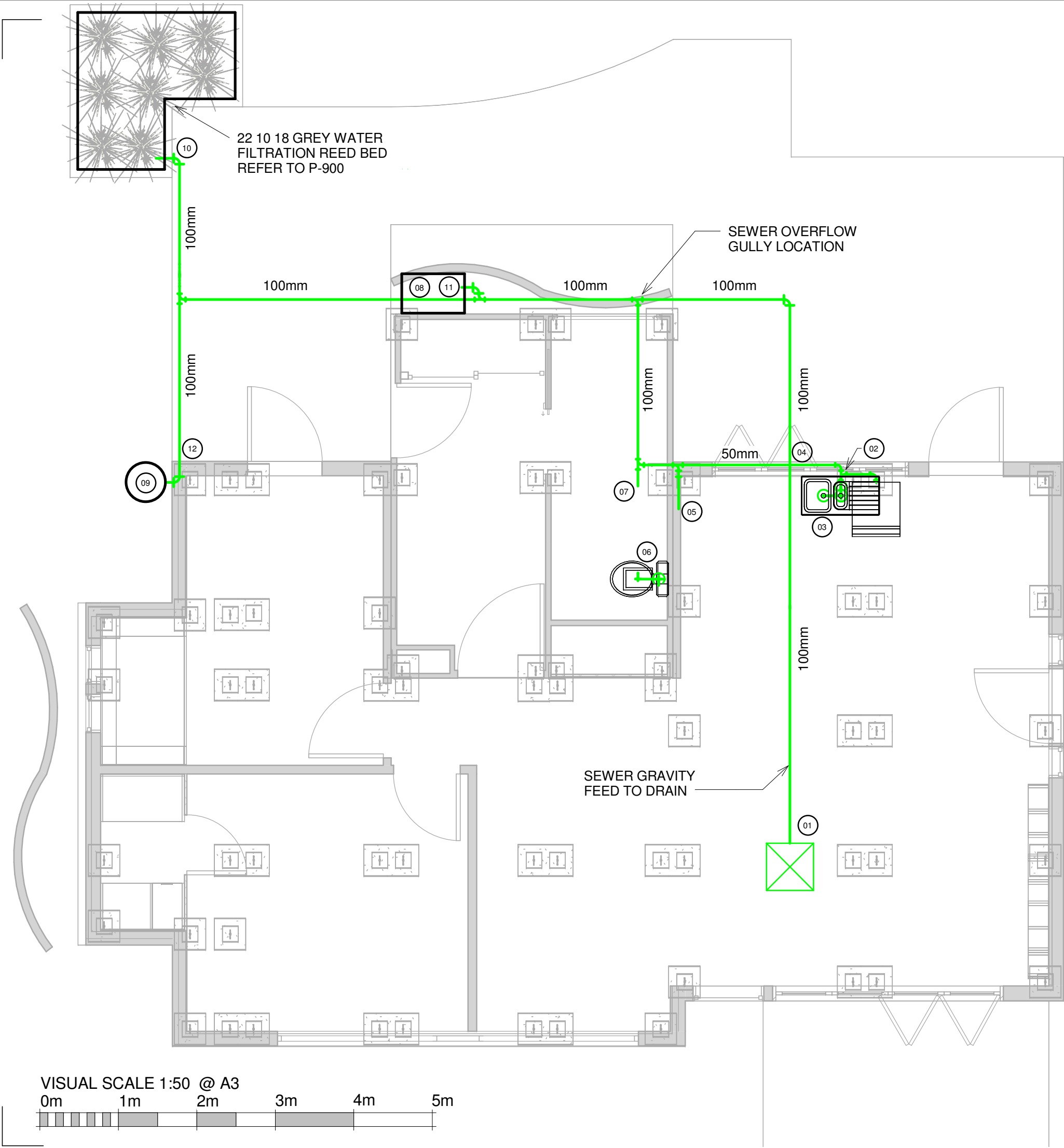
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**Plumbing Grey Water Plan**



**P-202**





NOTES:

- 01 33 03 04 100mm DIAMETER SEWER DISCHARGE POINT TO TURN DOWN INTO EVENT ORGANISER SUPPLIED SEWER WELL UNDER HOUSE
- 02 DISHWASHER PUMPED DRAINAGE TO CONNECT INTO SIDE OF KITCHEN SINK DRAINAGE ABOVE S-TRAP
- 03 S-TRAP UNDER SINK
- 04 100mm MAIN SEWER DISCHARGE LINE TO CROSS UNDER 100mm KITCHEN SEWER AT THIS LOCATION FIXED UNDER FLOOR
- 05 SEWER VENT PIPE TO RISE IN CAVITY WALL AND CONNECT WITH GREY WATER VENT PIPE
- 06 22 10 02 ROCA THE GAP CLOSE COUPLED TOILET SUIT - WITH S-TRAP CAPPED OFF FOR DISPLAY PURPOSES
- 07 SEWER LINE CAPPED OFF AT THIS LOCATION FOR DISPLAY PURPOSES
- 08 SEALED HOUSE GREY WATER COLLECTION TANK

- 09 22 10 19 SLOW SAND FILTER COLLECTING OVERFLOW FROM RAIN WATER TANK
- 10 22 10 18 REED BED SUMP OVERFLOW TO SEWER
- 11 22 10 20 HOUSE GREY WATER COLLECTION TANK OVERFLOW TO SEWER
- 12 22 10 19 SLOW SAND FILTER OVERFLOW TO SEWER



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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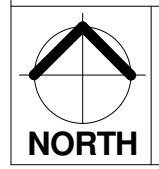


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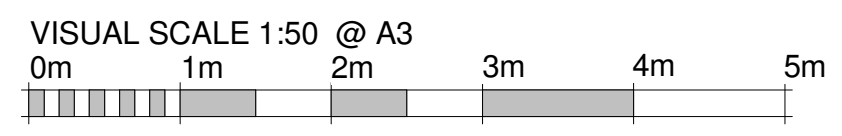
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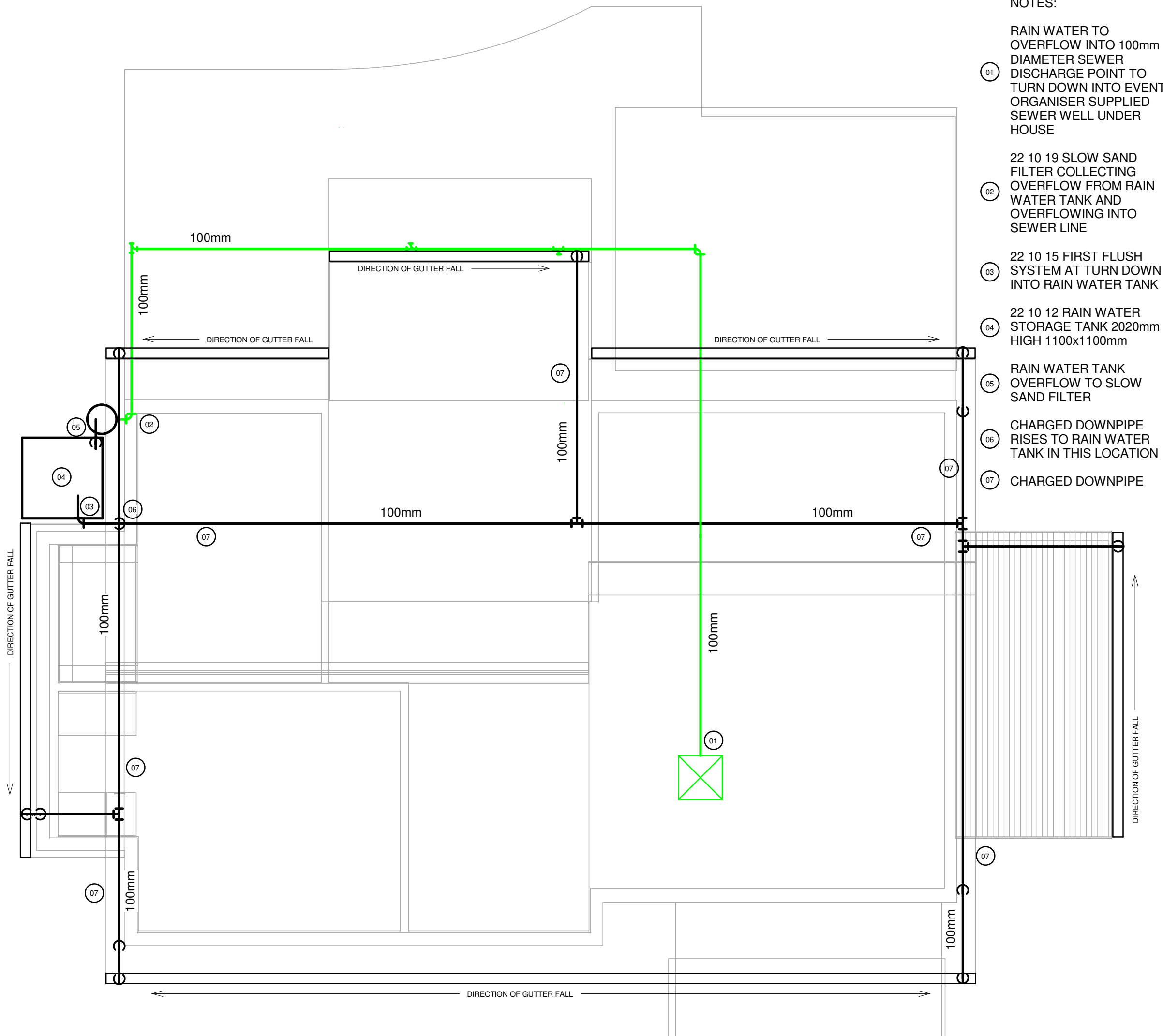
**Plumbing Sewer Plan**



**P-203**

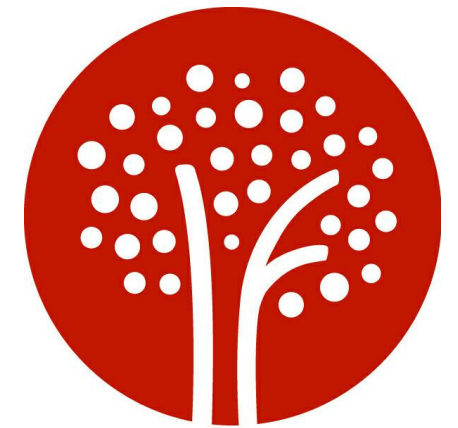






NOTES:

- 01 RAIN WATER TO OVERFLOW INTO 100mm DIAMETER SEWER DISCHARGE POINT TO TURN DOWN INTO EVENT ORGANISER SUPPLIED SEWER WELL UNDER HOUSE
- 02 22 10 19 SLOW SAND FILTER COLLECTING OVERFLOW FROM RAIN WATER TANK AND OVERFLOWING INTO SEWER LINE
- 03 22 10 15 FIRST FLUSH SYSTEM AT TURN DOWN INTO RAIN WATER TANK
- 04 22 10 12 RAIN WATER STORAGE TANK 2020mm HIGH 1100x1100mm
- 05 RAIN WATER TANK OVERFLOW TO SLOW SAND FILTER
- 06 CHARGED DOWNPIPE RISES TO RAIN WATER TANK IN THIS LOCATION
- 07 CHARGED DOWNPIPE



**TEAM UOW AUSTRALIA**  
Illawarra Flame

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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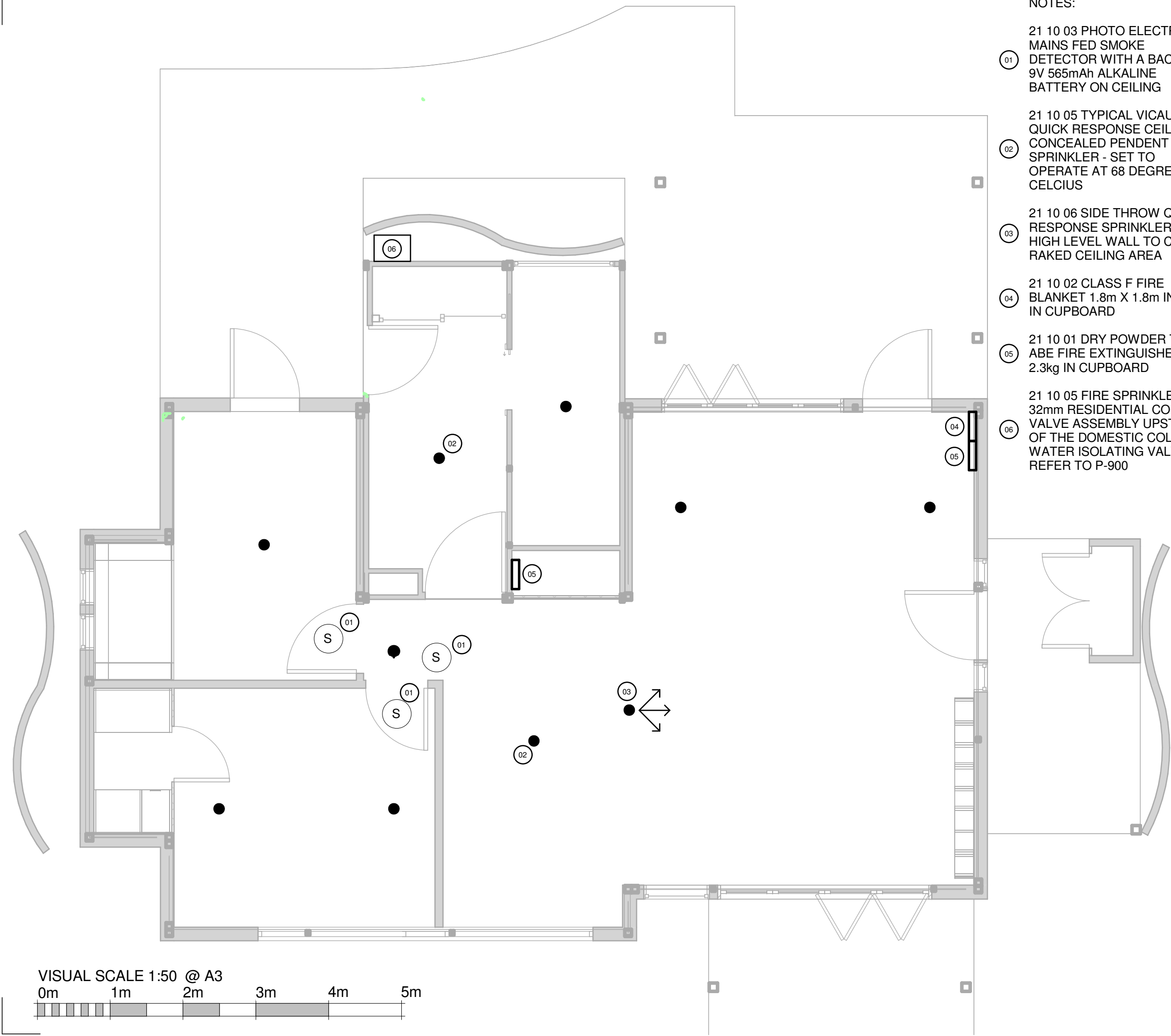
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**Plumbing Rain Water Plan**



**P-204**



NOTES:

- 01 21 10 03 PHOTO ELECTRICAL MAINS FED SMOKE DETECTOR WITH A BACK UP 9V 565mAh ALKALINE BATTERY ON CEILING
- 02 21 10 05 TYPICAL VICAULIC QUICK RESPONSE CEILING CONCEALED PENDENT SPRINKLER - SET TO OPERATE AT 68 DEGREES CELCIUS
- 03 21 10 06 SIDE THROW QUICK RESPONSE SPRINKLER ON HIGH LEVEL WALL TO COVER RAKED CEILING AREA
- 04 21 10 02 CLASS F FIRE BLANKET 1.8m X 1.8m IN SIZE IN CUPBOARD
- 05 21 10 01 DRY POWDER TYPE ABE FIRE EXTINGUISHER 2.3kg IN CUPBOARD
- 06 21 10 05 FIRE SPRINKLER 32mm RESIDENTIAL CONTROL VALVE ASSEMBLY UPSTREAM OF THE DOMESTIC COLD WATER ISOLATING VALVE - REFER TO P-900



**TEAM UOW AUSTRALIA**  
Illawarra Flame

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 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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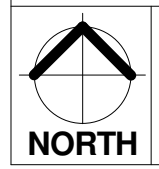


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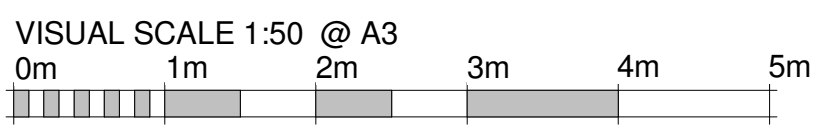
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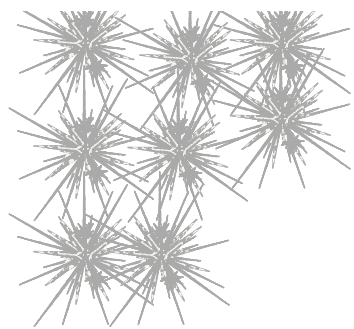
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 Copyright:None; Project is Public Domain  
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**Plumbing Fire  
 Equipment Plan**



**P-205**





NOTES:

- 01 21 10 05 TYPICAL VICAULIC QUICK RESPONSE CEILING CONCEALED PENDENT SPRINKLER - SET TO OPERATE AT 68 DEGREES CELCIUS
- 02 21 10 06 SIDE THROW QUICK RESPONSE SPRINKLER ON HIGH LEVEL WALL TO COVER RAKED CEILING AREA
- 03 21 10 04 FIRE SPRINKLER 32mm RESIDENTIAL CONTROL VALVE ASSEMBLY UPSTEAM OF THE DOMESTIC COLD WATER ISOLATING VALVE - REFER TO P-900
- 04 TYPICAL 15mm FLEXIBLE PIPE CONNECTION TO SPRINKLER HEAD
- 05 COUPLERS USED TO SEPARATE 32mm SPRINKLER PIPE BETWEEN MODULES
- 06 SPRINKLER PIPE RISER FROM BELOW - REFER TO P-200



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**Illawarra Flame**

Team Name: TEAM UOW  
 Address: UNIVERSITY OF WOLLONGONG  
 WOLLONGONG  
 NSW, AUSTRALIA 2522  
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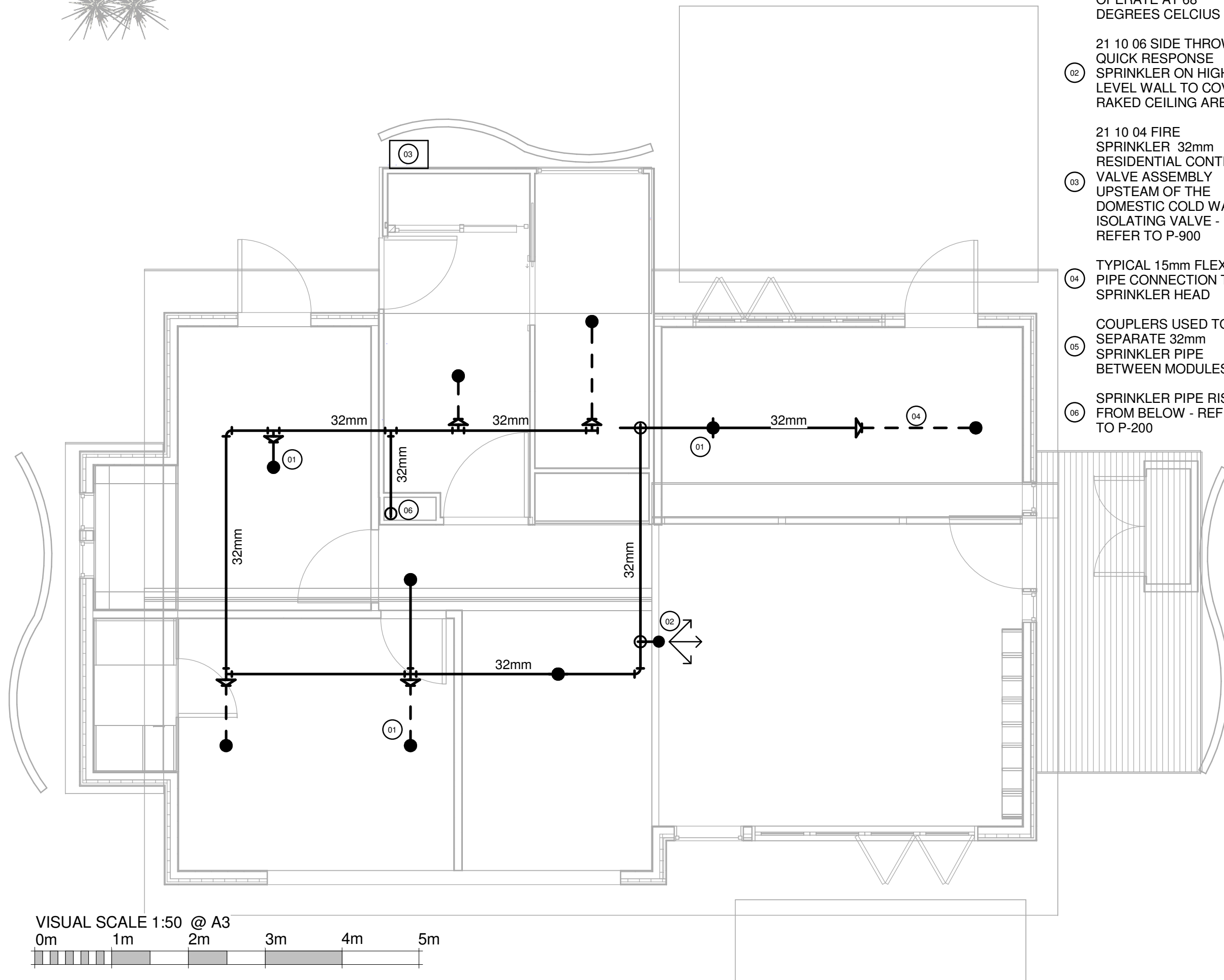
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**Plumbing Fire  
 Sprinkler Plan**



**P-206**

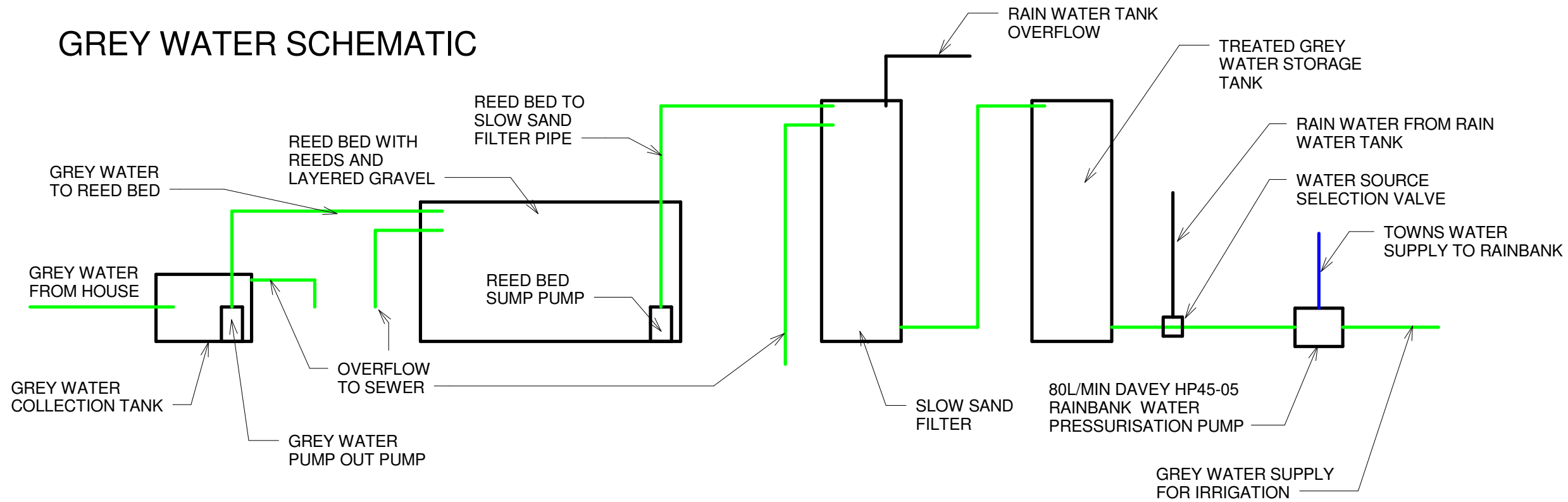


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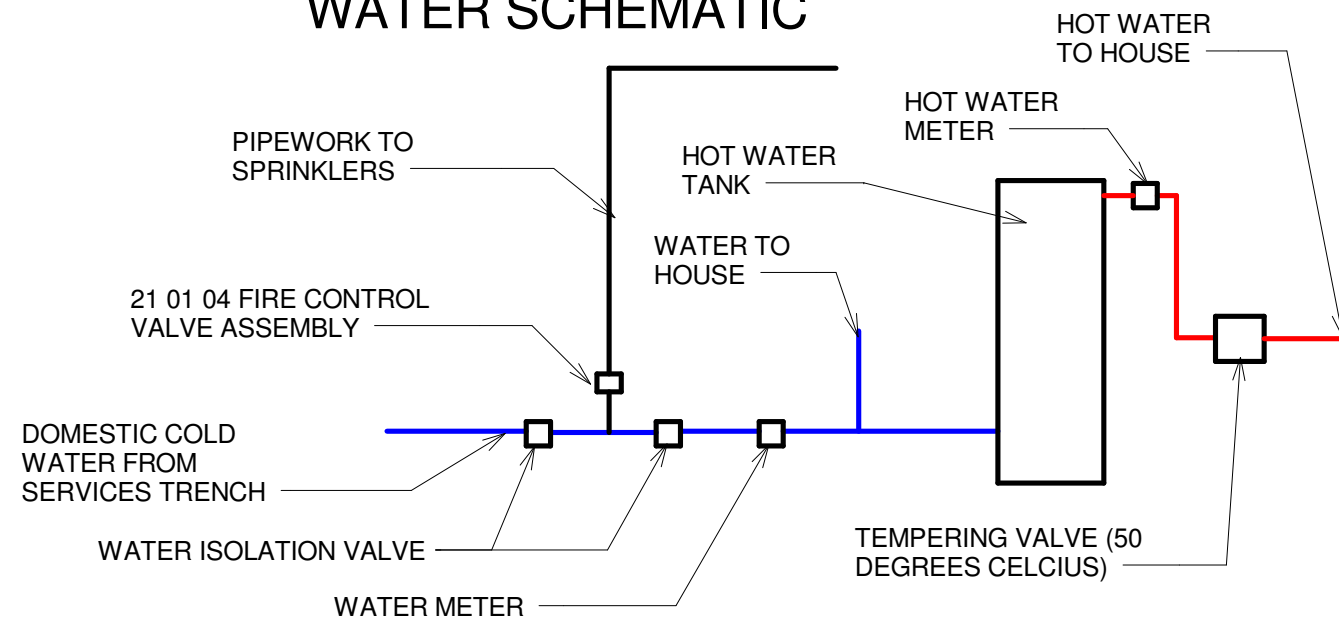




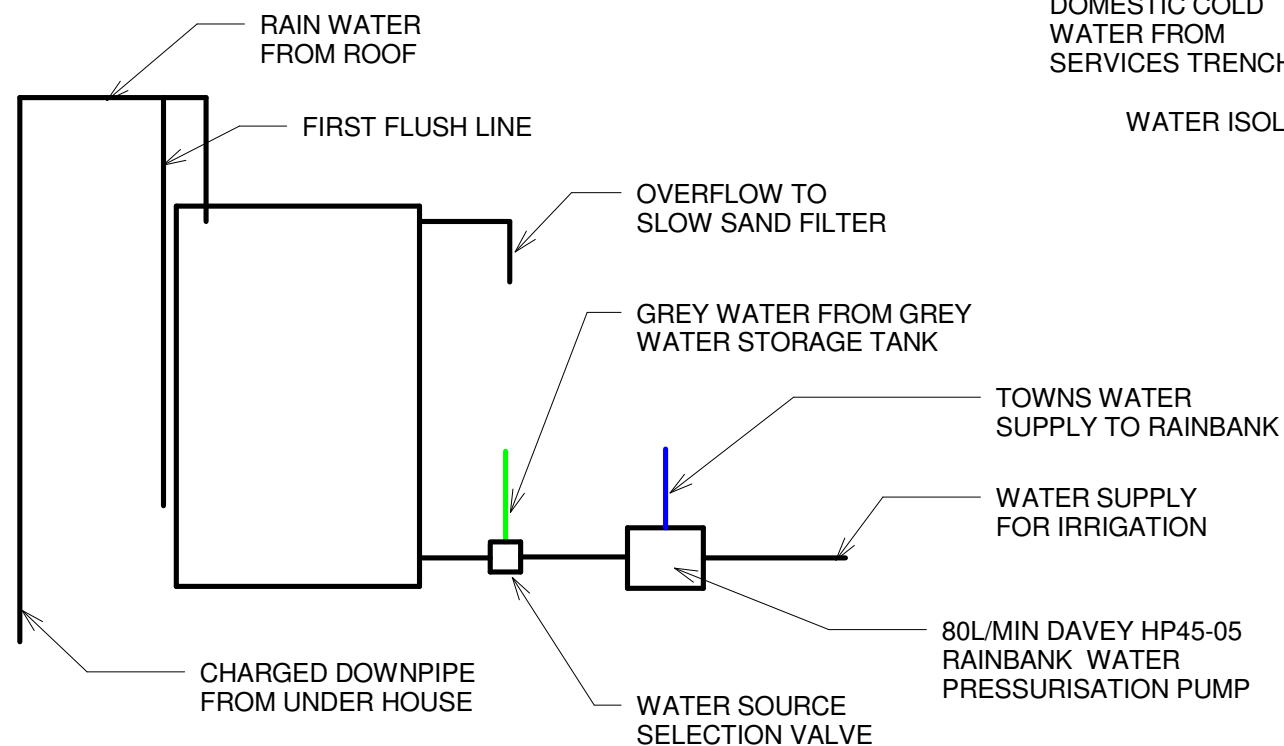
# GREY WATER SCHEMATIC



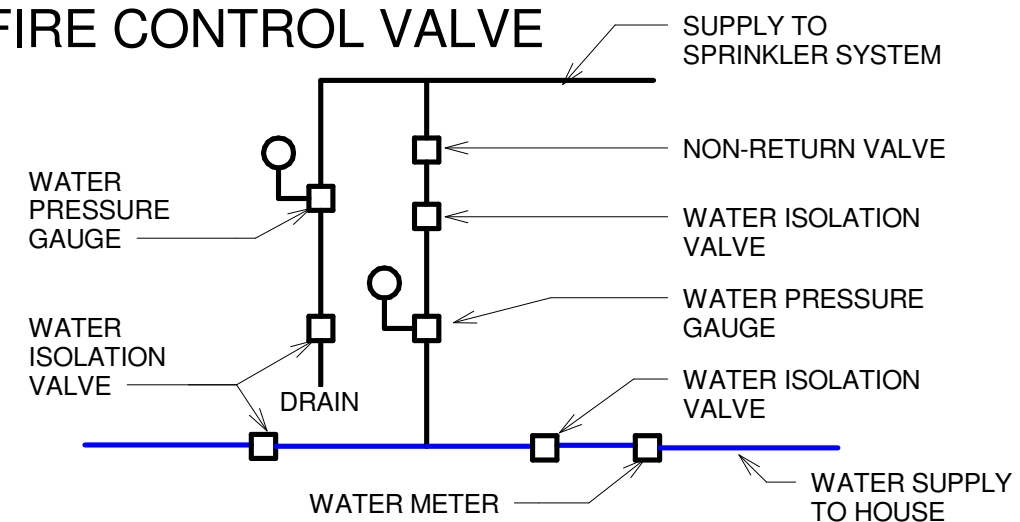
# WATER SCHEMATIC



# RAIN WATER SCHEMATIC



# FIRE CONTROL VALVE



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Illawarra Flame

Team Name: TEAM UOW

Address: UNIVERSITY OF WOLLONGONG  
WOLLONGONG  
NSW, AUSTRALIA 2522

Contact: sd2013@uow.edu.au  
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**Plumbing Schematic**

**P-900**



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Illawarra Flame

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WOLLONGONG  
NSW, AUSTRALIA 2522

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**Amendments**

Rev.	Description	Date
P1	Preliminary Issue 1	31.8.12
C1	Schematic Design Issue	21.9.12
C2	Schematic Design Re-Issue	30.1.13
C3	Final Submission	15.3.13
C4	As Built Issue	03.6.13

Lot Number #303

Drawn By: M. Whitehouse

Checked By: M. Whitehouse

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Date: 03/06/13

Scale: N.T.S

**Plumbing Hot Water Schematic**

**P-901**

