

## Davis Center for Human Ecology

Bar Harbor, ME

### College Building

New Build

PHI Database ID#: 6906

Certification Goal:



Status: **Pending**

Size: 29,000

**Description:** This mixed-use classroom building for higher education includes art studios, science labs, general classrooms, and faculty office space.

DOE Climate Zone: 6A

### Team:

**Architect/Designer:**

OPAL  
[www.opalarch.us](http://www.opalarch.us)  
Susan T Rodriguez Architecture Design  
[www.str-architecture.com](http://www.str-architecture.com)

**MEP Engineer:**

VanZelm Engineers  
[www.vanzelm.com/vZEngineers/](http://www.vanzelm.com/vZEngineers/)

**Structural Engineer:**

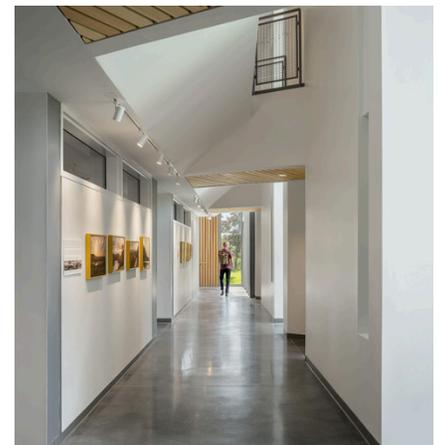
TYLin  
[www.tylin.com](http://www.tylin.com)

**Builder:**

E.L. Shea Builders & Engineers  
[www.elshea.comwood.com](http://www.elshea.comwood.com)



A model for low-carbon academic design in northern climates, the Davis Center for Human Ecology at College of the Atlantic demonstrates how architecture can unite human well-being with ecological stewardship. Designed in collaboration with Susan T. Rodriguez Architecture Design, the building sits on a bluff overlooking Frenchman Bay, extending studios, labs, classrooms, and gathering spaces toward the shoreline. Its L-shaped plan frames a central green for ceremonies and outdoor activities, weaving learning and community life into the coastal landscape.



## Thermal Envelope

### Ground:

Cast concrete w/ EPS insulation

### Walls:

Glulam timber framing, wood stud framing, wood fiber insulation (Gutex)

### Roof:

Wood framed with cellulose insulation

### Windows & Doors:

Unilux FineLine and ModernLine with Ornilux bird-safe glazing

### Shading Strategies:

Fixed external shading at South and West facing facades



Meeting stringent Passive House standards, the building reduces energy demand by 90% through high-performance glazing, robust exterior insulation, and simplified mechanical systems. South-facing glass mitigates winter heating loads while filling interiors with daylight, and a high-capacity energy recovery system maintains constant fresh air supply for diverse teaching and laboratory uses, necessary for a building that combines classrooms with the dissection of large marine mammals.

## Mechanical Systems:

### Ventilation:

Custom enthalpy wheel on custom-sized Daikin direct outdoor air unit

### Heating:

Daikin VRF

### Cooling & Dehumidification

Daikin VRF

### Domestic Hot Water:

Point-of-use electric DHW as needed

### Onsite Renewable Energy

Photovoltaic panels on roof and off-site



Ecological strategies extend beyond energy: the previously disturbed site manages 100% of stormwater on-site; locally sourced wood products and wood fiber insulation dramatically reduce the building's embodied carbon; and bird-safe glazing protects surrounding species. An all-wood structure and enclosure of mass timber columns, beams, and wood fiber insulation emphasize renewable resources while yielding industry-leading levels of stored carbon emissions. Developed through a stakeholder-driven design process, the Davis Center ensures alignment with the college's rigorous dedication to sustainability and performance and the health of its community.

## PHPP Values

<b>Climate:</b> 6b	<b>Cooling &amp; Dehumidification Demand:</b> 10 kWh/m <sup>2</sup> /yr
<b>Airtightness:</b> .64 Pascals at ACH50	<b>Cooling Load:</b> Not measured
<b>Annual Heating Demand:</b> 13 kWh/m <sup>2</sup> /yr	<b>PE Demand:</b> 107 kWh/m <sup>2</sup> /yr
<b>Heating Load:</b> .82kW/m <sup>2</sup>	<b>PER Demand:</b> 50 kWh/m <sup>2</sup> /yr