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# SAINT JOHN TRANSIT OPERATIONS CENTRE

Radiant Heating  
Project Profile

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## REHAU Radiant Heating System Helps New Brunswick Bus Facility Achieve LEED Certification

Achieving energy efficiency in a bus storage and maintenance facility that's nearly twice the size of a Canadian football field?

That may seem as challenging as heating a football field itself, but not to the engineers at REHAU. The company has done both, using the same highly efficient radiant heating system that is one of the most comfortable and efficient space conditioning solutions available today.

When the Saint John Transit Commission decided to replace its warehouse-style bus storage and maintenance building with a 10,219 m<sup>2</sup> (110,000 ft<sup>2</sup>) operations center, commission members were intent on building a highly energy-efficient building. "These buildings, by their nature, are energy thieves because you have to exhaust the air on a continuous basis," explains Frank McCarey, general manager of the transit commission.

Maintaining the utilities of a transit center that stores up to 70 buses using conventional heating and energy systems can be an overwhelming task, with negative effects on the building's overall efficiency. In order to achieve the LEED® Silver certification they were pursuing, developers of the Saint John Transit Operations Centre knew they had to think outside the box.

A key component of their solution was the application of REHAU's in-floor radiant heating system, which works by circulating warm fluid through a network of RAUPEX® crosslinked polyethylene (PEXa) pipes embedded in four separate slabs of concrete. (The size of the project required four separate concrete pours rather than a single slab.)

As McCarey explains it, radiant heat is ideally suited for a bus storage and maintenance facility. "It's the best kind of system to have because you want the heat underneath the buses so their air systems don't freeze up in cold weather, while maintaining a comfortable environment for our mechanics," he says. "I've been in and out of an awful lot of garages, and if you can get in-floor heating, it makes for a much better work environment."

McCarey says they heat the bus storage area to 48 degrees. "If we had natural gas overhead, we'd have to heat the storage garage to 55 degrees to make sure the bus air systems didn't freeze. Since the radiant heat stays near the floor, it is much more efficient for cold storage of vehicles."

Developers laid 43,100 m (141,400 ft) of PEXa pipe underneath the floor of the Saint John Transit Centre. The high-tech heating system is monitored and controlled remotely by the Saint John energy officer, who works out of city hall.

Completed in 2009, the Saint John Transit Operations Centre exceeded its initial energy savings target of 45 percent. With REHAU's radiant heating system incorporated into their energy efficiency strategies, the transit commission achieved LEED Silver certification, increased the overall comfort inside the facility and improved the efficiency of the vehicles.



**Project:** Saint John Transit Operations Centre, Saint John, New Brunswick

**Type of Construction:** Public transit, opened in 2009

**Scope of Project:** 43,100 m (141,400 ft) of RAUPEX pipe

**Mechanical Engineer:** MCW Maricor, a division of MCW Consultants

**Mechanical Contractor:** Master Mechanical

**REHAU Systems Used:** Radiant heating (RAUPEX® pipe, compression-sleeve fitting system, PRO-BALANCE® manifolds)

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