

Building Pride

Summer 2011

National Committee Appointment for C.F. Evans

The NAHB Research Center recently appointed C.F. Evans to its National Consensus Committee, which will make updates for the next version (2012) of the National



Green Building Standard. Patrick Westbury, of C.F. Evans, serves on

the Multifamily Task Group that will review proposed changes to the Multifamily and Renovation Division of the standard.

The National Green Building Standard is the first point-based rating system for green residential construction, remodeling and land development. "We need to continue providing our industry with the best implementation platform to build green, one that is practical, accessible, credible and applicable across various markets," says Don Pratt, chairman of NAHB Consensus Committee, "The National Green Building Standard, created through a true consensus process, allows us to do that."



"We build it like it's ours."

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Pictured above left: The building form largely conceals a 500+ space parking garage. Above right: Open air decks reduced fire sprinkler and ventilation requirements.

More Than a Parking Garage... When Built Right

Across the country, apartment builders have been developing more and more sites near urban cores. Surface parking is usually inefficient on these sites, as land area is limited, so developers often turn to parking structures.

One common design is the "wrap," in which apartment buildings wrap around a garage. Residents have covered parking, and the garage blends with the building's architecture. Often, precast structures offer advantages over those cast-in-place.

With precast garages, success depends on "not casting problems into concrete." Careful preplanning is key to ensuring the garage integrates properly with the site and apartment buildings. A case study of The Tribute, with 359 living units and a 520-space garage in Raleigh, N.C., demonstrates how effective preplanning reduces problems when the garage arrives and is installed, and how good design can create attractive features from garage components.

Designing With The Site

With The Tribute, site conditions created an extreme challenge. The architect, Bill Egan of JDavis Architects, faced topography that fell more than 70 feet across the site. Working with the team, the architect developed an innovative solution that created aesthetic value and cost benefits.

Egan explains. "Our approach was to create a single wood-framed apartment building with a compact form that would work with the existing site—twice stepping the building with the hillside and allowing its footprint to be shaped by the topography. The resulting building form conceals the project's programmatic size."

"The parking garage was tucked into the hillside," he adds, "allowing its entry to be located mid-height within the deck so that no user of the garage would ever need to travel more than three floors within it. The courtyards were then shaped in such a manner as to allow for all except the lowest level of the deck to be classified as an open parking garage," a solution that eliminated sprinkler and ventilation requirements on all but the lowest garage level.

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Ensuring Quality Offsite At The Precast Plant

The garage manufacturer, Tindall Corporation, built all components in Spartanburg, S.C. The design utilized a pre-topped finish concrete beam system. Joining the team early, Tindall ensured that all components were designed to meet topography



Components manufactured in a controlled environment ensured consistent, high quality products.

requirements and that component delivery coordinated with the erection schedule.

“We were always present,” says Tindall’s Carl Clary. “We listened, provided input, and assisted in the early design of the structure to guarantee that the precast components would be manufactured and installed in a way that provided maximum efficiency.”

General contractor C.F. Evans meticulously reviewed all component shop drawings to confirm the garage would integrate seamlessly with building elements such as structural supporting foundations and retaining walls; mechanical, electrical, plumbing, and sprinkler systems; overhead clearance and elevator dimension requirements; and door and access requirements.

When the reviews were completed, Tindall manufactured the garage in a climate-controlled environment to eliminate weather delays and safeguard quality. Clary notes that “precast concrete allowed for the expedited schedule to be met, and it shifted a majority of the on-site construction risk to the precast manufacturing facility.”

Long before manufacturing was complete, site planning had begun. Facing a seven-week erection schedule and the challenge of accommodating oversized, precast components arriving by truck, the team created logistical plans to provide all-weather surface routes, adequate truck turning radiuses and adequate staging space.

Planning For Smooth Assembly


According to Carl Byars, senior project manager for C.F. Evans, “Unlike buildings, the garage is erected full height starting at one end and working toward the other, which requires leaving the exit path open. Our team developed a thorough strategy to allocate space properly, and the process was well-coordinated; everyone knew their role.” Field management applied close oversight to ensure watertight integrity, adherence to life safety codes and meeting of final finish performance requirements.

Takeaways

Ultimately, success depends on identifying all garage design requirements upfront and eliminating problems before manufacturing begins. Bringing together partners committed to extensive planning and coordination allows for the optimum solutions, leading to fewer field problems and a garage that integrates well with the project.



Highly coordinated site logistics enabled complete garage assembly in just 7 weeks.

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**Building Pride through
teamwork and innovation**