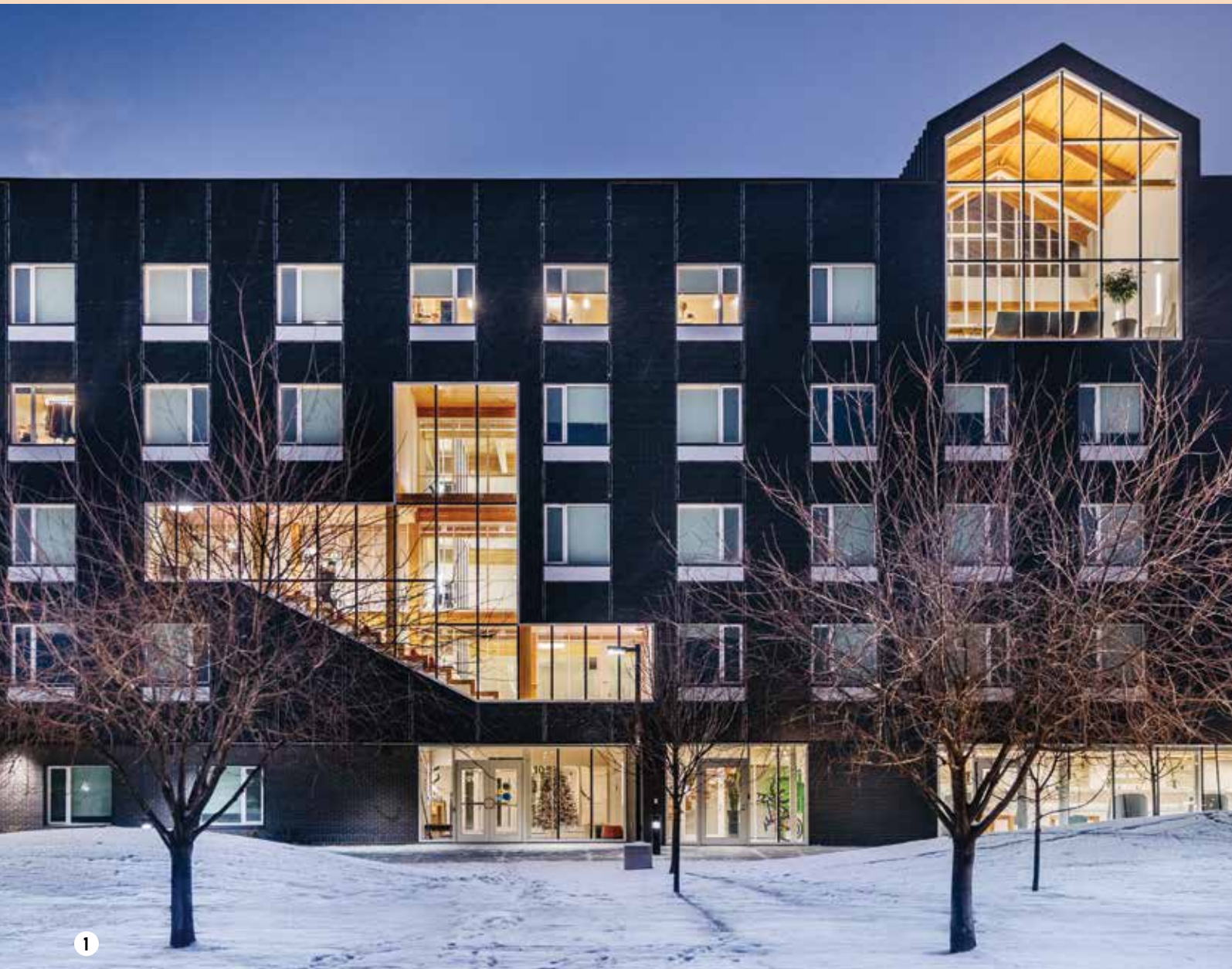


Red Deer Polytechnic Student Residence

Red Deer, Alberta

Jury Comment

The project is notable for its use of sustainable features, such as the photovoltaic cladding panels, to create an architectural language. Also notable are the multiple social spaces visible from the exterior and the exposed mass timber structure; both adding to the didactic quality of the building.



1



Main floor



Second floor



Fourth floor

Floor plans 

1. Stage 1 - gathering stair
2. Bike room
3. Reception & staff offices
4. Stage 2 - kitchenette & lounge
5. Commercial laundry
6. Typical barrier free unit
7. Typical standard unit
8. Stage 3 - relaxation room
9. Stage 4 - gathering stair & presentation space
10. Lounge
11. Student laundry
12. Stage 5 - study space

1. The south facade.
2. The Residence features photovoltaic panels as cladding, on the east, south and west faces of the building which offset approximately 40% of the annual energy consumption of the building; a visible reminder of the Polytechnic's commitment to a sustainable future.

This 5,800 m², five-storey, 145-unit mass timber structure was first occupied by 300 athletes who attended the Canada Winter Games in 2019. However, the long-term purpose of the building was always to house Red Deer Polytechnic's growing student population. The building also functions as a hotel, providing accommodation for short- and long-term guests, including faculty and external users. The Polytechnic's vision was to create a building that would keep students on campus by providing recreational and social opportunities, rather than having them to drive to downtown Red Deer. The result is a residence that offers a bright and airy interior environment with an unprecedented range of social spaces.

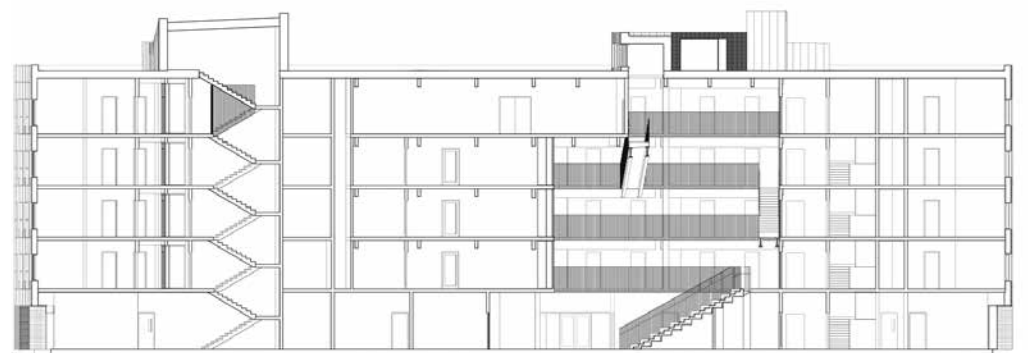
Although the client did not mandate the design team to achieve any green building certification, the project was designed to LEED Gold standards. With its R35 walls, R45 roof, R7 windows and Passive House Certified fibreglass curtainwall, it exceeds the prescriptive requirements of the National Energy Code for Buildings (NECB).

Special attention was also given to:

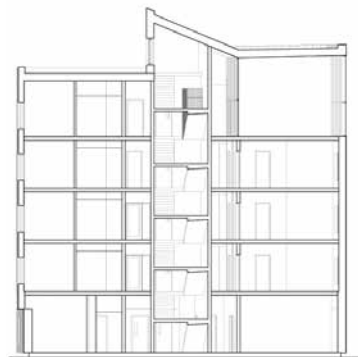
- encouraging walking within the building and discouraging use of the elevator
- passive solar heating in winter, and operable windows for ventilation in warmer months
- leveraging the health benefits of natural daylight, views and indoor plants,
- energy reduction through use of 100% LED lighting and a 90% efficient HVAC system.



2



Long section A-A



Short section C-C

Seven distinct gathering spaces or 'Stages' are scattered around the perimeter of all five storeys of the building. In total, these Stages increase the area of social space by a factor of 10 when compared to a conventional residence building.

The interconnected floor spaces create the opportunity for more natural light, increased air volume and circulation, as well as increased visual connection and interaction between students.

The scattered positioning of the 'Stages' gives students views in all directions, and gives the building a stronger and more meaningful connection with the surrounding landscape.

This new design approach has dramatically increased the quality of student life within the building, yet was achieved within the budget and overall floor area allocated for the project.

4, 5, and 6. The Polytechnic's vision was to create a building that would keep students on campus by providing recreational and social opportunities. The result is a residence that offers a bright and airy interior environment, and seven large gathering spaces, called Stages, scattered throughout the building.

PROJECT CREDITS

OWNER/DEVELOPER Red Deer Polytechnic
ARCHITECT Reimagine Architects Ltd
GENERAL CONTRACTOR Clark Builders
LANDSCAPE ARCHITECT Katharina Kafka
 Landscape Architect

CIVIL ENGINEER Stantec
ELECTRICAL ENGINEER Manasc Isaac Consulting
MECHANICAL ENGINEER DA Fox Engineering
STRUCTURAL ENGINEER RJC Engineers
PHOTOS Cooper + O'Hara

PROJECT PERFORMANCE

Energy intensity (building and process energy) = 70.68KWhr/m²/year
Energy intensity reduction relative to reference building under MNECB 2011 = 50%

Exposing the soffits of the mass timber floors eliminated the need for suspended ceilings. All the wood was locally harvested, milled in an Edmonton shop to minimize transportation costs and GHG impacts.

The east, west and south facades of the building are covered with a 163 kW integrated photovoltaic array that offsets approximately 40% of the annual energy consumption of the building.

The successful implementation of these diverse sustainability goals was made possible through a collaborative design approach and an Integrated Project Delivery (IPD) method using a multi-party contract.

The Polytechnic was well aware that isolation and lack of community support for students has a negative influence, not only on their ability to perform in the classroom, but also on their mental, physical and emotional well-being. In this context, the design team saw an opportunity to reconceptualize the typical student residence typology.

In a traditional residence, student rooms are arranged along double-loaded corridors and the social spaces are treated as auxiliary program elements. By contrast, in this project, the student rooms open onto continuous balconies overlooking a central atrium that tapers from east to west through the length of the plan.

3. The interconnected floor spaces create the opportunity for more natural light, increased air volume and circulation, as well as increased visual connection and interaction between students.

