



Steven A. Hunt & Associates

TOUCHSTONES

ROCHDALE

RIBA 2 – FIRST FLOOR SERVICES

MECHANICAL AND ELECTRICAL SERVICES



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Harnessing all **elements** of Mechanical and Electrical Engineering





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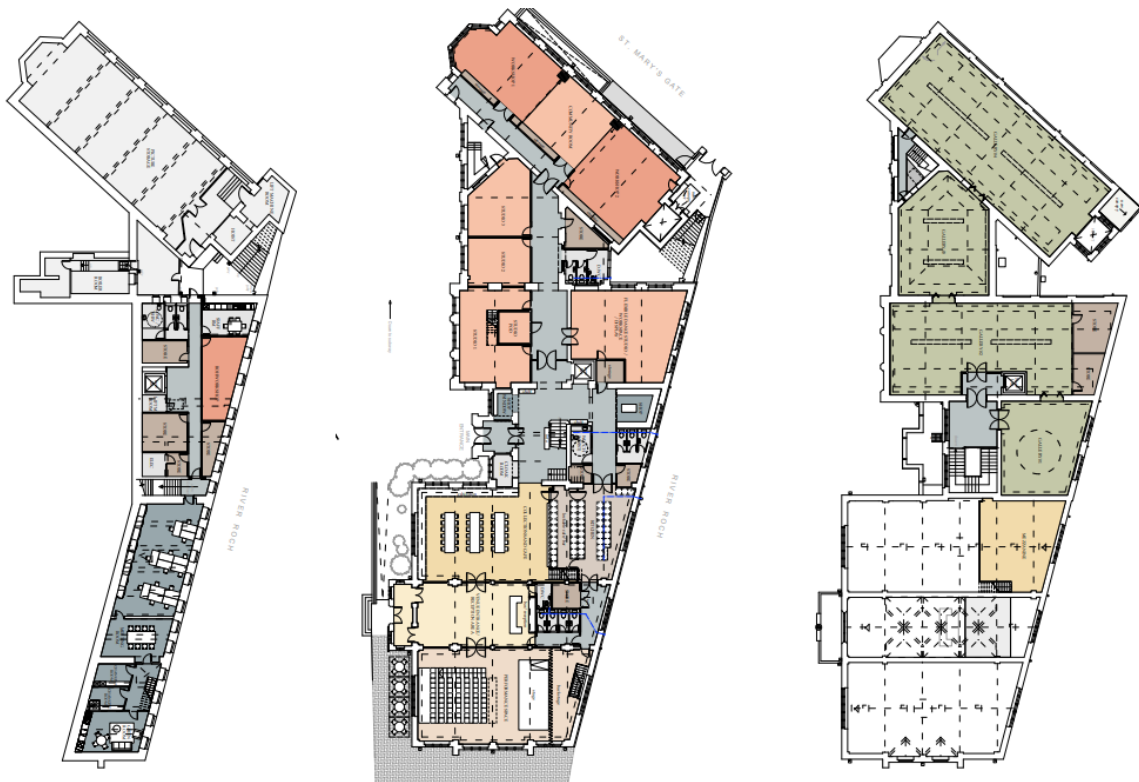
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1.0 Introduction

Your Trust are currently seeking tenders for the first phase of the refurbishment of the Touchstones Arts and Heritage venue in Rochdale which is a Grade II listed building owned by Rochdale Council. The first phase includes works to the ground floor and basement only.

However, the building accommodates; 5 temporary galleries at first floor level which are not part of the scheme (other than ensuring fire compliance), but are to be introduced as part of the scheme at a later date and this document provides details of what is proposed for each of the relevant services to enable the tendering contractors to understand the principles involved.

The building is on three floors and the general proposed layout is as follows.



2.0 Proposed Mechanical Services

2.1 General

The first floor galleries currently have low level finned tubing heating mounted below the display walls. The tubing is life expired and has limited control.

Ventilation openings exist between the inside and outside and have been part of the original ventilation strategy but have since been blocked up, it is the intention to reinstate these and covert them into active louvres.

The galleries also have historical extract turrets on the roof which no longer work and again it is the intention to replace the internal components of the turrets to bring these into operation.



2.2 Heating

The heating to the rest of the building has been designed to accommodate the first floor installation with strategic risers to enable a series of low level radiators to be installed behind architectural grilles in the face of the display wall.

The radiators are to be located in front of the existing louvre openings to offer preheating of the incoming fresh air. The radiators shall be designed to operate at 55/45oC flow and return temperatures in readiness for the district heating network as per the new installation in the rest of the building.

Control of the rooms shall be via the VT circuit for the rest of the building and local 2 port valves in each gallery controlled via room temperature sensors.

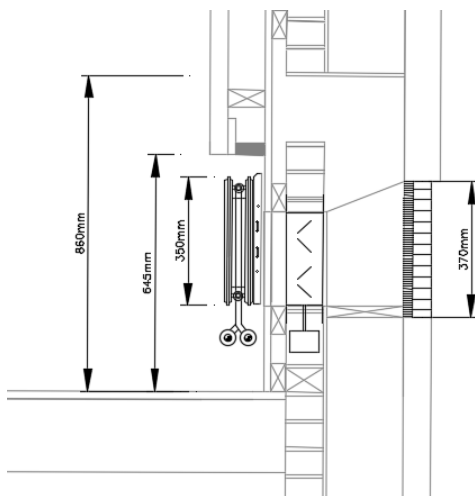
2.3 Ventilation

Ventilation to the galleries shall be via a combination of air inlet louvres and high level extract which shall be operated naturally or fan assisted as demand requires.

2.3.1 Fresh air supply

There are a number of external natural ventilation openings around the building and the intention is to create a fresh air path to the first floor via a purpose built bespoke ventilation box complete with automated volume control dampers placed behind radiators.

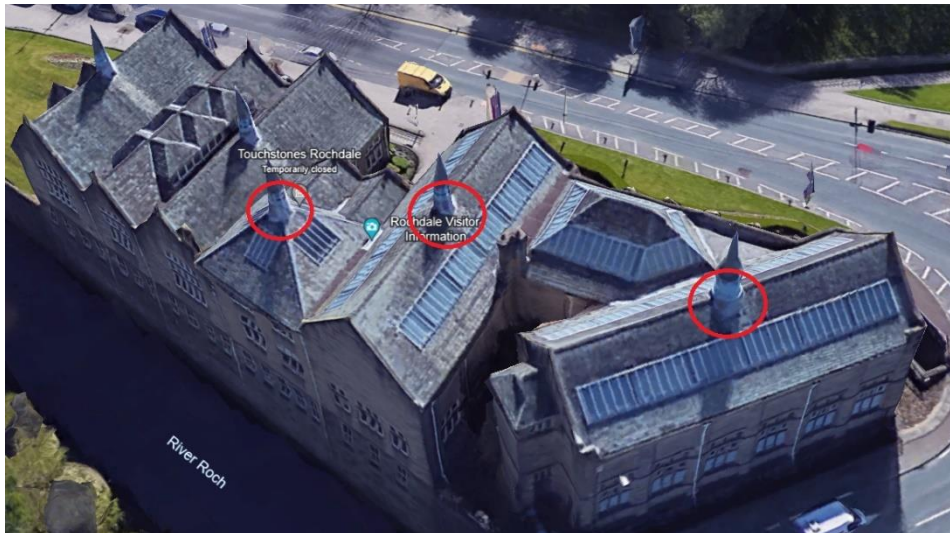
The dampers shall be controlled via the BMS to provide fresh air based on air quality sensors and improved ventilation to assist with overheating.



Section through wall

2.3.2 Exhaust ventilation

Galleries 2,3 and 5 each have an existing roof turret and the intention is to install a new propellor fan within the unit to provide ventilation. The system shall have a volume control damper to operate open/close and shall provide natural ventilation to the majority of the year in conjunction with the low level fresh air inlets and during warmer spells shall operate its the fan to provide increased ventilation.



2.4 Gallery 4

For the majority of the year Gallery 4 shall operate on the same principle as the other galleries, however, from time to time the gallery may attract more prestigious work which requires closer control and therefore this gallery shall be fitted with two close control units to regulate temperature and humidity to closer margins.

2.5 BMS Controls

The new BMS system shall be upgraded to accommodate the necessary control to operate all of the above.

3.0 Proposed Electrical Services

3.1 General

The existing electrical services at first floor level shall be stripped out and replaced entirely.

3.2 Main Distribution

Two new distribution board shall be installed at first floor level to replace existing boards DB3 and DB5, they shall be of the metal clad type designed to accept MCB and RCBO circuit protective devices suitably sized to serve all out going circuits.

3.3 Lighting

The lighting principles in each of the galleries are to remain the same ie suspended track lighting with adjustable spotlights.

However all new lighting is to be LED with more control over individual fittings to enable lighting to be dimmed as needed for each exhibition or artefact.

Installation of circuits shall be wired in LSF single core cables 6491B cables, concealed within suitable containment systems and within the building fabric where possible.

Emergency lighting shall be provided as self testing LED fittings.

3.4 Small Power

Small power shall extend to facilitate all operational and administration requirements within the first floor which shall generally be provided via wall mounted fittings. Each of the display boards requires local power behind the board to enable access to power for exhibition components.

Provisions will generally extend to the following:

- Cleaner Socket Outlets – 1 no. per room with maximum lead length of 8 metres including all corridor areas
- General Twin Switched sockets
- Specialist Small Power Provisions
- Specialist Systems Power and Containment Provisions - AV Systems
- Specialist Systems Power Provisions - Fire alarm
- Mechanical Services Power and Containment Provisions
- Structured Wiring System Power and Containment Provisions - (32A and 16A SPN BS4343 socket outlets to each cabinet and PDUs)

3.5 Fire Alarm

The existing Protec fire alarm system is to be retained and modified to suit the new layout. New devices shall be installed as required at first floor level.

The system shall be installed in accordance with BS 5839 Part 1 20017 complete with associated equipment in compliance with BS EN 54-2:1997+A1:2006

The system shall be installed to provide “L1” categorisation, compliant to BS5839 and in full conformity with the local fire authority and building control officer requirements.

The fire alarm system shall consist of break glass units, automatic smoke and heat detectors and sounder beacons.

Fire alarm interfaces to door access and plant shutdown shall be provided.

Cabling to serve all devices throughout shall match the existing and shall be zoned and looped as required to comply with BS 5839

A new Cause & Effect schedule will be developed in line with the agreed Fire Strategy document and in line with the Fire Officer requirements.

3.6 Structured Wiring

New data and Wifi points shall be wired throughout the first floor linking to the new system at the lower floors.