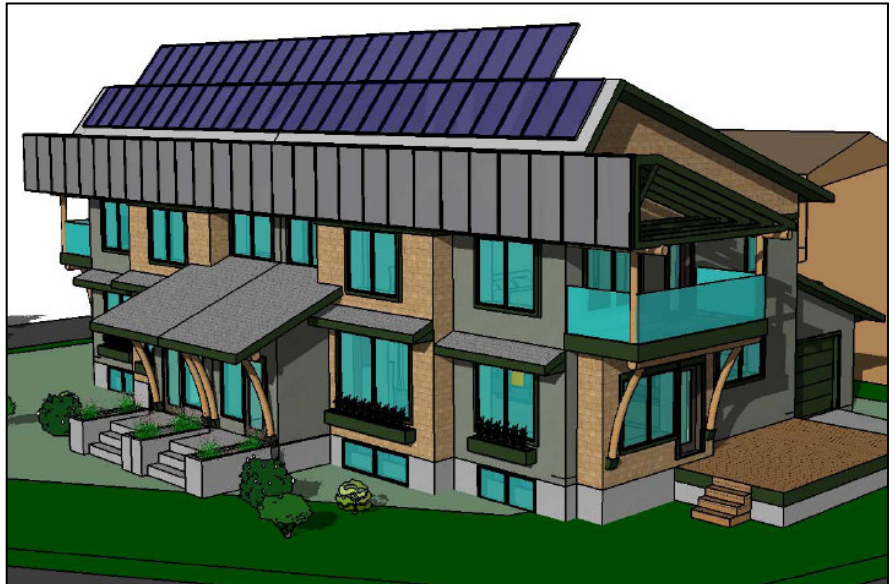


SOLAR CASE STUDY

Solar hot water for a Net-Zero Energy home

Edmonton AB, Canada



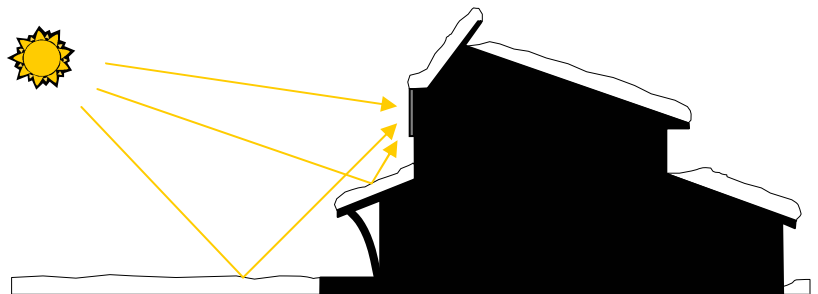
This is a design for a duplex in a northern climate that can generate all the energy it needs on site. The long row of thermal collectors above the windows gathers heat for space heating and hot water while the angled photovoltaic collectors on the roof turn sunlight into electricity for lights and appliances.

The solar thermal system was designed by Taylor Munro. Highly efficient flat-plate solar collectors gather the energy and send it to large, insulated tanks for storage. The system will work year-round, no matter how cold it gets outside!

This design is one of 12 winners in a net-zero energy housing design competition held by Canada Mortgage and Housing Corporation (CMHC).

Capturing the sun in winter

The solar thermal collectors are mounted vertically so that they maximize energy collection in the winter for space heating. The winter sun hits the collectors at a low angle while additional reflected radiation is also captured from nearby snow-covered surfaces.



This is a drainback system with ordinary tap water as the heat transfer fluid running through the collectors. The water drains back to indoor heated space whenever it is not circulating. This is an elegant design for year-round solar heating in a freezing climate.

Taylor Munro 
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