

Basis of Design

This section applies to the modifications and review of existing buildings for items which include, but are not limited to, the following: floor or roof penetrations, wall penetrations, support of equipment.

Design Criteria

- Obtain and review existing drawings maintained in Facilities Records. Conduct site visit during design phase to verify conditions especially if existing drawings are not available.
- The resulting structure shall be at least as strong or stronger than before the modifications. In no case shall the structure be weakened by the modifications. This applies to both gravity loads as well as lateral (seismic and wind) loads.
- Be sure to use the actual operating weight when reviewing new equipment loads. Consider housekeeping pad, inertia pad and curb weights also.
- Include miscellaneous equipment when reviewing new medical equipment. These items include: shielding, ceiling suspended units, and wall mounted units.
- Evaluate the final equipment location as well as the route that the equipment needs to take to travel to the final location.
- Re-establish lateral load strength of the building if wall penetrations are cut into shear walls.
- Analyze lateral load diaphragm effects if floor or roof penetrations are significant.
- Consider and specify any temporary shoring or jacking required to support existing members prior to modification. A possible example would be for supporting or relieving load from existing steel members prior to adding steel plates for strengthening.
- All existing structural defects discovered during design, demolition, and construction shall be repaired. This includes patching of spalls at exposed rebar in slabs, beams, and columns.

Design Evaluation

The following information is required to evaluate the design:

- Schematic Design Phase: Provide schematic plan indicating proposed revisions. Outline specifications.
- Design Development Phase: Provide framing plans, typical details. Draft specifications.
- Construction Document Phase: Complete design and specifications.

Construction Submittals

- Shop drawings and submittals for new structural members as required by other Facilities Services Design Guide sections.

Related Sections

- Facilities Services Design Guide - General Requirements – Structural
- Facilities Services Design Guide - Seismic Analysis & Upgrade of Existing Buildings

- All of the structural material sections of the Facilities Services Design Guide.

Products, Material and Equipment

- As required by other Facilities Services Design Guides sections for the specific structural materials utilized.

Installation, Fabrication and Construction

- As required by other Facilities Services Design Guide sections for the specific structural materials utilized.
- Specify that the contractor is to field verify actual field conditions prior to construction.

END OF DESIGN GUIDE SECTION