



Phase II



Phase I

Carnegie Mellon University is a global research university of over 10,000 students and is recognized for its world-class arts and technologies programs. As one of the first buildings of Carnegie Institute of Technology, the 1908 structure houses many of the Chemistry, Chemical Engineering and other engineering curriculum.

The project was completed in two phases. The first phase included a ten-story 40,000 square-foot, steel-framed laboratory addition built adjacent to the original steel-framed building built into a steep hillside at the west side of the site. Further complicating the design, new lower levels were created, below existing floor levels, to accommodate extensive mechanical equipment for the new laboratories. Approximately 20 foot high soil nailing walls were required to retain the adjacent existing foundations. Much of the new and existing foundations had to be carefully coordinated in the field. The northern stair tower and western glass mechanical shaft façade incorporated exposed steel framing. The entrance area ramp and steps are vaulted for the fresh air intakes below.

The project's second phase was initiated about two years upon completion of the first phase. It included an eight-story square-foot concrete and steel-framed elevator stair and mechanical addition located at the east end of the site. The project complimented the design of the first phase and included a 5,000 square-foot "green" plaza roof. Mechanical systems are located below the plaza that required it to be built into the adjacent hillside.

Renovations for both Phases included modifying floor elevations in the existing building to accommodate the existing main corridor's 4-1/4 percent slope. Additionally, some of the original lateral steel bracing was modified in order to simplify floor layout.

PROJECT DESCRIPTION:

The building serves as the primary structure for the University Chemistry Department and Chemical Engineering. As one of the first structures on the campus, preservation of the exterior facade was essential. Renovation and addition to an 8-story building to house the Art, Engineering and Science Laboratories.

ADDITIONAL PROJECT FACTS:

- Renovations to existing labs, mechanical rooms and offices and construction of a ten and eight-story additions.
- The project presented many phasing and logistics challenges, since ongoing operations had to be maintained at all times.
- Special welded and bolted connections to the original 1908 steel-framed structure were required.
- Concrete-framed green roof built into hillside with mechanical room below.

