

SITECAST TILT-UP PANELS GET **A+** AT ÉCOLE ÉLÉMENTAIRE PUBLIQUE DES SENTIERS

CLIENT

Conseil des écoles publique de l'Est de l'Ontario (CEPEO)

ARCHITECT

Pye & Richards Architects

ENGINEER

LJB Inc.

PROJECT

New elementary school
école élémentaire publique Des Sentiers

DETAILS

- 55,000 sq.ft.
- 24 classrooms
- Full sized gym with stage
- Library
- Insulated load bearing concrete SiteCast panels, 3" SM insulation
- Thin-set intertragonal brick with exposed sand-blasted concrete

BENEFITS

- ~38% savings on natural gas costs annually, over traditional masonry school built with same design layout
- ~23% electricity savings

In 1998, speed and cost were the driving factors behind Conseil des écoles publique de l'Est de l'Ontario's (CEPEO) decision to hire SiteCast Construction to build the 55,000 square ft. école élémentaire publique Des Sentiers in



Cumberland, Ontario. Using insulated concrete tilt-up panels, SiteCast built this two storey-elementary school in just **5.5 months**, and still kept the costs within a tight budget.

But the benefits don't end there. In 2012, an energy study revealed that in just one school year, Des Sentier saved 38% on its natural gas and 23% on hydro costs compared to its sister school that was built using traditional brick/masonry construction. Since the schools are virtually identical, except for the construction methods/wall assemblies, the difference in energy savings can be attributed to the concrete insulated "sandwich" tilt-up panels.

SiteCast tilt-up structures are proven to be more thermal efficient than traditional construction methods; an R16 tilt-up panel system will perform as well as or better than an R32 low mass construction system, depending on thickness of concrete panel. Non-conductive composite ties join the two layers of concrete and insulation together, providing a superior thermal rating.



Given the performance of tilt-up, it's little wonder SiteCast continues to construct schools and additions for CEPEO and other school boards across the province.

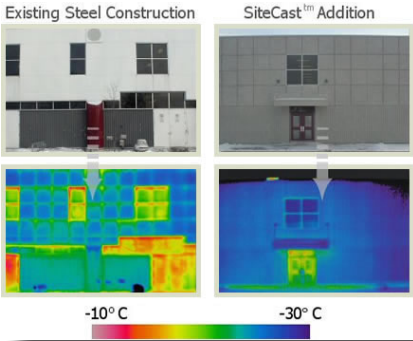


It's a simple equation
reducing energy consumption = saving money

SiteCast Construction is an industry recognized concrete tilt-up panel specialist.

Since 1991 SiteCast has worked on projects of varying size, shape and texture in Canada and abroad.

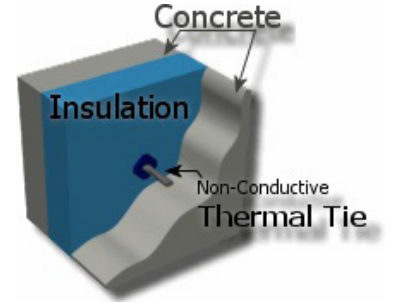
SiteCast's award winning construction techniques are recognized throughout the tilt-up industry and used throughout Canada and abroad, establishing SiteCast as a leader and innovator in this superior energy efficient construction technique.



Advantages for School Boards

ENERGY EFFICIENCY

- Panels are constructed with two layers of concrete and a 3"+rigid insulation core to create a high performance wall assembly.
- An edge-to-edge, foundation to roof assembly provides an uninterrupted rigid insulation layer that eliminates thermal bridging.
- The interior layer of concrete (load bearing) provides a quantity of **thermal massing** properties.
- Not only does the exterior layer of concrete protect the rigid insulation, it provides additional natural thermal properties. (In addition, this layer provides sound masking, architectural detail and because of its durability helps to reduce ongoing maintenance costs.)
- SiteCast can assist school boards in meeting the Ontario Regulation #397/11 made under the Green Energy Act, 2009.



INSULATED LAYER

The thermal image (left) compares SiteCast tilt-up panels against traditional wall assemblies. Red and yellow indicate heat loss and probable air movement.

- Our closed cell insulation acts as the wall assembly vapour barrier. The surface tension of the concrete acts as the air barrier. These properties remove the need for two trades. The panel joints are vented with two layers of water infiltration defense.

SPEED - SCHEDULE - COST SAVINGS

Insulated concrete classrooms can be erected in a few hours; an eight-classroom structure with washrooms and air conditioning can be completed in mere weeks. An entire school can be built in as little as six months.

- Wall profiles are simplistic, as these become a puzzle, not a series of multiple material connections.
- Materials (i.e. concrete and rebar) are readily available.
- Several building phases can proceed at the same time.
- Trades can safely access the site sooner because the floor slab is cast first.
- As the forming of tilt-up panels is precise, other trades are able to complete their shop drawings and order doors and windows, prior to fabrication of the panels.
- Structure is completed quickly. Once they are erected, the building shape is defined.



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