CASE STUDY

IC2 TECHNOLOGIES INC.

A subsidiary of Unicel Architectural Corp.

Architect creates glass house with wood framing to optimize sylvan setting

Timber curtain walls seamlessly blend interiors with nature

The project

A growing, three-generational family had a vision to create a nature-infused vacation retreat on a large wooded property of over three acres in Amagansett on Long Island, NY. The property featured a lovely treed setting with ample privacy and tranquility – ideal for weekend escapes and reconnecting with the outdoors. The family particularly wanted the residence to seamlessly blend indoor and outdoor living in a way that could easily accommodate an extended family with multiple grandchildren.

"The idea was to create an architectural space in dialogue with the woods, and with all the comforts of modern living, while complementing - not detracting from - the natural beauty of the surroundings."

- Jerome Engelking, Architect

The design

Architect Jerome Engelking understood immediately the challenges and the opportunities presented by both the setting and the owner's vision. He also wanted to preserve the land as much as possible and create a home that would seem a natural extension of the landscape. To create the desired open effect, he designed a glass house to eliminate walls and visual delineations. Instead of the more industrial feel of steel or aluminum framing, he designed an all-timber structure to keep the building's aesthetic warm and natural. For ease of construction, he created a prefabricated building system that combined the timber frame structure with the glazing in easy-to-assemble components.

The 12-foot high house was designed to sit in the middle of the acreage in a grassy clearing. The base incorporates 5-foot modular increments for a rectilinear flow that includes a private wing with bedrooms and a lounge space to the north, and a social wing with living, dining and kitchen areas to the south. The bathrooms, laundry and kitchen spaces are set along the east side of the house. To manage daylight and privacy, automated wood blinds constructed on the exterior of the west façade, can be lowered and adjusted as required for occupant comfort.

The key elements

IC2 Timber Curtain Walls

Understanding that a glass house is defined by its structural framing, Engelking set out to find a timber curtain wall manufacturer with similar visions of sustainable, natural beauty. His research led him to Unicel Architectural's subsidiary, IC2 Technologies – a Quebec-based manufacturer specialized in the fabrication of high energy-efficiency timber curtain walls. IC2's curtain wall integrates RAICO's THERM+ H-I sealing technology that can be mounted on any kind of timber or derivative timber product. With its own invisible wooden connector system and an effective 3-level drainage system, this highly versatile RAICO technology can easily be installed in buildings with a steel, concrete or timber structure.

IC2 designed the curtain wall timber mullions to support the roof structure – a very unique architectural feature in that the whole curtain wall perimeter of the house supports all the roof loads.

"It is rare to find timber or aluminum curtain wall manufacturers that allow the façade mullion systems to support the roof like this. The skin system directly applied to the structure of the house offered the minimal aesthetic I was looking for."

- Engelking

Art Massif Glulam Timber

In addition to providing wood mullions for the curtain walls, Quebec-based Art Massif partnered with Unicel's IC2 to incorporate its Southern Yellow Pine glulam timber beams and decking for the roofing system. Art Massif specializes in glued-laminated timber manufacturing for commercial and residential construction using a traceability chain which means their wood comes from responsibly managed forests harvested using methods that respect local ecosystems and communities. Its glued-laminated timber beams are manufactured according to CSA Standard 0122-6 and certified by APA, a quality assurance association specializing in engineered wood products and reaches the highest aesthetic quality grade.

"The timber curtain wall solution with glazing and load-bearing columns was packed into readily transportable pieces and was assembled on-site within six days. A seamless, pragmatic and easy construction experience."

- Engelking

The Results

Now completed, the glass house resides organically in the wooded clearing with a lawn area as a back yard and a carefully positioned retaining wall protecting the front façade. Vertical slats of cedar ensure adjustable privacy and provide daylighting and heat control. From the interior, occupants feel a part of the outdoor setting as the distinction between inside and out is effortlessly abstracted. Aesthetically pleasing natural wood elements dominate the design to infuse interiors with warmth and style.

From a functional living perspective, the growing family lives comfortably in expandable sleeping spaces that feature bunk beds and sofa beds as required. The communal living area is ideal and flexible for larger or smaller groups and uses space efficiently for relaxing, cooking and dining. For the children, the house conveys a sense of camping and outdoorsy ambience. For the parents, it is functional, easy to maintain and comfortable in every way. An ideal getaway!

Participants

Architect: Jerome Engelking
Timber Curtain wall: IC2 Technologies Inc., a Unicel Architectural Corp. subsidiary
Glue-laminated Timber: Art Massif Wood Structure

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