

# **NJIT architect designs award-winning house that looks like an igloo**

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NJIT architect Matt Burgermaster's ice house was designed as a snow-belt residence for Buffalo in Western New York state. Credit: Matt Burgermaster, NJIT

An NJIT College of Architecture and Design (COAD) architect who designed an "ice house," reminiscent of an igloo, has received yet another award for his unique residence. The 2012 Association of Collegiate Schools of Architecture awards program recently feted NJIT Assistant Professor Matt Burgermaster's design for "Ice Cycle House," a prefabricated "green" residential prototype by featuring the house in its annual book Architectural Education Awards 2011-2012.

Judges said that Burgermaster's project "takes an everyday occurrence, such as the thawing and freezing of roof drain water and elevates it

through an artistic and performative design response. The underlying thermodynamic research is used as a synthetic departure point to generate an informed and innovative architecture."

This is not the first time peers have touted Burgermaster's design. In 2010, the *Journal of Architecture Education* featured the house as one of four innovative designs by architecture faculty engaged in research-based practice. The project also received a professional design award from the American Institute of Architects (2009) and in (2010) was presented at the International Conference on the Constructed Environment in Venice, Italy.

"Its exterior envelope design consists of uniquely multi-functioning components that re-imagine the performative capacity of conventional drainage and ventilation strategies," said Burgermaster, who originally designed the house as a snow-belt residence for Buffalo, in Western New York State, and as a site-specific building solution for sustainable living in northern climates.

Beyond being inspired by the natural flows of ice, Burgermaster also likes concrete for sustainability. To those ends, he is involved with the Precast/Prestressed Concrete Institute (PCI) Architectural Studio at NJIT and recently highlighted Thomas Edison's architectural achievements as designer of one of the nation's first concrete houses. In his 2011 presentation to the Society of Architectural Historians, he illustrated how Edison invented and patented in 1917 an innovative construction system to mass produce prefabricated and seamless concrete houses. Most people associate this style of architectural design and type of building technology with the European avant-garde of the early 20th century.

Edison houses remain standing in towns surrounding West Orange, the location of Edison's factory, now a national historic park. The park even

features a prototype concrete house. "Edison's one-of-a-kind system was patented for the purpose of building a single, repeatable structure without any parts, with a single act of construction," said Burgermaster.

Burgermaster analyzed Edison's invention of a single-pour system for concrete construction as a novel application of this material's dynamic behavior and speculated on its role in the development of a type of integrated building technology that, perhaps inadvertently, also invented the idea of a seamless architecture. Originally motivated by the objective of providing a cost-effective prototype for the working-class home, this early experiment in mass-production was one of Modernism's first attempts to construct a building with a single material.

Edison's 1917 patent proposed a building-sized mold that leveraged the intrinsically dynamic capacity of concrete to form itself into a variety of shapes and sizes, limited only by the design of its framework. The invention's potential efficiencies resided in the distribution of this material as a continuous flow through an entire building instead of being confined to the prefabrication of its constituent parts. Burgermaster said that "this historical example continues to be a forward-thinking approach to the integration of building design and construction, a source of inspiration for my own [design](#) work, and hopefully for others involved in the creation of a more sustainable built environment."

**More information:** For more information, please visit [www.njit.edu/news/2011/2011-215.php](http://www.njit.edu/news/2011/2011-215.php)

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