Ballet Centre Shines
High-Performance Finishes on a Beautiful Building

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Commercial office properties have always had to contend for tenants as a part of doing business, but increasingly, existing buildings are facing stiffer competition from new office properties offering integrated amenities packages that go way beyond the lobby coffee shop. As a new generation of employees enters the workforce, employers are challenged to secure leases that provide more than simple office space, instead offering an attractive combination of recreation, retail, and relaxation options that feel more akin to a resort than a workplace. In the case of Prudential Plaza, a 41-story structure in Chicago built in 1955, the challenge for building owners was to offer new value in a building originally designed to respond to a workforce that no longer exists.

Investing more than $85 million into building renovations, Prudential Plaza’s owners envisioned a top-to-bottom rehabilitation, crowned by a 13,000 square-foot amenities deck on the 11th floor. The roof top transformation is highlighted by a fully-wired amphitheater, fire pit lounge and a small lawn accompanied by a new 12,000 square-foot fitness center and a 7,000 square-foot clubhouse. All of which are exclusively for building tenants and their employees. Kyle Kamin, a CBRE Inc. executive vice president and tenant broker who has clients in Prudential Plaza called the roof deck “a game-changer with an unbeatable view.”

Certainly the idea of a gorgeous tenant recreation and lounge area would appeal to most, however few outside of the design and construction industry would appreciate the immense challenge of adding this type of space on top of a 60-year-old roof. When Wolff Landscape Architecture was asked to partner with Chicago-based architecture firm Solomon Cordwell Buenz...
for landscape design, project manager Ishmael Joya quickly understood the complexities of the situation. Joya is a landscape architect with 15 years of experience, specializing in green roof construction.

“Prudential Plaza is a classic figure in Chicago’s skyline and the first time we walked the project it was clear that the four-and-a-half-inch thick roof deck was going to present some design and construction challenges,” remarked Joya. Though the Wolff team has completed many green roof projects including other renovations, Joya realized that adding what is essentially a mini-park to a very thin structural surface was going to require out-of-the-box thinking. “In any roof deck renovation, it’s critical to reduce the weight of the building materials, because the building is only designed to support a maximum amount of weight and that can’t be compromised,” he said.

Fortunately, Joya had already had a strong positive experience with ACH Foam Technologies’ Foam-Control EPS Geofoam, a lightweight expanded polystyrene (EPS) material with high compressive strengths that is used to reduce axial loading on structures. Joya has also found the product very easy to work with, which saves time and money, ultimately allowing designers to put more of the client’s investment into tangible value users will see and feel rather than sub-surface building materials. Joya worked closely with the design team’s structural engineer to make sure the appropriate products were specified to support the expected weight of each area of the renovation.

On the Prudential roof deck renovation, two types of Geofoam were used. EPS 15 was used in areas that would largely be filled with plants and wouldn’t bear much foot traffic. EPS 46, chosen for its exceptionally high compressive strength, was used as a structural fill across the design’s many grade changes and in areas that would bear more weight of the roof deck occupants. For Joya, another great advantage of using the EPS Geofoam is being able to see the shape of the assembled product and make any required changes before the concrete is poured and rework becomes significantly more complicated.

Once the design was complete and construction was underway, installing the Geofoam was the responsibility of Christy Webber Landscapes, a subcontractor to general contractor Bear Construction, who managed the overall building renovation. Though, like the Wolff team, Christy Webber Landscapes has extensive experience with green roof construction, project manager Nick Kinsella remarked that the roof deck on Prudential Plaza was one of the most challenging projects he has worked on.

“The design for this project was really quite complex, with lots of different design elements and a wide range of building materials in play,” noted Kinsella. For most construction projects, especially renovation work, understanding and resolving construction logistics is a challenge that generally presents case-by-case
complexities for builders like the Christy Webber team. In the case of the Prudential roof deck renovation, one of the biggest challenges was simply getting the required building materials to the 11th-floor roof. Since the building is located adjacent to a series of vaulted streets, the construction team was unable to use a high reach crane because the weight of the crane would have required special provisions and necessitated street closures.

“Basically we had to bring all of the construction materials up to the project site in the building’s freight elevator,” continued Kinsella. “We were able to work with ACH Foam Technologies to have all of the pieces of foam cut to a specific length allowing laborers to transport the foam to the 11th floor on the elevator and then walk it through a series of corridors out to the roof.” Kinsella also worked with the company’s product representative to develop a just-in-time delivery schedule to ensure that a steady stream of EPS Geofoam in the required densities arrived on the roof as workers were ready to put them in place. This allowed builders to keep the limited staging area clear of excess materials while ensuring that construction progress would continue unimpeded.

Once the Geofoam was on the roof, the building team assembled the premarked pieces, allowing the space to take shape. As each area of blocks was assembled, the construction team was able to survey the progress and fine tune according to the designed curves and contours. Pieces that needed to be further shaped were cut by hand with a reciprocating saw by general laborers.

Today, with construction at Prudential Plaza complete, building tenants are enjoying a premium green roof experience that boasts fantastic skyline views and overlooks Chicago’s famed Millennium Park. Interestingly, 10 years earlier, Millennium Park was also built on top of ACH Foam Technologies’ EPS Geofoam for many of the same reasons.

“The transformation of the 11th-floor roof deck really couldn’t be more dynamic,” said Kinsella with pride. “The space went from a flat, barren roof to a vibrant, inviting private park that will be a delightful spot for mid-day lunch or after work drinks.” Joya agrees, adding that without Geofoam this beautiful, elevated green space simply wouldn’t have been a possibility. ARW/WC Architect