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Announcing the Winners of the Third Annual USGlass
DESIGN AWARDS

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LARGEST CIRCULATION OF ANY GLASS MAGAZINE



One Hundred Above the Park features an angled glass façade constructed with 135,000 square feet of glass.

High-Rise Construction

One Hundred Above The Park

St. Louis, Mo.

Completion Date: November 4, 2020

Square Footage: 135, 000

Architect: Studio Gang

Glazing Contractor/Curtainwall Supplier: Ventana

Glazing Consultant: Studio Nyl

Structural Engineer: Magnusson Klemencic Associates

Glass Supplier: Shanghai Yaohua Pilkington (SYP)

This 518,000-square-foot Green Globes-certified residential tower was designed to provide views of Forest Park and the Gateway Arch. The 36-story, 316-unit tower rises 385 feet and contains 135,000-square-feet of glass. The angled glass façade improves energy efficiency, and each apartment features a corner



living room with double exposures. Its scalloped façade and leaf-shaped design frames the western skyline of St. Louis. Its precisely angled expanses of glass reveal the first light of a waking city and the setting sun over the forest below.

Constructing the unique façade and floorplates on time required an aggressive schedule and complex glass work. Using BIM and GPS technology, the team completed one floor per week by installing the curtainwall glass on an upper floor simultaneously with metal panel walls on the floors below. The design's angled edges create a condition, which, together with tilted glazing, not only capture more daylight but also self-shade when necessary and provide the opportunity for natural cross ventilation. The building's design contains zero straight slab edges. Its glass curtainwall tilts outward and each floor cascades in different angles to resemble a maple leaf. Since the curtainwall had to be pre-manufactured off-site, pouring slabs to meet a stringent 1-inch curtainwall tolerance was the project's primary challenge.

Ventana created a BIM model used by the concrete subcontractor to establish the slab locations of the building. The leans of the high performance, low-E insulating glass required a custom geometric design and install, contained zero right angles, and significant BIM services and Revit modeling. The BIM models created by Ventana were used by other trades to successfully complete the build. Ventana also designed custom laboratory-tested guardrail units to snap onto the curtainwall and match the look of the overall building.



Photo: Brian Peregrina

↑ Low- to Mid-Rise Construction

UC Riverside Plant Growth Environments Facility

Riverside, Calif.

Completion Date: November 20, 2020

Square Footage: 1,700

Architect: Perkins & Will; Stuppy

Greenhouse

Glazing Contractor/Consultant: Giroux

Glass

Metal Installer: Rutherford

Structural Engineer: Stuppy Inc.

Greenhouse Design, Manufacturing &

Construction

Glass/Curtainwall Suppliers: Arcadia,

Trulite, Stuppy Greenhouse

Additional Glazing Materials Suppliers:

C.R. Laurence (glazing supplies); Ahern

(boom lift rentals)

Greenhouses use glass to create an environment where non-native plants can survive. The floor-to-ceiling glass panels allow maximum sunlight to enter the structure during the day, absorbing heat that keeps the interior warm when temperatures cool at night. This structure is no exception, but its extremely large size sets it apart from the average greenhouse. It's also unique because it was built as a research facility, specifically designed for studying plants. For this reason, the glass and framing

had to be perfectly assembled to maintain a climate-controlled environment, ensuring that no air, water, or particulate from the outside made its way into the structure. The original greenhouse plans did not account for geographically-unique weather patterns. Cold, rainy winters and hot, dry summers would expand and contract the original glazing and frame materials, compromising the structure's controlled internal environment. To remedy this, Giroux Glass adjusted the greenhouse's design in order to make it completely secure. The team also administered multiple rounds of water tests to make sure everything was built to the highest standard.

Roughly 85% of the interior and exterior walls, as well as the roof of both the head house and greenhouse were comprised of glass components. The remaining 15% was clad with a standing seam panel. This large quantity of glass put Giroux in a unique position. The industry generally categorizes glazing as a finish trade, as glaziers usually perform their installations after the majority of other building components have been set in place. But because the glass in this building functioned as the interior and exterior walls, as well as the roof, Giroux became the leading resource for constructing this building. The glazing team worked very closely with the project's two sets of general contractors: DPR, which oversaw work for the overall project, and Stuppy Greenhouse, which designed and supervised construction of the greenhouse system.

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In the UC Riverside Plant Growth Environments Facility, about 85% of the interior and exterior walls, as well as the roof of the head house and greenhouse, are constructed of glass components.