



Fred Kaiser Building – UBC

By Robin Brunet

The University of British Columbia is fast becoming a showcase for new or retrofitted buildings that meet LEED standards — even if some of the developers have not sought official LEED status.

Such is the case with the Fred Kaiser building, a five-storey complex that contains computer engineering facilities, research laboratories and assorted amenities. The edifice consists of a new three-level structure that sits on a portion of the old two-level civil and mechanical engineering (CEME) building that was constructed in the 1970s and had to undergo significant seismic upgrades as part of a \$20.5-million redevelopment package.

Rob Brown, a project manager with UBC Properties Trust, says, “Our construction manager, the Scott Construction Group, was actually obliged to start work while design elements were still being ratified.” As Scott crews laboured, developers hurried to fine-tune interior concepts and finishes.

Although it would have made more sense to demolish the old structure and start fresh, logistics dictated otherwise. “The research labs were still operational,” says Omicron Consulting Group partner and architect Mike McColl. “This posed an additional challenge: not only did we have to expand the size of the Electrical and Computer Engineering facility to 96,000 square feet and make it seem like an organic whole, crews had to work without disturbing lab activity.” The biggest alteration inside the old building was the inclusion of rows of columns that would support the new structure above. McColl and Scott project manager Dave Williams liaised

closely with user groups to create a schedule that took into account their needs to occupy the space for their research while construction continued around them.

Although McColl says the revamped Fred Kaiser Building would qualify the project for a LEED Silver status, time and money compelled the developers to forego pursuing the designation.

“It would have added a lot of paperwork and more cost to the job,” says Brown. “That aside, McColl and his colleagues did wonders incorporating the environmental components into an aesthetically pleasing design as well as creating several visual showpieces, the prime one being the main atrium with a tiled floor, elegant millwork and extensive glazing.” One of the environmental features is the use of photovoltaic panels sandwiched in the atrium skylight. They provide the emergency power for the building and serve as a demonstration project to incoming students.

“This was one project where we worked collaboratively with the users, design team and builder to provide unique design elements like a DC fluorescent lighting system. The building can be used to show future electrical engineers what can be done with proper planning,” says Dean Kaardal, a Stantec principal.

The Fred Kaiser Building is one of three UBC projects to be funded under a provincial initiative called Double the Opportunity. The seismic work received separate federal money and Omicron was retained in August of 2002 after the preliminary budget was secured. “We approached the job by entering into a joint-venture partnership with Architect’s Alliance Architects of Toronto,” says

McColl. “It was a total design collaboration, with both firms working on everything from the interiors to the curtain wall.”

On-site work kicked off in June of 2003 with the rerouting of services, which posed its own challenges. “A huge steam line ran through the site that required relocation and was rebuilt inside a fully accessible tunnel under the new atrium,” says Brown. “This took longer than we anticipated and extended the aggressive fast-track schedule.”

The inconvenience of tunnel building was soon eclipsed by the escalation of costs brought about by the rebounding B.C. economy and a shortage of skilled labourers. The production schedule was ultimately set back four months because of the developers attempting to find more favourable deals.

HIGHLIGHTS

Location

2324 MAIN MALL
UNIVERSITY OF BRITISH COLUMBIA
VANCOUVER, B.C.

Owner/Developer

UBC PROPERTIES TRUST

Architect

OMICRON CONSULTING GROUP/
ARCHITECT’S ALLIANCE ARCHITECTS

Construction Manager

SCOTT CONSTRUCTION GROUP

Structural Consultant

BUSH BOHLMAN & PARTNERS

Mechanical Consultant

OMICRON CONSULTING GROUP

Electrical Consultant

STANTEC CONSULTING LTD.

Total Area

8,640 M²

Total Construction Cost

\$20.5 MILLION

The original CEME building was a concrete block bunker-style edifice that did not meet modern earthquake requirements. The Scott crew reinforced the structure with six sheer walls and massive footings, and the three new levels sit upon steel trusses, so that in times of seismic activity, it and its two-storey foundation move independently of each other. Test engine exhaust vents and other existing roof services were channelled up to the new roof.

The project initially called for a cantilevered retrofit design, but this was scrapped in favor of enveloping the entire structure in a smooth sheet of glazing. “If you walk to the back of the building you can still see the original concrete tilt-panels on the east side,” says Brown. Aside from its sleek, modernistic appearance, the glazing with its ceramic fritting bounces back solar gain and thus helps keep the building cool during summer.

Glazing was also used extensively in the atrium. “Windows have been motorized to automatically open and close to discharge heat,” says McColl. The heat rises to the top of the atrium, where it is ducted out of the roof. This form of natural heat displacement also means that Omicron and the Architect’s Alliance could reduce the number of traditional mechanical elements in their design. “There is also an aesthetic consideration to the interior glazing,” adds McColl. “Our consultation with the user groups determined that it would be desirable if not only people in the building could look out, but people on the ground level could look up and see all sorts of activity. This gives the atrium an added sense of vitality.”

Offices have been organized around the inside perimeter of the building, while the labs are grouped deeper in the interior and receive natural overhead illumination.

Of the final product, Brown says, “We’re pleased with the way things turned out. Budget dictated that many components, such as the labs, be fairly utilitarian, but the architect wisely focused resources on the public spaces and the exterior curtain wall.”

McColl concludes, “We couldn’t have pulled it off so successfully if we didn’t enjoy an unusual level of trust between the client, the user groups and ourselves. In this regard, it was an extremely satisfying project.” ■