Oldcastle partnered with Blue Sea Development – known for integrating emerging environmental technologies into high-quality, affordable housing developments – on construction of the 130,000 sq ft Forest House, a sustainable, eight-story green housing project located in a low-income area of New York. The 124-unit building will incorporate green and energy-efficient elements, both inside and out, and feature a rooftop greenhouse. Oldcastle Precast Building Systems supplied locally-produced precast concrete building components to allow the structure to be built quickly, and with minimal disturbance to surrounding areas. The site is located in a high density area with little space for construction activity.

Precast elements will also create a superior energy-efficient building envelope. The building’s tight seal will create a continuous thermal break, meaning no heat can pass between the inside and the outside of the building. Airtight seals will line the building’s interior walls, keeping temperatures, sounds and odors in common areas to a minimum, while increasing privacy and overall quality of life in the building.

A commercial recycling hydroponics greenhouse will be built on the roof that will incorporate Oldcastle Precast storm water run-off structures for rainwater harvesting. The greenhouse is integrated with the building structure so that it can make use of waste heat from the building below. Rooftop solar panels will create renewable energy for greenhouse power needs.

Project Credits: Architect – abs Architects & Danois Architects; Structural Engineer – TY LIN International; Precast Consultant – Equus Design; General Contractor – Blue Sea Development Company; Precast Supplier – Oldcastle Building Systems (and thanks to David Wan for this information).

Testimonial “Oldcastle’s unique thin brick inlay saved labor and reduced the construction cycle time for exterior walls.” Barbara Skarbinski, abs Architects.
The State University of New York (SUNY) recently completed a new $60 million, all precast concrete, 500-bedroom apartment-style dormitory on the southeast portion of the Uptown campus, named “Liberty Terrace”. The 180,000-square-foot facility is one of SUNY’s first total precast concrete dormitories. The two five-story buildings offer 4-bedroom apartments with 2 bathrooms, a full kitchen, and living/dining room area.

“Oldcastle Precast is responsible for the precast concrete design and engineering of the precast dormitory structure and manufacturing and installation of the precast concrete elements. Precast concrete was chosen for its versatility, durability, and speed of installation which allows for a short-term construction period”, stated Aaron Fink, Regional Sales Engineer for Oldcastle Precast Building Systems.

Using two field erection cranes and crews, and with the ease of installing precast components, installation began in June of 2011 and finished in September, meeting a very aggressive schedule to place approximately 185,000 sq ft of 8” and 10” Elematic hollow core plank, 604 exterior wall panels and 250 8” thick interior walls, plus various precast lintels, stairs and landings. The exterior walls were 12” thick, with 4” of insulation sandwiched between a 5” interior structural wall and 4” of exterior architectural grade finished concrete.

The dormitory project is designed to achieve the LEED Gold Level, meaning this construction project will be environmentally friendly in a number of ways, incorporating features such as countless natural and sustainable elements, including permeable pavement, a green roof, rain gardens, daylight maximization, and the use of recycled and locally-sourced materials. The buildings will be heated and cooled through a geothermal (ground source heat pump) system using the constant temperature of the soils to moderate cooling and heating energy needs.

LeChase Construction Services is the project general contractor, teamed with PS & S Architects and Paulus Sokolowski Sartor Engineering, PC to design and construct the dormitory. Oldcastle Building

(continued on page 3)
SUNY Albany’s New 500-Bed All Precast Concrete Dormitory
(continued from page 2)

Systems supplied and installed the precast, teamed with US Concrete Precast Group who supplied the exterior walls. Thanks to David Wan, P.E., Chief Engineer, Oldcastle Precast Building Systems for this story and the photos, as well as the September ’11 issue of “Oldcastle Precast - Delivering Reliability”.

Precast Concrete Products, from PCA’s 9/8/11
“Concrete Thinker”

In 1950, the completion of the Walnut Lane Memorial Bridge in Philadelphia signaled the beginning of the precast concrete industry in North America. Today, precast concrete structures, including buildings, parking garages, and bridges, are commonplace. These products benefit from superior quality control achievable at a production plant. Cost savings are realized when shapes are duplicated.

Uses:

Precast concrete is widely used for:
- Multi-family housing (low-, mid-rise)
- Hotels and Motels
- Retirement Homes
- Security facilities
- Schools
- Office Buildings
- Warehouses
- Manufacturing Facilities
- Storage Facilities
- Big Box Stores
- Shopping malls
- Hospitals
- Libraries
- Airport Terminals
- Stadium and Arena Elements (seating, steps, pedestrian ramps, concession stands, locker rooms)
- Sound barriers (Highways, Industrial Sites)
- Security barriers (planters, walls)

Why:

Provides predictable quality and structural characteristics because of factory controlled conditions.

Timeliness. Mass production as well as off-site production shortens project timeline, allowing earlier occupancy. For example, the walls of a building can be manufactured while on-site foundations are being built.

Strength. Precast concrete is normally of higher strength which allows for long clear spans making it especially applicable to structures requiring large open spaces such as parking garages.

Safety. By nature concrete provides superior fire resistance and sound control for individual building elements and reduces fire insurance rates, especially useful in multi-family housing.

Durable. Provides long service for high use applications.

Secure. Acts as a strong barrier for locations where security is an issue.

Precast concrete has many environmental benefits during construction and for the life of the structure.

During construction:

Waste Minimization. Less materials are required because precise mixture proportions and tighter tolerances are achievable. Less concrete waste is created due to tight control of quantities of constituent materials. Waste materials are more readily recycled because concrete production is in one location. Sand and acids for finishing surfaces are reused. Steel forms and other materials are reused.

During the life of the structure:

Energy Performance. Energy savings are achieved in buildings by combining the thermal mass of
Precast Concrete Products

concrete with the optimal amount of insulation in precast concrete walls. Precast concrete acts as an air barrier, reducing air infiltration, and saving more energy.

Disaster Resistant. Precast concrete structures are resistant to fires, wind, hurricanes, floods, earthquakes, wind-driven rain, and moisture damage.

Cool. Light- or natural-colored concrete reduces heat islands, thereby reducing outdoor temperatures, saving energy, and reducing smog. Precast concrete reduces heat islands, thereby saving energy, and reducing smog. During the production process, forms for concrete are well lubricated. After curing, the product is carefully lifted from the form and taken to a yard for further curing before it is shipped to the project site. The form is cleaned and prepared for the next batch of concrete. Many precasters can reuse their forms every one to two days.

Exterior finishes for architectural precast concrete can incorporate a full range of colors and textures. Textures are achieved by acid-etching, retarders, or sandblasting.

Recyclable. Precast concrete structures in urban areas can be recycled into fill and road base material at the end of their useful life.

Standard precast products such as beams, decks, and railroad ties are shaped in one type of form that is used repeatedly. Specialty precast products are designed for the particular building, bridge, or other structure. Most precast companies have their own carpentry shops where skilled workers create forms for the specialty products. Architectural concrete is often cast specifically for each new project.

During the production process, forms for concrete are well lubricated. After curing, the product is carefully lifted from the form and taken to a yard for further curing before it is shipped to the project site. The form is cleaned and prepared for the next batch of concrete. Many precasters can reuse their forms every one to two days.

Exterior finishes for architectural precast concrete can incorporate a full range of colors and textures. Textures are achieved by acid-etching, retarders, or sandblasting.

Welcome to LHV Precast Inc.

PCANY is very pleased to welcome LHV Precast, Kingston, NY, as our newest Full Producer Member. As with all our members, you can find information on the wide range of quality products they produce on our website, as well as theirs. Adam Baker will be their presenter for PCANY at the January breakfast meeting of ACI ENY, describing their successful system for fast replacement of county bridge structures and abutments.