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HISTORIC PLASTER CONSERVATION SERVICES

A plaster technician makes repairs to the great cove molding that connects the upper and lower elements of the cornice in Ancaster's Old Town Hall.

FEATURE | Concrete & Masonry

Ancaster town hall facelift preserves the past

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Historic plasterwork can be replaced, but conserving and strengthening original plaster is another matter. Tough conservation jobs often call for the talents of Historic Plaster Conservation Services (HPCS), a boutique contractor and consulting firm with offices in Port Hope. The company specializes in consolidating, restoring and re-adhering historic plaster on projects that include work on Ottawa's Library of Parliament and historic churches in New York City.

HPCS is currently restoring the original plaster ceiling of Ancaster's Old Town Hall in Hamilton, as part of a \$133,000 historic restoration project. Built in 1871, the hall is considered a prime example of late 19th century stone architecture.

"The original ceiling is lath and plaster construction with the surface material made up of horse hair-reinforced lime plaster," says Rod Stewart, owner of HPCS. "The City of Hamilton indicates that we need to preserve as much of the original plaster as possible."

In lath and plaster construction, plaster is pressed into spaces between the wood strips of the lath where it forms lugs that spread out behind them. The plaster is suspended from the ceiling, but does not actually adhere to it. When the lugs begin to break, the plaster weakens until large sections become unstable.

"Typically, a large section comes crashing down at once, and with no apparent warning," says Stewart.

The fragile condition of the historic surface was apparent to architect B. Napier Simpson who completed a renovation of the building in 1966, in preparation for Canada's centennial.

He realized that he couldn't repair the plaster using available technology, so he placed quarter-inch plywood over it," says Stewart. "He had remarkable foresight."

Using a proprietary acrylic resin formula developed by Stewart, the plaster can now be made to adhere to the lath. The contractor begins by removing all of the debris that's settled on the upper surface of the plaster, inside the attic space above the ceiling.

"We then apply a penetrating acrylic resin which infiltrates the spaces around the plaster, penetrates the plaster and ultimately adheres the plaster to the lath," says Stewart. "When the material cures, the plaster ceiling is transformed from a suspended system to an adhered system."

The fallen sections of plaster ceiling will be replaced with a matching lime plaster mix. "You can certainly tell that Ancaster is a heritage-sensitive community," says Stewart. "People from a local riding stable dropped by with a bag of cleaned horse hair."

Stewart is also inspecting the ceiling's damaged cornice structure and installing supplementary mechanical fastenings to stabilize it. The month-long project is expected to conclude by the end of September.

HPCS is currently working with Citymark Drywall, under general contractor Atlas Corporation on a two-and-a-half year upgrade to Toronto's Old City Hall. The engineer on the project is The Mitchell Partnership and the historic consultant is the Ventin Group. The contractor is stabilizing ceilings in 140 rooms of the building in preparation for a new HVAC system.

"We can't get into the space above the plaster," says Stewart. "Instead, we're going in every night and injecting the acrylic resin into the ceiling cavity through tiny holes in the plaster surface to strengthen the ceilings. The HVAC crews follow us room by room and suspend conduits from the ceiling, but we need to have each space completely ready for use by morning."

At Union Station, HPCS is also working as a consultant to Carillion Canada and the City of Toronto in determining the protocol for restoration of heritage portions of the building. The project architect is NORR Partnership Ltd. and the heritage consultant is FGMDA Architects.

"The plaster ceiling in the station's Great Hall is made of large cast panels of fibrous plaster, which includes burlap fibres," says Stewart. "These panels run about six by six feet and were cast in the shop, delivered to the site, and then suspended from the steel-framed structure using wires or even jute string, which was covered with plaster for fire resistance.

"We'll be assessing the condition of the ties and advising the client whether reinforcement is needed. If you find jute, you definitely want to replace it because it's subject to rot and mildew."

The walls of the station are made of a combination of real stone on the flat surfaces and Zumbro Stone, a plaster product cast to produce its ornamental surfaces. "It was precast because it was a much easier and less expensive way to create shapes and contours than carving real stone," says Stewart. "Nobody has made artificial Zumbro Stone since 1923, so we'll be mixing up a replacement material so contractors can match the original."