



Wearing Its Age Lightly

The Library of Parliament is the single most exuberant expression of high Victorian spirit in Canada. In 2006, it took a new lease on life **By Janet Uren**

WORKERS ARRIVED AT FIVE O'CLOCK in the morning on a memorable summer day in 2003. That morning, architects, engineers, librarians, and a construction team assembled on Parliament Hill with a crowd of reporters and staff to see a crane heave the old iron crown off the dome of the Library of Parliament. No one who saw the 15-tonne teepee lift dramatically, impressively from the place it had rested, more or less undisturbed, for 126 years will ever forget the sight.

The removal of the iron teepee was a thrilling milestone in one of the most comprehensive, complex, and significant conservation efforts in Canadian history. There are architectural historians who maintain that the Library of Parliament is the most important building ever erected in North America. Certainly, it is the single most inspiring expression of Gothic revival architecture in Canada. The glorious building has served Canada's parliamentarians well as a working library since 1876. Recently, however, it



Window treatment: No more drafts! Librarians rejoiced as the 147 leaky leaded windows were restored

had fallen on hard times.

Fire and water lay at the root of the problem. In 1952, a fire caused by faulty wiring in the attic brought firefighters to the scene, and during a 10-hour battle, they sent some one million litres of water cascading into the library. It was a mess—an expensive mess. The government of the day briefly considered tearing down the building and replacing it with a modern structure. Instead, they decided to do what they had to to bring the irreplaceable library back to working order. Even that required massive effort, however, with rebuilding of the dome; replacement of the lights, floor, and furniture; and the building of two

continued on page 29

Design



▲ The Scaffolding

It was no ordinary project. Contractors had to respect the working of Parliament, so they scheduled much of the noisiest work for nighttime, with shutdowns for national ceremonies. The Institute for Research in Construction came on board and, using an impact echo system, charted voids and cracks in the walls and measured how well the outer sandstone was adhering to the rubble core. Their findings showed that much of the interior grout had washed away and that earlier attempts at repair had been temporary fixes at best. In fact, the building was in much worse shape than anyone had ever suspected. Before work could begin, the team needed to create a working platform that would not damage those vulnerable walls. The result was some very creative self-sustaining scaffolding—70 tonnes of it, 17 storeys high—covered with tarps so that stone-masons and carpenters could labour summer and winter for four years.



▲ The Galleries

In the old days, light came through the windows in the dome so strongly that librarians in the central area practically needed to wear visors. Other parts of the library—notably the third gallery—lay in almost unbroken gloom, and librarians went there armed with flashlights. Though the old gas lamps that line the galleries were wired for electricity long ago, they were overshadowed by the addition of hideous plastic shades in the 1950s. Today the lights have been restored with beautiful glass globes that cast an enchanting light over the whole space. The restorers of the 1950s also replaced the glass floors of the gallery with plywood and linoleum and painted the deeply coloured railings an unrelieved black. Today the floors and partitions of the galleries are once again constructed of light-disseminating glass. Traces of original paint also gave restorers the clue they needed to return the railings to their previous sprightliness with green, burgundy, and yellow paint.



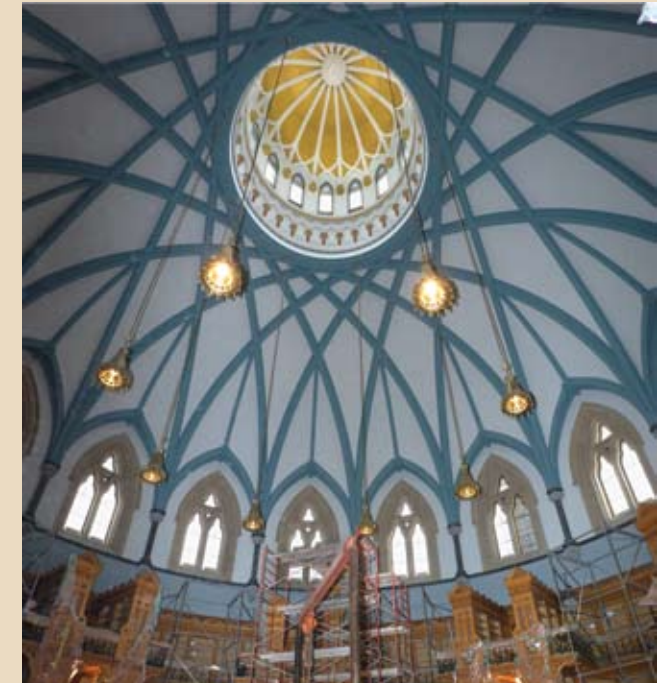
▲ The Basement

Hardrock miners rarely come to work in downtown Ottawa. For this project, however, they were hired to delve into the rock under the library and to create an extra 8.75 metres of new basement and a series of service tunnels. Again, the project called for innovation. While drilling and blasting may be fine for iron ore, they were out of the question with a fragile old building sitting right on top of the pit. The miners experimented cautiously with low-impact rock breakers and non-explosive dynamite. In the end, it was a new hydraulic rock splitter discovered at a trade show in Las Vegas that allowed the excavation to be made. The miners proceeded to remove some 4,815 cubic metres of rock, allowing for the creation of three basement levels. Gone are the low-ceilinged stacks. State-of-the-art air-conditioning and heating systems are now generously accommodated, and rare old books are protected as they should be.



▲ The Woodwork

The carvings that line the walls of the library are one of its principal glories. A monument to the artistry and whimsy of the tradesmen who created the decorations in the 1870s, this fabulous wooden mosaic features a symphony of curling vines, bursting flowers, and fantastic animals and birds. No one panel is the same as any other. Many of the carvings were showing their age in the 21st century, but no attempt was made to make them look new. Teams of conservators went over every inch of them, cleaning and repairing major and minor damage and carving new pieces to replace damaged parts.



▲ The Dome (interior)

The Victorians loved bright colours. In the 1950s, however, much of the building's early splendour was buried under dull beige paint. As conservators and scholars studied the records and looked for traces of earlier colour schemes, they rediscovered some of the glory of the past and specified a new and brighter look for the old building. The ribs of the library vault, for example—once it had been cleaned and repaired—were outlined in rich blue, and the gold-leaf decoration was cleaned to restore its lustre.



▲ The Floor

The floor installed after the 1952 fire was a glorious jigsaw of variously coloured woods, the contractor hired for that project being Montreal Parquetry. When the time came to replace the much-abused floor, the same company competed eagerly for the privilege of replicating the old splendour. Essentially, it undertook to recreate the floor of 1956 with three types of wood (oak, cherry, and walnut) in a complex geometric design. Because the building is not perfectly symmetrical—it was, after all, designed in the era before computer-aided design—the process of creating this huge wooden jigsaw took four months.

◀ Queen Victoria

Queen Victoria was less than five feet tall and was slender in her youth. Her statue in the library is altogether more imposing—over two metres tall and weighing some 1,500 kilograms. It was Queen Victoria who chose Ottawa as capital in 1859, and she was thus indirectly responsible for the construction of the Parliament Buildings. Marshall Wood carved the statue of the young queen in 1871. By 2002, the gleaming white marble was engrained with dust and soot, its satiny surface eroded by environmental contaminants. The Canadian Conservation Institute carefully cleaned the statue, repaired a hole, and replaced with marble part of the crown that had earlier been repaired with plaster. The whole surface was then lightly coated with wax to restore the sheen and prevent further deterioration. The restorers also made the monarch earthquake-proof by pushing a steel rod up through the floor, pedestals, and statue to bolt everything securely together. Presumably, the queen was not amused.

Design



◀ The Dome (exterior)

The roof of the library is looking much cleaner and more colourful these days. The giant black weather vane, when dismantled, revealed tiny chips of blue and gold paint, and these inspired a new colour scheme for the restored vane. The roof also illustrates the continuity that persists among trades in this region and the pride they take in their work, generation after generation. The Fullers are just one case in point. When the dome of the library was recoppered, the old sheets of metal were shipped down the street to the new Canadian War Museum for reuse on three dramatic interior wall murals. One of the men hired to rehang the copper was startled to find a set of letters scratched on the back of one sheet. He realized that they were the initials of his uncle, who had worked on the library restoration in the 1950s.

▶ The Windows in the Dome

Librarians of the future can put away their winter coats. Removing and restoring the 147 leaded windows was a headache, however, since many of the old comes, (slender bars of lead used to join panes of glass) fell to pieces in the hands of the restorers. The historic glass was carefully reassembled within the original design, with new comes, and every window was fitted with a second layer of energy-efficient thermal panes. This was anything but straight-forward, because the window embrasures all varied slightly in size, so custom-building of 147 windows would have been very costly. Instead, wherever possible, a standard window was used, with flexibly sized fittings around them. The windows were also fitted with heaters to keep the temperature constant and to prevent frost buildup.



Masonry

Thousands of stones were used to construct the library in the 1870s, and stonemasons faced a daunting 20 kilometres worth of eroded mortar in the exterior walls. They began with research to identify appropriate mortars for each part of the project (mortars equivalent to those used in the past, though typically of better quality). Indeed, one of the outstanding characteristics of the library restoration was the depth of research that went into every phase of the work. The first step, of course, was to bind the exterior stones to the inner rubble. Stonemasons drilled thousands of holes in the stone and pumped more than 200 tonnes of sustaining grout into the core. Afterwards they assessed every stone to see if it needed cleaning or repair. Only then did the work of chipping out the old mortar begin, followed by replacement with new. Throughout the project, stonemasons were challenged to control temperature and humidity in the sheltered working space so that the mortar cured at the right speed.

continued from page 25

minimal basements. But the elements continued to take their toll.

No major work was done over the next half century, and even without another fire, the building began to creak with age. The seams in the copper roof gaped. The glorious leaded windows shrank in their frames and began to leak water and cold air. When it rained, buckets collected drips in the attic and librarians ran to pull plastic sheets over the precious books. Those same librarians wore coats as they worked in winter.

The collection grew over time, and it, too, was vulnerable to the ravages of climate. By the 1990s, books were crammed into stacks in a low-ceilinged basement where tall librarians ventured only with extreme caution. Similarly, the processes of librarianship had changed. Computers arrived, and with the mushrooming demand for power, holes were poked in the fine floor and electrical boxes proliferated. Stiletto heels and roller chairs also wrought havoc on the polished floors, and periodic refinishing left the wood perilously thin.

The library was designed in the 1860s by architects Thomas Fuller and Chilion Jones, and it took 17 years to build. Significantly, it was Fuller's descendants—great-grandsons William and Simon of Thomas Fuller Construction Limited—who competed successfully for a contract with Public Works and Government Services Canada to serve as the general contractors. They brought with them a team that included metalworkers, conservators, carpenters and—astonishingly—hardrock miners. All in all, some 1,200 people worked on the restoration, which from the initiation of planning in 1995 took 11 years to complete.

Hundreds of workers came to an open house to celebrate the reopening in 2006. Many confessed that they had left their initials hidden within the structure as a message to craftspeople of the future. Those little acts of identification show one generation of workers passing the torch proudly to the next. The beneficiaries of their dedication are the Canadians to whom this building belongs in perpetuity. **END**

Tours of Parliament Hill include a visit to the library. Phone 613-992-4793 for further information