

MECHANICAL & ELECTRICAL SCOPE OF WORKS DOCUMENT

Project : Christchurch C of E Primary School
London NW3 1JH

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1.0 INTRODUCTION

The following Scope of Works are based upon a visual survey (20/02/2015) and the latest Scabel drawing.

The building is to be generally remodeled internally to create addition space and usage.

The internal phasing of the works has been defined.

The following scope of mechanical and electrical engineering works acknowledges that the proposed works are to be carried out within a Listed Building and a Conservation area.

Any modifications proposed to the mechanical and electrical installations shall not have any detrimental effect to the building fabric, structure or appearance. All new M&E services installations shall be installed to maintain the character of the original build construction and finishes.

The building area falls below the 1000m² and the implication of Consequential Improvements under Building Regulations Part L2B is not applicable. However, the gas fired boilers for heating and hot water generation have been replaced in 2010 with high efficiency SEEBUK A rated models.

Together with the boiler replacement, the automatic controls have been replaced to provide weather compensation, optimization of operation and multi programmable time controls.

As part of the proposed refurbishment works the internal lighting shall be generally replaced throughout with high efficiency lighting including elements of automatic control (presence detection). External lighting shall be discreet to illuminate pathways and exits only. External lighting shall be wall mounted or secured to underside of external canopies. External lighting shall be Dark Skies compliant and the light fittings in keeping with the age of the building.

Heating and hot water pipework installed as part of the refurbishment and where appropriate shall be fully thermal insulated to ensure minimal heat loss.

As the central plant has been recently replaced, the building being Listed and in a Conservation area, the application of Renewable or Low Carbon Technology is not considered economical feasible or practical.

Generally the proposed refurbishment involves internal remodeling without effecting the existing base build mechanical and electrical services installation.

The internal occupied rooms and spaces shall be naturally ventilated via openable windows as existing.

Existing toilets have mechanical extract ventilation installed and shall be renewed. New toilet facilities shall have mechanical extract ventilation discreetly installed through external walls and discharged via black grate grilles to match existing.

The mechanical and electrical services proposed installation has limited impact or generation of external noise. The heating boilers are existing being retained.

2.0 MECHANICAL SERVICES EXISTING SERVICES

2.1 LTHW Services

The existing gas fired boiler room is located within a first floor/roof plant room located above existing toilet accommodation and accessed via ladder from the corridor.

The whole of the boiler room plant and equipment was replaced in approximately 2010.

The gas fired boiler plant consists of 2No. wall hung high efficiency boilers as manufactured by Broag, Model Quinta 65. Approximate output 60kw each.

The heating system is pressurized. The heating boilers are individually pumped to a low loss header. From the low loss header, two secondary circuits are connected as follows:

- a) 42mm compensated pumped (twin head variable speed) serving radiator heating to the School.
- b) 22mm constant temperature pumped (single head) to an indirect vented hot water cylinder serving the toilets only. The hot water cylinder is located within the adjoining roof space.

The secondary heating copper distribution mains generally has been installed throughout the School at high level dropping to serve a mixture of radiators and low surface radiators as manufactured by Myson.

The existing automatic control panel mounted within the plant room incorporates Hardware/software as manufactured by Trend.

2.2 Gas

The incoming gas service and meter is currently located at the opposite end of the School to the boiler room. The gas meter is located within the coats area to the existing Year 1 and Reception classbases.

The U25 gas meter is located within a cupboard. The gas meter no. is M025AO1295.

A 50mm diameter gas main runs to the boiler room at high level.

The gas only serves the gas fired boiler room only.

2.3 Domestic Hot Water

Apart from a small 110 litre indirect vented hot water cylinder connected to the central gas fired boiler plant, the domestic hot water provision throughout is local point of use electric water heaters.

The small 110 litre domestic hot water cylinder serves the toilet accommodation located adjacent to the existing hall/kitchen.

2.4 Domestic Cold Water

The existing rising cold water main enters the building via the existing toilet accommodation adjacent to the existing IT suite. The existing external water meter and main stopcock are located within a chamber mounted within the foot path adjacent to the church.

The existing water meter and stopcock chamber is full of water and is believed to have a leak.

In the recent past, the existing roof mounted main cold water storage tanks have been abandoned and a cold water main has been installed throughout serving all cold water outlets and electric water heaters.

The redundant cold water storage tanks are still in position located above the existing toilets/computer suite.

Smaller capacity cold water storage tanks are located in the roof/loft space located adjacent to the roof boiler room. The small tanks serve the local toilet block only.

2.5 Dx Heat Pump (Comfort Cooling)

The existing IT/Computer Suite has a standalone Dx refrigerant based comfort cooling system installed. The indoor unit is high level wall mounted.

The external condenser unit is located upon the flat roof of the existing single storey toilet accommodation adjoining the IT Suite. The existing condenser unit is screened from view.

The existing first floor classbases (2 number) are provided with Dx comfort cooling.

The existing external condenser units (2 number) are located within the first floor pitched roof valley.

3.0 MECHANICAL SERVICES – PROPOSED WORKS

3.1 LTHW Heating System

The following scope of LTHW heating works to be read in conjunction with Brontide Drawings Nos, 0313 –M-3002, 3500 to 3502.

The LTHW heating system first floor central plant room shall be retained without modification to the existing installation except the modification of heating pipework to the indirect vented domestic hot water cylinder.

The distribution LTHW heating mains and the LST radiators shall require modification and re-positioning to suit the proposed works as follows:

- a) Provide new LST radiators to new accessible toilet provision (00.40). girls W.C., (0.34) and Boys toilet (0.32).
- b) Reposition existing LST radiator (R15) to new Corridor.
- c) Reposition existing radiator (R2) and connecting pipework to allow formation of new staircase.
- d) Reposition existing radiator (R11) and connecting pipework to allow removal of existing wall within Reception classbase (00.23)
- e) Reposition existing radiator (R14) located in corridor to allow formation of new external doorway.
- f) Provide and install new LST radiators to newly formed 1st floor Year 6 classbase (01.08)

General – the existing LTHW heating mains will require local modifications to suit new classbase remodeling and to allow formation of first floor classbase.

3.2 Gas

General – the existing high level gas distribution shall require local modification/diversion to allow formation of first floor classbase.

The gas pipework is currently installed exposed at high level through the school and painted to identify gas. If gas is to be concealed, any new boxing's, ceiling etc. will require to be ventilated to be compliant with the Gas Regulations.

3.3 Cold Water Main

The incoming cold water main supply shall be replaced to enable all new and existing fittings within the school to be connected to the cold water main and eliminate the need for cold water storage tanks.

The existing cold water storage tank located within the roof space where the new stairs are to be formed shall be made redundant and removed.

An application to be made to Thames Water to possibly increase the cold water main supply diameter and to repair the leak currently experienced in the boundary water meter and stopcock chamber.

The new replacement water main shall rise into the existing school building in an agreed location e.g. existing toilets. The new rising cold water main shall be extended through the school at high level, and drop to connect to terminal fittings.

The new rising water main from the ground shall be complete with stopcock, double check valve, draincock and an appropriate anti scale device.

3.4 Domestic Hot Water

The existing vented 110 litre indirect domestic hot water cylinder to be repositioned and replaced to serve the remodelled toilets and new sink units within remodeled Classbases. The relocated hot water cylinder to be positioned within the existing roof plant room.

Existing hot water to the existing disabled WC and adjoining boys' toilets, shall be isolated and removed to allow construction of new stair case.

- a) Provide and install new point of use electric hot water heaters to serve new sink units located within each reception classbase.
- b) Extend domestic hot water flow and return from relocated cylinder to serve new Accessible W.C, Girls toilets and Boys toilets and ground/mezz classbase sinks.

General – the Contractor to isolate, disconnect, remove and dispose of all redundant electric hot water heaters and associated connecting pipework to redundant toilets, sinks, etc.

All new electric water heaters shall be regulated and factory set to deliver hot water at 39deg C to avoid scald temperatures.

3.5 Domestic Cold Water

The existing domestic cold water main shall be modified and adapted to suit the new remodeled layouts.

The existing cold water main shall be disconnected from all redundant fittings and electric water heaters. This shall include the removal of all potential deadlegs in the pipework.

The cold water main shall be extended to serve new toilet provision and WRAS Approved unvented point of use electric water heaters.

3.6 Ventilation

Rooms/Areas not provided with mechanical ventilation to be naturally ventilated to comply with Building Regulations and Building Bulletin 101.

Newly formed classbases to have operable windows to achieve the requirements of BB101.

Please note natural; ventilation and the compliance with BB101 shall be restricted by Listed Building criteria.

Where possible and achievable, Natural ventilation to be achieved by cross flow low – high openings located upon opposite sides of each room served.

Within each classbase or teaching area, provide and install a dedicated stand alone CO2 sensor to provide visual indication of CO2 levels within the room served.

Mechanical Ventilation

- a) Provide and install new individual ducted extract ventilation to the Accessible W.C., Boys toilets and Girls toilets. The extract ductwork to be terminated through the pitched roof tiles.
- b) Provide and install through the wall extract fan ventilation for the new W.C., to reception toilets. The external terminals to the extract ventilation shall match the existing black grate grilles installed in the existing external walls.

3.7 Above Ground Drainage

General – extend from sockets provided at ground level by others new above ground drainage to serve sinks, W.C's, wash hand basins, etc.

3.8 Dx Comfort Cooling

Dx comfort cooling to be provided to ground floor classbase (0.29) and newly created first floor classbase (1.08).

The indoor unit to be wall mounted with remote controller.

The external condenser units (x2) to be mounted with the existing roof mounted condenser units serving the first floor.

3.9 Basis of Mechanical Services Design

The Basis of Design for the Mechanical Engineering Services and plant maximum demand operating conditions are as follows and on completion of the works commissioning of the various systems and plant must demonstrate these conditions can be achieved.

Winter design external air temperature: -4°C 100% saturated

20% overload capacity included into design in accordance with CIBSE Guide Recommendation

Winter design internal air temperatures:

Reception Base Class	21°C +/- 1°C
Class Bases	19°C +/- 1°C
Offices	21°C +/- 1°C
Toilets	19°C +/- 1°C
Circulation	19°C +/- 1°C

Summer Internal Design Air Temperature:

To the requirements of BB101

Heat gain allowances

15w/m² – equipment

10w/m² – lighting (not applicable if daylighting criteria is achieved)

Mechanical ventilation air change rates:

Shower Rooms	–	6 air changes / per hour
Toilet Cubicles	-	15 Litres/sec/cubicle
Natural ventilation	–	8 litres/per second/per person rapid ventilation 3 litres/per second per person background ventilation

Design Infiltration air change rates:

Winter	2 air changes / per hour
Summer	½ air changes / per hour

Noise levels:

Toilets	NR45
Class bases	NR33
Hall	NR35
Transit Areas	NR35
External	To the requirements of the Local Authority

Plant Operation:

16 hour period

Water Services:

To comply with Local Water Authority Requirements, British Standard EN806 and the latest Water Regulations.

Gas Services

To comply with the following documentation:

- a) The Gas Safety Regulations latest edition
- b) Publication IM/16 Guidance Notes on the Installation of Gas Pipework
- c) Publication IM/15 manual valve selections
- d) Publication IM/2 purging procedures
- e) Publication IM5 soundness testing procedures

Internal gas service pipe distribution – pipework sized on maximum pressure drop over total equivalent length of travel of 0.4" wg = 99Pa

The Designs shall comply with all applicable Legislation, Regulations Guidelines and Recommendations as stated in the following where appropriate.

- a) Planning Consents and Conditions
- a) Current Building Regulations
- b) Current Water Regulations & Byelaws
- c) British Standards and Code of Practice
- d) CIBSE Guides and Technical Memorandum
- e) BRE Technical Bulletins
- f) Health & Safety Regulations
- g) CDM Regulations
- h) HSE Guidance Notes & Publications
- i) COSHH Regulations
- j) HVCA Guides
- k) IEE Regulations

4.0 ELECTRICAL SERVICES

4.1 UK Power Network (UKPN)

The building is currently served from a 200 Amp rated TP&N service supply extending from UK Power Networks existing local underground distribution system. The incoming service arrangement appears to be relatively new and in very good condition.

The service supply is located within the existing Caretakers Office (located adjacent to the Christchurch Hill public roadway) and enclosed within a cupboard, together with the associated metering equipment and consumer's main electrical switch disconnecter and distribution / switchgear equipment.

It is envisaged that the current incoming supply arrangement will be sufficient for the load requirements to serve the proposed refurbishment works to the building.

In addition, a second UKPN service supply is currently provided within the mixed use areas adjacent to the Reception Classroom, the service supply appears to service the first floor staff room accommodation.

This service supply appears to have been installed for a number of years, and whilst there are no concerns relating to its general condition or operating performance, the service supply should be disconnected and made redundant and the areas serviced transferred onto the main electrical supply as part of the overall refurbished works proposed to the building.

A third service supply was present at high level within the entrance lobby adjacent to the current head teacher's room. This service supply appears to have been the original incoming service serving the building but now appears to be out of service and redundant.

It would seem prudent that the existing service is checked to confirm whether it is in service and ultimately removed from the building.

4.2 LV Distribution

The existing LV distribution system consists of a main Ryefield distribution board providing sub-main distribution to a series of three-phase and neutral (TP&N) and single-phase and neutral (SP&N) distribution boards positioned at strategic locations within the existing building.

Typically, the TP&N distribution boards provide distribution to high current equipment usage areas such as the Kitchen and the main administration block, whereas the SP&N distribution boards provide distribution to smaller and lower current usage areas such as the classrooms, etc.

Due to the nature of the refurbishment works it will be necessary to undertake modifications to the existing distribution system such that distribution boards are available locally for ease of distribution of small power and lighting final circuits serving the newly formed areas of the building.

The current use of a Ryefield distribution board, traditionally employed by UKPN for domestic distribution installations, will be replaced with a LV Panelboard complete with moulded case circuit breakers (MCCB's) to provide a technical engineering solution more suitable for a school building environment.

All new small power and lighting distribution boards will be provided with supplementary sub-metering equipment to monitor energy consumption to achieve compliance with Part L of the Building Regulations.

4.3 Lighting

The general lighting system provided throughout the building appears to be from original installation with piecemeal replacement of luminaires, etc., as and when remedial works undertaken to the building.

The luminaires provided to the original elements of the School such as the teaching areas, administrative areas and circulation spaces generally consist of linear fluorescent type fitted with louvre type diffusers either suspended from the building structure or integrated within a suspended lighting trunking.

Luminaires to other areas such as the main hall consist of surface mounted luminaires fitted with prismatic / opal diffusers.

The general lighting to the main hall area is supplemented with a specialist stage lighting system, operated and controlled via a dedicated lighting control system positioned within a separate cupboard enclosure within the hall area.

Generally the lighting is controlled either by wall mounted light switches located adjacent to the particular area served.

The nature of the refurbishment works will effectively necessitate the replacement of the lighting system within the refurbished areas only, inclusive of all luminaires and modes of switch control.

The new lighting schemes would generally consist of the following elements to achieve compliance with current design guidelines associated with education premises: -

- a) Teaching spaces will generally consist of surface and suspended high frequency fluorescent luminaries providing upward/downward illumination.
- b) Circulation spaces will generally consist of surface ceiling and wall mounted high frequency fluorescent luminaries, subject to the nature and type of ceiling finishes.
- c) W.C's spaces will generally consist of surface ceiling and wall mounted downlighter type luminaires, complete with compact fluorescent lamp sources. The final selection of the luminaires will be subject to the nature and type of ceiling finishes.
- d) All lighting will generally be locally automatically controlled with downstream manual switches in class bases and offices, etc. W.C's and circulation routes shall be switched by movement detectors with delayed off switching for energy saving.
- e) All lighting will be provided for compliance with Part L of the Building Regulations in terms of conservation of energy relative to automatic switching control and energy efficacy of lamp sources.

4.4 Emergency Lighting

An emergency lighting system is provided throughout the existing building to assist the occupants in leaving the building in the event of an emergency situation arising.

The emergency lighting appears to have been a retro-fit installation and generally consist of the use of standalone self-contained emergency bulkhead luminaires installed surface mounted to the building fabric to the relevant areas of the building.

The nature of the refurbishment works will effectively necessitate the wholesale replacement of the existing emergency lighting system within the refurbished areas only, inclusive of all luminaires and modes of test switch control.

The new emergency lighting scheme achieve compliance with current design guidelines associated with education premises and be specifically supplemented with the following: -

- a) The use of combined luminaires integrated within the general lighting luminaires provided throughout all areas of the building to achieve compliance with statutory legalisation.
- b) The use of emergency lighting exit signage to indicate the routes for means of escape from the building.
- c) The introduction of emergency lighting to the external areas of the building, typically above or adjacent main mean of escape areas.

- d) All emergency lighting will be of the self-contained system, with individual battery inverter units incorporated within each luminaire. Test switches, for statutory maintenance regimes, will be provided adjacent to the relevant area or adjacent to the relevant general lighting distribution boards serving the various areas of the building.

In addition, the existing emergency lighting within the proposed non-refurbished areas will be modified such that emergency test switches will be provided to each area to achieve compliance with current design guidelines associated with education premises.

4.5 External Lighting

New external lighting will be provided to the building and consist of the following: -

- a) Local lighting to entrance / exit doors.
- b) Feature LED lighting integrated within the newly formed handrail to the existing main external staircase area.
- c) Feature LED lighting integrated within the newly formed Canopy adjacent to the rear playground areas.
- d) New Floodlighting to the main playground areas. The new floodlighting will replace the existing floodlighting scheme currently installed to these areas.

The external lighting will be controlled by dedicated external lighting controls to provide timeswitch scheduling and photocell control to suit the building operating conditions.

All external lighting shall be downward light output for "dark skies" compliance.

4.6 Small Power

Small power systems are provided throughout the building to serve the Schools teaching and administrative requirements. In addition, small power is provided to satisfy fixed items of equipment installed throughout the building.

Small power provision to the teaching areas generally consisted of twin socket outlets served either on an individual basis from the original elements of the building or contained within PVC conduit systems surface mounted to the building fabric.

The existing Computer Room utilises a form of a dado trunking installed to the perimeter areas of the room to accommodate the small power and data socket outlets serving the computer and PC equipment.

The nature of the refurbishment works will effectively necessitate the replacement of the small power system to the refurbished areas only, inclusive of all outlets and circuit wiring.

The new small power system would generally consist of the following elements: -

- a) All teaching areas will be provided with two compartment dado trunking to accommodate small power and data socket outlets requirements.
- b) High level small power and data socket outlets within the teaching areas and administration areas to serve fixed items of equipment such as interactive screens, projector equipment, CO2 sensors, etc.
- c) High level small power and data socket outlets within the teaching areas and administration areas to serve wireless access points (WAN).
- d) Administration areas would also be provided with a two compartment trunking to accommodate small power and data socket outlets requirements.
- e) General small power provision to serve the cleaners outlet provision throughout the building.
- f) General small power outlets to serve hand dryers and urinal control equipment within the WC areas of the building.

- g) General small power outlets mounted above worktop level to serve staff room welfare catering appliances, i.e. refrigerator's, microwave's, vending machines, etc.

Generally the small power systems will be provided on the basis of ring and radial final circuits to serve the proposed equipment and be protected against fault conditions with the use of combined MCB / RCBO protective devices in accordance with current legislative documents.

4.7 Fire Alarm System

The building is currently provided with an addressable fire alarm system inclusive of main control panel, automatic trigger detectors (smoke & heat detectors), electronic sounders and manual call points.

The layout and arrangement of the current installation suggested that the system is a Category 'L4' classification in accordance with BS 5839 standard.

The fire alarm system did not appear to be utilised for a Class Change system.

The nature of the refurbishment works will effectively necessitate the modification of the existing fire alarm system in order to provide sufficient protection to levels to the refurbished areas of the building to maintain the current Category 'L4' classification.

The modifications works to fire alarm system will entail the introduction of new trigger devices, electronic sounders, manual call points and xenon beacons to achieve compliance with the current British Standard and the requirements of the building control officer.

4.8 Data Communication

The building is currently provided with a data communication system providing IT distribution to all areas of the building. The system consists of 2 No. wall mounted data cabinets positioned at high level within the existing ICT room at ground floor level.

Data cabling extends from the data cabinets to serve the data outlets generally employing a surface mounted installation attached to the building fabric.

The nature of the refurbishment works will effectively necessitate the modification and alterations to the existing data communication system.

These works will entail the installation of a new data cabinet and associated data communication cabling to serve the new data socket outlet provision to the refurbished areas of the building.

All new data socket outlets will be served from the new data cabinet location. The provision of new data communication outlets will include for both hard wired data socket outlets to the refurbished areas of the building and the provision of wireless access network outlets throughout all areas of the school.

The new data cabinet will be interlinked with the existing data cabling infra-structure by the use of a multi-mode fibre optic cable, allowing minimum disruption to the new data communication system when accommodating future construction works to the building.

4.9 Intruder Alarm

The building is currently provided with a intruder alarm system to protect the building and its content from unwanted entry. The system comprises of PIR detectors at points of entry, door contacts to main entrance doors, security key pad device and main control panel and associated battery supply equipment.

The nature of the refurbishment works will effectively necessitate the modification of the existing intruder alarm system, including undertaking modifications and temporary installations in order to maintain as intruder alarm system as refurbishment works within the building are undertaken.

The modifications works to the intruder fire alarm system will entail the introduction of new PIR detectors (dual functionality type), door contacts, etc., to achieve compliance with the current NACOSS and the requirements of the building insurers.

4.10 Access Control System

The newly re-modeled areas of the building will be provided with an access control system to control and monitor the movement of the occupants entering the primary entrances of the building and in addition limiting to specific areas of the building, i.e. staff areas, server room, etc.

The access control system will operate as a standalone distributed addressable system consisting of externally mounted card reader panels, internally mounted request to exit button, manual call points, door locking equipment and intelligent door controllers serving each of the areas to be controlled.

4.11 CCTV System

The building currently has a number of CCTV cameras installed to specific areas, however, following discussion with the Caretaker it is understood these camera locations do not operate and are only employed as visual deterrent to visitors of the building.

No further works are proposed to the CCTV system.

4.12 TV Aerial System

The newly formed areas of the building will be provided with a new TV Aerial distribution system to provide terrestrial and 'Freeview' broadcast images to a series of TV aerial socket outlets provided to specific areas of the building, i.e. the main hall, etc.

4.13 Disabled Alarm System

The newly formed disabled and accessible areas of the building will be provided with a local disabled call alarm system to provide an assurance alarm in the event that the disabled users experience difficulties when using the provided facilities and require assistance from the building staff.

4.14 Induction Loop System

The newly formed main reception areas will be provided with a fixed induction loop system to assist with the hard of hearing with communicating to the building staff at the main entrance areas.

Luminaire Schedule

Luminaire Reference Type:

General Lighting

A

Emergency Lighting

NA

General Appearance



General Description

A surface wall mounted LED area floodlight complete with mounting bracket, integral control gear, wire guard accessory and lamp source.

IP66, IK08, Class I electrical.

Luminaire manufactured from: body: recyclable, die-cast aluminium (AS12U, EN AC-47100) powder coated dark grey. Enclosure: 5mm thick toughened glass. Integrated visor for precise lighting control. Reversible mounting stirrup supplied.

Installation Locations

Main Playground Area

Luminaire

Manufacturer	Thorn Lighting
Model	Area Flood LED
List Number	96269103
IP Rating	IP65
Mounting Method	Surface Wall Mounted
LOR / Part L Efficacy	Not Applicable

Light Source

Type	LED
Designation	LED
Wattage	1 x 55W
CCT (K)	4000
CRI (Ra)	85

Control Gear / Transformer

Type	LED Driver
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	N/A
Other	96255339 - Wire Guard

Dimensions

Length (mm)	477 mm
Width (mm)	206 mm
Height / Depth (mm)	368 mm
Diameter (mm)	N/A

Emergency Version

Type	N/A
Duration	N/A
Test Facility	N/A
List Number	N/A

Additional Information

- 1.
- 2.
- 3.
- 4.
- 5.

Luminaire Schedule

Luminaire Reference Type:

General Lighting

G

Emergency Lighting

NA

General Appearance



General Description

A recessed mounted rectangular compact fluorescent external luminaire complete with magnetic control gear, baffle frame diffuser and lamp source.

Class I electrical, IP65, IK10, specification.

Luminaire manufactured from : body: die-cast aluminium, painted grey (Akzo Nobel 900). Glass: tempered glass, 8mm thick.

Luminaire to be complete with recessed housing.

Installation Locations

External Lighting located adjacent to the newly formed residential entrance.

Luminaire

Manufacturer	Thorn Lighting
Model	Linn Range
List Number	96262128 + 96262135
IP Rating	IP65
Mounting Method	Recessed Mounted
LOR / Part L Efficacy	Not Applicable

Light Source

Type	Compact Fluorescent
Designation	TC-T
Wattage	1 x 18 W
CCT (K)	3000
CRI (Ra)	80

Control Gear / Transformer

Type	High Frequency
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	96262135 Baffle frame
Other	96262140 Recessded box

Dimensions

Length (mm)	229 mm
Width (mm)	102 mm
Height / Depth (mm)	92 mm
Diameter (mm)	N/A

Emergency Version

Type	N/A
Duration	N/A
Test Facility	N/A
List Number	N/A

Additional Information

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- 5.

Luminaire Schedule

Luminaire Reference Type:

General Lighting

H

Emergency Lighting

NA

General Appearance



General Description

A recessed mounted rectangular compact fluorescent external luminaire complete with high frequency control gear, and lamp source.

Luminaire manufactured die-cast aluminium with 45° grill and with IP65 optical and gear compartment, SC1 class.

Luminaire to be finished in manufacturers standard black colour finish.

Luminaire to be complete with optional black polycarbonate recessing housing.

Installation Locations

External Lighting located adjacent to the newly formed school entrance.

Luminaire

Manufacturer	Thorn Lighting
Model	Jalon Range
List Number	96002660
IP Rating	IP65
Mounting Method	Recessed Mounted
LOR / Part L Efficacy	Not Applicable

Light Source

Type	Compact Fluorescent
Designation	TC-T
Wattage	1 x 26W
CCT (K)	3000
CRI (Ra)	80

Control Gear / Transformer

Type	High Frequency
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	N/A
Other	96002661 - Housing

Dimensions

Length (mm)	305 mm
Width (mm)	105 mm
Height / Depth (mm)	100 mm
Diameter (mm)	N/A

Emergency Version

Type	N/A
Duration	N/A
Test Facility	N/A
List Number	N/A

Additional Information

- 1.
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- 5.

Luminaire Schedule

Luminaire Reference Type:

General Lighting

L

Emergency Lighting

NA

General Appearance



General Description

A continuous 24v DC IP67 weatherproof outdoor flexible LED strip innatural warm white finish.

Cut points every 20cm

Flexible connectors main the IP67 rating (please note silicon adhesive is required on the connections to maintain this IP rating)

FPCB UV protected PVC

CE approved

Installation Locations

External canopy lighting and handrail lighting to existing main entrance stracase.

Luminaire

Manufacturer	Thorn Lighting
Model	Innovate Electrical Supplies Ltd
List Number	SRT03WW
IP Rating	IP67
Mounting Method	Surface Mounted
LOR / Part L Efficacy	Not Applicable

Light Source

Type	Continuous LED
Designation	LED
Wattage	2.8 Watt / M ²
CCT (K)	3000
CRI (Ra)	80

Control Gear / Transformer

Type	High Frequency
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	N/A
Other	N/A

Dimensions

Length (mm)	Continuous Roll
Width (mm)	10mm
Height / Depth (mm)	5mm
Diameter (mm)	N/A

Emergency Version

Type	
Duration	
Test Facility	
List Number	

Additional Information

1. Innovate Electrical Supplies Ltd - Telephone No. 08712 455296
2. Web Address - sales@innovate-electrical.co.uk
- 3.
- 4.
- 5.

Luminaire Schedule

Luminaire Reference Type:

General Lighting

M

Emergency Lighting

NA

General Appearance



General Description

A recessed mounted dimmable fluorescent luminaire for compliance with CIBSE LG7 complete with high frequency control gear, central satinbrite louvre.

Manufactured in diecast aluminium body and injection moulded polycarbonate reeded curved clear diffuser with internal diffuser.

Installation Locations

External Lighting

Luminaire

Manufacturer	Dextra Lighting
Model	Avalon Wallpack LED
List Number	AVAWP2 L30 C84
IP Rating	IP65
Mounting Method	Surface Wall Mounted
LOR / Part L Efficacy	Not Applicable

Light Source

Type	LED
Designation	LED
Wattage	1 x 55W
CCT (K)	3000
CRI (Ra)	80

Control Gear / Transformer

Type	LED Driver
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	N/A
Other	N/A

Dimensions

Length (mm)	300 mm
Width (mm)	271 mm
Height / Depth (mm)	190 mm
Diameter (mm)	N/A

Emergency Version

Type	Self contained
Duration	3 Hour
Test Facility	Yes - Remote Test Switch
List Number	AVAWP2 L30 C84 / CL / E3

Additional Information

- 1.
- 2.
- 3.
- 4.
- 5.

Luminaire Schedule

Luminaire Reference Type: **General Lighting** N **Emergency Lighting** N/A

General Appearance



General Description

A ground recessed mounted square luminaire, complete with integral driver, recessing box and LED lamp source.

Luminaire constructed from the following - Body: die-cast aluminium with powdered paint finish. Frame: painted aluminium, 3mm thick. Front glass: semi-frosted toughened glass, 10mm thick, surface temperature complies with EN60598-2-13. Recessing box: polypropylene.

Class I electrical. Maximum static load 1000kg.

Installation Locations

Newly Formed External Entrance - Floor Level Lighting

Luminaire

Manufacturer	Thorn Lighting
Model	EFACT Range
List Number	96107686 + 96107686
IP Rating	IP67
Mounting Method	Recessed Floor Mounting
LOR / Part L Efficacy	Not Applicable

Light Source

Type	LED
Designation	LED
Wattage	1 x 3W
CCT (K)	4000
CRI (Ra)	85

Control Gear / Transformer

Type	LED Driver
Dimmable	No
Location	Integral

Accessories

UV Filter	N/A
Lens	N/A
Other	Base - 96107686

Dimensions

Length (mm)	186mm
Width (mm)	186mm
Height / Depth (mm)	202mm
Diameter (mm)	N/A

Emergency Version

Type	N/A
Duration	N/A
Test Facility	N/A
List Number	N/A

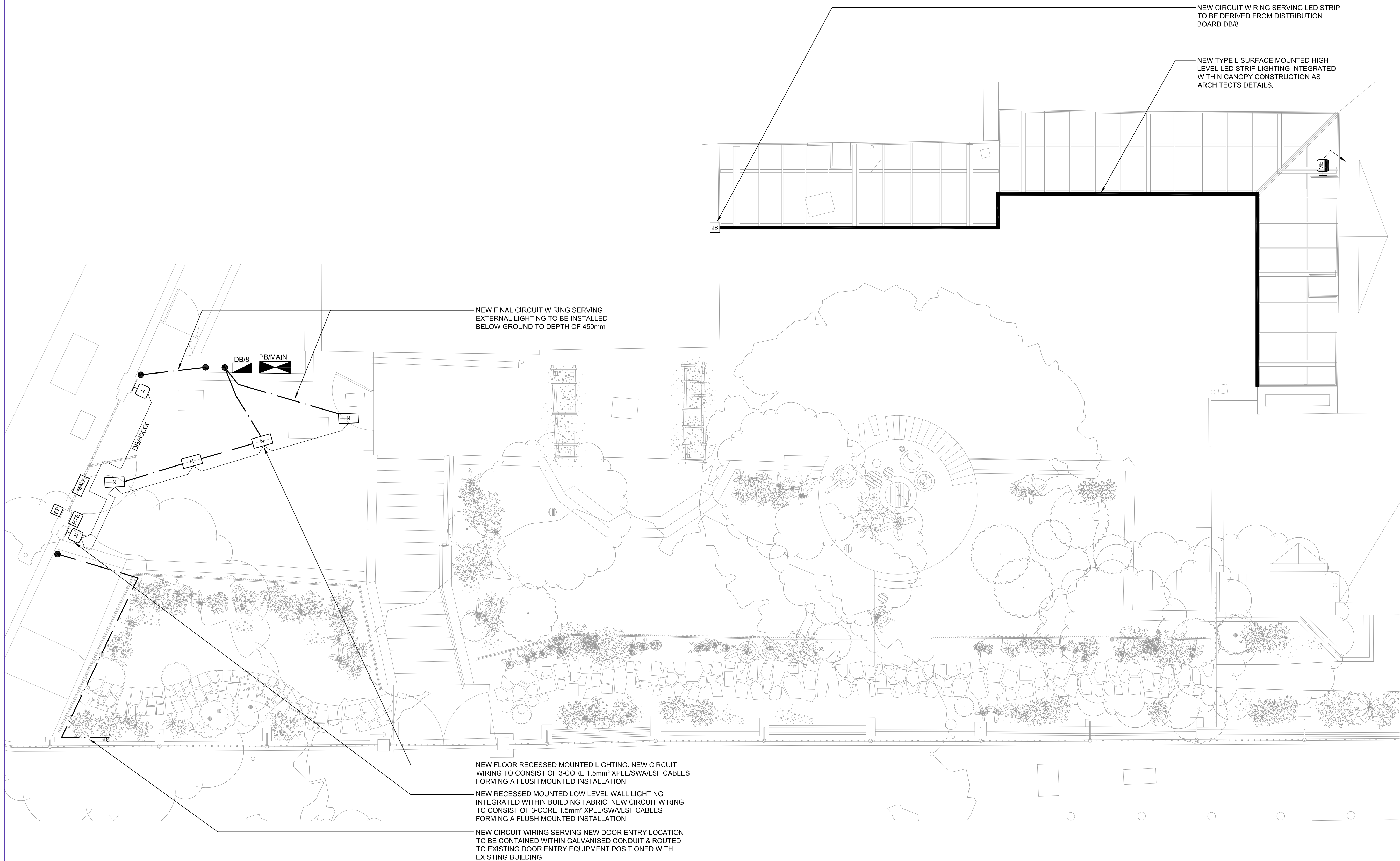
Additional Information

1. Tender information for lighting system based upon the luminaire type specified above.
2. Alternative luminaires may be offered by the contractor, confirmed in writing as part of their tender submission.
- 3.
- 4.
- 5.

In addition to the hazards/risks normally associated with the types of work detailed on this drawing and noted in the designer risk assessments and health and safety plan, note the following:

- It is assumed that all works on this drawing will be carried out by a competent contractor working, where appropriate, to an approved method statement.
- Where applicable, all significant residual risks will be highlighted below.

- Notes:**
1. DRAWING TO BE READ IN CONJUNCTION WITH ELECTRICAL SERVICES SPECIFICATION.
 2. REFER TO DRAWING No.0314/E/1000 FOR SCHEDULE OF ELECTRICAL SERVICES SYMBOLS.



T	11.03.2015	TENDER ISSUE	LEW
DT	27.02.2015	DRAFT TENDER ISSUE	LEW
Rev	Date:	Amendments:	Drawn:

TENDER



Unit 15, Old Park Farm, Main Road,
Ford End, Chelmsford, Essex, CM3 1LN
Telephone: 01245 - 237336
Email: info@brontideconsulting.com
Web: www.brontideconsulting.com



Project:
CHRIST CHURCH PRIMARY SCHOOL
CHRIST CHURCH HILL, LONDON

Title:
EXTERNAL ELECTRICAL SERVICES
LAYOUT SHEET 1 OF 2

Drawn:	Engineer:	Approved:	Date:
LEW	JAH	TH	DEC 2014
Scale:	Reference File:		
1:50			

ELECTRICAL SERVICES

Drawing Number: 0313 - E - 1101
Revision: T

In addition to the hazards/risks normally associated with the types of work detailed on this drawing and noted in the designer risk assessments and health and safety plan, note the following:

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- Where applicable, all significant residual risks will be highlighted below.

Notes:

1. DRAWING TO BE READ IN CONJUNCTION WITH ELECTRICAL SERVICES SPECIFICATION.
2. REFER TO DRAWING No.0314/E/1000 FOR SCHEDULE OF ELECTRICAL SERVICES SYMBOLS.

NEW WALL MOUNTED FLOODLIGHT LUMINAIRES CONTROLLED BY TIME SWITCH & COMPLETE WITH MANUAL OVERRIDE SWITCH LOCATED ADJACENT TO DISTRIBUTION BOARD

3-CORE 1.5mm² BLACK LSF SHEATHED FP100 CABLE CLIPPED DIRECT TO BUILDING FABRIC AT HIGH LEVEL & ROUTED BETWEEN TYPE A FLOODLIGHT LUMINAIRES BACK TO DISTRIBUTION BOARD DB/1/

NEW SURFACE MOUNTED REQUEST TO EXIT BUTTON INTEGRATED WITHIN NEWLY FORMED GATE

NEW SURFACE MOUNTED MAGNA LOCK INTEGRATED WITHIN NEWLY FORMED GATE

NEW RECESSED MOUNTED STEP-LIGHTING LUMINAIRES CONTROLLED BY TIME SWITCH & COMPLETE WITH MANUAL OVERRIDE SWITCH LOCATED ADJACENT TO DISTRIBUTION BOARD

NEW RECESSED MOUNTED STEP-LIGHTING INTEGRATED WITHIN NEWLY FORMED STAIRCASE. NEW CIRCUIT WIRING TO CONSIST OF 3-CORE 1.5mm² XPLE/SWA/LSF CABLES FORMING A FLUSH MOUNTED INSTALLATION

NEW SURFACE MOUNTED 2-BUTTON VIDEO/AUDIO DOOR ENTRY PANEL INTEGRATED WITHIN NEW ENTRANCE AREA

NEW TYPE L SURFACE MOUNTED LED STRIP LIGHTING INTEGRATED WITHIN NEW BALUSTRADE HANDRAIL CONSTRUCTION AS ARCHITECTS DETAILS.

NEW SURFACE MOUNTED ADAPTABLE BOX FOR CONTAINMENT OF LED DRIVER SERVING LED STRIP & ASSOCIATED FIXED FINAL CIRCUIT WIRING

ROUTING OF EXISTING CABLING SERVING EXISTING DOOR ENTRY SYSTEM

EXISTING REQUEST TO EXIT & BUTTON TO BE RELOCATED FROM ORIGINAL POSITION TO ACCOMMODATE REFURBISHED CYCLE STORE

EXISTING MAGNA LOCK DOOR HOLDER TO EXISTING GATE TO BE RETAINED & RE-USED

EXISTING 3 BUTTON VIDEO/AUDIO DOOR ENTRY PANEL TO BE REPLACED WITH NEW SINGLE BUTTON UNIT

DRAFT TENDER

DT	27.02.2015	DRAFT TENDER ISSUE	LEW
Rev	Date:	Amendments:	Drawn:

TENDER



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Project: CHRIST CHURCH PRIMARY SCHOOL
CHRIST CHURCH HILL, LONDON

Title: EXTERNAL ELECTRICAL SERVICES
LAYOUT SHEET 2 OF 2

Drawn:	Engineer:	Approved:	Date:
LEW	JAH	TH	DEC 2014
Scale:	Reference File:		
1:100	-		

ELECTRICAL SERVICES

Drawing Number: 0313 - E - 1102
Revision: T

In addition to the hazards/risks normally associated with the types of work detailed on this drawing and noted in the designer risk assessments and health and safety plan, note the following:

- It is assumed that all works on this drawing will be carried out by a competent contractor working, where appropriate, to an approved method statement.
- Where applicable, all significant residual risks will be highlighted below.

Notes:
1.

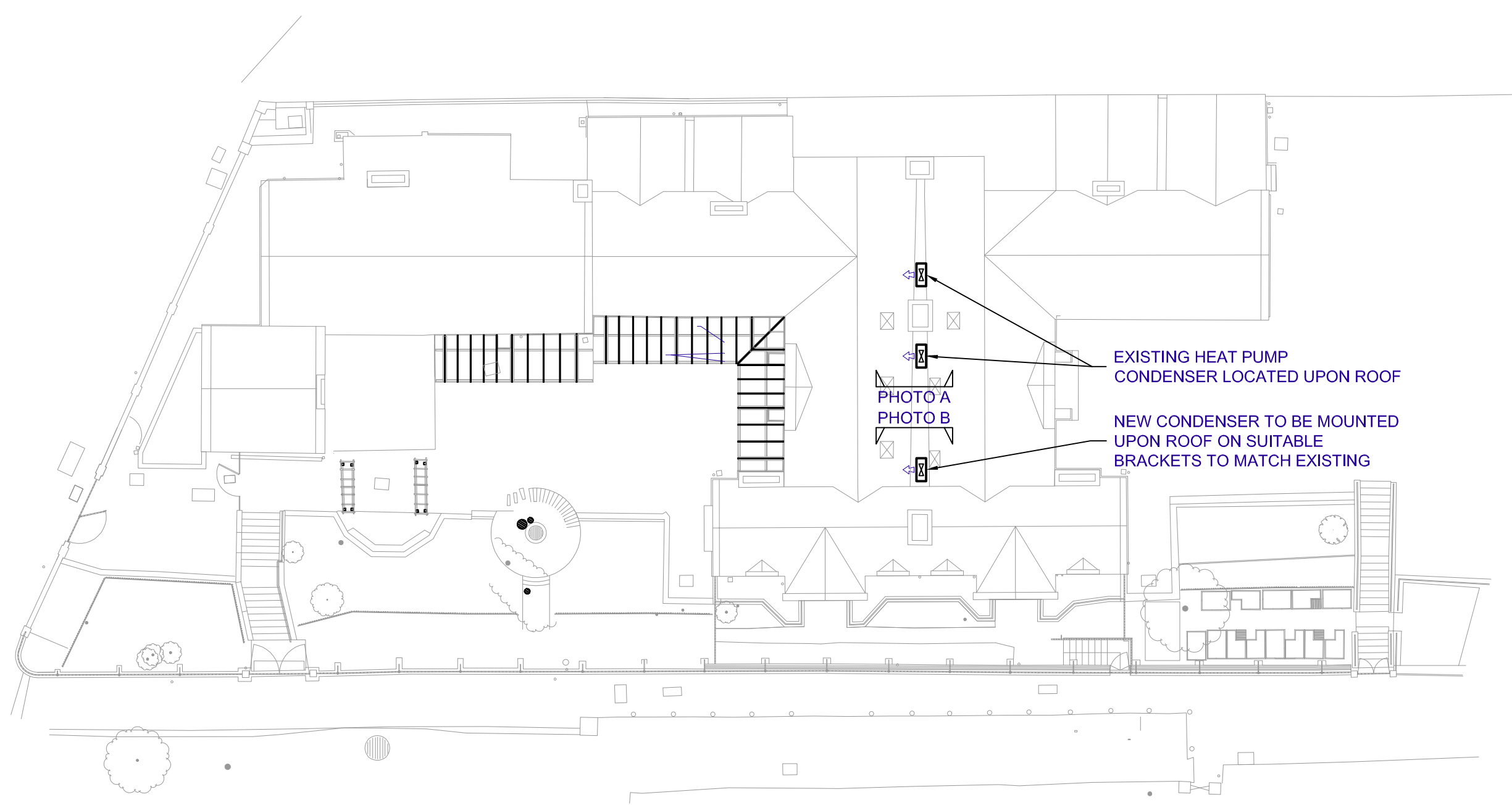


LOCATION OF EXISTING CONDENSER
LOCATION OF EXISTING CONDENSER - PHOTO A
LOCATION OF PROPOSED CONDENSER - PHOTO B

SITE PLAN - EXTERNAL CONDENSER LOCATIONS



PHOTO A
EXISTING ROOF MOUNTED EXTERNAL CONDENSER



EXISTING / PROPOSED EXTERNAL CONDENSERS
ROOF PLAN
(1:200)



PHOTO B
PROPOSED LOCATION FOR NEW EXTERNAL CONDENSER

DRAFT TENDER

DT: 27.02.2015 DRAFT TENDER ISSUE LEW
Rev: Date: Amendments: Drawn:

TENDER



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Project:
CHRIST CHURCH PRIMARY SCHOOL
LONDON, NW3 1JH

Title:
EXTERNAL CONDENSER LOCATIONS

Drawn: RAM Engineer: IMW Approved: - Date: FEB 15
Scale: 1:50 @ A1 Reference File: -

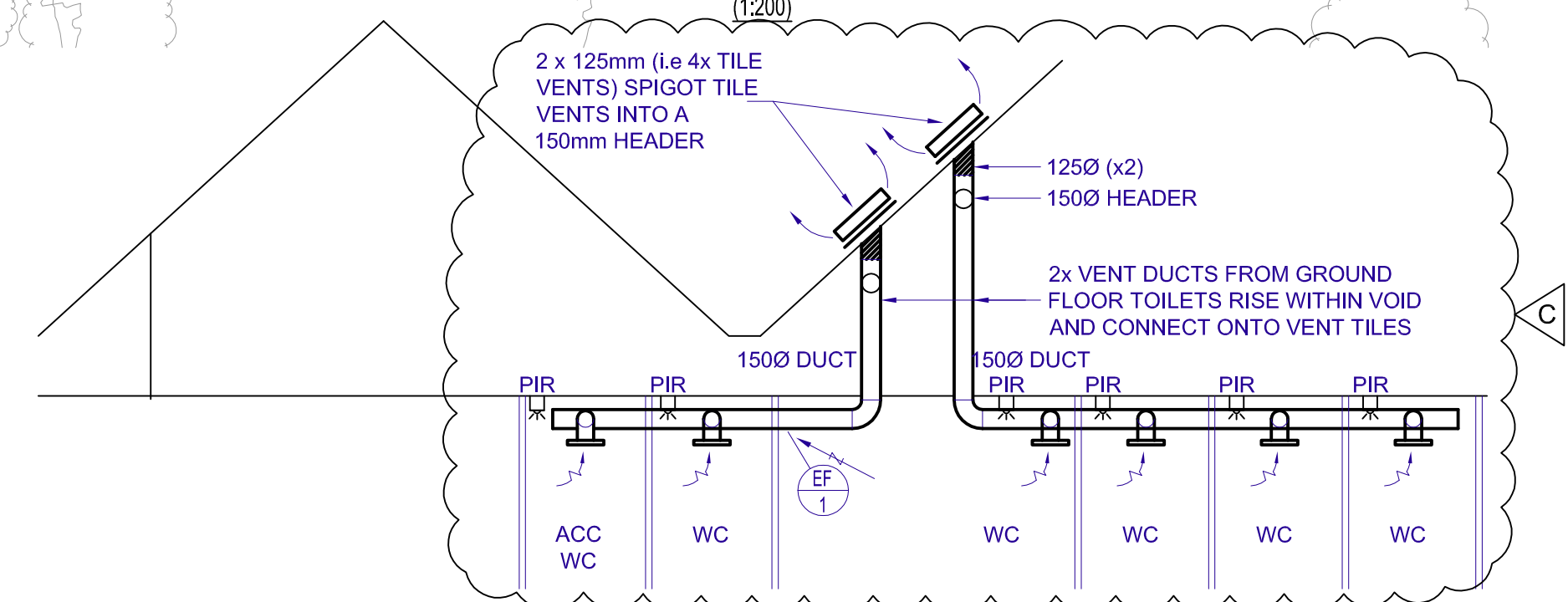
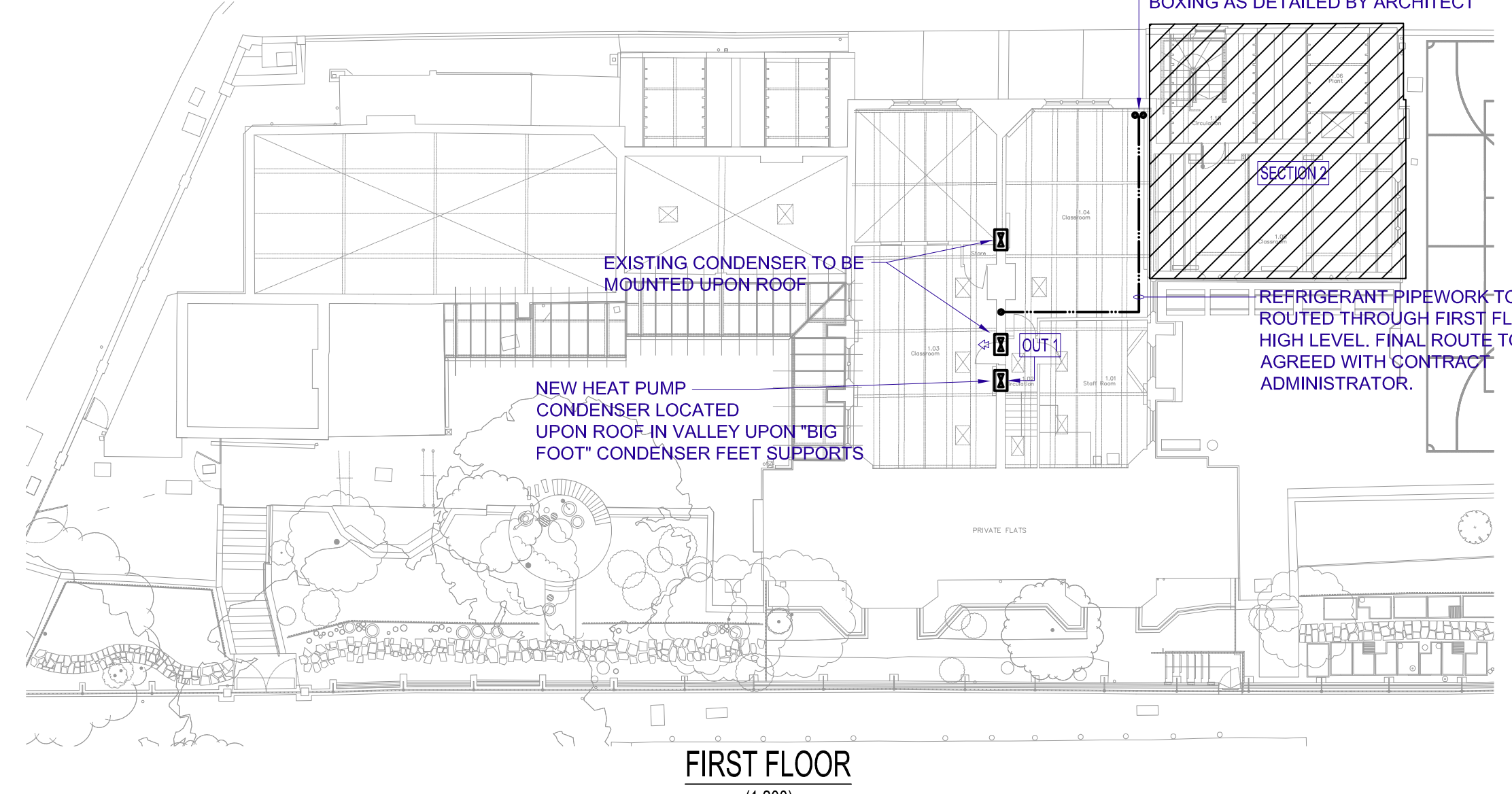
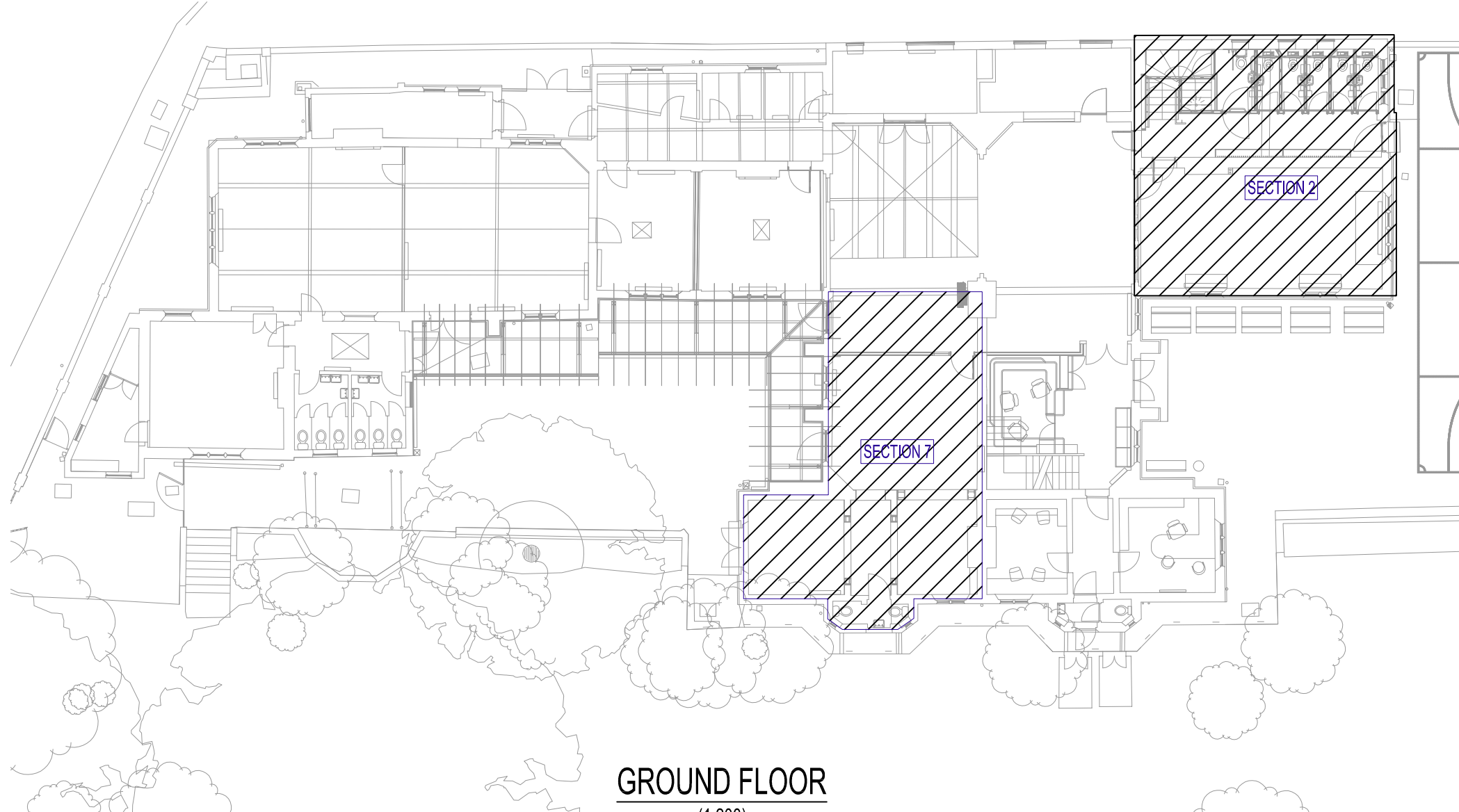
MECHANICAL SERVICES

Drawing Number: 0313 - M - 3801 Revision: T

In addition to the hazards/risks normally associated with the types of work detailed on this drawing and noted in the designer risk assessments and health and safety plan, note the following:

- It is assumed that all works on this drawing will be carried out by a competent contractor working, where appropriate, to an approved method statement.
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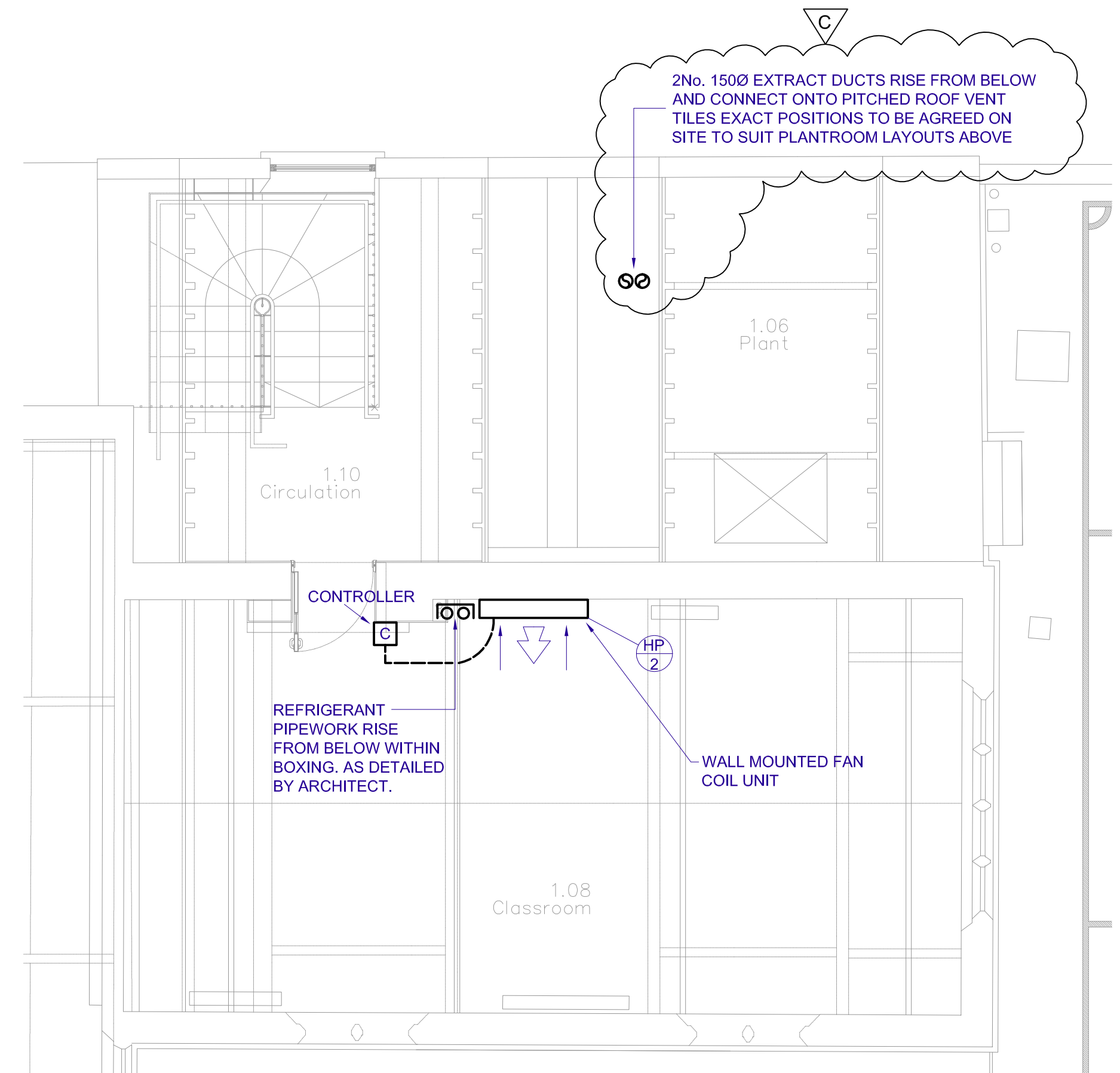
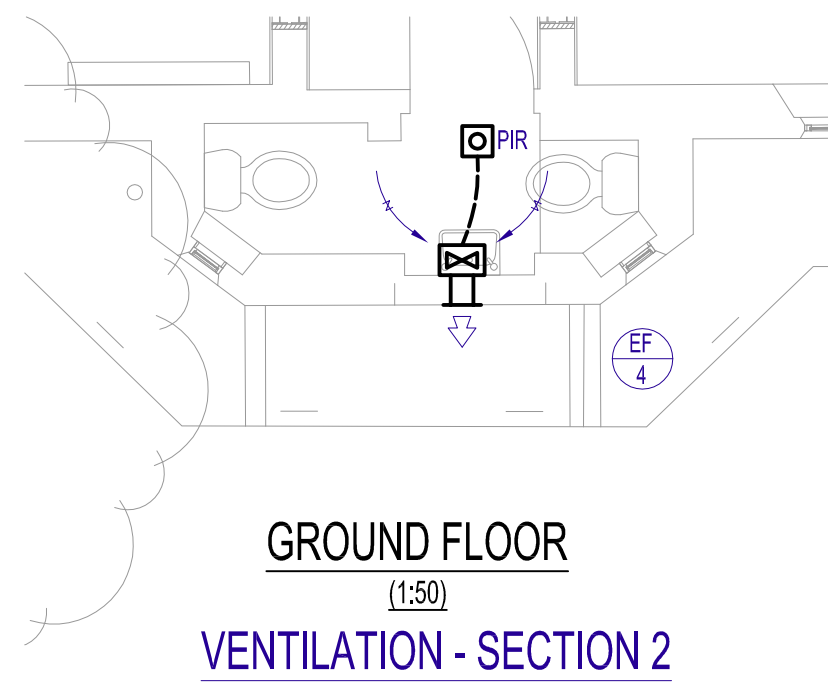
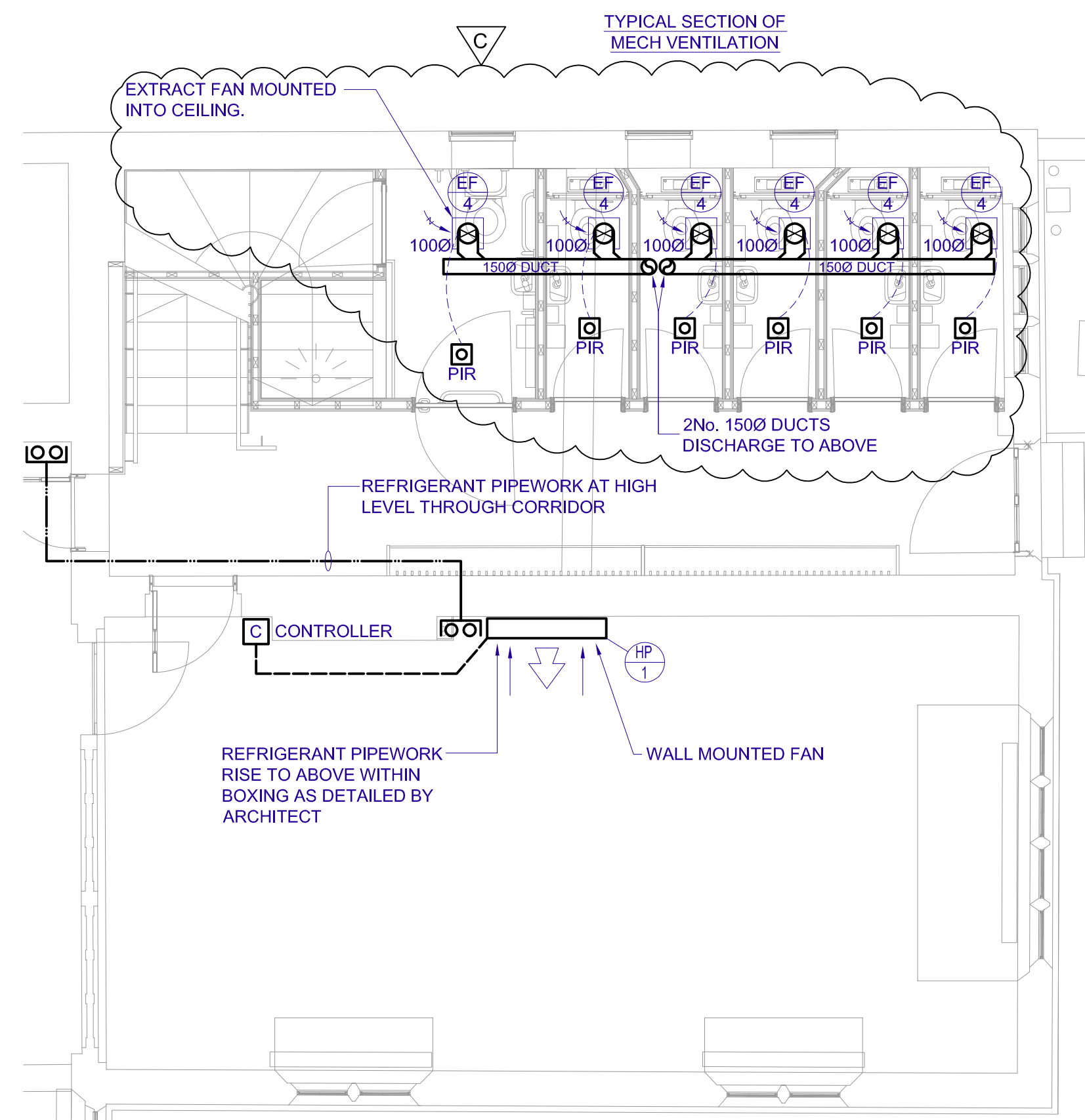
Notes:
1.



DAIKIN - DX HEAT PUMP (COMFORT COOLING)								
LOCATION	FCU	Tmp C	Rq TC	Max TC	Rq SC	Max SC	Max HC	WxHxD
		°C	KW	KW	KW	KW	KW	mm
YR5 CLASSROOM	FXAQ63P	22.0/50%	4.0	TBC	3.5	TBC	8.0 (N/A)	1050x290x238
YR6 CLASSROOM	FXAQ63P	22.0/50%	5.0	TBC	4.5	TBC	8.0 (N/A)	1050x290x238

NAME	OUTDOOR	POWER SUPPLY	MCA	MFA	RUN AMPS	St Curr	FUSES	WxHxD	Wgt
			A	A	A	A		mm	Kg
OUT1	RXYSQ6P8V1	230V1Ph	27	32	22.2	22.2	Cfr Local Legislation	900x1345x320	120

- EF 1 - EXTRACT FAN AS MANUFACTURED BY VENT AXIA MODEL: TX6PL WITH INTEGRAL ANTI-BACK DRAUGHT SHUTTER. EXTRACT FAN ACTIVATED BY PIR SENSOR AND INCORPORATES AN ADJUSTABLE RUN-ON TIMER.
- EF 2 - EXTRACT FAN AS MANUFACTURED BY VENT AXIA MODEL: LO-CARBON SOLO PLUS T (TIMER). BOOST SPEED ACTIVATED BY PIR SENSOR.
- EF 3 - EXTRACT FAN AS MANUFACTURED BY VENT AXIA MODEL: LO-CARBON SOLO PLUS T (TIMER). BOOST SPEED ACTIVATED BY PIR SENSOR.
- EF 4 - EXTRACT FAN AS MANUFACTURED BY VENT AXIA MODEL: LO-CARBON SOLO PLUS T (TIMER). BOOST SPEED ACTIVATED BY PIR SENSOR WITH INTEGRAL SHUTTER



C	Jun 15	CONSTRUCTION ISSUE	RAM
Rev:	Date:	Amendments:	Drawn:

CONSTRUCTION

Brontide Consulting
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CARBON LOW ENERGY ASSESSORS

Project: CHRIST CHURCH PRIMARY SCHOOL LONDON, NW3 1JH

Title: SECTION 7 & 8 DX COMFORT COOLING SECTION 1 & 2 VENTILATION

Drawn:	Engineer:	Approved:	Date:
RAM	IMW	-	FEB 15
Scale:	Reference File:		
1:50 @ A1	-		

MECHANICAL SERVICES

Drawing Number: 0313 - M - 3800 Revision: C