Construction of the City Home Development Building, in Toronto's St. Lawrence area. One of the most blighted areas in the city is being replaced with an 11-block residential community. Nearly all of the many buildings in the development feature wall systems made of lightweight steel framing and brick veneer.

### Lightweight Steel Framing Can Indeed Contribute to Apparent Miracles—Thru Imagination

Wall systems constructed of steel framing have helped bring back to life a badly blighted area in Toronto.

Eight years ago, the St. Lawrence area just southeast of downtown Toronto, was an industrial wasteland comprised of scrap yards, rail spurs, and run-down warehouses and factories. Then, in 1974, the city announced plans to revitalize the area with a $145 million residential community to be built in three phases over a 10-year period. Today, that vision is a reality.

With two of the scheduled phases of the project completed, the St. Lawrence neighborhood is now an 11-block residential community containing a variety of housing units, parks, schools, stores and services. The development houses a socially mixed population residing in lower, middle and upper income housing that blends with historic buildings in surrounding communities.

Nearly all of the many buildings in the development feature wall systems made of lightweight steel framing and brick veneer. To understand why steel framing was selected for wall systems in so many of the buildings, consider the case of the City Home Development Building, a 13-story, 260 rental unit building designed for low income tenants.

Energy conservation was a major objective of the city officials, and steel framing could provide a wall system with outstanding thermal insulation value, at a cost lower than masonry, a more traditional back-up system. Combined with its inherent strength and lightness, it offered other advantages over masonry that made it the logical choice for the project.

“Because the walls are hollow, you have a lot of room for insulation and for air space between the insulation and the walls,” say Hamilton. “Because concrete is a poor insulator, you have to significantly increase the amount of insulation to achieve the same thermal value as a wall made with steel framing. That’s why...

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**Reduces Costs**

According to Frank Hamilton, project architect for Thorn Partnership, the architectural firm that designed the building, lightweight steel framing was recommended by officials of the City of Toronto Non-Profit Housing Corporation. Energy conservation was a major objective of the city officials, and steel framing could provide a wall system with outstanding thermal insulation value, at a cost lower than masonry, a more traditional back-up system. Combined with its inherent strength and lightness, it offered other advantages over masonry that made it the logical choice for the project.

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lightweight steel framing was more cost-effective for this project."

Approximately 80,000 lineal feet of steel track and studs, weighing 13 tons, were used for the City Home Development Building. Heavy gage steel studs formed exterior walls while light gage steel studs were used for interior partitions and associated drywall trim. Bailey Metal Products Limited, Toronto, supplied all the steel framing for the job.

The 18 gage steel track was mechanically fastened to 18 gage steel studs as bridging at the one-third point of the stud length. A 20 gage flat horizontal bracing bar was fixed to each stud.

A typical wall section consisted of face brick anchored with brick ties to the back up wall studs. The wall cavity contained an air space, rigid insulation, and a polyethylene vapor barrier. Lightweight steel framing is easy to fabricate, as well as being cost and energy-efficient for most jobs.
for added thermal protection. A ½ inch gypsum drywall board fastened to the exterior side of the wall completed the installation.

### Other Advantages

When walls are constructed of brick veneer and cement blocks, moisture from rain or condensation can sometimes work its way into the porous surface and cause the interior wall to leak. This is not the case with lightweight steel framing. The air space between the brick veneer and the interior wall allows moisture to evaporate before it condenses inside the building.

“Nothing is better for wall construction than steel framing provided it’s installed properly,” says Adam Kunst, president of West York Construction, the general contractor for the project. “It’s stronger, doesn’t leak, and has a greater thermal value than masonry.”

In addition to these advantages over traditional wall systems, steel framing also provided the architect with greater design flexibility. Because steel framing is lightweight and easy to fabricate, the architect included balconies on the building to improve its appearance.

“The added weight of masonry restricts the length of the cantilever making addition of this design element more costly and difficult,” says Hamilton. “And a tradesman can turn a corner with steel framing much easier than with masonry. This enabled us to go in-and-out with our design and avoid a boring square box design.”

### Faster to Install

Lightweight steel framing also proved to be faster to install than masonry. The firm that installed the wall system, a two or three-man crew can install the curtainwall for one floor of a 14-unit apartment building in just one working day. Using masonry, it would take much longer to install a floor with the same number of units.

“There’s no doubt that steel framing installs faster than conventional
wall systems for apartment buildings,” he says. “And as soon as the framing for one floor is installed, the other trades can follow right behind you. In our market, steel framing can speed up an average job by at least two months on a 150-unit apartment building.” Bonata’s crew fabricated the entire steel framing job on-site in only four months.

**Trend to Continue**

The St. Lawrence neighborhood development is a significant example of how good planning and determination can transform a wasteland into a garden.

The framework of this transformation was lightweight steel framing, a material that provided strength, ease of installation, moisture protection, and energy conservation at a modest cost. Other cities should consider the example of Toronto’s St. Lawrence neighborhood when looking for ways to combat urban blight.