Double Dream

Info

Owner:	Catherine Sickles
Address:	768 Jaffrey Road, Marlborough, NH
Scope:	An addition onto the primary home
Statement:	"I am a 69-year-old woman living alone in Marlborough and I have adult children and grandchildren living in NH. I have been interested in an ADU so that family members can be close by as I age. My four-plus acre property has the space, and I would like a chance to learn about designing an ADU in my setting."

Approach

A reversal of the traditional mother-in-law suite, this 400 square foot addition provides space for Catherine's caregivers as she ages in place.

Form

The profile of the main house is extended over the existing garage, respecting the existing structure, minimizing new foundation work, and making an elegant facade over what is now the least attractive face of an otherwise charming building.

Program

The project requires caregiving spaces where life and work are intertwined. The living room and kitchen are imagined as adaptable rooms which maximize the living area within the confines of such a condensed dwelling. The bedroom of the addition is conceived as a space of restoration. A voluminous ceiling and light from above give the caretakers a space which feels tucked away and allows for cognitive restoration.

Circulation

Our proposal creates a new entry to the existing house, and a small porch. This simple act both separates and unifies the two dwellings, allowing the caregivers a degree of separation while facilitating easy movement between the two structures. The addition and porch are kept on the same level to ensure accessibility.

Structure

The main living room is constructed from locally fabricated hay-insulated panels. The more private rooms are made from conventional stud framing, both literally and figuratively weaving the new construction into the existing house.

Sustainibility

The project is positioned above the existing garage to minimize foundation work, the most carbon-intensive aspect of contemporary construction. The addition uses Straw Bale SIP Panels from a local producer (New Frameworks or similar). Not only is fabrication local, but the plant-based materials which compose these panels are grown within a 50 mile radius of the fabrication site. This minimizes carbon from shipping throughout the process while maintaining cost-effectiveness. This construction method also eliminates the harmful polymers found in most contemporary buildings without sacrificing the insulating ability (r-value) required to minimize energy cost during the colder months. Windows in all four directions allow for ample passive ventilation, allowing for minimal need of cooling in the summer.

Both interior and exterior finishes emphasize healthy, regenerative materials: lime-plastered straw panels, pine ceilings, porcelain or heavy-metal-free ceramic tiles, formaldehyde-free cabinets and casework, and engineered wood flooring. A single mini-split unit handles all electrical and cooling loads for the addition.

The building's proximity to the existing house reduces electrical installation costs. The heating and cooling is all electric. While solar power is recommended, it's not included in the cost estimate. An 8–10kW system (suitable for a 3-bedroom house plus 1-bedroom ADU) would cost approximately $25,000, or around $15,000 after available federal and state incentives.

Cost Estimate

Base Cost Estimate

Item	Unit Cost	Units	Cost
Foundation/slab (insulated)	$25	400 SF	$10,0000
Structure/Integrated insulation[1]	$37.5	840 SF (exterior wall area)	$31,500
Roof (extend existing)	$13	400 SF	$5,200
Windows/Doors (energy efficient)	$12	400 SF	$4,800
Flooring (Sustainable lumber)	$10	400 SF	$4,000
Electrical	$10	400 SF	$4,000
HVAC (mini split)	$10	400 SF	$4,000
Interior Finishes (healthy materials)	$36	400 SF	$14,400
Subtotal (Base Cost)			$77,900

Additional Costs

Design/permits	$8,000
Site work	$10,000
Contractor overhead (15%)	$11,685
Contingency	$7,790

Total

Total Estimate	$115,375

[1] Cost ranges from $32-$43 per square foot for regenerative Straw Bale Panels, per New Frameworks in Vermont.