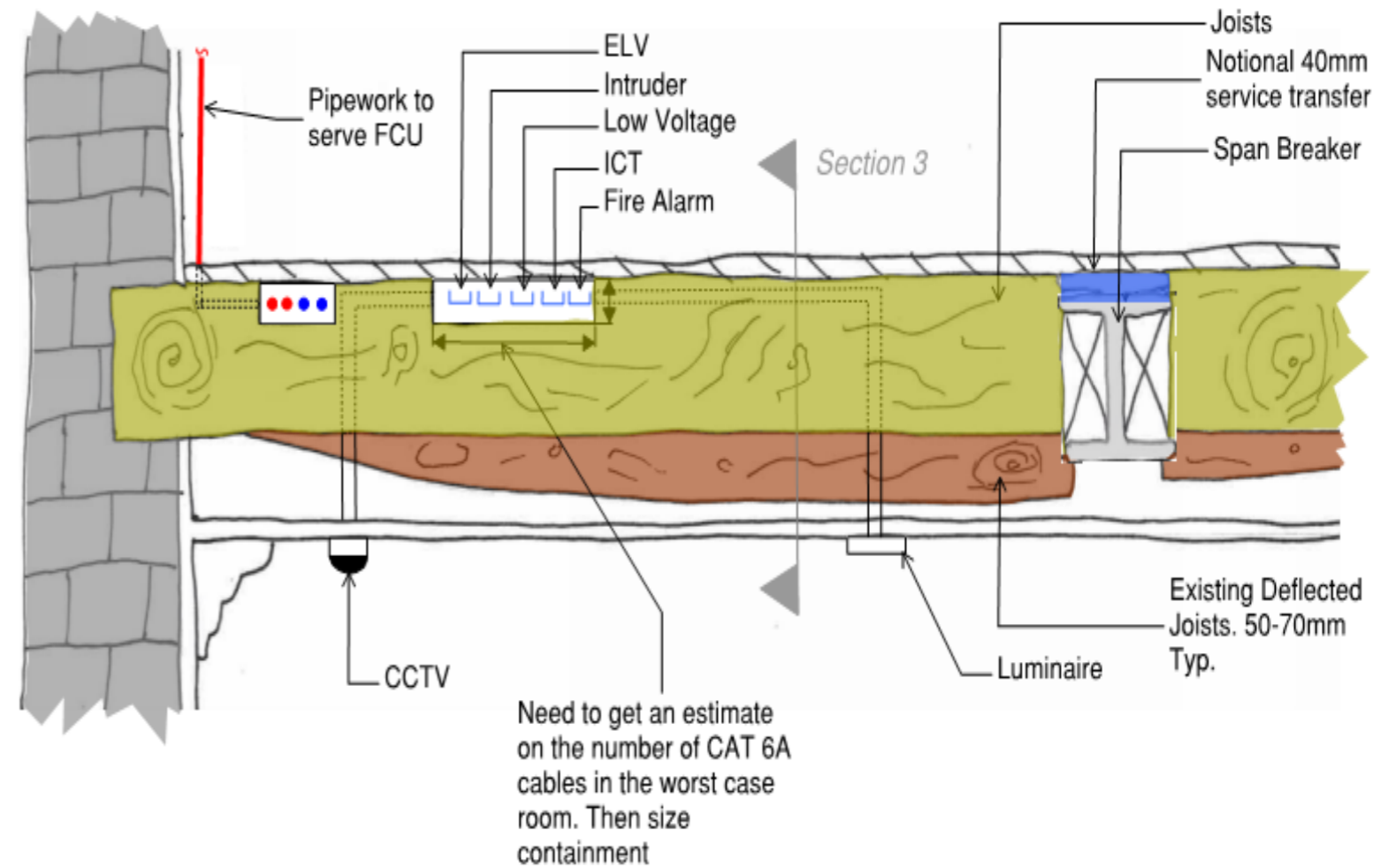


**APPENDIX C**  
**M&E Strategy Document**

# Parnell Square Cultural Quarter Central Library

## Parnell Square Cultural Quarter Architectural & Urban Heritage Report

### APPENDIX C M&E Services Strategies Georgian Houses – Typical Room Layouts



Author: David Hegarty

Date: 29<sup>th</sup> March 2018

Revision : 0

Arup have reviewed a number of typical rooms in the existing buildings to provide design intent to show the level of servicing requirements within the Georgian Houses.

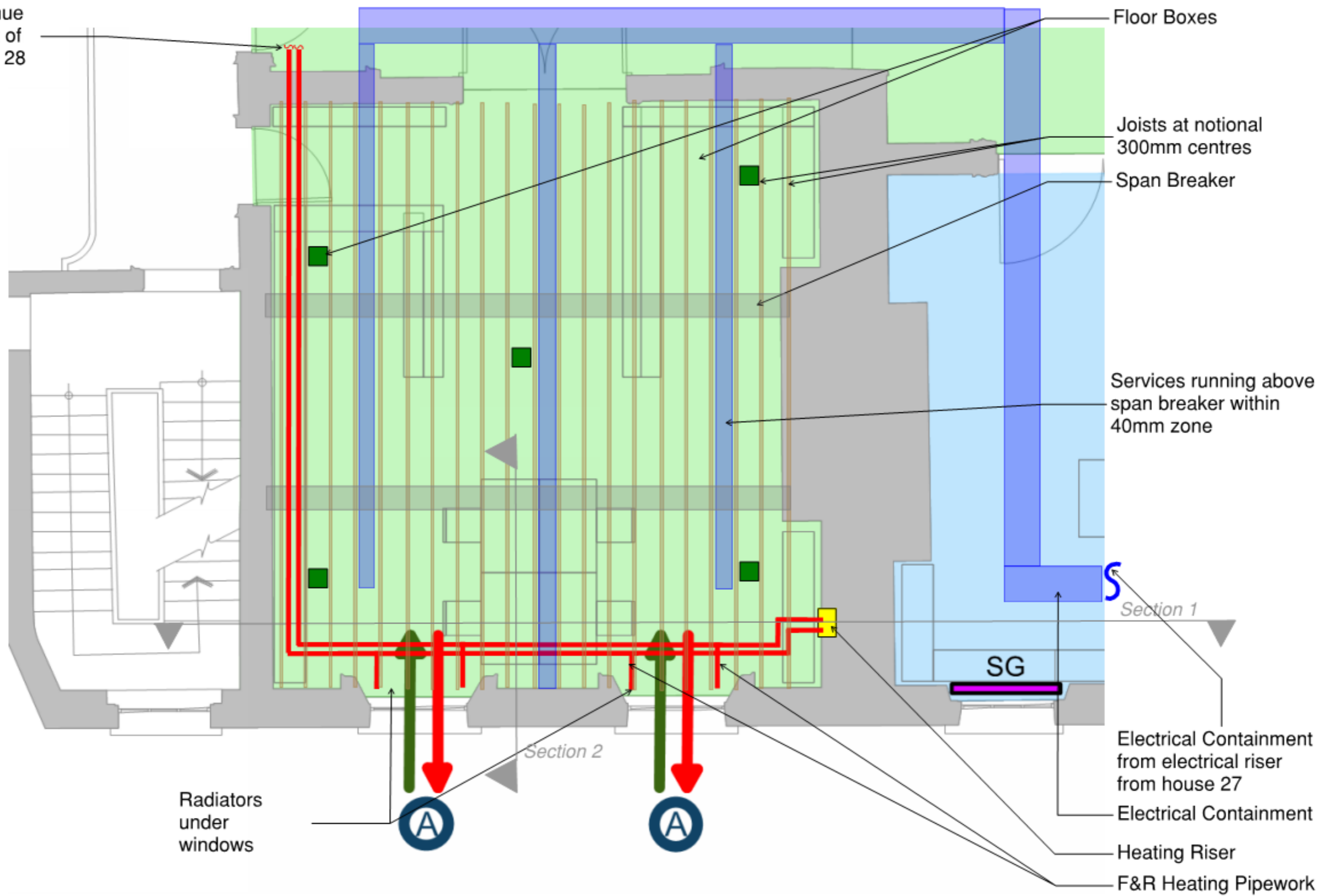
Each room is serviced with a different strategy. These include:

- Naturally Ventilated Strategy
- Mechanically Ventilated Strategy: Lower Cooling Requirements
- Mechanically Ventilated Strategy: Higher Cooling Requirements

The following strategies apply principally to House Nos 23-28. These are followed by M&E strategies for Nos 20-21

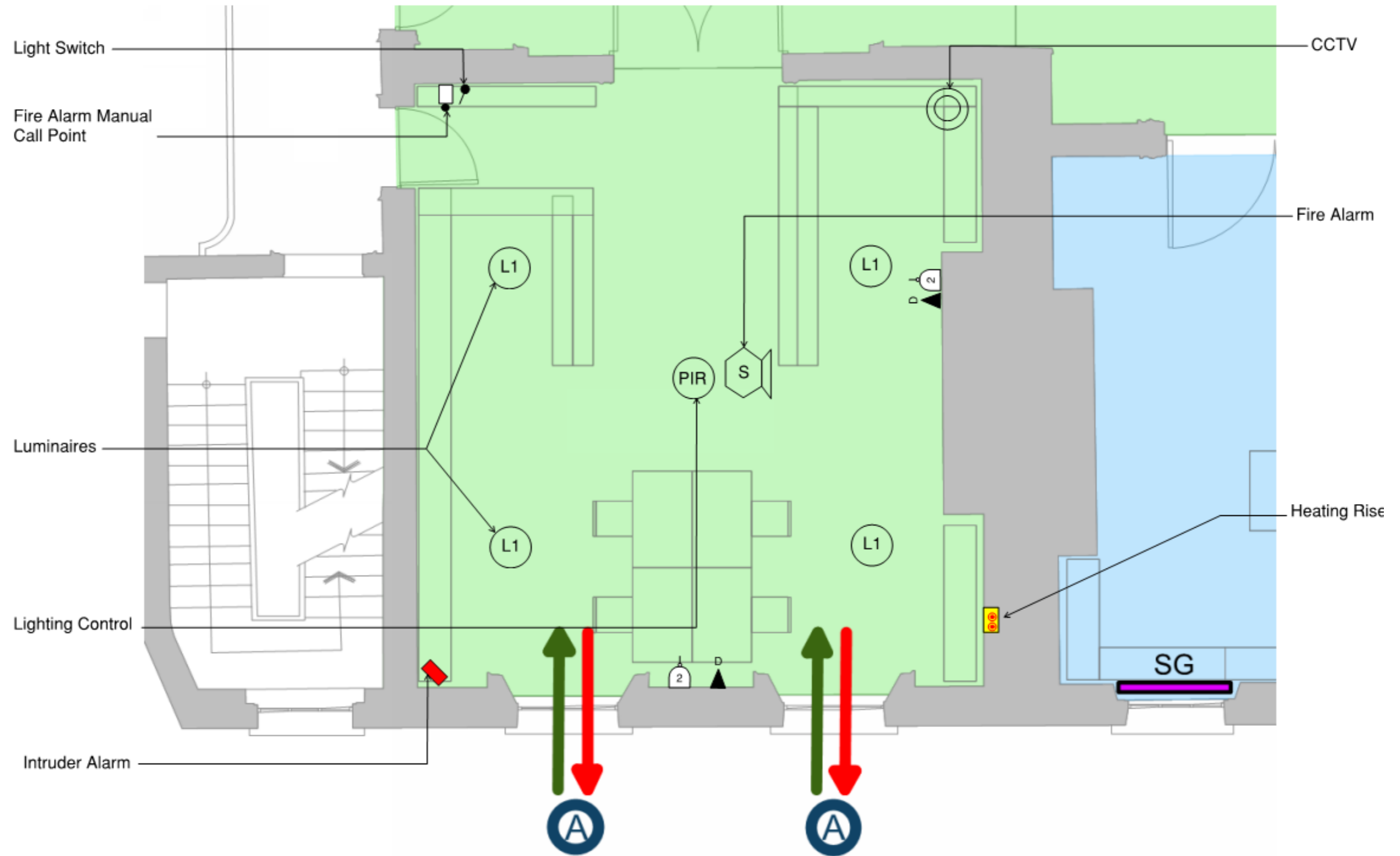
# Naturally Ventilated Strategy - PLAN VIEW

Continue to rest of house 28



Note: Example room taken from Georgian Building House 28, 1st Floor front of house

Naturally Ventilated Strategy: - Reflected Ceiling Plan

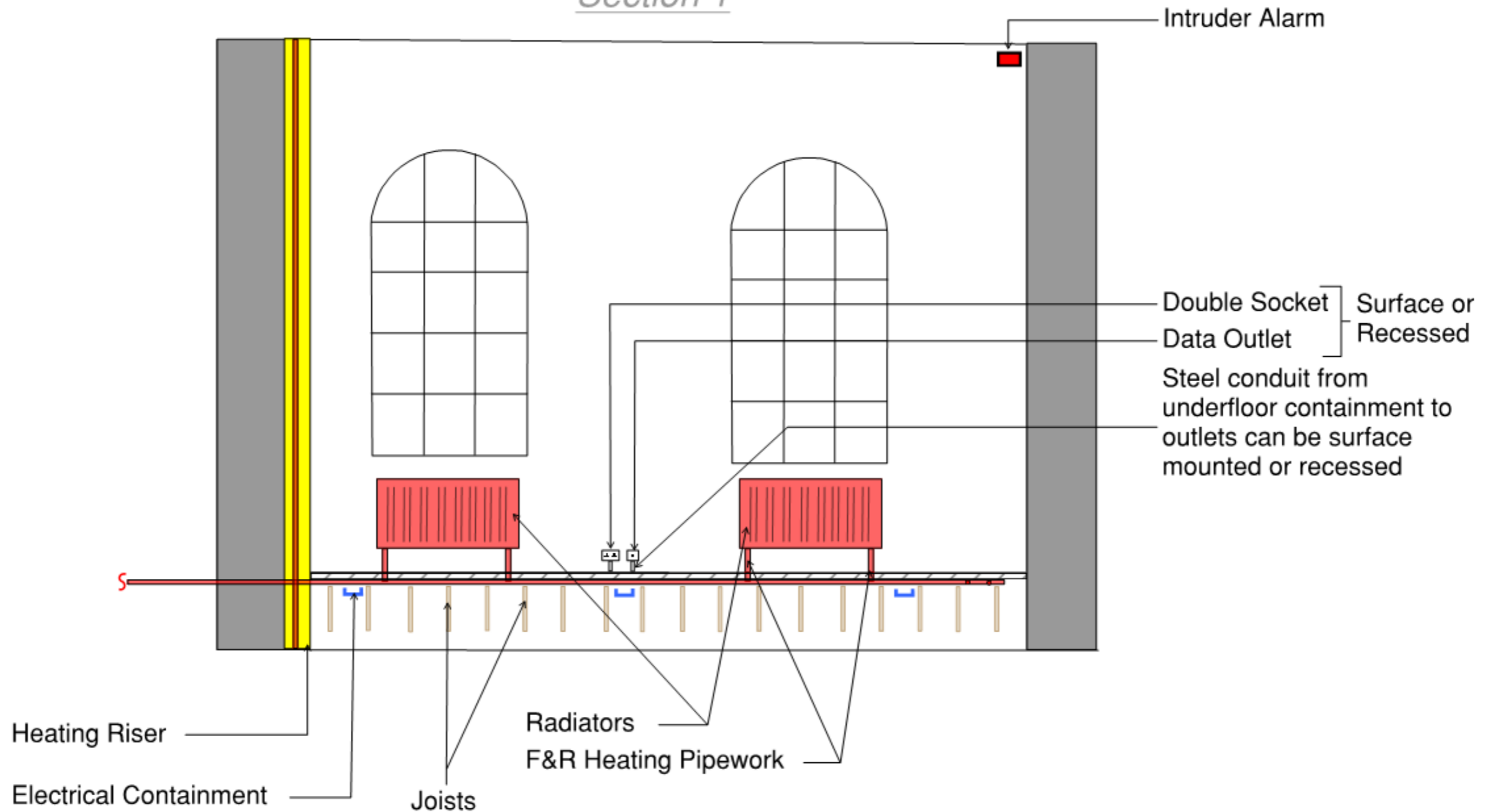


Note: Example room taken from Georgian Building House 28, 1st Floor front of house

# Naturally Ventilated Strategy – SECTION 1



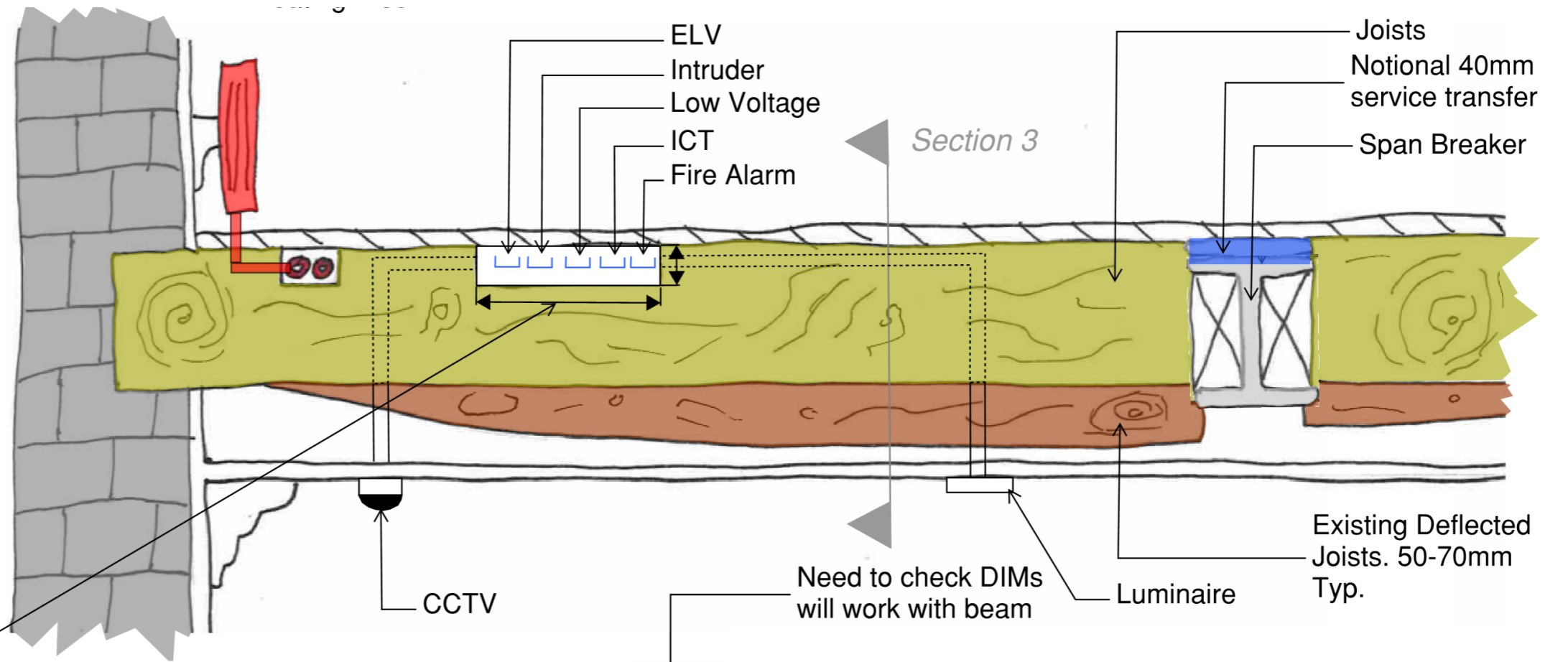
*Section 1*



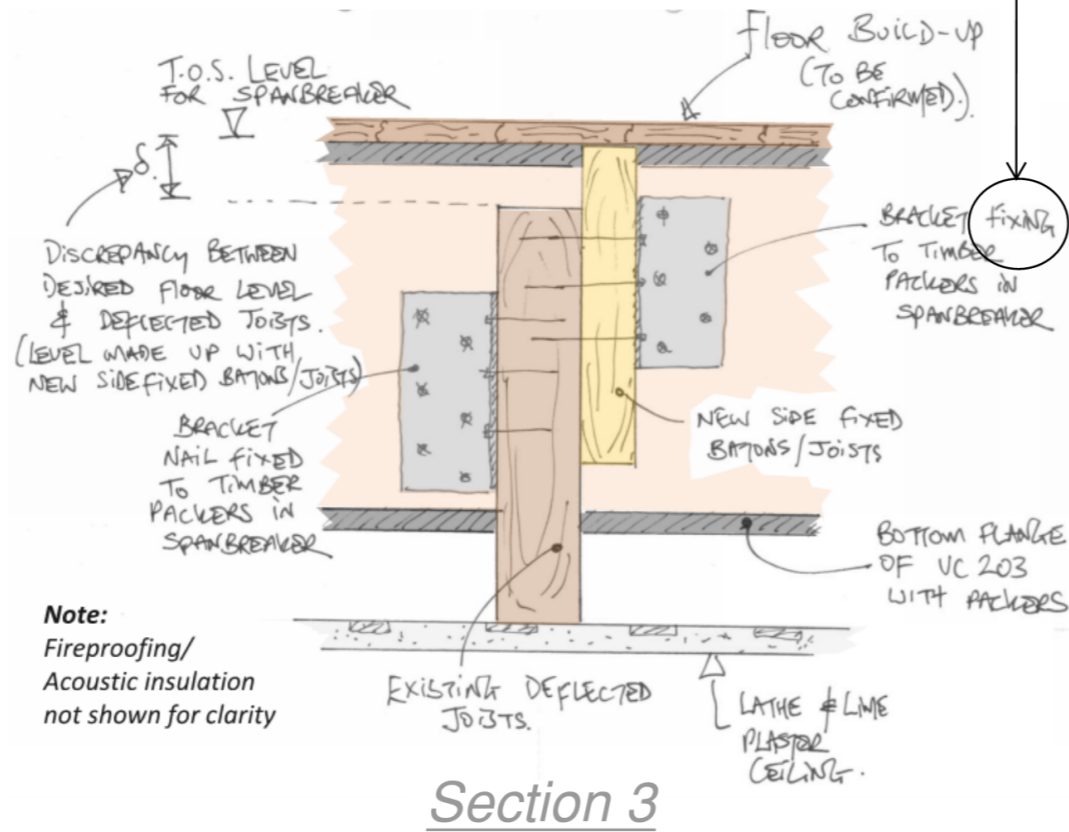
Note: Example room taken from Georgian Building House 28, 1st Floor front of house

# Naturally Ventilated Strategy - SECTION 2 + 3

Section 2



Need to get an estimate on the number of CAT 6A cables in the worst case room. Then size containment

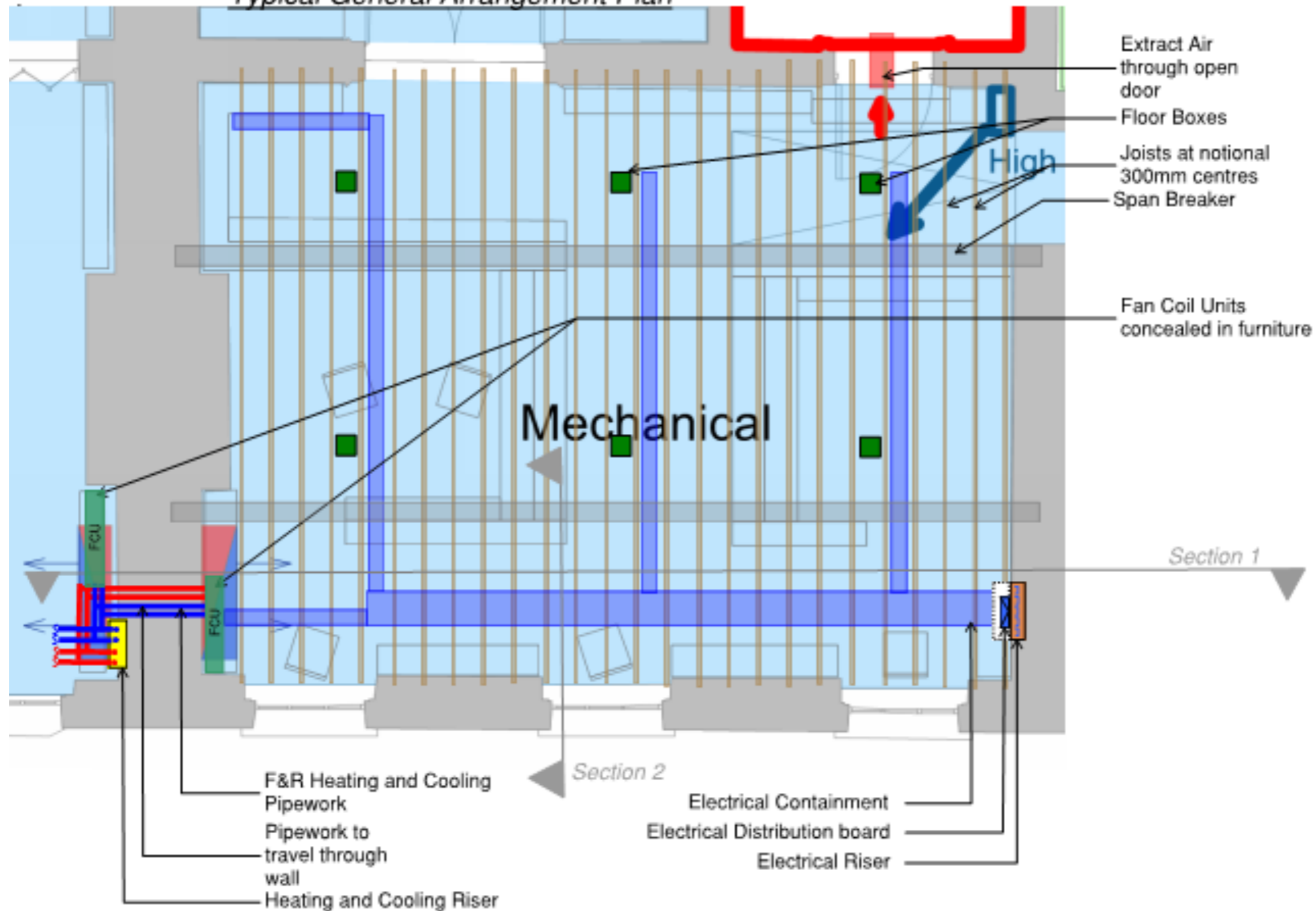


**Note:**  
Fireproofing/  
Acoustic insulation  
not shown for clarity

**Note:** Example room taken from Georgian Building House 28, 1st Floor front of house

Mechanically Ventilated Strategy:  
Lower Cooling Requirements - PLAN VIEW

Typical General Arrangement Plan

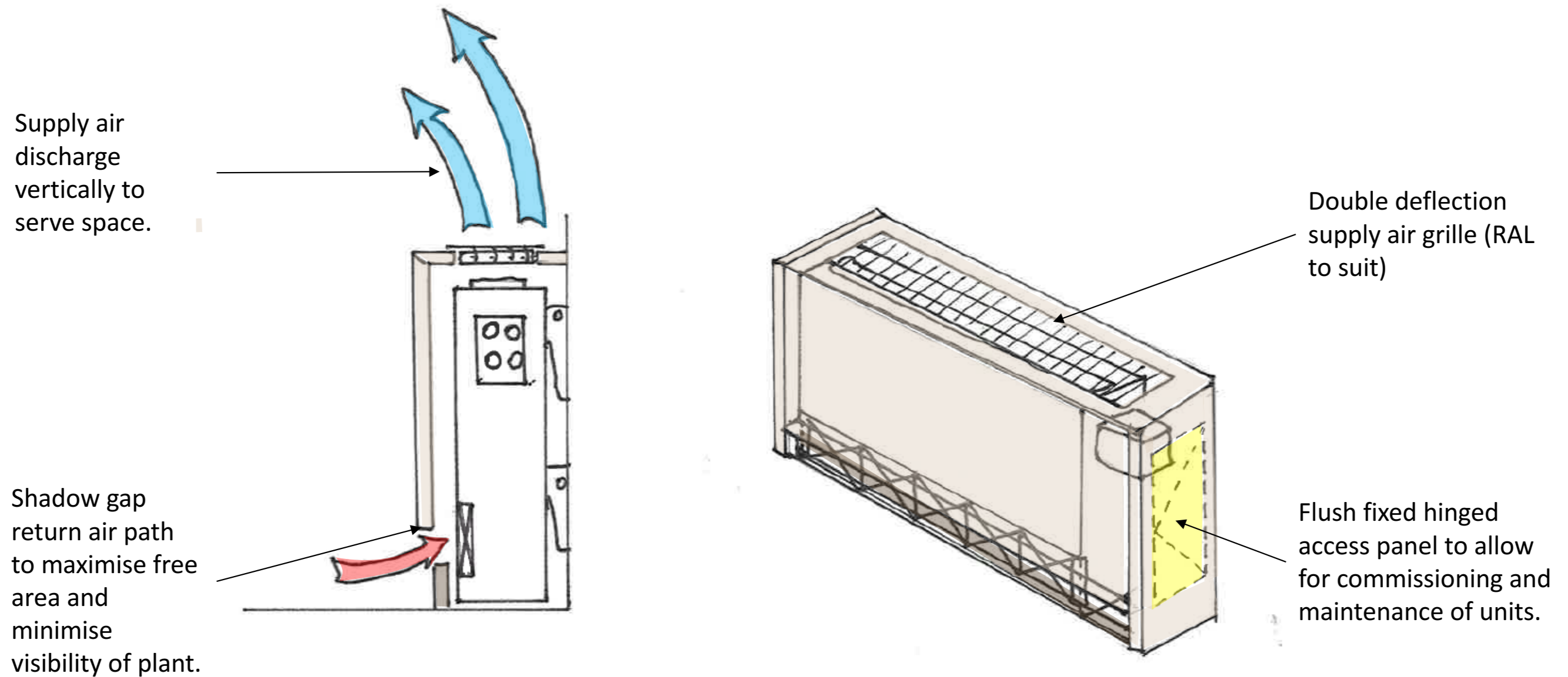


Note: Example room taken from Georgian Building House 25, front of house

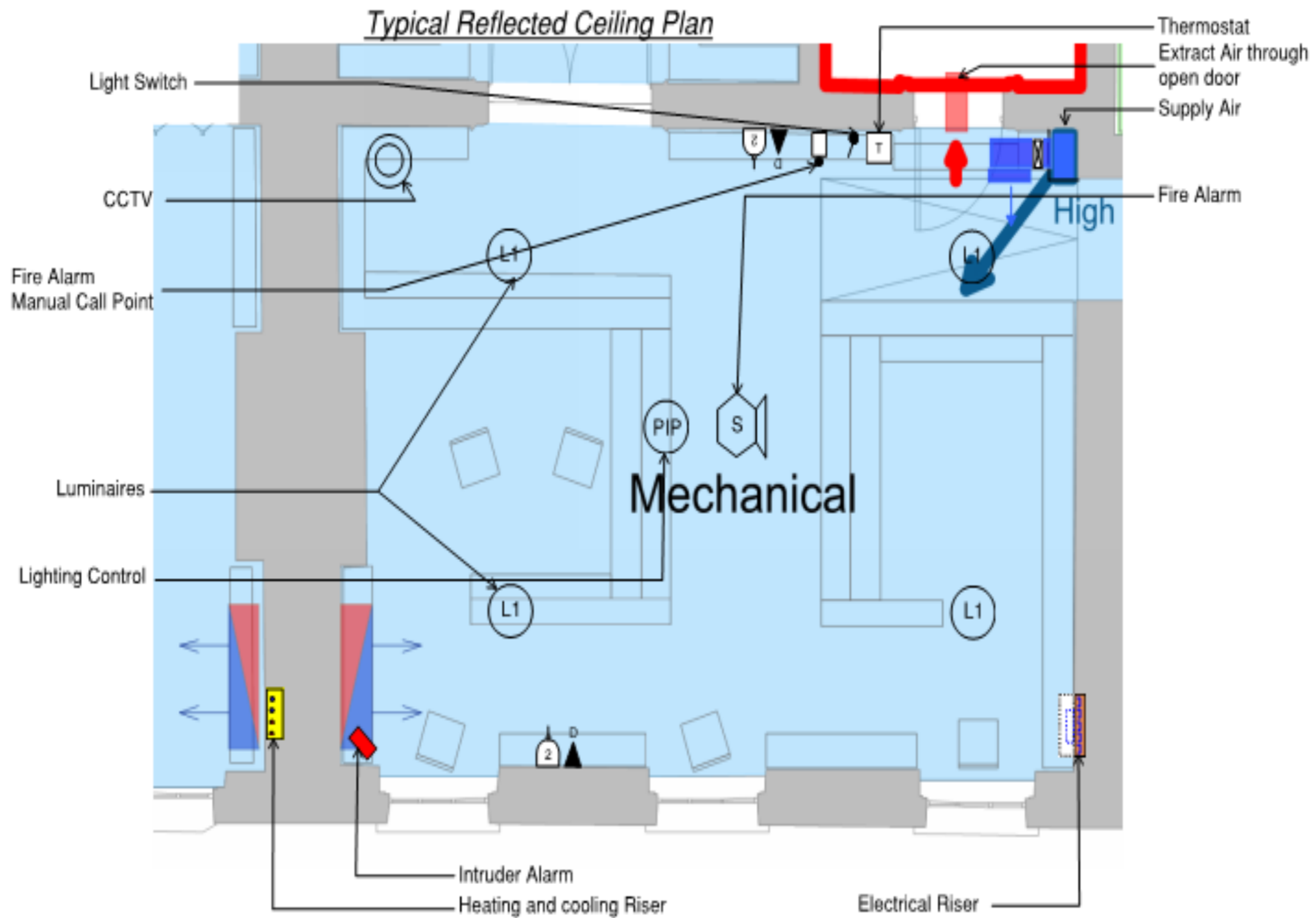
## Fan coil units – low level

A good alternative to high level FCUs is to mount the FCU's at floor level. Units can then be hidden in various housings as long as sufficient free area is provided for air movement to and from the unit.

Adequate space and access must also be provided for both connective pipework and cabling requirements, and items that require maintenance (filters / pumps etc.).



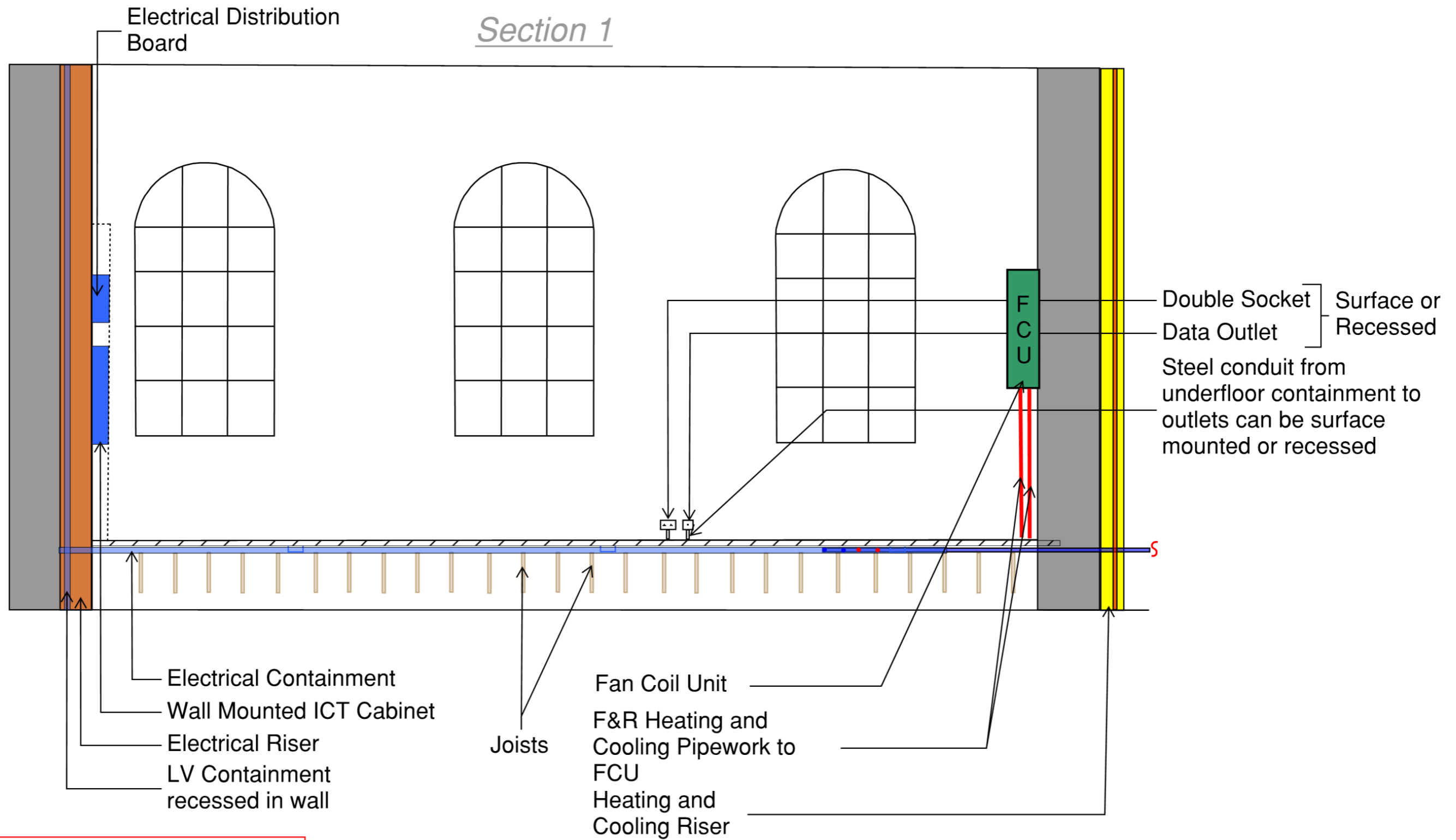
Mechanically Ventilated Strategy:  
Lower Cooling Requirements - Reflected Ceiling Plan



Note: Example room taken from Georgian Building House 25, front of house

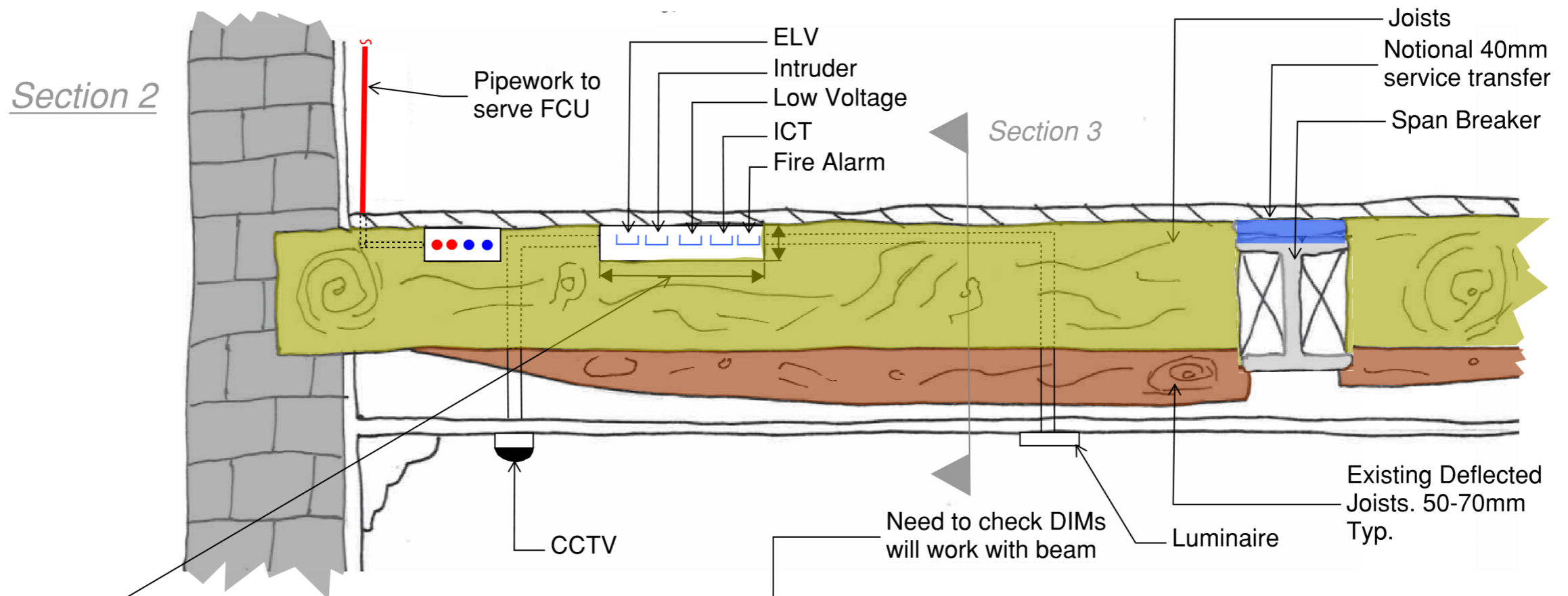


**Mechanically Ventilated Strategy:  
Lower Cooling Requirements -SECTION 1**

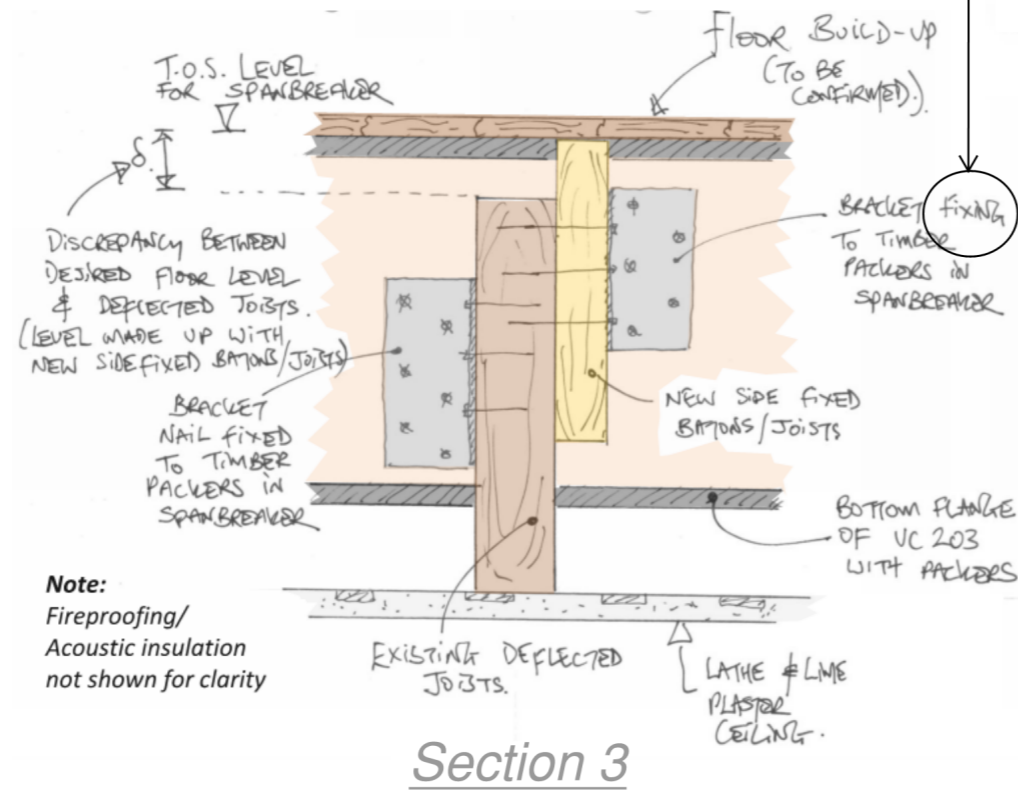


**Note:** Example room taken from Georgian Building House 25, front of house

Mechanically Ventilated Strategy:  
Lower Cooling Requirements - Section 2 + 3



Need to get an estimate on the number of CAT 6A cables in the worst case room. Then size containment



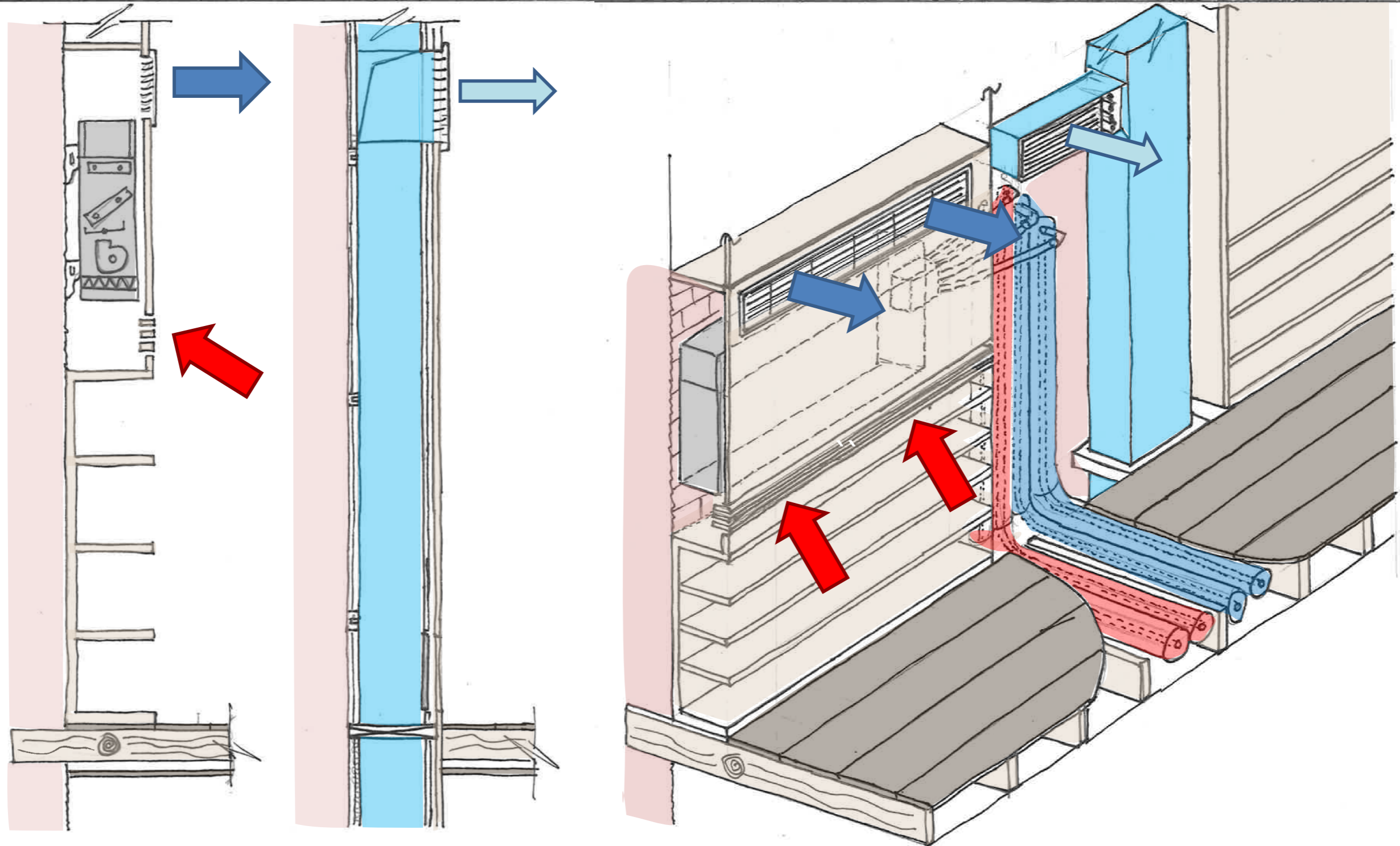
**Note:**  
Fireproofing/  
Acoustic insulation  
not shown for clarity

**Note:** Example room taken from Georgian Building House 25, front of house

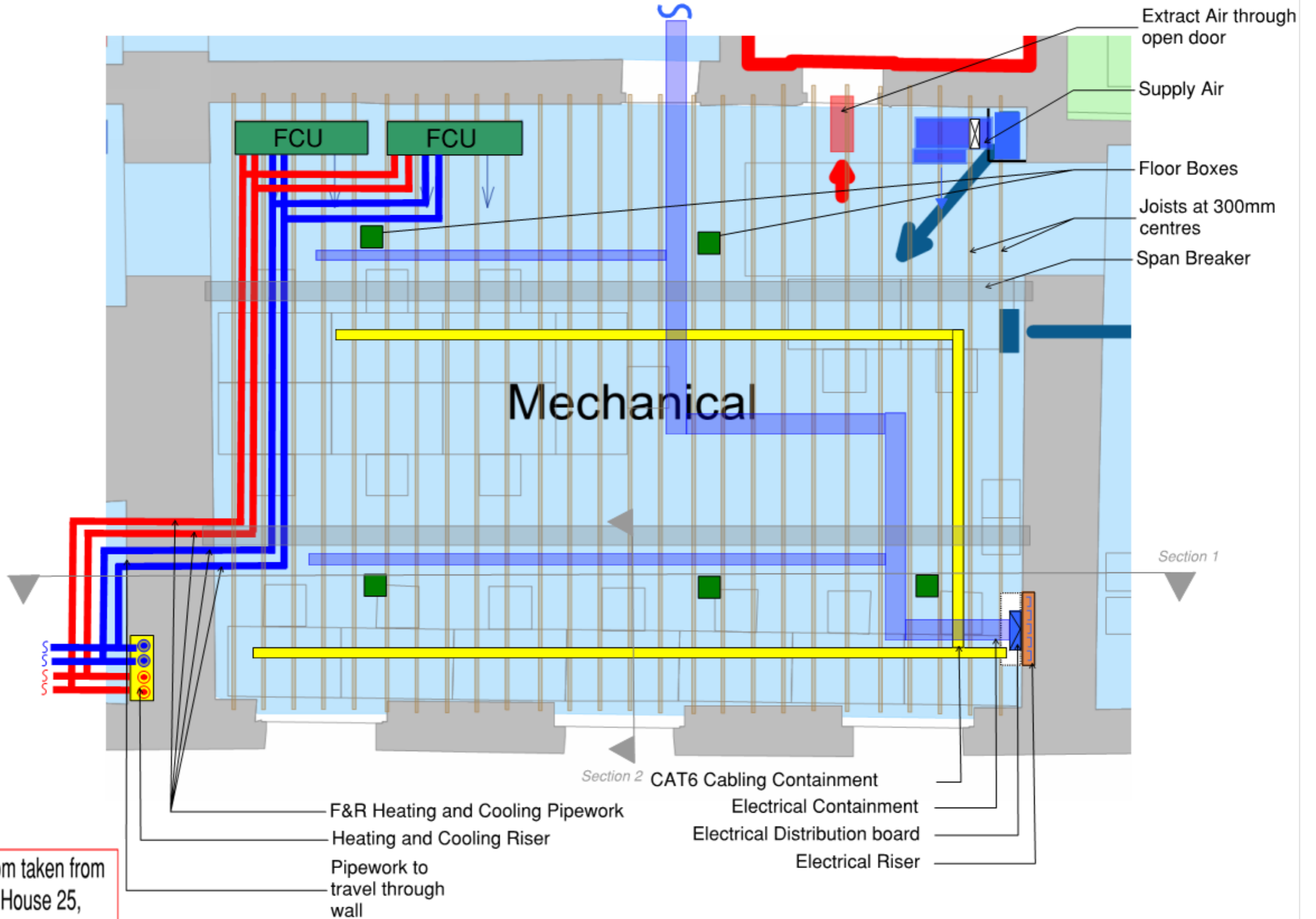
Mechanically Ventilated Strategy:  
Lower Cooling Requirements - Fan Coil Unit Options

## Fan coil units – high level

By careful planning of joinery; fan coil units and services distribution (heating, cooling, condensate drainage, power, controls) can be neatly integrated within the furniture minimising the visual impact of the intervention by concealing the units behind removable panelling (wood to match that of book shelves).



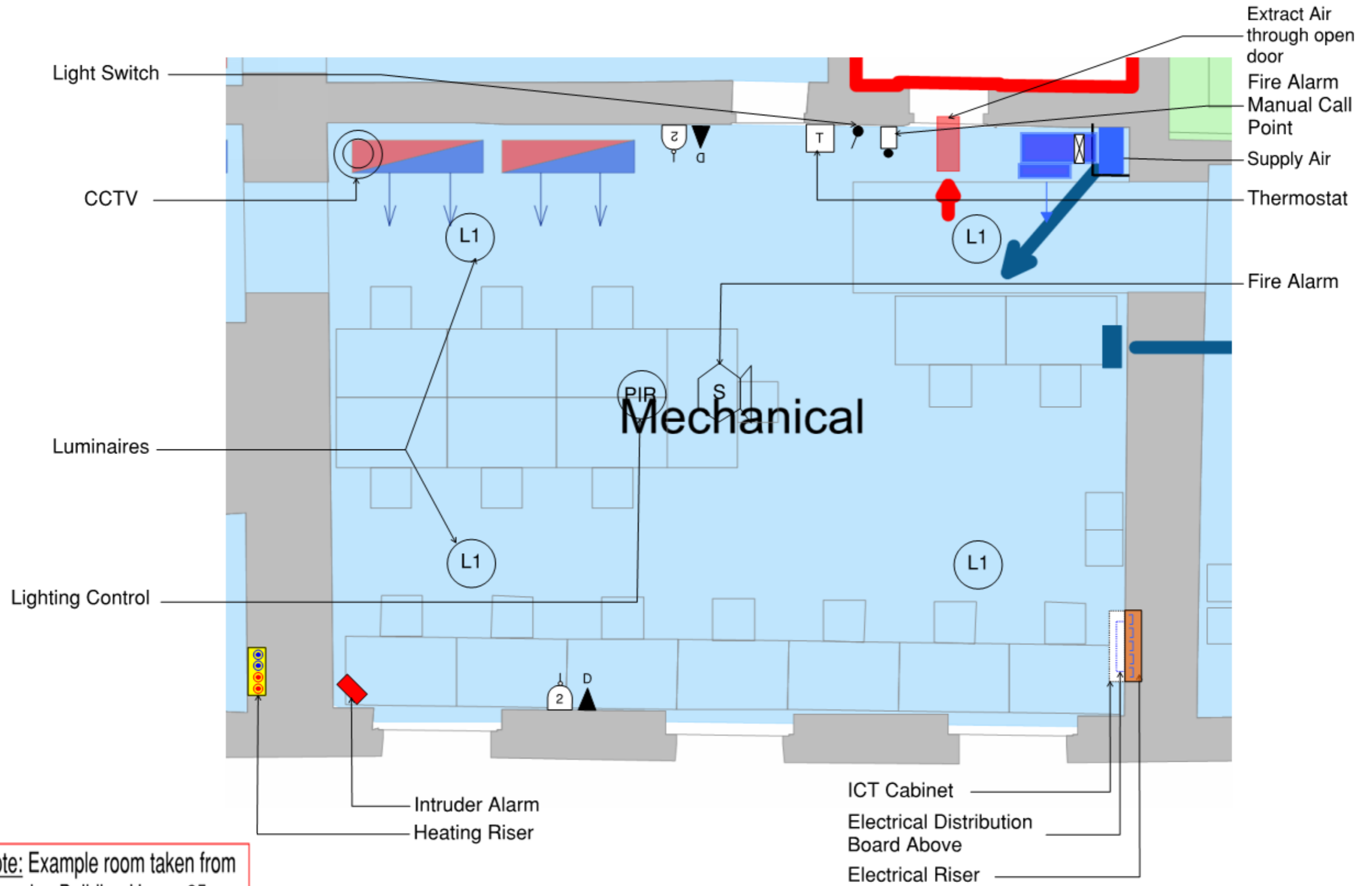
Mechanically Ventilated Strategy:  
Higher Cooling Requirements – PLAN VIEW



Note: Example room taken from Georgian Building House 25, front of house

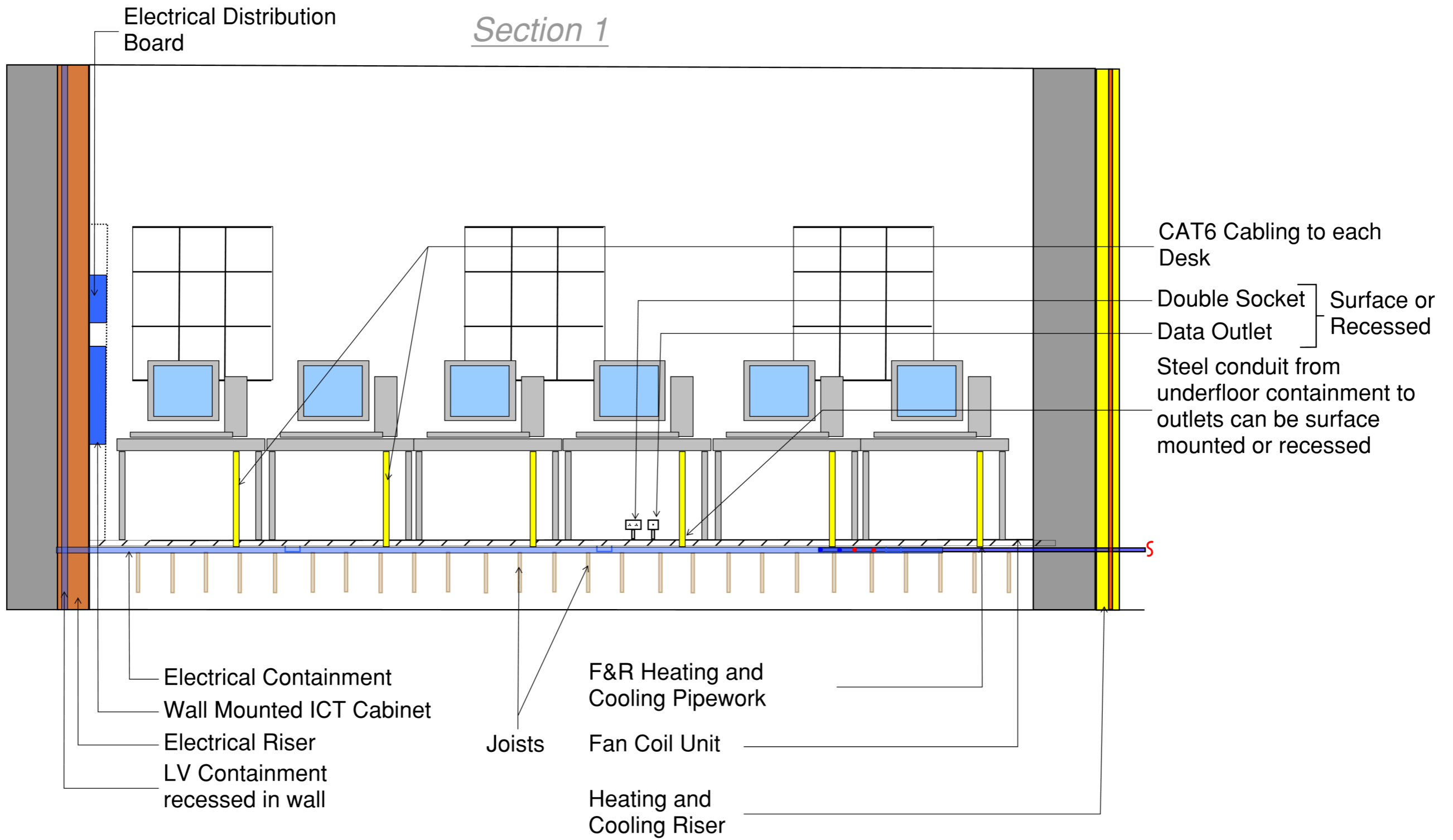


Mechanically Ventilated Strategy:  
Higher Cooling Requirements -  
Reflected Ceiling Plan



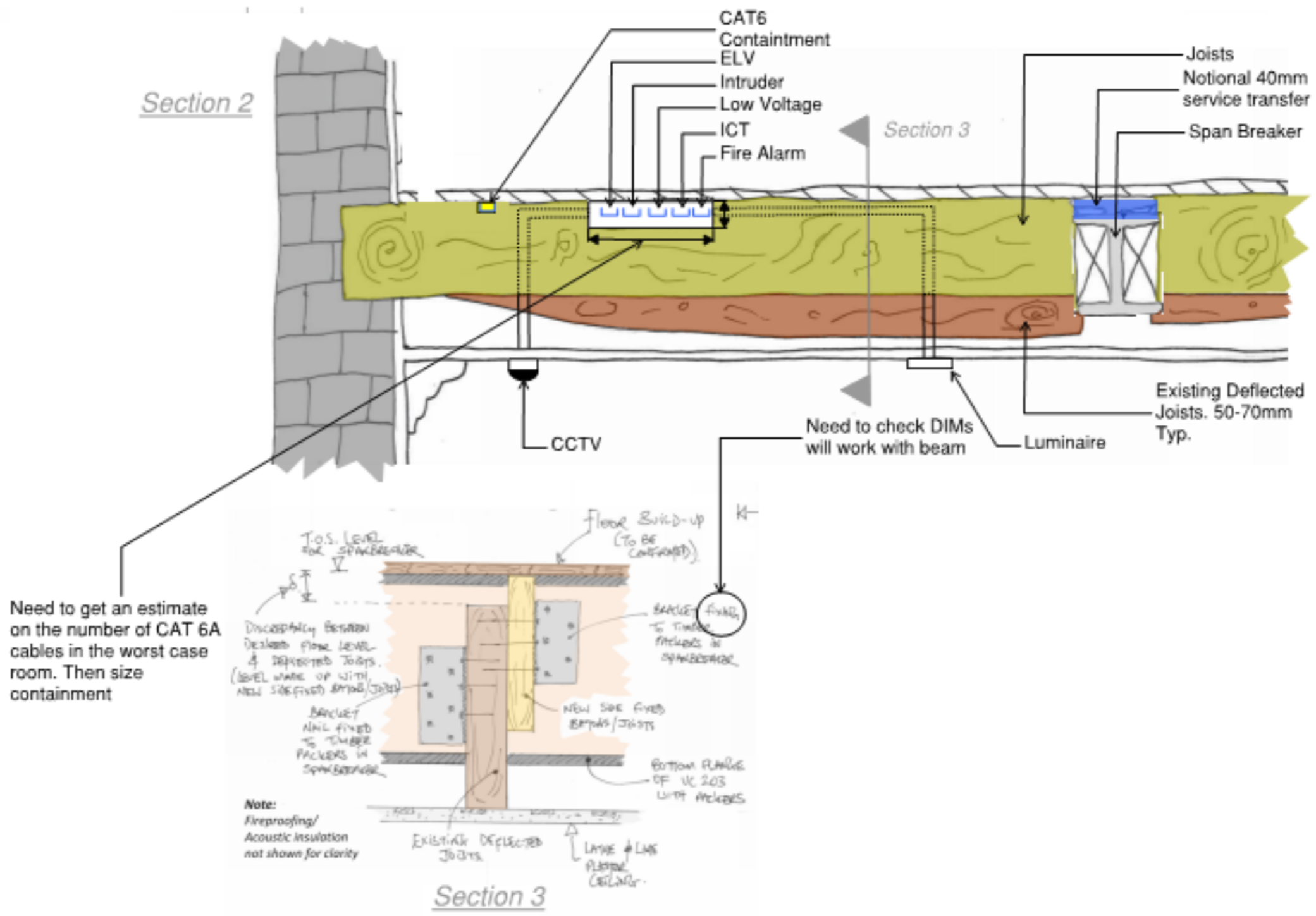
Note: Example room taken from Georgian Building House 25, front of house

Mechanically Ventilated Strategy:  
Higher Cooling Requirements -SECTION 1



**Note:** Example room taken from Georgian Building House 25, 3rd Floor front of house

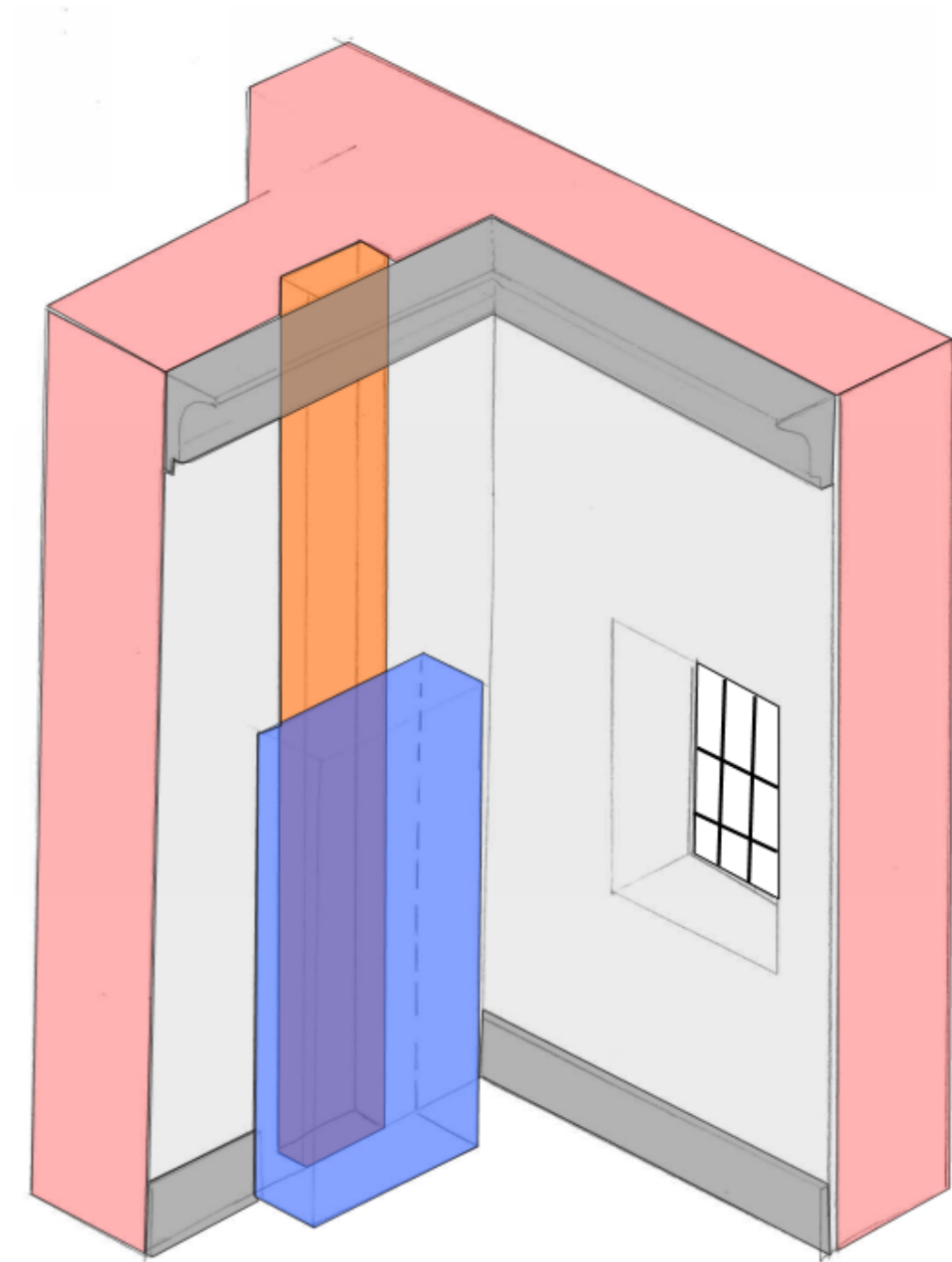
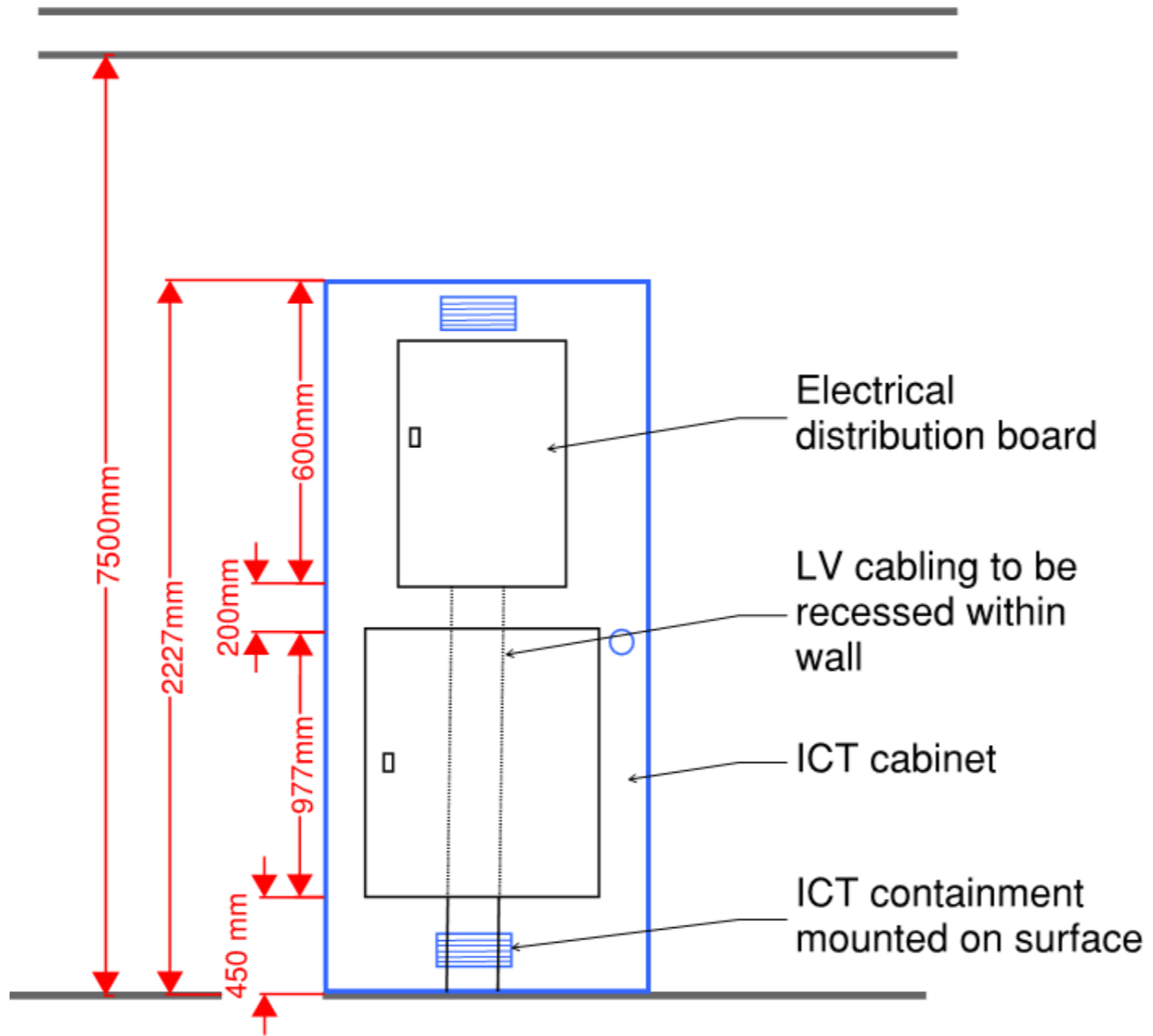
Mechanically Ventilated Strategy:  
Higher Cooling Requirements - Section 2 + 3



Need to get an estimate on the number of CAT 6A cables in the worst case room. Then size containment

Note: Example room taken from Georgian Building House 25, 3rd Floor front of house

# ELECTRICAL RISER LAYOUT



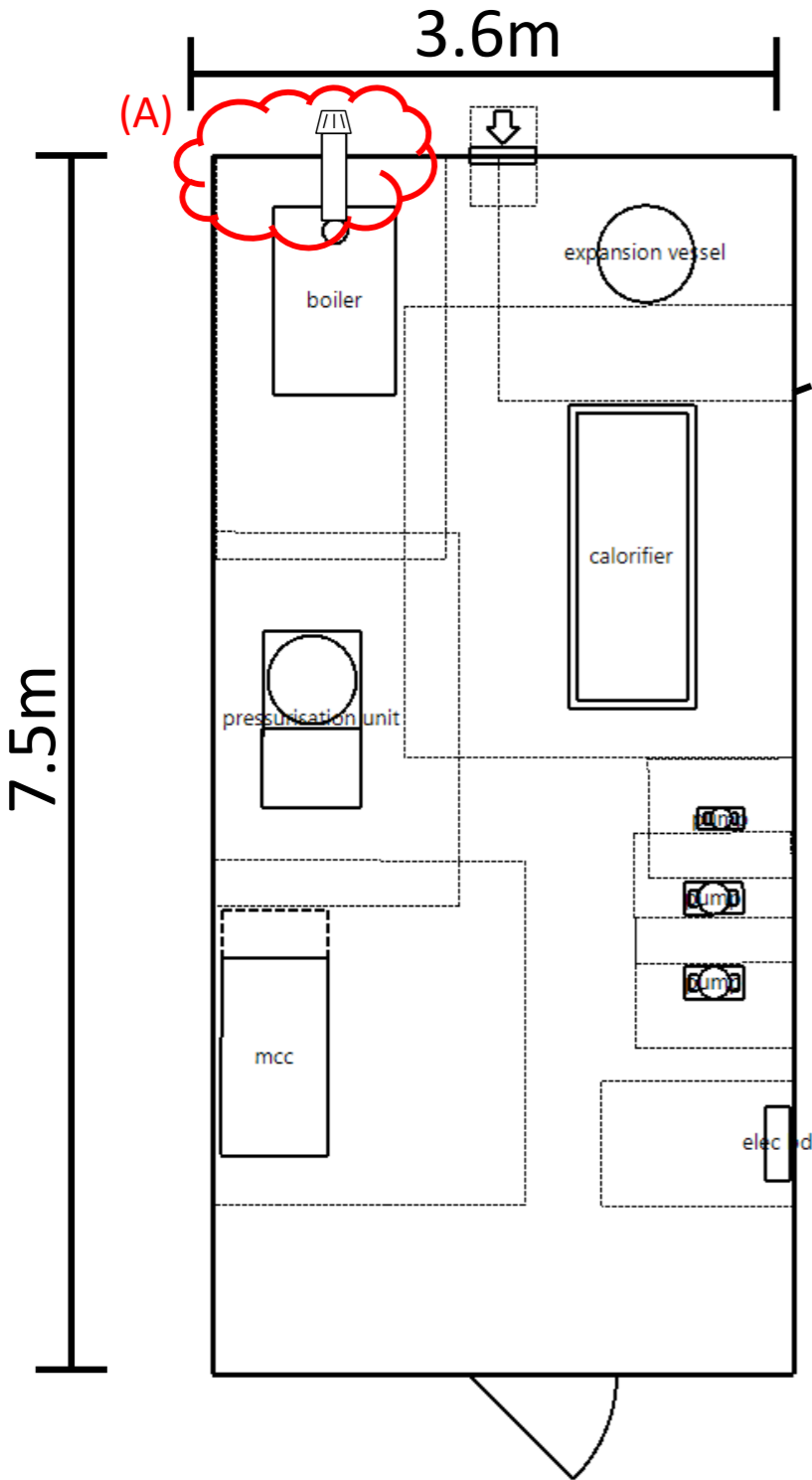


This document outlines the proposed strategies for Houses 20-21 for heating, ventilation, electrical and ICT.

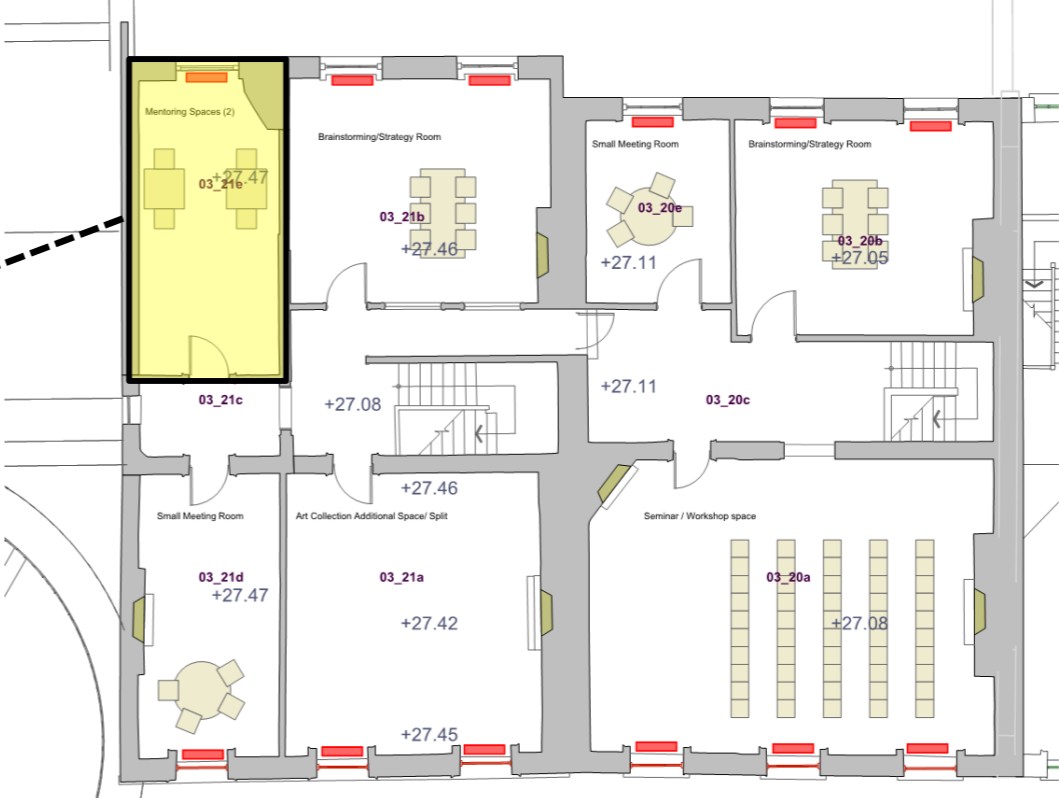
# MECHANICAL

# PLANT SPACE

# Proposed Boiler Room



Potential Location



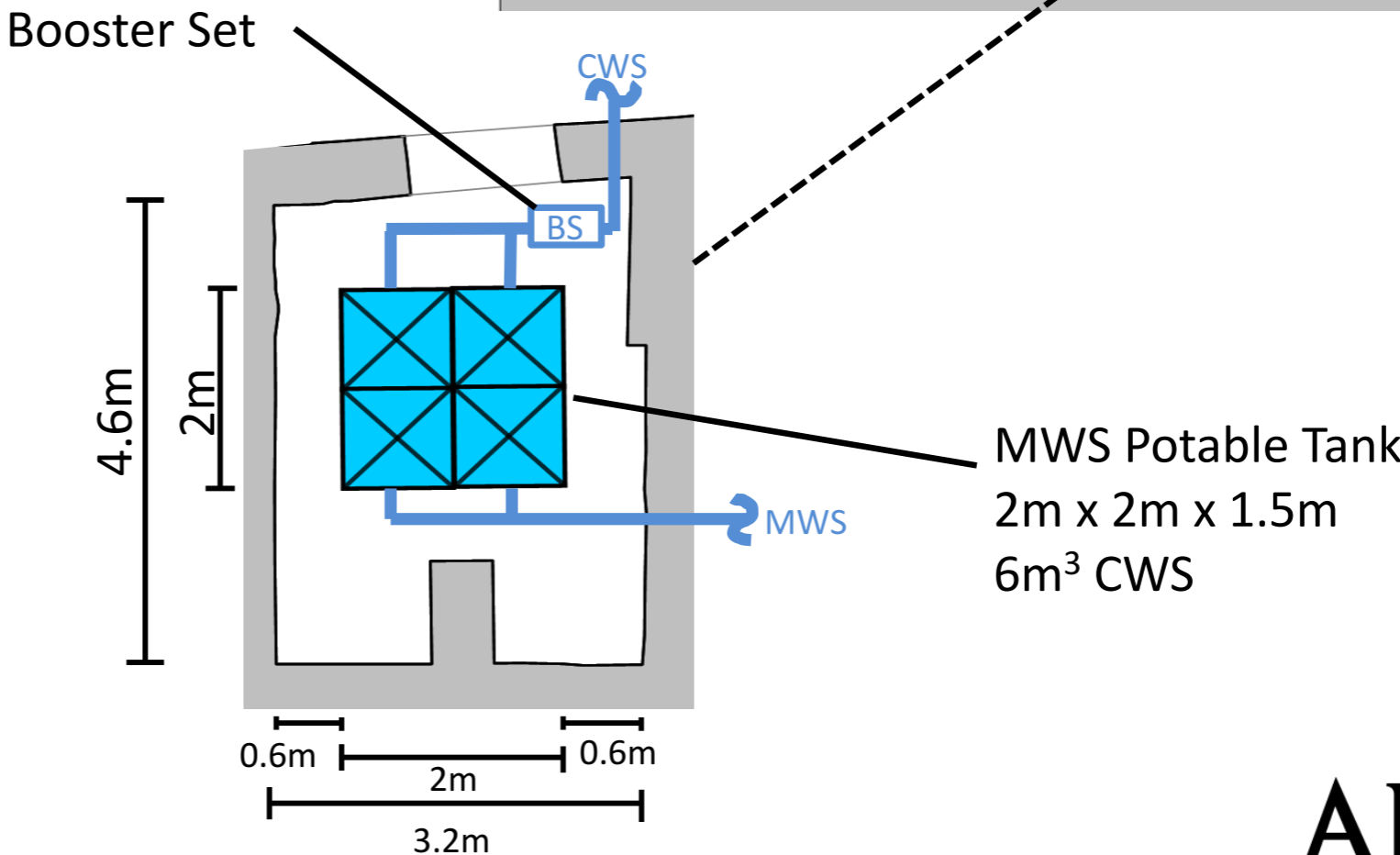
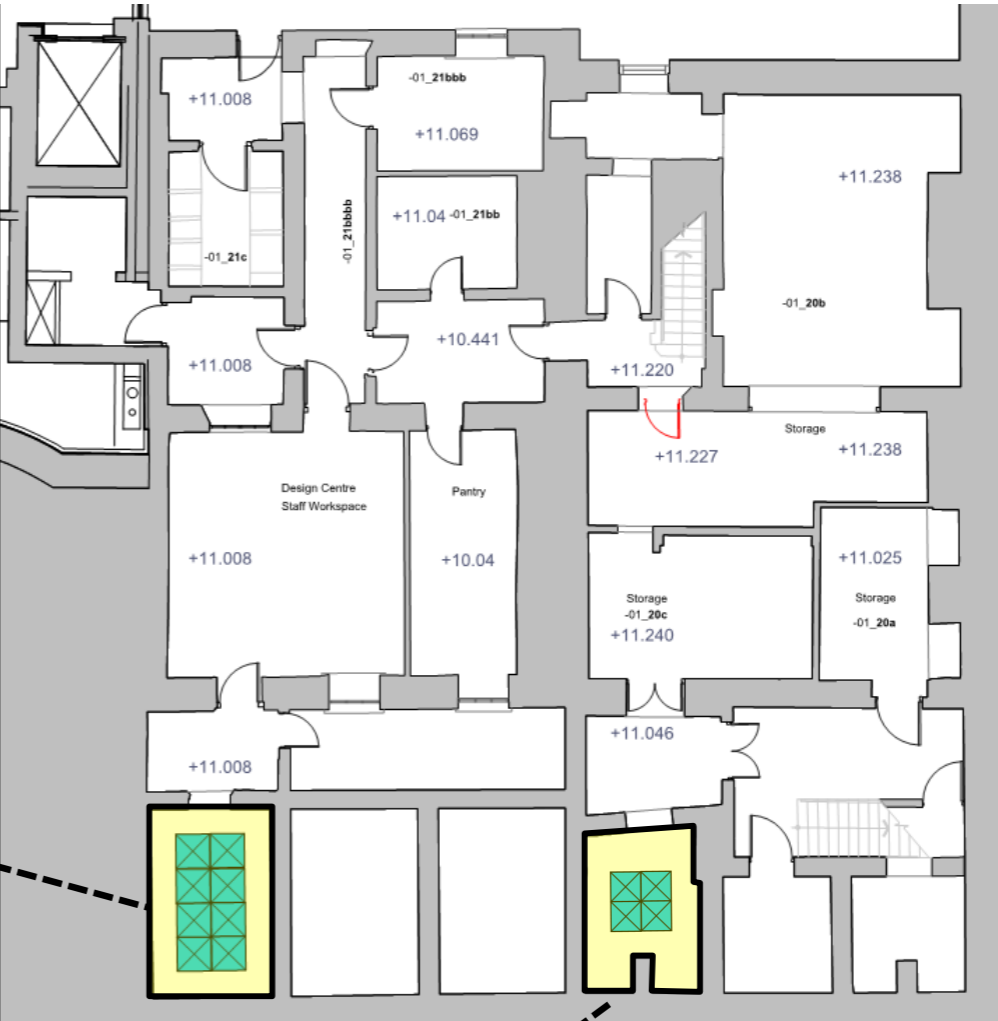
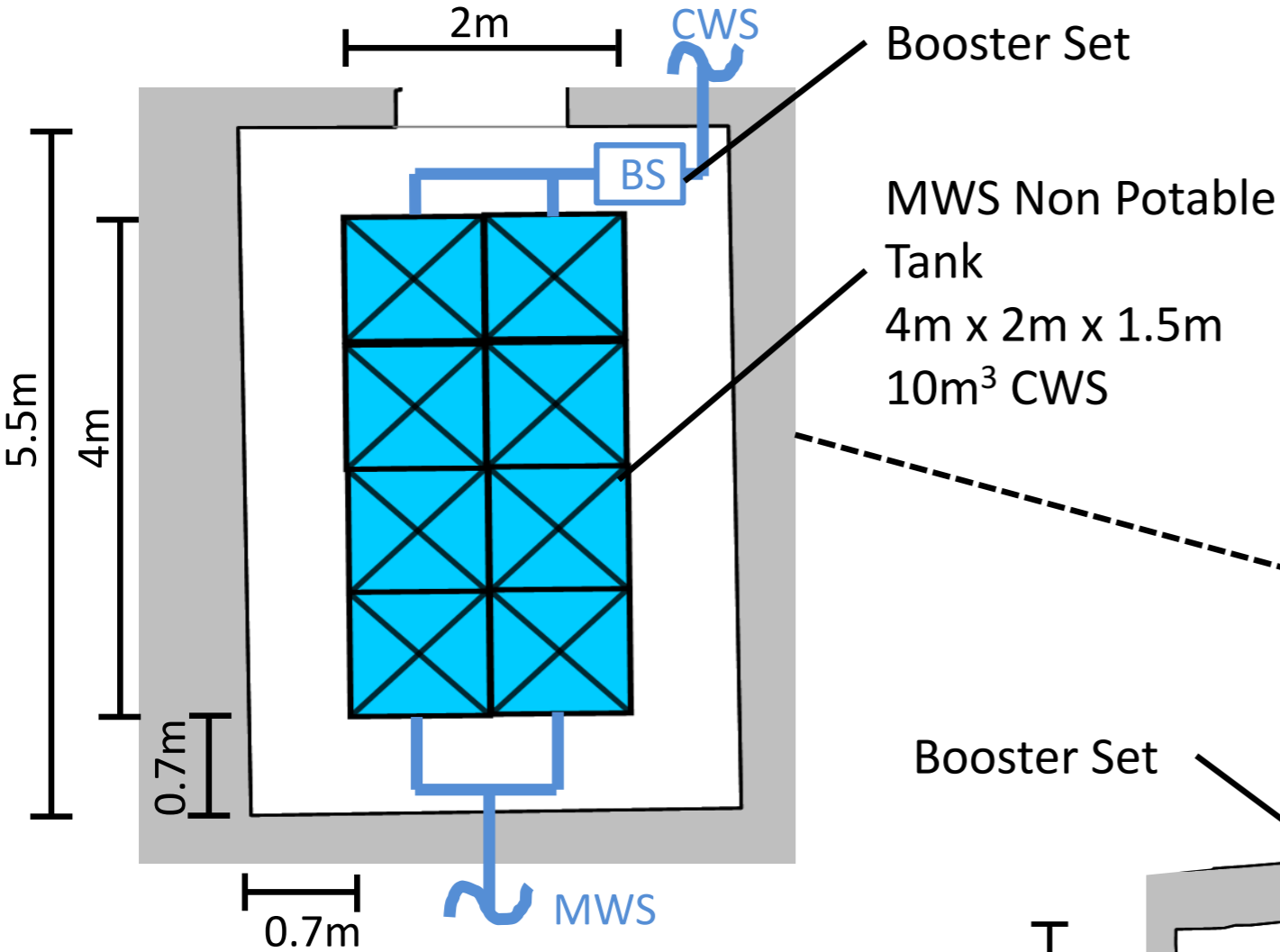
Third Floor – 03\_21e

(A) Flue could leave plant room through wall at rear of house or rise vertically through roof

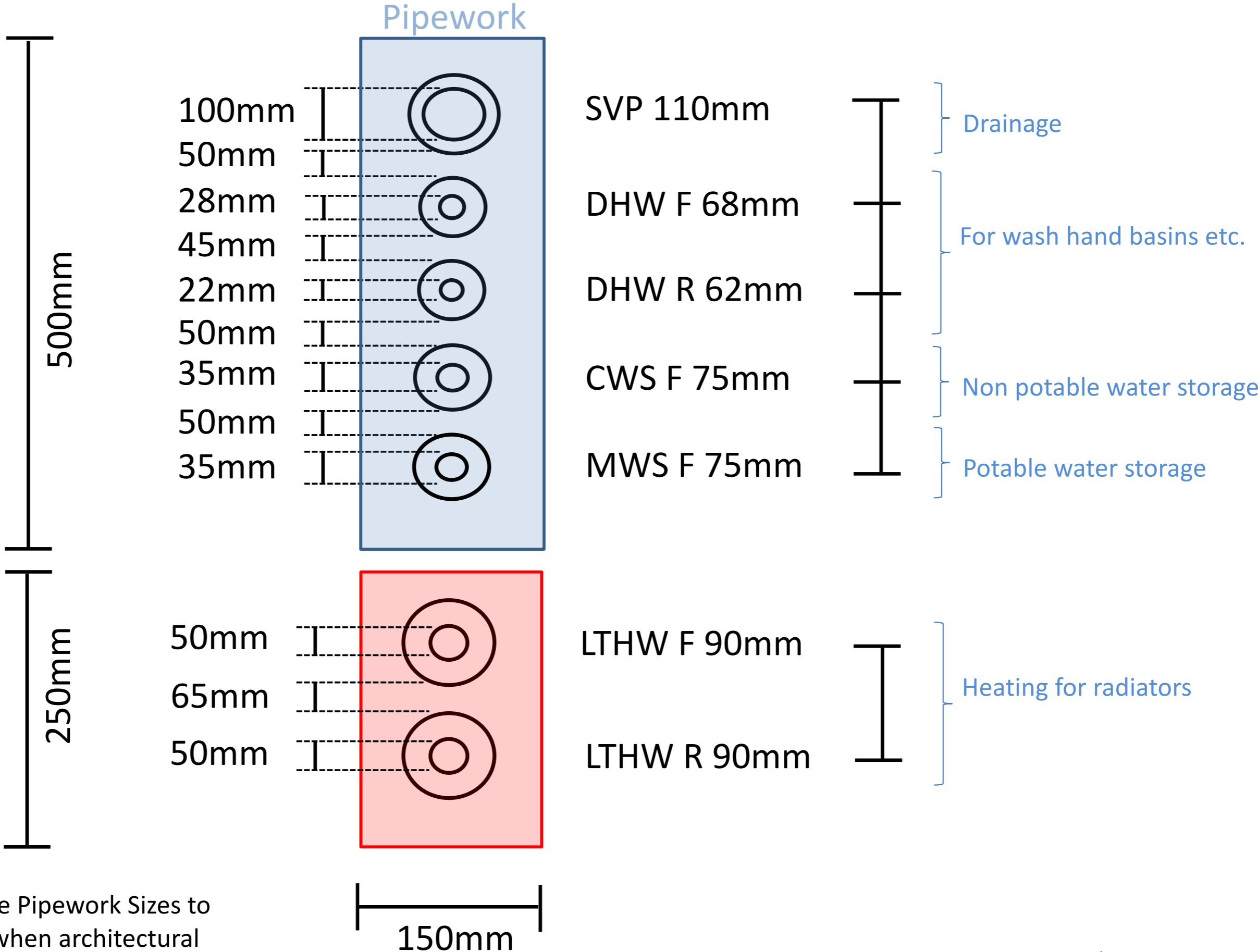
Note: Flue path is minimised by locating plant room on the top floor of the house. This removes risk of flue gases being drawn back in windows by means of natural ventilation

# Proposed Cold Potable & Non-Potable Water Storage

Basement Floor – Cellar 1 & 4 :

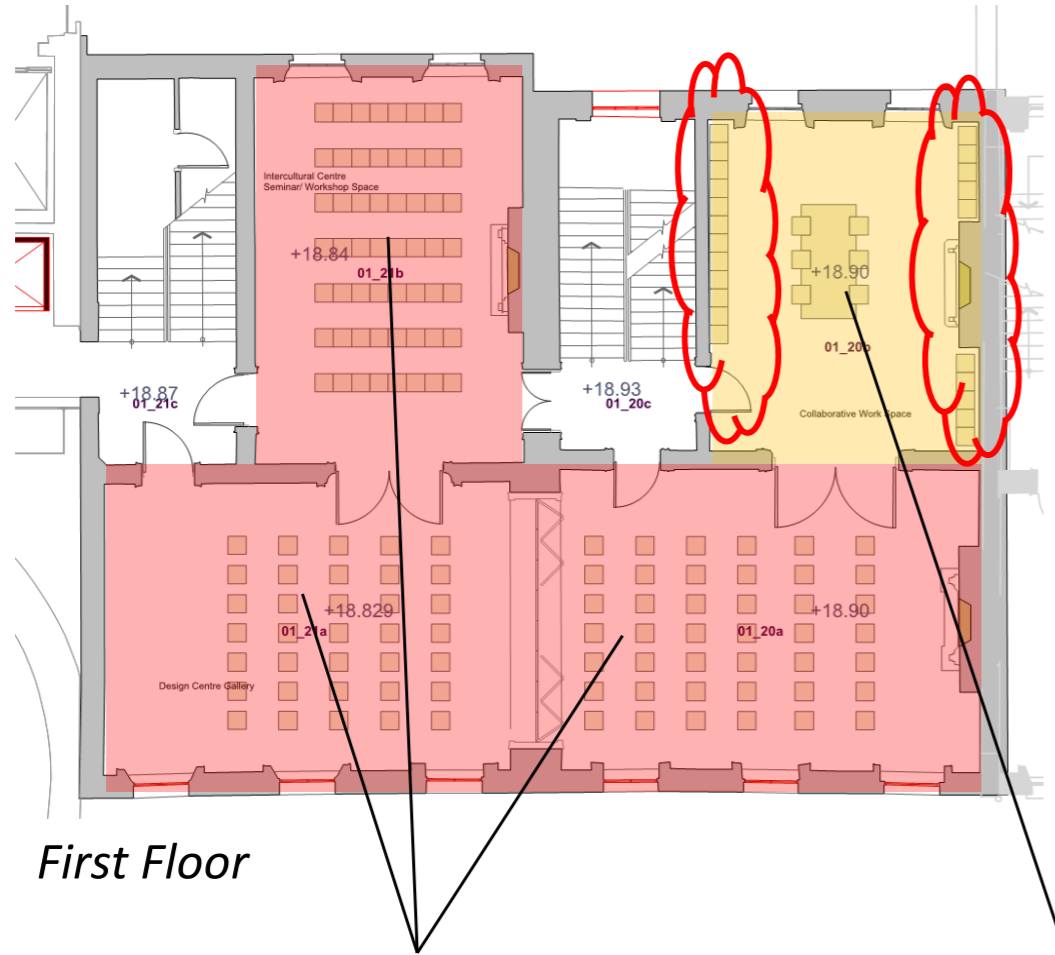


# Public Health/ Water Services/ Heating Riser Requirements



Note: Indicative Pipework Sizes to be confirmed when architectural layouts are finalised

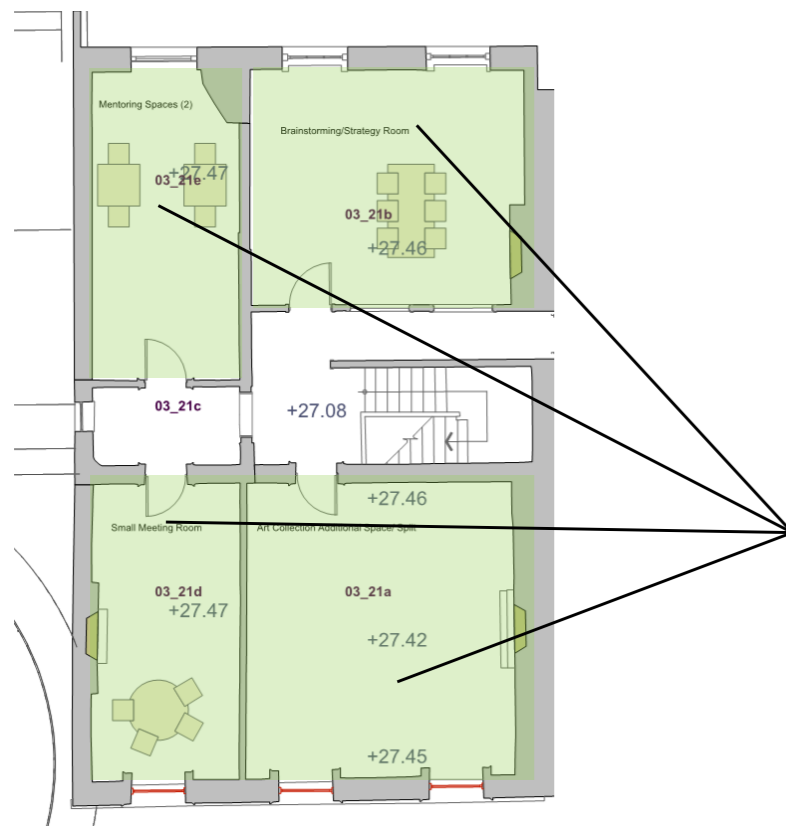
# Ventilation/ Cooling



First Floor

Occupancy profiles too large for natural ventilation to work

Natural Ventilation would be a viable option in this space if the perimeter seating was removed

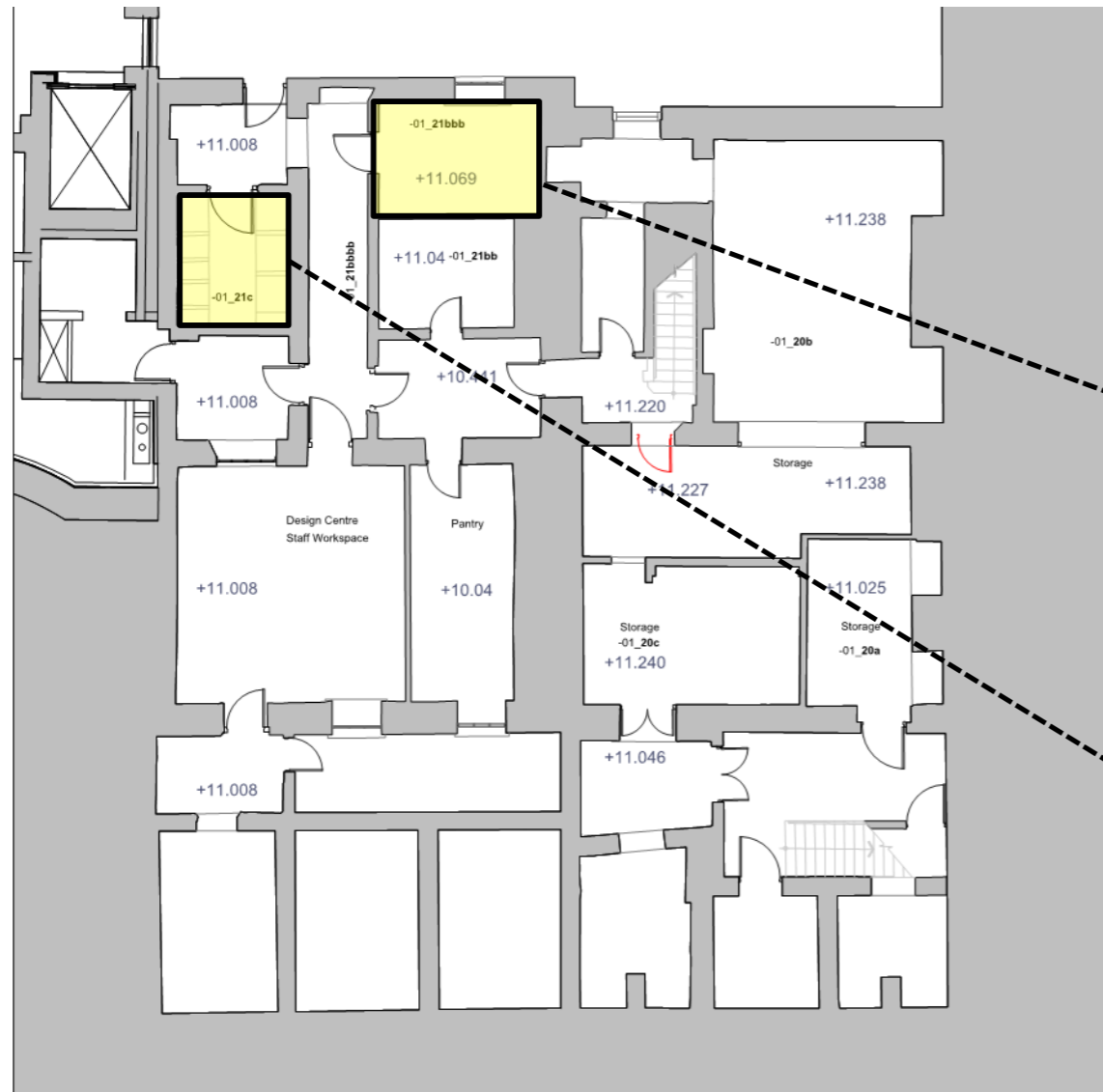


Third Floor - House 21

Natural Ventilation is a viable option for all spaces on the 3<sup>rd</sup> floor of house 21

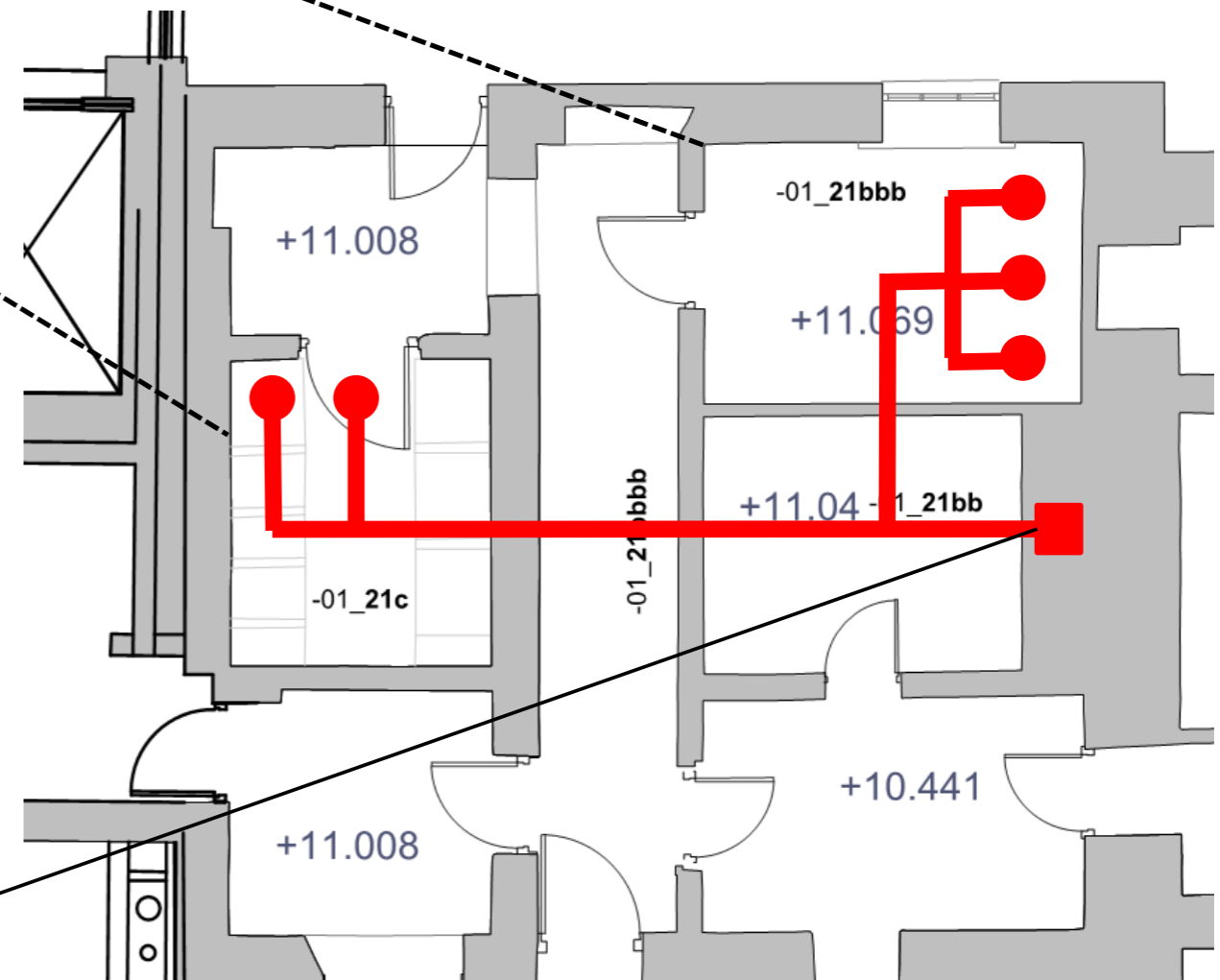
- Natural Ventilation is available for Houses 20 & 21 with windows to the outside on either side of the houses
- This will not be a solution for high occupancy spaces
- No mechanical ventilation/cooling is currently allowed for 20/21. Access from Houses 20/21, to the AHU's in the New Build plant room is limited. Complications arise when trying to link the two. There is no clear route.
- For natural ventilation to work, space functions and occupancy profiles need to be reviewed.

# Toilet Extract



Basement Floor

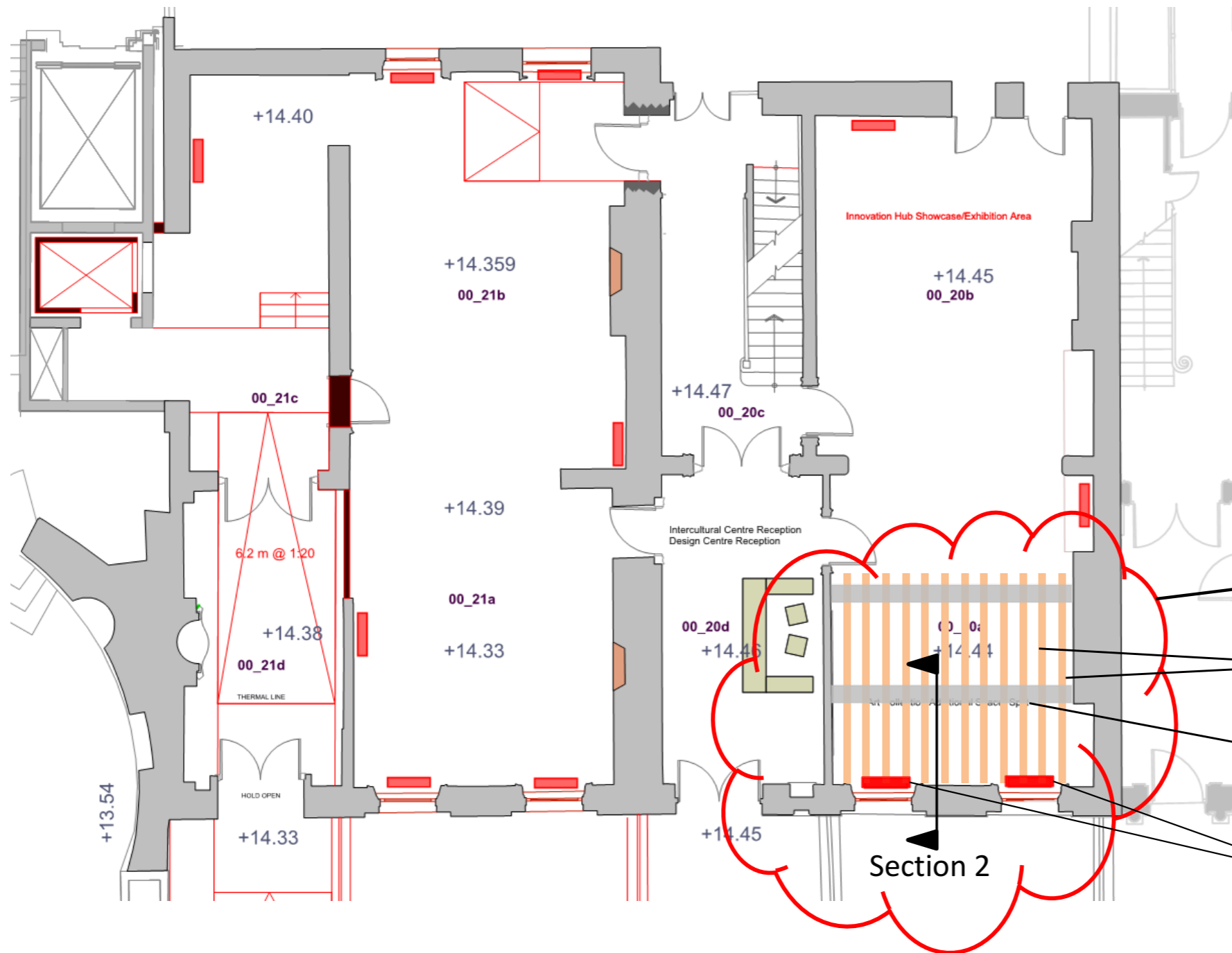
- Current architectural layouts do not have toilets. As a result, toilet locations are assumed as per previous layouts in the Stage 2B MEP Report.



Flue assumed clear to transfer toilet extract to roof level



# Heating



- Heating F&R pipework route to be determined when riser locations are confirmed
- Radiators indicatively placed around perimeter of floor plate.
- Each level is to be heated with the same strategy
- Services to run in between joists as per Houses 23-28

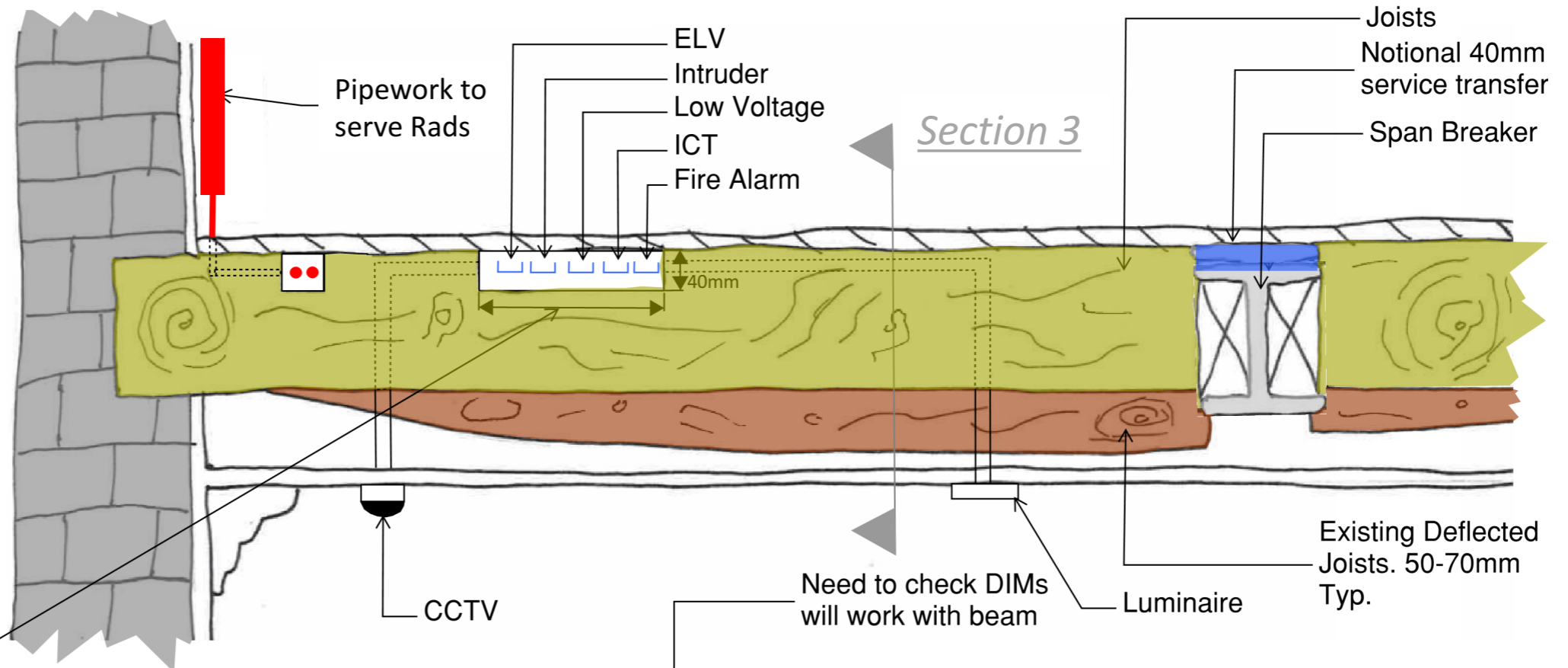
Indicative Layout

Joists

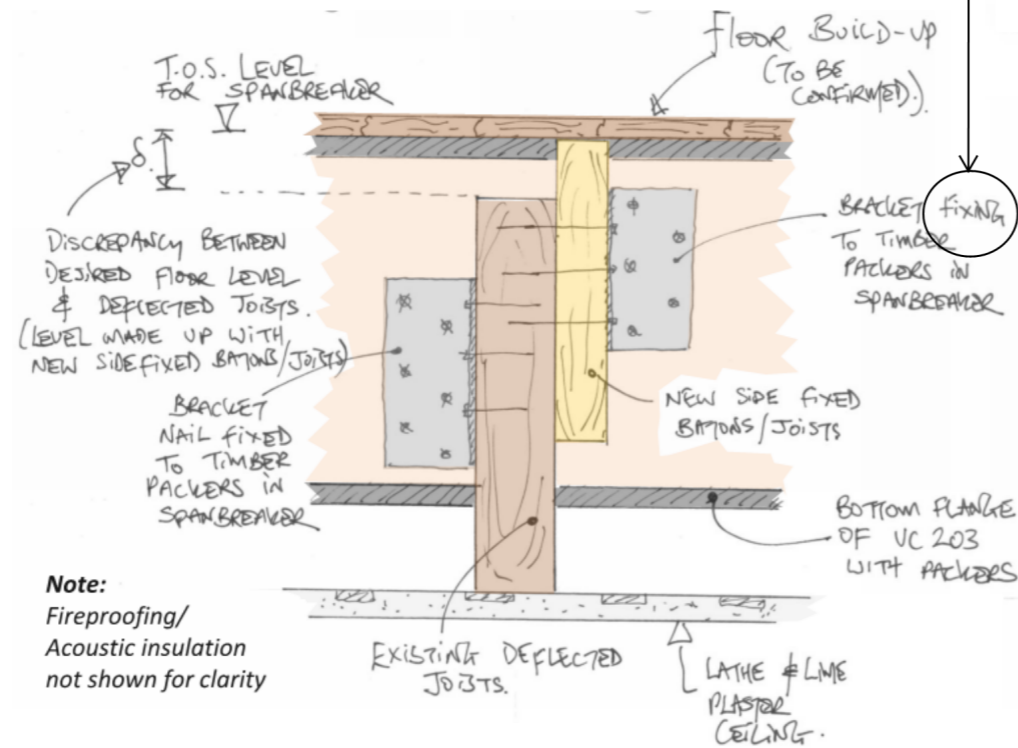
Notional Span Breaker

Radiators

Section 2

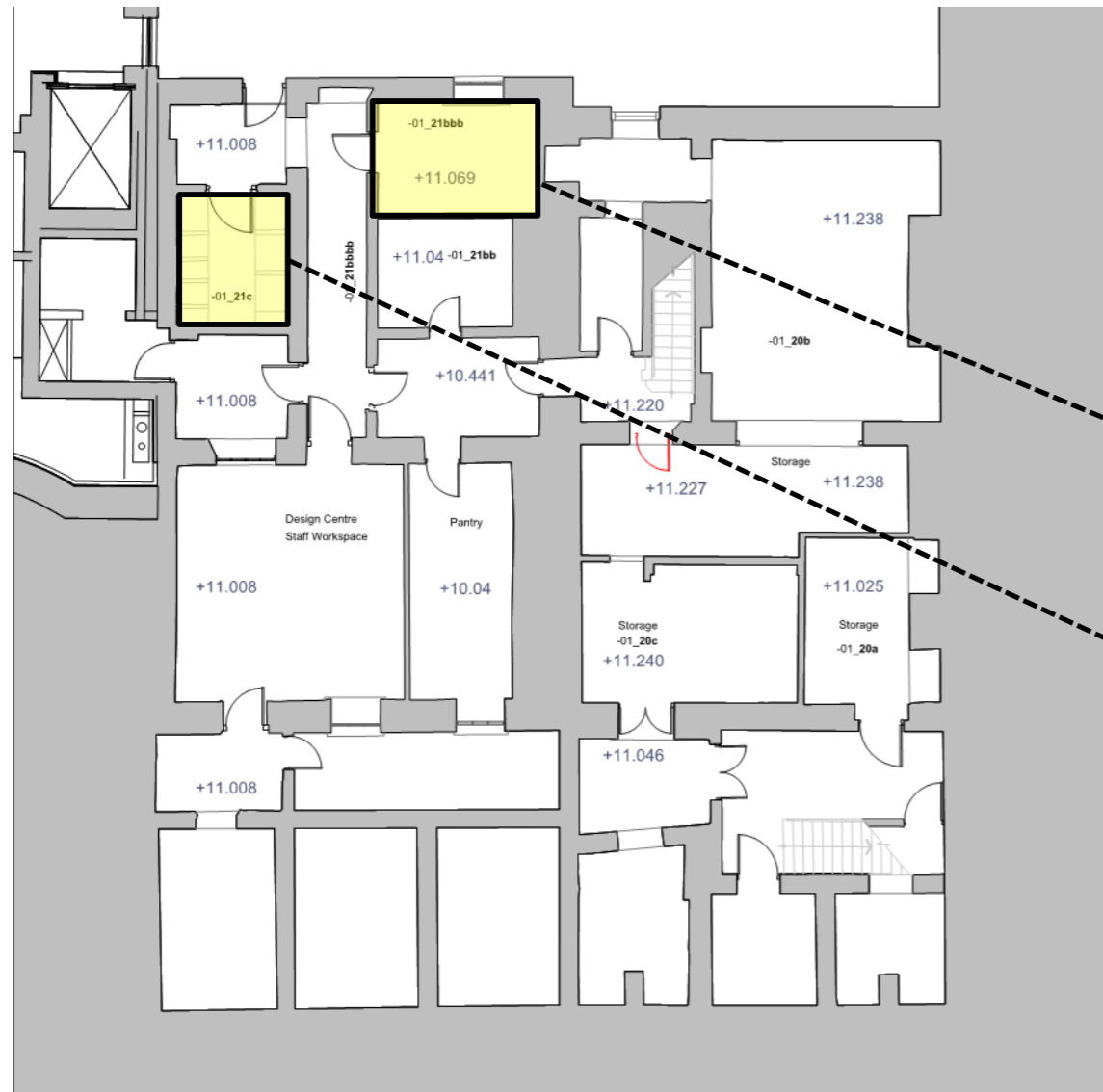


Need to get an estimate on the number of CAT 6A cables in the worst case room. Then size containment



Section 3

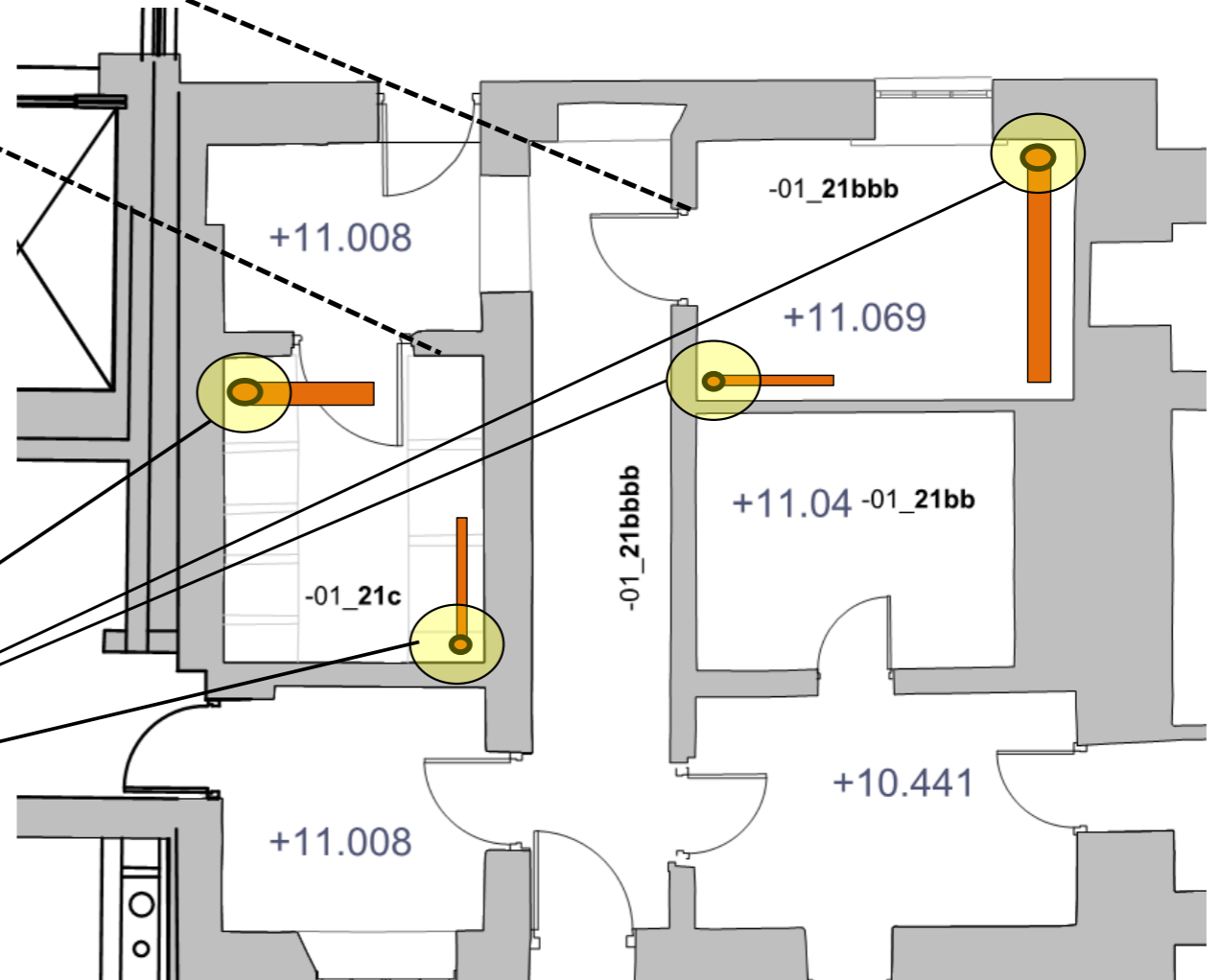
# Above Ground Drainage



Basement Floor

- Current architectural layouts do not have toilets. As a result, toilet locations are assumed as per previous layouts in the Stage 2B MEP Report.
- Water service locations are yet to be determined in house 20/21. Additional civils drainage pop-up locations will be required

Indicative civils pop-up locations



# ELECTRICAL/ ICT

# PLANNING FOR HOUSES 20/21

Houses 20/21 are part of the planning application for Parnell Square Cultural Quarter. Houses 20/21 are separated by Hugh Lane Gallery (HLG).

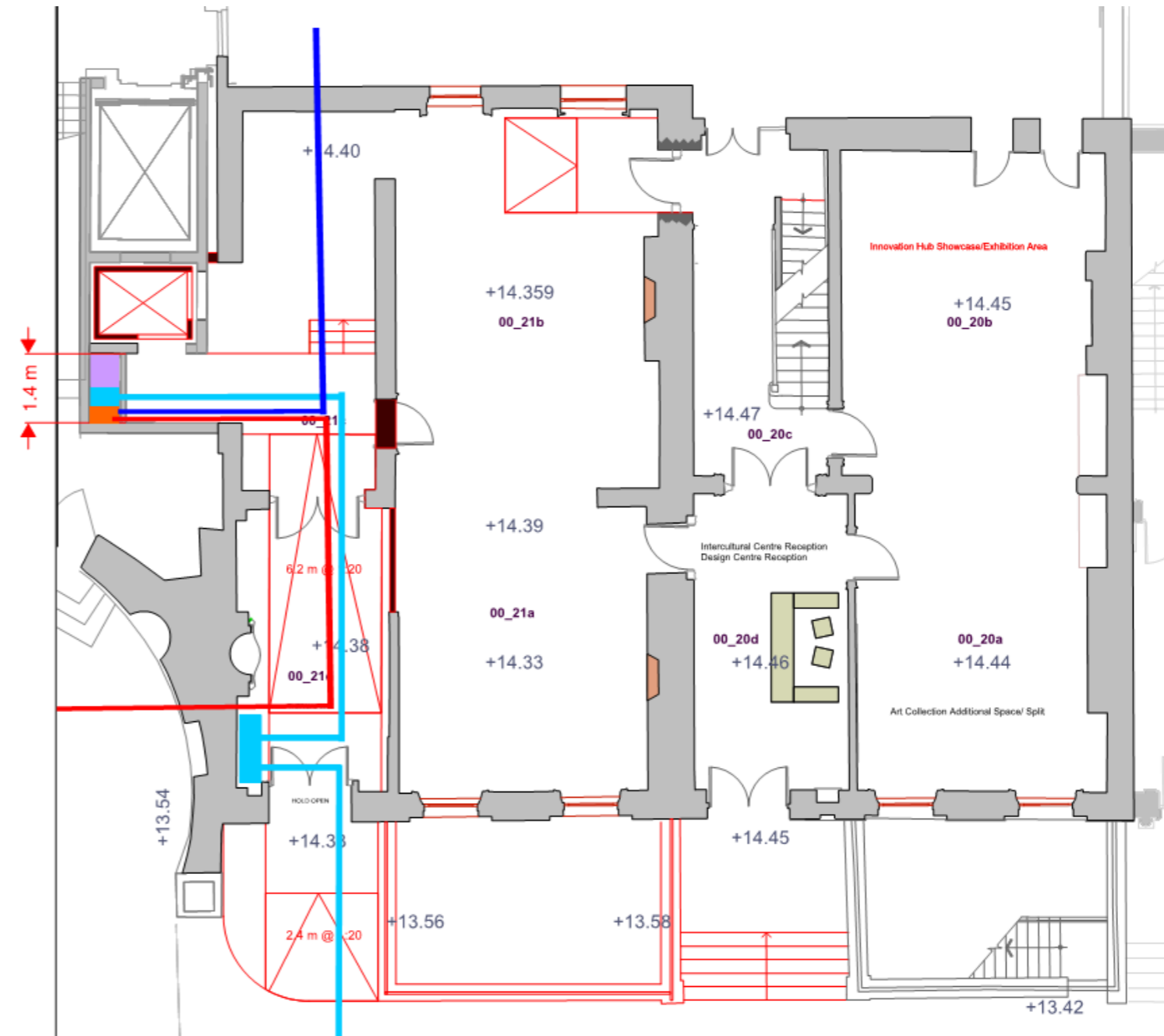
To provide resilient ICT connections it is proposed to provide two separate connections between PSCQ and House 20/21.

One route could be through Hugh Lane Gallery (across the roof) and second one through the path in front of the main entrance to HLG, or two cable routes across the roof of HLG.

Both routes need to be confirmed with the authorities/client for both buildings (HLG and PSCQ).

It is proposed that power to House 20/21 will be connected via new or existing ESNB connection. It also needs to be confirmed with ESNB.

The full strategy will be demonstrated on the next slides.

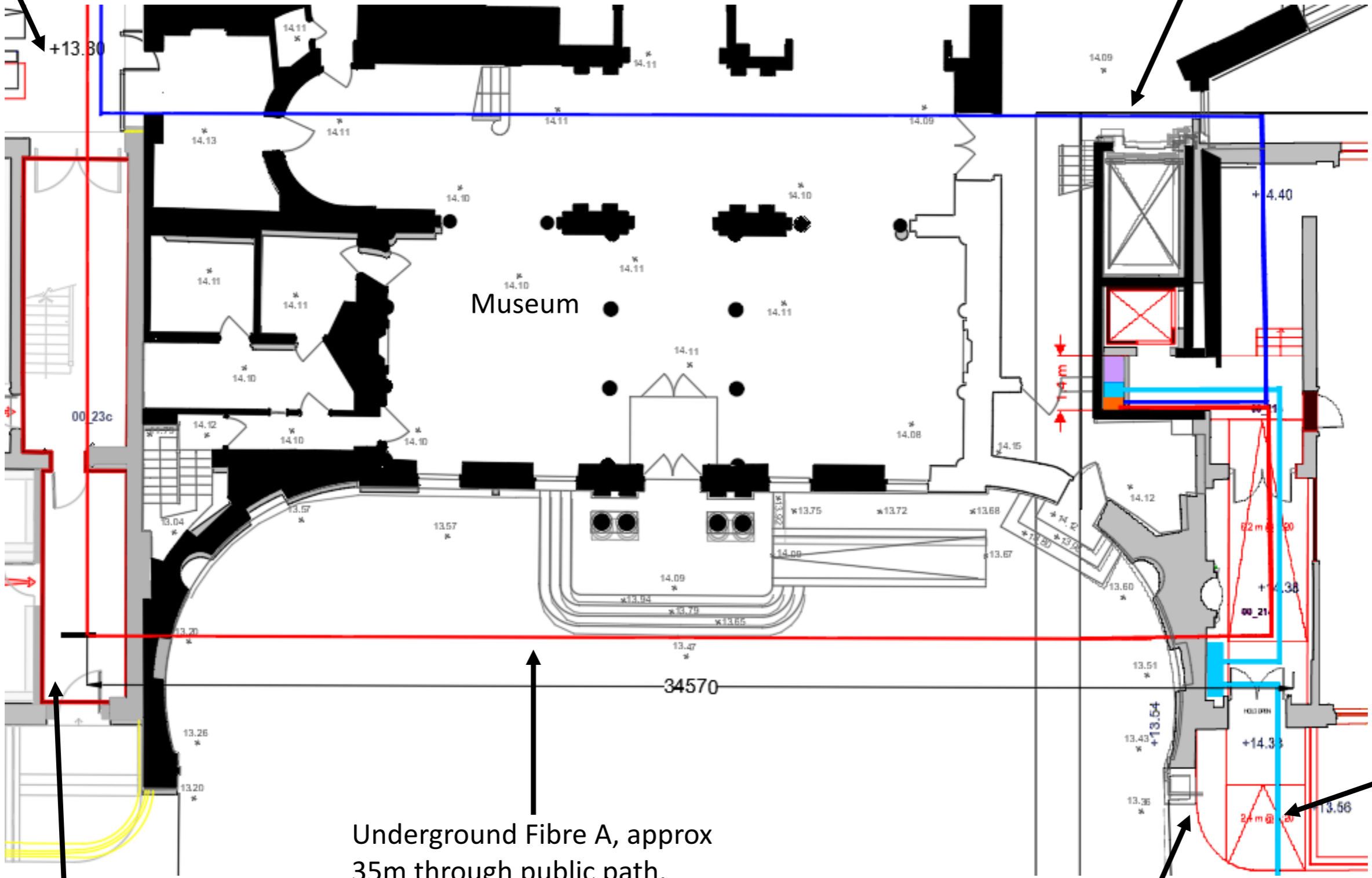


# FLOOR PLAN – GROUND FLOOR

New Building

Fibre A + B originates from ICT room on ground floor.

Fibre B run through the Hugh Gallery.



00\_23c

Museum

34570

Electric from ESB network

Underground Fibre A, approx 35m through public path.

Georgian Building

Houses 20- 21

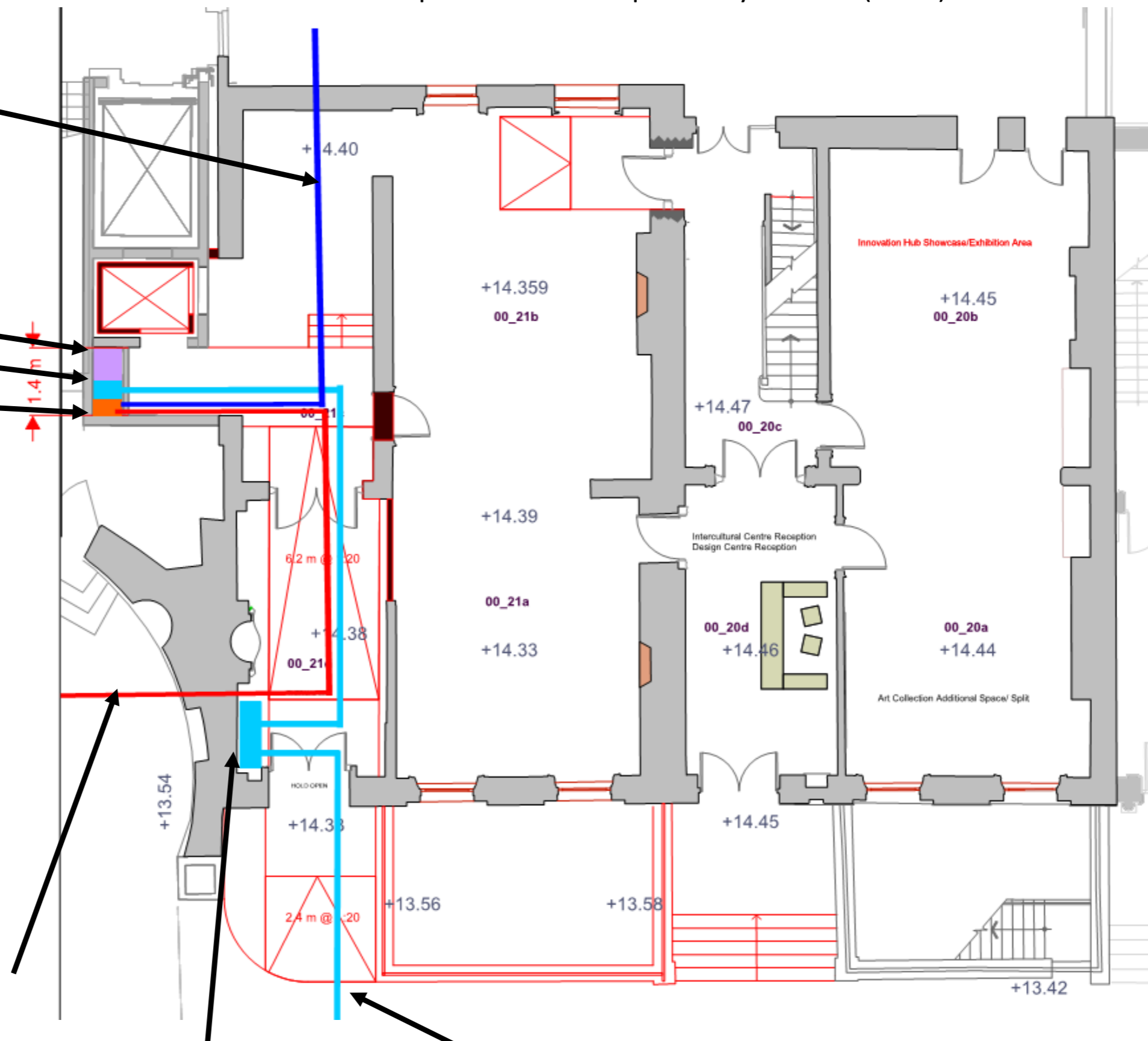
# FLOOR PLAN – GROUND FLOOR

Will be considered 1 loop of fibre between the ICT cabinets on Houses 20/21. This loop will be contemplated by 2 fibres (A + B) to increase the reliance.

Fibre B connection to a comms cabinet in house 21 by a 25mm duct from Hugh Gallery.

Mech Riser  
Electrical Riser  
ICT Riser

Fibre A connection to a comms cabinet in house 21 by a 25mm duct underground from public path.



Main Elect switchboard

Houses 20-21 will be powered by ESB network

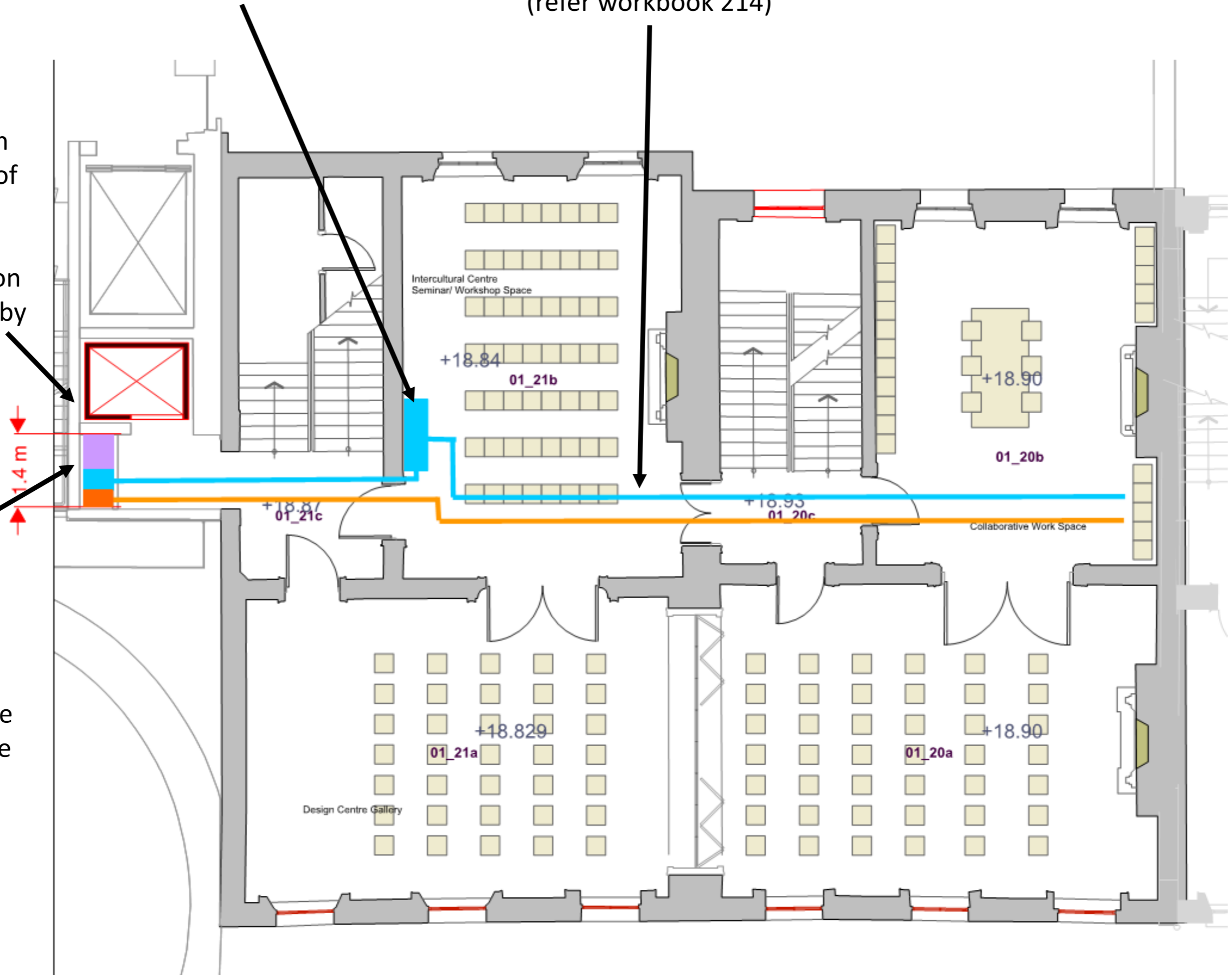
# FLOOR PLAN – FIRST FLOOR

Containment will be run at high level from the riser for each level (refer workbook 214)

Secondary switch board

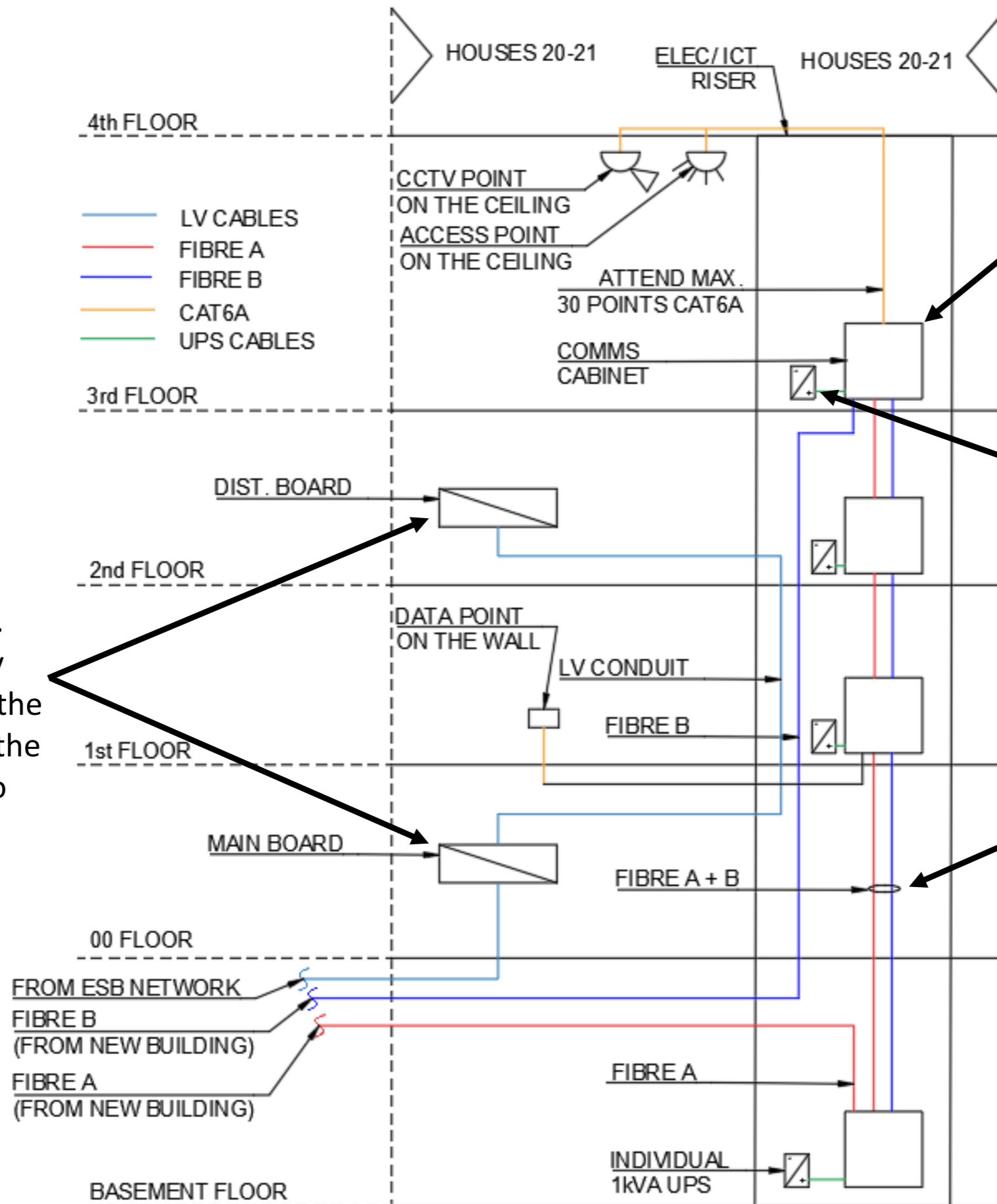
A comms cabinet will be housed in the riser at each level (maximum capacity of 30 data points). Where required, additional cabinets can be installed on the floor plate and linked by fibre cabling (A+B).

Two main panels will be installed on GF and 2nd. The GF panel will supply power to equipment in the basement and GF, with the other panel supplying to the remainder of the houses.





# SCHEMATIC



Two main panels will be installed on GF and 2nd. The GF panel will supply power to equipment in the basement and GF, with the other panel supplying to the remainder of the houses.

A comms cabinet will be housed in the riser at each level (maximum capacity of 30 data points). Where required, additional cabinets can be installed on the floor plate and linked by fibre cabling.

Each comms cabinets will have its own 1kVA UPS.

Fibre A + B loop interlinks all comms cabinets.