The project includes construction of new student housing, related support structures, site improvements, and utilities. Construction is underway on the three main buildings with an anticipated move-in date of late Summer 2011 for the first building. The project has the goal of achieving LEED Silver certification. The rendering below is courtesy of the Architect, EwingCole. Irwin & Leighton, Inc. is the Construction Manager on the project.

The construction involved masonry bearing walls with 152,600 sf of 8” Elematic plank (1,768 pcs), 10” solid slabs for breezeway & balconies (369 pcs), 12” x 12” precast columns (264 pcs), and precast stairs & landings (60 pcs). Some pieces were supplied to Oldcastle Precast by Bethlehem Precast.

Thanks to David Wan, PE, Oldcastle Building Systems, for supplying this project information. He concludes with “From looking at Princeton Theological College’s website, one can see that comfortable living quarters are very important for their students – low noise level, solid structures – like a modern monastery.”
Hollow core slabs, or plank, are precast prestressed concrete components typically used as structural floor or roof deck systems in single and multi-story buildings. To reduce weight and provide a more efficient product, the planks are cast with continuous voids that run the length of the panel. Prestressing the slabs creates an exceptionally strong structural component that can be used to span areas up to 45 feet in length.

At J. P. Carrara & Sons, Inc, we produce our Dynaspan hollow core plank on three 500’ long beds – a 4’-0” wide bed, an 8’-0” wide bed, and an 8’-3” wide bed which is the widest of its kind in New England. The use of 8’ wide plank significantly reduces the number of plank and thus the number of joints required in the structure resulting in time and cost savings for the owner. The wider plank can also accommodate larger mechanical openings than narrower systems without the need for steel support headers in most cases. The plank we produce has a smooth bottom surface which can be suitable for use as a finished ceiling, and our “carpet ready” plank can be finished with a smooth top surface ready for a direct-flooring application.

Our 8’-0” production line produces 8” & 10” thick plank. Our 8’-3” line produces 6”, 8” & 10” thick plank and our 4’-0” line produces 8” & 12” thick plank. The required thickness of plank is dependent upon design loads and the desired length of span.

We are often asked how we handle our large 8’ wide hollow core plank in the field. Typically, plank installers sling the plank at each end with cables to place the plank in the structure. They then have to leave the plank apart from the adjacent plank in order to remove the cables then bar the plank over tight to close the gap. This process is time consuming and increases the likelihood of chipping and spalling the bottom edges of the plank. J.P. Cararra & Sons utilizes vacuum lift devices to lift the plank and set them in their required location in the structure. These vacuum lifts are rated for up to 15 ton picks and can handle up to 8’ wide x 36’.

J.P. Carrara & Sons is also capable of fabricating many other precast/prestressed products, including total precast buildings and other specially formed and designed products. An all-precast system makes for one-stop shopping. This article was taken from their website, which of course, contains much other information.
8” Elematic Plank on CFS Load-Bearing Metal Studs

The Hilton Garden Inn, Clifton Park, NY illustrates that CFS load bearing metal studs and precast hollow core planks is one of the fastest structural systems to construct. Delivery of 65,200 sf (728 pcs) started in April and finished at the end of May, 2011, less than two months total time. Wesley Patton, PE, with the project structural engineering firm WGPM Inc, Charlotte, NC, said they have used this system on many hotels and dorms, because of the quickest speed of construction. Sometimes they used 1” to 2” concrete topping to take out the plank camber, but they were able to use $\frac{3}{4}$” of gypsum topping on this job, with a further cost saving. The floors were carpeted, and the ceilings (underside of the plank) had a textured paint applied. Thanks to Wesley and to David Wan, Oldcastle Building Systems for this story.

New SUNY Dormitory Is All Precast

Following years of industry promotion and obvious project successes, the new 5 story 500 bed dormitory now under construction in Albany is an all precast structure.

The project involves 180,000 sf of hollow core plank and 862 precast architectural wall panels (3323 tons of cement). Prior to this epic project, SUNY used wood in most dormitories.

(continued on page 4)
New SUNY Dormitory (continued from page 3)

SUNY Albany 500-bed dormitory site precast installation started in June, 2011

Oldcastle Precast Building Systems, Selkirk, NY is supplying and installing the precast components. Paulus Sokolowski and Sartor Engineering PC, Warren, NJ are the architects and engineers, and thanks again to David Wan, PE, Oldcastle Precast for these photos and facts.

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