



UCSF Minnesota Housing

San Francisco, CA

Exceeding Expectations with a Prefabricated Building Envelope and Target Value Design

With the high cost of living in San Francisco and only able to offer campus housing to 14 percent of its population, the University of California (UCSF) was eager to start construction on two six-story buildings that would provide much-needed housing for 708 students and trainees. Located in the heart of the Dogpatch, San Francisco's fastest-growing neighborhood, the student housing will bring affordable housing to students and become an important recruiting and retention tool for the University.

Owner:

University of California,
San Francisco

General Contractor:

Skanska

Architect:

Kieran Timberlake

Design-Build Prefabricator:

Clark Pacific

Striking a Balance

USCF design architects Kieran Timberlake wanted the buildings to fit into the look and feel of the Dog Patch neighborhood. Because of this, the University sought out an exterior system that balanced aesthetics with cost and environmental considerations. The design team decided on a rainscreen system but quickly discovered it would exceed the budget and add substantial time to the project schedule.

As a field installed system, it would also require scaffolding. This added cost and created multiple issues because the site didn't allow the space for this method of construction and union field labor is at a premium in the Bay Area.

It also required collaboration across multiple trades, each installing one of many systems such as cladding, insulation, windows and interior finishes. With a budget of \$125 per sq. foot, USCF had to explore other options.

A Single Source

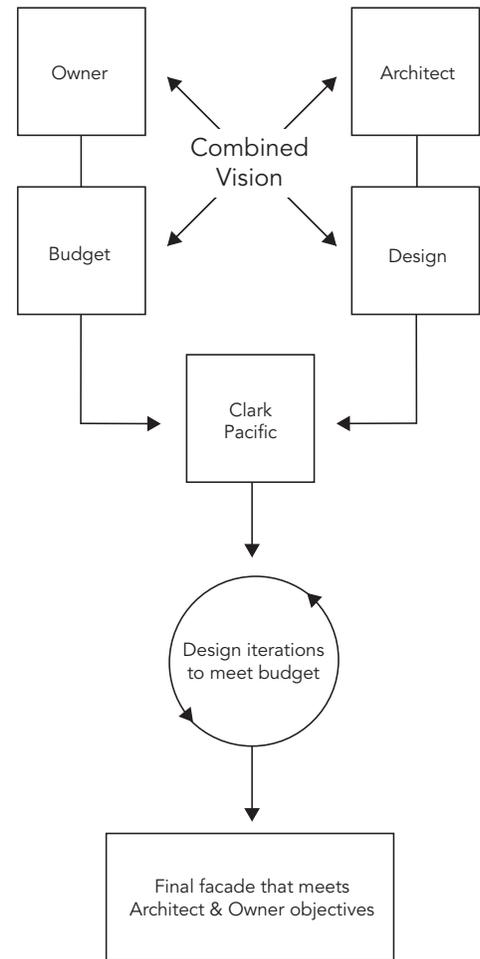
A single source barrier system would expedite construction, reduce risk and eliminate the need for UCSF to manage work with multiple trades. Clark Pacific's Target Value Design (TVD) methodology gave the University a blank palette to start with and one source for a complete building envelope system that is prefabricated offsite and already tested for ASTM and AAMA air, water and vapor penetration, and meets or exceeds Title 24 building code requirements for every climate zone in California.

Clark Pacific's system meets or exceeds requirements for:

- Air, Water, Vapor
- Fire
- Seismic Performance
- Sound Reduction
- Title 24
- LEED

With standards and requirements already met, UCSF only needed to think about aesthetics.

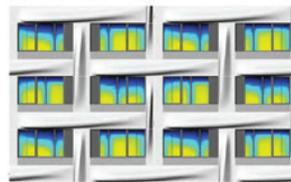
Target Value Design



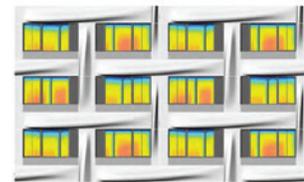
NORTH FAÇADE
37% INCIDENT SOLAR REDUCTION



EAST FAÇADE
28% INCIDENT SOLAR REDUCTION



SOUTH FAÇADE
39% INCIDENT SOLAR REDUCTION



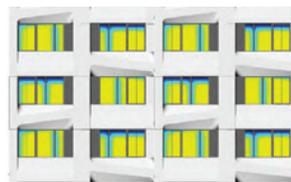
WEST FAÇADE
21% INCIDENT SOLAR REDUCTION



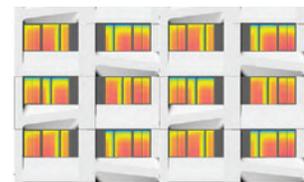
NORTH FAÇADE
25% INCIDENT SOLAR REDUCTION



EAST FAÇADE
16% INCIDENT SOLAR REDUCTION



SOUTH FAÇADE
20% INCIDENT SOLAR REDUCTION



WEST FAÇADE
10% INCIDENT SOLAR REDUCTION

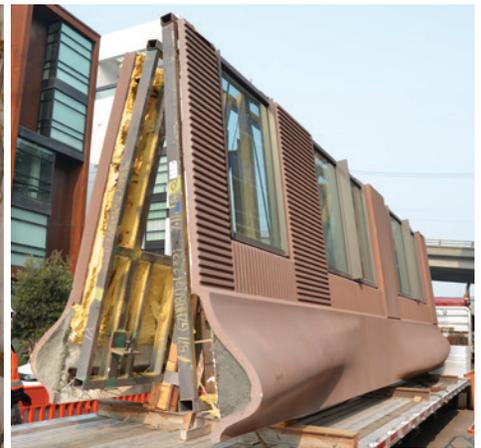




Form liners, a cost-effective way to provide depth and contrast.



Insulation applied on panel during the manufacturing process.



Complete panel; insulation, windows and frame ready for transport to the jobsite.

Energy Usage and Thermal Comfort for Residents

Clark Pacific worked with UCSF to determine a window-to-wall ratio that would keep cost within budget while also focusing on thermal comfort. The design team was able to explore multiple scenarios and the effect each would have on energy systems, cost and performance.

Kieran Timberlake also conducted a façade sun exposure analysis to determine impact of solar heat gain on the rooms. The design team selected billows and both horizontal and vertical sunshades were built directly into the Clark Pacific panels on the sun-facing elevations and flat panels on the others.

Clark Pacific's baseline system meets Title 24 prescriptive requirements and exceeds the requirements on performance. A key component of this is the continuous insulation built into the system. UCSF was able to achieve the U-value with a single source and without hiring another trade subcontractor. The design parameters of the system made it easier for the owner's energy consultant to analyze the input.

Results

- Working with Clark Pacific as the single source provider eliminated the need for UCSF to work with multiple trades.
- Working through its target value design process and production, Clark Pacific shaved six months off the design schedule.
- Weekly meetings allowed for multiple iterations in design on the fly and as the job progressed while maintaining the TVD budget.
- Standards and requirements were met automatically, eliminating the need for extra consultants and testing.
- Clark Pacific is the single contact for the envelope warranty.

Architectural Precast w/ Glass

The Rockwell
San Francisco, CA



Structural Facade

Escondido Graduate Village
Stanford, CA



Metal Panel on C-CAPP

Kasier Roseville
Roseville, CA



About Clark Pacific

Clark Pacific designs, manufactures, and constructs prefabricated building systems, bridging the gap between construction and manufacturing. We provide building owners and developers greater schedule and cost certainty, cleaner and safer jobsites, higher quality systems and more resilient structures than conventional construction.