

Omena House / Danny Forster

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Text description provided by the architects. Energy, Climate and Construction Strategies Consultant: Kiel Moe

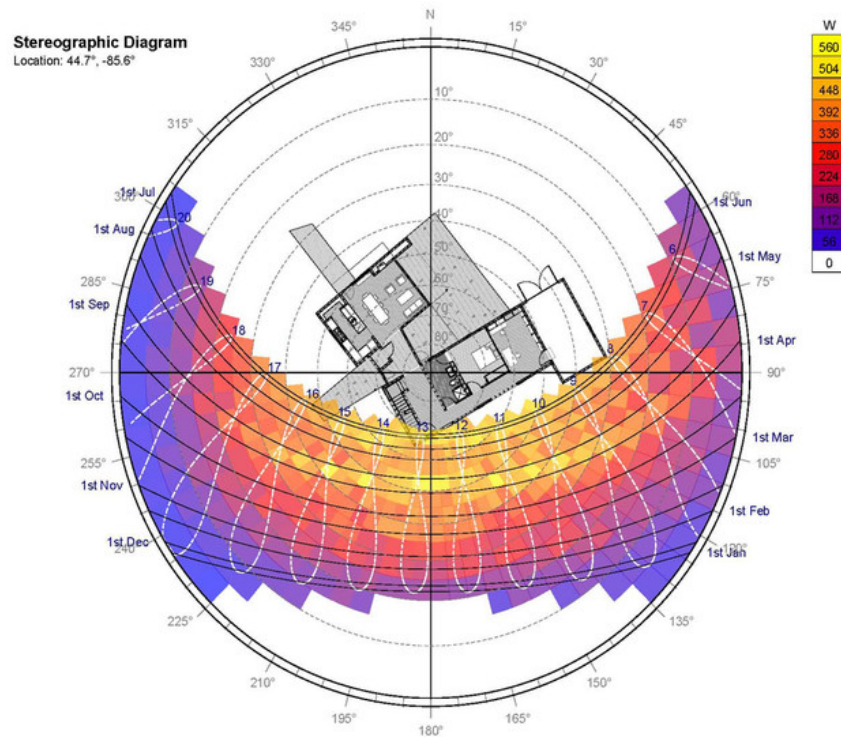
Danny Forster Design Studio's philosophy is that through a blend of intuitive design decisions and technologically enabled design strategies, it is possible to make beautiful sustainable architecture accessible at a reasonable cost.

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“While we are well-versed in latest high-tech gadgetry, we see sustainability largely as a matter of careful logic and inventive planning. In other words, why pay for air conditioning if mother nature is dolling it out on the cheap?”

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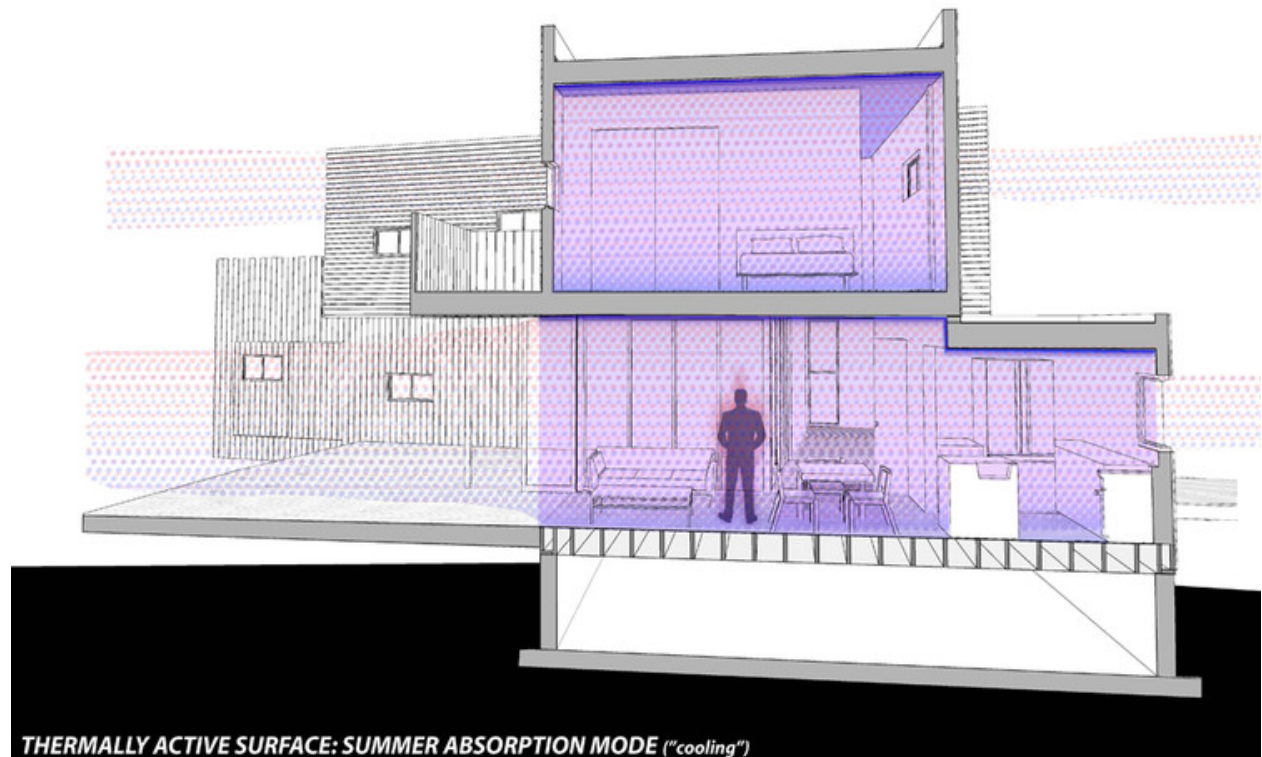
Their vision is exemplified in this 2700.sq ft lake house, the first private residence in northern Michigan to achieve LEED gold status, (there are 7 total in the state). The Omena Lake house is a project that combines sophisticated energy modeling software, never-before attempted active systems, and basic common sense design strategies that create a contemporary sustainable home whose goal is to connect its residents to the dynamic site on which it sits. Although flat roofed and geometrically abstract, the house is very much a part of the history of Northern Michigan Lake homes—it's a modern, sustainable interpretation of the a Lake-side cottage.

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The main living area has a 15 ft long thermally broken, fully operable 'Nano-Wall', which acts as the main wind intake to passively cool the entire house. The interior floors are made of rapidly renewable, locally harvested bamboo. The counter-tops are richlite, made from recycled newspaper. The house is equipped with compact fluorescents, low-flow fixtures, two button toilets, and energy star rated appliances. The façade of the building is clad in vertical cedar. 60% of the home is wrapped in an Ipe-clad rain-screen, used both for solar deflection as well as passive cooling.

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The house is one of the country's first to use an in-ceiling hydronic radiant heating AND cooling system - there's no traditional forced air HVAC, just the geo-thermal powered, thermally-active ceiling that can both heat and cool the house. Also 100 % of the roof surface is covered in a unique vegetative roof, used for both solar deflection and storm water filtration. The house was designed using the energy modeling software Eco-tech, to leverage and calibrate both passive cooling, passive solar, as well as basic site orientation.