

COMMERCIAL: EDUCATION

BURR AND BURTON ACADEMY MOUNTAIN CAMPUS

Peru, Vermont

Year: 2012/13

Architect: Randall Walter, Bensonwood

Builder: Bensonwood

Square Footage: 6,211

Timberframe: Nordic lam (FSC) Locally sourced timbers:
Eastern White pine, oak) and Port Orford
Cedar (west coast)

CERTIFIED LEED PLATINUM

AWARDS:

Wood Design Award (2015)

ENR Merit award

Efficiency Vermont Honor Award

AIA New Hampshire Merit Award

Vermont Governor's award for Environmental Excellence



Designed by Bensonwood, the building's insulation, windows, orientation, roof overhangs, and all other design elements were specified with the intention of creating a beautiful, super energy-efficient building that is also long-lasting. The materials in the building are locally sourced, and the building specifically designed to take advantage of the unique features of its location. The windows are not only large resources for passive solar heating, but views to a beautiful environment worth watching and studying.

Contributing to the building's LEED Platinum award are triple-glazed windows and doors, cellulose insulated walls (R-35) and roof (R-60), native grey slate tile and marble, and natural whey-based finishes with no Volatile Organic Compounds. The building also employs a wood-burning masonry heater, air-source heat pumps, Energy Recovery Ventilators, photovoltaic arrays (to achieve Zero Net Energy), and Passive House standards for air infiltration.

The organic architectural features use a variety of wood species with fabricated and natural tree forms in a 6,200 square-foot high school classroom. The wood structure was fabricated from sustainable, locally-sourced materials and designed to simulate a forest setting. Glulam beams tie into solid-wood, tree-shaped columns surrounded by pine, hemlock and cedar wall panels and ceiling rafters. The modules were manufactured off site, where temperature and humidity can be controlled, allowing airtight and watertight tolerances, reducing gaps and improving energy efficiency. The modules are then moved to the construction site and installed, resulting in low impact to the site's ecology. The building also achieved Net-Zero Energy status; through solar panels and energy-efficient technologies, it produces more energy than it consumes.



SMARTER from the roof down.



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**CATHERINE HOUGHTON
ARTS CENTER**

The White Mountain School
Bethlehem, New Hampshire

Built: 2013-2014

Design: Ruhl Walker, Ruhl Walker Architects,
Boston, MA

Architect: Randall Walter, Bensonwood

General contracting and Net Zero building:
Bensonwood

square footage: 5,400

HIGH PERFORMANCE NET-ZERO

prefabrication of panelized assemblies

rapid on-site delivery

energy-efficient design

geothermal heat pump system

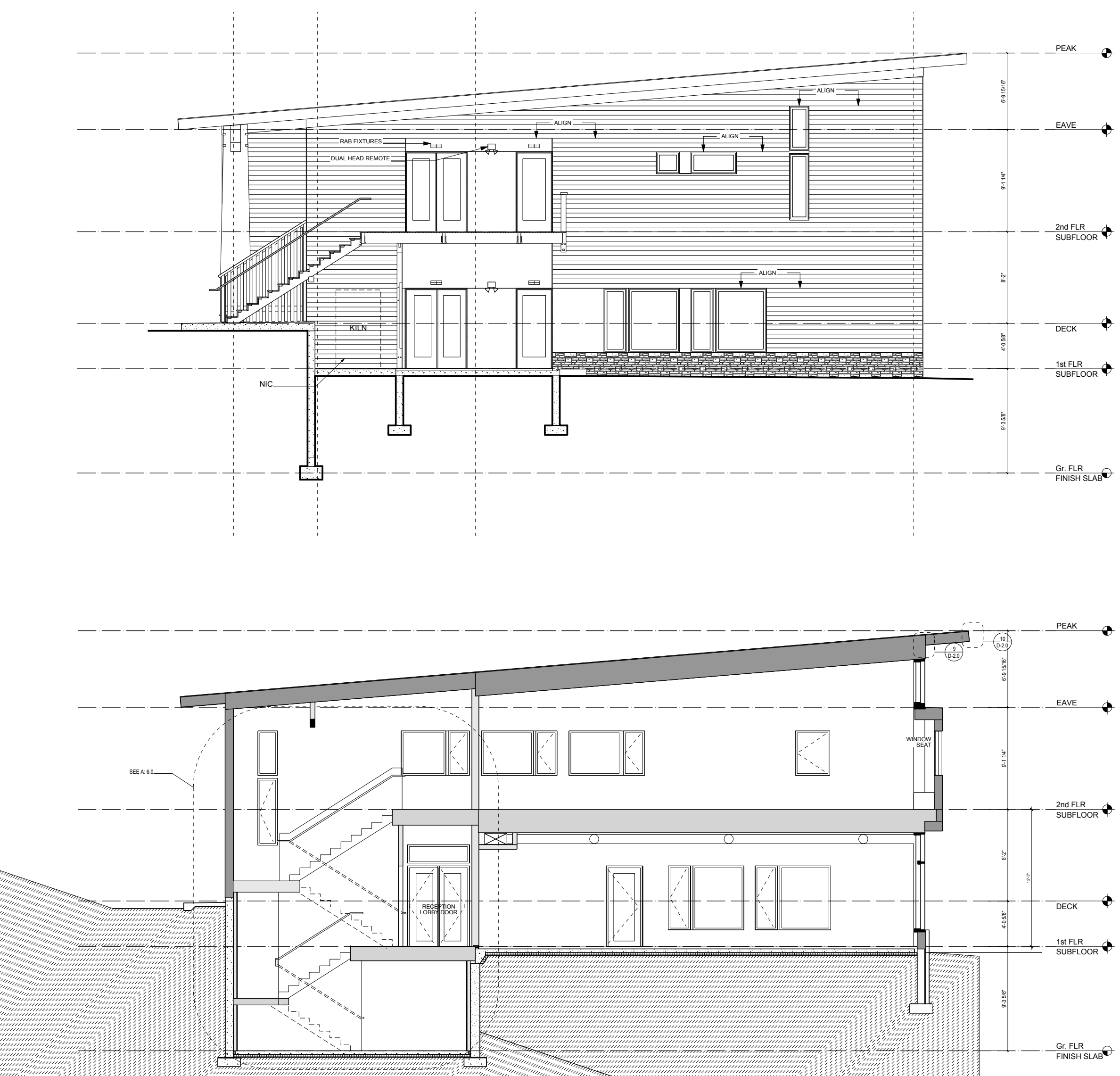
rooftop photovoltaic array



Bensonwood produced the permit-related architectural and engineering drawings, prefabricated the building, and acted as general contractor, working in close collaboration with the award-winning architectural firm, Ruhl-Walker. This multi-use arts and academic building incorporates some of the latest advances in 21st century construction, including prefabricated panelized assemblies and rapid onsite assembly. After excavating and building the foundation, Bensonwood delivered the building components to the site and erected the entire structure in just four days.

With a tight budget, the building's shape had to be as simple as possible. The main façade is a north-facing engineered lumber curtain wall, designed to bring in abundant light into all four studios. On top, a pitched roof faces south west to focus a 50 kW rooftop photovoltaic modular array. The rooftop PV generates more power than the arts center needs, so the excess powers a portion of the other academic buildings.

The engineered wood curtain wall and outdoor stage beam are cross laminated black spruce, fabricated from logging remnants, and the distinct wood column came from a nearby forest. Interior finishes include post-consumer recycled carpet tiles in the music studio, all light fixtures are LED, all plumbing fixtures are water-conserving, and the drinking fountains include water bottle fillers.



SMARTER from the ground up.