A Couple of Walls, a Roof and Some Window Frames

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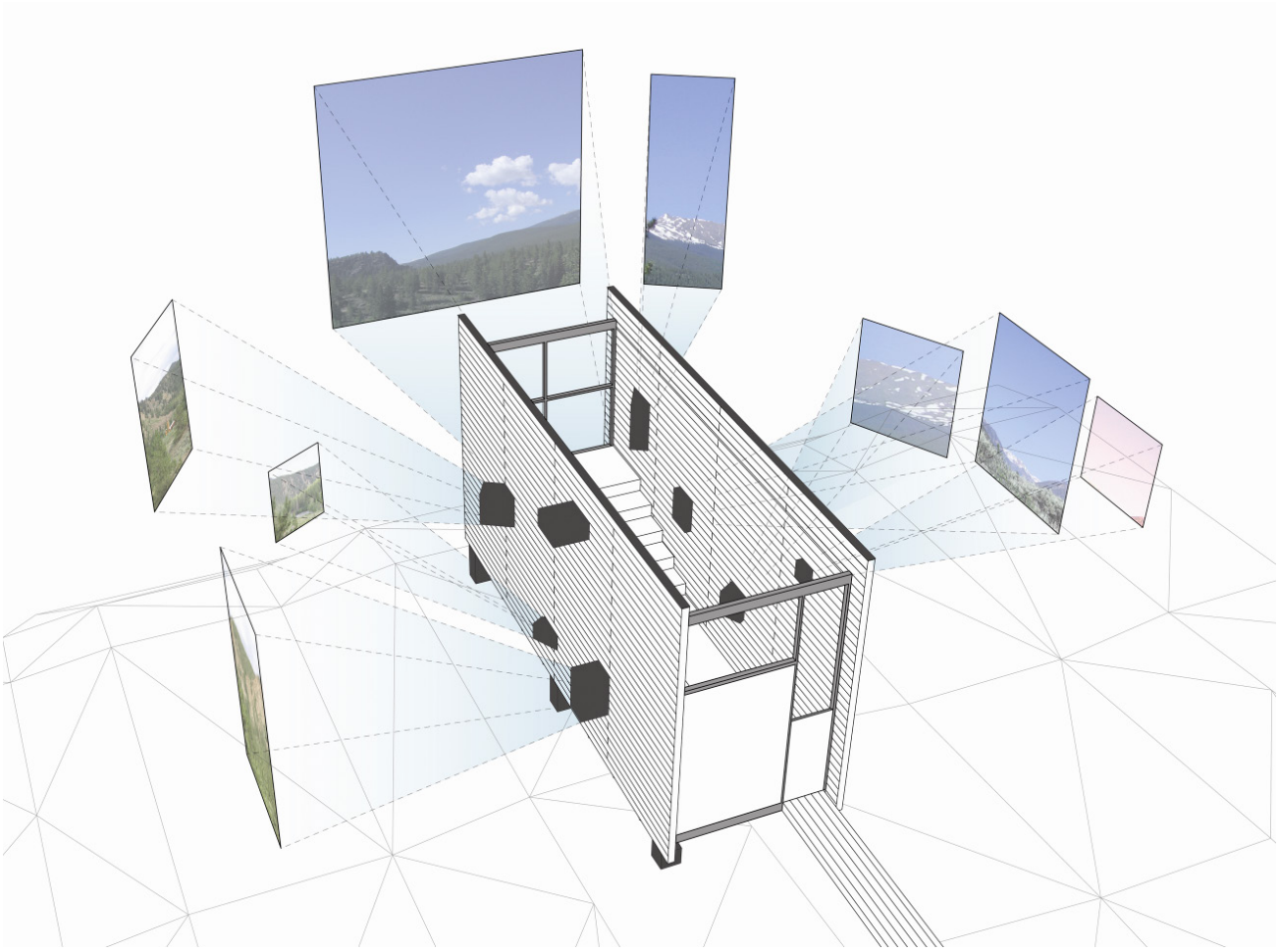
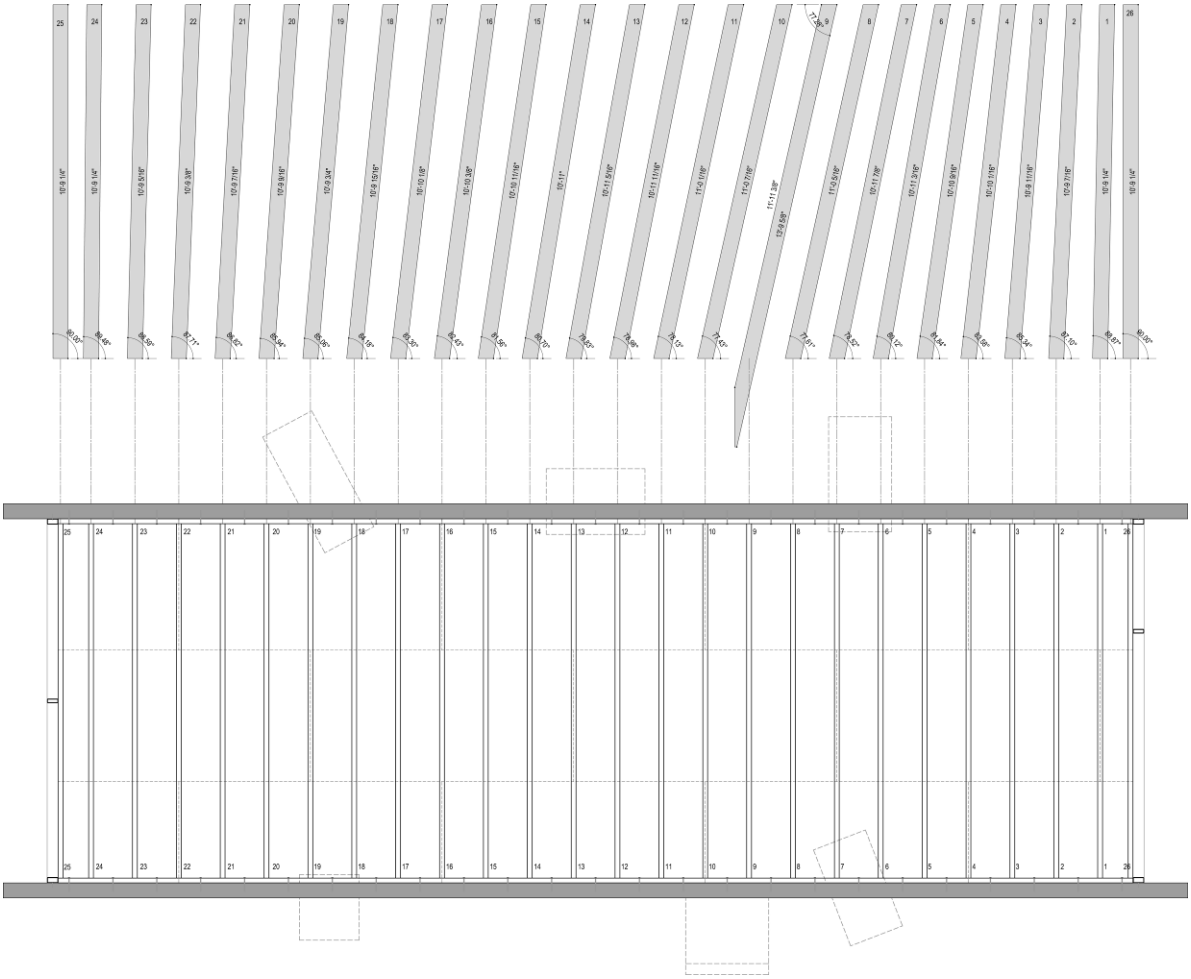
This small building is used as a yoga studio, a painting studio, and a performance space for family and friend recitals, sing-alongs, and readings. Situated atop a hill in the Colorado mountains along the Upper Arkansas River, the building captures several significant views of the adjacent landscape from the remote mountain site. The designer was the builder of this project; the seventh on this property.

The construction system utilizes solid 6x8 spruce timbers for the structure, insulation, finish materials, and enclosure of the walls and floor. The roof



is a ruled surface that pitches water and snow to a single scupper on the east wall. This roof also gives the ceiling an asymmetrical belly that casts light and sound around the interior. The mass of the building is used in the summer and the winter to modulate the thermal swings of the climate and seasons. An analysis of the embodied energy of this solid wood approach helps build an argu-




VERSA-LAM 2.0 2800
ICC ES ESR 1040
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COMC 12472-R
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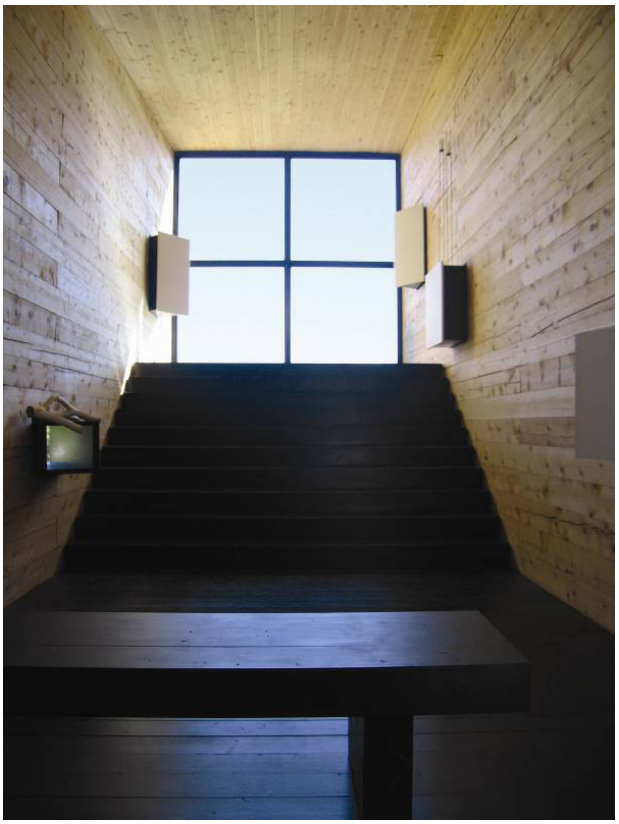
ment for monotlithic construction in contemporary architecture.

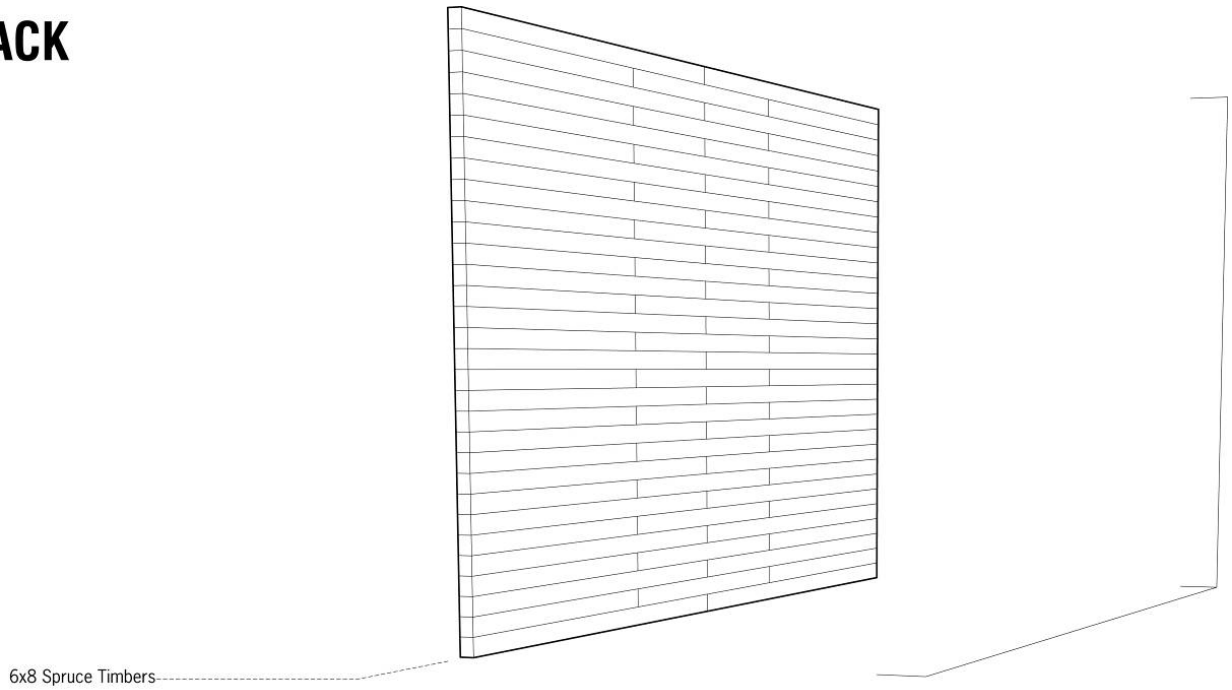
With no heating system, the owner enjoys sitting in the south facing space reading Ovid in a t-shirt in the middle of February with sub-zero temperatures and a couple feet of snow outside.

A series of black metal box windows frame a variety of views of significant points in the adjacent landscape. They also provide cross ventilation for the space.

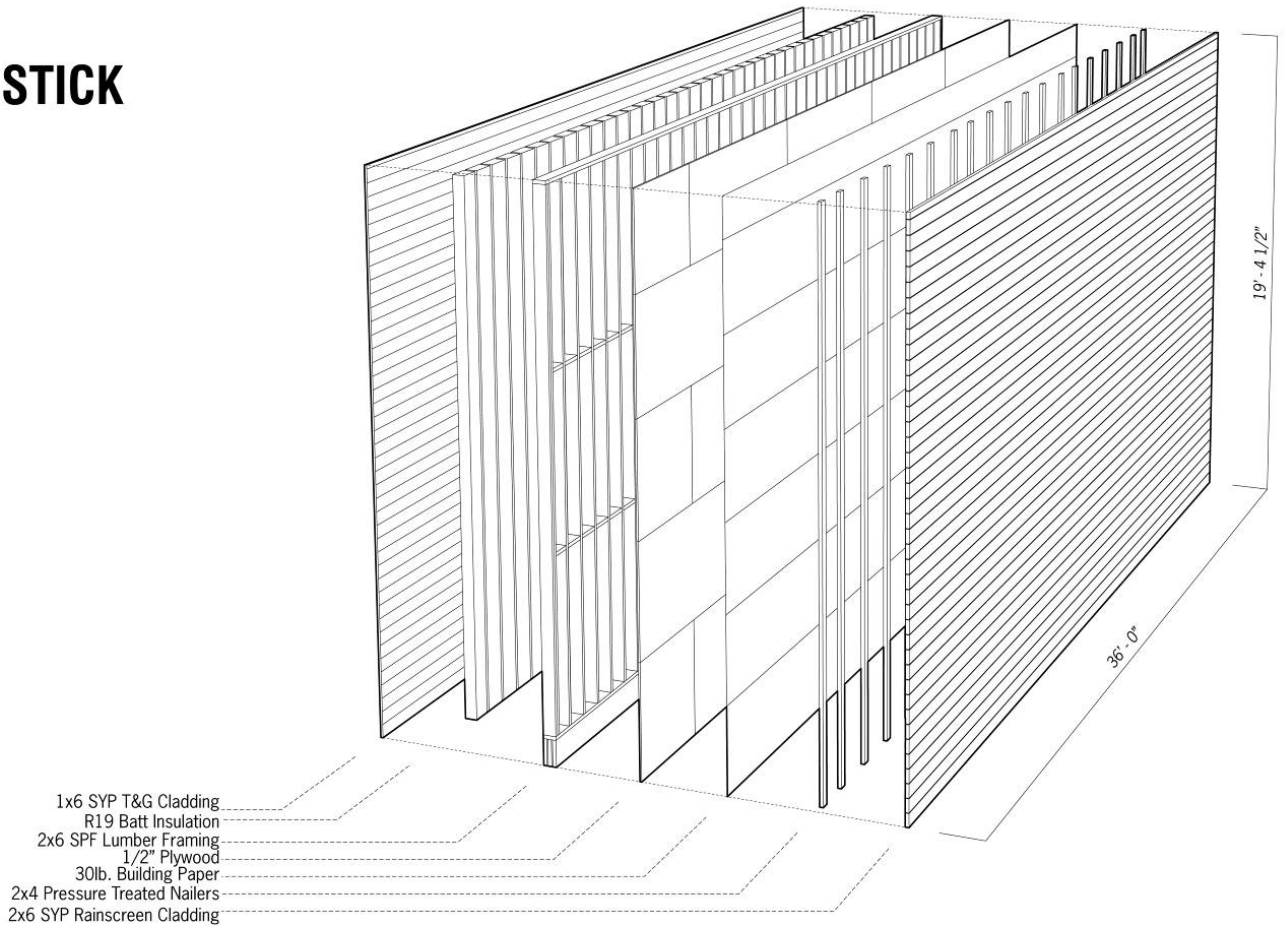
The solid wood wall has a significantly lower consumption of embodied energy when compared with a typical stick-framed, insulated wall. Even a very conservative comparison of the transportation of the locally sourced and milled spruce timbers compared with the egregiously excessive externalities of the highly additive stick framing approach re-

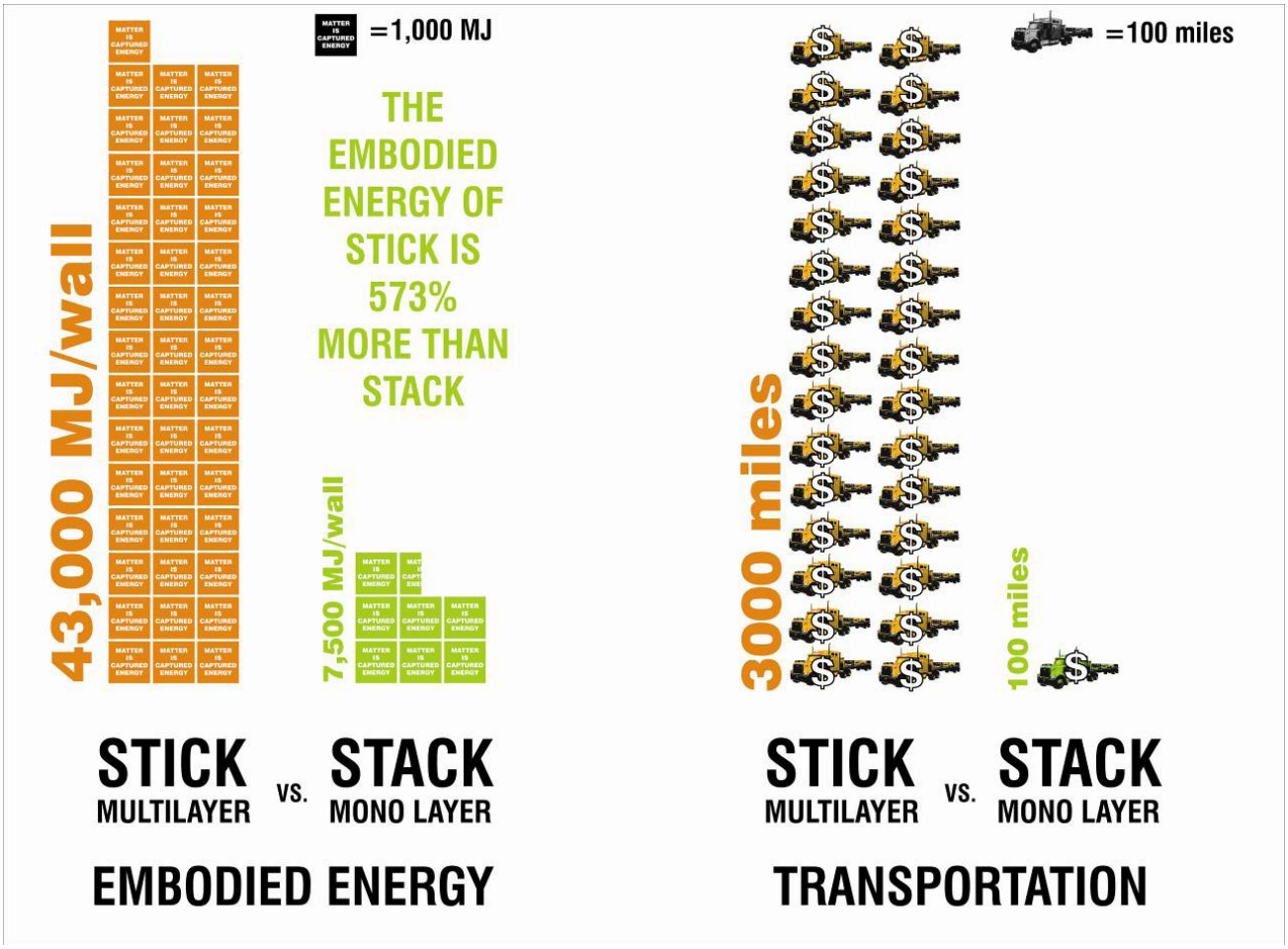


STACK


6x8 Spruce Timbers

STICK


19' - 4 1/2"
36' - 0"
1x6 SYP T&G Cladding
R19 Batt Insulation
2x6 SPF Lumber Framing
1/2" Plywood
30lb. Building Paper
2x4 Pressure Treated Nailers
2x6 SYP Rainscreen Cladding



veals the repulsively hubristic and wasteful technics of contemporary construction that must cast doubt on the efficacy of this approach to construction. It seems that we spend a lot of building budgets mindlessly driving around unsustainable, undurable materials. It makes more sense to spend that budget on more architecturally robust building materials and techniques that contribute, rather than detract, from the qualities of life. This is analysis is ostensibly about embodied energy but, perhaps more so, it is emblematic of a more poignant role for architecture in current economic and ecological conditions; an integrated lower-technology, higher-performance architecture of solidarity.

STICK	qty	length	linear feet	volume per	cu feet	cu meter	MJ per unit	MJ
2x6 stud	39	18.2	710	0.05729	40.664442	1.151488766		
2x6 plate	2	36	72	0.05729	4.12488	0.116803594		
blocking	76	0.875	67	0.05729	3.809785	0.107881097		
2x12 beam	3	36	108	0.11458	12.37464	0.350410783		
						1.72658424	4692	**8101**
Plywood	**qty**			**volume per**	**cu feet**	**cu meter**		
1/2"	23			1.333	30.659	0.8681662	9440	**8195**
Batt Insulation	**qty**	**length**	**sf**		**lbs**	**kg**	**MJ per unit**	**MJ**
R-19 x 12"	36	18	648		162	73.5	150	**11025**
Interior Finish	**qty**	**length**	**linear feet**	**volume per**	**cu feet**	**cu meter**	**MJ per unit**	**MJ**
1x6 SYP #1	39	36	1404	0.01909	26.80236	0.758958317	4692	**3561**
Rain Screen	**qty**	**length**	**linear feet**	**volume per**	**cu feet**	**cu meter**	**MJ per unit**	**MJ**
2x4 nailer	19	19.2	365	0.028645	10.449696	0.295902439		
2x6 cladding	39	36	1404	0.05729	80.43516	2.277670087		
						2.573572526	4692	**12075**
								42958

STACK	rows	length	linear feet	volume per	cu feet	cu meter	MJ per unit	MJ
6x8 timber	31	36	1116	0.276909	309.030444	8.750767677	848	**7421**