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Closer to Home

Canada creates a domestic maximum-security facility for female inmates.

By Morgan Jones



Canada's federal prison system embraces the highest design principles found in corrections facilities. "We're interested in design, but not at any cost," says Michel Blais, project leader for Correctional Service Canada. "What we're seeing is that we can add a great design for the same price as a bad design."

Among the facilities supporting Blais' claim are Canada's new women's prisons. Aided by the fact that Canada's female

prisoner population is about 30 times smaller than that of the United States, Correctional Service Canada (CSC) places women in small living groups of no more than 10. Instead of galleries or pods, they live in communal houses arranged around administration and support facilities.

As part of a mid-1990s decentralization program, CSC and Public Works Canada built four such campuses. A fifth women's institution is now under construction and partially operational, but these new prisons serve only minimum- and medium-secure inmates. Close-custody female inmates demonstrating destructive behavior - often directed inward - needed separate facilities.

The last phase of CSC's construction plan called for the creation of close-custody intervention centers at each of the four newly-constructed women's institutions, requiring facilities that would offer a domestic environment similar to that in the communal houses and also provide higher security.

"The Intensive Intervention Unit is a secure environment, but it was also made to be a pleasant one - so that the inmates would respect their environment," says Blais. Designed by Kleinfeldt Mychajlowycz Architects Inc. and opened in 2003,

GRAND VALLEY INTENSIVE INTERVENTION UNIT
 Kitchener, Ontario

Construction Cost: \$6.3 million (Canadian)
Area: 12,613 square feet
Capacity: 15 beds, plus 4-cell segregation unit
Start Date: October 2001
Completed: October 2003
Owner: Correctional Service Canada
Architect: Kleinfeldt

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the new Intensive Intervention Unit (IIU) at the Grand Valley Institution for Women exemplifies CSC's effort to construct facilities that are less institutional in feel and appearance.

The 12,600-square-foot facility serves a small population of just 15 women and relies on intensive staff management as its core security measure, allowing the facility to operate without any interior cameras. Operable windows in the cells and elsewhere provide both good views to a nearby historical park and allow natural ventilation to flow through the unit, and a dynamic design facilitates learning life skills for eventual reintegration.

Mychajlowycz Architects Inc.
Structural Engineer: Read Jones Christoffersen Ltd.
General Contractor: D. Grant & Sons
Security Electronics: Valcom Ltd.
Correctional Furniture: CORCAN

DESIGN STANDARD



The 12,600-square-foot facility serves a small population of just 15 women and relies on intensive staff management as its core security measure.



The single-cell, direct-supervision layout is set up to offer a semblance of family, with the facility's 15 women living in three groups of five. All the domestic elements are present for each group, with a kitchen and areas that replicate living and dining rooms. Women can make a meal on the unit, where there is a refrigerator, microwave and sink, although dinner comes in from the main institution's central kitchen, as do some other services.

Each of the shared living and dining areas overlooks one of two courtyards, further reinforcing the communal ideal. The structure's varied masses maximize the number, range, and quality of both view and spaces from the interior, but still differentiate the exterior spaces, acknowledging the isolation and restricted movement of the residents.

The two-story Central Hall includes a control post and accesses the program rooms, residential lobbies and the administrative wing. Though austere, the Central Hall displays the building's interesting mix of security-grade materials, including a standing seam roof, slab-on-grade, and reinforced concrete masonry.

These approaches earned the facility a place in the American Institute of Architects' prestigious Justice Facilities Review 2004-2005. "It's to the credit of CSC and Public Works Canada that the project turned out the way it did," says Carol Kleinfeldt, principal at Kleinfeldt Mychajlowycz, who has worked with CSC several times over the last decade.

"They were really pushing the envelope in terms of design expertise and security, as well as their concern for the inmates and how the facility could have a positive affect."

Bedroom furniture is custom made of hardwood maple, and planners determined that porcelain

toilets were appropriate for women. In addition, there are full-sized shower and bathroom doors with locks, as opposed to modesty stalls that go to the knee. The enclosures let women enjoy full privacy.

There are no surveillance cameras. CSC depends instead on a close interaction between staff and inmates. "The officers are always on tour. From the booth, you can see into the three different ranges, and you can also see into the four-bed segregation unit," says Kleinfeldt. "This way, they can minimize their staff and still have a one-to-one relationship with the inmates."

CSC minimizes the use of cameras not just at Grand Valley IIU, but throughout much of the system. "We have more cameras in maximum-security men's facilities, but sometimes cameras are only for recording and not for surveillance," Blais explains. "If you have cameras for surveillance, you have to have staff in front of monitors, and they're not on the floor."

Spurning technology in some areas and using inexpensive materials helped keep costs for the intervention center under \$6.4 million (Canadian), but an eye for durability also will reduce long-term costs. "If you have finishes on the floor that are of quality, they will last longer," says Blais. "If you have good design, inmate behavior is better and the staff feels better."

One major challenge for Kleinfeldt Mychajlowycz was that the existing Grand Valley Institution, opened in 1997, had set a high design standard. The 88-bed facility won a Canadian Governor General's Award of Merit and an AIA Certificate of Merit for Kuwabara Payne McKenna Blumberg Architects.

"The layout and the way the consultant kept things flowing, with a green open spine that serves all the functions, so it's like a small village," Blais says of the larger facility. "Kleinfeldt Mychajlowycz didn't try to repeat the existing building, but some elements are repeated. You have walls that are offset and roofs that are sloping."

Both facilities stand near Heritage Village, an historical park that features restored buildings such as a one-room schoolhouse, general store, train station and log homes. The IIU's galvanized standing seam metal and stone make reference to history of rural Ontario and Quebec, where standing seam roofs are traditional. Though modern, the prison's design is evocative of a nearby barn.



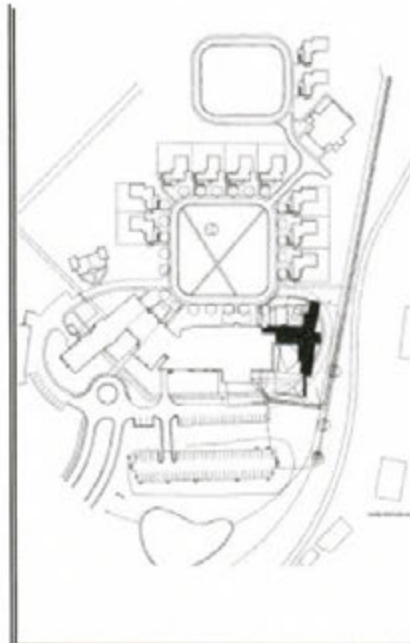
Each group of five inmates shares a unit kitchen where they may prepare their own meals.



"It's a very popular tourist destination and all that separates it is just a small fence," says Kleinfeldt. "Tourists are looking at the intervention center as they're walking through the Heritage Museum, so they wanted this facility to blend in with the neighborhood and to be a part of the landscape."

Keeping close-custody inmates secure, good sightlines are provided throughout, and the intervention center's perimeter is made up of stone walls with an unobtrusive LID laser intrusion-detection system - the latest technology evaluated by CSC in its search for a perimeter system that meets harsh climate conditions with fewer false positives.

The intervention center is a world away from the old centralized facility, which once housed all of Canada's federally-sentenced female inmates. Women lived



The close-custody women's center, shown here in black, is linked to administrative and support facilities at the Grand Valley Institution for Women. Minimum- and medium-security inmates live in a village of small houses, above.

behind an imposing wall that made the 66-year-old Prison for Women a fortress, often far from family and friends. Cramped conditions at the facility forced many of them to live under a higher level of security than was necessary.

Not only were women "overclassified," the facility also was noisy, inadequately ventilated, and lacked sufficient program space. Where the old central facility was dark and imposing, the new Grand Valley IIU makes use of daylight and natural ventilation, and all of the bedrooms have a direct view to nature.

OPERABLE WINDOWS

Canada's federal prison officials have shown they are far more interested in integrating environmentally-friendly design with justice architecture than have federal and state prison systems in the United States. Challenged by the restrictions of providing a secure facility, the prison construction market is far behind education, commercial and other markets.

No prison in either country has yet earned certification from LEED (Leadership in Energy and Environmental Design), a program run by the U.S. Green Building Council, but it seems likely that the first LEED-certified prison will be built in Canada. If Canada had started their LEED program sooner, the Grand Valley IIU

might have been the first.

The facility meets the CSC Green Plan and Sustainable Development Strategy and also conforms to ASHRAE/IES Standard 90.1 and NRC measures for energy conservation. For example, water consumption was minimized using devices such as low-flush toilets and regulated showerhead flows.



The intervention center's stone wall and rustic fence help blend the facility with the neighboring historical park. Laser intrusion technology adds security.

"Overall, the approach to energy conservation was low-tech," says Kleinfeldt. "We looked at things that were sensible: ventilation, material choices, and doing adequately ventilated wall and roof sections. Having the two courtyards in the thin section means that we can reduce the lighting requirements. All of the main rooms have windows and there are no interior rooms, which reduces lighting costs."

The Grand Valley IIU incorporates offices, kitchens, activities rooms, and Central Hall. The residential spine is bisected by these spaces, a plan that makes the most of natural ventilation, taking advantage of air movement patterns from all four points.

Operable windows, a key component in natural ventilation, are often disregarded as an option in prison-cell design, but in Canadian prisons, operable cell windows are mandatory. CSC hired Kleinfeldt Mychajlowycz to develop a new maximum-security window glazing and frame system, and the Grand Valley Intensive Intervention Unit is the site of the first installation. Officials expect future facilities to use the firm's new window system as well.

Product Data
 EIFS: Dryvit
 Metal Roofing: Vic West Inc.

CSC wanted to get away from bars to scale down the overt use of components indicating security. According to architect Roman Mychajlowycz (pronounced Mi-hy-lo-vich), the need for operable windows is practical. Correctional Service Canada does not allow air conditioning for inmates, but

Metal Siding: Vic West Inc.
Roofing: Soprema
Stone: Arriscraft
Brick: Canada Brick/Hanson
Brick
Wall Tile: Olympia/Centura
Gypsum: Canadian Gypsum Co.
Epoxy Flooring: Stonhard
CCTV: Panasonic
UPS: Powerware
Touchscreen: Delco Automation
Intercom: Aiphone
Security Cell Door Controls:
Delco Automation
Security Cell Doors: Steelgate
Security Products
Security Glazing: GE Structured
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Security Screens: Steelgate
Security Products
Security Fencing: Royal Fence
Ltd.
Security Locks: RR Brink Locking
Systems
Security Cell Lighting: Cooper
Lighting
Security Sprinkler Equipment:
Viking Corp.
Security Fire Equipment:
National Fire Equipment Ltd.
Smoke Detection System:
Simplex Grinnell
Ventilators: Nutone Whispaire
Refrigeration: Amana
Custom Stainless Equipment:
Sani Metal
Hydronic Boiler: Laars Heating
Systems
Radiant Floor Heating System:
Wirsbo Canada
Penal Plumbing: Acorn
Engineering

federal prisoners are required to have control over their windows.

CSC needed the operable windows to be secure, functional and unobtrusive. "That comes from their belief that if the place looks fortified, armored and dangerous, people will perceive it as dangerous and respond in like fashion," Mychajlowycz says. "CSC's direction is to deinstitutionalize these facilities. That's across the system, not only at female institutions, but also in the male institutions, although that's more difficult to do."

The design team devised a two-part window system. The interior window is a detention screen with a composite of polycarbonate and glass, and also screened vents, top and bottom. Outside, a commercial aluminum window has two projecting awnings corresponding to the top and bottom screened sections. Detention-grade knobs operate the windows. Bladed louvers, also screened, are found on the walls opposite the cells, accomplishing cross-ventilation.

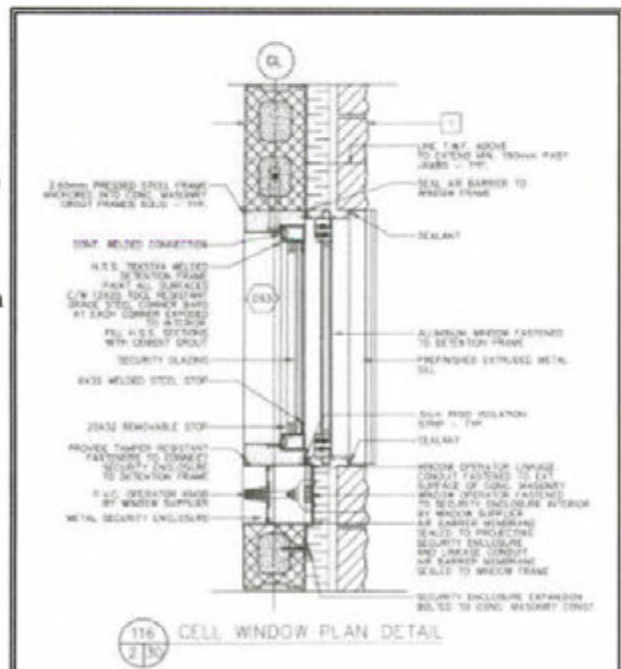
"There are ventilation screens along the entire length of the wall in the bedroom units," says Kleinfeldt. "We minimized the sections so that air flows to the living quarters and then the bedrooms and then directly out, so that we have cross ventilation coming through from one courtyard side to the outside perimeter."

Mychajlowycz says that tests on the window system proved it to meet Level I and other ASTM F33 definitions criteria for breach. But he also notes that ASTM tests deal primarily with blunt force, and that an inmate working unobserved for an extended period might be able to dismantle the window system.

"I think some people could argue that if you don't have tool-resistant bars, they may be susceptible to being dismantled," Mychajlowycz says. "There's some validity to that, but also I think the proof is in the pudding." At Grand Valley IIU, close monitoring by staff is expected to alleviate such concerns.

The facility is a striking example of a secure environment made domestic. Like all of Canada's new women's institutions, Grand Valley is more modern, specialized and smaller, better preparing female inmates for reintegration into society, while bringing them closer to families and support networks. Keeping facilities breezy and daylighted is seen as a component of Canada's new programs for women inmates.

You find inmates enjoy being in their little corner and serving their time in a dark spot," Blais says. "So we're trying to bring light in so they know what's going on outside. They know if it's raining or snowing. We



Kleinfeldt Mychajlowycz was commissioned to design new operable windows not just for the Grand Valley IIU, but for use through much of the Canadian prison system.

didn't have that 10 years ago, but now we see it's part of rehabilitation."

