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The 135,000-square-foot Nottawasaga Pines Secondary School in Angus, Ontario, includes a number of green features. It also required a lightweight, durable composite structure due to seismic concerns. Geotechnical reports classified the site as Class E. The project won a 2012 Consulting Engineers of Ontario award for environmental stewardship.

Angus school includes geothermal energy

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staff writer

When the firm of Snyder Architects was retained by the Simcoe County District School Board in the fall of 2008 to realize the board's bold vision for a 21st century school in the town of Angus, it immediately realized "that this wasn't just another school.

"We knew this was a tremendous opportunity to make a difference," said architect Doug Snyder, the principal of the firm which specializes in the design of education and long-term care facilities.

The firm's mandate was to design a facility that fostered student and community engagement, student-centred learning and environmental sustainability.

"It was a very collaborative process, not just focused on the building of the school and but on the building of the community," said Snyder, a graduate of the University of Waterloo's school of architecture and a founding partner in the firm now known as Snyder and Associates.

The three-storey, 135,000-square-foot Nottawasaga Pines Secondary School was constructed by Percon Construction Inc. at a cost of \$22.6 million. The curriculum includes a full range of academic programs.

Nestled in and amongst various academic facilities on the main floor of the school are a soaring atrium and light-filled cafetorium, the school's heart and cultural hub.

To encourage student engagement, hands-on teaching labs and project-based classrooms are pulled into the heart of the school. Athletic facilities and community partnerships allow for further collaboration and interaction.

As part of a partnership with the township of Essa, a municipal public library has been incorporated in the facility. It is accessed via the atrium as well as the building's exterior.

“Challenges related to schedule and community partnerships were anticipated, but achievable,” said Snyder, who labels the project the most sophisticated undertaken by his firm in terms of both community collaboration and sustainability.

Sustainability features include geothermal energy, xeriscaping, high-performance glass, heat recovery systems, carbon dioxide control, photocell-lighting control of ventilation systems, solar domestic hot water, and photovoltaic solar energy generation.

Snyder said key challenges included meeting expectations for sustainable design as well as seismic design requirements within the project budget.

Geotechnical reports classified the site as Class “E”, which required the designers to meet stringent seismic design requirements. Soil conditions also didn’t help, as the school was to be constructed on super-saturated wet sand.

“All of this meant that we couldn’t adopt a conventional but heavier loadbearing masonry structure and had to devise a very lightweight yet durable composite structure to suit the difficult soil conditions,” Snyder said.

He said the building also is “unusually large” in terms of the number of students, a fact which had budgetary implications as well.

Construction started in June 2010.

“When you look at the building, you might think it was over-designed, but there had to be a lot of seismic calculations done,” said Percon president Frank Perricone, noting that additional reinforcing of mechanical and electrical systems and piping was required as well anchoring of items on the roof.

The geothermal system had to be carefully installed as well in light of seismic concerns, he said.

The recipient of a 2012 award for environmental stewardship from Consulting Engineers of Ontario, the project was undertaken by a team that included structural engineering consultants Hastings & Aziz, mechanical-electrical consultants Jain & Associates, site, landscape and civil consultants Greenland and sustainability consultants Sustainable Edge Ltd.

Snyder officially handed over the keys to principal Chris Samis at a grand opening hosted by the school board in mid-May.



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