# Case Study

OFFICE SUSTAINABLE

## 1 BNC Center

CHARLOTTE, NC

**Owner**
1 BNC Center
Charlotte, NC

**Architect/Designers**
Perkins+Will
Charlotte, NC

**Vitro Products**
*Solarban*® 70 glass

**General Contractor**
Balfour Beatty
Charlotte, NC

**Glazing Fabricator**
J.E. Berkowitz
Pedricktown, NJ

**Glass Contractor**
Trainor Glass Company
Charlotte, NC

## PROJECT BACKGROUND

*Solarban*® 70 (formerly *Solarban*® 70XL) glass does more than provide tenants of Charlotte's 1 BNC Center with spectacular city views. The Vitro glass is also helping the city's newest skyscraper nourish a vast collection of interior plants and trees that enhance the comfort and productivity of its occupants.

The centerpiece of a $540 million development, 1 BNC Center contains more than 700,000 square feet of office space in a soaring, see-through, 32-story tower. While the building's transparency is striking, its most noteworthy highlight may be the lush forest of interior greenery. Visitors are greeted by a landscaped six-story "Urban Garden" atrium with a water feature and an array of trees, shrubs and other vegetation. In addition to the atrium, the architects developed a series of stacked "sky gardens" that occur at opposite corners of the building. Each sky garden is a three-story-tall, landscaped interaction hub flanked by formal and informal conference spaces.

*Solarban*® 70 glass was specified for 1 BNC Center for more than aesthetic reasons. With a visible light transmittance of 64 percent, *Solarban*® 70 glass provides the sustainable attributes to help sustain "sky gardens" at opposite corners of the building.

Vitro® Architectural Glass

**1 BNC Center | Charlotte, NC, USA**

Thomas Mozina, LEED® AP, AIA, Perkins+Will, was the senior designer for the project. He said the sky gardens were designed to create an environment that increases business performance. Research studies showed that access to nature can have performance, psychological and physiological benefits to a building's occupants. "We built a business case that included enhanced opportunities for collaboration and communication, improved staff retention and recruitment, stress reduction, increased mental agility, increased motivation and productivity, and improved air quality and comfort."

Although *Solarban*® 70 glass was a relatively new product when it was specified for 1 BNC Center, Mozina said it was clearly the best choice for the project. "We needed glass with high visible light transmission for the vegetation as well as aesthetics," he explained.

Energy and environmental performance were critical factors in the selection of *Solarban*® 70 glass, according to Mozina. "Our practice focuses on sustainable design, which includes energy modeling of the building and choosing products that meet the thermal demands of the climate. Having the building perform at an optimal level and thriving years from now was key to the glass selection. We specified *Solarban*® 70 [glass] because of its strong performance characteristics."

Bob Trainor, CEO of glazing contractor Trainor Glass Co., echoed Mozina's thoughts. "The decision to use *Solarban*® 70 glass was driven by a commitment, not just to achieve LEED certification, but to create one of the most environmentally friendly buildings in the Southeast. The glass is ideal for that region because it provides excellent results in both cold winter and hot summer conditions."

The predominant use of *Solarban*® 70 glass on 1 BNC a sustainable design and excellent results in all weather conditions for years to come.

Although it was introduced at the 2005 Greenbuild International Conference and Expo, almost five years before 1 BNC Center finished construction, *Solarban*® 70 glass continues to set the standard for environmental performance in the glass industry. With visible light transmittance of 64 percent and a solar heat gain coefficient of 0.27, the glass yields a light to solar gain (LSG) ratio of 2.37 that remains unmatched by competing commercial glass products.

Other sustainable attributes of 1 BNC Center include rain and groundwater collection systems, low-flow plumbing fixtures, green roofs and indoor air that is enhanced by regular infusions of fresh air. Floor-to-ceiling windows bathe offices and conference rooms in natural light and cubicles feature individual ventilation controls. There also are bike racks and changing spaces that encourage workers to pedal to work.

Now that 1 BNC Center is open for business, Mozina couldn't be more pleased with the outcome. "This project is a shining example of a 'thoughtful approach' to addressing the needs of a contemporary work force.

He is equally certain that his choice of *Solarban*® 70 glass was the right one. "At the time we selected the glass, *Solarban*® 70 [glass] was a very new product. Over the years, we have continued to specify the product for other projects as well."

Brian Clark, senior executive vice president for glazing contractor Trainor Glass was equally satisfied with *Solarban*® 70 glass. "From our perspective, the job was a simple installation, yet the scope of the project (more than 300,000 square feet of glass) was immense," he said. "What was unique was the vast amount of different interfaces, from glass to metal panels, to louvers, to stainless steel panels, to skylights systems. Those interfaces added to the complexity of the project."

**To learn more about *Solarban*® 70 glass and other high-performance glass products by Vitro Glass, visit vitroglazings.com or call 1-855-VTRO-GLS (887-6457).**



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