

## Unicel & the Net Zero Capable Solar-powered House

### Unicel contributes to fabrication and design of solar-powered roof

We recently announced our participation as part of TeamMTL for the 2018 Solar Decathlon China (SDC) competition in the city of Dezhou, Shandong province. SDC 2018 focuses on green residential design concepts and was formed with the U.S. Department of Energy, the National Energy Administration of the People's Republic of China, and the China Overseas Development Association.

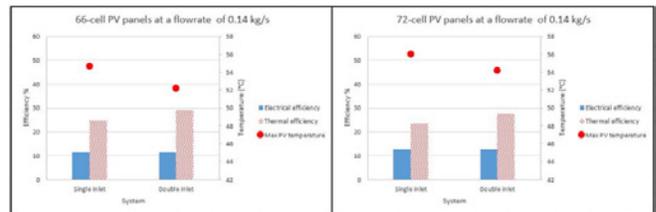
### Incorporating a smart energy production system into the roof

The house designed by TeamMTL for the 2018 competition employs both Building Integrated Photovoltaic (BIPV) and Building Integrated Photovoltaic with Thermal recovery (BIPV/T) roofs. BIPV is a smart energy production system that uses solar photovoltaic panels as part of roofs, windows, facades and shading devices. Unicel adapted its existing curtainwall and skylight technology to incorporate the BIPV and BIPV/T smart energy systems into the house roof. Roof panels were supplied by Canadian Solar.

### Why is this relevant?

A traditional photovoltaic panel converts about 20 percent of the sun's power to electricity - the rest being lost primarily through heat. With a BIPV/T system, you can reclaim some of that heat with an air channel behind the PV to heat the house, thereby recuperating up to 70 percent of the sun's energy. Leveraging Unicel's advanced curtainwall and skylight technology, the TeamMTL house features a BIPV/T front roof and a BIPV back roof that deliver high levels of thermal performance.

### The preliminary results are encouraging!



### A collaborative effort for the house of tomorrow

Sponsored by Hydro-Québec, the TeamMTL entry is a joint project led by students from both McGill and Concordia Universities. The SDC competition requires each team to design and build a two-story, Net Zero Energy capable, solar-powered house of 120 to 200 m<sup>2</sup> (1290 to 2150 ft<sup>2</sup>) size, equipped with all standard household appliances and capable of charging an electric vehicle. Each entry will be evaluated for cost feasibility, power efficiency, environment adaptability, power generation capacity and architectural quality. We will be competing against 21 other teams from 11 countries and 43 universities in designing and building the next generation of housing.

For more information about the Solar Decathlon China, visit: <http://teammml.ca>

