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TOWERING AMBITIONS

Three vanguard architects reinvent the skyscraper, grounding the form with Earthly sensibilities, P. 54

DRUMLIN FARMS POULTRY HOUSE

sunny-side south

Harnessing the power of the sun is the key to Maryann Thompson Architects' work at a Massachusetts wildlife sanctuary—and everywhere else

by Erik Pisor

Incorporating passive-solar design into New England-area structures has been the architectural focus of Maryann Thompson and her self-named firm for the past 20 years. By creating a good siting strategy and orienting buildings to the south, she has reduced the lighting needs of a number of Northeastern structures—often without her client's knowledge.

"[In the past] it wasn't popular from a client standpoint. People would look at you sideways if you brought up passive-solar or sustainable [architecture]," Thompson says. "Then there was a cultural shift." Since that shift, Thompson, who has a degree in architecture and landscape art, has served as principal of Cambridge, Massachusetts-based Maryann Thompson Architects—a regional design firm that brings passive-solar design to institutional and residential structures.

ABOVE: The Drumlin Farms poultry house could become the first LEED Platinum project for Maryann Thompson.

"A lot of the work we do is about revealing the quality of a landscape via architecture," Thompson says. The firm recently worked within the rolling-hill landscape of Lincoln, Massachusetts, which is home to Drumlin Farms Wildlife Sanctuary, a Mass Audubon working farm and public sanctuary. The first portion of the Drumlin Farms project involved a large poultry house that Maryann Thompson Architects renovated through the use of spiderweb-like trusses, which brought light into the house from above. The focal point of the project, however, was the farm's two-classroom building.

Like all the firm's structures, the classroom was sited to the south so it would receive the most daylight. The building also opens toward the farmyard and features attached overhangs that block the harsh summer sun while still admitting enough warm light in winter. "If you don't orient [a building] towards the sun it doesn't make sense," Thompson says. "It reduces the energy load [of a building]." Daylighting and natural heating of the building is further improved through the implementation of skylights and the use of triple-glazed windows in specific areas. "To keep the [building's] heating costs down, there is a formula where the windows don't go to the ground," Thompson says. "You can only do a third of the building in windows because otherwise there is too much heat loss."

She says the classroom windows are different that those of typical projects—being smaller and triple-glazed rather than two paned. The ceiling of the classroom features a vaulted, curved roof that is reminiscent of the many roof barns throughout New England while also being super-insulated. Its wood was harvested and salvaged from trees on-site.

The building features a heating system, but it is "very small," according to Thompson. This is because the structure's south-facing orientation, seasonal overhangs, skylights, triple-glazed windows, and vaulted, curved roof provide nearly all the heating and insulation needed. "[The heating system] has the horsepower of a hair dryer," Thompson says. "It's cool to be able to do a building that can have such a small load." The classroom is currently seeking LEED Platinum certification. If awarded this rating, it would be the first Platinum project for Maryann Thompson Architects.

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—Maryann Thompson, Principal

With the Drumlin Farms project completed, the firm is currently underway on the adaptive reuse of an existing 150,000-square-foot warehouse and the conversion of an existing 7,200-square-foot mechanical building—both of which are part of Brooklyn Bridge Park in New York City. The warehouse, known as Pier 2, features a number of recreational courts and equipment that is suspended between the continuous pier-deck surface and an existing skin, which was partially excavated and replaced with translucent panels. The surface also features a series of full-height, stainless-steel screens that provide light and shadow.

The majority of the mechanical building, dubbed the warming hut, will remain intact—with the interior of the building featuring expansive views of lower Manhattan. The second story of the structure is currently being removed—with that space being transformed into an observation roof terrace. A densely spaced wooden screen that was salvaged and reused from the site will veil the terrace.

Looking beyond the Brooklyn project, Thompson has few plans to expand her business too far, mostly because she feels doing so would go against the sustainable lifestyle she's cultivated. However, she still plans to continue bringing passive-solar design to a host of New England structures, extending her 20-year run far into the future and keeping buildings daylit wherever and however she can. gb&d