

Manchester Storage Facility

Calgary, Alberta



The Manchester Storage facility is part of the redevelopment of the Manchester Centre, a City of Calgary owned project. The entire project is upscale and keyed on sustainable development. The buildings have a LEED Silver designation.



the process, the precast manufacturer learned about issues that were critical from an architectural design perspective.

The project features insulated precast prestressed concrete sandwich panels that serve as the building envelope. The insulation used was



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The precast manufacturer was involved in all phases of the storage facility, from conception to construction. Precast sales representatives met with the Architect, Riddell Kurczaba's, Tim Fossey, to provide assistance on potential precast solutions to his architectural design. The architect wanted multiple exterior finishes, including brick, as well

varying colors and textures. There were also accent features such as glazing with headers and sills. The precaster provided suggestions and input to facilitate construction as well as achieve the architectural requirements. In addition, the designer visited the precast production plant to become better acquainted with production methods, and in

Stunning Example of a Green Building:

La Tohu Pavilion – Cirque du Soleil



Dow Chemical PANELMATE™ with a thickness of 4 inches which provides an R value of 21 in the panel system.

In addition to providing insulation, the precast concrete panels also provide thermal mass. Thermal mass is determined by the material's specific heat, thermal conductivity and density – where the mass of the concrete acts as a thermal storage medium. The heat generated inside the building during the day can be stored in the concrete. At night, the heat stored during the day is released keeping the temperature in the building from falling. The thermal balancing provided by the exposed concrete walls improves the efficiency and reduces the peak loads on the mechanical HVAC system. The brick texture on the building

facade was achieved by using a neoprene mold liner. Self-consolidating concrete (SCC) was placed on brick pattern mold liners in the precast form. The use of self-consolidating concrete was critical to the success of the system to achieve a panel finish with no surface imperfections i.e. bug-holes. A long lasting red stain was applied to the



exterior brick textured area with a roller after the building was erected. The ribbed areas were produced using a ribbed casting machine that

textured the top surface of the panels while the concrete was still plastic.

The owner's needs for a modern, sustainable building with a striking appearance were certainly achieved with the use of precast concrete. No other material can match the flexibility and durability offered by precast concrete.



CREDITS:

Owner: City of Calgary

Architect: Riddell Kurczaba

Structural Engineer: MMP
Structural Engineering

Mechanical Engineer: DCM
Mechanical

Contractor: Dominion
Construction

Precast: Lafarge Precast