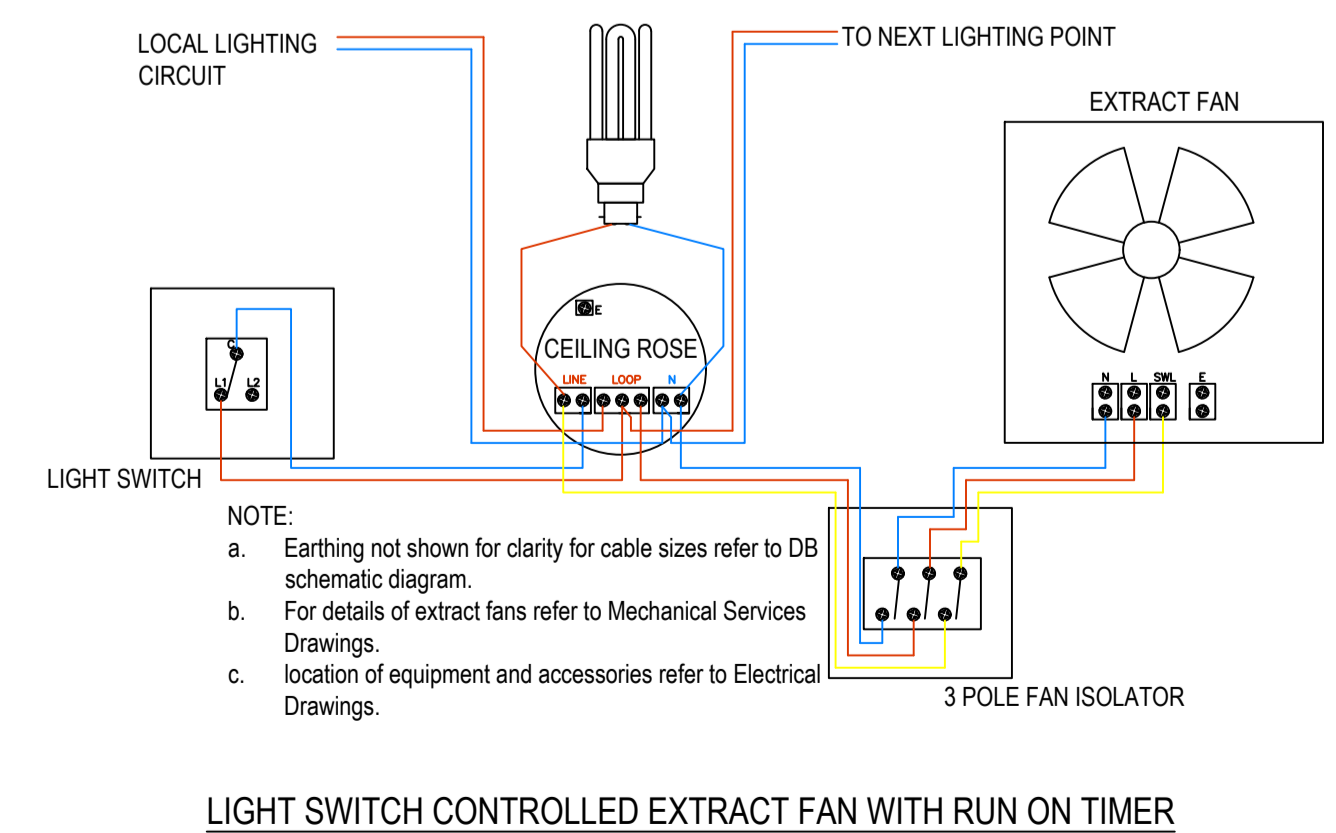
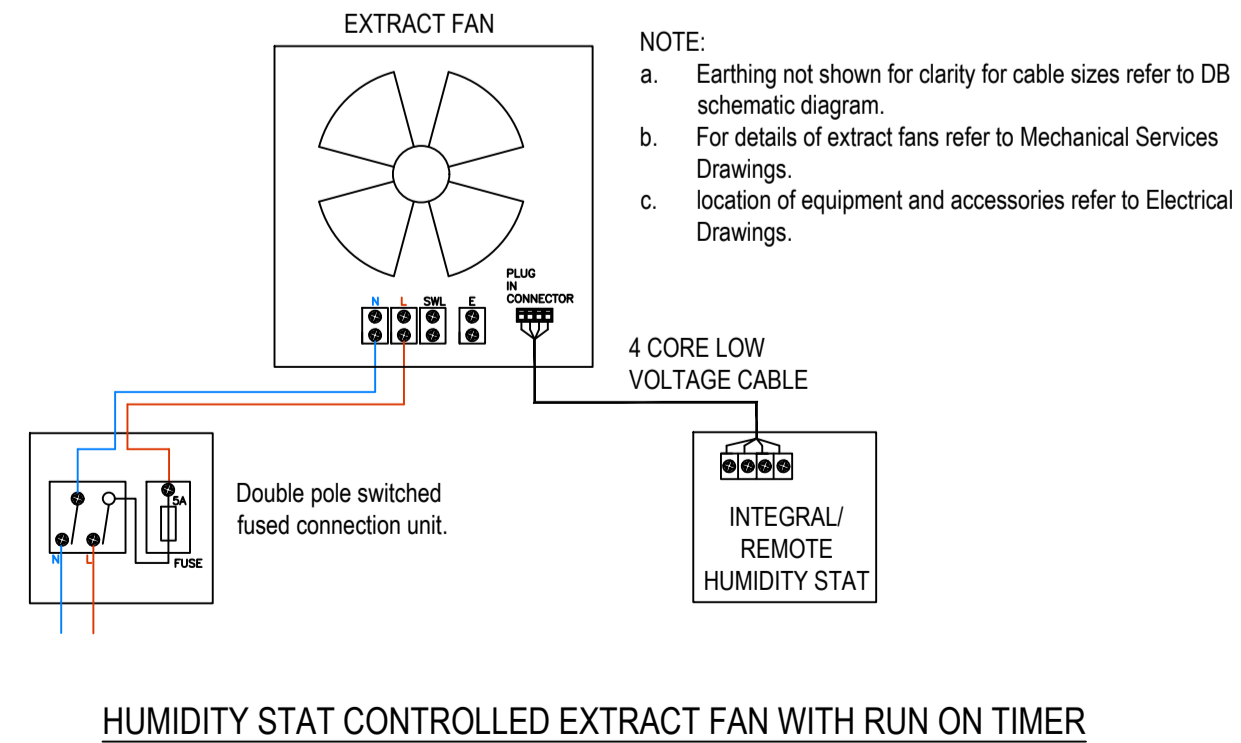
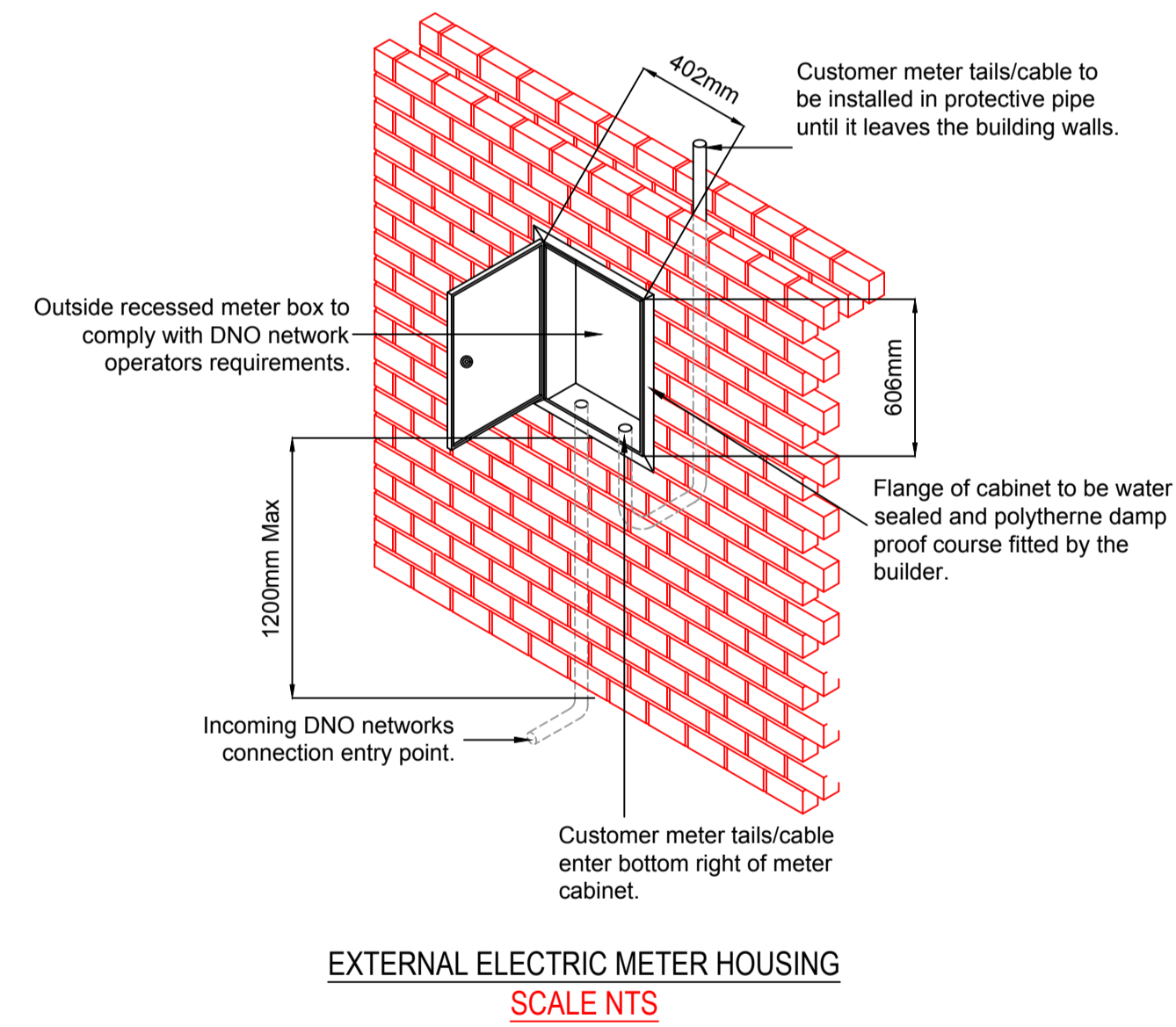


Code [A] - 1.5mm² 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids  
 Code [B] - 2.5mm² 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids  
 Code [C] - 4.0mm² 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids  
 Code [D] - 6.0mm² 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids  
 Code [E] - 10.0mm² 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids  
 Code [F] - 35.0mm² 1 Core LSF single core cables concealed within the building fabric and floor and ceiling voids c/w separate 35.0mm² single core earth cable

EARTHING unless otherwise stated all earth cables shall be equal to the live and neutral conductor sizes and all single phase multi core cables shall incorporate an internal earth core as the circuits main earth.



- GENERAL NOTES**
- Do not scale from this drawing.
  - Contractor to make safe and strip out all existing redundant electrical services and equipment which remain.
  - Contractor shall install the Electrical Services fully in accordance with BS7671 and the Building regulations.
  - All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
  - The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
  - The Contractor shall be responsible for coordinating the works in accordance with the main program.
  - All builders work shall be carried out by the Main Contractor.
  - The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
  - All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
  - The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

- ELECTRICAL NOTES**
- MK Masterseal Plus IP 66 RCD protected socket mounted 500mm AFFL.
  - Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic dish washer, the fused connection unit to be engraved Dish Washer.
  - Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic washer, the fused connection unit to be engraved Washer.
  - Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic tumble dryer, the fused connection unit to be engraved Tumble Dryer.
  - Switched fused connection located in a suitable location within the loft to feed client supplied multichannel satellite amplifier unit or for future connection.
  - Switched fused connection located in a suitable location within the loft to feed client digital multiswitch or for future connection.
  - 4SA DP cooker control switch feeding a low level cooker connection outlet for final connection of an electric cooker.
  - Unswitched fuse connection unit to supply Intruder Alarm panel.
  - Broadband/fibre optic connection point, final location to be agreed.
  - Three (3) pole fan isolator switch at high level engraved Extract Fan, Fan control via integral humidity stat provided and is fitted with a run on timer thus a permanent live is required. Fan installed by the Mechanical Contractor.
  - Three (3) Pole fan isolator switch and installed at high level engraved Extract Fan. The fan is operated from the lighting switch in the room and is fitted with a run on timer thus a permanent live is required Fan installed by the Mechanical Contractor.

**IMPORTANT CDM / H & S NOTE**  
 THE DESIGNERS WOULD DRAW THE READERS ATTENTION TO KEY RESIDUAL HEALTH AND SAFETY RISKS THAT HAVE NOT BEEN ELIMINATED FROM THE DESIGNS SHOWN ON THE DRAWINGS BY THE DESIGN PROCESS. THESE RISKS ARE IDENTIFIED BELOW

- Co-ordination of M&E services with all other trades
- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height
- Asbestos

ANY CONSTRUCTION PERSONNEL INCLUDING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE SIGHT OF:  
 (1) THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS  
 (2) THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN  
 (3) THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16

Rev	Description
T01	TENDER

**Parsec**  
 CONSULTING ENGINEERS

Ashburn House  
 84 Grange Road

Status: TENDER

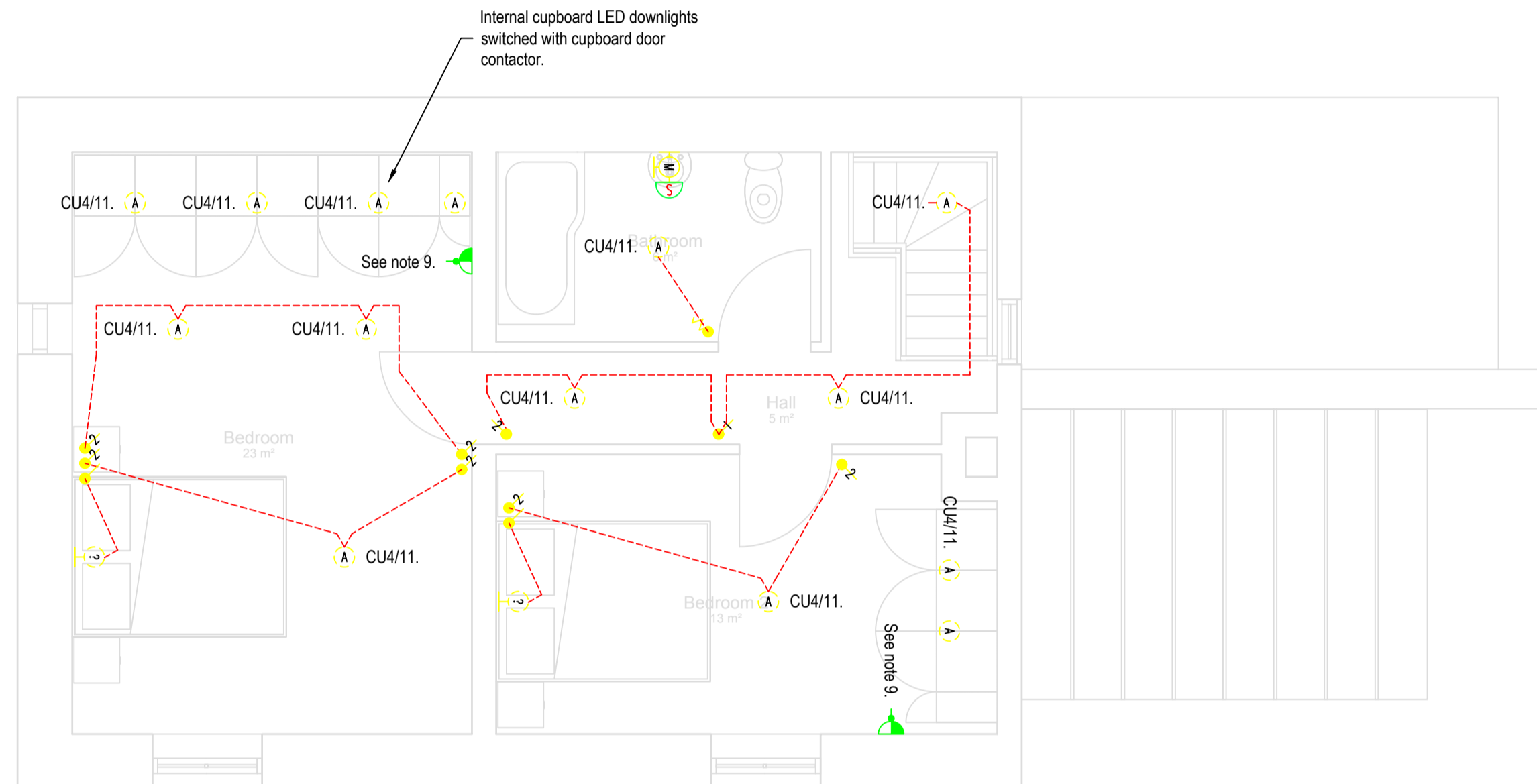
Client: SANDERSON WEATHERALL

Project: PARK HALL AISLABY, N YORKS YO21 1SW

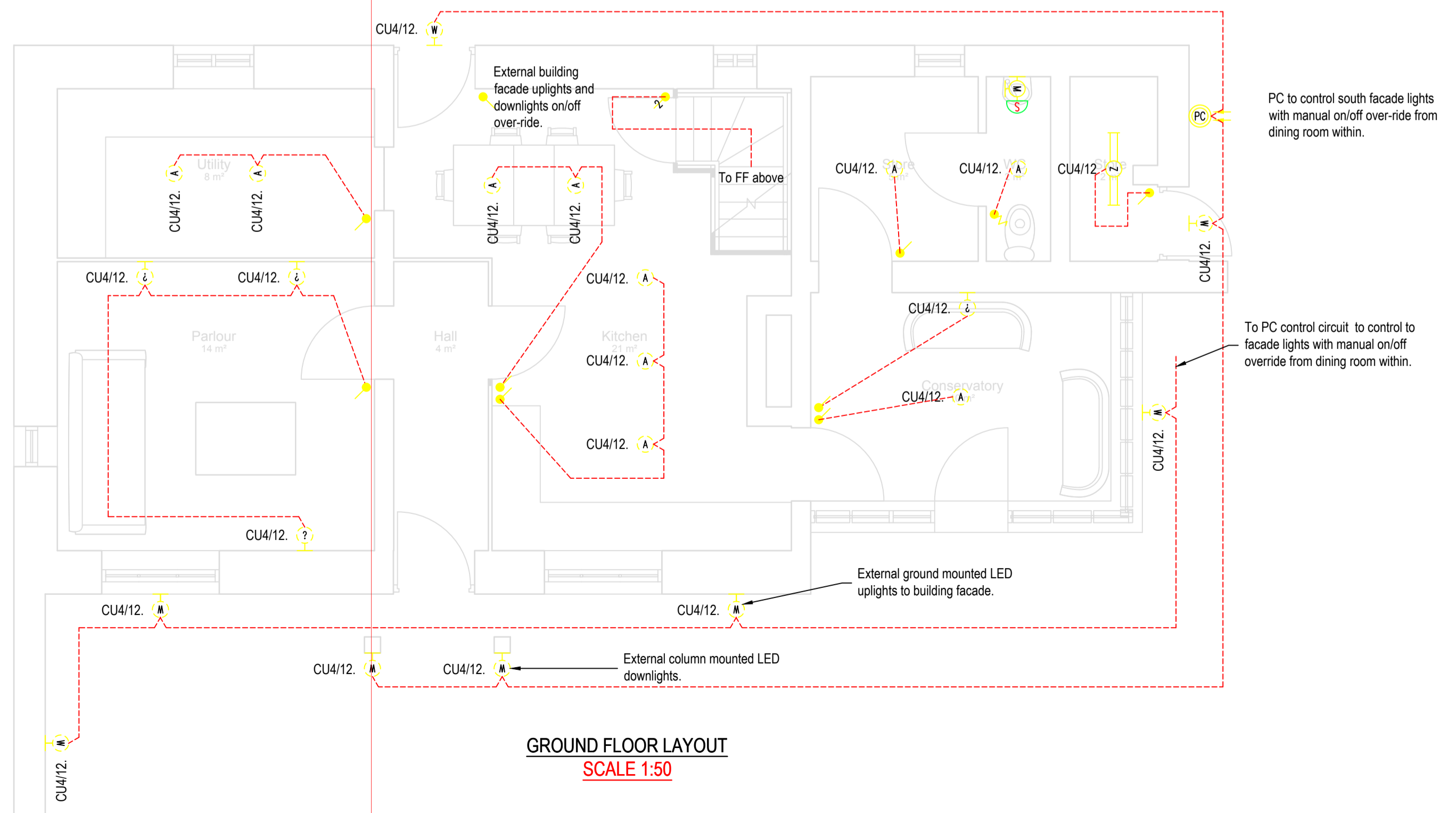
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Scale: 1:50 @ A1 Date: 10 JUNE 2016

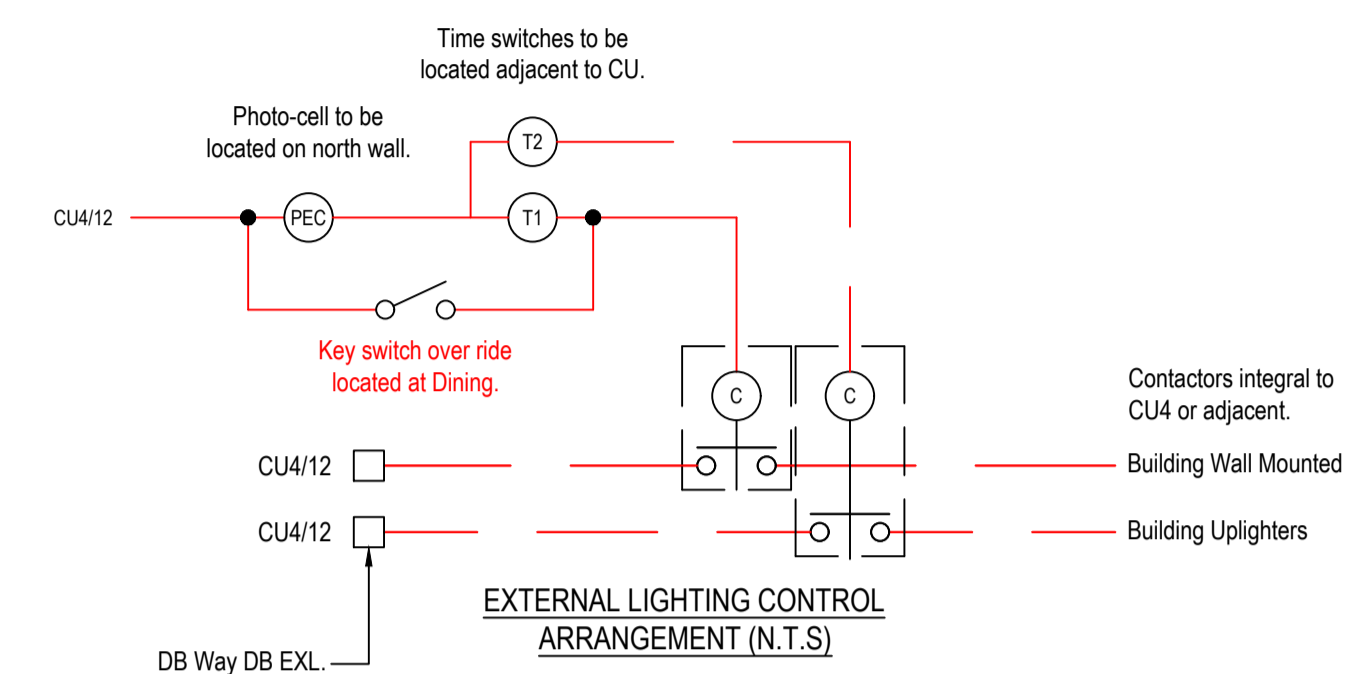
Dwg No: 2016 433 KC LEC 010 E01 Rev: T01



**FIRST FLOOR LAYOUT**  
SCALE 1:50



**GROUND FLOOR LAYOUT**  
SCALE 1:50



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
LIGHTING		LIGHTING	
	ONE WAY 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY LAMP HOLDER AND CEILING ROSE.
	TWO WAY / INTERMEDIATE 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY BATTERY LAMP HOLDER
	3 POLE FAN ISOLATION SWITCH		INTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS
	CORDED PULL SWITCH		EXTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS AND C/W COMBINED PIR/PHOTOCELL SENSOR
	PHOTO-ELECTRIC CELL IP65		45W APOLLO LIGHTING POLYLED IP65 LINEAR LED
	PASSIVE INFRA-RED MOVEMENT DETECTOR		45W APOLLO LIGHTING POLYLED IP65 LINEAR LED WITH INTEGRAL PIR
			15W SHAVER LIGHT WITH SHAVER SOCKET MK OR SIMILAR APPROVED

**ABBREVIATIONS**

- AB ACCESSORY ABOVE BENCH
- CL CLEANERS SOCKET
- CU CONSUMER UNIT
- DP DOUBLE POLE
- DA DISABLED ALARM
- FAP FIRE ALARM PANEL
- FC FAN COIL UNIT
- FL FLOOR LIGHT
- HD HANDDRIER
- LL ACCESSORY AT LOW LEVEL
- RHL RISE TO HIGH LEVEL
- RDB RISE TO DISTRIBUTION BOARD
- DDB DROP TO DISTRIBUTION BOARD
- RTF RISE THROUGH FLOOR

**GENERAL NOTES**

- A. Do not scale from this drawing.
- B. Contractor to make safe and strip out all existing redundant electrical services and equipment which remain.
- C. Contractor shall install the Electrical Services fully in accordance with BS7671 and the Building Regulations.
- D. All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
- E. The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- F. The Contractor shall be responsible for coordinating the works in accordance with the main program.
- G. All builders work shall be carried out by the Main Contractor.
- H. The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- I. All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
- J. The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**ELECTRICAL NOTES**

1. Final luminaire fittings and switching configuration to be confirmed by client prior to installation.
2. Kitchen and Utility areas to be confirmed.
3. Cellar area not shown, allow for the supply and installation of 4 Type Z fitting in two separate rooms all with galvanised steel conduit.
4. External lighting point controlled via a one way switch. Final luminaire selection by others.
5. External lighting point requires switched and permanent live supplies for PIR integral sensor. Final luminaire by others.
6. Cables shall be segregated based on their category as defined by the IEE Wiring Regulations.
7. Unscreened data cables must be spaced 200mm min from unscreened power cables.
8. Where LED drivers are installed they shall be located in an accessible location and where more than 2 are used in the same location these shall be located in one suitable location. Note that these drivers will require air to circulate over them to reduce the heat build up around them.
9. Cupboard and wardrobe fixed LED downlighter fused connection unit for local isolation.

**IMPORTANT CDM / H & S NOTE**  
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- Asbestos

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Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington

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Status: **TENDER**

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Client: **SANDERSON WEATHERALL**

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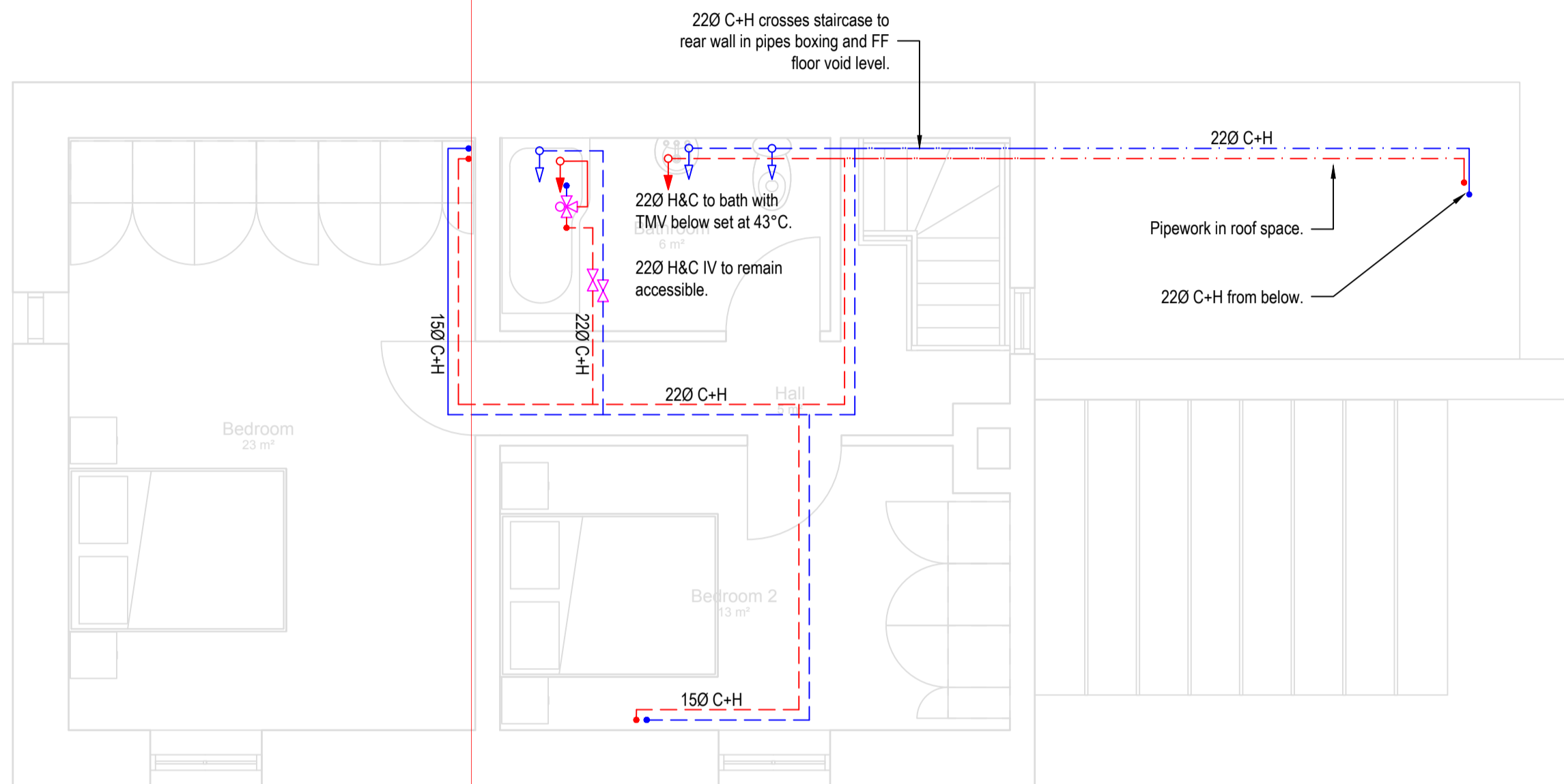
Project: **PARK HALL  
AISLABY, N YORKS  
YO21 1SW**

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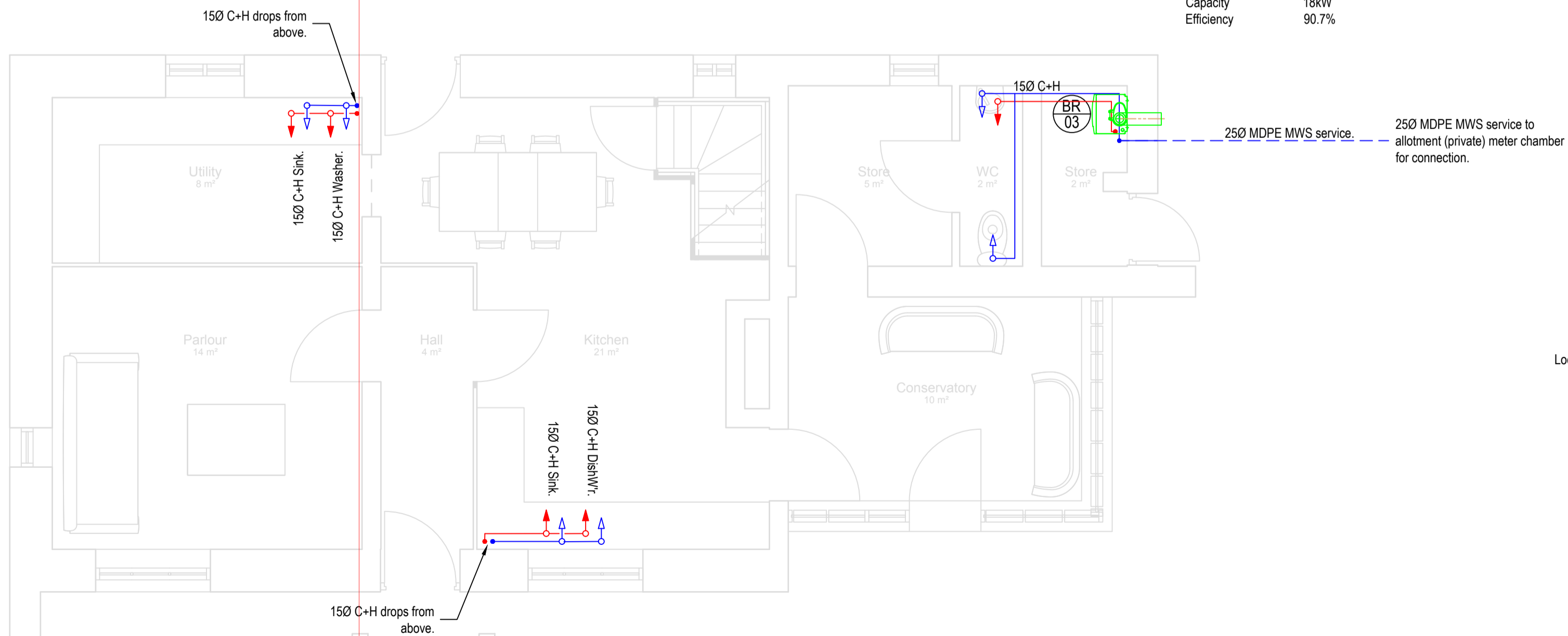
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KEEPERS COTTAGE GF & FF  
PROPOSED LIGHTING SERVICES**

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Scale: <b>1:50 @ A1</b>	Date: <b>10 JUNE 2016</b>
Dwg No: <b>2016 433 KC LEC 020 E01</b>	Rev: <b>T01</b>



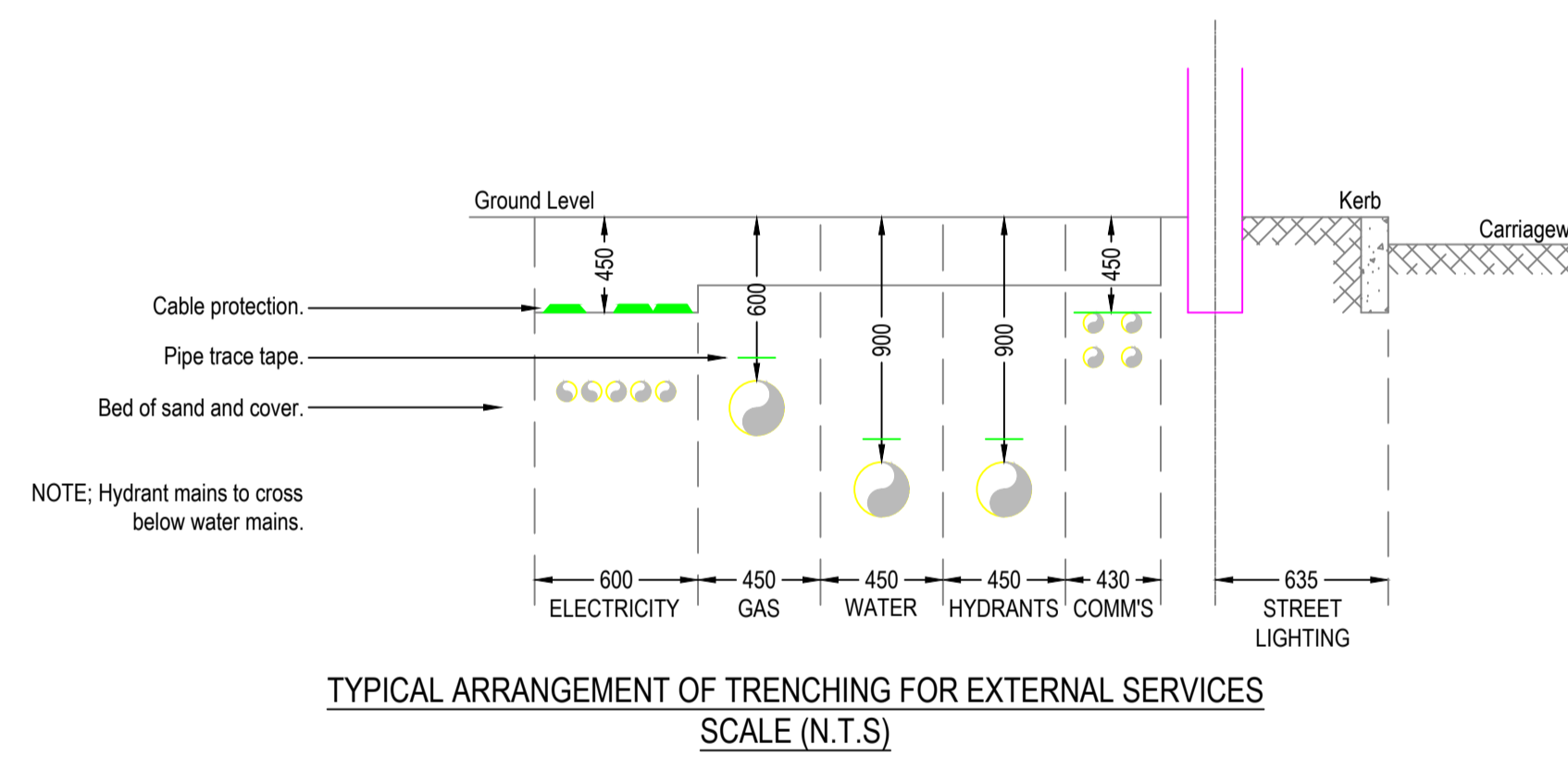
**FIRST FLOOR LAYOUT**  
SCALE 1:50



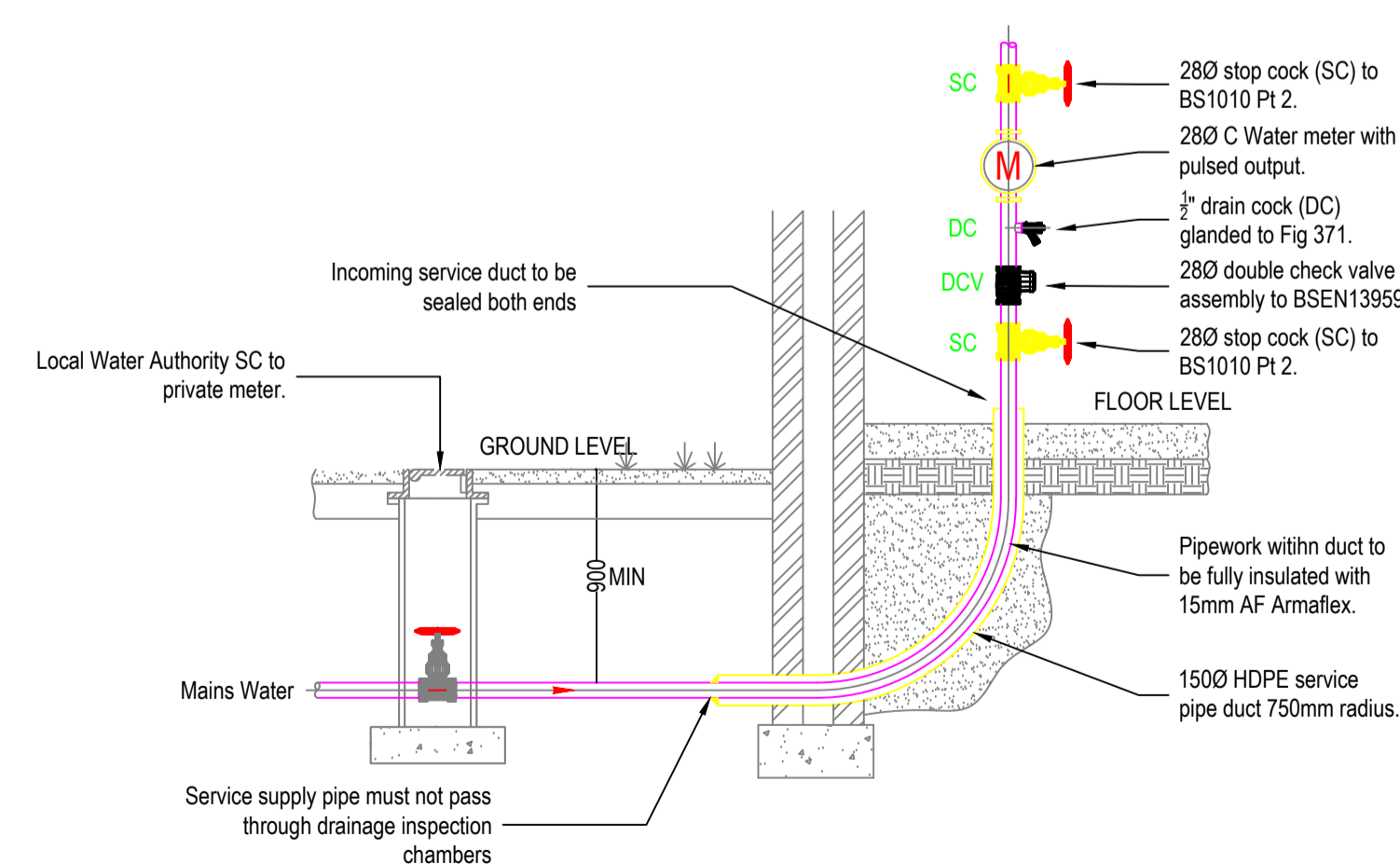
**GROUND FLOOR LAYOUT**  
SCALE 1:50

**BOILER**  
WORCESTER BOSCH GREENSTAR HEATSLAVE II  
12/18 EIP A Rated oil fired COMBINATION boiler. Unit shall be fitted fully in accordance with the manufacturer's instructions.

Capacity	18kW
Efficiency	90.7%



**TYPICAL ARRANGEMENT OF TRENCHING FOR EXTERNAL SERVICES**  
SCALE (N.T.S)



**TYPICAL ARRANGEMENT OF WATER SERVICES ENTRY INTO BUILDING**  
SCALE (N.T.S)

**MECHANICAL LEGEND**

- Pipe at Low Level
- - - Pipe Below Floor
- - - Pipe at High Level
- Pipe in Ceiling Void
- ⊗ Isolation Valve
- ⊕ Commissioning Set
- Y Y Type Inline Strainer
- ⊕ Quick Fill Loop
- ⊕ Glanded Drain Cock
- ⊕ Non Return Valve
- ⊕ Auto Air Vent
- ⊕ Safety Relief Valve & Tundish
- ⊕ DPS Pump o/w Diff Sensor
- ⊕ BMS MID Class 2 Heat Meter to BEMS
- ⊕ Two Port Valve

**NOTES**

1. Do not scale from this drawing.
2. Drawings must be read in conjunction with the Mechanical Services Specification.
3. All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
4. The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
5. The Contractor shall be responsible for coordinating the works in accordance with the main program.
6. All builders work shall be carried out by the Main Contractor.
7. The M&E sub-contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
8. The M&E sub-contractor shall be responsible for co-ordination of their works with all other trades.
9. All water outlets and pipe sizes have been calculated to BS6700 and comply with the latest Building Regulations. Care must be taken on selection of appliances and taps to ensure flow rates do not exceed design.
10. All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
11. All insulation to comply fully with current water byelaws, requirements of BS 6700 and local water authorities.
12. All fittings, plant and equipment to be installed, regulated and tested in accordance with the manufacturers printed instructions.
13. All pipework, fittings and equipment to be installed to provide systems free of air locks, water hammer or leaks.
14. Stopcocks to be BS1010 gate valves to BS5154. Check valves to BS6282: Part 1 with test cock to BS2879, drain valves to BS2879.
15. All valves to be fully accessible and be provided with identification labels.
16. All commissioning sets to have full shut off facility for isolation purposes.
17. Drain valves and air vents to be provided at all low & high points in all systems respectively.
18. All pipework exposed at high level, roof void, service ducts, boxings and enclosures to be fully insulated with rigid mineral sections having class 'C' foil finish in compliance with BS 5422 insulation thickness as follows:  
Pipework up to 32mm - 25mm thick  
Pipework 40mm and above - 32mm thick
19. The complete domestic services shall be flushed and sterilised in accordance with the specification.
20. All final pipework drop positions to be agreed with the architect.
21. All final pipework connections to wash hand basins and sink units shall be 15mm unless otherwise indicated. Each termination to be valved.
22. Circulating returns shall be installed such that the maximum dead leg from each outlet is no more than 1.5m
23. Identification of pipework shall be in accordance with BS 1710.
24. Thermostatic mixing valves (TMVs) to be provided to the each basin to TMV3 scheme set to 40°C and verified.
25. Thermostatic mixing valves (TMVs) to be provided to the each sink to TMV3 scheme set to 55°C and verified.
26. The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2008 or later, and provide detailed O&M manuals complete with all required certification.

**IMPORTANT CDM / H & S NOTE**  
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- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height
- Asbestos

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Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington  
DL1 5NP

Status: **TENDER**

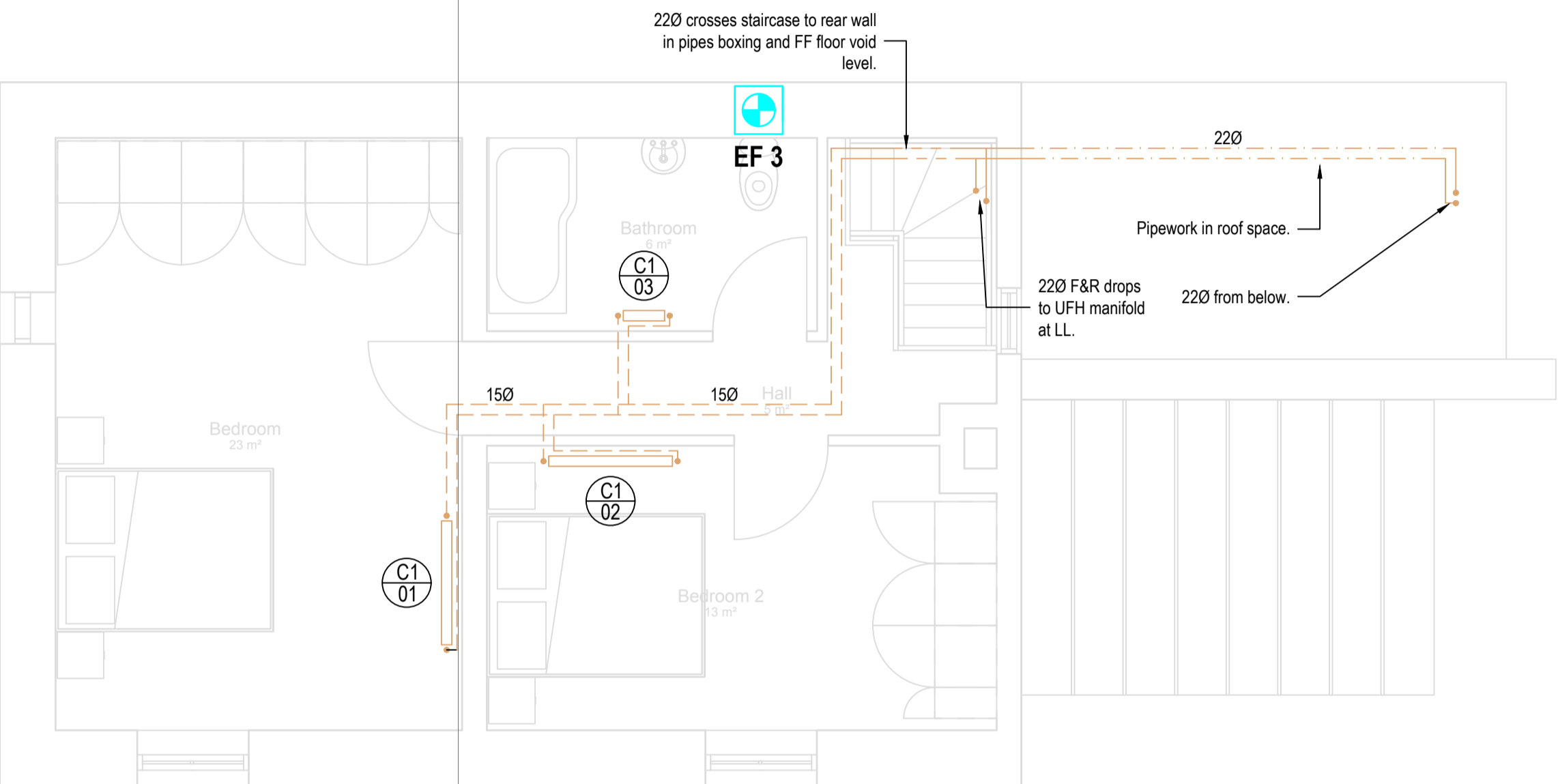
Client: **SANDERSON WEATHERALL**

Project: **PARK HALL AISLABY, N YORKS YO21 1SW**

Title: **MECHANICAL SERVICES KEEPERS COTTAGE GF & FF PROPOSED DOMESTIC SERVICES**

Scale: **1:50 @ A1** Date: **10 JUNE 2016**

Dwg No: **2016 433 KC MEC 020 M01** Rev: **T01**



**RADIATOR SCHEDULE**  
**Manufacturer: Steirad COMPACT K3 & COMPACT**

REF	LOCATION	MODEL	REQUIRED	OUTPUT	FLOW (Kg/s)	BAL' P (KPa)	HEIGHT	LENTH	DEPTH	CON'S
<b>KEEPERS COTTAGE</b>										
C1/01	BEDROOM 1	K2 600 X 1200	2.00KW	2.07KW	0.040	15.97	600	1200	135	15BOE
C1/02	BEDROOM 2	K1 600 X 1200	1.20KW	1.17KW	0.020	15.97	600	1200	93	15BOE
C1/03	BATHROOM	K1 700 X 600	0.54KW	0.67KW	0.001	15.00	700	600	93	15BOE

**NOTES**

- Prior to order the Contractor SHALL check the dimensions and final locations (with the client) for each radiator position shown.
- Output based on -4°C Ext and 22°C Int with output from manufacturers tables design temperatures 82°C/171°C.
- 15mm BOE connections.
- All radiators shall be manufactured by Steirad selected from the Compact Range. Factory standard white finish.
- Each radiator shall be complete with Herz Valves (Herzules) Herz TS 98 V 7264 V TRV with 9230 59 HEAD sensor set to position • (22°C) and shall be located on the flow connection RHS with LSV RL1 3724 to the return. The flow rate through the TRV body shall be pre-set to the flow rates indicated.
- All radiators and valves shall be installed FULLY in accordance with the manufacturers instructions.

**EXTRACT FAN SYSTEM EQUIPMENT SCHEDULE**  
**Manufacturer: Nuair Ltd or Equal and Approved**

REF	LOCATION	MODEL	L/S	ΔP	SFP	WATTS	WIDTH	DEPTH	HEIGHT	IP rating
EF1	CLOAKS WC	Genie-DC-S12	6	40	2.67	12V/16	173	55	200	-
EF2	KITCHEN	Slimaire NA150HT	60	25	2.30	230V/26	200	22	200	-
EF3	UTILITY	Slimaire NA150HT	60	25	2.30	230V/26	200	22	200	-
EF4	MAIN BATHROOM	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-

**NOTES**

- All fans to be RECESSED with ancillary external wall (recess kit) and wall duct and louvre mounted to fan.
- EF1 & EF4 connected to local lighting circuit with ELV 230V/12V transformer (over entrance door adjacent to double pole switch installed to manufacturer's installation instructions. Timer set to 25mins.
- EF2 & EF3 with integral humidistat via local power supply and double pole isolator with ancillary external wall (recess kit) and wall duct and louvre mounted to fan.
- Standard internal finish.

**NOTES**

1. Do not scale from this drawing.
2. Drawings must be read in conjunction with the Mechanical Services Specification.
3. All works must be carried out in accordance with CDM 2007 COP - see project significant hazards for identified significant risks before commencing works.
4. The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
5. The Contractor shall be responsible for coordinating the works in accordance with the main program.
6. All builders work shall be carried out by the Main Contractor.
7. The M&E sub-contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
8. The M&E sub-contractor shall be responsible for co-ordination of their works with all other trades.
9. The heating design is based upon the temperatures identified, thus 20°C throughout to all rooms except bathrooms which shall be 22°C.
10. The roof spaces to be insulated to current Building Regulation standards.
11. The timber floor areas on the GF to be insulated with 200mm Rockwool Thermal Insulation Roll suspended between joists with stapled netting for support.
12. All existing windows and doors to be draught proofed.
13. All new windows to comply with current Building Regulation standards.
14. All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
15. All insulation to comply fully with current water bylaws, requirements of BS 6700 and local water authorities.
16. All fittings, plant and equipment to be installed, regulated and tested in accordance with the manufacturers printed instructions.
17. All pipework, fittings and equipment to be installed to provide systems free of air locks, water hammer or leaks.
18. Stopcocks to be BS1010 gate valves to BS154. Check valves to BS282: Part 1 with test cock to BS2879, drain valves to BS2879.
19. All terminal connections to appliances to be fitted with independent ballcock valves.
20. All valves to be fully accessible and be provided with identification labels.
21. All commissioning sets to have full shut off facility for isolation purposes.
22. Drain valves and air vents to be provided at all low & high points in all systems respectively.
23. All pipework exposed at high level, roof void, service ducts, boxings and enclosures to be fully insulated with rigid mineral sections having class '0' foil finish in compliance with BS 5422 insulation thickness as follows:  
 Pipework up to 32mm - 25mm thick  
 Pipework 40mm and above - 32mm thick  
 The heating system shall be flushed twice and after pressure testing filled with glycol anti-freeze fluid to the manufacturers concentration.
24. All final pipework drop positions to be agreed with the architect.
25. Identification of pipework shall be in accordance with BS 1710.
26. The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2008 or later, and provide detailed O&M manuals complete with all required certification.

**IMPORTANT CDM / H & S NOTE**  
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Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
 CONSULTING ENGINEERS

Ashburn House  
 84 Grange Road  
 Darlington  
 DL1 5NP

Status: TENDER

Client: SANDERSON WEATHERALL

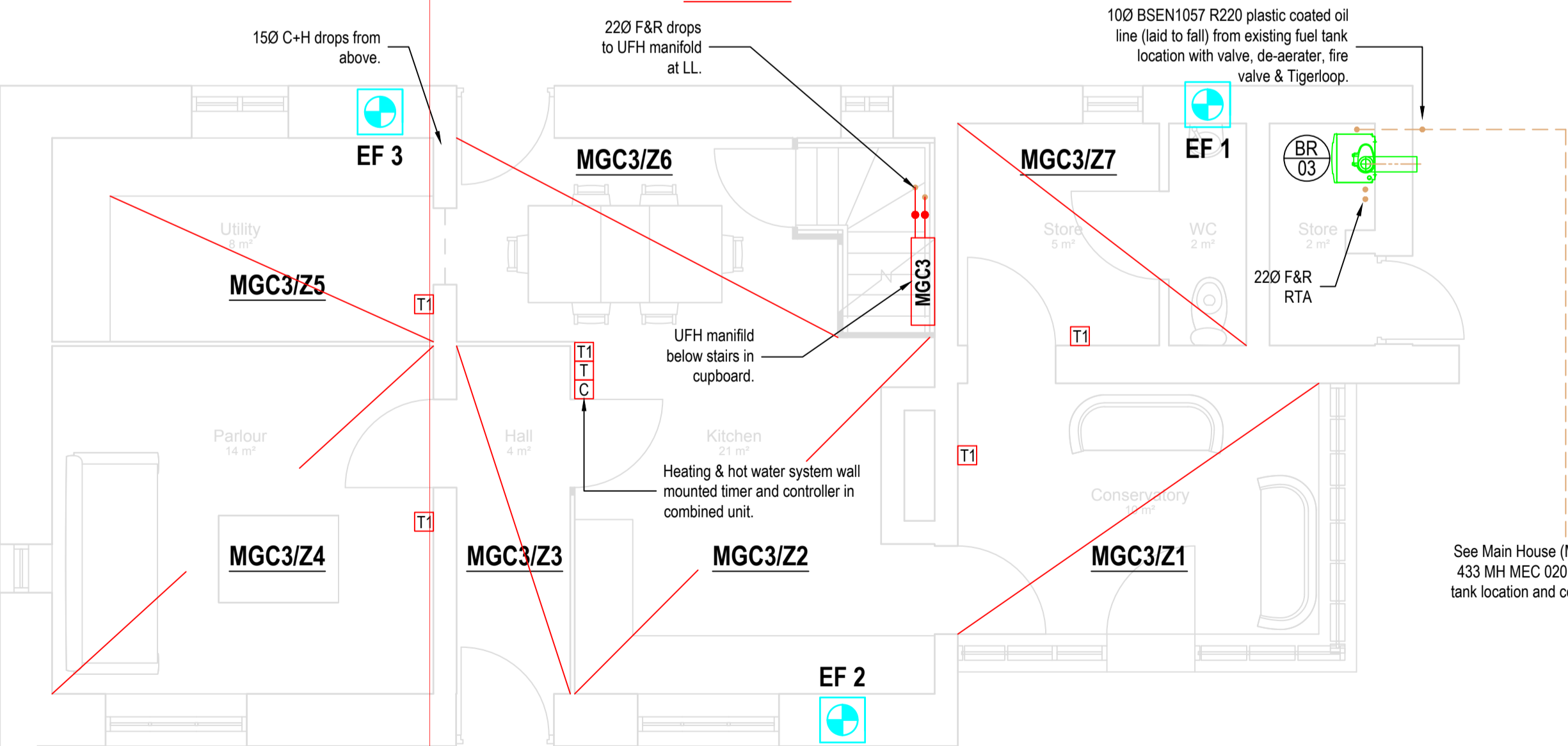
Project: PARK HALL  
 AISLABY, N YORKS  
 YO21 1SW

Title: MECHANICAL SERVICES  
 KEEPERS COTTAGE GF & FF  
 PROPOSED HTG & VNT SERVICES

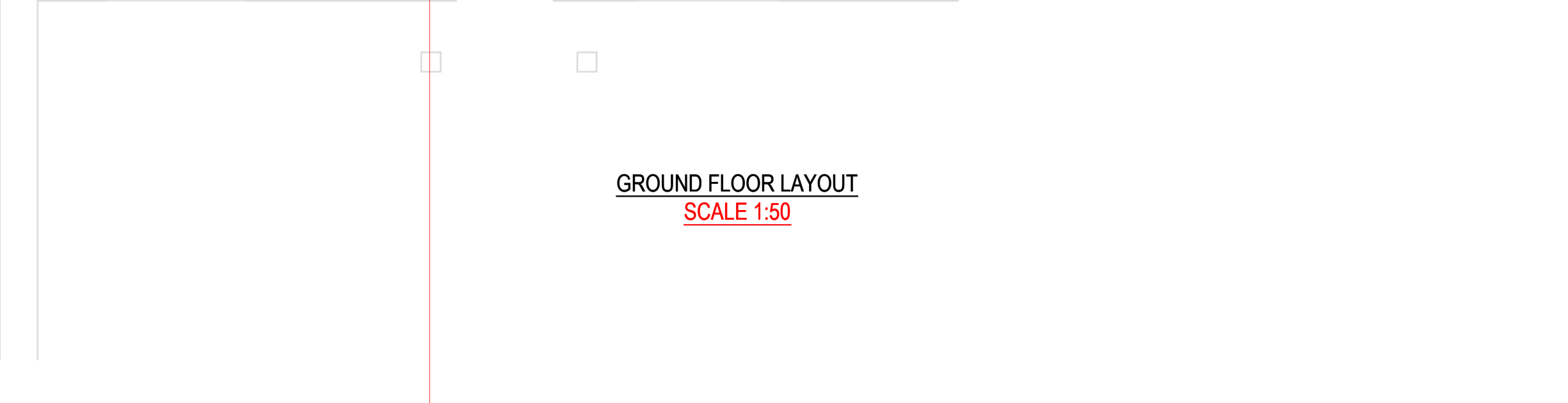
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Dwg No: 2016 433 KC MEC 030 M01 Rev: T01

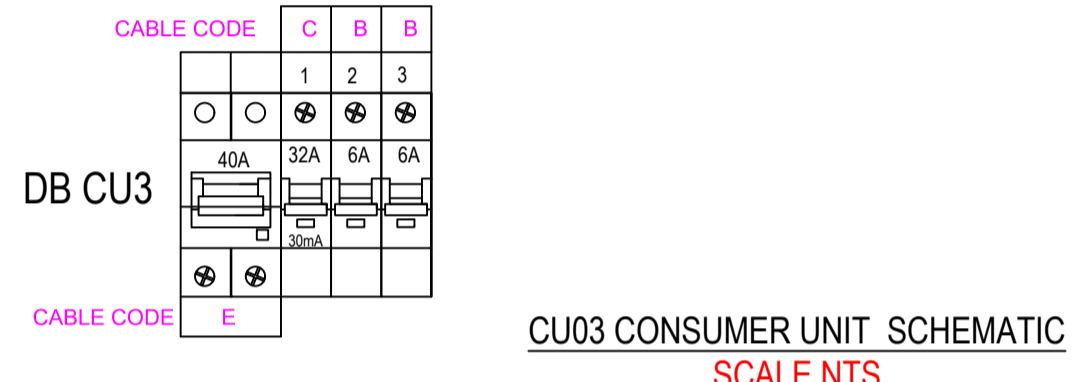
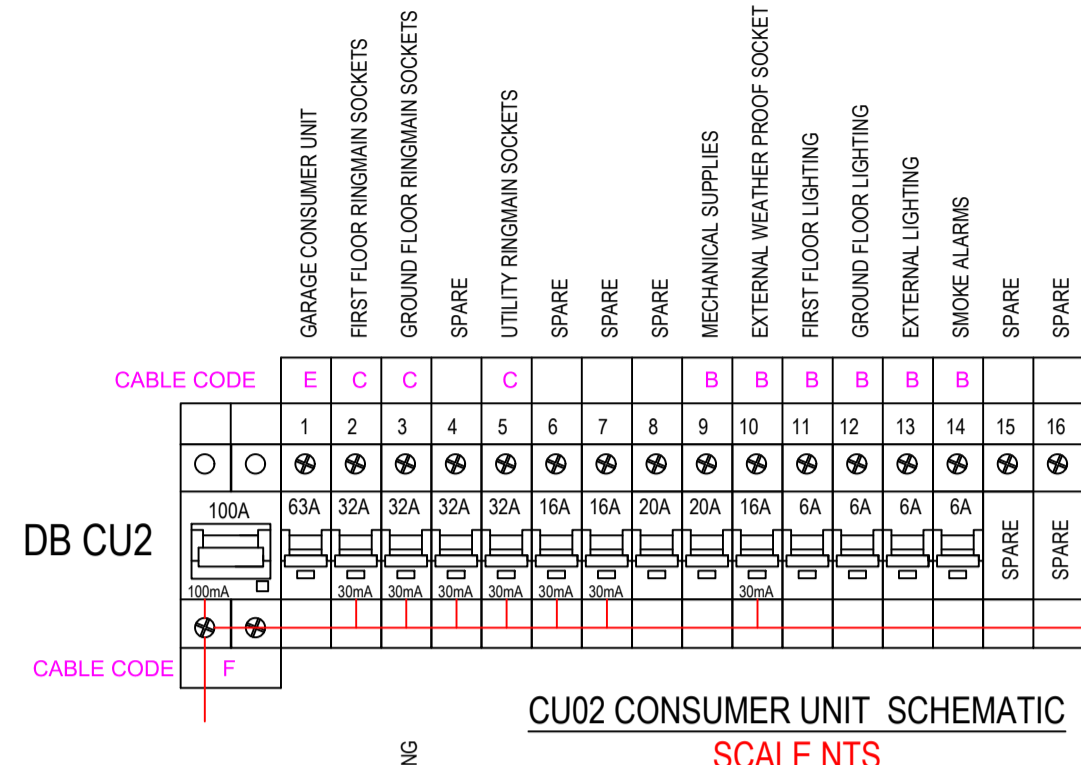
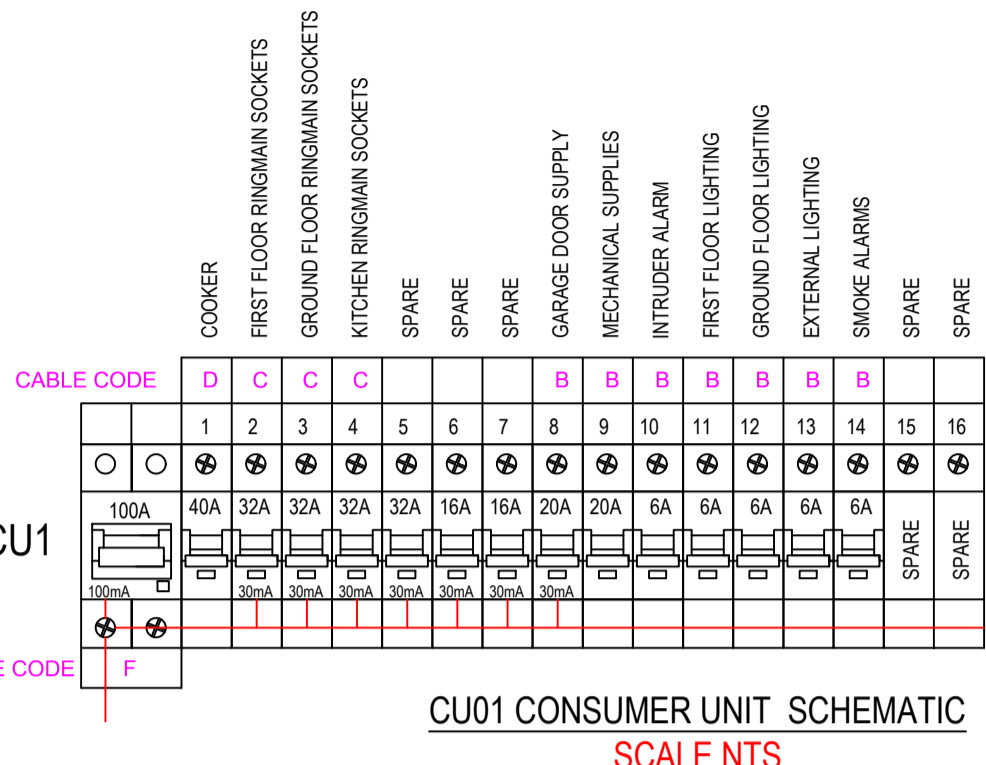
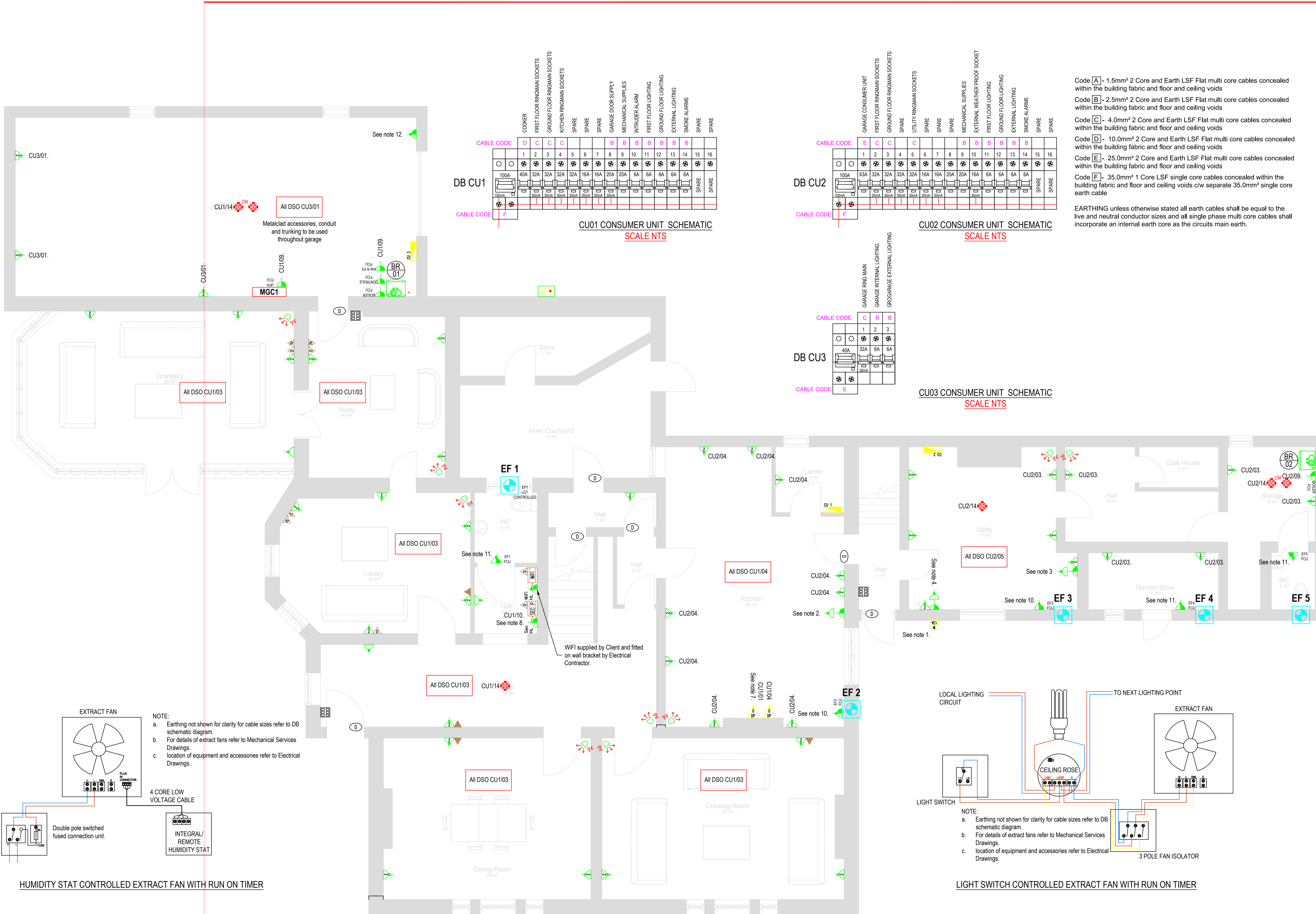
**FIRST FLOOR LAYOUT**  
**SCALE 1:50**



**GROUND FLOOR LAYOUT**  
**SCALE 1:50**



See Main House (MH) drawing 2016 433 MH MEC 020 01 for oil storage tank location and connections details.



Code **A** - 1.5mm<sup>2</sup> 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids

Code **B** - 2.5mm<sup>2</sup> 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids

Code **C** - 4.0mm<sup>2</sup> 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids

Code **D** - 10.0mm<sup>2</sup> 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids

Code **E** - 25.0mm<sup>2</sup> 2 Core and Earth LSF Flat multi core cables concealed within the building fabric and floor and ceiling voids

Code **F** - 35.0mm<sup>2</sup> 1 Core LSF single core cables concealed within the building fabric and floor and ceiling voids c/w separate 35.0mm<sup>2</sup> single core earth cable

**EARTHING** unless otherwise stated all earth cables shall be equal to the live and neutral conductor sizes and all single phase multi core cables shall incorporate an internal earth core as the circuits main earth.

**GENERAL NOTES**

- Do not scale from this drawing.
- Contractor to make safe and strip out all existing redundant electrical services and equipment which remain.
- Contractor shall install the Electrical Services fully in accordance with BS7671 and the Building regulations.
- All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
- The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- The Contractor shall be responsible for coordinating the works in accordance with the main program.
- All builders work shall be carried out by the Main Contractor.
- The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
- The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**ELECTRICAL NOTES**

- MK Masterless Plus IP 66 RCD protected socket mounted 500mm AFFL.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic dish washer, the fused connection unit to be engraved Dish Washer.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic washer, the fused connection unit to be engraved Washer.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic tumble dryer, the fused connection unit to be engraved Tumble Dryer.
- Switched fused connection located in a suitable location within the loft to feed client supplied multichannel satellite amplifier unit or for future connection.
- Switched fused connection located in a suitable location within the loft to feed client digital multiswitch or for future connection.
- 4SA DP cooker control switch feeding a low level cooker connection outlet for final connection of an electric cooker.
- Unswitched fuse connection unit to supply Intruder Alarm panel.
- Broadband/fibre optic connection point, final location to be agreed.
- Three (3) pole fan isolator switch at high level engraved Extract Fan, Fan control via integral humidity stat provided and is fitted with a run on timer thus a permanent live is required. Fan installed by the Mechanical Contractor.
- Three (3) Pole fan isolator switch and installed at high level engraved Extract Fan. The fan is operated from the lighting switch in the room and is fitted with a run on timer thus a permanent live is required Fan installed by the Mechanical Contractor.
- Switched fused connection at HL in garage for future electric doors.

**IMPORTANT CDM / H & S NOTE**

THE DESIGNERS WOULD DRAW THE READERS ATTENTION TO KEY RESIDUAL HEALTH AND SAFETY RISKS THAT HAVE NOT BEEN ELIMINATED FROM THE DESIGNS SHOWN ON THE DRAWINGS BY THE DESIGN PROCESS. THESE RISKS ARE IDENTIFIED BELOW

- Co-ordination of M&E services with all other trades
  - Provision for future maintenance
  - Site access/egress for deliveries etc.
  - Working at height
  - Asbestos
- ANY CONSTRUCTION PERSONNEL INCLUDING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE SIGHT OF:
- THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS.
  - THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
  - THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec CONSULTING ENGINEERS**

Ashburn House  
84 Grange Road  
Darlington  
DL1 1NP

Status: **TENDER**

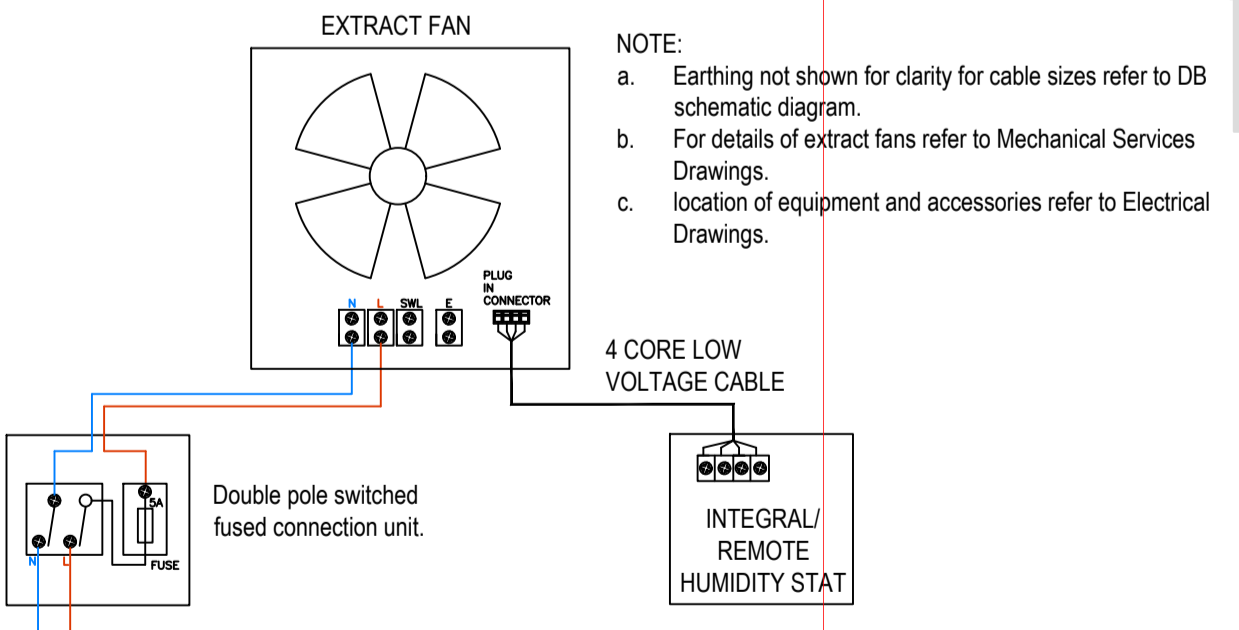
Client: **SANDERSON WEATHERALL**

Project: **PARK HALL AISLABY, N YORKS YO21 1SW**

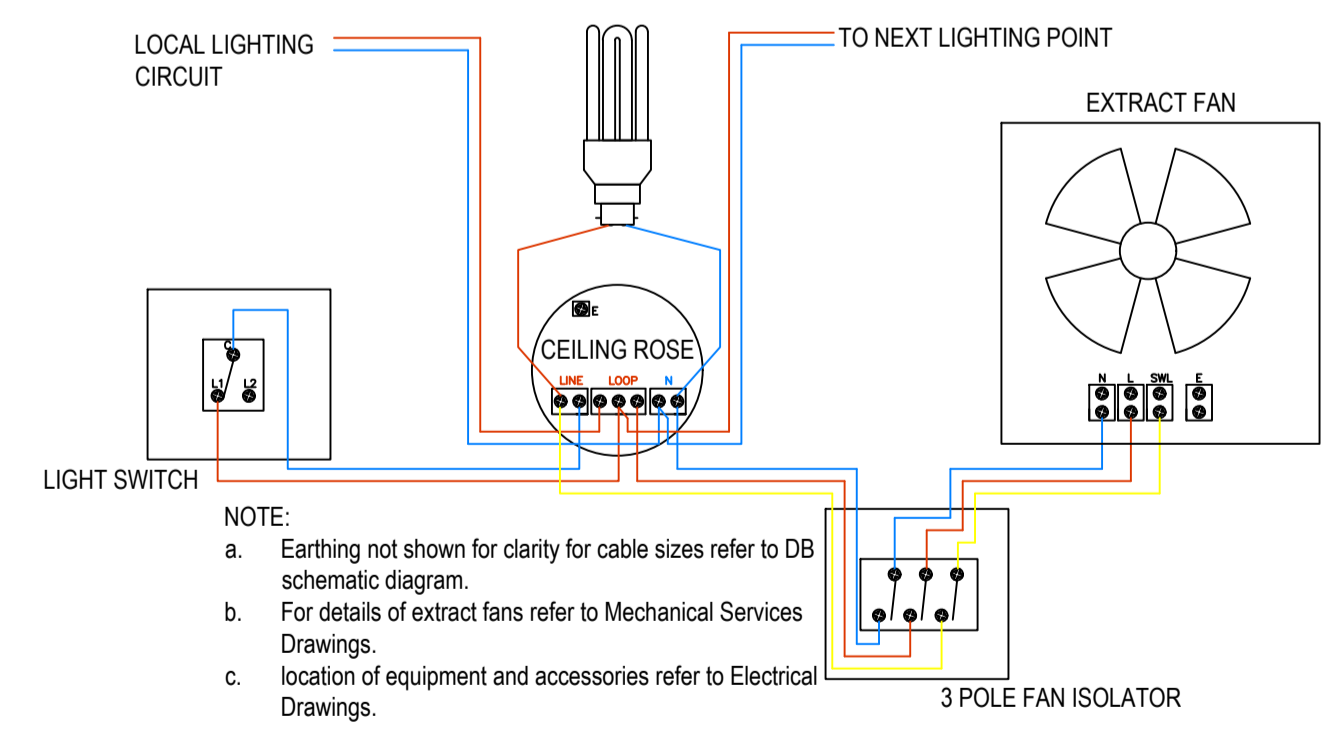
Title: **ELECTRICAL SERVICES MAIN HOUSE GROUND FLOOR PROPOSED PWR & DATA SERVICES**

Scale: **1:50 @ A1** Date: **10 JUNE 2016**

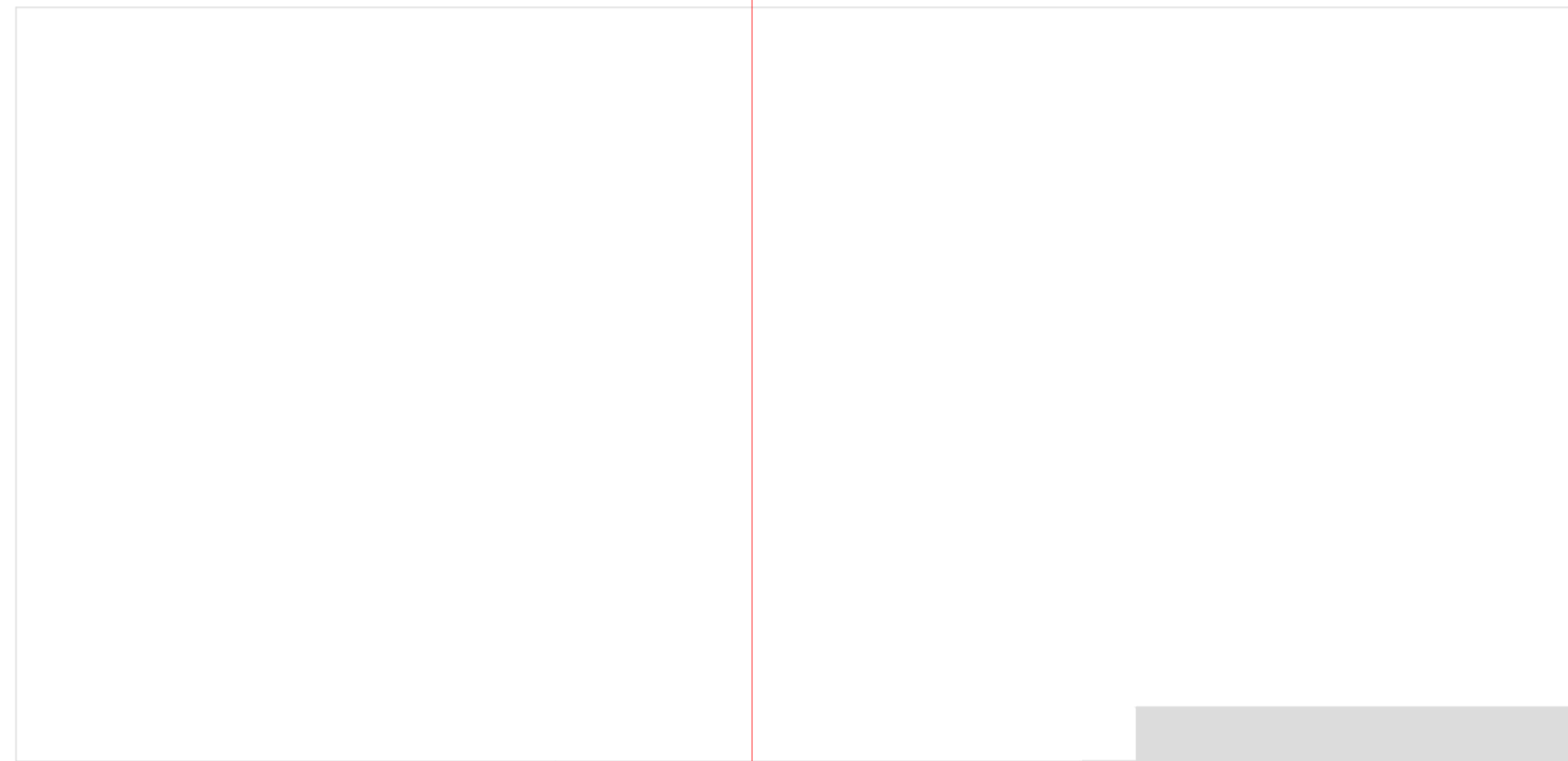
Dwg No: **2016 433 MH LEC 010 E01** Rev: **T01**



**HUMIDITY STAT CONTROLLED EXTRACT FAN WITH RUN ON TIMER**



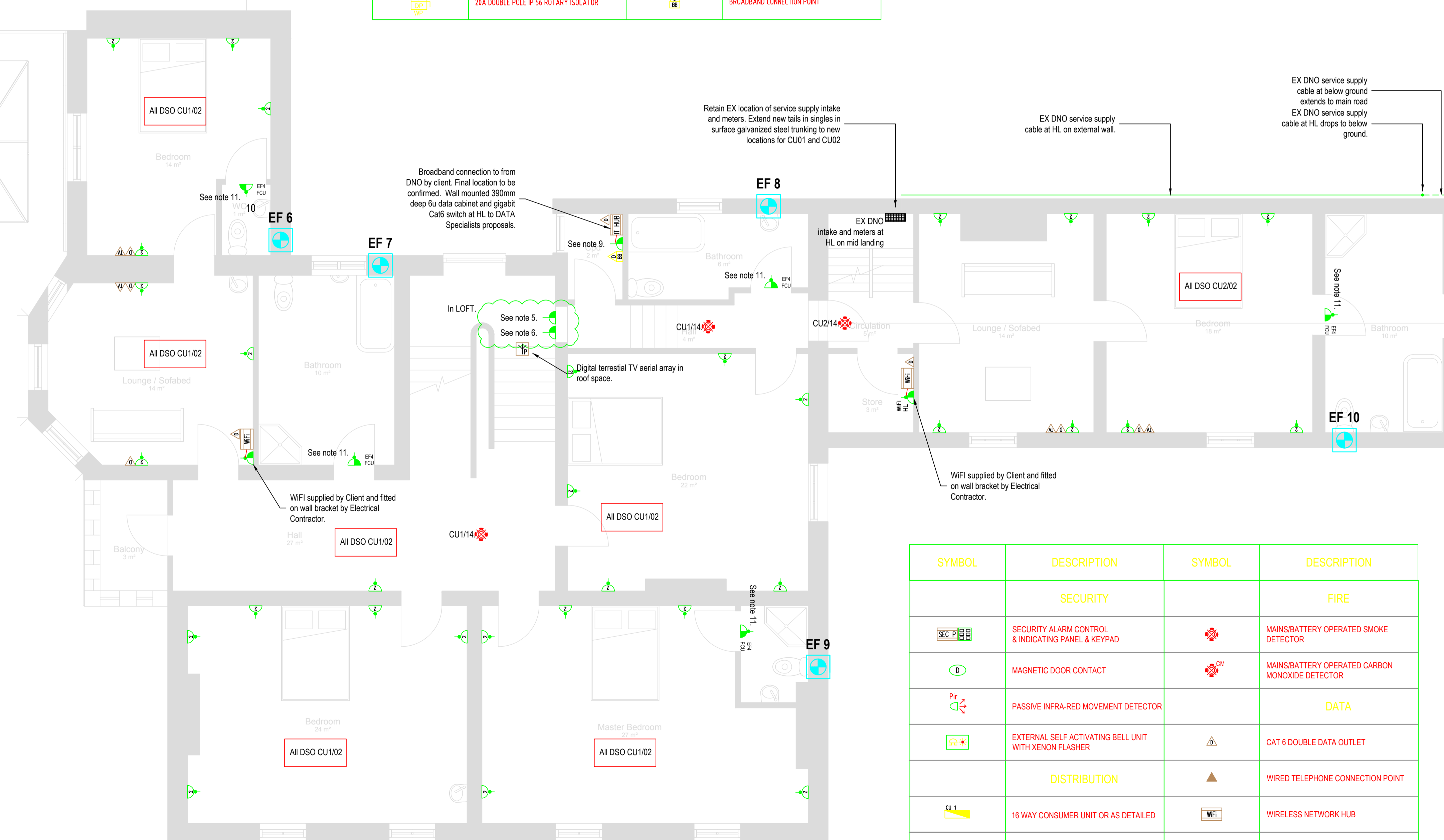
**LIGHT SWITCH CONTROLLED EXTRACT FAN WITH RUN ON TIMER**



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	<b>SMALL POWER</b>		<b>SMALL POWER</b>
	SINGLE 13A UNSWITCHED SOCKET OUTLET		MK MASTERSEAL SOCKET WITH RCD
	TWIN 13A UNSWITCHED SOCKET OUTLET		CABLE OUTLET PLATE
	SINGLE 13A SWITCHED SOCKET OUTLET		SHAVER SOCKET OUTLET 230 & 110 C/W DOUBLE WOUND TRANSFORMER
	TWIN 13A SWITCHED SOCKET OUTLET		COOKER CONTROL UNIT (13A SOCKET INTEGRAL)
	UNSWITCHED FUSED CONNECTION UNIT		HUMIDITY STAT
	SWITCHED FUSED CONNECTION UNIT		EXTRACT FAN
	20A DOUBLE POLE SWITCH FOR OVEN		TV OUTLET AND AERIAL ARRAY
	20A DOUBLE POLE IP 56 ROTARY ISOLATOR		BROADBAND CONNECTION POINT

**ABBREVIATIONS**

AB	ACCESSORY ABOVE BENCH
CL	CLEANERS SOCKET
CU	CONSUMER UNIT
DP	DOUBLE POLE
DA	DISABLED ALARM
FAP	FIRE ALARM PANEL
FC	FAN COIL UNIT
FL	FLOOR LIGHT
HD	HANDDRIER
LL	ACCESSORY AT LOW LEVEL
RHL	RISE TO HIGH LEVEL
RDB	RISE TO DISTRIBUTION BOARD
DDB	DROP TO DISTRIBUTION BOARD
RTF	RISE THROUGH FLOOR



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	<b>SECURITY</b>		<b>FIRE</b>
	SECURITY ALARM CONTROL & INDICATING PANEL & KEYPAD		MAINS/BATTERY OPERATED SMOKE DETECTOR
	MAGNETIC DOOR CONTACT		MAINS/BATTERY OPERATED CARBON MONOXIDE DETECTOR
	PASSIVE INFRA-RED MOVEMENT DETECTOR		<b>DATA</b>
	EXTERNAL SELF ACTIVATING BELL UNIT WITH XENON FLASHER		CAT 6 DOUBLE DATA OUTLET
	<b>DISTRIBUTION</b>		WIRED TELEPHONE CONNECTION POINT
	16 WAY CONSUMER UNIT OR AS DETAILED		WIRELESS NETWORK HUB

**GENERAL NOTES**

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- All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
- The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- The Contractor shall be responsible for coordinating the works in accordance with the main program.
- All builders work shall be carried out by the Main Contractor.
- The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
- The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**ELECTRICAL NOTES**

- MK Masterseal Plus IP 66 RCD protected socket mounted 500mm AFFL.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic dish washer, the fused connection unit to be engraved Dish Washer.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic washer, the fused connection unit to be engraved Washer.
- Switched fused connection mounted above bench height serving an unswitched single socket at low level for a supply to a below worktop domestic tumble dryer, the fused connection unit to be engraved Tumble Dryer.
- Switched fused connection located in a suitable location within the loft to feed client supplied multiswitch satellite amplifier unit or for future connection.
- Switched fused connection located in a suitable location within the loft to feed client digital multiswitch or for future connection.
- 4SA DP cooker control switch feeding a low level cooker connection outlet for final connection of an electric cooker.
- Unswitched fuse connection unit to supply Intruder Alarm panel.
- Broadband/fibre optic connection point, final location to be agreed.
- Three (3) pole fan isolator switch at high level engraved Extract Fan, Fan control via integral humidity stat provided and is fitted with a run on timer thus a permanent live is required. Fan installed by the Mechanical Contractor.
- Three (3) Pole fan isolator switch and installed at high level engraved Extract Fan. The fan is operated from the lighting switch in the room and is fitted with a run on timer thus a permanent live is required Fan installed by the Mechanical Contractor.

**IMPORTANT CDM / H & S NOTE**

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- Co-ordination of M&E services with all other trades
- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height
- Asbestos

ANY CONSTRUCTION PERSONNEL INCLUDING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE SIGHT OF:

- THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS
- THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
- THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

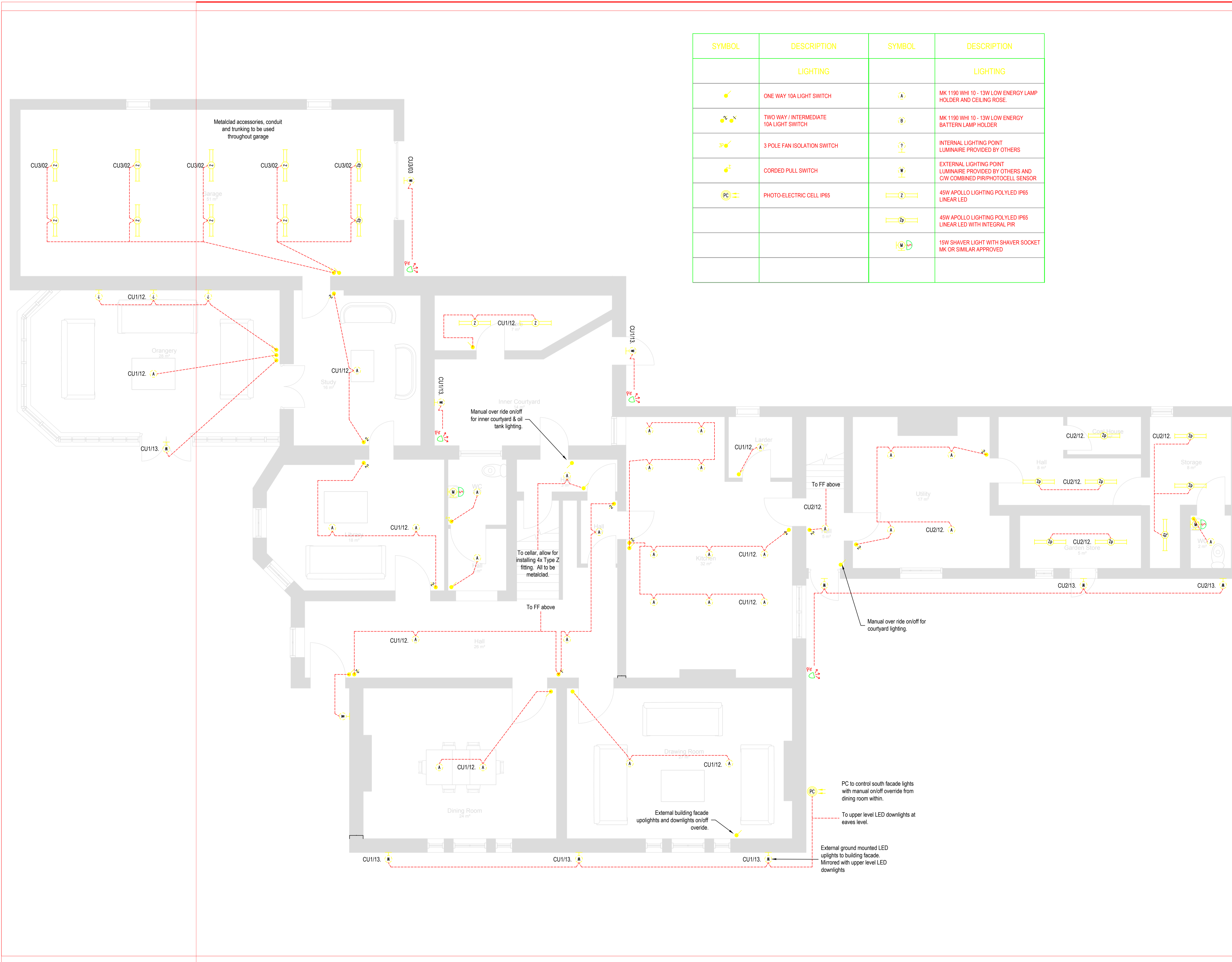
**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington

Status	TENDER
Client	SANDERSON WEATHERALL

Project	PARK HALL AISLABY, N YORKS YO21 1SW
Title	ELECTRICAL SERVICES MAIN HOUSE FIRST FLOOR PROPOSED PWR & DATA SERVICES

Scale	1:50 @ A1	Date	10 JUNE 2016
Dwg No	2016 433 LEC 010 E02	Rev	T01



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	<b>LIGHTING</b>		<b>LIGHTING</b>
	ONE WAY 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY LAMP HOLDER AND CEILING ROSE.
	TWO WAY / INTERMEDIATE 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY BATTERY LAMP HOLDER
	3 POLE FAN ISOLATION SWITCH		INTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS
	CORDED PULL SWITCH		EXTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS AND C/W COMBINED PIR/PHOTOCELL SENSOR
	PHOTO-ELECTRIC CELL IP65		45W APOLLO LIGHTING POLYLED IP65 LINEAR LED
			45W APOLLO LIGHTING POLYLED IP65 LINEAR LED WITH INTEGRAL PIR
			15W SHAVER LIGHT WITH SHAVER SOCKET MK OR SIMILAR APPROVED

**GENERAL NOTES**

- A. Do not scale from this drawing.
- B. Contractor to make safe and strip out all existing redundant electrical services and equipment which remain.
- C. Contractor shall install the Electrical Services fully in accordance with BS7671 and the Building regulations.
- D. All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
- E. The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- F. The Contractor shall be responsible for coordinating the works in accordance with the main program.
- G. All builders work shall be carried out by the Main Contractor.
- H. The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- I. All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
- J. The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**ELECTRICAL NOTES**

1. Final luminaire fittings and switching configuration to be confirmed by client prior to installation.
2. Kitchen and Utility areas to be confirmed.
3. Cellar area not shown, allow for the supply and installation of 4 Type Z fitting in two separate rooms all with galvanised steel conduit.
4. External lighting point controlled via a one way switch. Final luminaire selection by others.
5. External lighting point requires switched and permanent live supplies for PIR integral sensor. Final luminaire by others.
6. Cables shall be segregated based on their category as defined by the IEE Wiring Regulations.
7. Unscreened data cables must be spaced 200mm min from unscreened power cables.
8. Where LED drivers are installed they shall be located in an accessible location and where more than 2 are used in the same location these shall be located in one suitable location. Note that these drivers will require air to circulate over them to reduce the heat build up around them.

**IMPORTANT CDM / H & S NOTE**

THE DESIGNERS WOULD DRAW THE READERS ATTENTION TO KEY RESIDUAL HEALTH AND SAFETY RISKS THAT HAVE NOT BEEN ELIMINATED FROM THE DESIGNS SHOWN ON THE DRAWINGS BY THE DESIGN PROCESS. THESE RISKS ARE IDENTIFIED BELOW

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- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height
- Asbestos

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- (1) THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS
- (2) THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
- (3) THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington

---

Status: TENDER

---

Client: SANDERSON WEATHERALL

---

Project: PARK HALL  
AISLABY, N YORKS  
YO21 1SW

---

Title: ELECTRICAL SERVICES  
MAIN HOUSE GROUND FLOOR  
PROPOSED LIGHTING SERVICES

Scale	1:50 @ A1	Date	10 JUNE 2016
Dwg No	2016 433 MH LEC 020 E01	Rev	T01

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>LIGHTING</b>		<b>LIGHTING</b>	
	ONE WAY 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY LAMP HOLDER AND CEILING ROSE.
	TWO WAY / INTERMEDIATE 10A LIGHT SWITCH		MK 1190 WHI 10 - 13W LOW ENERGY BATTERY LAMP HOLDER
	3 POLE FAN ISOLATION SWITCH		INTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS
	CORDED PULL SWITCH		EXTERNAL LIGHTING POINT LUMINAIRE PROVIDED BY OTHERS AND C/W COMBINED PIR/PHOTOCELL SENSOR
	PASSIVE INFRA-RED MOVEMENT DETECTOR		45W APOLLO LIGHTING POLYLED IP65 LINEAR LED
			45W APOLLO LIGHTING POLYLED IP65 LINEAR LED WITH INTEGRAL PIR
			15W SHAVER LIGHT WITH SHAVER SOCKET MK OR SIMILAR APPROVED

**GENERAL NOTES**

- Do not scale from this drawing.
- Contractor to make safe and strip out all existing redundant electrical services and equipment which remain.
- Contractor shall install the Electrical Services fully in accordance with BS7671 and the Building regulations.
- All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
- The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- The Contractor shall be responsible for coordinating the works in accordance with the main program.
- All builders work shall be carried out by the Main Contractor.
- The Contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
- The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**ELECTRICAL NOTES**

- Final luminaire fittings and switching configuration to be confirmed by client prior to installation.
- Kitchen and Utility areas to be confirmed.
- Cellar area not shown, allow for the supply and installation of 4 Type Z fitting in two separate rooms all with galvanised steel conduit.
- External lighting point controlled via a one way switch. Final luminaire selection by others.
- External lighting point requires switched and permanent live supplies for PIR integral sensor. Final luminaire by others.
- Cables shall be segregated based on their category as defined by the IEE Wiring Regulations.
- Unscreened data cables must be spaced 200mm min from unscreened power cables.
- Where LED drivers are installed they shall be located in an accessible location and where more than 2 are used in the same location these shall be located in one suitable location. Note that these drivers will require air to circulate over them to reduce the heat build up around them.

**IMPORTANT CDM / H & S NOTE**  
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- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height
- Asbestos

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- THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
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Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington  
DL1 5NP

Status: TENDER  
Client: SANDERSON WEATHERALL

Project: PARK HALL  
AISLABY, N YORKS  
YO21 1SW

Title: ELECTRICAL SERVICES  
MAIN HOUSE FIRST FLOOR  
PROPOSED LIGHTING SERVICES

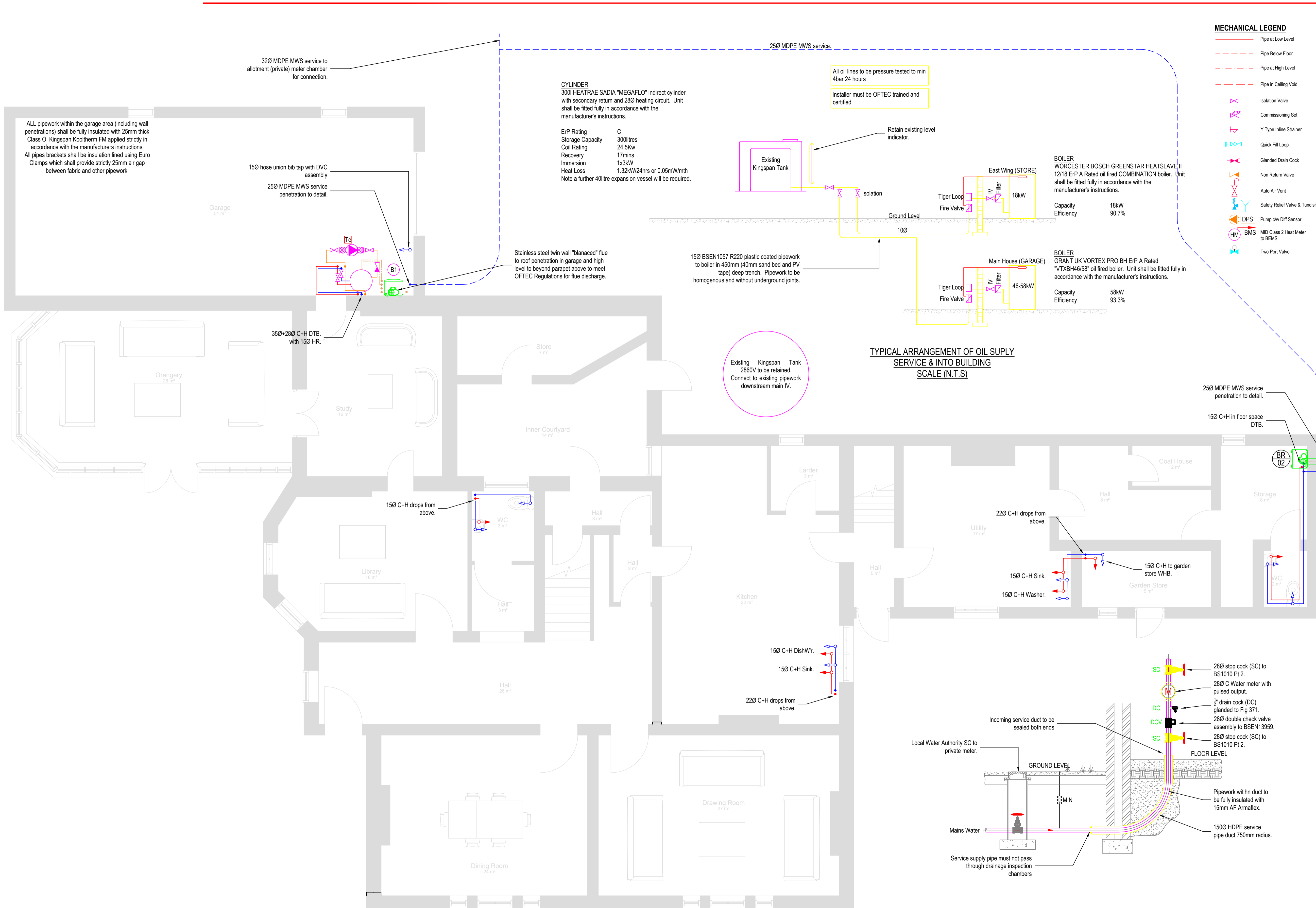
Scale	1:50 @ A1	Date	10 JUNE 2016
Dwg No	2016 433 MH LEC 020 E01	Rev	T01

**ABBREVIATIONS**

- AB ACCESSORY ABOVE BENCH
- CL CLEANERS SOCKET
- CU CONSUMER UNIT
- DP DOUBLE POLE
- DA DISABLED ALARM
- FAP FIRE ALARM PANEL
- FC FAN COIL UNIT
- FL FLOOR LIGHT
- HD HANDDRYER
- LL ACCESSORY AT LOW LEVEL
- RHL RISE TO HIGH LEVEL
- RDB RISE TO DISTRIBUTION BOARD
- DDB DROP TO DISTRIBUTION BOARD
- RTF RISE THROUGH FLOOR





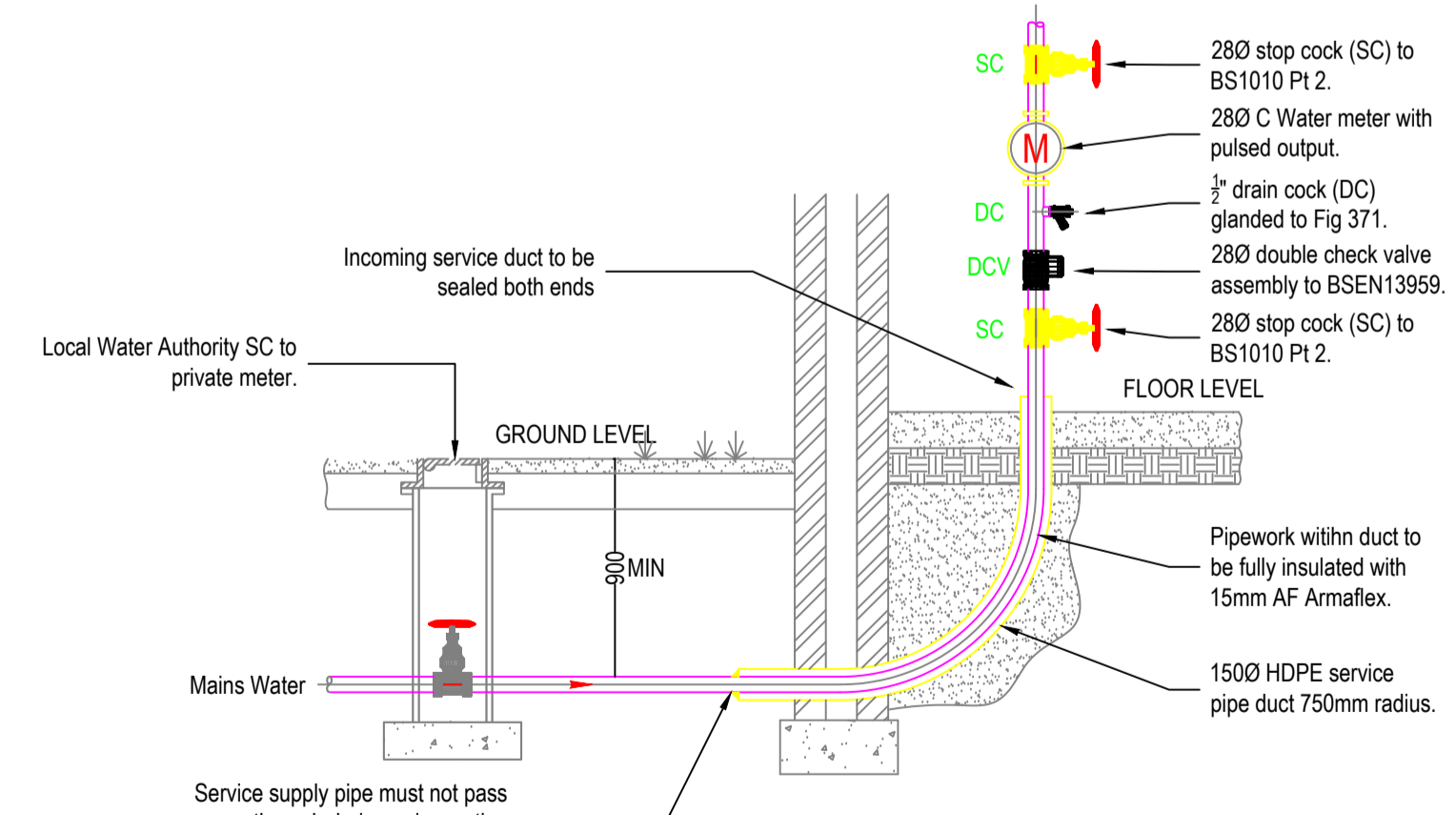


**CYLINDER**  
 300 HEATRAE SADIA "MEGAFLO" indirect cylinder with secondary return and 280 heating circuit. Unit shall be fitted fully in accordance with the manufacturer's instructions.

ErP Rating C  
 Storage Capacity 300litres  
 Coil Rating 24.5Kw  
 Recovery 17mins  
 Immersion 1x3kW  
 Heat Loss 1.32kW/24hrs or 0.05mW/mth  
 Note a further 40litre expansion vessel will be required.

All oil lines to be pressure tested to min 4bar 24 hours  
 Installer must be OFTEC trained and certified

**TYPICAL ARRANGEMENT OF OIL SUPPLY SERVICE & INTO BUILDING SCALE (N.T.S)**



**TYPICAL ARRANGEMENT OF WATER SERVICES ENTRY INTO BUILDING SCALE (N.T.S)**

- MECHANICAL LEGEND**
- Pipe at Low Level
  - - - Pipe Below Floor
  - Pipe at High Level
  - Pipe in Ceiling Void
  - ⊗ Isolation Valve
  - ⊕ Commissioning Set
  - Y Y Type Inline Strainer
  - ⊕ Quick Fill Loop
  - ⊕ Glanded Drain Cock
  - ⊕ Non Return Valve
  - ⊕ Auto Air Vent
  - ⊕ Safety Relief Valve & Turndish
  - ⊕ DPSS Pump o/w Diff Sensor
  - ⊕ BMS MID Class 2 Heat Meter to BEMS
  - ⊕ Two Port Valve

- NOTES**
- Do not scale from this drawing.
  - Drawings must be read in conjunction with the Mechanical Services Specification.
  - All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
  - The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
  - The Contractor shall be responsible for coordinating the works in accordance with the main program.
  - All builders work shall be carried out by the Main Contractor.
  - The M&E sub-contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
  - The M&E sub-contractor shall be responsible for co-ordination of their works with all other trades.
  - All water outlets and pipe sizes have been calculated to BS6700 and comply with the latest Building Regulations. Care must be taken on selection of appliances and taps to ensure flow rates do not exceed design.
  - All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
  - All insulation to comply fully with current water bylaws, requirements of BS 6700 and local water authorities.
  - All fittings, plant and equipment to be installed, regulated and tested in accordance with the manufacturers printed instructions.
  - All pipework, fittings and equipment to be installed to provide systems free of air locks, water hammer or leaks.
  - Stopcocks to be BS1010 gate valves to BS154. Check valves to BS6282 - Part 1 with test cock to BS2879, drain valves to BS2879.
  - All valves to be fully accessible and be provided with identification labels.
  - All commissioning sets to have full shut off facility for isolation purposes.
  - Drain valves and air vents to be provided at all low & high points in all systems respectively.
  - All pipework exposed at high level, roof void, service ducts, boxings and enclosures to be fully insulated with rigid mineral sections having class 'C' foil finish in compliance with BS 5422 insulation thickness as follows:  
 Pipework up to 32mm - 25mm thick  
 Pipework 40mm and above - 32mm thick
  - The complete domestic services shall be flushed and sterilised in accordance with the specification.
  - All final pipework drop positions to be agreed with the architect.
  - All final pipework connections to wash hand basins and sink units shall be 15mm unless otherwise indicated. Each termination to be valved.
  - Consulting returns shall be installed such that the maximum dead leg from each outlet is no more than 1.5m
  - Identification of pipework shall be in accordance with BS 1710.
  - Thermostatic mixing valves (TMVs) to be provided to the each basin to TMV3 scheme set to 40°C and verified.
  - Thermostatic mixing valves (TMVs) to be provided to the each sink to TMV3 scheme set to 55°C and verified.
  - The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

**IMPORTANT CDM / H & S NOTE**  
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- Site access/egress for deliveries etc.
- Working at height
- Asbestos

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- THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
 CONSULTING ENGINEERS

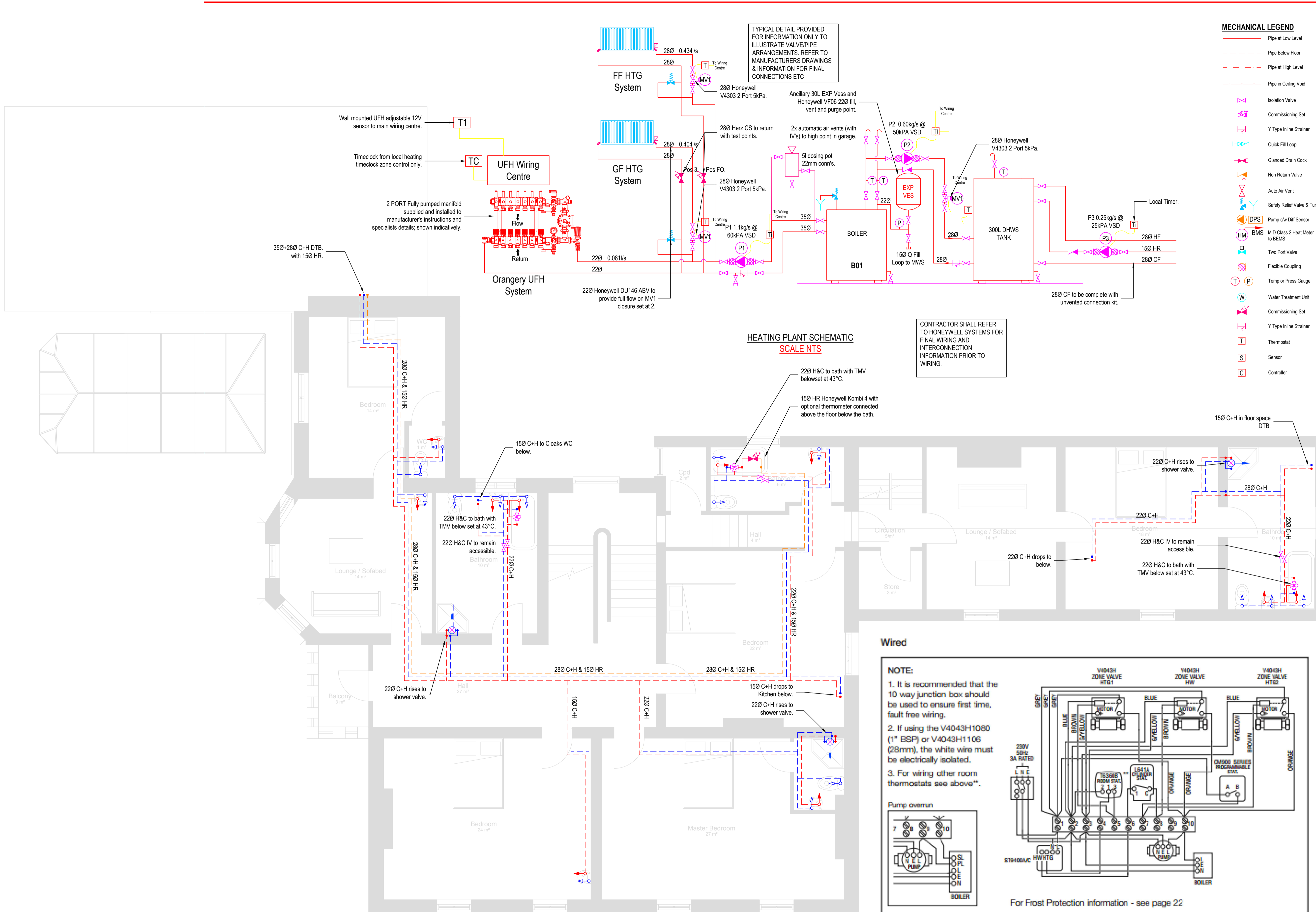
Ashburn House  
 84 Grange Road  
 Darlington  
 DL1 5NP

Status: TENDER  
 Client: SANDERSON WEATHERALL

Project: PARK HALL  
 AISLABY, N YORKS  
 YO21 1SW

Title: MECHANICAL SERVICES  
 MAIN HOUSE GROUND FLOOR  
 PROPOSED DOMESTIC SERVICES

Scale	1:50 @ A1	Date	10 JUNE 2016
Dwg No	2016 433 MH MEC 020 M01	Rev	T01



- NOTES**
- Do not scale from this drawing.
  - Drawings must be read in conjunction with the Mechanical Services Specification.
  - All works must be carried out in accordance with CDM 2015 COP - see project significant hazards for identified significant risks before commencing works.
  - The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
  - The Contractor shall be responsible for coordinating the works in accordance with the main program.
  - All builders work shall be carried out by the Main Contractor.
  - The M&E sub-contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
  - The M&E sub-contractor shall be responsible for co-ordination of their works with all other trades.
  - All water outlets and pipe sizes have been calculated to BS6700 and comply with the latest Building Regulations. Care must be taken on selection of appliances and taps to ensure flow rates do not exceed design.
  - All wall and floor penetrations are to be sleeved, fire stopped as required, and complete with wall or floor plates.
  - All insulation to comply fully with current water bylaws, requirements of BS 5700 and local water authorities.
  - All fittings, plant and equipment to be installed, regulated and tested in accordance with the manufacturers printed instructions.
  - All pipework, fittings and equipment to be installed to provide systems free of air locks, water hammer or leaks.
  - Stoppcocks to be BS1010 gate valves to BS154. Check valves to BS6282: Part 1 with test cock to BS2879, drain valves to BS2879.
  - All valves to be fully accessible and be provided with identification labels.
  - All commissioning sets to have full shut off facility for isolation purposes.
  - Drain valves and air vents to be provided at all low & high points in all systems respectively.
  - All pipework exposed at high level, roof void, service ducts, boings and enclosures to be fully insulated with rigid mineral sections having class 'O' foil finish in compliance with BS 5422 insulation thickness as follows:
    - Pipework up to 32mm - 25mm thick
    - Pipework 40mm and above - 32mm thick
  - The complete domestic services shall be flushed and sterilised in accordance with the specification.
  - All final pipework drop positions to be agreed with the architect.
  - All final pipework connections to wash hand basins and sink units shall be 15mm unless otherwise indicated. Each termination to be advised.
  - Circulating returns shall be installed such that the maximum dead leg from each outlet is no more than 1.5m
  - Identification of pipework shall be in accordance with BS 1710.
  - Thermostatic mixing valves (TMVs) to be provided to the each basin to TMV3 scheme set to 42°C and verified.
  - Thermostatic mixing valves (TMVs) to be provided to the each sink to TMV3 scheme set to 55°C and verified.
  - The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2006 or later, and provide detailed O&M manuals complete with all required certification.

- IMPORTANT CDM / H & S NOTE**
- THE DESIGNERS WOULD DRAW THE READERS ATTENTION TO KEY RESIDUAL HEALTH AND SAFETY RISKS THAT HAVE NOT BEEN ELIMINATED FROM THE DESIGNS SHOWN ON THE DRAWINGS BY THE DESIGN PROCESS. THESE RISKS ARE IDENTIFIED BELOW
- Co-ordination of M&E services with all other trades
  - Provision for future maintenance
  - Site access/egress for deliveries etc.
  - Working at height
  - Asbestos
- ANY CONSTRUCTION PERSONNEL INCLUDING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE SIGHT OF:
- THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS
  - THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
  - THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
CONSULTING ENGINEERS

Ashburn House  
84 Grange Road  
Darlington

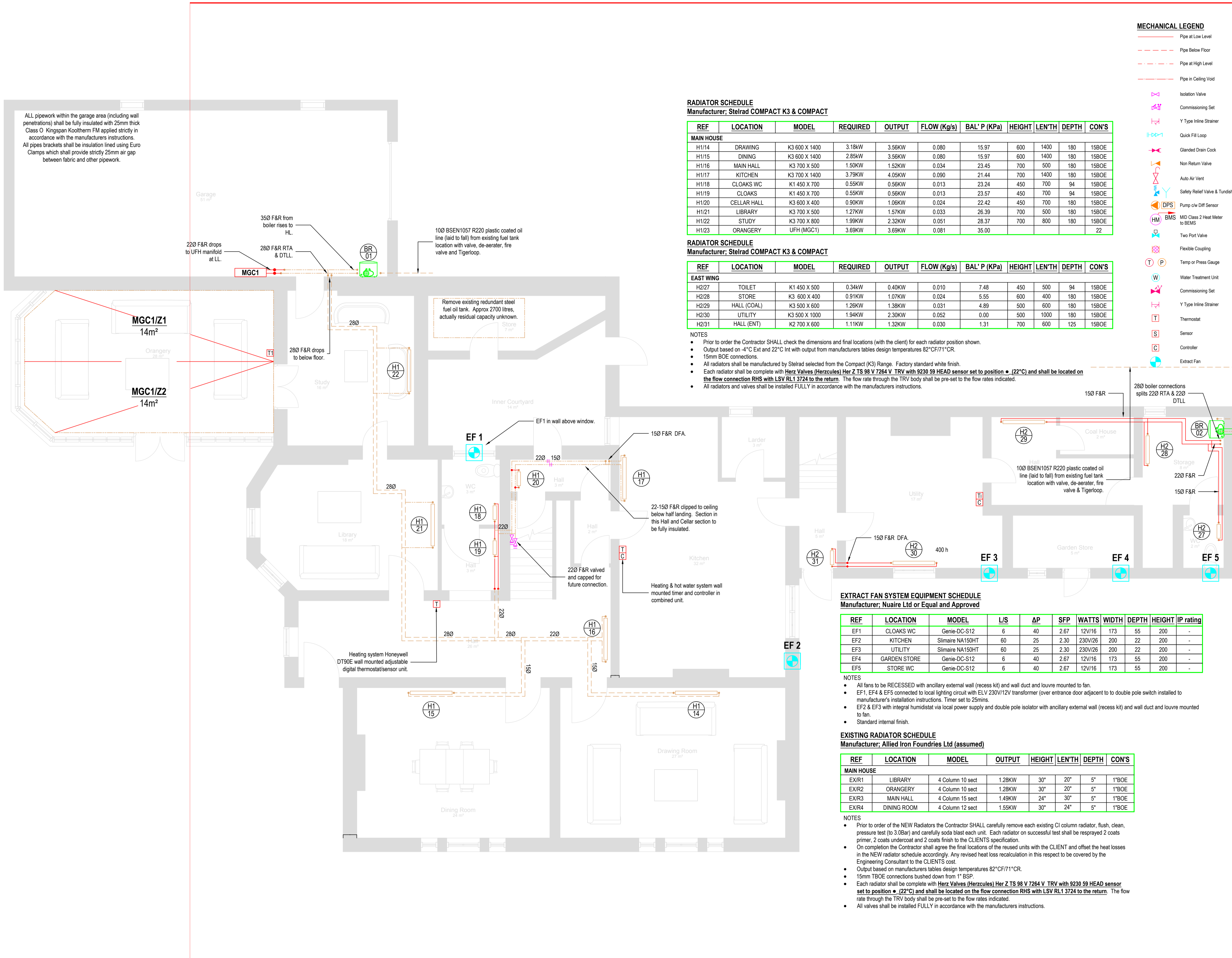
Status: TENDER

Client: SANDERSON WEATHERALL

Project: PARK HALL  
AISLABY, N YORKS  
YO21 1SW

Title: MECHANICAL SERVICES  
MAIN HOUSE FIRST FLOOR  
PROPOSED DOMESTIC SERVICES

Scale	1:50 @ A1	Date	10 JUNE 2016
Dwg No	2016 433 MH MEC 020 M02	Rev	T01



ALL pipework within the garage area (including wall penetrations) shall be fully insulated with 25mm thick Class O Kingspan Kooltherm FM applied strictly in accordance with the manufacturers instructions. All pipes brackets shall be insulation lined using Euro Clamps which shall provide strictly 25mm air gap between fabric and other pipework.

**RADIATOR SCHEDULE**  
**Manufacturer: Stelrad COMPACT K3 & COMPACT**

REF	LOCATION	MODEL	REQUIRED	OUTPUT	FLOW (Kg/s)	BAL' P (KPa)	HEIGHT	LEN'TH	DEPTH	CON'S
<b>MAIN HOUSE</b>										
H1/14	DRAWING	K3 600 X 1400	3.18KW	3.56KW	0.080	15.97	600	1400	180	15BOE
H1/15	DINING	K3 600 X 1400	2.85KW	3.56KW	0.080	15.97	600	1400	180	15BOE
H1/16	MAIN HALL	K3 700 X 500	1.50KW	1.52KW	0.034	23.45	700	500	180	15BOE
H1/17	KITCHEN	K3 700 X 1400	3.79KW	4.05KW	0.090	21.44	700	1400	180	15BOE
H1/18	CLOAKS WC	K1 450 X 700	0.55KW	0.56KW	0.013	23.24	450	700	94	15BOE
H1/19	CLOAKS	K1 450 X 700	0.55KW	0.56KW	0.013	23.57	450	700	94	15BOE
H1/20	CELLAR HALL	K3 600 X 400	0.90KW	1.06KW	0.024	22.42	450	700	180	15BOE
H1/21	LIBRARY	K3 700 X 500	1.27KW	1.57KW	0.033	26.39	700	500	180	15BOE
H1/22	STUDY	K3 700 X 800	1.99KW	2.32KW	0.051	28.37	700	800	180	15BOE
H1/23	ORANGERY	UFH (MGC1)	3.69KW	3.69KW	0.081	35.00			22	

**RADIATOR SCHEDULE**  
**Manufacturer: Stelrad COMPACT K3 & COMPACT**

REF	LOCATION	MODEL	REQUIRED	OUTPUT	FLOW (Kg/s)	BAL' P (KPa)	HEIGHT	LEN'TH	DEPTH	CON'S
<b>EAST WING</b>										
H2/27	TOILET	K1 450 X 500	0.34KW	0.40KW	0.010	7.48	450	500	94	15BOE
H2/28	STORE	K3 600 X 400	0.91KW	1.07KW	0.024	5.55	600	400	180	15BOE
H2/29	HALL (COAL)	K3 500 X 600	1.26KW	1.38KW	0.031	4.89	500	600	180	15BOE
H2/30	UTILITY	K3 500 X 1000	1.94KW	2.30KW	0.052	0.00	500	1000	180	15BOE
H2/31	HALL (ENT)	K2 700 X 600	1.11KW	1.32KW	0.030	1.31	700	600	125	15BOE

- NOTES**
- Prior to order the Contractor SHALL check the dimensions and final locations (with the client) for each radiator position shown.
  - Output based on -4°C Ext and 22°C Int with output from manufacturers tables design temperatures 82°C/71°C R.
  - 15mm BOE connections.
  - All radiators shall be manufactured by Stelrad selected from the Compact (K3) Range. Factory standard white finish.
  - Each radiator shall be complete with Herz Valves (Herzules) Her Z TS 98 V 7264 V TRV with 9230 59 HEAD sensor set to position ● (22°C) and shall be located on the flow connection RHS with LSV RL1 3724 to the return. The flow rate through the TRV body shall be pre-set to the flow rates indicated.
  - All radiators and valves shall be installed FULLY in accordance with the manufacturers instructions.

**EXTRACT FAN SYSTEM EQUIPMENT SCHEDULE**  
**Manufacturer: Nuair Ltd or Equal and Approved**

REF	LOCATION	MODEL	L/S	ΔP	SFP	WATTS	WIDTH	DEPTH	HEIGHT	IP rating
EF1	CLOAKS WC	Genie-DC-S12	6	40	2.67	12V/16	173	55	200	-
EF2	KITCHEN	Slimaire NA150HT	60	25	2.30	230V/26	200	22	200	-
EF3	UTILITY	Slimaire NA150HT	60	25	2.30	230V/26	200	22	200	-
EF4	GARDEN STORE	Genie-DC-S12	6	40	2.67	12V/16	173	55	200	-
EF5	STORE WC	Genie-DC-S12	6	40	2.67	12V/16	173	55	200	-

- NOTES**
- All fans to be RECESSED with ancillary external wall (recess kit) and wall duct and louvre mounted to fan.
  - EF1, EF4 & EF5 connected to local lighting circuit with ELV 230V/12V transformer (over entrance door adjacent to double pole switch installed to manufacturer's installation instructions. Timer set to 25mins.
  - EF2 & EF3 with integral humidistat via local power supply and double pole isolator with ancillary external wall (recess kit) and wall duct and louvre mounted to fan.
  - Standard internal finish.

**EXISTING RADIATOR SCHEDULE**  
**Manufacturer: Allied Iron Foundries Ltd (assumed)**

REF	LOCATION	MODEL	OUTPUT	HEIGHT	LEN'TH	DEPTH	CON'S
<b>MAIN HOUSE</b>							
EX/R1	LIBRARY	4 Column 10 sect	1.28KW	30"	20"	5"	1"BOE
EX/R2	ORANGERY	4 Column 10 sect	1.28KW	30"	20"	5"	1"BOE
EX/R3	MAIN HALL	4 Column 15 sect	1.49KW	24"	30"	5"	1"BOE
EX/R4	DINING ROOM	4 Column 12 sect	1.55KW	30"	24"	5"	1"BOE

- NOTES**
- Prior to order of the NEW Radiators the Contractor SHALL carefully remove each existing CI column radiator, flush, clean, pressure test (to 3.0Bar) and carefully soda blast each unit. Each radiator on successful test shall be resprayed 2 coats primer, 2 coats undercoat and 2 coats finish to the CLIENTS specification.
  - On completion the Contractor shall agree the final locations of the reused units with the CLIENT and offset the heat losses in the NEW radiator schedule accordingly. Any revised heat loss recalculation in this respect to be covered by the Engineering Consultant to the CLIENTS cost.
  - Output based on manufacturers tables design temperatures 82°C/71°C R.
  - 15mm TBOE connections bushed down from 1" BSP.
  - Each radiator shall be complete with Herz Valves (Herzules) Her Z TS 98 V 7264 V TRV with 9230 59 HEAD sensor set to position ● (22°C) and shall be located on the flow connection RHS with LSV RL1 3724 to the return. The flow rate through the TRV body shall be pre-set to the flow rates indicated.
  - All valves shall be installed FULLY in accordance with the manufacturers instructions.

**MECHANICAL LEGEND**

- Pipe at Low Level
- - - Pipe Below Floor
- - - Pipe at High Level
- - - Pipe in Ceiling Void
- ⊗ Isolation Valve
- ⊕ Commissioning Set
- Y Type Inline Strainer
- Quick Fill Loop
- Glanded Drain Cock
- Non Return Valve
- Auto Air Vent
- Safety Relief Valve & Turndish
- DPS Pump c/w Diff Sensor
- BMS MID Class 2 Heat Meter to BEMS
- Two Port Valve
- Flexible Coupling
- Temp or Press Gauge
- Water Treatment Unit
- Commissioning Set
- Y Type Inline Strainer
- Thermostat
- Sensor
- Controller
- Extract Fan

**NOTES**

- Do not scale from this drawing.
- Drawings must be read in conjunction with the Mechanical Services Specification.
- All works must be carried out in accordance with CDM 2007 COP - see project significant hazards for identified significant risks before commencing works.
- The final position of equipment are approximate and must be checked with the latest Architects layout - if in any doubt ask.
- The Contractor shall be responsible for coordinating the works in accordance with the main program.
- All builders work shall be carried out by the Main Contractor.
- The M&E sub-contractor shall be responsible for supplying and installing all secondary "steelwork" if indicated or not as necessary.
- The M&E sub-contractor shall be responsible for co-ordination of their works with all other trades.
- The heating design is based upon the temperatures identified, thus 20°C throughout to all rooms except bathrooms which shall be 22°C.
- The roof spaces to be insulated to current Building Regulation standards.
- The timber floor areas on the GF to be insulated with 200mm Rockwool Thermal Insulation Roll suspended between joists with stapled netting for support.
- All existing windows and doors to be draught proofed.
- All new windows to comply with current Building Regulation standards, and complete with wall or floor plates.
- All insulation to comply fully with current water bylaws, requirements of BS 6700 and local water authorities.
- All fittings, plant and equipment to be installed, regulated and tested in accordance with the manufacturers printed instructions.
- All pipework, fittings and equipment to be installed to provide systems free of air locks, water hammer or leaks.
- Stopcocks to be BS1010 gate valves to BS154. Check valves to BS282: Part 1 with test cock to BS2879, drain valves to BS2879.
- All terminal connections to appliances to be fitted with independent ballcock valves.
- All valves to be fully accessible and be provided with identification labels.
- All commissioning sets to have full shut off facility for isolation purposes.
- Drain valves and air vents to be provided at all low & high points in all systems respectively.
- All pipework exposed at high level, roof void, service ducts, boxings and enclosures to be fully insulated with rigid mineral sections having class 0 fall finish in compliance with BS 5422 insulation thickness as follows:  
 Pipework up to 32mm - 25mm thick  
 Pipework 40mm and above - 32mm thick
- The heating system shall be flushed twice and after pressure testing filled with glycol anti-freeze fluid to the manufacturers concentration.
- All final pipework drop positions to be agreed with the architect.
- Identification of pipework shall be in accordance with BS 1710.
- The Contractor shall (prior to practical completion) provide as installed drawings in AutoCAD 2008 or later, and provide detailed O&M manuals complete with all required certification.

**IMPORTANT CDM / H & S NOTE**  
 THE DESIGNERS WOULD DRAW THE READERS ATTENTION TO KEY RESIDUAL HEALTH AND SAFETY RISKS THAT HAVE NOT BEEN ELIMINATED FROM THE DESIGNS SHOWN ON THE DRAWINGS BY THE DESIGN PROCESS. THESE RISKS ARE IDENTIFIED BELOW

- Co-ordination of M&E services with all other trades
- Provision for future maintenance
- Site access/egress for deliveries etc.
- Working at height

ANY CONSTRUCTION PERSONNEL INCLUDING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE SIGHT OF:

- (1) THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS
- (2) THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
- (3) THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				

**Parsec**  
 CONSULTING ENGINEERS

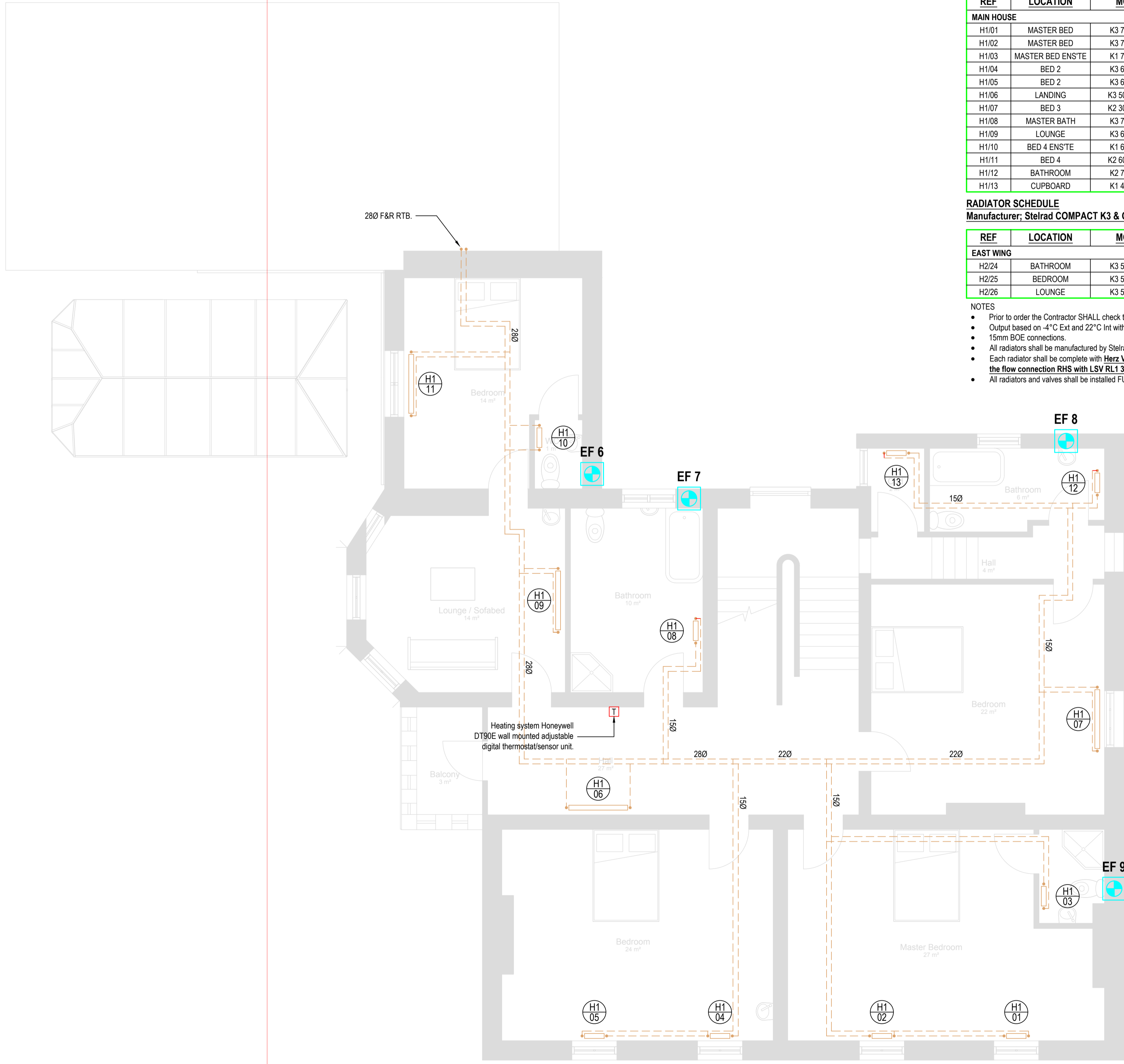
Ashburn House  
 84 Grange Road  
 Darlington

Status: TENDER  
 Client: SANDERSON WEATHERALL

Project: PARK HALL  
 AISLABY, N YORKS  
 YO21 1SW

Title: MECHANICAL SERVICES  
 MAIN HOUSE GROUND FLOOR  
 PROPOSED HTG & VNT SERVICES

Scale	Date
1:50 @ A1	10 JUNE 2016
Dwg No	Rev
2016 433 MH MEC 030 M01	T01



**RADIATOR SCHEDULE**  
**Manufacturer; Stelrad COMPACT K3 & COMPACT**

REF	LOCATION	MODEL	REQUIRED	OUTPUT	FLOW (Kg/s)	BAL' P (KPa)	HEIGHT	LEN'TH	DEPTH	CON'S
<b>MAIN HOUSE</b>										
H1/01	MASTER BED	K3 700 X 500	1.32KW	1.51KW	0.034	8.03	700	500	180	15BOE
H1/02	MASTER BED	K3 700 X 500	1.32KW	1.51KW	0.034	8.03	700	500	180	15BOE
H1/03	MASTER BED ENSTE	K1 700 X 400	0.47KW	0.47KW	0.011	8.84	700	400	180	15BOE
H1/04	BED 2	K3 600 X 500	1.24KW	1.34KW	0.030	12.20	600	500	180	15BOE
H1/05	BED 2	K3 600 X 500	1.24KW	1.34KW	0.030	11.24	600	500	180	15BOE
H1/06	LANDING	K3 500 X 1400	2.92KW	3.22KW	0.071	12.55	500	1400	180	15BOE
H1/07	BED 3	K2 300 X 2000	2.09KW	2.19KW	0.049	11.24	300	2000	125	15BOE
H1/08	MASTER BATH	K3 700 X 600	1.49KW	1.73KW	0.039	14.29	700	600	180	15BOE
H1/09	LOUNGE	K3 600 X 800	1.82KW	2.14KW	0.047	17.86	600	800	180	15BOE
H1/10	BED 4 ENSTE	K1 600 X 400	0.37KW	0.42KW	0.009	17.86	600	400	94	15BOE
H1/11	BED 4	K2 600 X 1000	1.68KW	1.94KW	0.043	19.55	600	1000	125	15BOE
H1/12	BATHROOM	K2 700 X 500	1.08KW	1.09KW	0.025	11.59	700	500	125	15BOE
H1/13	CUPBOARD	K1 450 X 600	0.43KW	0.51KW	0.012	11.93	450	600	94	15BOE

**RADIATOR SCHEDULE**  
**Manufacturer; Stelrad COMPACT K3 & COMPACT**

REF	LOCATION	MODEL	REQUIRED	OUTPUT	FLOW (Kg/s)	BAL' P (KPa)	HEIGHT	LEN'TH	DEPTH	CON'S
<b>EAST WING</b>										
H2/24	BATHROOM	K3 500 X 800	1.65KW	1.74KW	0.039	4.07	500	800	180	15BOE
H2/25	BEDROOM	K3 500 X 800	1.72KW	1.84KW	0.041	1.84	500	800	180	15BOE
H2/26	LOUNGE	K3 500 X 900	1.84KW	1.97KW	0.044	1.52	500	900	180	15BOE

- NOTES**
- Prior to order the Contractor SHALL check the dimensions and final locations (with the client) for each radiator position shown.
  - Output based on -4°C Ext and 22°C Int with output from manufacturers tables design temperatures 82°C/71°C R.
  - 15mm BOE connections.
  - All radiators shall be manufactured by Stelrad selected from the Compact (K3) Range. Factory standard white finish.
  - Each radiator shall be complete with Herz Valves (Herzules) Her Z TS 98 V 7264 V TRV with 9230 59 HEAD sensor set to position ● (22°C) and shall be located on the flow connection RHS with LSV RL1 3724 to the return. The flow rate through the TRV body shall be pre-set to the flow rates indicated.
  - All radiators and valves shall be installed FULLY in accordance with the manufacturers instructions.

**EXTRACT FAN SYSTEM EQUIPMENT SCHEDULE**  
**Manufacturer; Nuair Ltd or Equal and Approved**

REF	LOCATION	MODEL	L/S	ΔP	SFP	WATTS	WIDTH	DEPTH	HEIGHT	IP rating
EF6	BED 4 Ensuite	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-
EF7	MAIN BATHROOM	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-
EF8	BATHROOM 1	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-
EF9	MASTER Ensuite	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-
EF10	BATHROOM 2	Genie-DC-S12	15	40	2.67	12V/16	173	55	200	-

- NOTES**
- All fans to be RECESSED with ancillary external wall (recess kit) and wall duct and louvre mounted to fan.
  - All fans connected to local lighting circuit with ELV 230V/12V transformer (over entrance door adjacent to double pole switch installed to manufacturer's installation instructions. Timer set to 25mins.
  - Standard internal finish.

**EXISTING RADIATOR SCHEDULE**  
**Manufacturer; Allied Iron Foundries Ltd (assumed)**

REF	LOCATION	MODEL	OUTPUT	HEIGHT	LEN'TH	DEPTH	CON'S
<b>MAIN HOUSE</b>							
EX/R5	LANDING	4 Column 15 sect	1.49KW	24"	30"	5"	1"BOE
EX/R6	MASTER BED	4 Column 15 sect	1.49KW	24"	30"	5"	1"BOE
EX/R7	BEDROOM 2	4 Column 15 sect	1.49KW	24"	30"	5"	1"BOE
EX/R8	LUNGE/SOFA	4 Column 10 sect	1.28KW	30"	20"	5"	1"BOE

- NOTES**
- Prior to order of the NEW Radiators the Contractor SHALL carefully remove each existing CI column radiator, flush, clean, pressure test (to 3.0Bar) and carefully soda blast each unit. Each radiator on successful test shall be resprayed 2 coats primer, 2 coats undercoat and 2 coats finish to the CLIENTS specification.
  - On completion the Contractor shall agree the final locations of the reused units with the CLIENT and offset the heat losses in the NEW radiator schedule accordingly. Any revised heat loss recalculation in this respect to be covered by the Engineering Consultant to the CLIENTS cost.
  - Output based on manufacturers tables design temperatures 82°C/71°C R.
  - 15mm TBOE connections bushed down from 1" BSP.
  - Each radiator shall be complete with Herz Valves (Herzules) Her Z TS 98 V 7264 V TRV with 9230 59 HEAD sensor set to position ● (22°C) and shall be located on the flow connection RHS with LSV RL1 3724 to the return. The flow rate through the TRV body shall be pre-set to the flow rates indicated.
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**MECHANICAL LEGEND**

- Pipe at Low Level
- Pipe Below Floor
- Pipe at High Level
- Pipe in Ceiling Void
- Isolation Valve
- Commissioning Set
- Y Type Inline Strainer
- Quick Fill Loop
- Glanded Drain Cock
- Non Return Valve
- Auto Air Vent
- Pump c/w Diff Sensor
- MID Class 2 Heat Meter to BEMS
- Two Port Valve
- Flexible Coupling
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- Co-ordination of M&E services with all other trades
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- Site access/egress for deliveries etc.
- Working at height

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 (1) THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS  
 (2) THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN  
 (3) THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

Designed	SA	Drawn	SA	Approved	SA
Date	31/06/16	Date	31/06/16	Date	31/06/16
Rev	Description				
T01	TENDER				



Ashburn House  
 84 Grange Road  
 Darlington

Status: TENDER  
 Client: SANDERSON WEATHERALL

Project: PARK HALL  
 AISLABY, N YORKS  
 YO21 1SW

Title: MECHANICAL SERVICES  
 MAIN HOUSE FIRST FLOOR  
 PROPOSED HTG & VNT SERVICES

Scale: 1:50 @ A1 Date: 10 JUNE 2016

Dwg No: 2016 433 MH MEC 030 M02 Rev: T01