PCINE: A leadership role in raising the profile of precast concrete

April 04, 2008 - Owners Developers & Managers

Architects, builders and developers have long recognized that precast concrete offers distinct advantages: strength and durability, accelerated construction schedules, reduced long-term costs, design flexibility and a wide range of aesthetic options, among others.

The Precast/Prestressed Concrete Institute Northeast (PCINE) was established to educate developers, architects and others about the numerous benefits of precast. PCINE also fosters understanding of how precast is helping to shape the development of important, wide-reaching construction trends.

Recently, for example, the building industry has begun to appreciate the critical role precast plays in sustainable design and construction and the responsible use of resources.

About PCINE

PCINE is a professional trade association and a chapter of the national Precast/Prestressed Concrete Institute (PCI). The association, based in Belmont, Mass., comprises nine producer members and 35 associate member companies that serve Mass., Rhode Island, Conn., Maine, N.H., Vermont and N.Y.

All producer members are PCI Plant Certified, which means they adhere to professional production techniques and rigorous industry standards.

Since its founding in 1978, PCINE has assumed a leadership role in educating the construction community and design professionals on the advantages of precast concrete and assist designers in specifying precast products and building systems.

Precast: The choice for sustainability

With increasing urgency, the construction industry is seeking new methods and materials that combine environmental stewardship with economic viability for builders and owners. Many have discovered that precast offers reduced long-term costs, increased energy efficiency, and can help contribute to earning 23 of the 26 points required for LEED certification.

At PCINE, we emphasize these and other benefits for sustainability, including:

Manufacturing: The materials needed to make precast concrete - sand, stone, limestone, clay and water - are accessible, plentiful and not high in toxicity. Because of precise mixture requirements, fewer of these materials are needed, and less waste occurs.

Construction: Precast concrete offers a quieter, cleaner, shorter construction period. Because precast concrete is manufactured away from the construction site, less dust and waste are created on-site and a smaller construction footprint is required.

Durability: Precast is highly resistant to weather, corrosion, natural disasters and fire. Panels can also remain unaffected during renovations, and offer a much higher probability that a building will remain intact should the function of the building change.

Efficiencies during occupancy: High performance precast concrete insulated wall panels for the building envelope can reduce a structure's heating and cooling costs over its lifetime. The panels are manufactured with an outer layer of concrete, an insulation layer and an inner layer of concrete.
The advantage of the panel reduces the number of joints and gaps where moisture and air could intrude into the building, which could reducing the energy efficiency and increase the potential for mold growth.
Mega projects: A growing trend
Throughout the northeastern United States, developers continue to expand the scope of their vision, creating mixed-use projects that combine residential, commercial, retail and entertainment elements. Over the past decade or so, these "mega-projects" have revitalized urban areas. Of course, these complex projects also entail significant challenges in design, planning, cost and scheduling. In addition, mega-projects entail the numerous challenges that accompany development in an urban or previously developed setting.
To overcome these challenges, developers have turned to precast concrete, which offers significant advantages to a mega-project. Two of the most important: lower cost and faster construction.
By selecting precast, developers compress construction schedules. In addition, precast erection can continue regardless of the weather and can result in the quicker enclosure of structures â€” important factors for developers who have to contend with winter in the northeastern U.S.
During the planning phase, precast concrete panels provide designers with a significant degree of flexibility and the ability to achieve a broad range of aesthetic goals.
In addition, precast elements are manufactured in a controlled environment. This process offers uniform strength and reliability of each element and enables delivery of precast as needed, saving valuable space on-site. After construction, precast provides a zero-maintenance faÃ§ade that saves the owner time and money.
As sustainability continues to gain steam and developers plan new mega-projects - and as new trends emerge - PCINE will continue to develop programs that demonstrate the strengths of precast.

Rita Seraderian, P.E., is executive director of Precast/Prestressed Concrete Institute Northeast (PCINE), Belmont, Mass.