Pre-engineered, Panelized Light Steel Framing (LSF) Provides Time, Cost and Accuracy Advantages

HEARTHSTONE BY THE LAKE

BURLINGTON, ONTARIO

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DESIGN AND CONSTRUCTION TEAM

OWNER:
Tony Iannacci

GENERAL CONTRACTOR:
Tridel

ARCHITECT:
Global Architect Inc.

STRUCTURAL ENGINEER:
Kazmar Associates Limited

MECHANICAL AND ELECTRICAL ENGINEER:
M.V. Shore Associates (1993) Ltd.

FIRE CODE:
Labes/Rubes Inc.

PRE-ENGINEERED, PANELIZED LIGHT STEEL FRAMING:
KML Engineered Homes Ltd.

Genesis™ is a trademark of KML Engineered Homes Ltd.

Hearthstone by the Lake is a condominium complex comprising two residential towers and a multi-use building called The Clubhouse. Located in Burlington, Ontario, Hearthstone is intended to attract active seniors. The residential towers house 174 condominium suites and are attached by ground-level and underground links to The Clubhouse. In this article, we are primarily interested in the use of the Genesis™ system of pre-engineered light steel framed panels, manufactured from galvanized and Galvalume™ steel, used in The Clubhouse and one of the residential tower's penthouse structures, and supplied by KML Engineered Homes Ltd. of Cambridge, Ontario.

KML provided the Genesis loadbearing wall system, which included exterior walls and selected interior loadbearing walls for The Clubhouse. In addition, KML supplied and installed the complete roof structure. The Clubhouse is a single-storey, 1,347m^2 (14,500 ft^2) building sitting on a concrete slab over the underground parking lot. It provides a full range of services and activities for the residents. The architect for the project was Global Architect Inc. of Mississauga, and the contractor, Tridel of Toronto. Prime considerations for The Clubhouse included weight due to its location over the parking space, noncombustible material, and speed of erection.

The take-down of an existing structure at the site began in April 1999, with new construction getting underway in July of that year. The first occupancy occurred in July of this year, with project completion expected in October. KML was recommended to Tridel by other trades involved in the project. Tridel's Senior Project Manager, Ron Rapp, was impressed from the start: "I met with KML and they came back with a 3-D rendering in a couple of days. Their system appeared ideal for our design of perimeter loadbearing to permit flexibility with internal wall placement. The first time you see the 21.3m (70 ft) clear span you think, this is cool."

KML received the contract in January this year and had completed engineering and installation of their wall and two of three roof systems, which included exterior walls and selected interior loadbearing walls, by the end of February. Roof truss material used to span the 21.3 m (70 ft) varied from 0.034" to 0.073" Galvalume and galvanized steel. Wall panels were manufacturered from Galvalume steel. Panels for the floor and roof were 0.044" with 0.058" - 8" "C" channels.

KML's Vice President Operations, David Fogolin, says the typical advantages of the Genesis system include absence of nail popping, truss uplift and material deformation due to dryness or humidity, plus speed in installation. Tridel's Rapp agrees and adds, "I think their biggest plus is panelization. There are time, cost and accuracy advantages - KML works to tight tolerances by construction standards - from in-house engineering and assembly in a controlled environment rather than on-site. I was impressed by their quick turnaround up front and in completion. I see it as a product of superior engineering, software and people capabilities."

LSF does not warp, shrink or twist, reducing the incidence of popped nails and cracked drywall.

Genesis™ steel roof trusses and wall panels made from light steel framing contributed significantly to meeting several of the prime considerations - light weight, noncombustibility and speed of erection.

Genisis pre-engineered and pre-assembled steel roof trusses, utilizing 0.034” and 0.073” light steel framed sections, allow for a 21.3 m (70 ft) clear span inside the community centre building.

Genisis steel wall panels are used for The Clubhouse walls, as well as for the ground-level links to the residential blocks. LSF sections were used for these wall panels.

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