

Firmitas. Utilitas. Venustas. Firmness. Commodity. Delight.

Simplicity and sufficiency were guiding design principles for the Solar CalPoly project. From the project's inception, the students' design proposals for the house were modestly sized, challenging contemporary residential trends. The resulting design is 650 square feet of conditioned living space, thoughtfully designed and detailed to house two individuals. The team strove to design the house from the inside-out with the same care as designing a sail boat, a functionally elegant vessel with architecturally integrated elements, furnishings and storage, making every detail and space count. Transparency, access to adjoining outdoor spaces, and use of a portion of the roof for an outdoor room expands both the virtual and actual size of the house while keeping its ecological and spatial footprint small.

Responding to the climate architecturally before relying on mechanical means for thermal comfort was also fundamental to our design process. The Solar CalPoly dwelling is intended to be "switch-rich," providing opportunities for user control to "sail" the building in *open mode*, collecting and retaining energy in *closed heating mode* and rejecting unwanted heat gains and using stored "coolth" in *closed cooling mode*. Fixed, operable and deciduous shading devices are employed to optimize solar gain in the winter and minimize unwanted heat gains in the summer. "Switch-rich" strategies not only help users adapt the building to seasonal variations but they also support the potential of this prototype project to adapt to various climates.

The passive design strategies are supported by necessary photovoltaic and solar thermal technologies; these systems are integrated with the architecture. In the case of the roof, the modules share precious roof space with the roof deck, which is an essential spatial component of the project. In the case of the south-facing shading devices, the modules perform simultaneous essential tasks by collecting the sun's energy while blocking out unwanted heat.

Firmitas. Utilitas. Venustas. Firmness. Commodity. Delight.

The Solar CalPoly project endeavors to be "delightful" and memorable through subtlety. As a physical artifact, the project is conscientiously economical in size, form, and detail. As an artifact connected to its site (an essential source for "delight" in architecture), the exigencies of the competition compelled the team to focus on a more temporal, near environment inside/outside relationship. For this project, the experiential relationship between inside and outside is designed to be as harmonious as possible. This "joint" is essential given the project's economical space. The intention was to project a feeling of expansion from the inside by providing a strong visual and physical connection to the greater outdoors. In addition, the relationship between spaces on the inside is also intended to be fluid. This allows the inhabitants to define and use the spaces according to fluctuating personal needs and desires.

As one of its essential principles, the project embraces simplicity in a time of increasing complexity. Simultaneously, it is through simplicity the team seeks to achieve elegance. With conscientious attention to materiality and detail, the project presents an alternative to our culture's increasingly large, over-commodified dwelling spaces. In this way, the project poses a socio-political polemic, reminding us that we don't necessarily need more in order to live well.



Simple. Fundamental. Elegant.