

King's new Township-Wide Recreation Centre first in Canada to achieve Zero Carbon Building Design certification

King's new Township-Wide Recreation Centre is the first combined aquatics and ice-sports community facility in Canada to achieve Zero Carbon Building Design Certification by the Canada Green Building Council (CaGBC). This certification is awarded for new constructions which demonstrate climate leadership through innovative carbon reduction strategies and optimal building performance. Considerations include: operational carbon reduction measures; efforts to reduce the building's embodied carbon; energy efficiency; grid-friendly design measures, and innovation. Key features of the Township-Wide Recreation Centre design: All electric building systems: All building systems, including rooftop ventilation, dehumidification, boilers, arena heat rejection, and air source heat pumps, connect to an integrated thermal energy network. Every possible effort is made to recover waste heat. This means there's less heat energy being rejected into the atmosphere, greater operational efficiency, and less energy required to run the facility. Innovative CO2 Arena Refrigeration System: CO2 is a naturally-occurring refrigerant, usually used in industrial applications. We chose to pursue this system because it produces high-grade waste heat, which can then be cycled through the building's thermal network, effectively providing free heat energy. Minimal dependence on gas-fired equipment: The building uses almost no gas-fired equipment, which means greenhouse gas emissions have been effectively eliminated. Daylight Optimization: Ample daylighting has been strategically incorporated into the design to enhance energy efficiency and create a bright, inviting atmosphere. Geothermal Readiness: The design includes the coordination of an open-loop geothermal well installation, providing a foundation for future retrofitting. This innovative approach taps into the most stable ground-source energy exchange available. Slated to open in summer 2024, the multi-use recreation centre is located on 25 acres at the southeast corner of the King Campus of Seneca and will be accessible from 15th Sideroad. The facility will include an aquatics centre with a six-lane lap pool and leisure pool, two NHL-sized ice rinks, spectator seating, an artificial turf fieldhouse with running track, and a multi-use community space. Outdoor amenities include a large courtyard with direct access to social and community rooms, with future plans for the site including connections to the Oak Ridges Moraine trail system and outdoor sports fields. The project is jointly funded by the Township of King, the Government of Ontario, and the Government of Canada through the Investing in Canada Plan. Construction of the new Township-Wide Recreation Centre is an ambitious project that reflects King's commitment to sustainable development, while providing our growing population with quality amenities to enjoy during their leisure time," said Mayor Steve Pellegrini. "The project was designed to open as a carbon-zero facility with the goal of reducing greenhouse gas emissions wherever possible. I am proud of the project team, including Township staff and the architects at MJMA, who have worked diligently over several years to develop innovative and economical ways to achieve this goal. To be the first facility of its kind in Canada to achieve Zero Carbon Building Design Certification is confirmation these efforts were a worthwhile investment, and one that the King community will benefit from for years to come. For a project overview, visit king.ca/townshipwiderecreationcentre. See regular updates at king.ca/majorprojects.