WHITECODE
CONSULTING

Scope of Works – Boiler Room Replacement

Gorringe Park Primary School

Prepared for McBains

Revision 1

12 June 2025

Contents

Revisions:

Rev No:	Date:	Status/Comments:	Prepared by:	Checked by:
01	12.06.2025	Scope of Works – Boiler Room Replacement	CM	AH

1. Project Overview

The project involves the removal of the existing boiler plant and the installation of a new, high-efficiency boiler system. The works must be completed with minimal disruption to school operations and in strict adherence to health, safety, and safeguarding policies applicable in educational environments.

2. Background Information

The current boiler system is over 30 years old, inefficient, and no longer suitable for the school's heating and hot water demands. The project forms part of the school's building services upgrade programme to improve energy efficiency and ensure safe, reliable heating for pupils and staff.

3. Detailed Scope of Work

The Contractor shall supply all labour, materials, equipment, and services necessary to carry out the complete replacement of the existing boiler plant. The works include, but are not limited to:

- Operation checks with replacement of radiator/emitter control valves as required
- System flush.
- Decommissioning and safe removal of existing boiler plant.
- Supply and installation of new energy-efficient gas-fired condensing boilers.
- Modifications to existing heating pipework and controls to integrate new plant.
- Upgrading of flue systems to meet current standards.
- Commissioning, testing, and demonstration of the new system.
- Provision of all relevant O&M documentation and training to site staff.

3.1. Detailed Method Statement

In situ plant room option.

- Drain system.
- Cut pipes back to wall exist, remove all plant.
- Paint the floor and walls.
- Modify gas to suit new boiler array.
- Fit duty/assist/standby wall-hung boilers with preformed rig and hydraulic separation.
- Drill & install new individual flues through the flat roof and weather proof.
- Install new trend controls and new power and controls wiring, including metal containment.
- Installed gas protection system and interface with building fire alarm.
- Install HWS heat exchanger and secondary return pump.
- Install New pressurisation unit with built-in degassing.
- Install stream filter with magnets.
- Install pipe insulation to BS 5422:2023 -Thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range –40 °C to +700 °C.
- Including zinc cladding.
- Commission.

Prefabricated plant option

- Design and supply 300kW plant room, site.
- Deliver to site.
- Install gantry for power and pipes.

- Flush.
- Drill external wall into plant room.
- Disconnect the pipes.
- Run new LTHW, HWS and Main water pipes. Insulated to BS5422 with PIB covering externally and zinc cladding internally.
- Remove all unused plant and pipe work.
- Commission.

4. MEP Specification

4.1. System checks

Carry out operation checks of emitters.

Replace radiator/actuator valves as required.

4.2. System flush

Carry out a system flush to BSRIA BG29.

Chemically, the heating system includes a maintenance dose of biocide.

Send for laboratory analysis system and report results.

Check levels after the boiler plant is fitted, and backwash the new plant as required.

4.3. Boilers

High-efficiency gas-fired condensing boilers in a rig format with a heat exchanger to protect the plant from the existing system.

Minimum seasonal efficiency: 92% (ErP Directive compliant).

Modular arrangement for redundancy and staged control.

Integrated controls with BMS, external weather compensation, and optimum start via 0-10Volt input.

Appropriate for indoor plantroom installation with adequate clearance for maintenance.

4.4. Heating System

Integration with existing LTHW distribution pipework.

New pumps with variable speed drives (VSD) for secondary circulation.

The inclusion of expansion vessels, pressurisation units with de-gassing on the secondary circuit (only), and safety valves as required.

Side-stream filtration and magnetic strainer for enhanced water quality.

4.5. Flue System

Stainless steel concentric or twin flue system with condensate drainage.

Designed to suit new boilers and terminated in compliance with BS 5440.

Chimney support and weathering detail as required.

4.6. Controls

The local boiler control panel is interfaced with the Building Management System (BMS). Weather compensation and time scheduling are to be included with the optimum start. The system shall monitor both the primary and secondary systems with the following minimum requirements:

Temperature

- Primary flow and return
- Secondary flow and return.
- Room temperature.
- Outside air temperature.

Pressure

- Primary
- *secondary*

Fault

- Boilers 1,2,3
- Pumps
- Pressurisation primary/secondary

Pump run/fail

- Primary
- Secondary

Provision for remote monitoring

4.7. Protection and insulation

All pipework shall be insulated to BS 5422 2023 standard with zinc applied protection and valve jackets.

Boilers and heat exchangers shall have a factory kit insulation system.

4.8. Commissioning and Testing

Complete flushing and chemical dosing to BSRIA BG 29/2021.

Pre-commissioning and commissioning per CIBSE Code W.

Performance testing and documentation of heat output and efficiency.

5. ELECTRICAL INSTALLATION

5.1. Power Supplies

Electrical supplies for new boilers, pumps, and controls.

Cable sizing, containment, and protection in accordance with BS 7671 (IET Wiring Regulations).

Labelled isolators are adjacent to each major item of equipment.

5.2. Controls and BMS Interface

Wiring for all control devices (sensors, actuators, valves).

Integration with existing BMS, where feasible, or installation of a new local controller.

Provision of control schematics and user guide for site staff.

5.3. Earthing and Bonding

Supplementary bonding is needed for all pipework and metal components in the plant room.

All works in accordance with BS 7671 and IEE guidance.

6. PUBLIC HEALTH

6.1. Condensate Drainage

Condensate pipework in corrosion-resistant material (e.g., plastic).

Connected to a foul drainage system with an appropriate trap and air break.

Heating trace and insulation for external runs to prevent freezing.

7. DEMOLITION AND MAKING GOOD

Isolate, drain, and make all existing services safe before demolition.

Dismantling and responsible disposal of redundant boiler equipment.

Making good of all disturbed finishes, walls, and penetrations to fire-rated standard.

Paint the walls before installation.

Paint the floors with a 2-pack epoxy paint, paint the room before installation, and apply a final top coat afterwards.

8. HEALTH & SAFETY AND COMPLIANCE

Risk and Method Statements (RAMS) to be submitted prior to commencement.

All operatives are to be appropriately qualified and have their DBS checked.

Works to be scheduled during school holidays or outside teaching hours to avoid disruption.

9. DOCUMENTATION AND HANDOVER

As-fitted drawings in PDF and DWG formats.

A boiler schematic, a Gas schematic and a Valve chart are fixed to the wall in a glass case.

O&M manuals with warranties and manufacturer documentation.

Full commissioning certificates and gas safety checks.

Training session for site maintenance staff on boiler operation and basic troubleshooting.

10. Servicing

To maintain the warranty, include a check after 1 month, 3 months, and full service after 12 months. Also, include a water sample after 1 month and at 12-month service.

Equipment Schedule – Boiler Room Replacement at Gorringe Park

Item No.	Equipment Description	Preferred Manufacturer/Model	Qty	Remarks
1.0	Gas-fired Condensing Boilers (Rig Format)	Remeha Ace 150kW	[3]	ErP Compliant, 92% Efficiency, Modular
2.0	Plate Heat Exchanger	Remeha	1	To match boiler
3.0	Radiator/Emitter Valves (Thermostatic and Actuated)	Danfoss Aveo	[x]	As required per operational check
4.0	Secondary Pumps with VSD	Grunfoss Magna	[x]	Twin head
5.0	Expansion Vessels	Flamco	1	Sized to system volume
6.0	Pressurisation Unit with De-gasser	Flamco	1	For secondary circuit only
7.0	Side-stream Filtration Unit	Vexo	1	To suit the estimated system volume
8.0	magnetic strainer	Adey – magna clean		

11. Deliverables

The contractor must produce:

- Fully constructed and operational facility
- As-built drawings
- Operation & Maintenance manuals
- Completion certificates
- Fully functional and commissioned boiler system
- Compliance certificates (e.g., Gas Safe, WRAS)
- O&M manual (Operation & Maintenance)
- As-installed drawings
- Disposal certification for old equipment

12. Technical Standards

All works shall be carried out in accordance with the latest applicable standards and guidance, including but not limited to:

- Building Regulations Part L
- CIBSE Guides B and H
- British Standards (BS 5422, BS 5570, BS EN 12828, BS EN 14336, etc.)
- Gas Safe Register Requirements
- BSRIA & CIBSE Commissioning Guides
- Health and Safety at Work Act
- Local Authority Planning and Building Control

13. Exclusions

The items below are *not* included in the scope.

Replacement of radiators or distribution pipework beyond the plant room

Structural building alterations

Electrical upgrades not directly related to boiler operation

14. Roles and Responsibilities

Outline the responsibilities of the contractor versus the client.

- Contractor: Responsible for all Installation, commissioning, testing, waste disposal, and certification, quality assurance, and health & safety compliance.
- Client: Provides site access, utility connections, and permit support as needed

15. Site Information

Site Address: Gorringe Park Primary School, Sandy Ln, Mitcham CR4 2YA

Site Access: Monday to Friday, 8am–5pm. Arrangements can be made for work to take place outside of school hours. The site must remain operational during working hours unless the school is closed.

Permit Requirements: All works must comply with site induction and permit-to-work systems.

Strict adherence to safeguarding: all workers must be DBS-checked.

15.1. Access Issues (material storage and deliveries)

- Plantroom congested.
- Low headroom access.
- Room dimensions Width 1950mm x Length 5600mm Height 2000mm.
- 5m x 2.4m area outside suitable for prefabrication.

16. Constraints and Assumptions

Works to be completed with minimal disruption to the school schedule

Temporary heating may be required if the works are during term time

Contractor assumes access to site utilities (water, power, drainage)

16.1. Feasibility During School Operation (holiday works)

These works will have been completed during the summer holiday to replace the plant room in situ.

However, the prefabricated option could be considered during term time, and modifications to the system could be carried out over a weekend.

17. Pricing Document

Refer to the Boiler Room Replacement Pricing Schedule for a detailed breakdown of contractor costs associated with the work described herein.

Complete both Option 1 and Option 2 on the schedule tabs within the Excel Sheet.

Option 1 – Boiler Room Replacement- in situ

Option 2 - Boiler Room Replacement – using external plant toom

17.1. Declarations & Notes

All prices must be inclusive of labour, plant, transport, preliminaries, and overheads.

Prices must remain valid for 30 days from the date of submission of the tender.

Tenderer must clearly indicate any assumptions, exclusions, or qualifications.

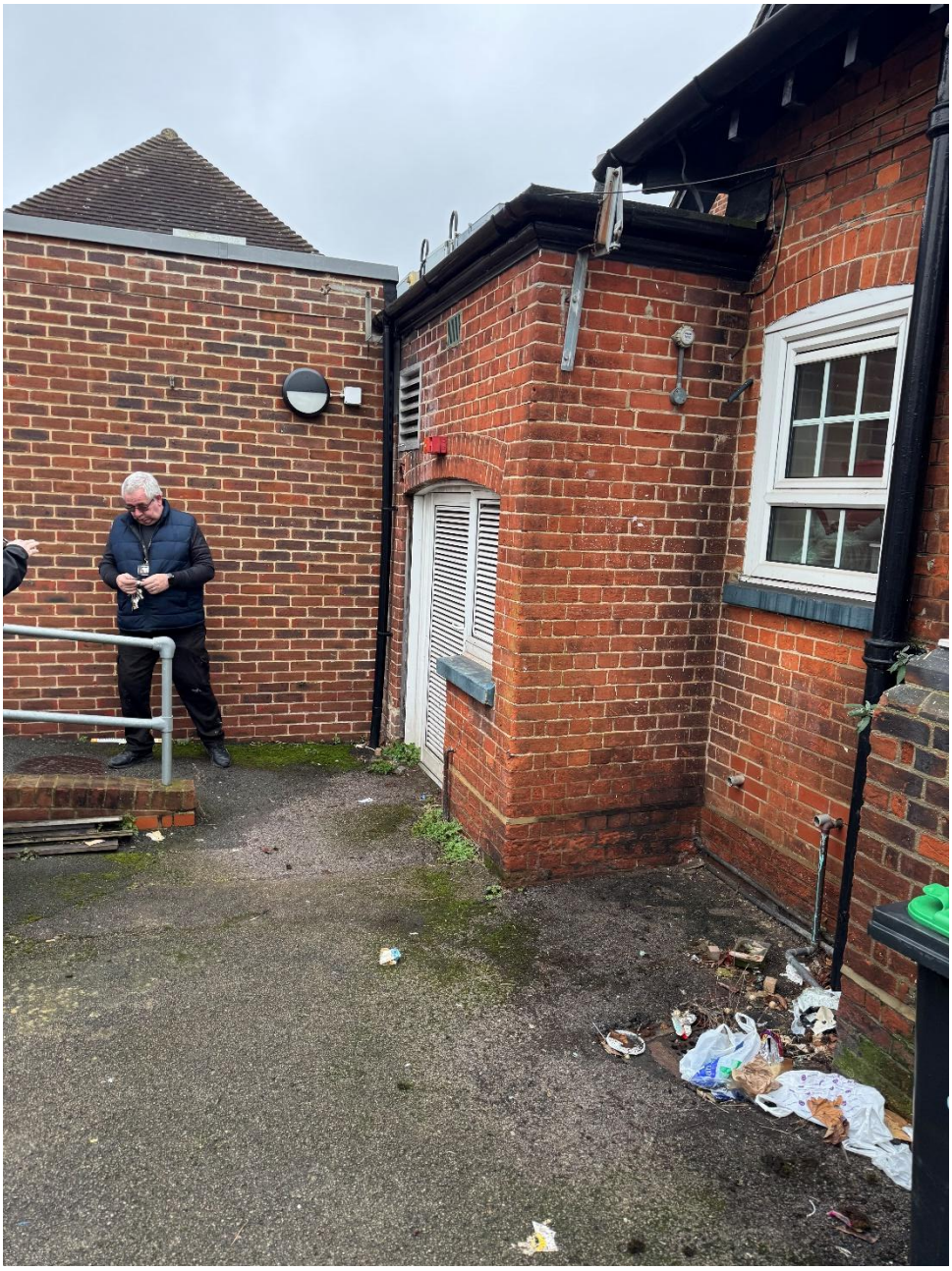
17.2. Disclaimer

For Unverified Quotations in Tender Submissions

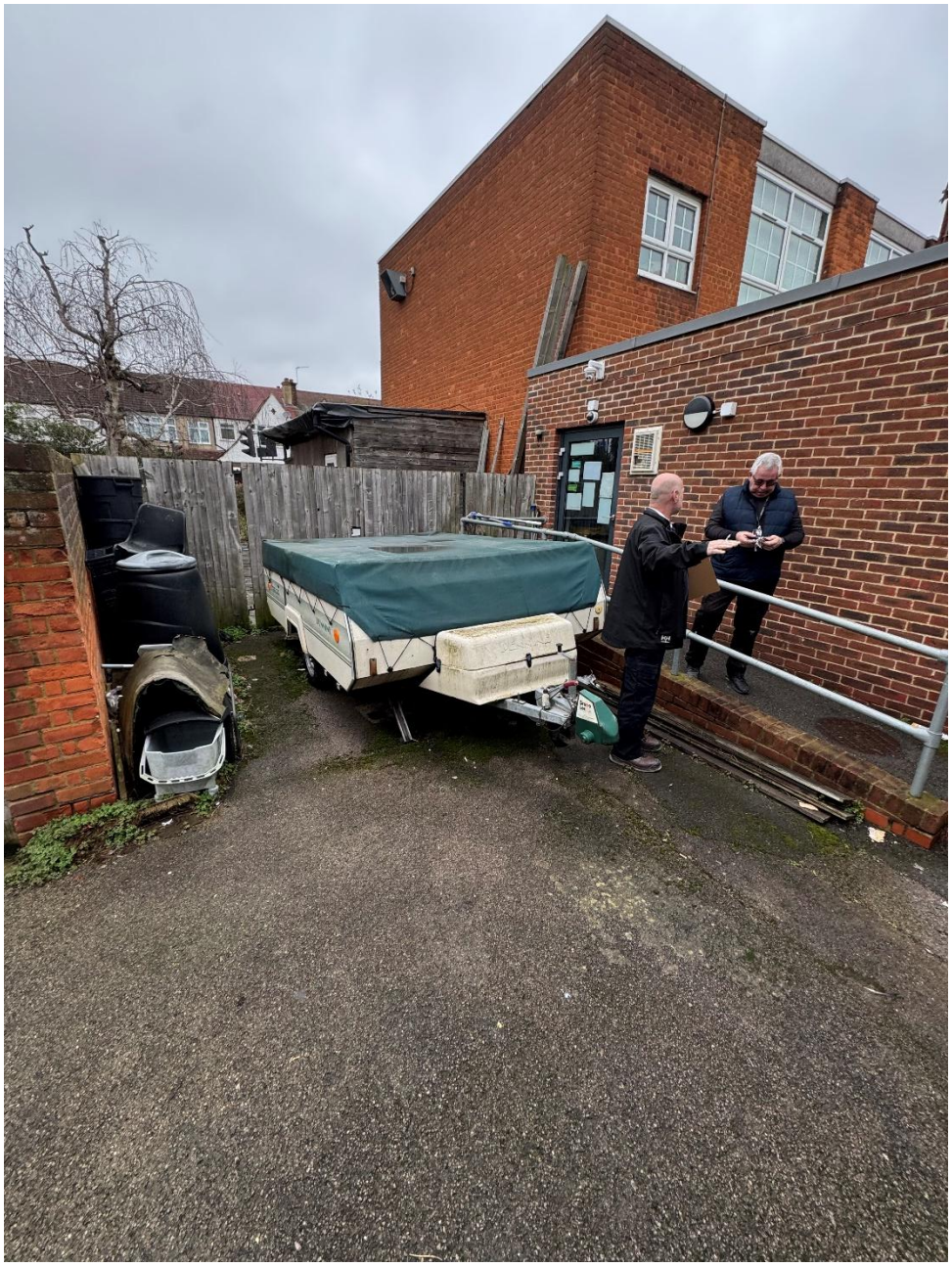
"The tenderer acknowledges that any third-party quotations, estimates, or pricing information included in this submission have not been independently verified by Whitecode Consulting Limited. The tenderer assumes full responsibility for the accuracy, validity, and reliability of such information. Whitecode Consulting Limited accepts no liability for any discrepancies, errors, or omissions arising from the use of unverified quotes. Tenderers use such information at their own risk."

18. Appendices – Supporting Documentation

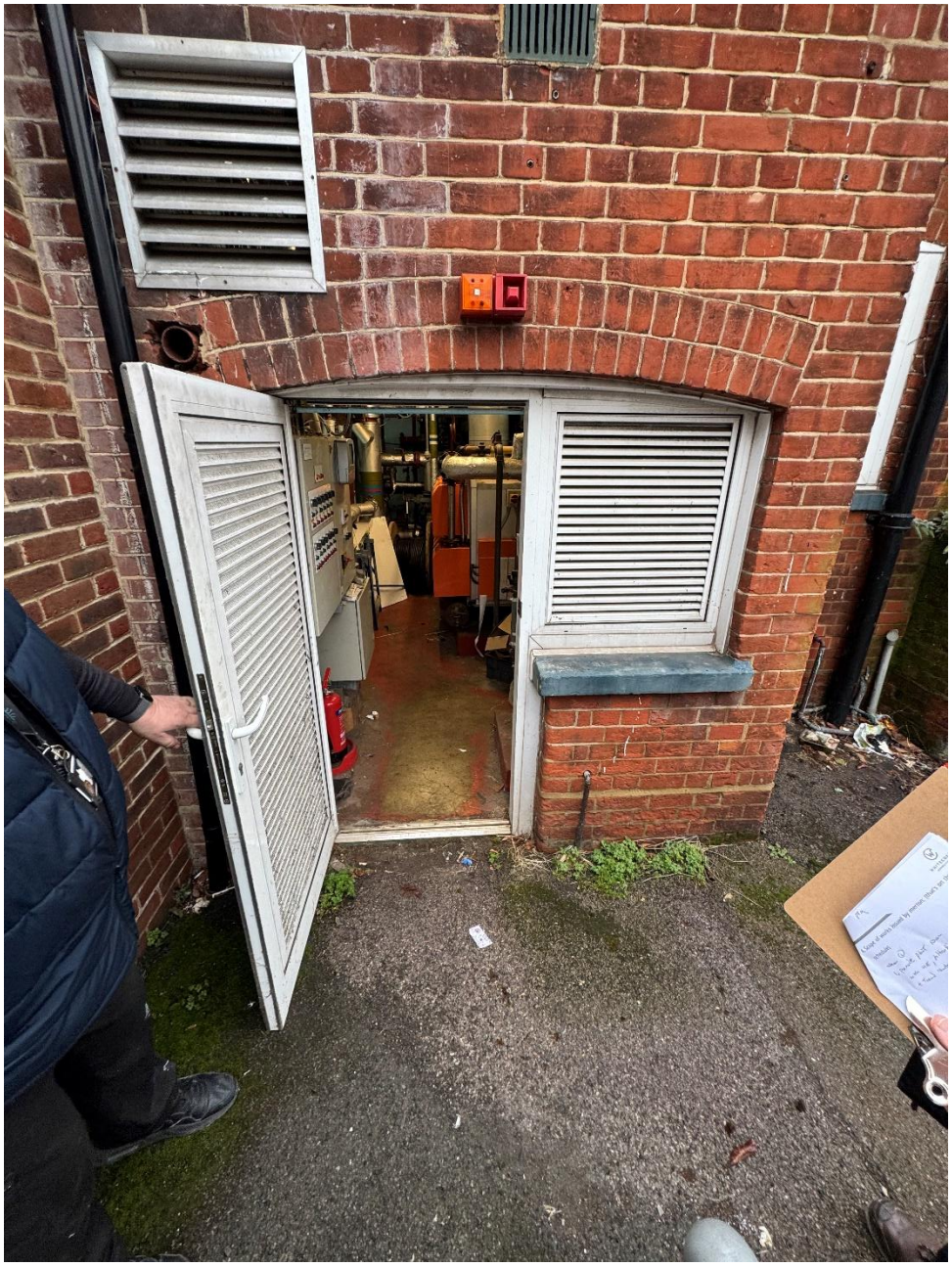
18.1. Appendix 1 - Pictures of the installation/Remediation area



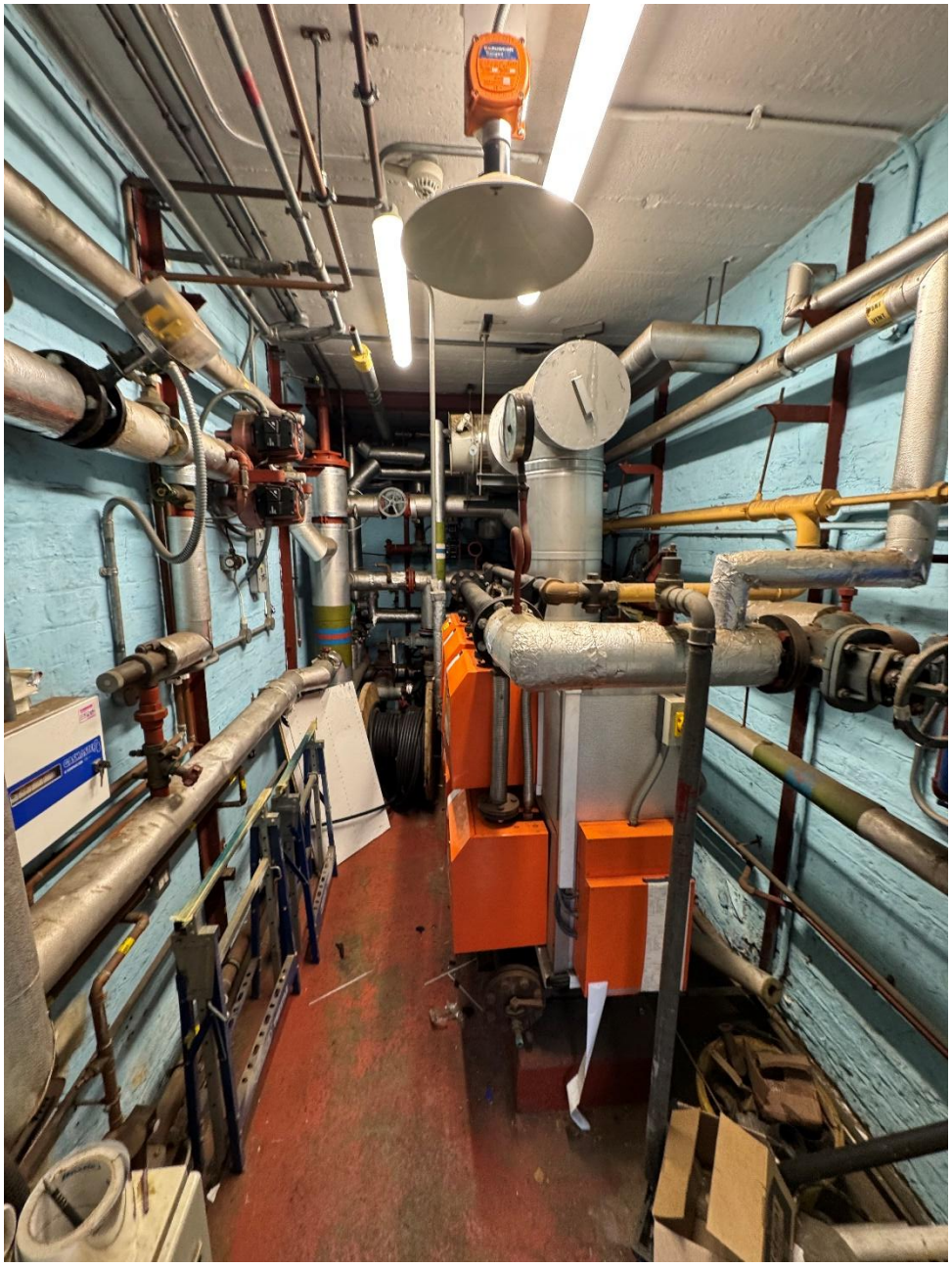
Photograph 1 – Plant room location



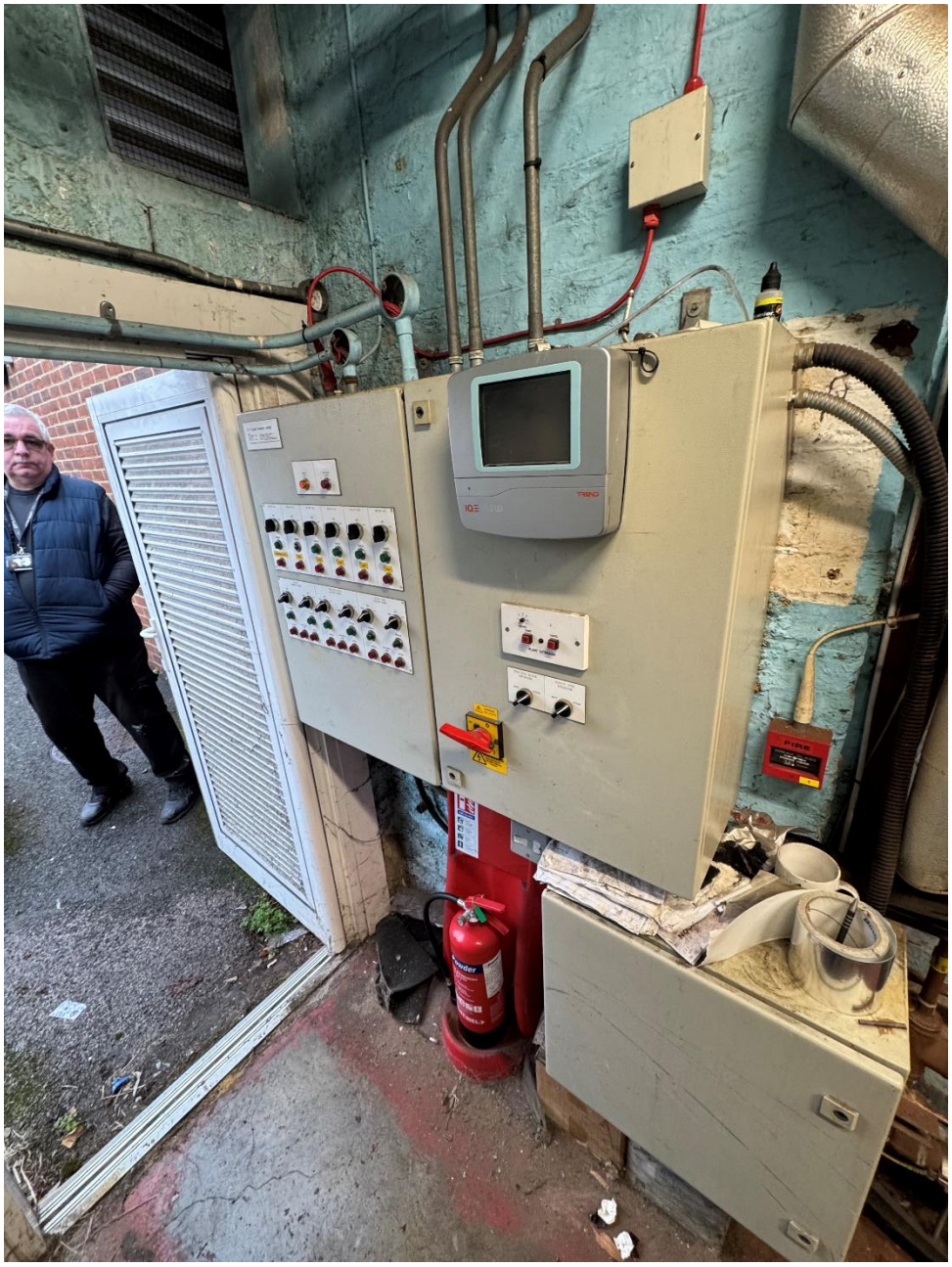
Photograph 2 – Area next to plant suitable for package plant room



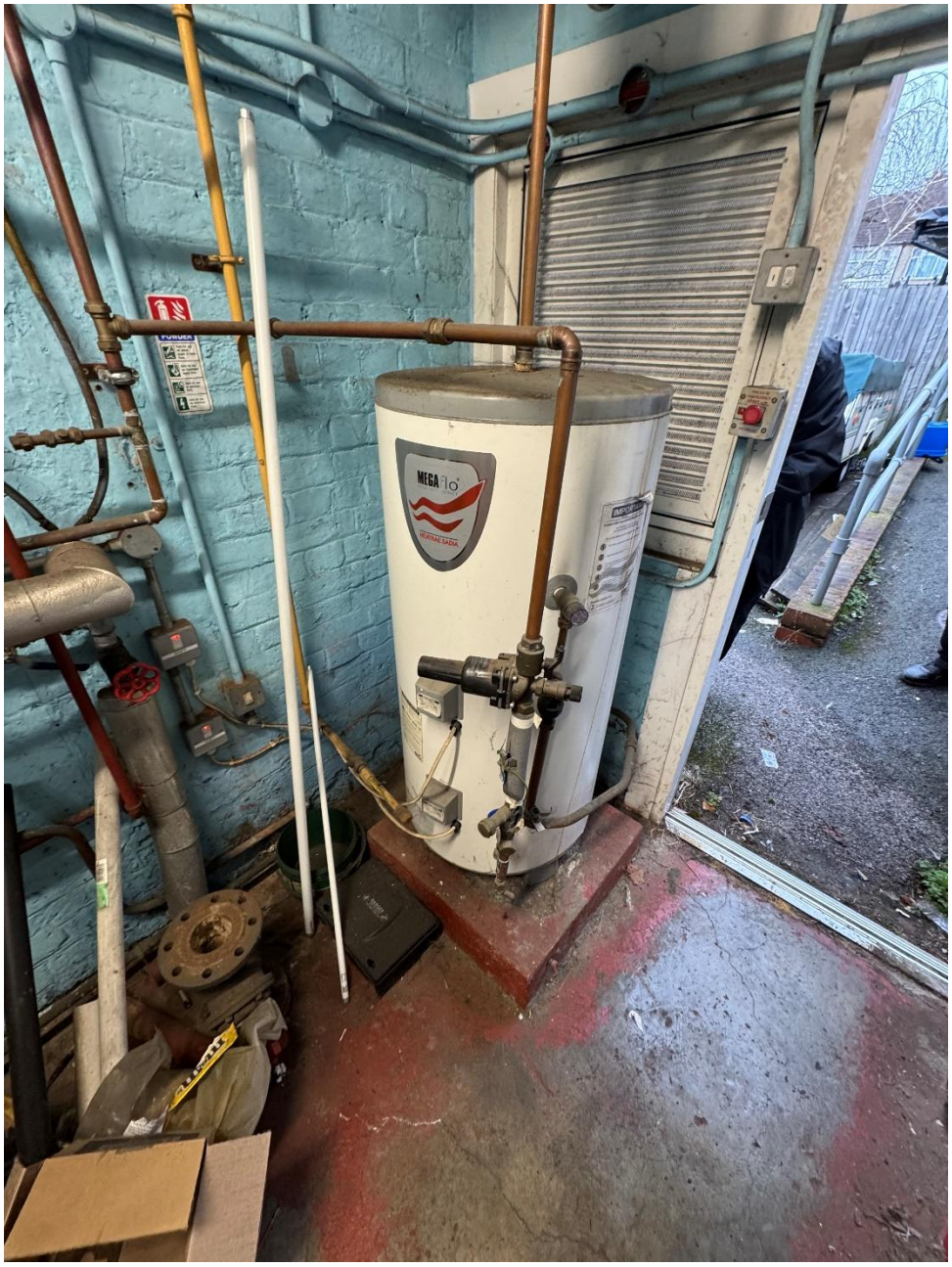
Photograph 3 – restricted headroom access



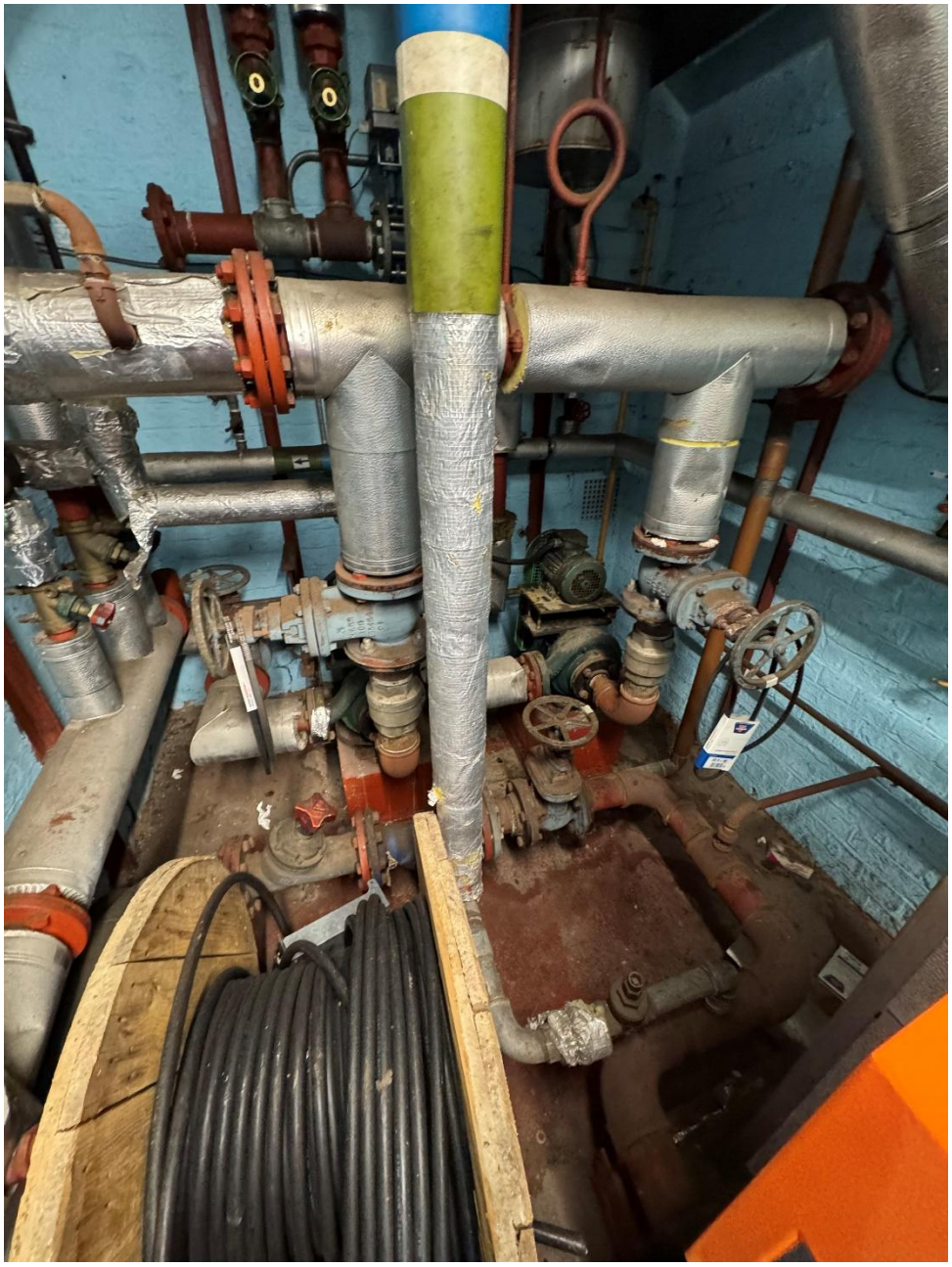
Photograph 4 – Congested plant area



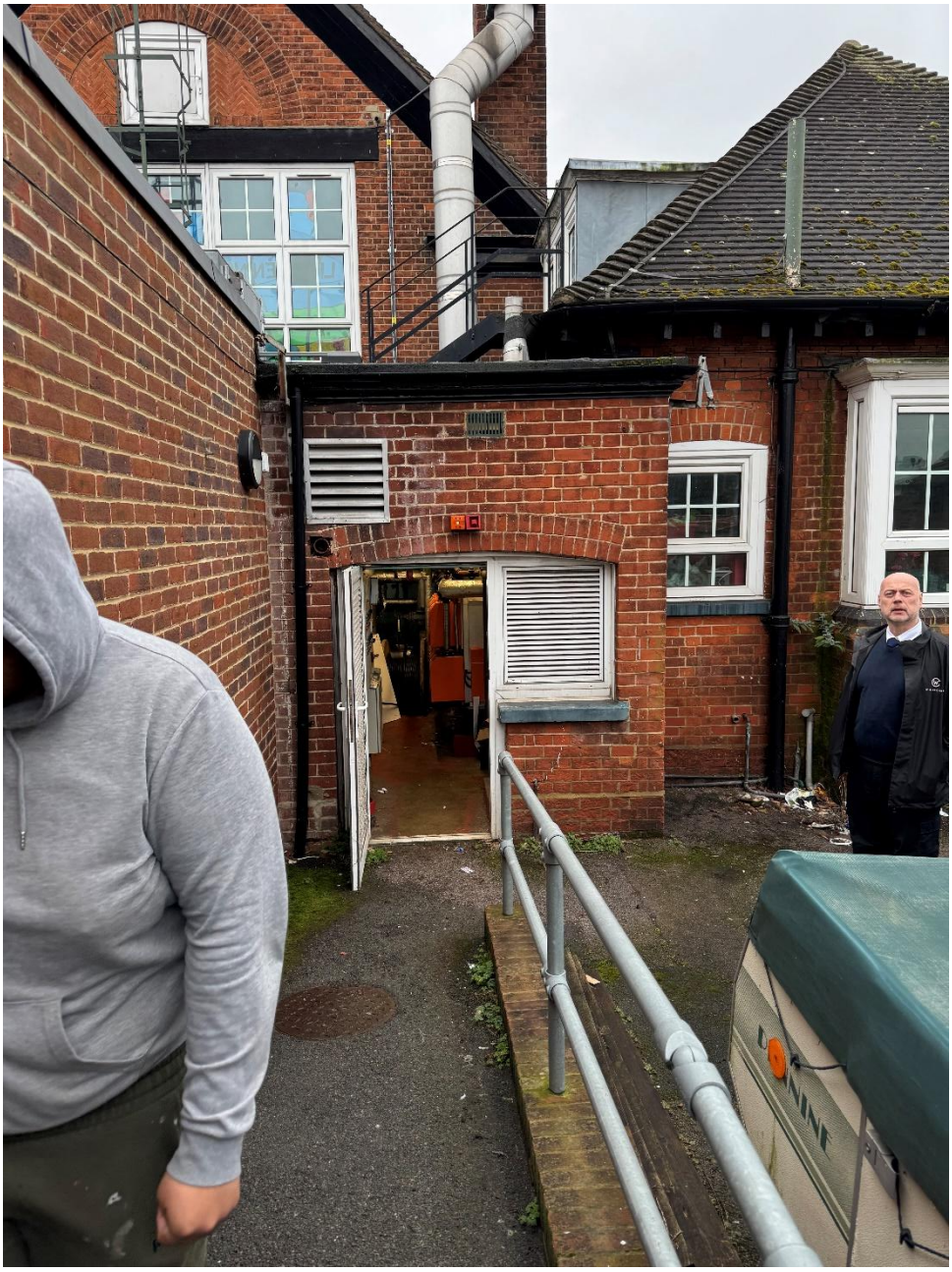
Photograph 5 – Existing obsolete Trend controls and control panel



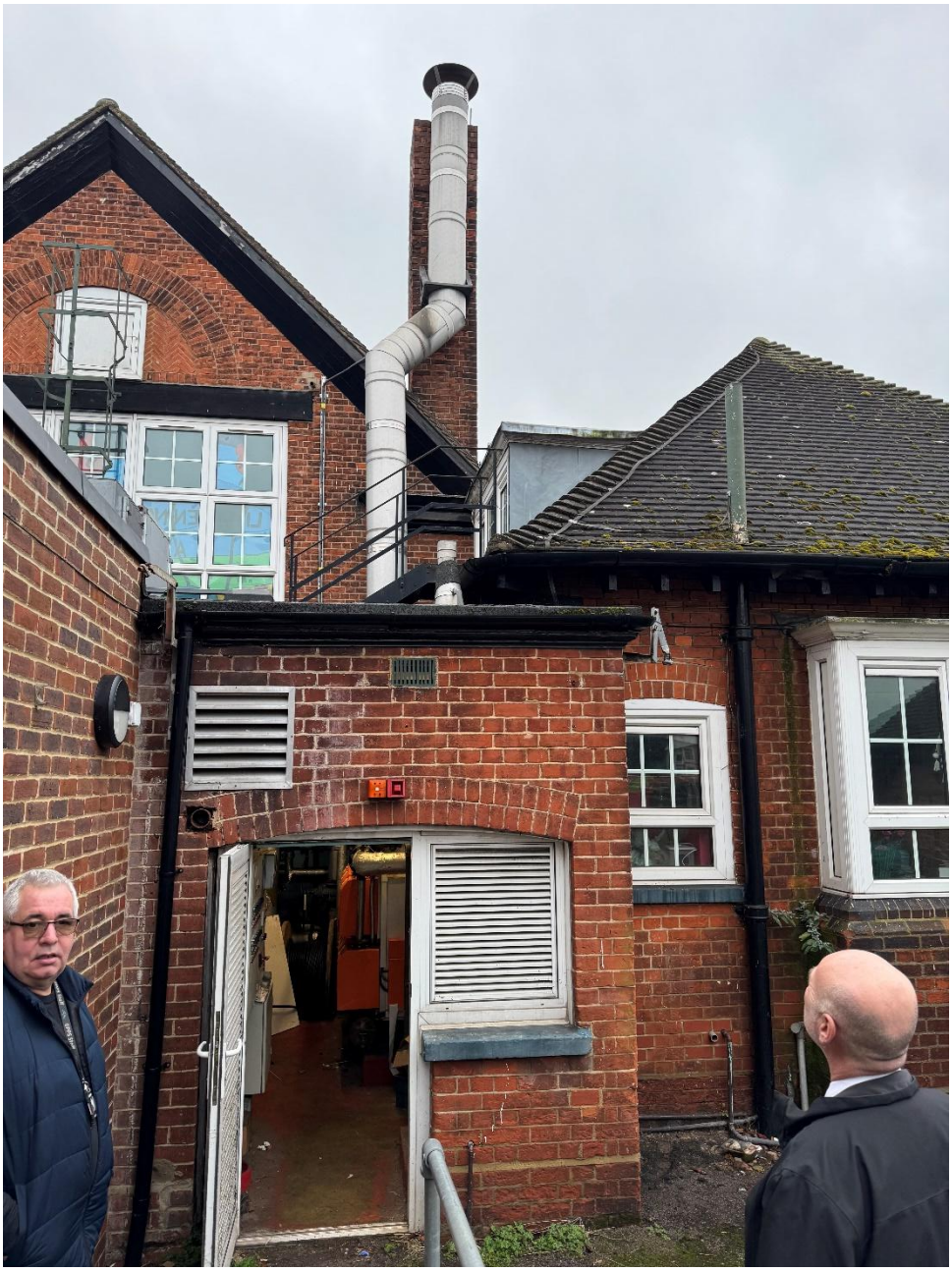
Photograph 6 – Domestic Hot water cylinder



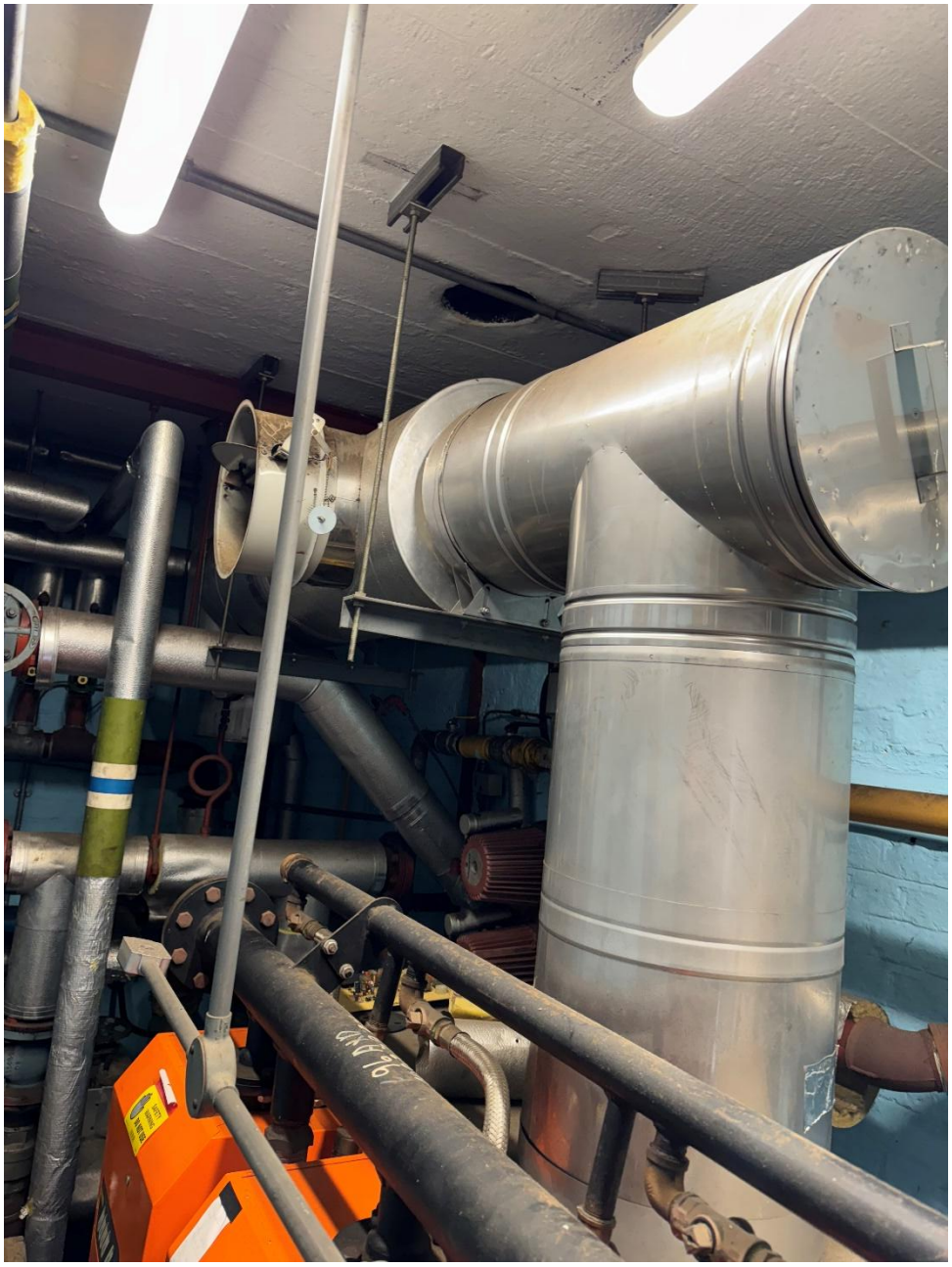
Photograph 71 – Belt drive primary pumps.



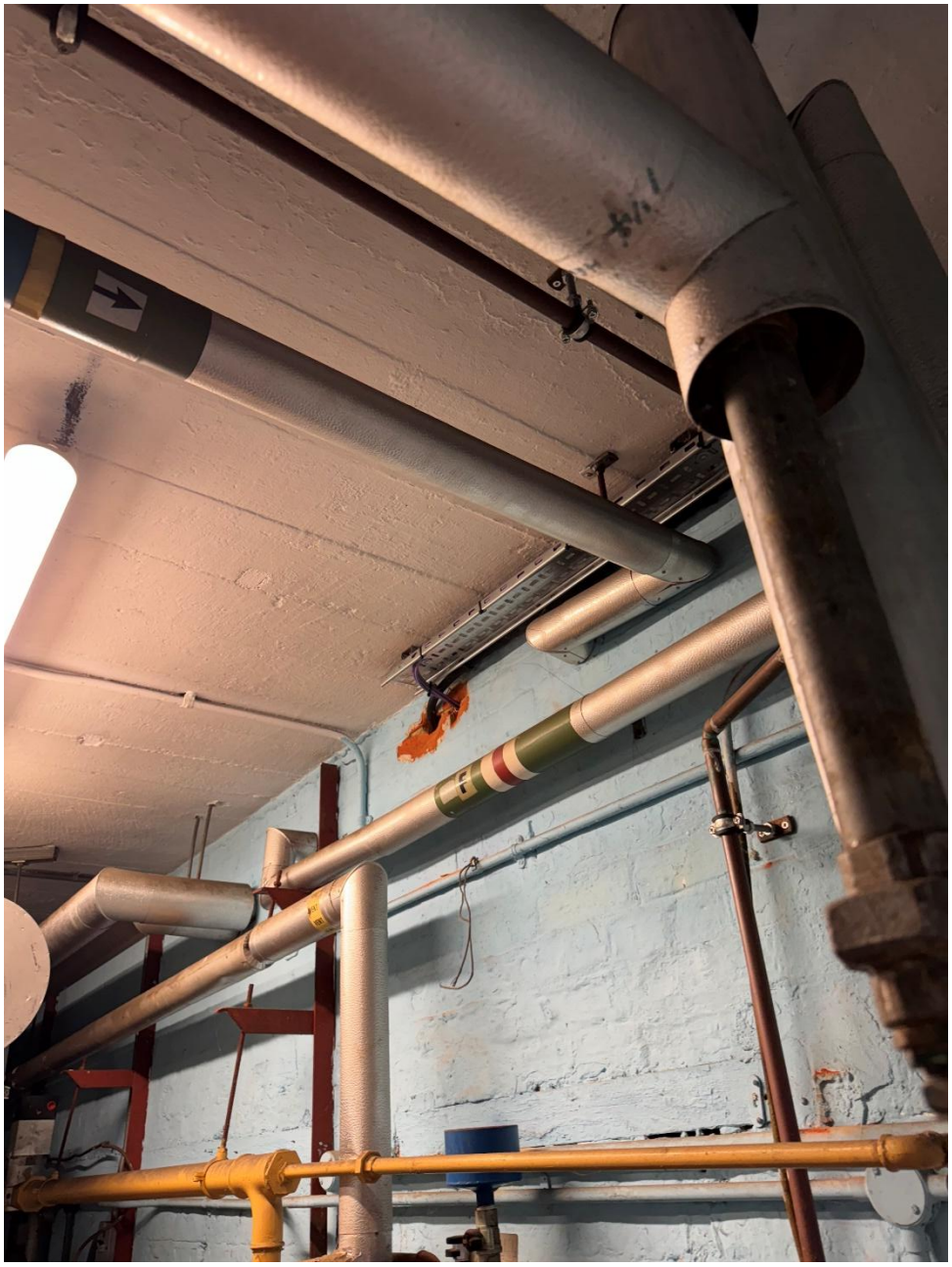
Photograph 8 – Flat roof



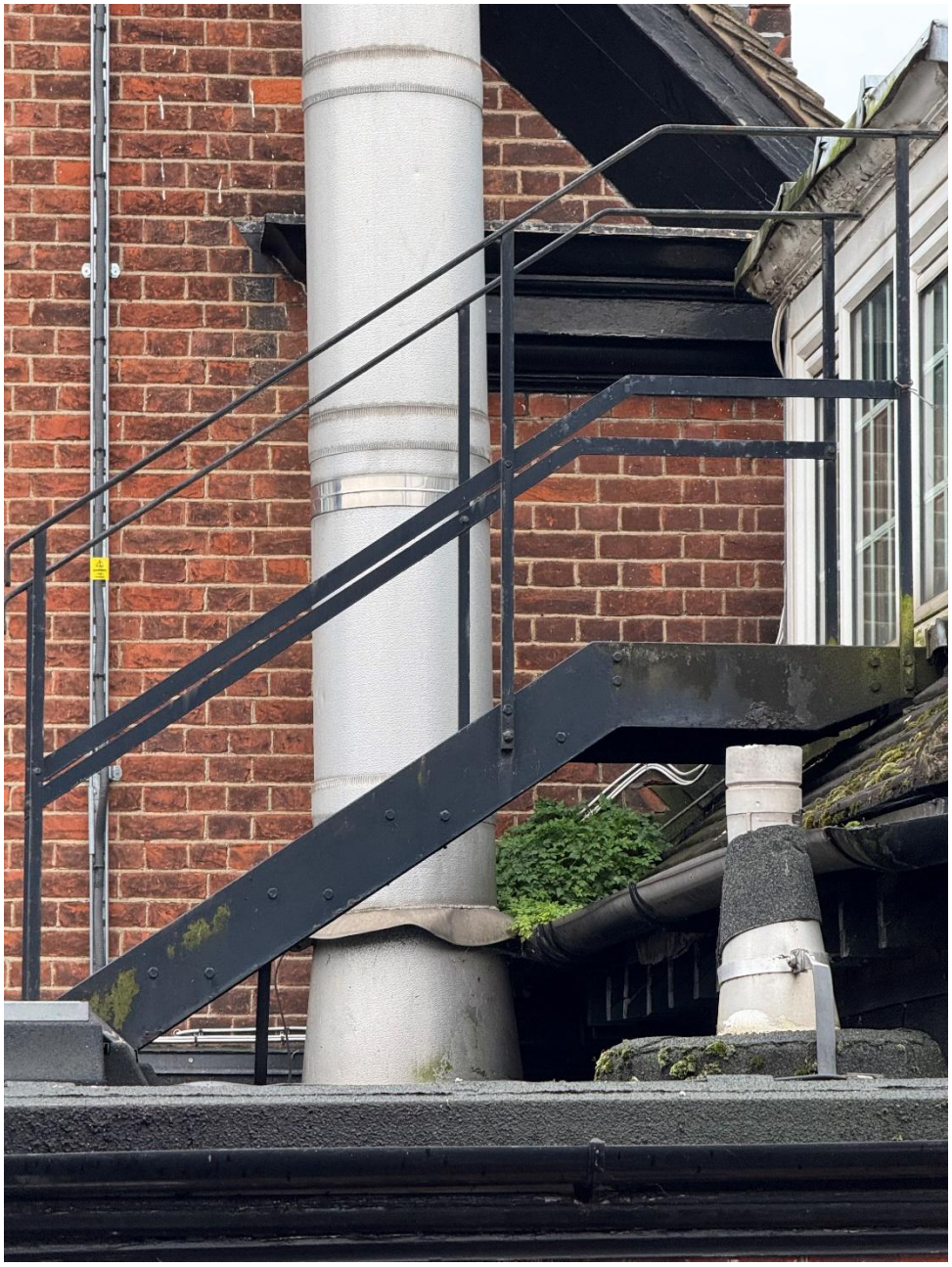
Photograph 9 – Existing open flue



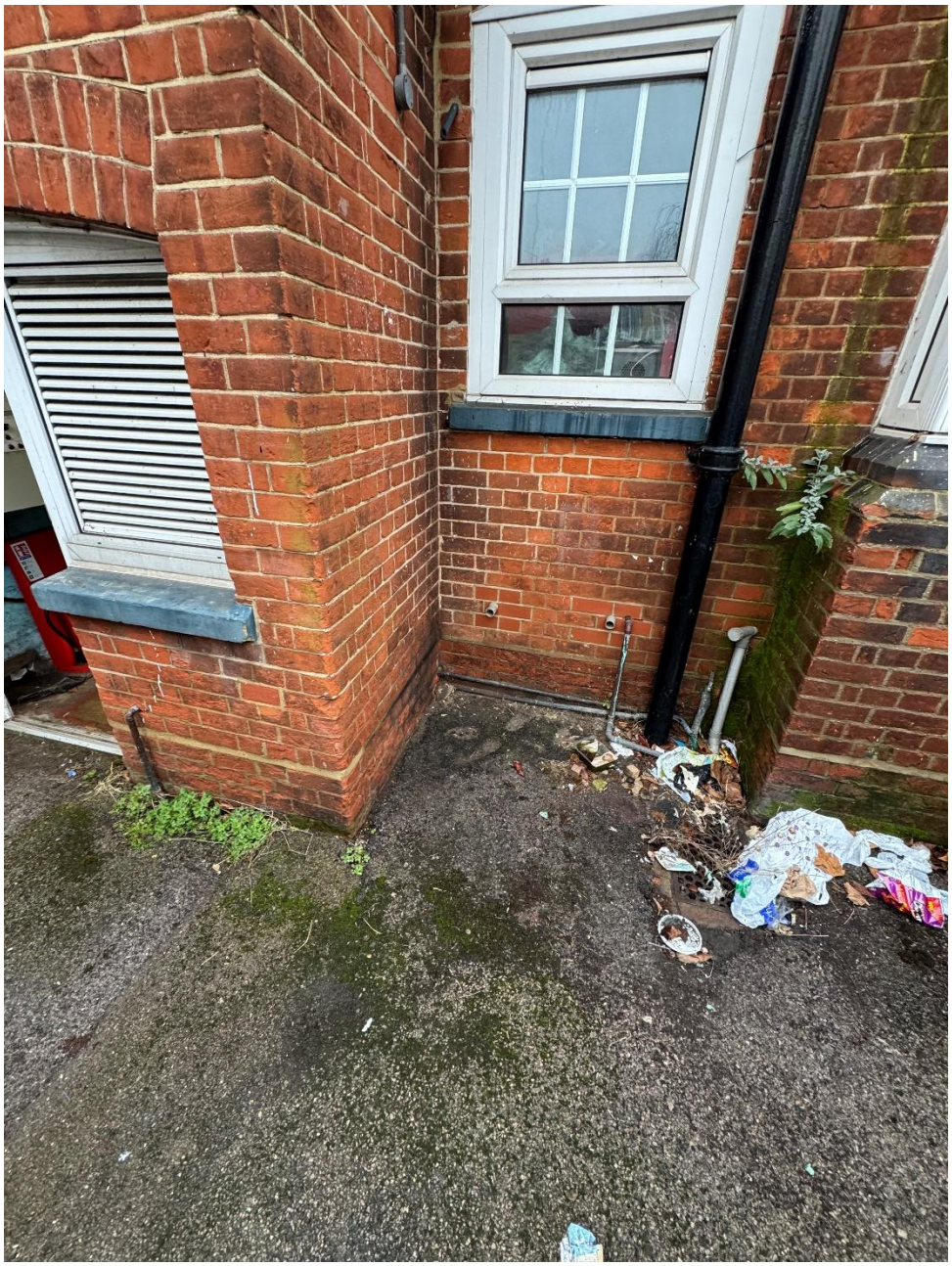
Photograph 10 – Flue internal photograph



Photograph 11 - Roof construction



Photograph 12 - The roof is covered with felt



Photograph 13 - Drainage connection externally.

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