

Name of Project: CABIN
Type of Project: New Construction - Under 5,000 SF
Project Size: 2,620 SF
Cost: (withheld)
Program Summary: This 2,500 sf, 4-bedroom, 2.5 bath cabin proposes a unique approach to a mountain retreat – celebrating the ever-changing Rocky Mountain landscape by occupying the different forest strata (below, within, and above). Conceived of as a tower in the woods, the cabin draws inspiration from the surrounding forest by arranging program vertically. An entry, mudroom, and bunk room embeds into the hillside, connecting to the native ground cover and warmth of the earth. A double height living area acts as the heart of the cabin, where public living spaces overlap with a mezzanine of guest rooms / sleeping areas, all looking through a two-story wall of glazing to a grove of aspen trees. The ascent terminates at the primary suite and a recessed deck – floating high above the treetops, with panoramic views of mountain peaks beyond. Carefully placed windows provide ample daylight and act as apertures into the surrounding landscape. Large mechanically operable sunshades protect the cabin from unwanted solar heat gain and the elements when the house is not occupied. A large covered main level deck set against the trees provides a space for grilling and an integrated hot tub – an ideal setting for a cozy mountain retreat.

Completion Date: January 2021
Project Location: Fairplay, Colorado

project narrative

After years spent searching for the right land, the owner/architect happened upon this semi-remote, 11-acre property just over a pass from the more developed town of Breckenridge. The parcel is situated along a small creek and had an established campsite. Experiencing living on the land prior to the cabin's construction, influenced the design solution. A dense pine forest interrupted by swaths of aspen trees cover the entire property, with only a few small meadows interspersed. The cabin site resides at the confluence of the largest of the aspen and pine groves, and its orientation capitalized on solar and wind exposures, as well as views to both distant mountains and more intimate moments within the surrounding forest.

Horizontal and vertical massing was studied, but the latter had unique advantages. By stacking the program, the footprint could be minimized. Locating the compact form in a natural clearing reduced disruption to the site. The multilevel layout allowed every floor to take in views- from the forest floor to vast uninterrupted vistas above the treetops. The lower level houses an entry/mudroom, bunk room, and mechanical/laundry spaces. The second level is the main living area – with kitchen, dining, powder, and family room open to the double-height ceiling and an expansive two-story tall window. The third level houses (2) guest sleeping areas/rooms, and a bathroom – left open as a mezzanine to the double-height living space below. The fourth level is the primary bedroom retreat with private bedroom and bathroom. This treetop level boasts expansive views, capturing the peaks of Mount Bross, Democrat, and Lincoln... to name a few.

The design and building process took several years as the architect also fabricated and installed most of the steel himself including the third level bunk beds, the operable sunshades, the steel detailing at the exposed beams, all handrails and guardrails and the entire 4-story stair.

The operable sunshades are a signature feature of the project. The shades, the largest of which is three stories tall, are constructed of steel frames clad with a perforated version of the black corrugated metal that covers the rest of the house. They are operated by antique pulley wheels connected to chain driven mechanisms inside the house and allow for uninterrupted views to the landscape when open, and when closed protect the home when the owners are away.

The owner/architect/GC worked with the cabin's (2) master carpenters on building every element of the cabin, which has been a labor of love for the owner and his family.

To commemorate this, the owner commissioned Denver artists Jaime Molina and Pedro Barrios to paint a mural that spans the 4 levels of the cabin. The mural depicts a monumental figure, embraces the concept of transformation, and each level represents a different phase of season in life. Hidden capsules of meaning, like the names of the carpenters, family pets, and children are sprinkled throughout the mural like Easter eggs.

The cabin provides a protected solace in a lush environment that allows the family to enjoy the outdoors. The cabin feels like a watchtower where the family can enjoy the view of the porcupines, deer, moose, and bears that call this area home.



design for economy

Every system of the house was designed and built with economy and efficiency in mind.

The concrete foundation optimized formwork sizes, and the depth of footings is shallow due to being built in well drained, and heavily rock laden soil - virtually eliminating frost heave concerns which can extend as deep as 10 feet. The structural steel system uses one central continuous column – with all other structural steel branching off from it to the perimeter bearing walls. The floor heights were designed using standard uncut stud heights, while the wall lengths utilize a 2-foot module to economize exterior and interior sheet goods. All the plumbing is stacked so supply and waste lines could be effectively run. All heating is hydronic, with radiant floors and radiators selectively placed throughout the cabin, eliminating the need for any duct work.

design for energy

Located at 10,500' in elevation, the cabin is in an extreme climate setting. During the summer, warm days quickly transition to cool nights. To avoid the need for air conditioning during the summer, operable windows were carefully placed to encourage cross breezes. The height of the cabin and open staircase creates a natural stack effect, which draws warm air up and out of the structure and cool air in from the forest undercroft at the ground level. To avoid solar heat gain on the warmest summer days, the operable shutters can be closed, and their perforated metal skins reflect and filter the direct sun from the windows. In winter, the wood-burning stove heats the living room, and this heat rises through the floors above. Even with its minimal footprint and resulting small roof area, the solar panel array on the roof can supply all the power needed to run the cabin – resulting in no annual electricity costs to the owners.

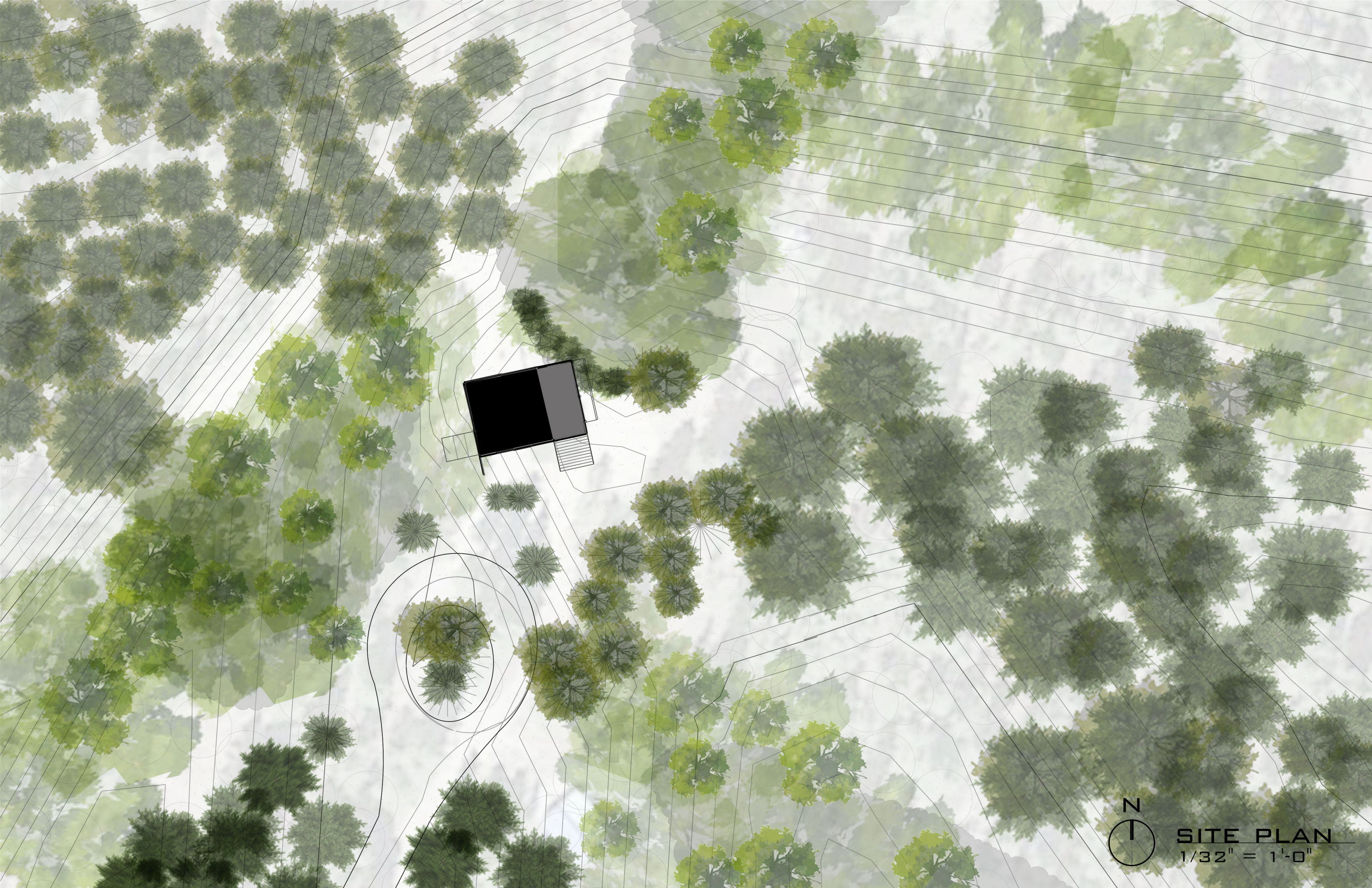
design for integration

Since the owner was also the architect and general contractor, it was important from the project's inception to balance good design with the realities of dimensional limits of construction materials and the constraints of building in a remote mountain site. The owner's desire to have the lowest impact on the land and the lightest touch possible was realized starting at the project's massing – a minimal footprint (26' square) with vertical expansion. Every material in the cabin was thoughtfully considered as it worked to be as efficient as possible. Where walls could be eliminated, they were, so curtains separate some of the sleeping spaces. Standard material dimensions drove the ceiling heights and room widths. Standard window sizing and cabinetry modules impacted the layouts of the millwork and interior spaces. Corrugated steel siding emphasized the verticality of the design, while also providing some level of fire protection. Every building system in the cabin was drawn and detailed to be as efficient as possible and to have thoughtful design transform a conceptual idea into an actual, constructable retreat.

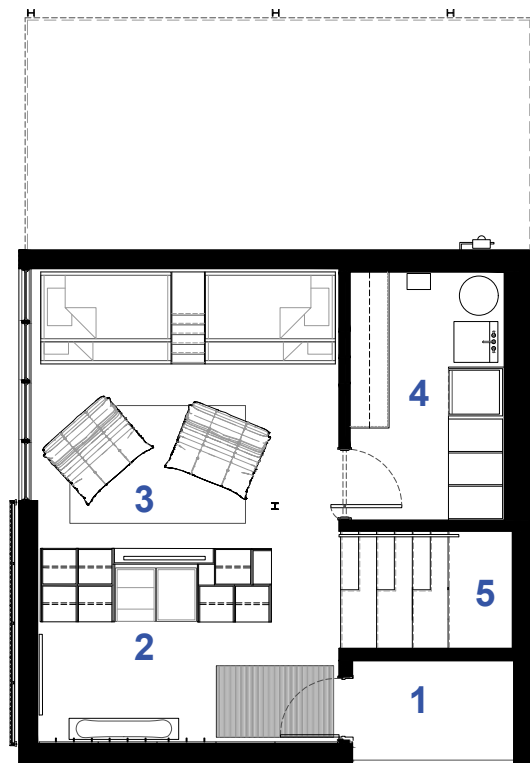




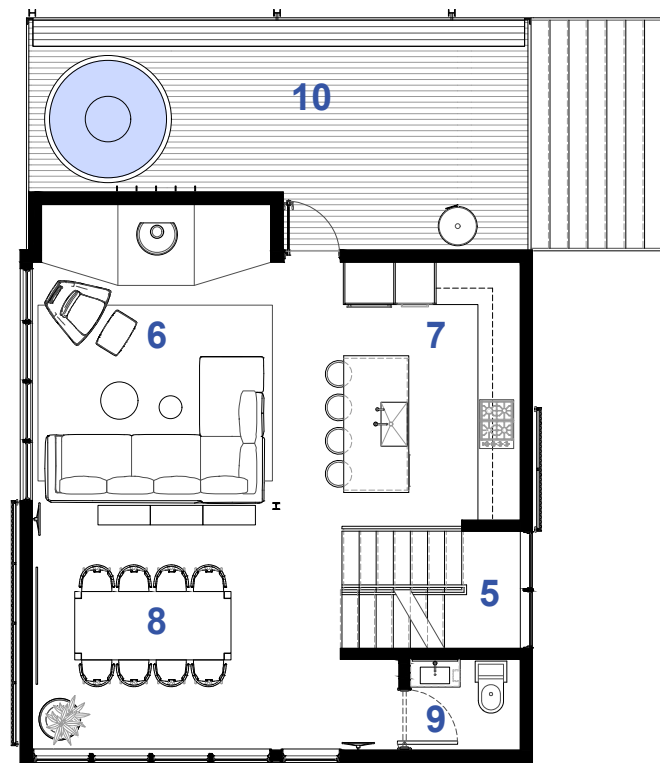




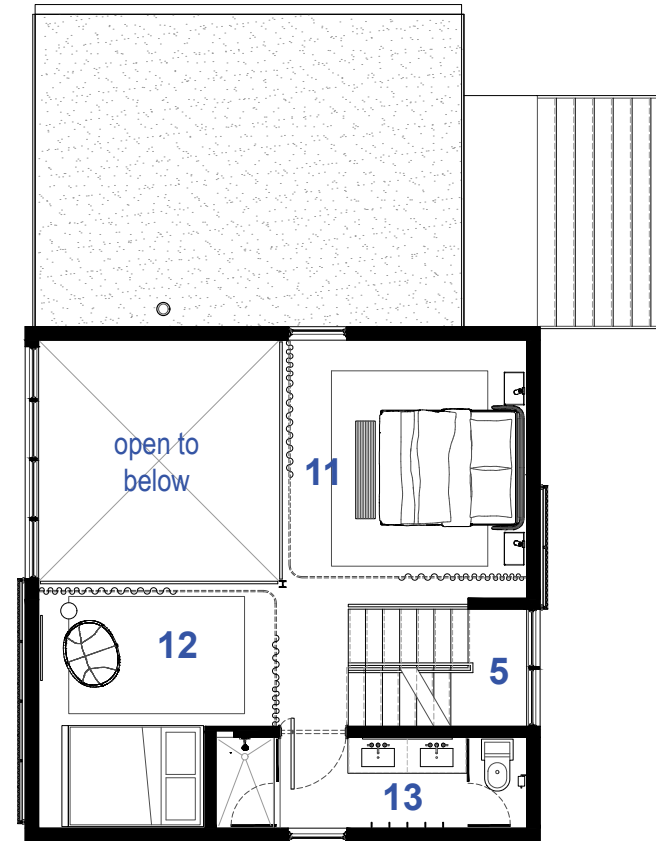
SITE PLAN
1/32" = 1'-0"



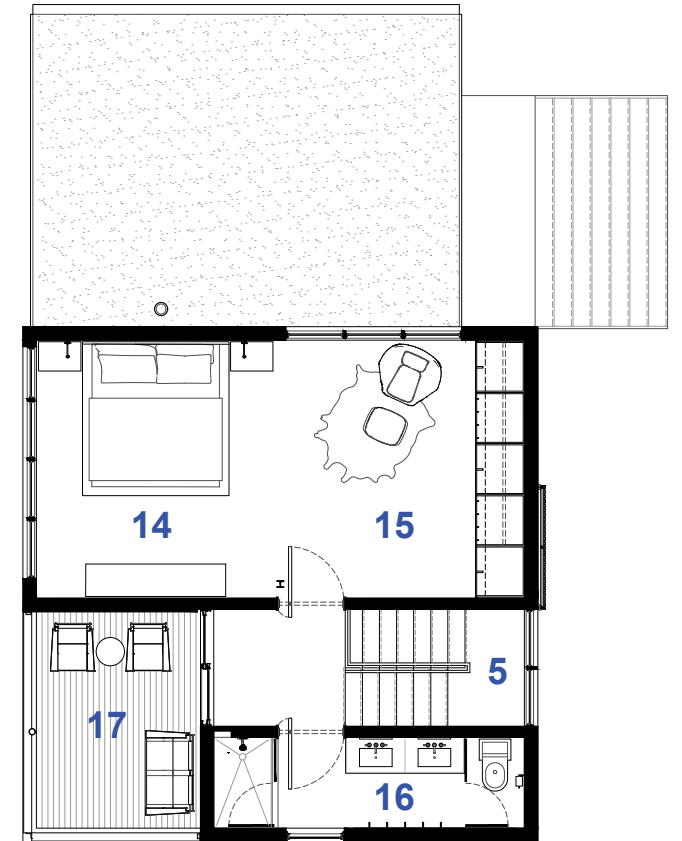
level one



level two



level three



level four

- 1. entry
- 2. mudroom / gear closet
- 3. game room / bunk room
- 4. laundry / mechanical room
- 5. stair
- 6. great room
- 7. kitchen
- 8. dining room
- 9. powder room
- 10. deck
- 11. guest bedroom
- 12. bunk room
- 13. guest bathroom
- 14. primary bedroom
- 15. primary closet / seating area
- 16. primary bathroom
- 17. balcony









