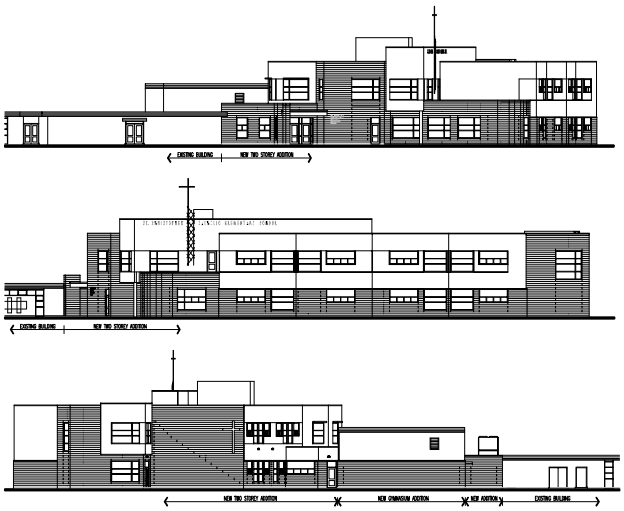
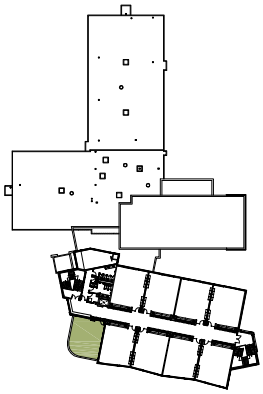
St. Christopher Catholic Elementary School
2004 Additions & Renovations

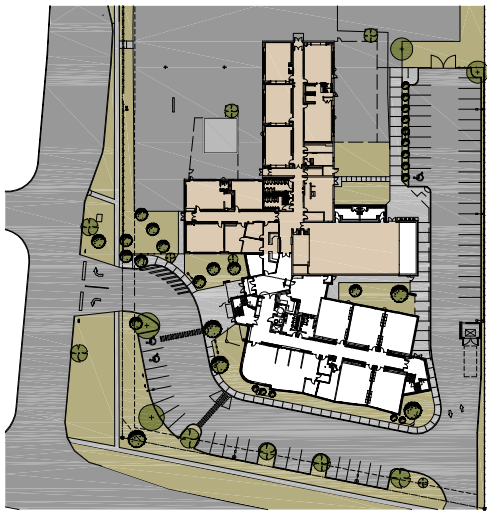
The design intent of this sustainable school project was to integrate a new 13 Classroom Addition including Administration areas and Resource Room with other smaller additions to an existing school minimizing the impact upon the rear play areas of the site. A two-storey 26,000 sf addition was added in the front un-used portion of the site providing a new school image while creating new traffic organization for staff, visitors, buses and parent drop off and pick up. An extremely high-performance envelope has been combined with several energy efficient lighting and HVAC initiatives resulted in this project becoming the most energy efficient elementary or secondary school in Ontario and the fourth most efficient in Canada as approved through the NRC Commercial Building Incentive Program (CBIP). Energy savings amount to over $25,000 annually being approved at 59.5% above the Model National Energy Code for Buildings (MNECB).

Extensive glazing allows for natural daylighting in all classrooms and corridors with a new entry atrium bringing natural light into the middle of the complex. Fibreglass frame windows with argon filled low-e coated sealed units have been used throughout with operable sliders provided to allow for additional occupant comfort control. A high efficiency condensing boiler was added with a new rooftop chiller to provide energy efficient sources for the new in-floor radiant heating and cooling system while a heat recovery wheel system reuses energy from the building exhaust to reheat fresh air constantly supplied to the structure to provide a superior indoor environment. Daylight and occupancy sensors throughout provide efficiency gains in lighting with a building management system to control all aspects of climate control. Waterless urinals were installed in all new and existing areas.

The most innovative, visible and enjoyed green element of 'the school with hair on top' is best witnessed by the two level 5,000 sf green roof viewed from vantages within the school and from the distant expressway. As well, exterior curved and undulating wall forms have been utilized to disperse traffic noise into the building while utilizing re-useable steel siding and a steel upper superstructure. This project was recently published by the Canada Green Building Council for it's innovations and energy savings while being below the allowable budget for other non-sustainable schools.







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