

Project Data

Betasso Overlook

Name of Project.....Betasso Overlook
Type of Project.....Residential
Project Size.....3,670 sf
Project Cost.....withheld

Program Summary

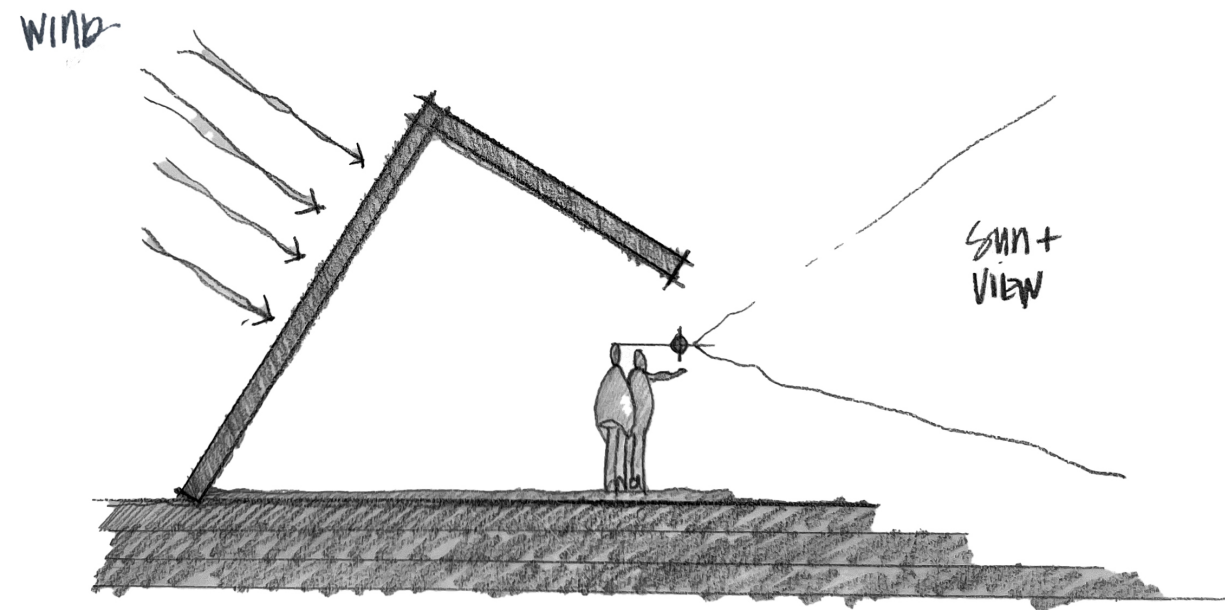
Betasso Overlook is a self-developed, site-specific design by the architect. Once designed, the architect sold the land, construction plans and building permits to a family moving to Boulder from Chicago. The owners were amid a significant life transition. They were leaving behind their urban Chicago lifestyle and moving west to live closer to nature and their three adult sons. The architect worked closely with the owners throughout the construction process, including making final lighting and interior design decisions. Requirements for the design were as follows:

- Architecture that responds to the site’s history, geography, topography, views, quality of light, and climate conditions
- A form modest in scale, proportion, and volume
- A layout in compliance with the constraints of a narrow parcel
- Net-zero energy design
- 100% electric operation
- 100% fire-resistive exterior shell

Project completion date.....June, 2024
Project Location.....Boulder, Colorado

Project Narrative

Betasso Overlook



Betasso Overlook challenges traditional alpine cabin norms, creating a new vernacular rooted in Rocky Mountain culture, climate, and landscape. Historically, the area was inhabited by turn-of-the-century, metal-clad miners' cabins, eventually giving way to simple A-frame and gable-roofed structures. Betasso Overlook takes inspiration from these vernacular forms, allowing the environment to inform the home's form, footprint, and interior design.

The program is broken down into three smaller volumes to reduce impact and scale. Conceptually, each volume of the residence is its own cabin, distinctly programmed for working, living, and sleeping. Glass halls connect each cabin, creating a sunny "space between." The three-volume composition sits with the natural topography, each cabin stepping down three feet in elevation as one moves toward the view.

The cabins are clad entirely in dark metal so as not to upstage their stunning alpine setting. Double fir rafters encase steel fitch plates to create long spans of open space. Hemlock ceilings layer above the rafters to bring warmth to the interior. Rafters align with cabinetry below to create a sense of rhythm and calm. Concrete floors ground the house to its alpine landscape of granite rock and pine forest.

The staggered spacing of the three volumes takes advantage of the sun's path across the site, each getting its own slice of sun. A steep, continuously insulated roof/wall shuts down northern winter winds, while on the opposing side, floor-to-ceiling glass opens up to sweeping southern views of Betasso Preserve. The home operates 100 percent gas-free with geothermal energy, a 9kW photovoltaic array, and all-electric appliances.

"Our mountain home isn't just built on this land; it belongs to it. Everything feels different - intentional, raw, alive. Nearly every week, we discover a detail that deepens our appreciation - a deliberate sightline, a hidden nook revealing a perfect sunrise view. This home is more than a shelter. It's a passage into something greater, a space where life unfolds. It completes a chapter we never realized was waiting to be written."

-Owner testimonial

Designing for Integration

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The home's simple forms stand in direct relationship with their habitat. Each space connects to light, air, and unique views. These gestures call our attention to the site's unique geographical features, igniting our senses, lifting our spirits, and strengthening our connection to place.

Designing for Energy

The building is sited for optimal passive solar gain. The staggered spacing of the three volumes takes advantage of the sun's path across the site, each getting its own slice of sun. A steep, continuously insulated roof/wall shuts down northern winter winds, while on the opposing side, floor-to-ceiling glass opens up to sweeping southern views of Betasso Preserve.

The home operates 100 percent gas-free with geothermal energy, a 9kW photovoltaic array, and all-electric appliances. Gas-free indoor appliances, such as the induction cooktop and stove, improve indoor air quality. The photovoltaic array, located on an off-site solar farm, makes the home operate net-zero.

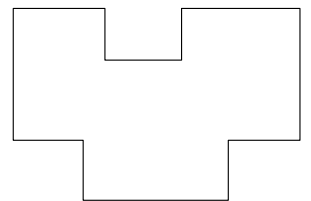
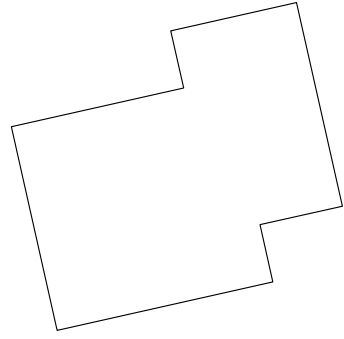
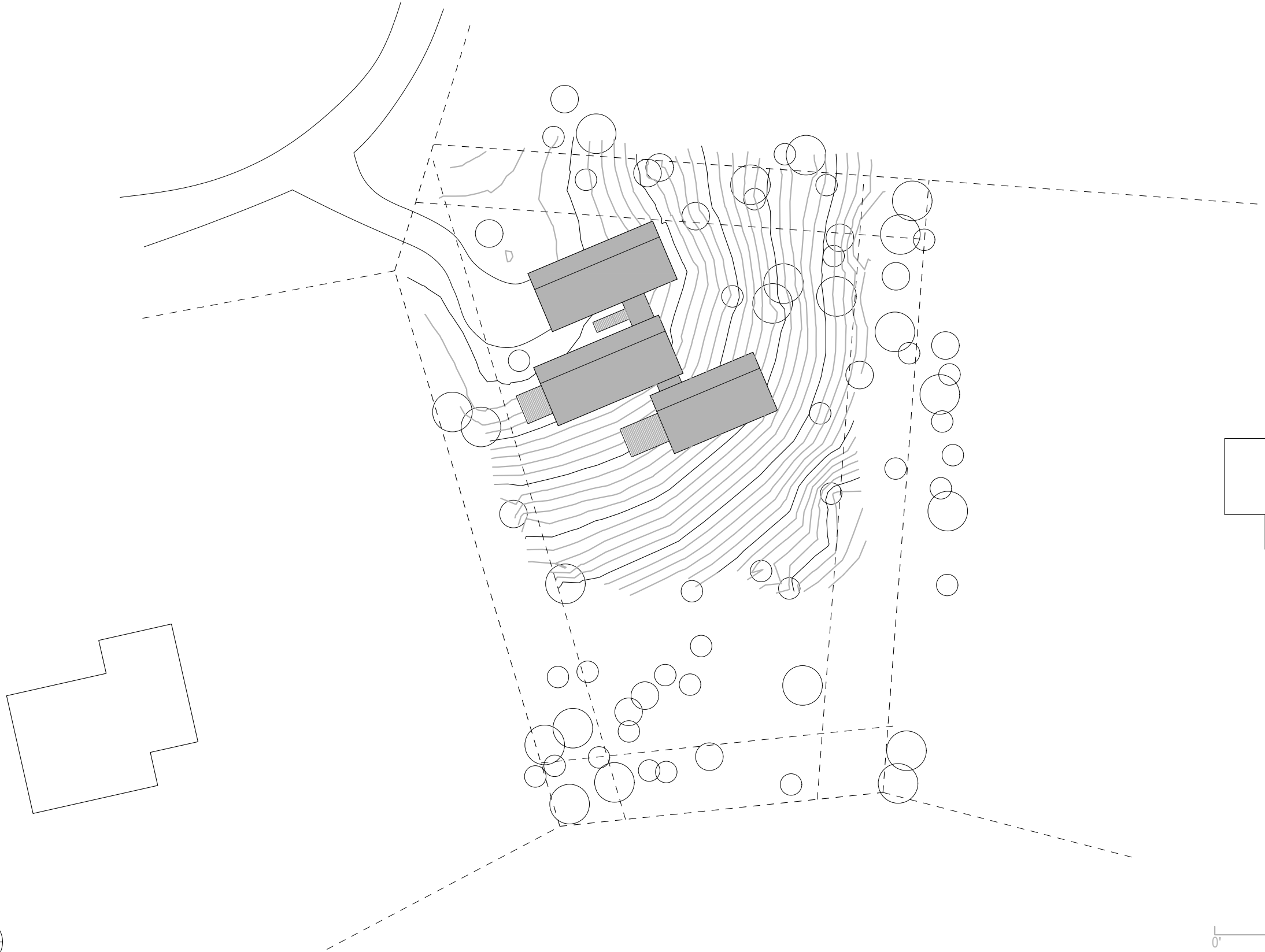
A ground source, water-to-water heat pump provides radiant floor heating in a three-inch-thick concrete slab. The thermal mass of the concrete floor absorbs daytime energy and releases it in cooler nighttime hours. High-efficiency energy recovery units further conserve heat. Floor-to-ceiling casement windows create an airy interior space with natural cross-ventilation. Continuous insulation around the exterior framed walls forms an airtight building envelope. The cabins run on individual programmable thermostats, creating even further efficiency.

Designing for Ecosystems

The project site at 6,500 feet elevation is a moderately dense forest of ponderosa pines, interspersed with sagebrush, cactus, and mountain mahogany. Local weather brings high swings in temperature, strong winter winds, and frequent late spring snowstorms. The location is a wildlife corridor for deer and mountain lions. The architecture respects this unique mountain landscape with its placement, form, and footprint.

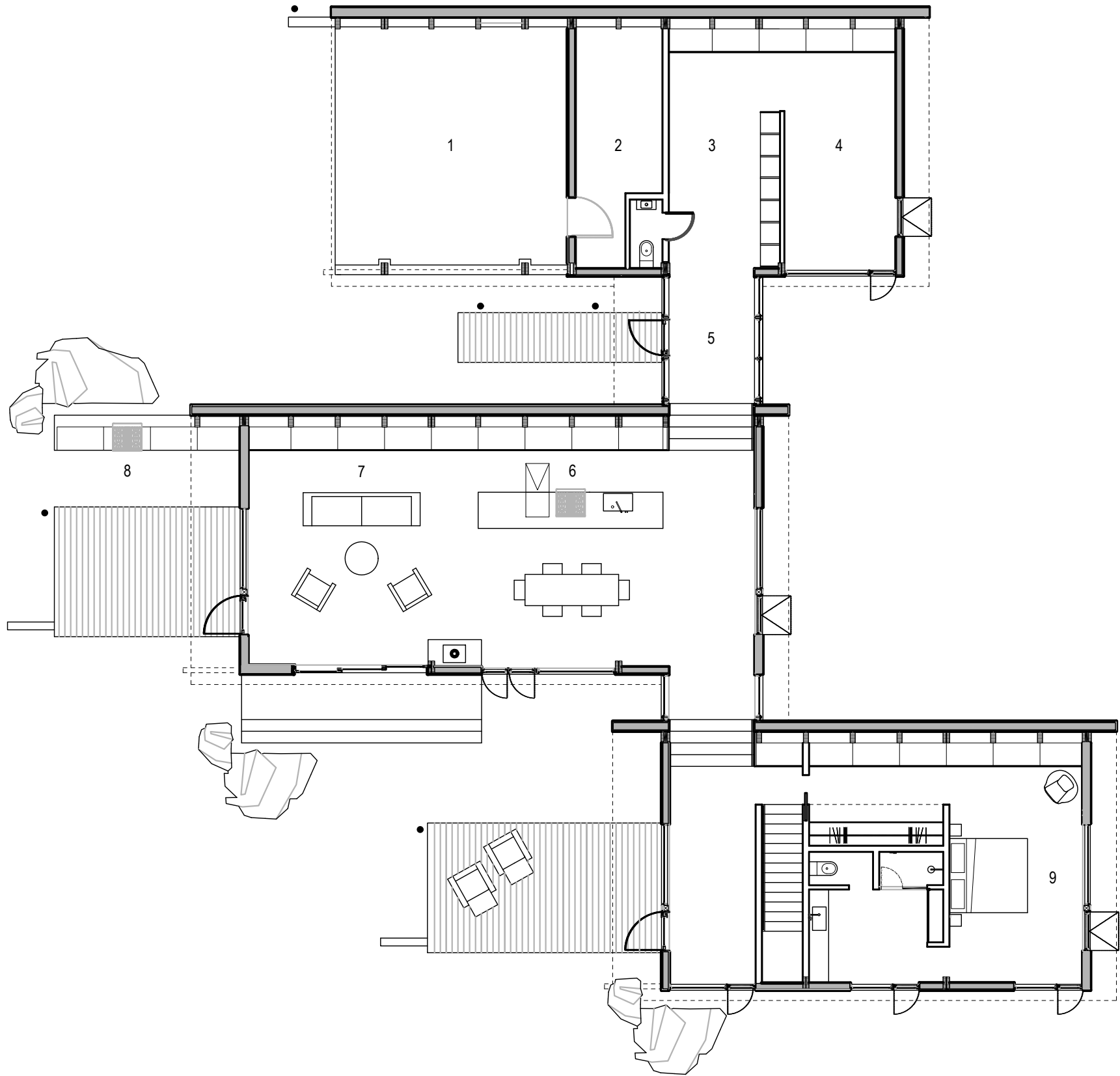
Mature ponderosa pines create shade and protect glass on south and west facades. Russian sage and catmint attract pollinators. Landscape lighting quantities are kept to a minimum, and fixtures are shielded and dark sky compliant. All site lighting is on a timer, turning off each night to create a natural nighttime habitat.

Post-construction, all disturbed areas were reseeded with a native foothills grass seed mix. All seeded areas are covered with weed-free straw matting to prevent erosion and encourage quick growth. 100 percent native plants and mature trees create a landscape requiring no long-term watering system. There is no turf grass on the property.



0' 20' 40'

SITE PLAN



- 1 CARPORT
- 2 STORAGE
- 3 MUD ROOM
- 4 STUDIO
- 5 ENTRY
- 6 KITCHEN
- 7 LIVING
- 8 OUTDOOR COOKING
- 9 BEDROOM



PLAN























