Design status

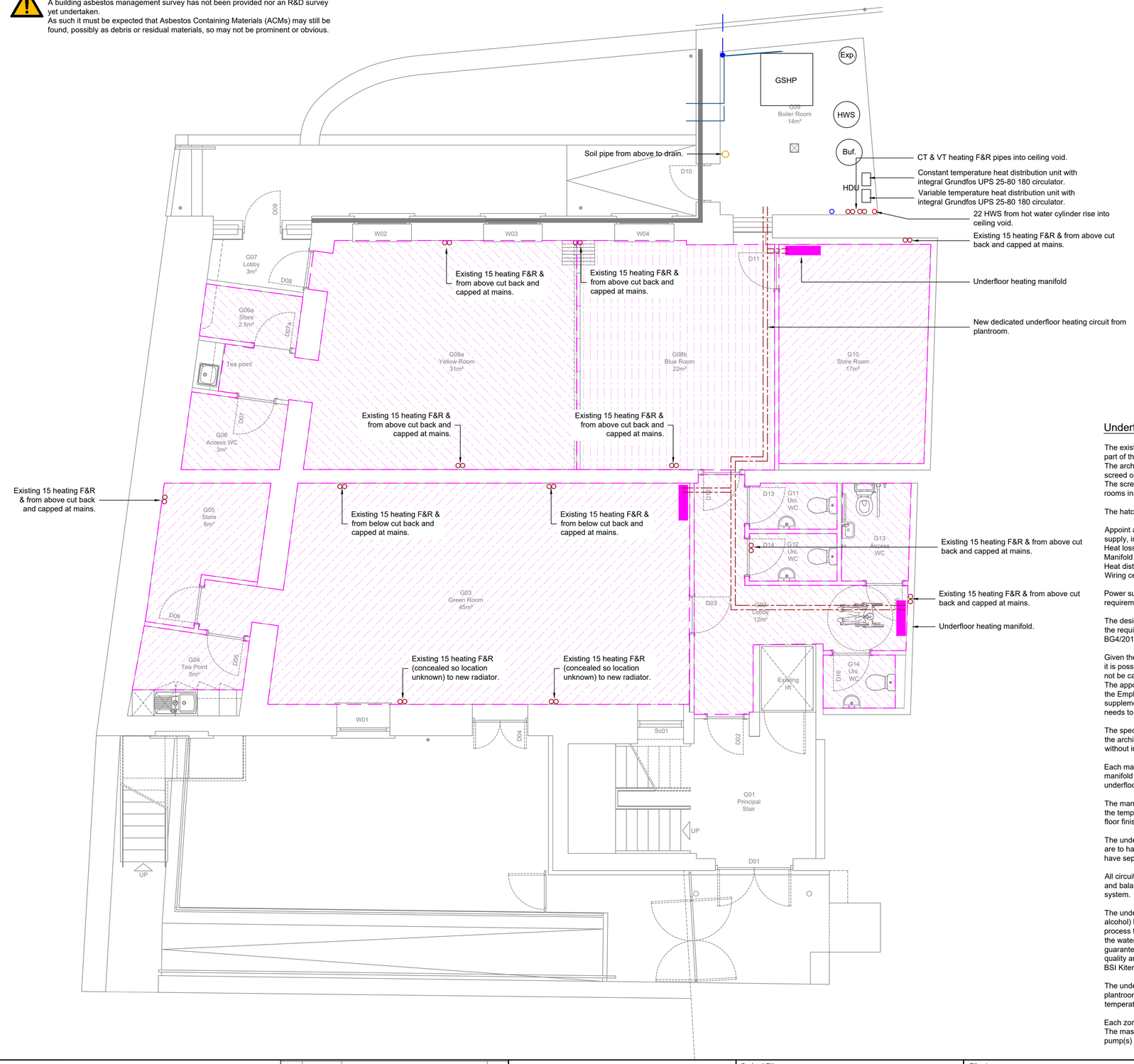
This is not a detailed design drawing and is not to be used for installation purposes. The final detailed design, coordination and installation is the responsibility of the appointed contractor. This drawing is intended to illustrate intent, not provide full detail, and reference must be made to the specification for further information.

Information on this drawing is based on visual non-intrusive survey. Not all mechanical services shown on this drawing.

There are no "as installed" drawings of the existing services systems. Pipework distribution routes are generally concealed and unknown. The distribution of the constant and variable temperature circuits from the heat distribution units is unknown.

Asbestos Containing Materials (ACMs)

The building was extensively refurbished in 2010.
A building asbestos management survey has not been provided nor an R&D survey yet undertaken.
As such it must be expected that Asbestos Containing Materials (ACMs) may still be found, possibly as debris or residual materials, so may not be prominent or obvious.



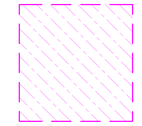
Heating system modifications for underfloor heating.

While the existing pipe distribution arrangement is unknown, it appears that lower ground floor radiators are fed from above, implying that the lower ground and ground floors are on the same heating distribution pipe circuit.

To improve zoning of the heating system and facilitate a separate underfloor heating circuit, it is proposed to create a dedicated lower ground floor heating circuit originating from the main plantroom.
It is envisaged this will require creating a new set of flow and return connections from the heat pump primary with new heat distribution unit, similar to the two existing.
All existing heating pipe drops to lower ground floor radiators are to be removed and cut back to the flow and return pipe mains.
The heat load from the lower ground floor radiators is then removed from the existing pipe circuit to be transferred to the new dedicated underfloor heating pipe circuit.

The heat pump and heating controls will need to be modified to include this new additional zone.

This is to be considered as a costed option when ceiling opening up works are undertaken and the existing pipework distribution system is exposed for investigation and assessment of installation practicality.



Indicative underfloor heating manifold zones

Underfloor heating option

The existing floor throughout the lower ground floor is being excavated and replaced as part of the waterproofing works.
The architects has provided floor details which includes floor finishes directly on a 75mm screed on top of a cavity drainage system.
The screed offers an opportunity to install embedded LTHW underfloor heating to all rooms instead of radiators.

The hatched zones are indicative of potential underfloor heating manifold zones.

Appoint a registered and approved underfloor heating system specialist to design, supply, install and commission the underfloor heating system including:
Heat loss calculations
Manifold design
Heat distribution pipework from the manifold
Wiring centres, controls and all controls wiring.

Power supplies will be installed by the electrical services contractor based on the requirements provided by the specialist.

The design and installation of the underfloor heating systems is to be in accordance with the requirements and guidance given in BS EN 1264 Parts 1-4 and BSRIA Guide BG4/2011.

Given the nature of the building and the poor thermal performance of the building fabric, it is possible that the potential output of the underfloor heating in individual rooms will not be capable of achieving the required "comfort" temperature during colder weather. The appointed underfloor heating specialist is to review their heat loss calculations with the Employer to establish whether supplementary heating is required. The need for supplementary heaters may impact on the design of the heat pump system so also needs to be discussed with the appointed heat pump specialist.

The specialist must be aware of the floor constructions and finishes being proposed by the architect and develop a system solution which can achieve the outputs required without impact on the quality of the floor finishes, adhesives or bonding materials.

Each manifold may have a dedicated mixing valve and circulation pump as part of the manifold assembly to ensure correct control of the water temperature and flow to the underfloor circuits.

The manifolds are to have hard wired over-temperature valves/sensors to ensure that the temperature of the underfloor circuits does not increase sufficiently to damage the floor finishes.

The underfloor heating manifolds are shown indicatively on the drawings. The manifolds are to have sufficient separate circuits for heating to multiple zones, each of which is to have separate temperature control.

All circuits are to have separate electronic control actuators, room temperature sensors and balancing valves to ensure efficient heat distribution and control throughout the system.

The underfloor pipe coils are to be polybutylene barrier pipe and an EVOH (ethanol vinyl alcohol) barrier layer embedded within the pipe wall, using a 5 layer co-extrusion process to ensure that oxygen cannot permeate through the pipe wall over time, to enter the water circuit. Polybutylene pipe designed to last for the life of the building guaranteed for 100 years. Pipe manufactured to, and to perform to, all known European quality and performance standards, including BS EN 9001:2008 and BS EN ISO 21003 BSI Kitemarked.

The underfloor heating system is to have a master control unit, installed in the plantroom, with touch screen allowing time clock setting for each manifold and temperature set point and limits for heating zones.

Each zone will then have a thermostat for temperature control and frost protection. The master controller will also send an enable/disable signal to the air source heat pump(s) controls.

Health & Safety Hazards and Risks

All works indicated on this drawing are to be carried out by a Contractor competent to undertake the works.
Specific hazards relating to the works are indicated on this drawing.
These are in addition to the normal hazards and risks faced by a competent person or contractor when dealing with the types of works indicated on this drawing.

General Notes

1. Do not scale from this drawing.
2. All dimensions are in millimetres unless stated otherwise.
3. Prior to commencing any works all relevant dimensions & site features are to be verified against contractual information.
4. All proprietary components are to be installed in accordance with the Manufacturer's current written instructions.

Rev	Date	Description	By
P1	24/02/26	Updated following team feedback.	KP
P0	17/02/26	Issued for review and comment.	KP

Suitability Number Key BS 1192:2007

WIP
S0 - Work in Progress *
Shared
S1 - Fit for co-ordination **
S2 - Fit for information
S3 - Fit for internal review & comment
S4 - Fit for construction approval
Documentation
D1 - Fit for costing
D2 - Fit for tender
D3 - Fit for Contractor design
D4 - Fit for manufacture / procurement
Documentation Sign-off
A - Fit for construction
B - Fit for construction with comments
C - Comprehensive revisions needed
Archive
AB - As Built
FC - Final construction
* For internal pre-issue usage only
** For model file usage only

Project Title
Lower Ground Floor Refurbishment

Drawing Title
Underfloor heating option

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Discipline: Mechanical Enginering Systems
Scale @ A1: 1:50
Drawn: KP
Checked: PB
Job Number: 252672
Date: Feb 2026
Drawing Status: Stage 4 Performance Design
Suitability: S3
Revision: P1
Project - Origin - Zone - Level - Type - Role - Number
2552-HP-XX-LG-DR-M-830

Do not scale

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