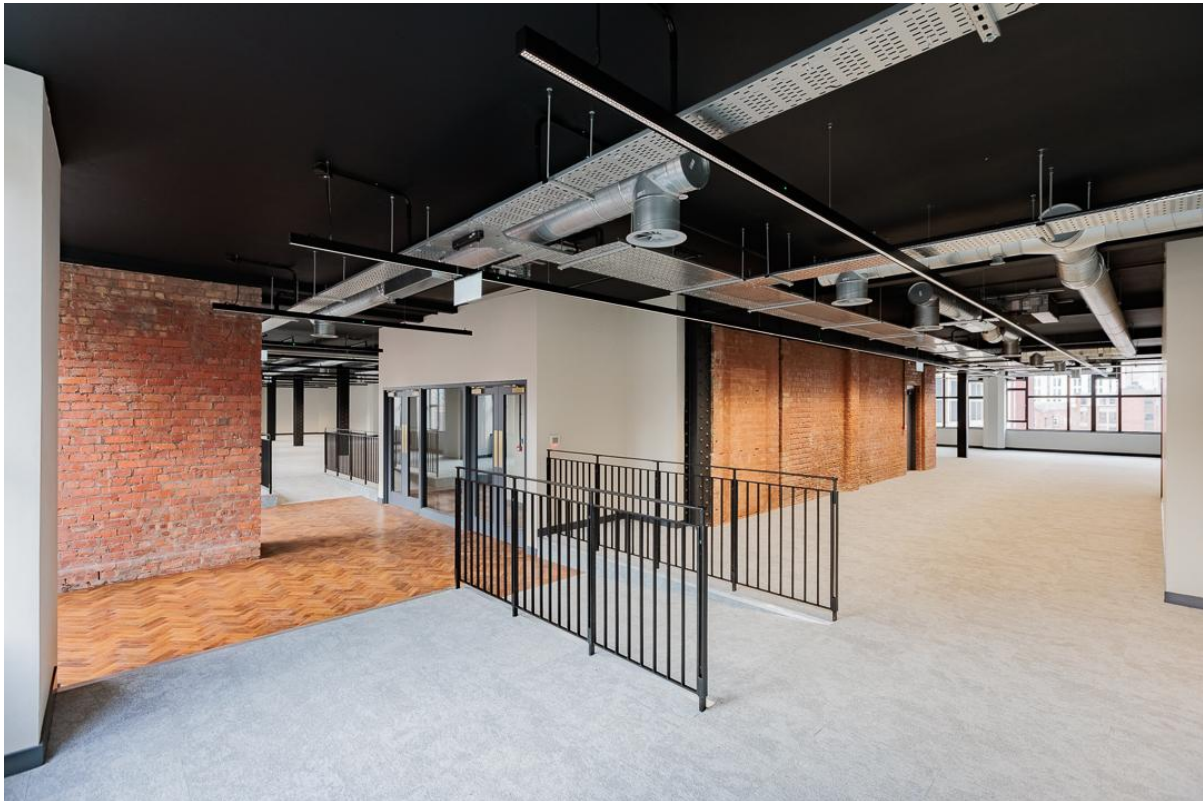




Method Statement: Installation of Mechanical Services to Grade II Listed Ceiling

1. Scope of Works

Installation of mechanical services including:

- Lossnay ventilation units
- Fan coil units (FCUs)
- Cable containment (tray/basket)

All services to be suspended from the structural slab above via drop rods, ensuring minimal intervention to historic fabric.

2. Key Constraints (Listed Building)

- No works to proceed without design approval.
- Fixings limited to structural slab only – no fixing into decorative or historic ceiling finishes.
- All interventions to be:

- Reversible where possible
- Minimised in number
- Located to avoid historic features, beams, or architectural details
- Works to comply with:
 - Conservation Officer requirements
 - Structural engineer's design
 - BS 5975 / BS EN 1992 (where applicable)

3. Pre-Commencement

- Review:
 - Pull test to ensure fixings adequate
- Undertake:
 - Setting out to minimise fixing locations
- Approval of:
 - Fixing type and loadings
 - Pull test methodology

4. Materials

- Threaded drop rods (galvanised steel)
- Approved mechanical or resin anchors (Hilti/Fischer or equal)
- Unistrut/channel supports where required
- Vibration isolation mounts for FCUs and Lossnay units

5. Installation Methodology

5.1 Setting Out

- Mark fixing points in coordination with:
 - Structural engineer

- Ensure spacing optimised to reduce total number of penetrations

5.2 Drilling & Fixing

- Drill holes into slab using rotary drill (non-percussive where required near sensitive areas)
- Avoid reinforcement where identified
- Clean holes using:
 - Blow pump
 - Brush
 - Blow pump (minimum 2 cycles)

5.3 Anchor Installation

- Install approved anchors:
 - Mechanical anchors OR
 - Resin anchors (preferred where vibration sensitivity applies)
- Install threaded rods to required depth and torque

5.4 Drop Rod Installation

- Install vertical drop rods to required level
- Use locking nuts and washers
- Install secondary support brackets/Unistrut as required

5.5 Equipment Installation

- Fix Lossnay units and FCUs onto support frames
- Install anti-vibration mounts
- Install cable trays via trapeze brackets or direct rod supports
- Ensure:
 - Alignment

- Level
- No excessive load eccentricity

6. Pull-Out Testing (Critical)

6.1 Testing Requirements

- Pull tests to be carried out on:
 - **Minimum 5–10% of installed anchors**
 - Or as specified by structural engineer

6.2 Test Procedure

- Use calibrated pull-test equipment
- Apply load gradually to:
 - **1.25–1.5 x working load (or as specified)**
- Hold load for minimum:
 - 1 minute

6.3 Acceptance Criteria

- No movement or failure of anchor
- No cracking or damage to slab
- All results recorded and issued

6.4 Failed Tests

- Failed fixings to be:
 - Removed and made good
 - Re-installed in new location
 - Retested

7. Protection of Historic Fabric

- Protect all surrounding surfaces with:
 - Dust sheets
 - Temporary coverings
- No chasing or alteration of historic ceilings
- All penetrations limited to slab only
- Dust extraction to be used during drilling

8. Quality Control

- Inspection of:
 - Fixing locations
 - Anchor installation
 - Load compliance
- Sign-off required prior to loading system

9. Health & Safety

- RAMS to be followed at all times
- Working at height controls:
 - Towers / MEWPs
- Dust control measures (silica exposure)
- Manual handling for plant

10. Completion

- Provide:
 - Pull test certificates
 - As-installed drawings
 - Fixing schedules
- Ensure all works are:
 - Neat

- Coordinated
- Compliant with heritage constraints