

Temporary Utilities

The use of the utilities required to run the renovation are somewhat unique because the building is a renovation project. The specification section covering the use of the existing building states that when the existing utilities are not available for use, when they are being worked on and changed over, then the contractor should base their use from the specification section 1500.

Use of the Existing Building

The existing building must be maintained in a weather tight condition. The use of existing utilities is allowed until such time as they need to be removed to install new utility lines or replace the existing lines. (Coordination of the change over is obviously the responsibility of the contractor.) Permits must be obtained from Smithsonian Institution in order to perform welding and cutting, because the building is historic the owner wants to be aware of all work involving a potential fire. Tools and equipment causing vibration must also request permission from SI before doing work due to the potential damage the vibration can cause to the Historic Building. The chart below shows the limitations on the equipment to be used in the building.

Frequency	Maximum Peak Particle Velocity
1-10 Hz	6mm/sec
10-40 Hz	6-13 mm/sec
40 Hz and above	13 mm/sec

Temporary Utilities

1. Sewers and drainage
2. Water service, metering, and distribution
3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities
4. Heating and cooling facilities
5. Ventilation
6. Electric power service
7. Lighting
8. Telephone service

Since the building is very old, there are issues relating to the different expansion and contraction of materials due to changes in weather. In order to limit the change in materials due to the temperature, the building is maintained at a relatively constant temperature using two (2) 40 ton temporary chillers and two heaters while it is under construction. The project has not had to add separate services for electricity, sanitary or storm drainage. All of those requirements are running from the buildings existing utility supplies and the systems have been coordinated so there is a direct switch-over from the old to the new system in all cases.

Temporary Utilities continued

Support Facilities

1. Temporary roads and paving
2. Wash racks
3. Dewatering facilities and drains
4. Project identification and temporary signs
5. Waste disposal facilities
6. Field offices
7. Storage and fabrication sheds
8. Lifts and hoists
9. Temporary elevator usage
10. Temporary stairs
11. Construction aids and miscellaneous services and facilities

Security and Protection Facilities

1. Environmental protection
2. Stormwater, sediment, and erosion controls control
3. Tree, plant, and animal protection
4. Pest control
5. Site enclosure fence
6. Security enclosure and lockup
7. Barricades, warning signs, and lights
8. Covered walkways
9. Temporary enclosures
10. Temporary partitions
11. Noise control
12. Weather protection
13. Fire protection
14. Existing storm water drains

Environmental Requirements: Concrete Placement

- Cold Weather concreting:
 - ◇ Frozen ground: Do not place concrete on frozen ground.
 - ◇ Do not place concrete when temperature is below 40 degrees F, except with prior approval of Smithsonian Institution
 - ◇ Place concrete in cold weather in accordance with ACI 306.
- Hot Weather concreting:
 - ◇ Do not place concrete when atmospheric conditions endanger quality of concrete.
 - ◇ Place concrete in hot weather in accordance with ACI 305.
 - ◇ Cover reinforcing steel with water soaked burlap if necessary to maintain steel temperature not exceeding ambient air temperature immediately before embedment in concrete.
 - ◇ Use water reducing retarding admixture when concrete temperatures exceed 80 degrees F or other adverse placing conditions, as approved by COTR.
- At time of placement, provide concrete temperature not lower than 50 degrees F, or higher than 90 degrees F. Maintain surfaces receiving concrete at approximately same temperature as concrete being placed.