

Monster Structure

Precast figures prominently in SJ Airport's garage project

By Greg Aragon

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At 1.8 million-sq-ft and \$270 million, the new eight-level parking garage going up at Mineta San Jose International Airport is one of the largest precast projects in California.

"It's a monster structure, the biggest I've ever been on," says Jeff Fredericksen, project manager for Greeley Colo.-based Hensel Phelps, the job's construction manager.

It is also the biggest precast project ever for West Sacramento-based Clark Pacific, which is in charge of erecting the 3,350-space garage, says Don Clark, the company's president of business development.

Both men say the city of San Jose, the project's owner, chose precast over traditional cast-in-place primarily because of time savings.

"By going with precast, the owner is able to get about 70,000 sq ft of floor area per week [erected], which is more than twice as fast as cast-in-place," says Clark, whose company is working on a \$35 million contract.

Clark adds that the precast amounts to a

five-month savings over the course of construction.

The consolidated car rental garage project is part of a major expansion and renovation of the airport. Also under construction currently is the North Concourse of Terminal B. Five of the 12 new gates will open this summer, with the entire terminal opening in mid-2010.

The design-build project is being built as a consolidated parking garage for the airport's rental car agencies. When complete it will include 3,000 rental car spaces, 350 public spaces, and a 200,000-sq-ft, three-level quick turnaround facility where rental cars are fueled, washed and maintained.

The new facility will make San Jose International more competitive with the region's other air transit hubs by placing rental cars within a short walk or onsite bus trip. No secondary transit mode will be required to reach the rental car centers as is the case at San Francisco and Oakland airports.

Construction is highlighted by a seismic method that included post-tensioning the precast beams with an array of cables, eliminating the need for extensive interior shear walls.

"[This] was the best solution to meet the client's need of wide open floors for the rental cars and to minimize the number of shear walls," says John Purinton, CEO of Watry Design Inc. of Redwood City, the project's architect.

Because the structure is going up at an operating airport, the project team had to deal with space and mobility issues, Fredericksen says.

"We have an extremely tight site – 6.5 acres for a building with a six-acre footprint – and we are completely surrounded by active roadways at the airport that have to remain open and not impacted, so we had to carefully map out our site utilization and staging," Fredericksen says.

"But being a precast job has helped because so much of the [structure] is manufactured offsite and brought in by truck, so we have a lot less concrete to pour onsite."

The project broke ground in February 2008. The precast topping out is scheduled for May 22.

When finished in August, the massive structure will have consumed 3,817 precast pieces or 32,600 cu yds of concrete, including 2,457 double Ts, 644 rectangular beams, 154 L beams, 84 inverted T beams, four transfer girders, 204 gravity columns and 212 spandrels. <<

Project Team

Owner City of San Jose

GC Hensel Phelps Construction, San Jose

Architect of Record TranSystems, Kansas City

Structural Engineer Watry Design, Inc., Redwood City

Parking Planning Watry Design, Inc., Redwood City

Precaster Clark Pacific, West Sacramento