

2012 GOVERNOR'S HISTORIC PRESERVATION AWARDS

Linde + Robinson Laboratory for Global Environmental Science



Linde + Robinson Laboratory's restored exterior with original celestial and solar motifs.

Originally built in 1932, Caltech's Linde + Robinson Laboratory for Global Environmental Science was transformed into a state of the art, high performance building, achieving status as the nation's first LEED Platinum laboratory in a historic building.

The Henry M. Robinson Laboratory of Astrophysics was designed for the Department of Astrophysics and housed solar observation instruments. Russell Porter, an artist, architect, and respected telescope designer designed Robinson Laboratory beginning in 1930 in collaboration with the architectural firm of Mayers Murray & Phillip. Robinson Laboratory is a rectangular building with two floors above ground and three below. Building construction is a reinforced concrete structure with cement plaster finish. The laboratory's function is reflected in its cast stone ornamentation, light fixtures, and other decorative details incorporating celestial and solar motifs.

Architectural Resource Group (ARG) and a diverse team of consultants—including mechanical and structural engineers, lab designers, and daylighting specialists—worked with users to design a cutting edge and energy efficient research lab while preserving the historic character of the building. The project fully restored the exterior of the building, while integrating an elevator addition and new rooftop equipment. Significant architectural spaces on the first and second floors were preserved, as are many of the character-defining features; including flooring, lighting, fixtures, bookshelves, and doors.

The Linde + Robinson laboratory uses a number of ground-breaking sustainability approaches, many of which take advantage of the building's historic design including: using the concrete building's thermal

mass; maintaining the original sun-telescope (coelostat) to track the sun and send daylight deep into the building; and using the lower portion of the telescope pit to hold water to service a cooling system that provides compressor-free cooling most of the year. Another historically sensitive environmental measure is the single high performance glazing system, which uses spectrally selective glass in historic window frames to maintain the appearance of the historic façade while reducing the amount of heat entering the building. Other energy-saving measures include: a system of advanced daylighting strategies, fuel cell technology employed as backup power of building systems; and roof mounted photo voltaic panels that track the sun with a combination of parabolic (solar concentrated) and thermal solar systems.

Learn more about the preservation and sustainability efforts at the Linde + Robinson Laboratory for Global Environmental Science:

<https://www.youtube.com/watch?v=2mDWb54m2Ww>