

SECTION 01 81 11 – CONFINED SPACES

1. GENERAL

- A. This section details the requirements to enhance accessibility for building and campus service equipment that require regular access for inspection, repair and maintenance, as well as to identify and eliminate, to the furthest extent possible, any confined space hazards that may develop in the course of new and renovation projects.
- B. Brown will use these procedures as a set of “living documents” over the long-term to safely service this equipment in compliance with the latest editions of:
 - OSHA – 29 CFR 1926.1204 Permit-required confined space program
 - OSHA - 29 CFR 1910.146 Permit-required confined spaces
 - Brown University Confined Space Program

2. DESIGN INTENT

- A. Confined space mitigation measures are an integral part of the design phase for all new construction projects at Brown and must be considered and included in the design process.
- B. For renovations to buildings with preexisting confined space documentation, existing documentation shall be updated when identified confined space issues are eliminated or when new confined spaces are added as a result of the project.

3. GENERAL DESIGN REQUIREMENTS

- A. Brown has classified two types of confined spaces on campus:
 1. NON-PERMIT confined spaces are confined spaces containing secondary hazards (i.e., slips, falls, poor lighting, etc.) which are not anticipated to cause death or serious physical harm under normal operating or planned maintenance conditions. Non-Permit confined spaces do not contain a hazardous atmosphere nor do they have the potential to contain a hazardous atmosphere under normal conditions.
 2. PERMIT-REQUIRED confined spaces are confined spaces having one or more of the following characteristics:
 - Contains or has the potential to contain a hazardous atmosphere
 - Contains a material that has the potential for engulfing an entrant
 - Has an internal configuration that may cause an employee to become trapped, fall or become disabled by inwardly converging walls, a tapering floor or other hazards, or asphyxiation
 - Contains stored energy within the equipment, or any other potentially hazardous energy sources
 - Contains any other recognized serious safety or health hazards.

4. SPECIFIC DESIGN REQUIREMENTS:

- A. A wide variety of design choices are normally available to avoid creating a confined space. Efforts shall be made in the course of project design to avoid the creation of confined spaces.

- B. In situations where a permit-required confined space is unavoidable, Brown prefers design actions that allow reclassification of the space as a Non-Permit Required confined space.
- C. A qualified person or firm with documented experience in confined space evaluation and mitigation shall be retained, where necessary, to evaluate, design, plan and select the most appropriate confined space mitigation solutions, as well as to complete, deliver, and include confined space deliverables at project completion.
- D. During the early project design phase, the design team shall consult with EH&S and FM Operations staff to review a project's equipment accessibility, servicing and maintenance needs and to identify potential confined spaces that may exist within a project. Details for review include, but are not limited to:
 - Locations of major building and campus equipment
 - Frequency of equipment inspection and access
 - Access and egress paths to and from work or equipment areas
 - Cut sheets for major equipment.

5. DELIVERABLES

- A. For all created and identified confined spaces, the following information shall be provided by the project team to Brown for reference and FM Operations use. Provide all information in spreadsheet table form.
 - 1. Campus Utilities:
 - Manhole Number
 - Manhole Location
 - Utility Type (Electric, Stormwater, Sewer, etc.)
 - Confined Space Type (Permit-Required or Non-Permit Required)
 - Actions Necessary for Non-Permit Required Classification
 - Entry Type
 - Minimum PPE Requirements
 - Attendant Requirements
 - Air Monitoring Requirements
 - 2. Building (and equipment) confined spaces:
 - Confined Space Type (Permit-Required or Non-Permit Required)
 - Actions Necessary for Non-Permit Required Classification
 - Confined Space Identifier (Coordinate with FM-Operations Staff)
 - Type of Space (i.e.: Air Handler, Boiler Interior, Attic, Basement Pit, Tunnel, etc.)
 - Equipment Nomenclature (Coordinate with FM-Operations Staff)
 - Entry Type
 - Minimum PPE Requirements
 - Attendant Requirements
 - Air Monitoring Requirements.

End of Section