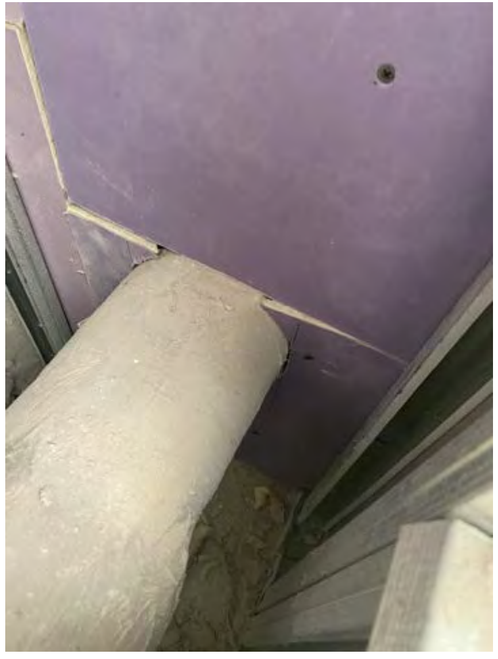
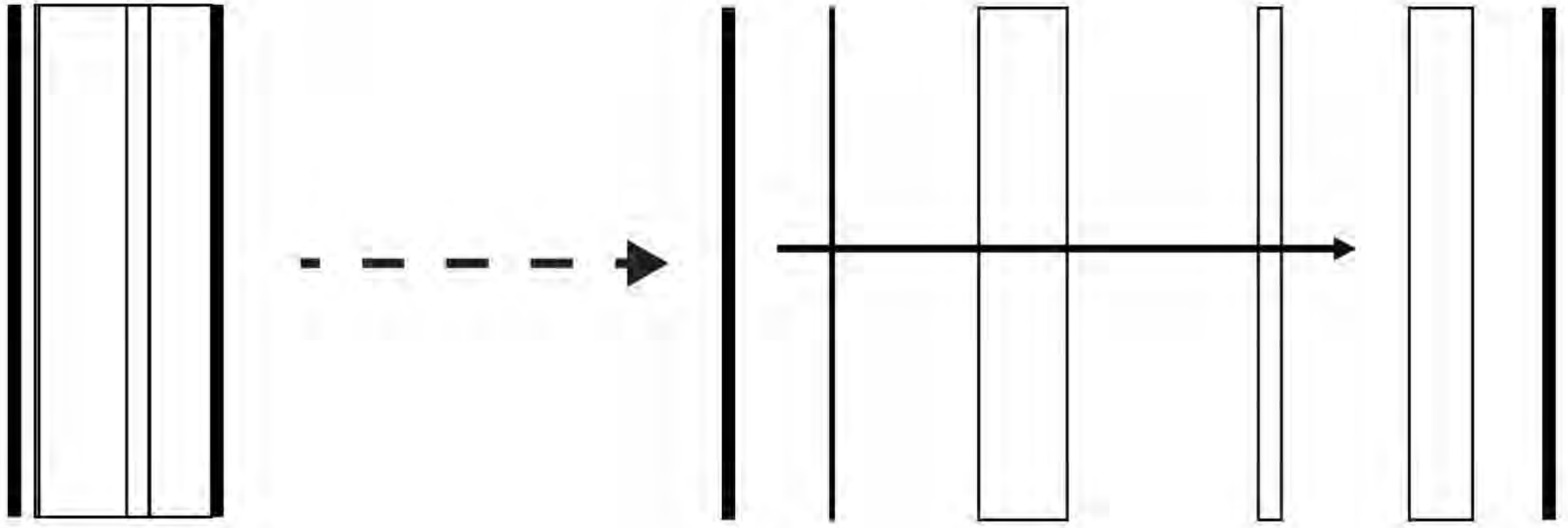
Traditional Wall

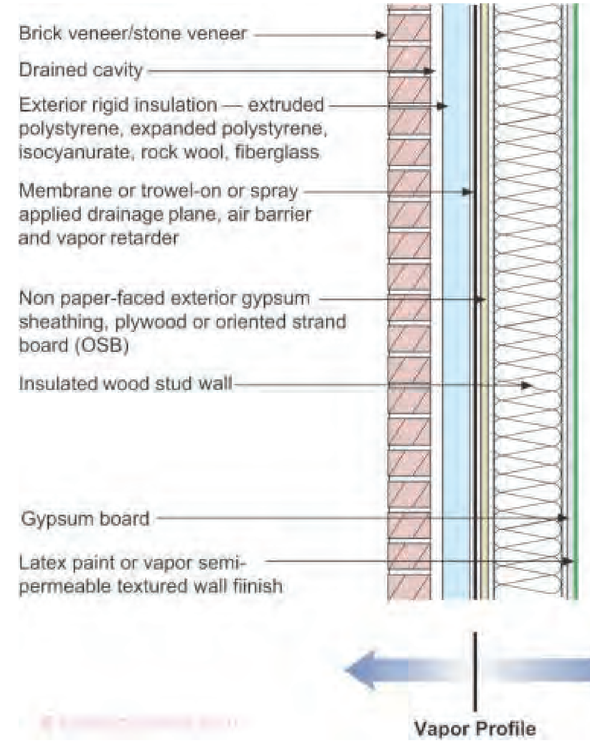




What is a Wall?

Noun or Verb

- Separator
- Divider
- Protection
- Structure
- Facade
- Privacy
- Restrictive
- Skin
- Surfaces



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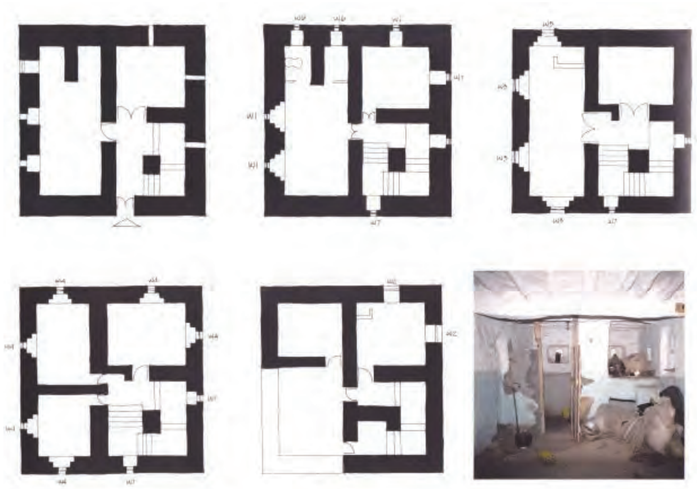

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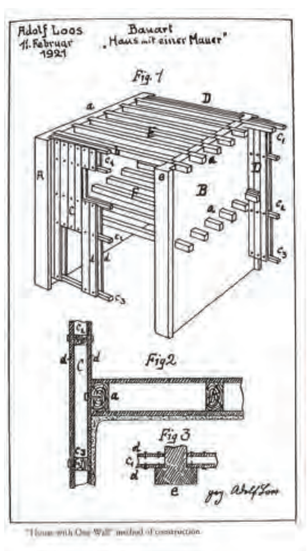
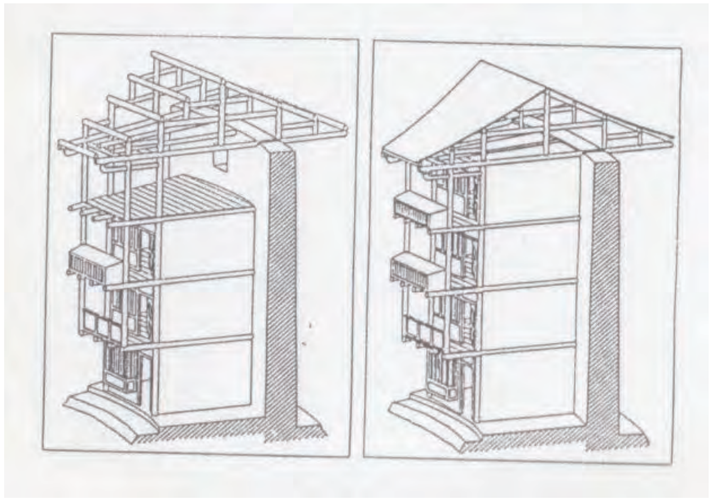


https://misfitsarchitecture.com/2014/01/23/the-one-wall-house/



https://misfitsarchitecture.com/2014/01/23/the-one-wall-house/

Thesis Statement

This project proposes examining the layers of a wall, separating them, and varying their anatomy to provide a more comfortable indoor environment. This project learns from and adapts traditional wall theory to modern stick-built construction, allowing for a dynamic use of interior space based on the occupants desired definition of comfort.

Comfort

Sense	Comfort in Buildings Translation	Buildings Application
Sight	Visual Connections, Transparency	Location of stud walls and glass
Taste		
Touch	Texture, Materiality	Selection of materials
Pressure	Site Location	Wind and altitude of the site
Itch	Touch, Texture, Materiality	Selection of materials
Thermoception	Temperature of Spaces	Envelope quality, HVAC systems
Sound	Acoustics	Thickness and type of materials
Smell	Spatial Connection, Ventilation	Openings, pressure differences
Proprioception (limbs in space)		
Tension Sensors		
Nociception (pain)	Ergonomics, Age-In-Place	Easy movement, no stairs, finishes
Equilibrioception (balance)		
Stretch Receptors		
Chemoreceptors	Air and Environment Quality	Ventilation, sensors, pollutants
Thirst	Temperature, Humidity	Design qualities of a space
Hunger		
Time	Spaces for Each Activity and Time	Distinct spaces

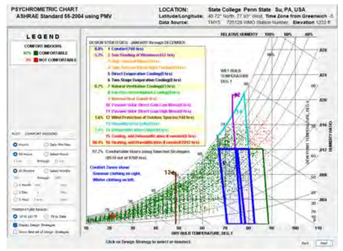
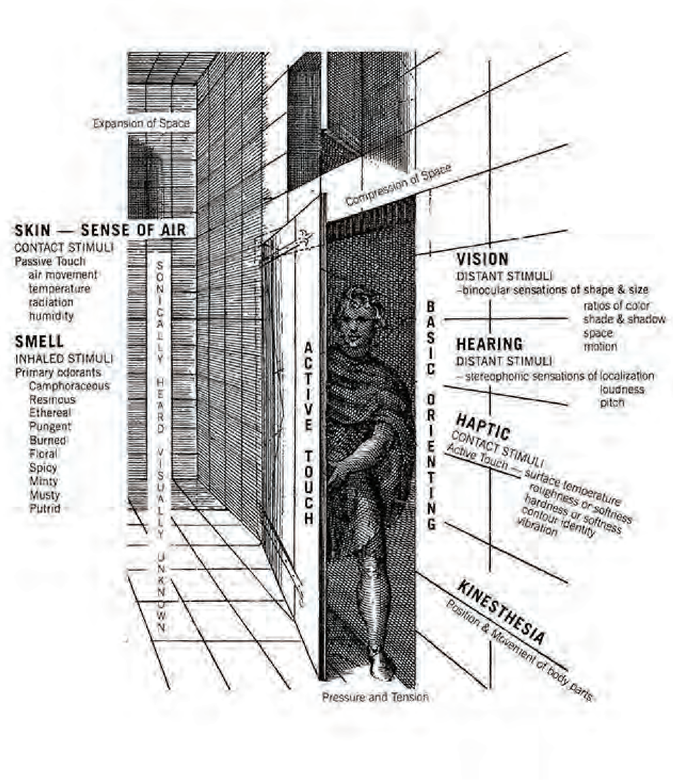


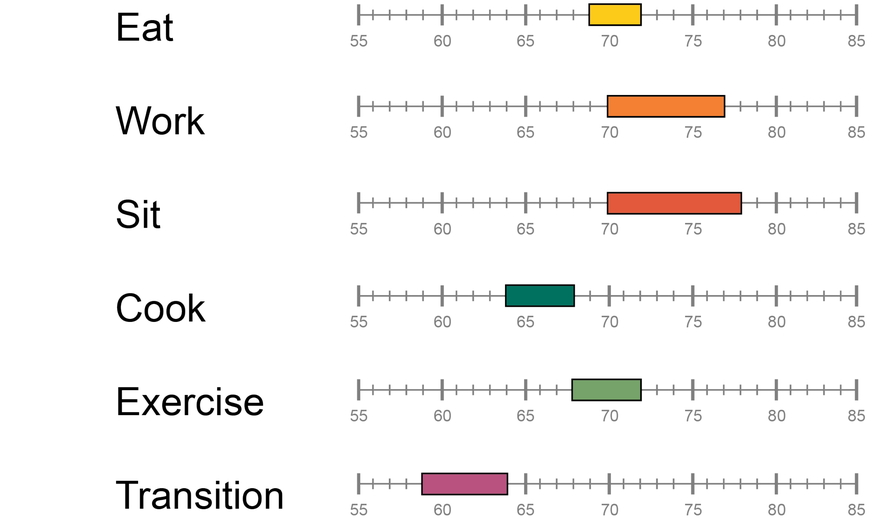
Table 9 Garment Insulation Values

Garment Description[a]	I_{cl}, clo[b]	Garment Description[a]	I_{cl}, clo[b]	Garment Description[a]	I_{cl}, clo[b]
Underwear		Long-sleeved, flannel shirt	0.34	Long-sleeved (thin)	0.25
Men's briefs	0.04	Short-sleeved, knit sport shirt	0.17	Long-sleeved (thick)	0.36
Panties	0.03	Long-sleeved, sweat shirt	0.34	**Dresses and Skirts[c]**	
Bra	0.01	**Trousers and Coveralls**		Skirt (thin)	0.14
T-shirt	0.08	Short shorts	0.06	Skirt (thick)	0.23
Full slip	0.16	Walking shorts	0.08	Long-sleeved shirtdress (thin)	0.33
Half slip	0.14	Straight trousers (thin)	0.15	Long-sleeved shirtdress (thick)	0.47
Long underwear top	0.20	Straight trousers (thick)	0.24	Short-sleeved shirtdress (thin)	0.29
Long underwear bottoms	0.15	Sweatpants	0.28	Sleeveless, scoop neck (thin)	0.23
Footwear		Overalls	0.30	Sleeveless, scoop neck (thick)	0.27
Ankle-length athletic socks	0.02	Coveralls	0.49	**Sleepwear and Robes**	
Calf-length socks	0.03	**Suit Jackets and Vests (Lined)**		Sleeveless, short gown (thin)	0.18
Knee socks (thick)	0.06	Single-breasted (thin)	0.36	Sleeveless, long gown (thin)	0.20
Panty hose	0.02	Single-breasted (thick)	0.44	Short-sleeved hospital gown	0.31
Sandals/thongs	0.02	Double-breasted (thin)	0.42	Long-sleeved, long gown (thick)	0.46
Slippers (quilted, pile-lined)	0.03	Double-breasted (thick)	0.48	Long-sleeved pajamas (thick)	0.57
Boots	0.10	Sleeveless vest (thin)	0.10	Short-sleeved pajamas (thin)	0.42
Shirts and Blouses		Sleeveless vest (thick)	0.17	Long-sleeved, long wrap robe (thick)	0.69
Sleeveless, scoop-neck blouse	0.12	**Sweaters**		Long-sleeved, short wrap robe (thick)	0.48
Short-sleeved, dress shirt	0.19	Sleeveless vest (thin)	0.13	Short-sleeved, short robe (thin)	0.34
Long-sleeved, dress shirt	0.25	Sleeveless vest (thick)	0.22		

[a]"Thin" garments are summerweight; "thick" garments are winterweight. [b]1 clo = 0.88 °F · ft² · h/Btu [c]Knee-length



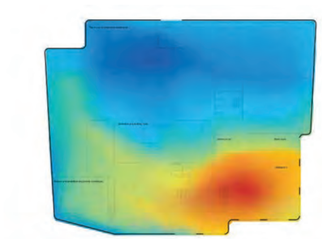
https://www.cooperhewitt.org/2018/04/03/why-sensory-design/

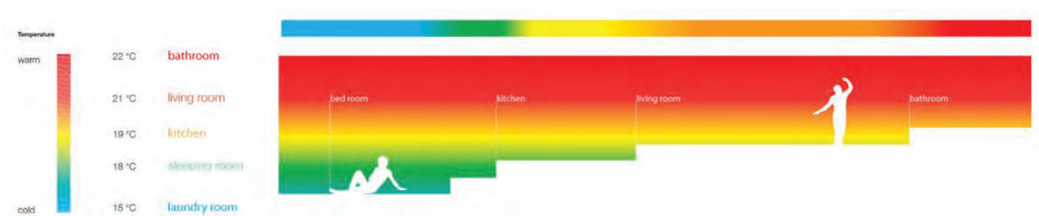


Philippe Rahm

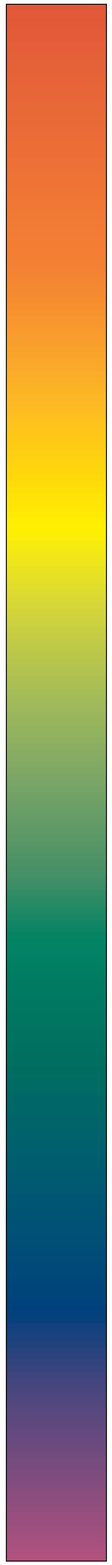
Right: Convective Apartments

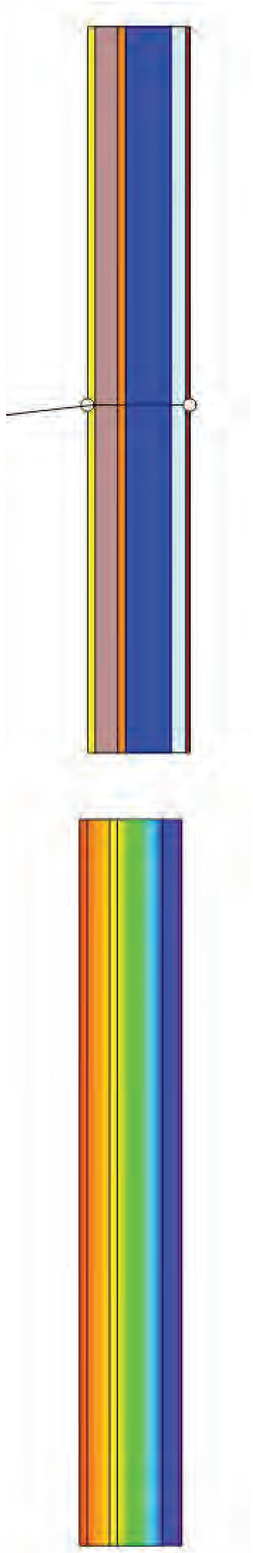
Left: Convective Museum

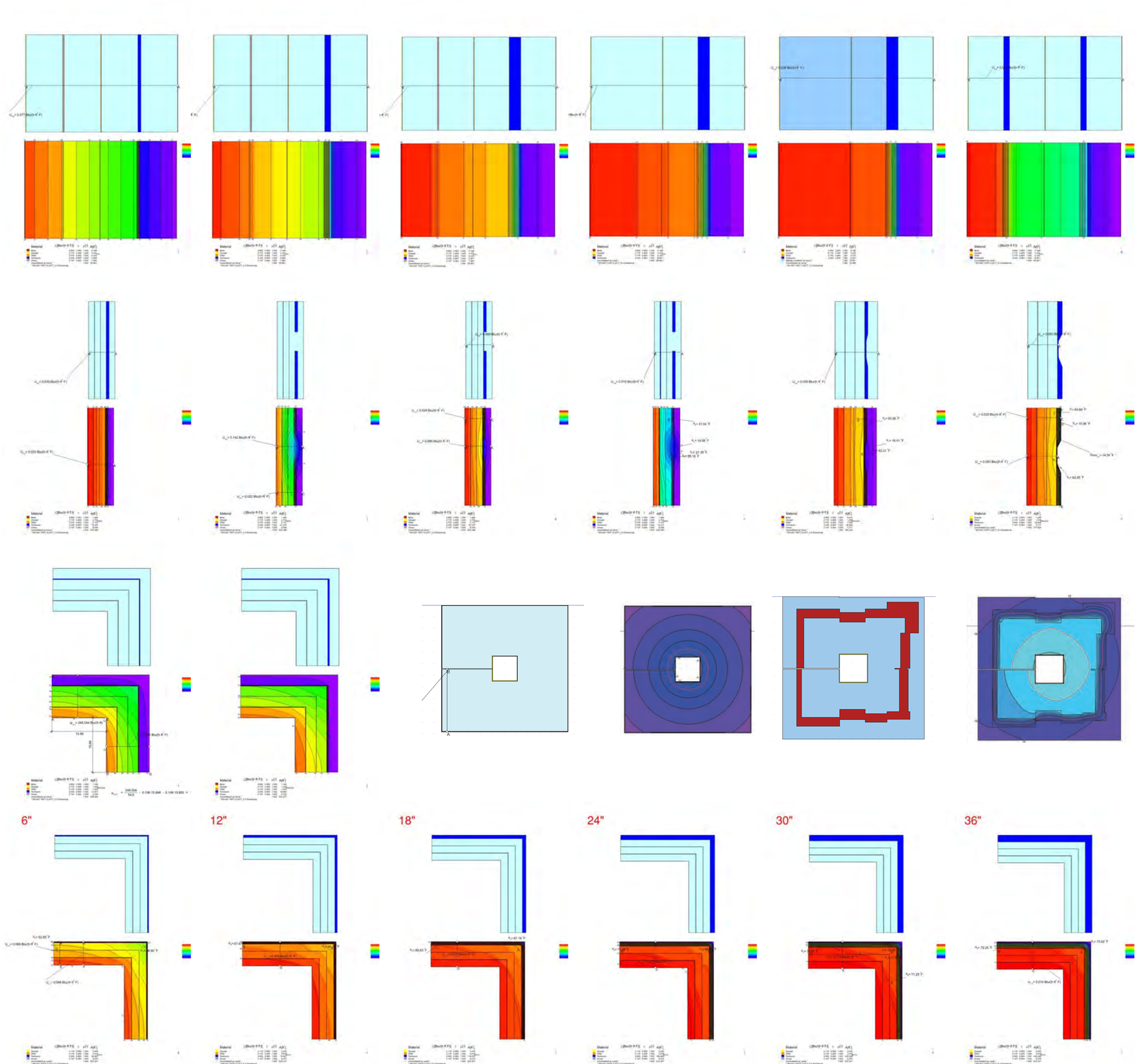




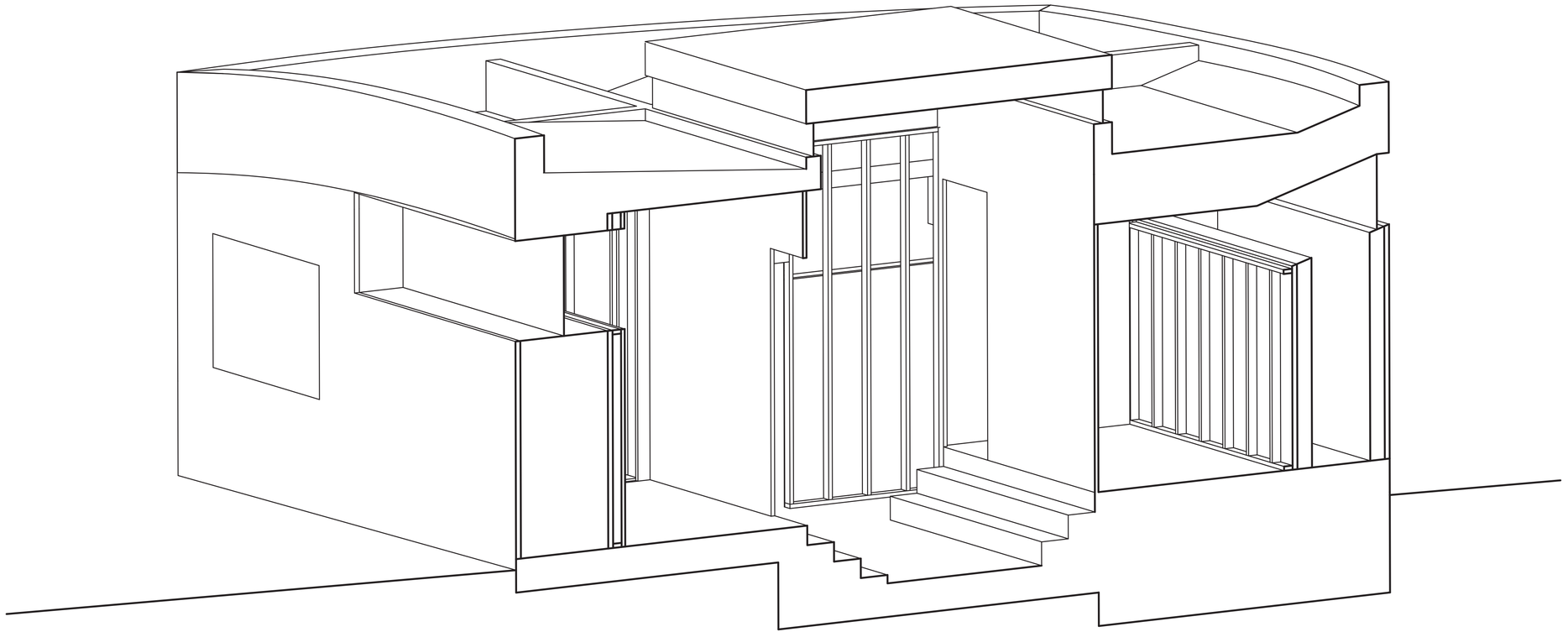
Flixo Thermal Transmittance Modeling







N/S Sectional Perspective



E/W Sectional Perpective

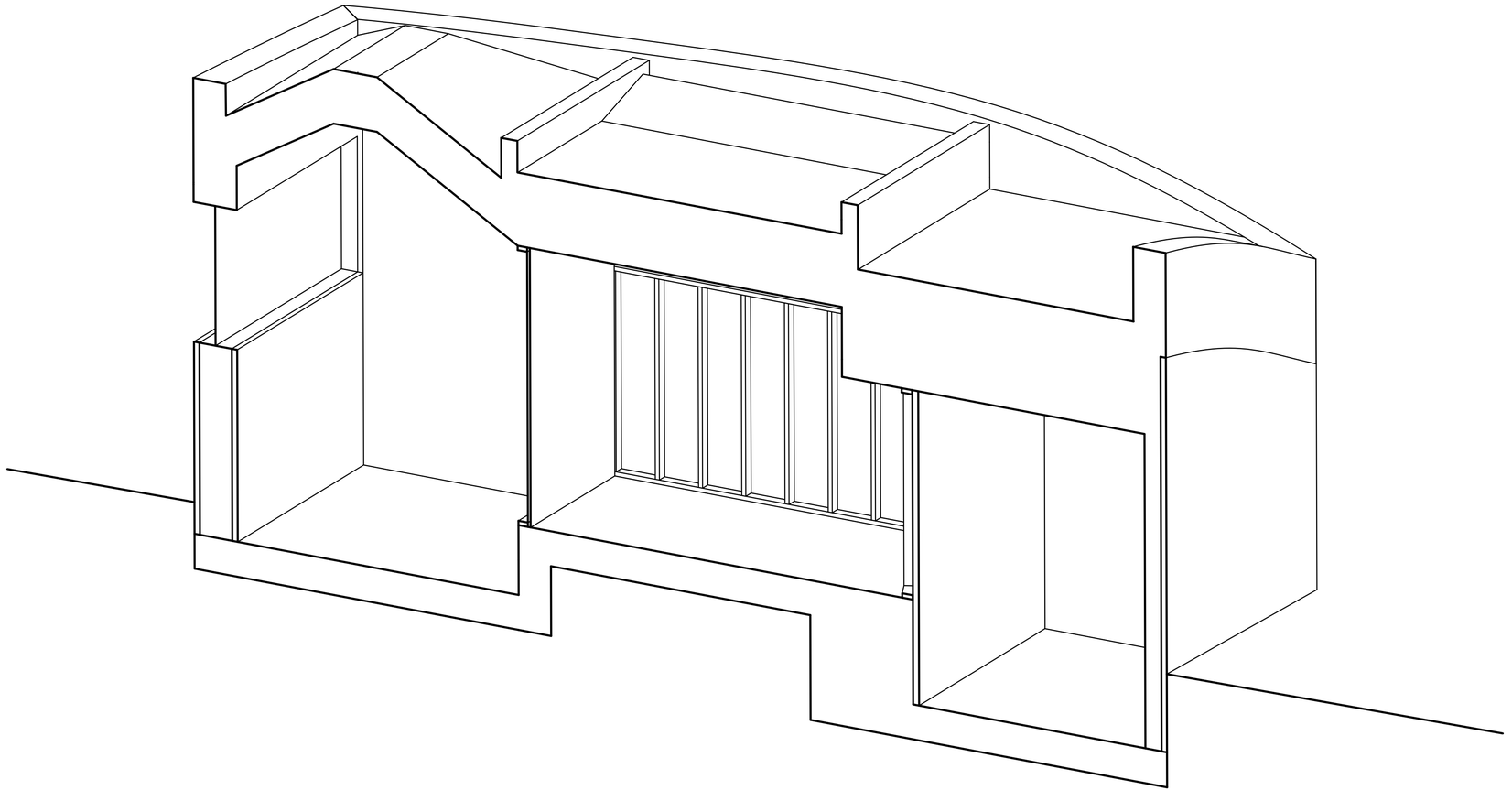
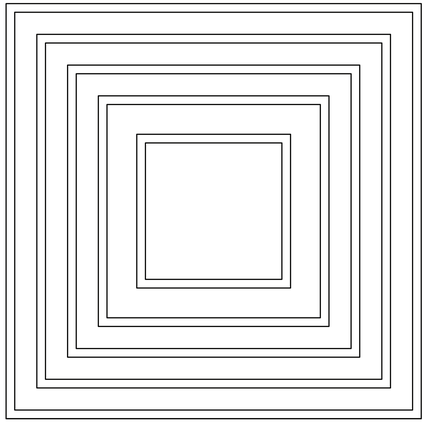
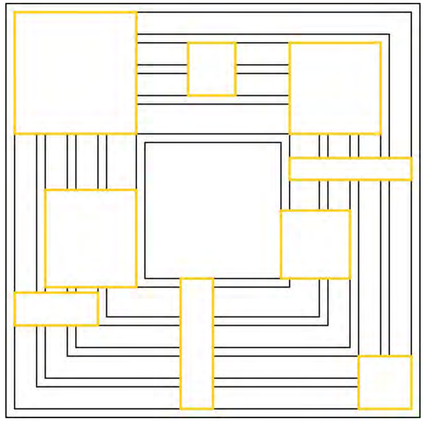


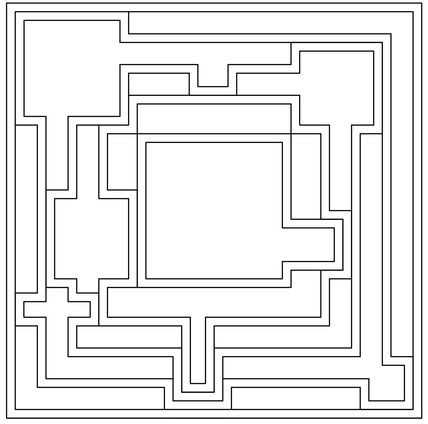
Diagram Progression



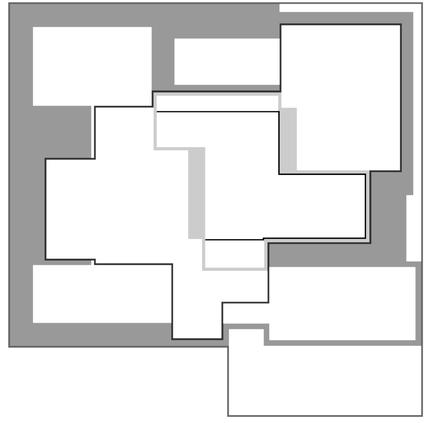
Base



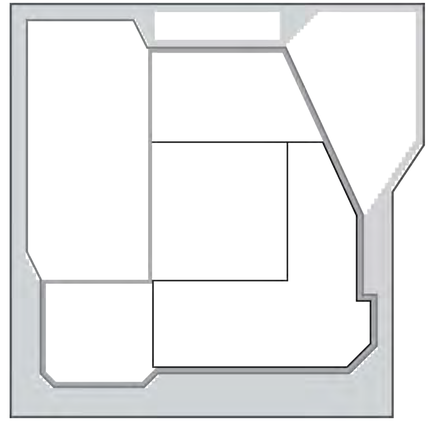
Cut Space



Continuous

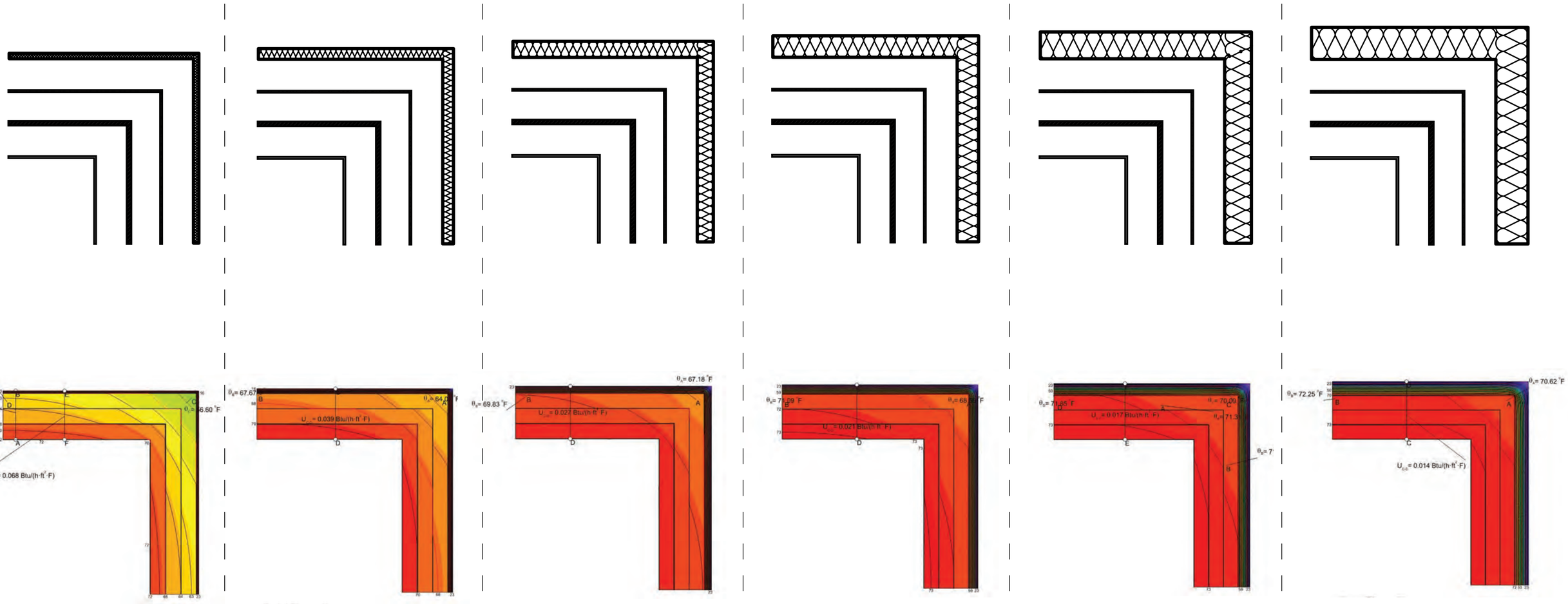


Size



Flexible

Insulation Thickness Performance



6”
R-14.7
Wall 62.85°
Corner 56.6°

Best for Transition and Sleep

12”
R-25.6
Wall 67.67°
Corner 64°

Best for Cooking

18”
R-37
Wall 69.73°
Corner 67.18°

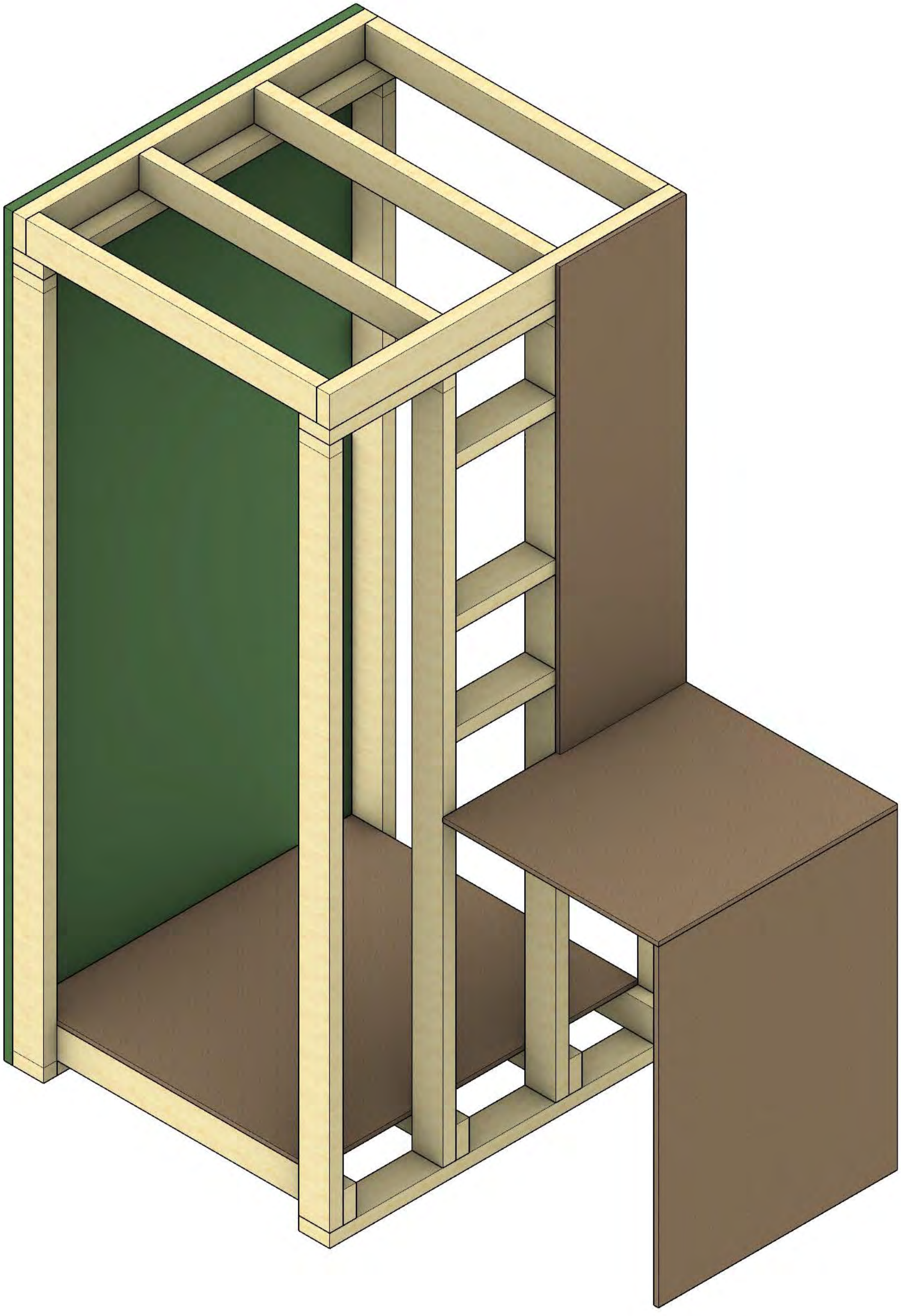
24”
R-47.6
Wall 71.09°
Corner 68.69°

Best for Eating and Exercise

30”
R-58.8
Wall 71.85°
Corner 70°

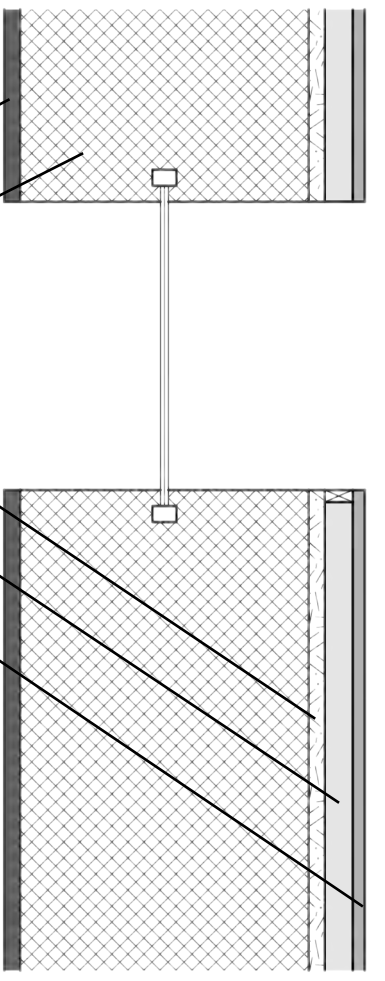
36”
R-71.4
Wall 72.25°
Corner 70.62°

Best for Work and Relaxing



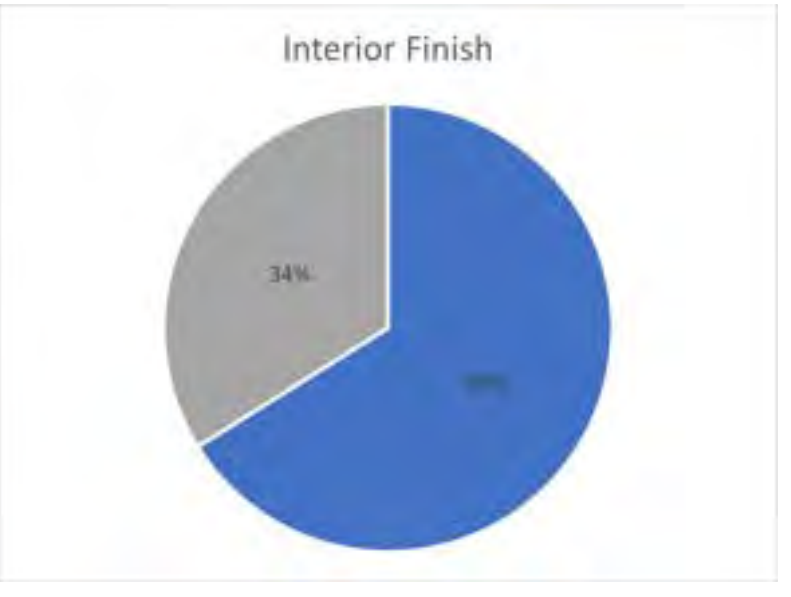
Materials

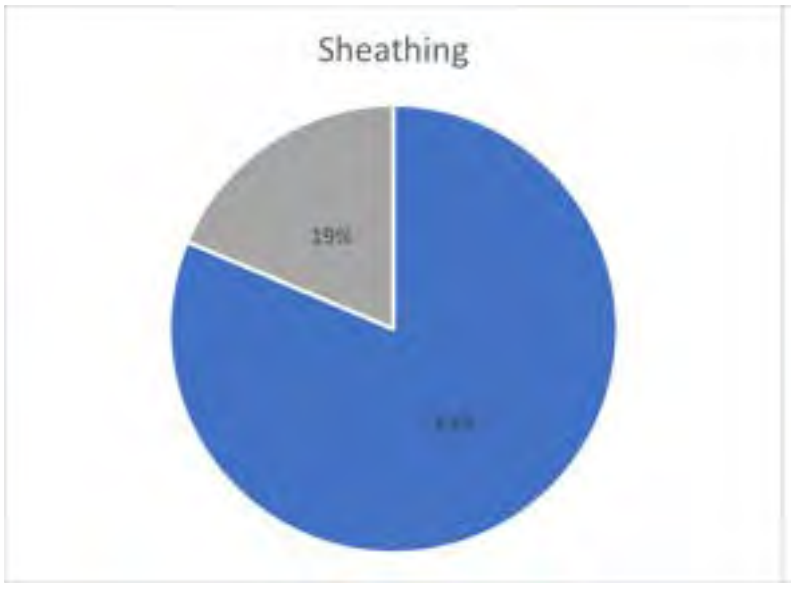
Used Here
- Exterior Rainscreen Cladding
- Rockwool Insulation
- OSB Sheathing
- Conventional Stud Framing
- Interior Gypsum Board Finish

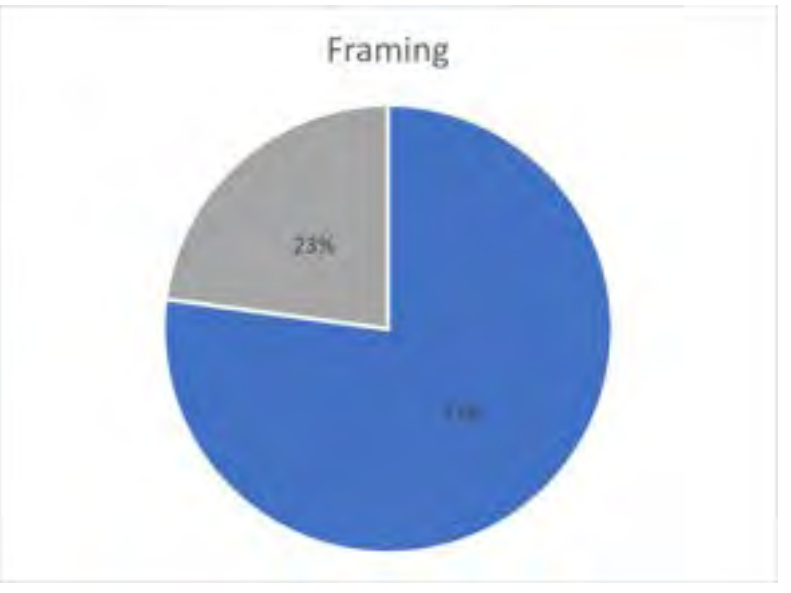


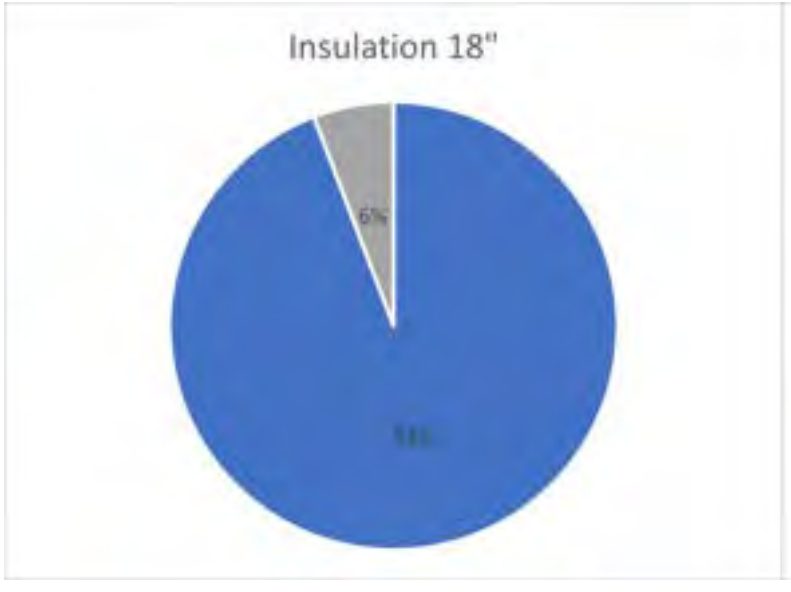
Other materials could include
- Hay Bales
- Concrete
- Cork
- Cotton Batts
- Fiberglass Batts
- Earthen Construction
- Recycled Materials

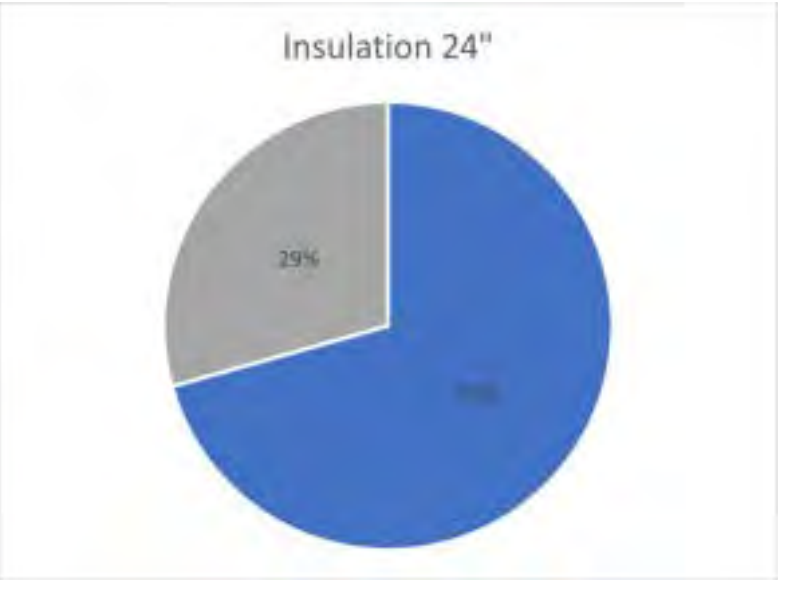
Material Savings



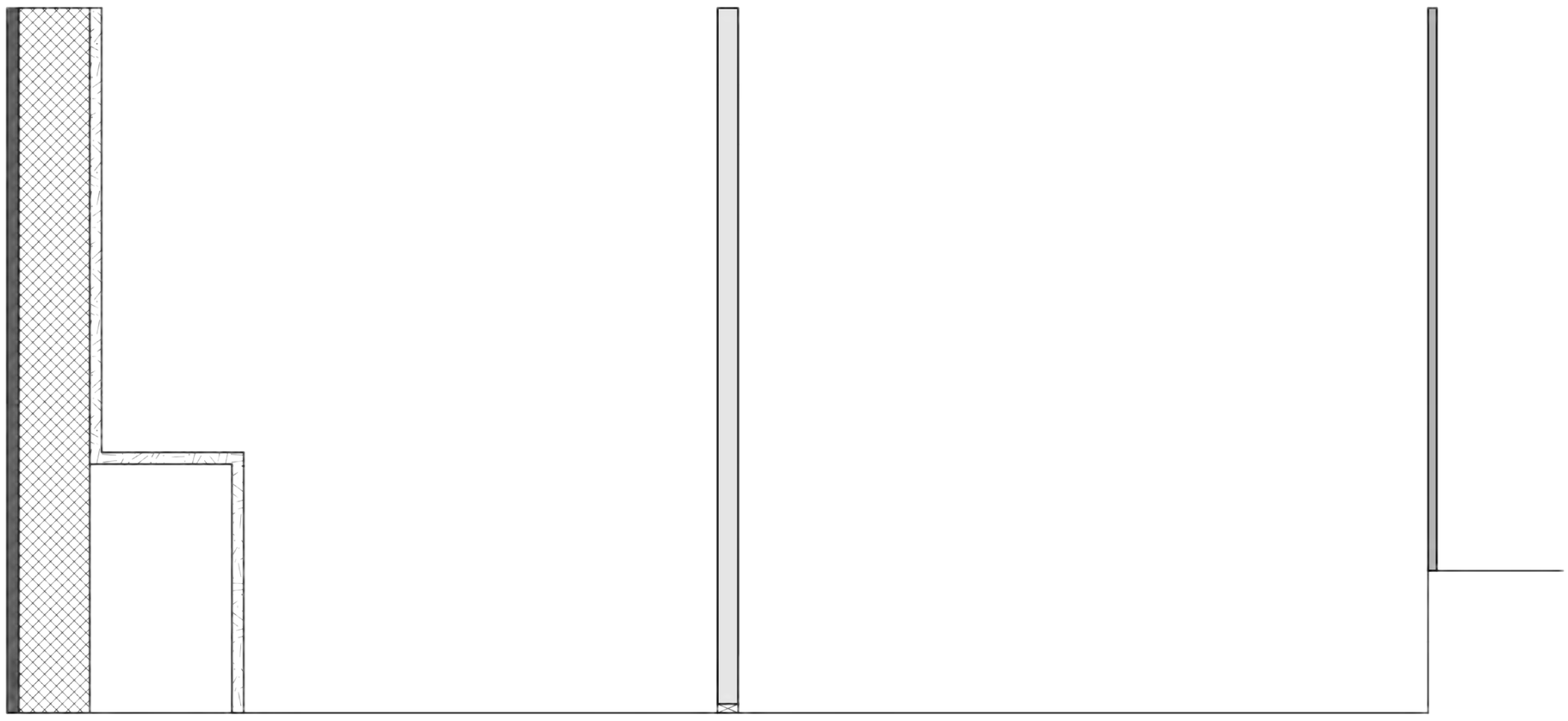


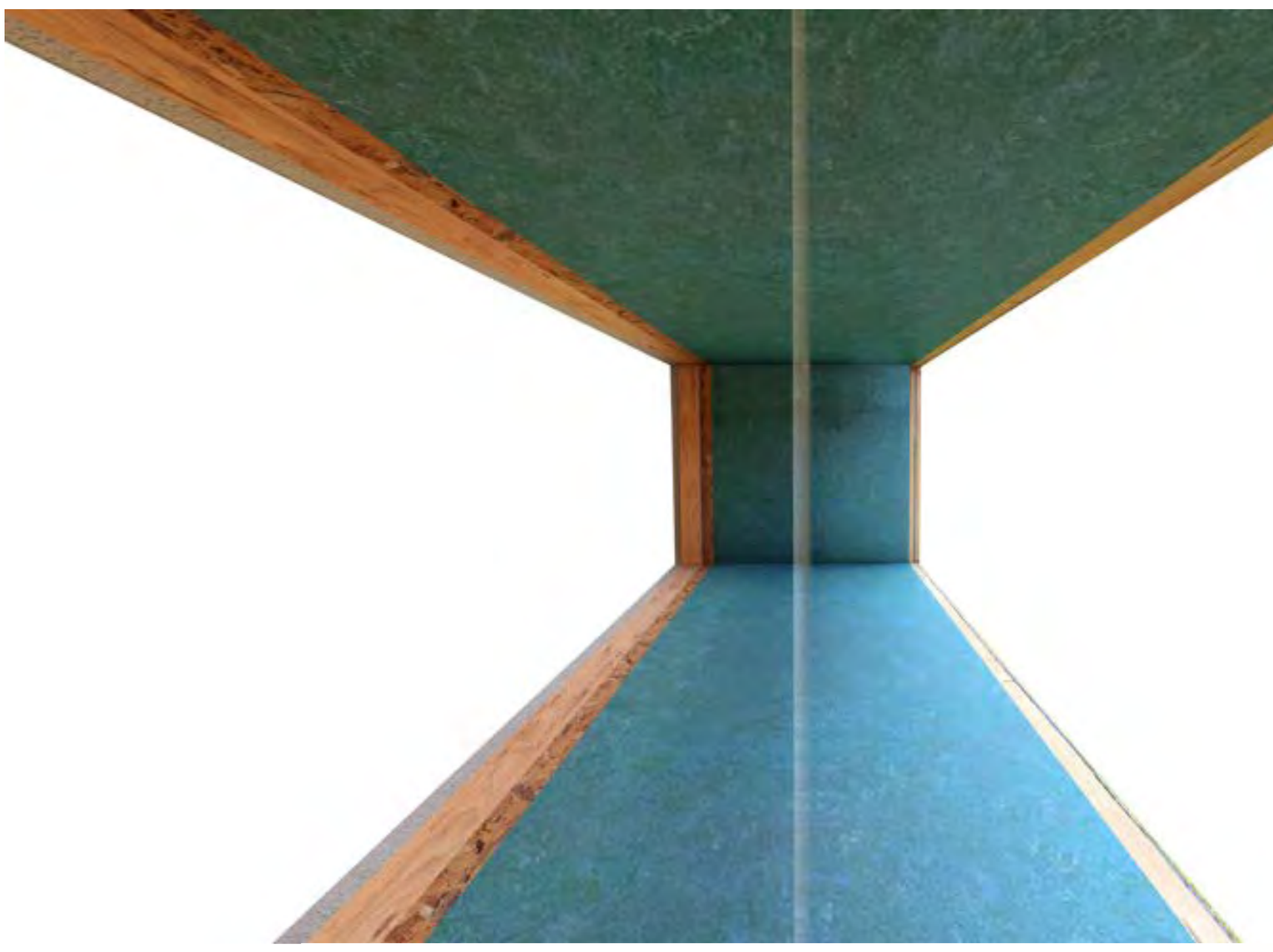


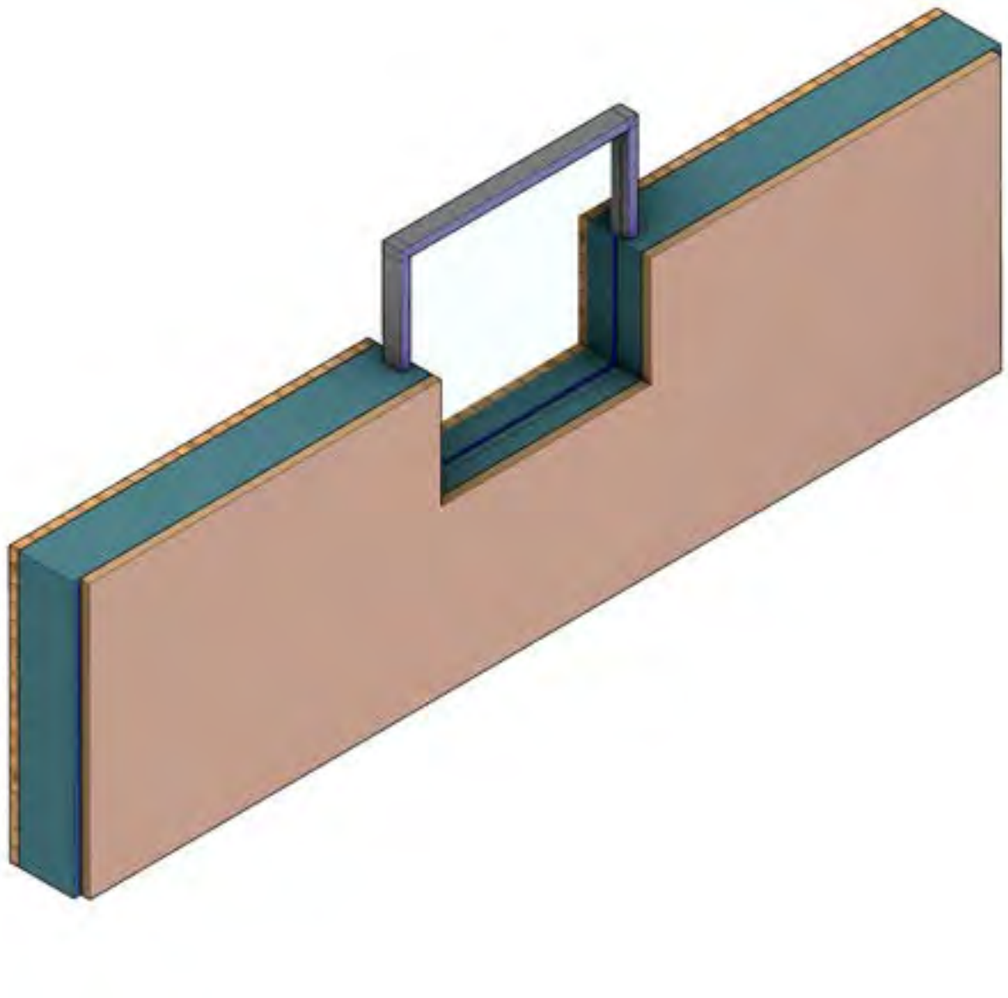




Wall Sections







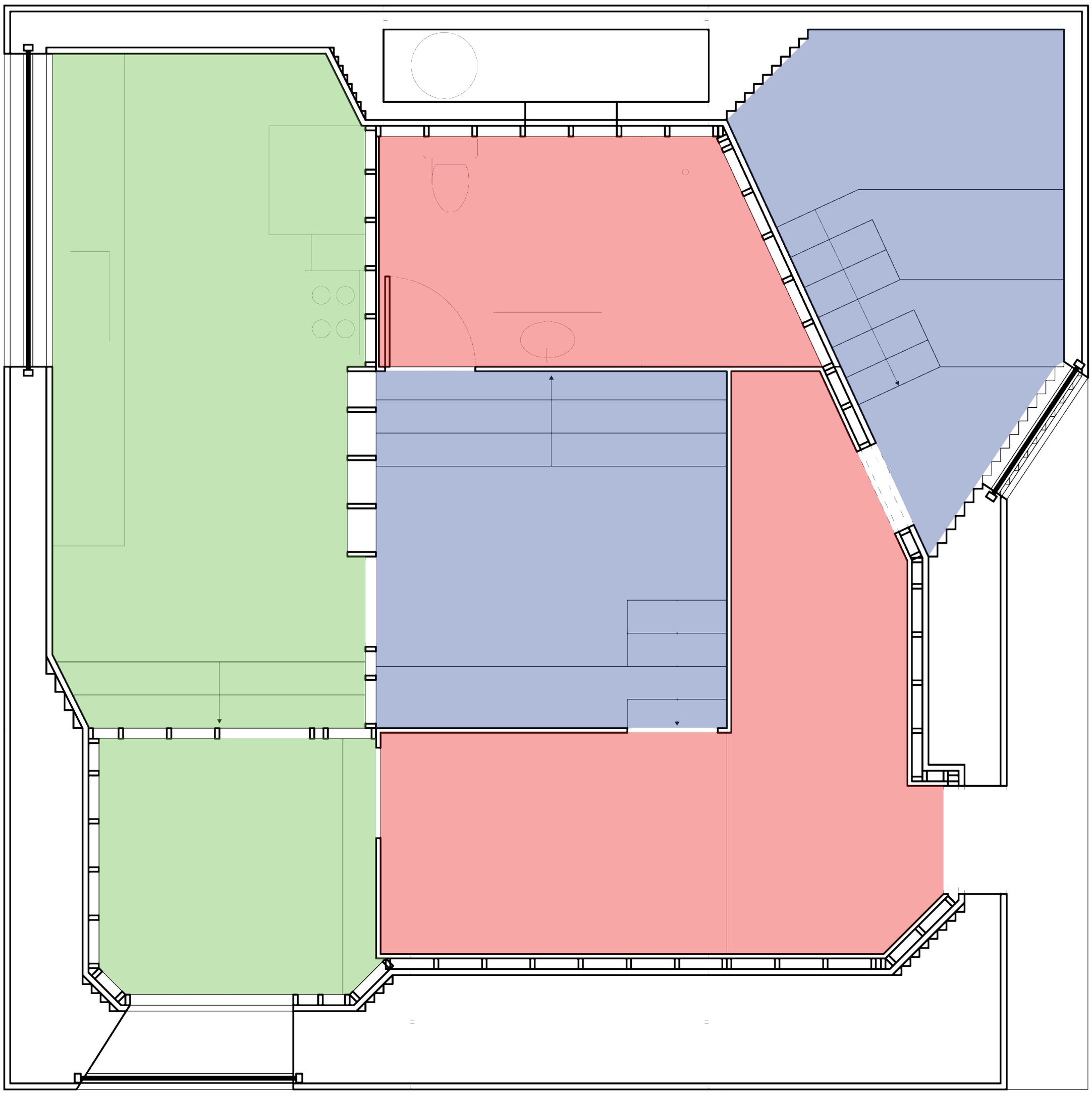
Renders

Entrance

Warm Space

Center

Thermal Spaces



Layers