



## Award of Merit

### York House School Senior Building



#### Consultant

MCW Consultants Ltd.

#### Prime Consultant

Acton Ostry Architects Ltd.

#### Owner/Client

York House School

#### Category

Buildings

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MCW was hired to provide Consulting Mechanical Engineering services for York House, a Vancouver private girls' school. The team's goal was to create a mechanical system providing comfortable conditions year-round, with low energy consumption using state-of-the-art technology.

A dedicated outdoor air system combining ceiling-mounted chilled beams was chosen. The variable air volume air distribution system features dedicated boxes for the classrooms and offices. All classrooms feature thermostats, CO2 sensors and occupancy sensors.

Active chilled beams meet the sensible load of the spaces by transferring heat from the chilled water loops. Heat transfer via hydronic loops is much more efficient than air. Occupancy sensors turn lights off and reset temperatures in the spaces to reduce energy consumption.

The central heating and cooling plant with two 20-ton air-to-water heat pumps was sized to meet the building's peak cooling load. A high-efficiency, gas-fired condensing boiler allows shutdown of the heat pumps at night to avoid potential noise complaints during nighttime operations.

The ventilation unit is equipped with a heat recovery coil and a single heating and cooling coil, delivering air between 21°C (winter) and 12.7°C (summer) for air dehumidification. A heat recovery cycle injects heat from air/refrigerant-type heat pumps to utilize excess pressure air and washroom exhaust.

The systems were installed within the client's budget and deliver the thermal and acoustical levels set at the project's inception.