

GRADUATE AERONAUTICAL LABORATORIES California Institute of Technology

GALCIT

THE GUGGENHEIM PROJECT

A Brief Summary

Building Renovation Plan



Background

The Guggenheim Building was built in 1927 under the leadership of the first GALCIT Director, Theodore von Kármán and is a designated historical building. The building is flanked by the Firestone and Karman Buildings. Firestone is separated from Guggenheim at the ground level but connected by a bridge at the second and third levels.

Phases of Renovation: Phase I and Phase II

Almost ten years ago, and following the removal of GALCIT's historic 10-foot wind tunnel, a partial building renovation and seismic upgrade (Phase I) to the Guggenheim Building was undertaken by Hans Hornung, the fourth Director of GALCIT. In this phase several vertical shear walls were added at the basement, sub-basement, and the first floor levels. It was understood that a future Phase II renovation and upgrade would be undertaken to add new laboratories and teaching areas. In particular, the new vertical shear elements would be carried up through the third floor, or a new floor slab would be added at the second floor to fill in a large part of the existing double-height space and to create a Laboratory of Experimental Mechanics as well as a new Laboratory of Space Exploration



Summary

While a large part of the Phase II renovation is the seismic and related upgrades as described above, the programmatic and architectural impetus of the project reflects the faculty's and my desire to provide a new identity along with new large upgraded facilities for the Graduate Aeronautics and Aerospace Laboratories.

From an architectural point of view this project explores the relationships between the existing Guggenheim Building and the new insertions made within it. These new insertions will formally express some essential qualities of the new research work performed at GALCIT, and in doing so will collectively form a strong and fresh identity for the program, the people and the buildings.

For the purpose of this project's design, the existing Guggenheim Building has been thought of by the architects and faculty as a container, much like the large wind tunnel it once held. Elements such as suspended ceilings will be dropped into the container and will flow through the public hallways and corridors. They will deflect, deform, or rupture when they encounter existing elements (such as columns) or widened nodes (such as common instruction areas/lobbies).

To further express this idea, the vertical surfaces of the public corridors and hallways will be composed of curved walls of stud construction clad in gypsum board which is either painted or covered with custom wallpaper. Carved into these surfaces will be benches, display cases, work surfaces, and niches. Horizontal elements such as suspended ceiling surfaces will be three-dimensional and performative – they will contain lighting, have acoustic properties, and may be interactive. The architects working closely with the faculty will develop their formal characteristics to be expressive of the research philosophy promoted within GALCIT.

The architects for the project are **John Friedman Alice Kimm Architects, Inc.** an innovative firm bringing new and innovative ideas that reflect our heritage and vision.

Renovation Plan

First Floor

- a) Full renovation and expansion of Lobby, including stairs and hallway to existing lecture hall.
- b) Creation of high-quality shell space for two future laboratories, of space exploration which will contain a double-height space for vertical experiments involving large space structures and/or propulsion.



Second Floor

- a) Creation of a Common Instructional Area, hallways and corridors.
- b) Creation of the new Gordon Cann Laboratory for experimental methods and will house Ae104 experiments.
- c) Replacement of (1) single-occupancy women's room with new accessible single-occupancy women's room.



Third Floor

- a) Creation of the Allen Puckett Common Instructional Area, conference room, hallways, and corridors (1) faculty office, (1) secretary's office, a computational laboratory and ancillary facilities.
- b) Creation of high quality shell space which would include two research laboratories.
- c) Replacement of (1) multiple-occupancy men's room with new accessible men's room.
- d) Replacement of the Storage Space with a single occupancy, fully accessible women's room.



Additional Plans

Also, our plans include the renovation of the second floor of the Karman Building. This will house the new Joe Charyk Laboratory of bio-inspired design. Future plans also include the design and creation of outdoor gathering spaces, as well as the systematic renovation of the Firestone and Karman Buildings (Phase III).

Schedule

The project construction is scheduled to kick-off in June 2007 (with preparatory work commencing in March) and should be completed in early January 2008.

Unity and Cooperation

During this renovation stage we are requesting cooperation and patience from all of GALCIT occupants. We will do our best to help this process go as smoothly as possible and to keep you informed, but we will need everyone's help.

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