



# architectureBC

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TECHNOLOGY + EDUCATION



ROBERT STEFANOWICZ PHOTO

# *Heritage Woods Secondary*

**S | C | H | O | O | L**

Port Moody, British Columbia



When Heritage Woods Secondary School opened its doors this September, another generation of students filled the “green” hallways, classrooms, gymnasium and atrium of the first silver LEED awarded to a public school. This school does not only feature environmentally conscious architecture designed by KMBR Architects and Planners, but employs technological advancements to service learning.

Heritage Woods Secondary School is a project with a high standard of sustainable design reflected in numerous features including a compact and thermal-efficient building plan and envelope, building orientation on an East-West axis optimizing daylight and minimizing solar gain, effective daylight control-shading devices and light shelves are just some of several featured examples.

Heritage Woods Secondary School students and staff have access to wireless Internet connections allowing for fast yet mobile information gathering. Laptop computers can be used anywhere in the building and not only in computer labs. Classrooms are equipped with multimedia tools allowing for a full range of multimedia presentations. Technology is utilized to help enhance student learning not only in the classroom but also in self-directed e-learning. The atrium is equipped with a touch-screen computer display giving students, staff and public access to the information about the design of the physical environment and, in particular, sustainable design features built into this school.

**ARCHITECTURAL:**  
**Killick Metz Bowen Rose Architects Planners Inc.**

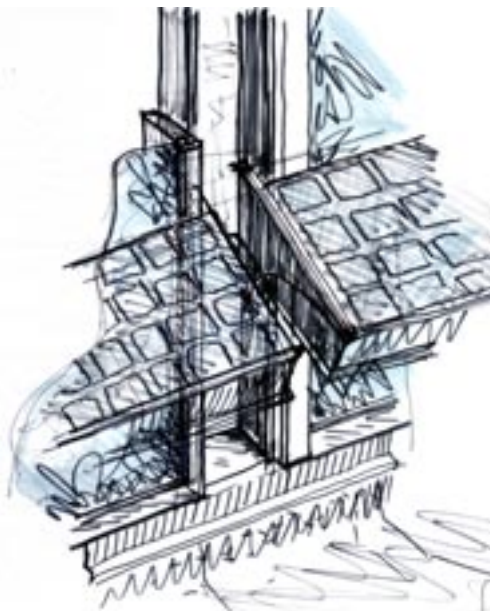
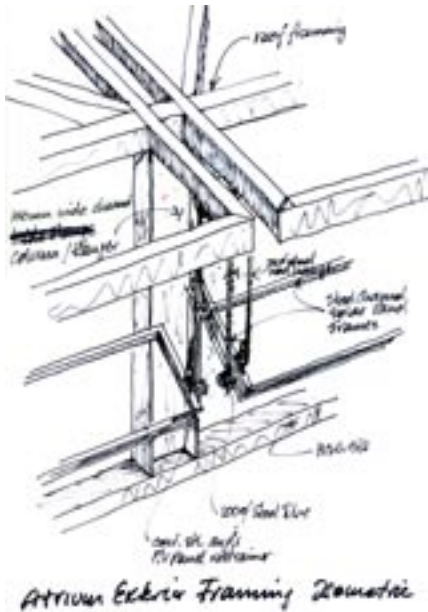
Structural:	Bush Bohlman & Partners
Mechanical:	J.M. Bean & Co. Ltd.
Electrical:	R.A. Duff & Associates
Civil:	R.F. Binnie & Associates
Landscape:	Perry & Associates
Geotechnical:	Davies Geotechnical
Theatre:	Douglas Welch & Assoc.
Acoustic:	BKL Mike Noble



■ The spacious atrium is a space for social events, indoor activities, study and relaxation for students and staff.

Architecturally, the atrium uses tapered concrete portal frames to support the floors and roof. It is an unheated space that buffers the heat loss from the internal classrooms.

Available to public and students is an innovative touch-screen computer displayed in the atrium, which allows users to step through building system graphics to view current building conditions and link to related websites.



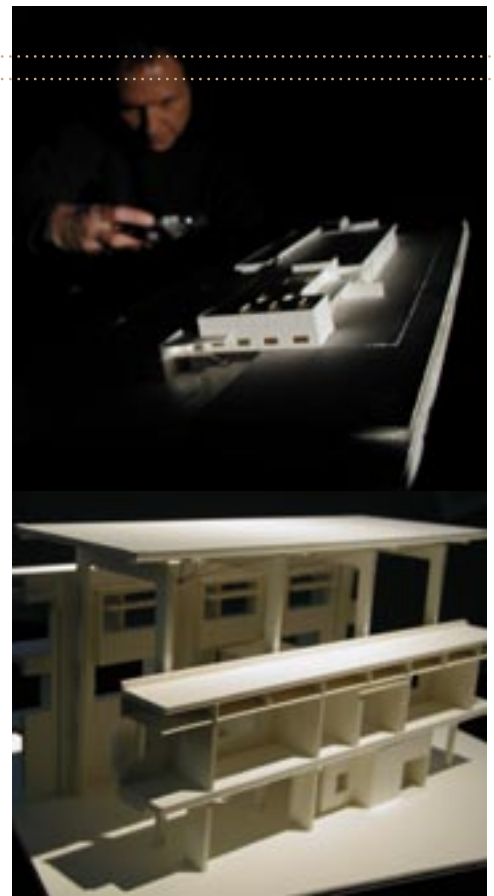
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## Green Design Features:

- effective daylight control through shading devices plus light shelves.
- ground-source heat pump cooling and heating.
- heat recovery ventilation utilizing chimney effect in atrium.
- natural ventilation, opening windows.
- high efficiency boilers for half the boiler capacity peak load.
- variable speed drives for mechanical pumps.
- low water consumption plumbing fixtures; partial use of waterless urinals.
- DDC controls and enhanced building commissioning procedures.
- zero use of CFC-based refrigerants and Halon fire suppression.
- carbon dioxide monitoring, high air exchange rating
- occupancy sensors to control lighting and outside air.
- reduced artificial lighting
- exterior lighting on photocell and time-clock control.



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■ Daylight capture and control refers to the variety of means used to bring in the kind of daylight that is desirable and block the daylight that is not. This is achieved with use of the large windows, overhangs and shading devices light shelves sloped ceilings and the selective use of skylight.


1/4" scale models of different parts of the building were taken to the lighting lab in Seattle, who can very accurately simulate daylight conditions and measure the daylight performance of the building. This service is free, other than the cost of the models and a day spent in Seattle.



■ The design of Heritage Woods has won two ASHRAE awards for innovation based on improvements that reduce energy consumption, and increase occupant comfort and indoor air quality.



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