

MID TO HIGH RISE RESIDENTIAL

222 ALBERT STREET



PROJECT CREDITS

OWNER
MNL Corner

ARCHITECT OF RECORD
ASP Design Group Inc.

ENGINEER OF RECORD
Rizz Engineering Inc.

**GENERAL CONTRACTOR/
CONSTRUCTION MANAGER**
Prica Group Construction Management Inc.

MATERIAL SUPPLIER
Stubbe's Precast Commercial Inc.

ADDITIONAL PARTICIPANTS

- Sika Canada

PROJECT FACTS

LOCATION Waterloo, Ontario

COMPLETION September 2015

QUICK PROJECT FACTS

- 705m² building area, 6200 m² gross floor area
- Overall dimensions area 30.3 m x 25.3 m
- Building height is 39.6 m
- 28,500 sq ft of 8" loadbearing precast wall panels
- 3,000 sq ft of 12" loadbearing precast wall panels
- 27,000 sq ft of loadbearing and non-loadbearing insulated precast sandwich panels
- 59,500 sq ft of 8" & 10" hollow core floors, spanning up to 8.8 m
- 8,500 sq ft of precast balconies and solid precast floor slabs
- 2,250 sq ft of precast landings with 51 precast stairs
- 2330 linear feet of precast columns and precast beams





222 Albert Street is a 12 storey total precast apartment building consisting of (66) one & two bedroom units ranging from 590 to 1060 square feet. Catering to the many students and young professionals in the area, the exterior finishes have to be unique and stand out from the adjacent buildings. This distinctive look is accomplished using a pre-cast superstructure with a curtain wall façade. Select precast panels used wood and fluted form liners to provide a textured contrast to the smooth glass and concrete elements. Furthermore, using its orientation, designers enabled the building to deflect stronger winds away, as well as increase natural sunlight to provide added comfort to the occupants.

Total Precast structures provide all the benefits of concrete such as structural integrity and durability, while providing added quality, reduced site time, and ease of construction. The building's structural system consists of insulated exterior precast walls, interior solid walls, precast beams and columns. One entire typical level (5100 square feet of precast hollow core floors & 4000 square feet of precast walls) was erected in 4 working days. The tight timeline set by the developer in hopes of targeting the fall influx of student rentals made total precast the optimal solution for this project, as it allowed all other trades to follow immediately behind the erector and meet the final completion date.

The southern elevation of the building, facing Columbia Street, was constructed using precast beams and columns on the residential level. This allowed ASP Design Group to maximize the amount of glazing and provide optimal views of the surrounding area.

The balconies on the building were designed to optimize both the tenant's views and the building's functionality. The angular design provides 180° views while maintaining privacy. Supported by a precast section cantilevering out from the face of the wall panels, the balconies provide continuous bearing for a simple slab design. In order to ensure resident comfort, a thermal break has been provided between each balcony slab and the hollow core slabs to reduce any temperature transfer between floor systems.

The exterior insulated wall panels function as both the building's façade as well as its structural support system, while providing the high quality architectural finishes desired, and reducing build time on-site. Each sandwich panel provides a thermal value of R-20 (4" of insulation) and combines architectural (cosmetic exterior 3" wythe) and structural (interior 7" wythe) elements providing added efficiency in the building's lateral support system and limits the need to incorporate multiple materials and trades.

Using a Total Precast approach placed the responsibility and accuracy of meeting design specifications with one contractor making what would be the coordination of structural trades simple and seamless, as well as requiring only one source to create the complete exterior wall and structural system. This also avoided any confusion between the scopes of various structural trades and helped with the coordination of MEP penetrations. 222 Albert St. stands out aesthetically in an area of Waterloo with multiple student apartment buildings and demonstrates the wide range of finishes available to architects when designing precast structures.

