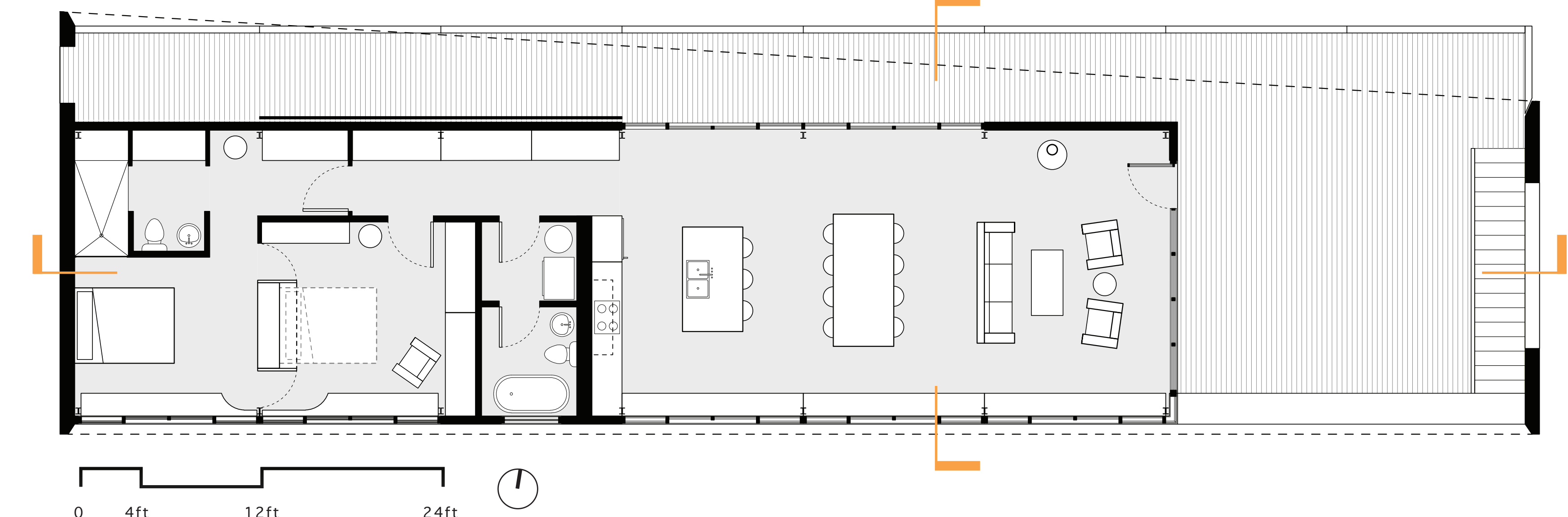
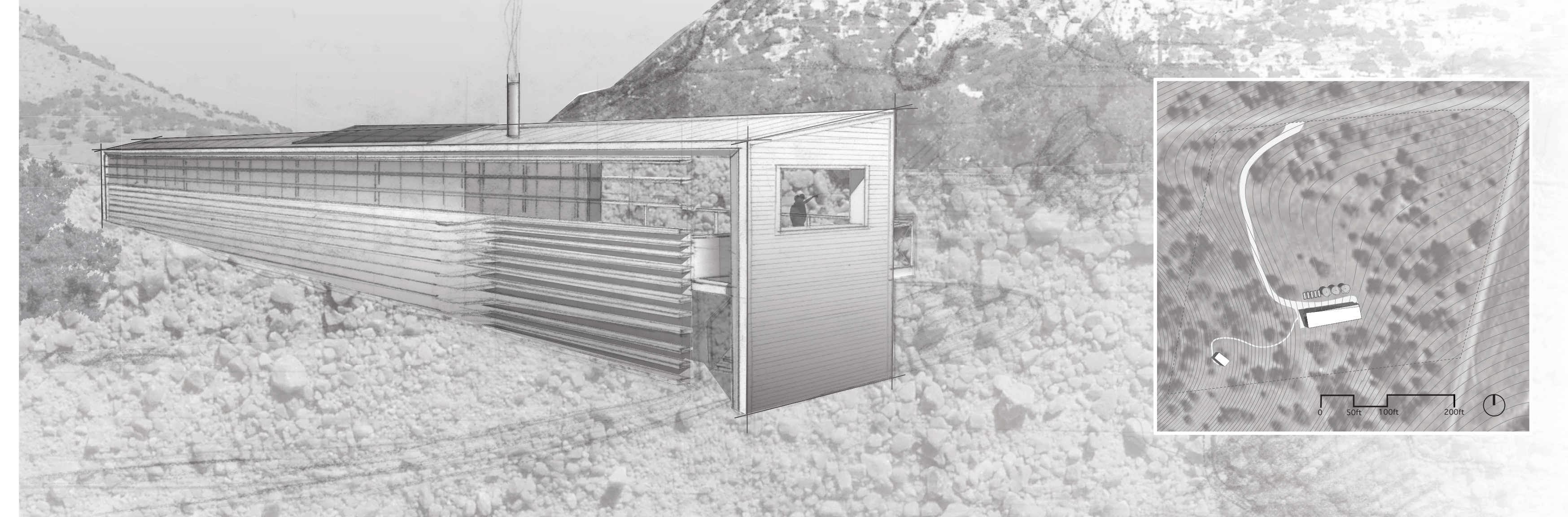
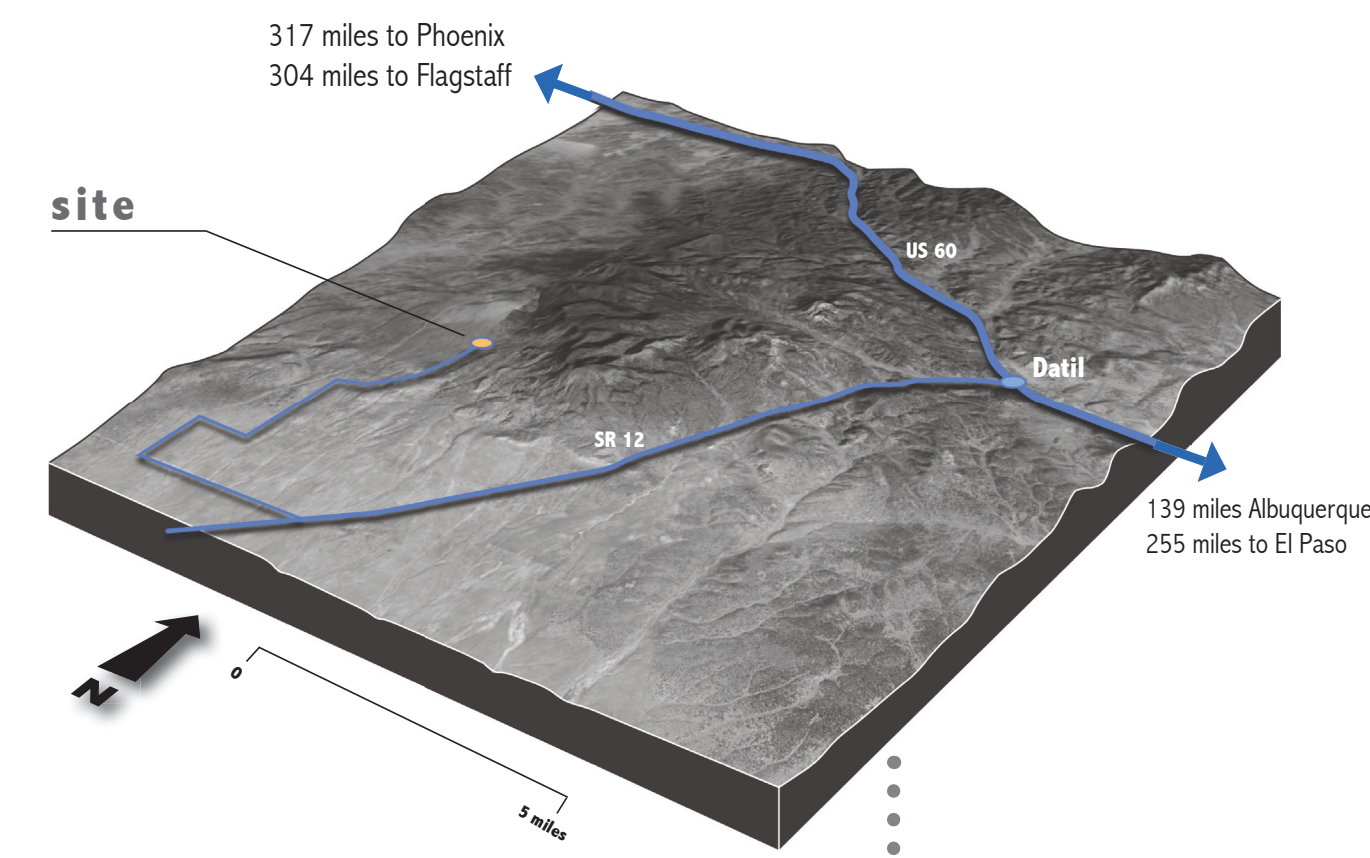


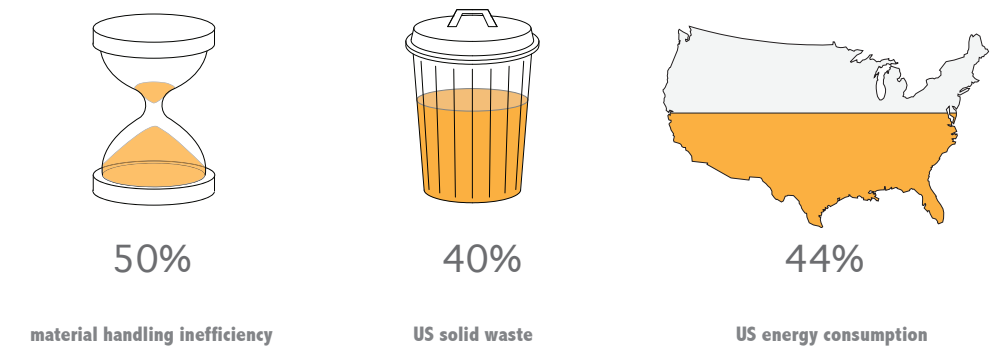
REMOTE HOME

a handcrafted, component-based solution for southwest living

This project resolves two issues confronting the building industry: how to combat the prevalence of waste inherent in construction, and how to make a prefabricated structure responsive to its context. The solutions to these two problems are mutually beneficial: through implementing prefabrication the design reduces the waste of time, material, and energy typical of housing construction, and by allowing the prefabricated system to adapt to the location and the desires of a client the design can gain a foothold in an industry typically hostile to prefabrication: the custom housing market.



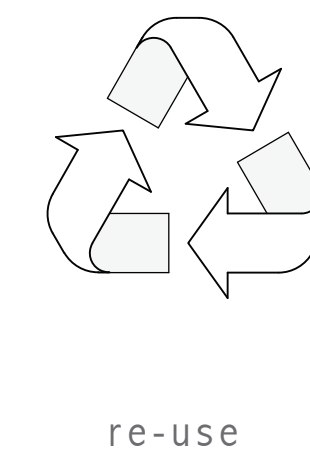
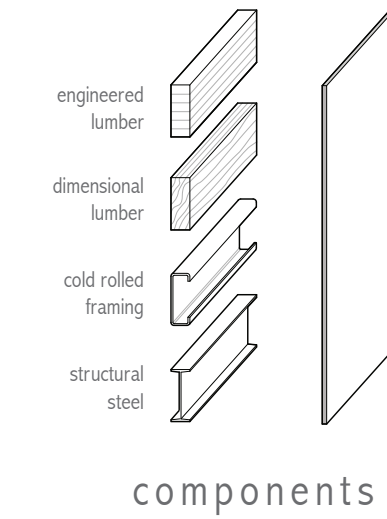
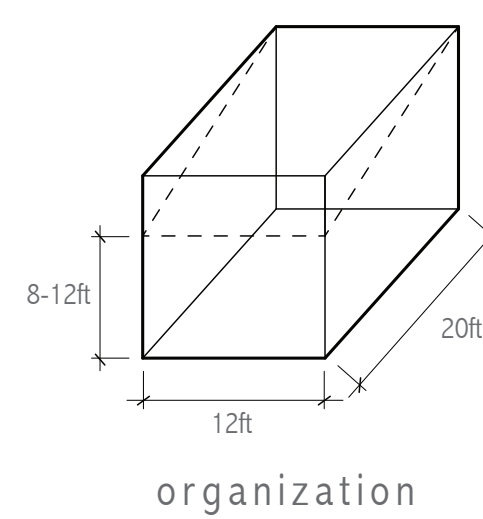
recent building industry statistics



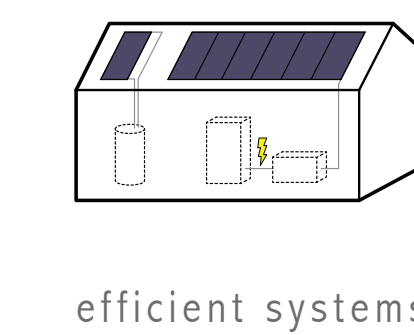
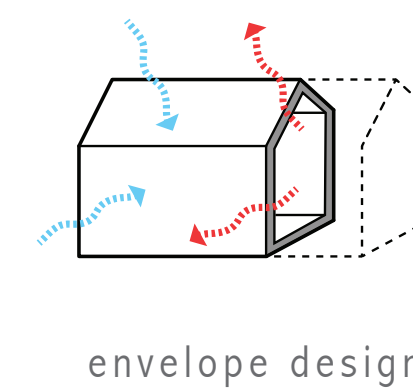
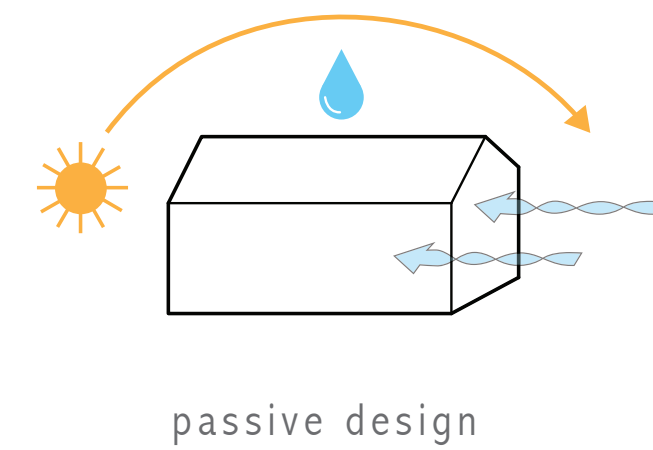
The test of this resolution is sited in an extremely remote area of western New Mexico. It is a single family home designed to be assembled in phases (as cash allows) by either a savvy homeowner or local contractor. Additionally, its remote site necessitates a light, efficient design and precludes the use of heavy lifting machinery or a prolonged assembly schedule. It utilizes durable, recycled or recyclable materials that are easily assembled with simple hand tools and without generating excess waste.

Passive design strategies are used extensively, and the active systems used are as low impact and efficient as possible. Rainwater capture and usage, grey water recycling, solar heat and energy harvesting, and bio-fuels are all used in order to decrease the immediate and future impact the house has on resource consumption.

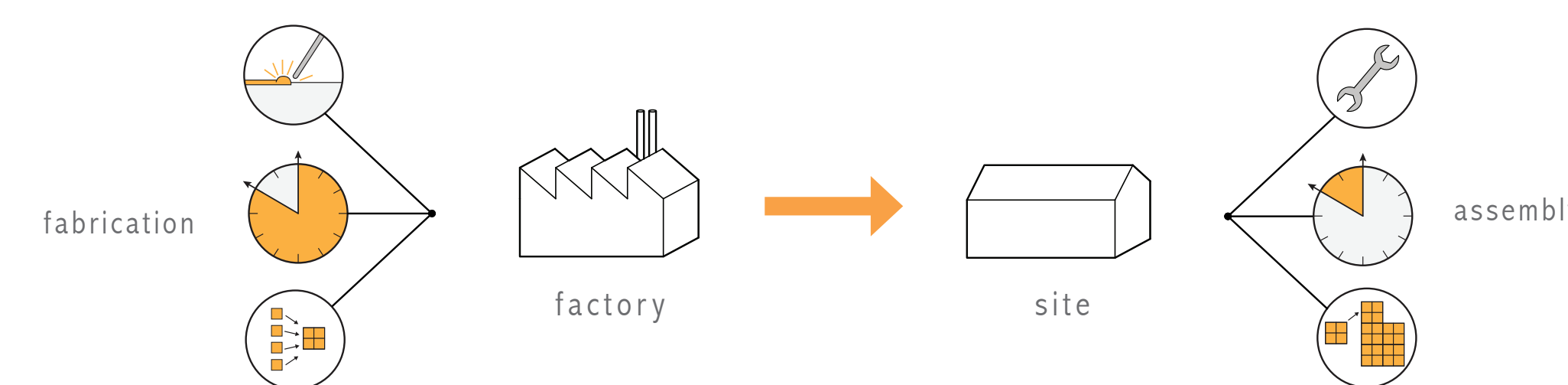
This particular high resolution example of a prefabricated house can be easily modified in size and organization in order to fit a number of sites throughout the southwest.



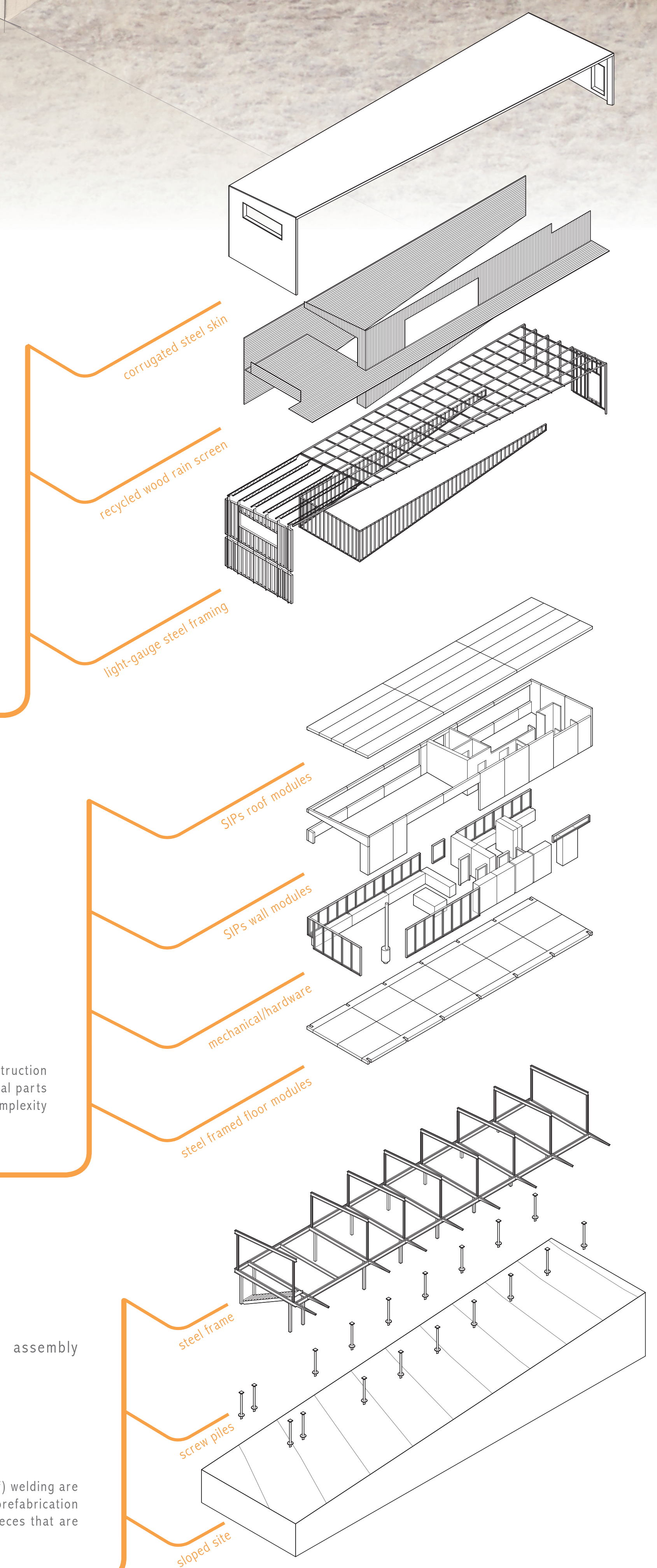
Material efficiency is maximized throughout the house by organizing the project around common construction dimensions, as well as specifying components with high recycled content or the ability to be recycled. The opportunity to directly re-use or easily recycle a component took precedence over embodied energy when choosing materials.

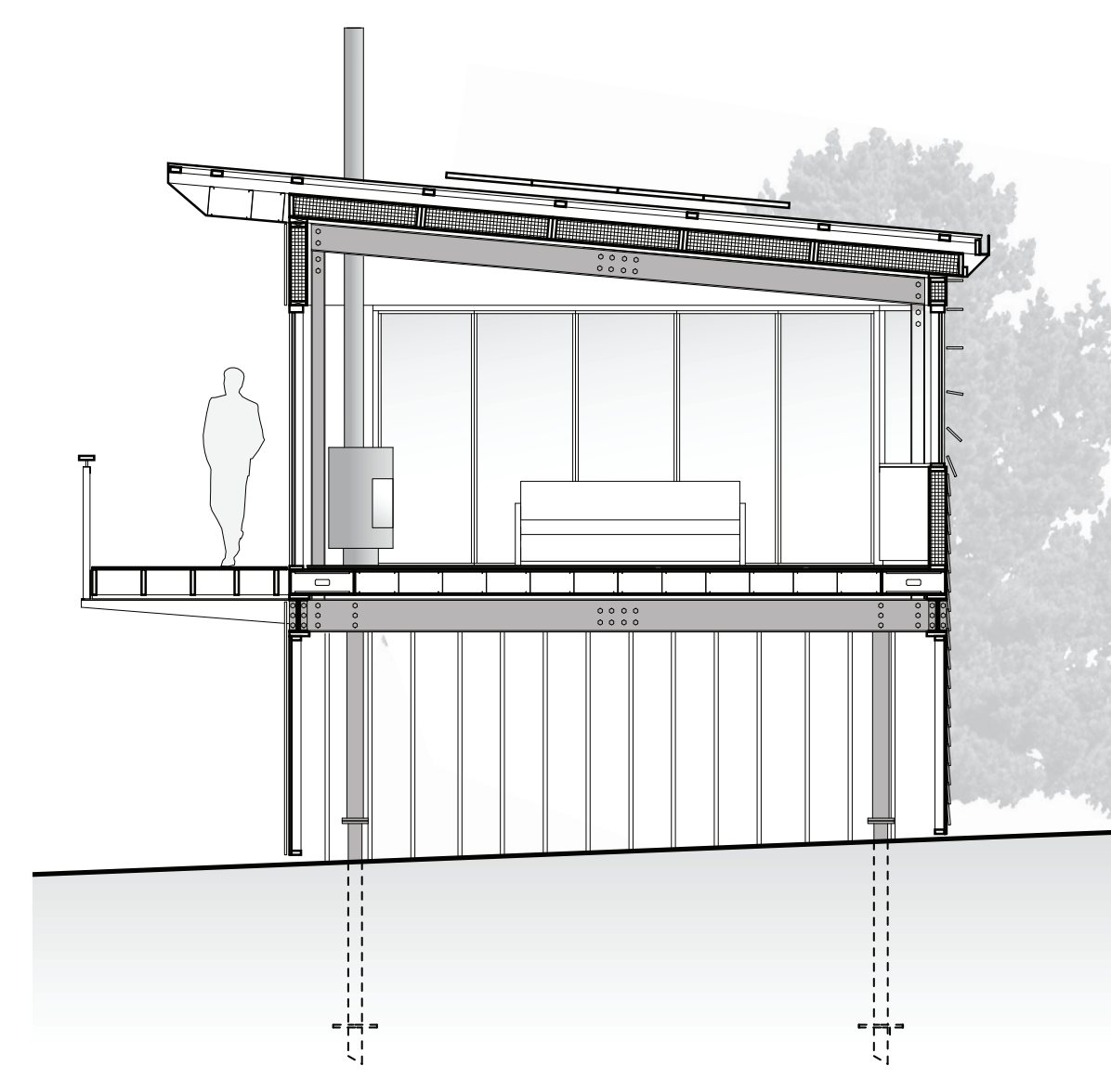
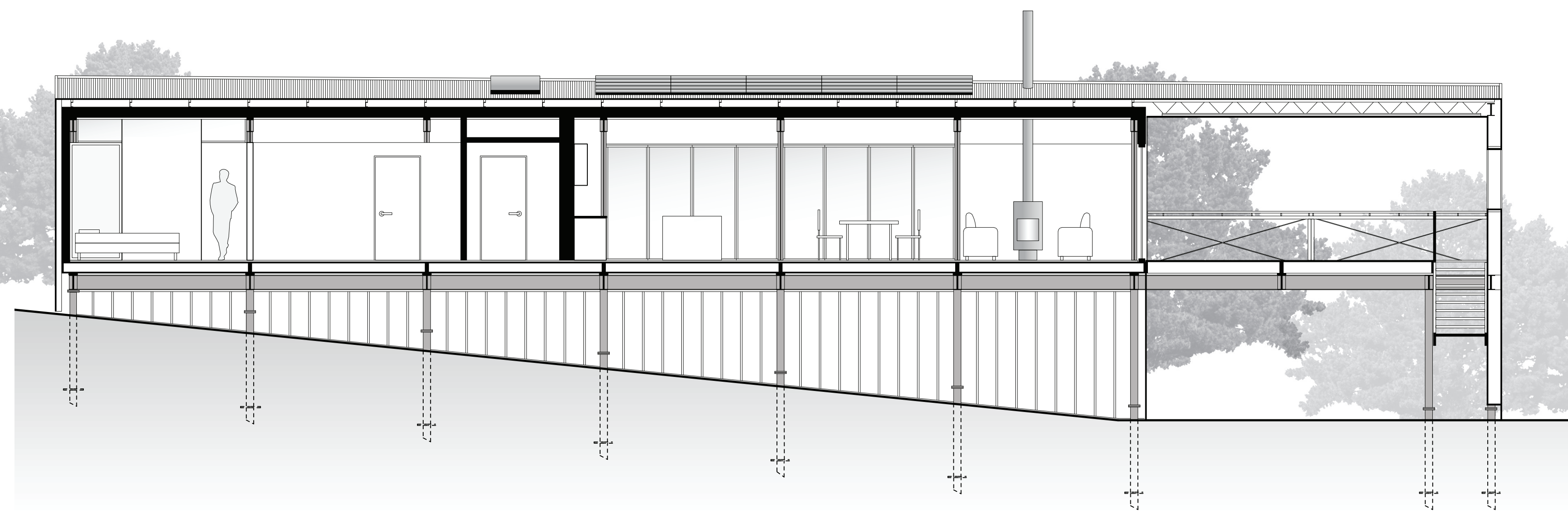


Special attention was paid to the make-up and orientation of the building envelope. Highly insulated panelized construction helps mitigate thermal bridges and combines the function of insulation, structure and skin, therefore reducing individual parts and joints. The exterior walls and roof have no internal plumbing or electrical runs, simplifying and condensing the complexity of systems to the prefabricated interior walls and a select few floor modules.



Fabrication is accomplished in a controlled, off-site environment whenever practical. Cutting, drilling, and (a minimum of) welding are all made in this setting so that the on-site assembly process is greatly simplified to merely bolting and nailing. With this prefabrication strategy waste of material and time is greatly reduced. The foundations and frame of the house are common steel pieces that are light and easily installed, as well as 100% re-usable and recyclable.

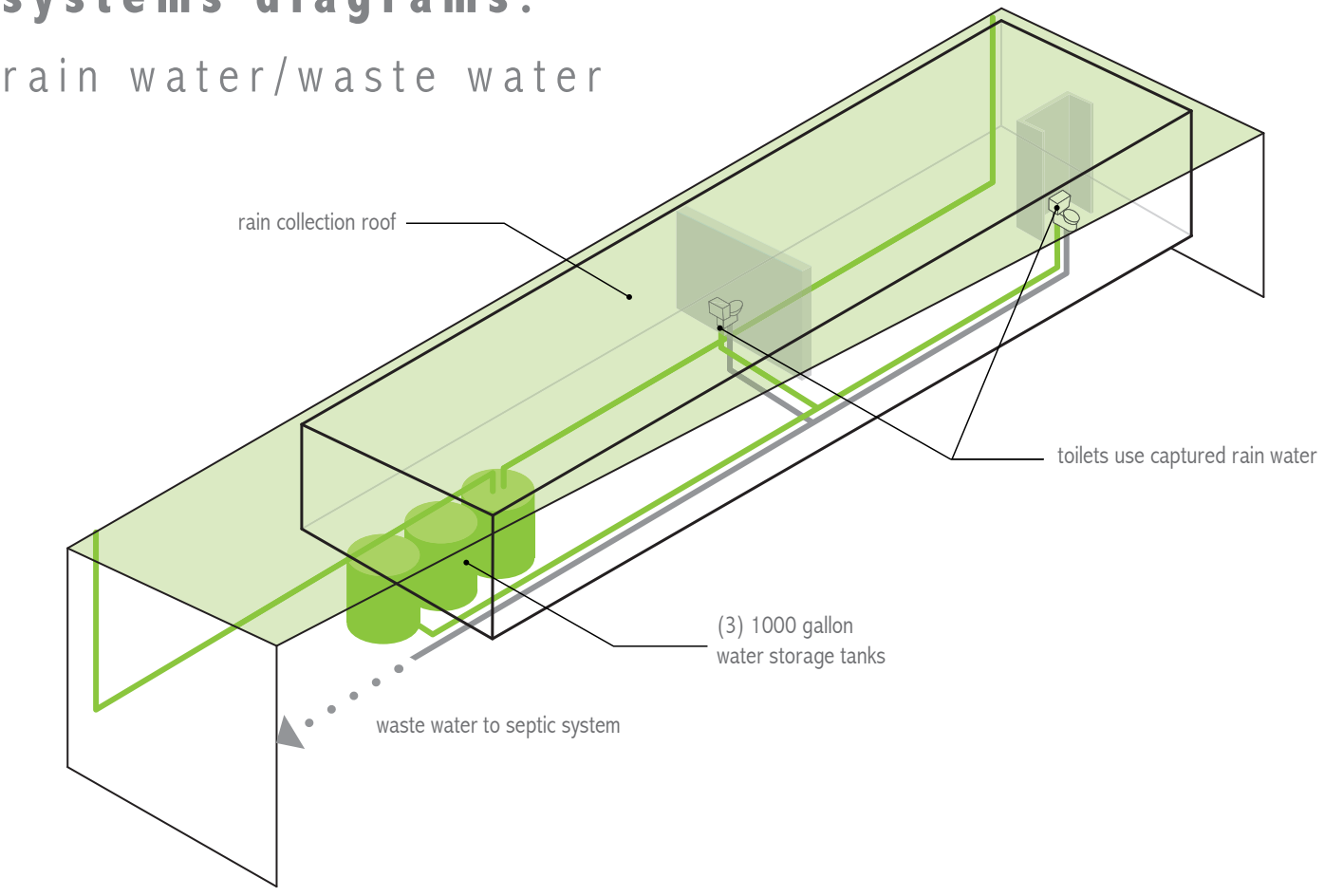




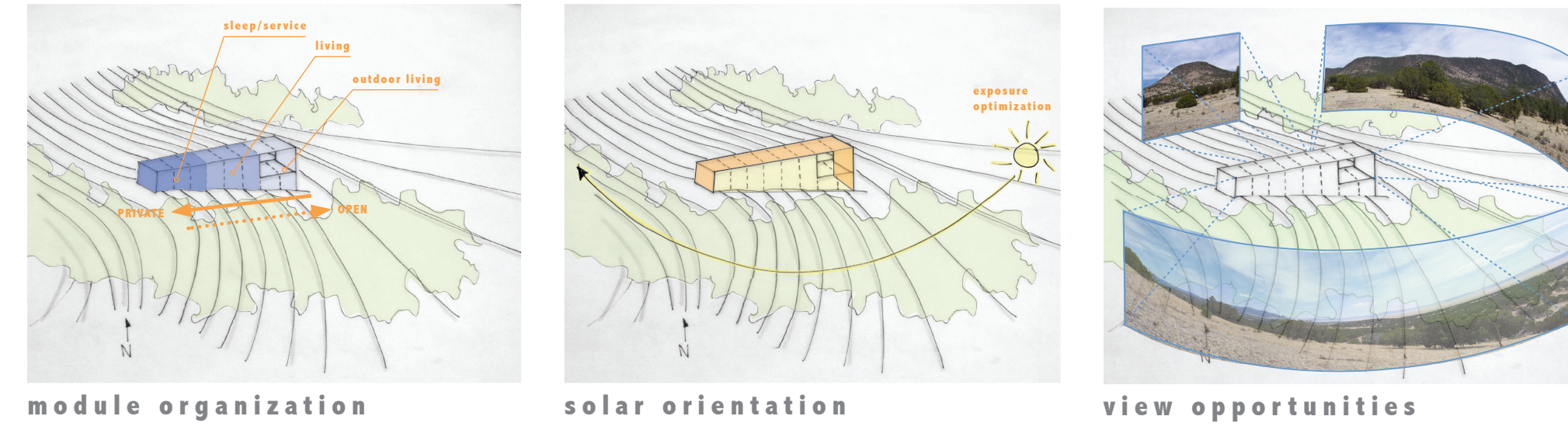
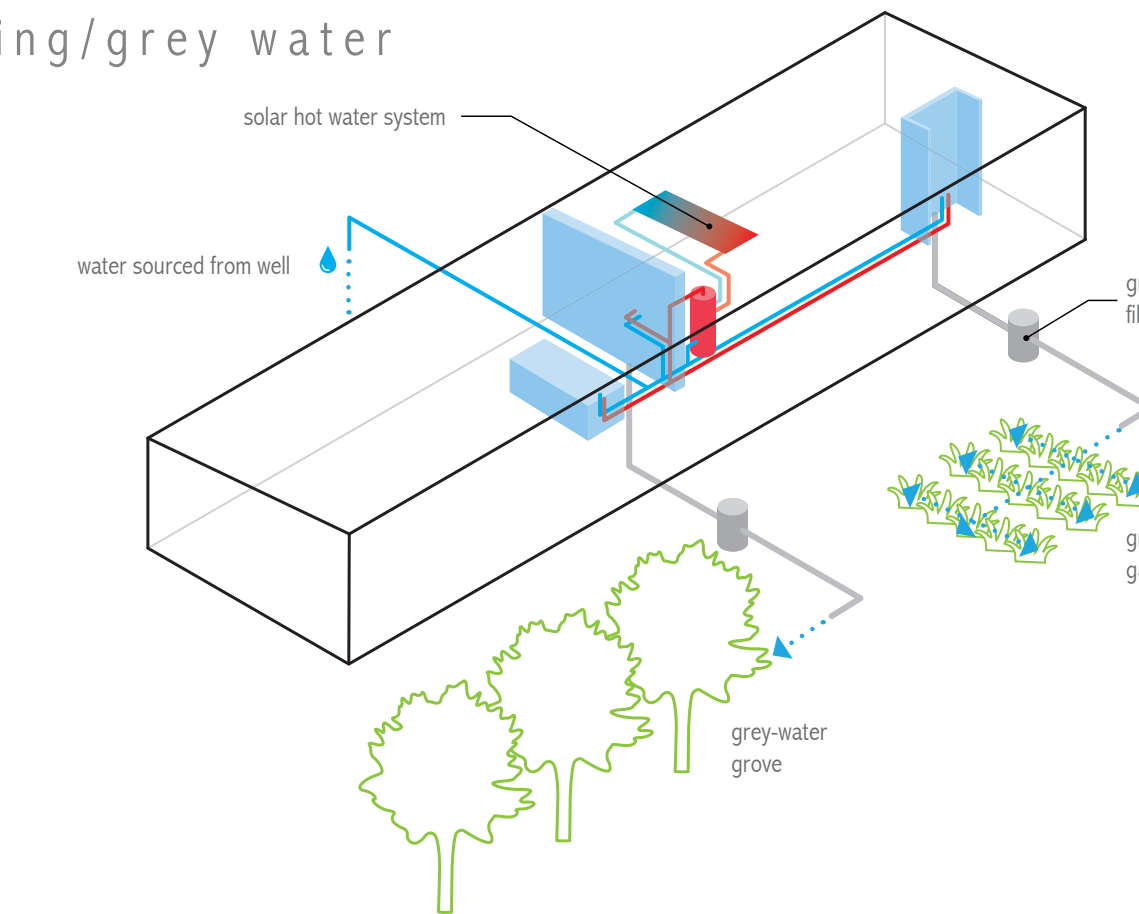
Structural, programmatic and climatic constraints result in a linear organization of the house. The repetition of identical structural bays gains economy in fabrication and simplicity of construction. The long East/West orientation minimizes the harshest desert solar gains while maximizing the more beneficial and controllable southern solar exposure. Additionally, this layout allows large expanses of the Northern facade to be opened to the beautiful mountain views, and creates a sheltered walkway and entry from the prevailing winds coming for the salt plains to the South.

The program of the house is organized from West to East moving from private to public, with the protected master bedroom situated at the hillside end of the house and the open, outdoor living area located at the West end of the house. As the ground gently falls away to the West a lower parking area is created under the outdoor deck, while the living area up above is afforded tree-house-like views above the local pinon pine and mesquite trees. Finally, the linear layout allows all of the program to be universally accessible from the guest parking to the West, ensuring that as the owners and guest age the house can accommodate any and all inhabitants.

systems diagrams:
rain water/waste water

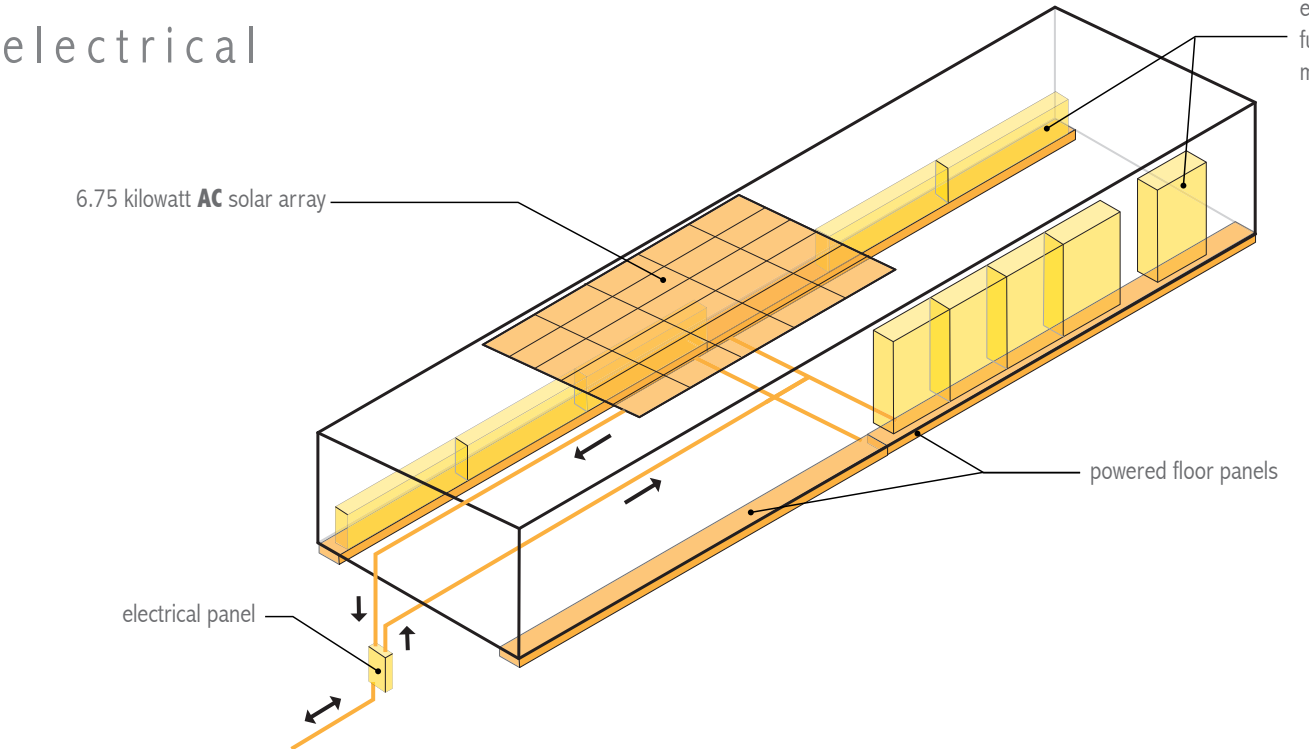


plumbing/grey water

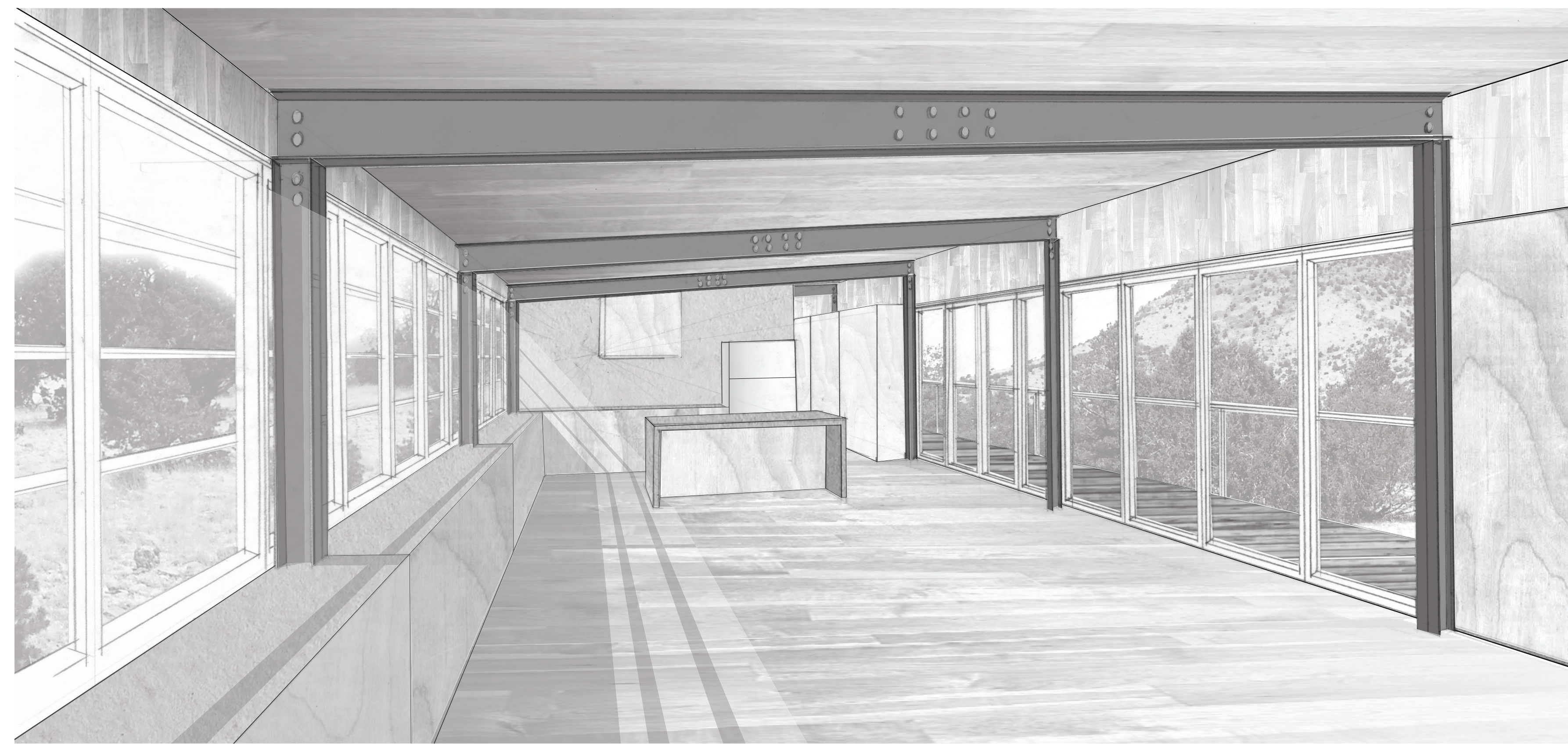
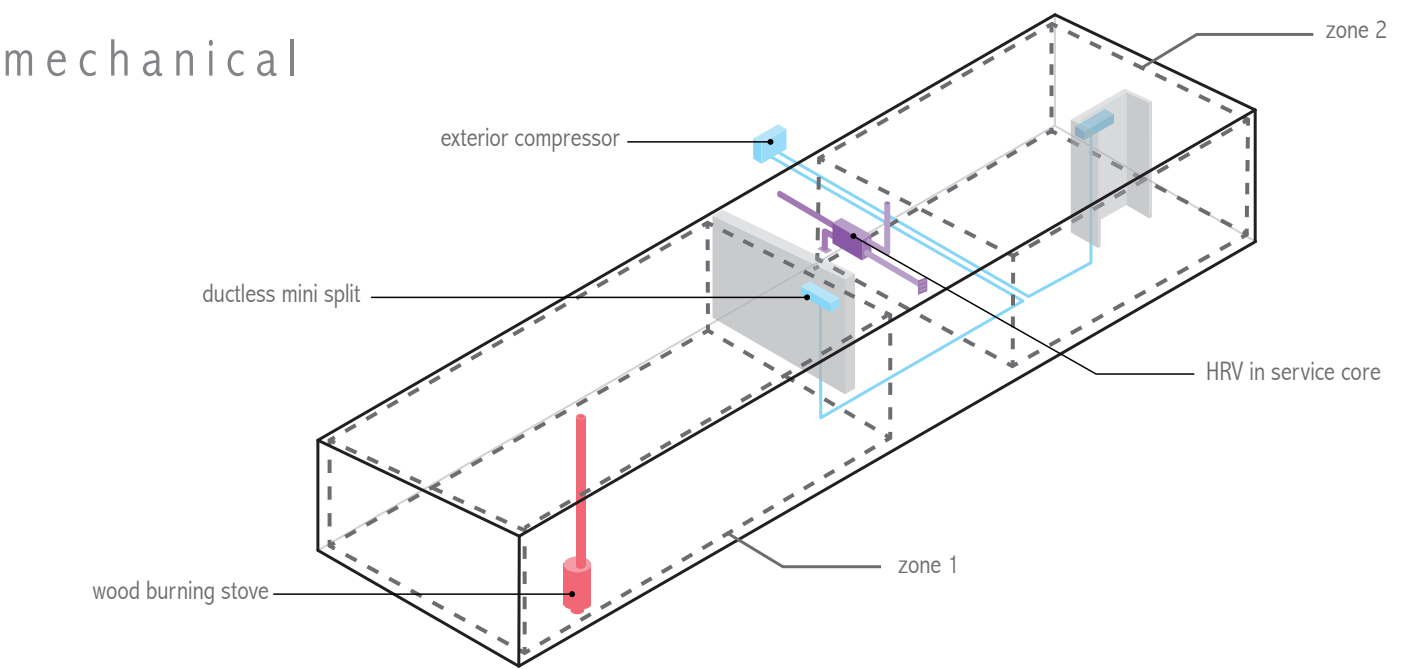


All of the componentry for the Remote Home was selected after setting strict criteria and weighing the benefits of portability, availability, and performance. Typically the lightest and most durable (steel) components were selected, although in the case of the panelized envelope OSB SIPs were selected due to their availability and ubiquity within the residential construction industry. The goal of establishing these criteria was to allow the design to adapt in the future with a different site or a more restricted set of material choices. This underlies the essence of this project's prefabrication: it is an organizational system rather than a specific set of components, and that system can be adapted to the site and the clients' needs in different situations. It is meant to be fabricated by any fabricator using local materials according to availability and labor skills. Since there are no specific parts, just simple and ubiquitous components, no tooling or extra training is needed, and the design is flexible enough to accommodate any common building material.

electrical



mechanical



criteria/performance

- foundations**
 - PRECAST CONCRETE: heavy precast, light to carry the ground, compatible with sloped sites
 - CONCRETE FOUNDATION: heavy ground work, added for better light, helps insulate below the house
- structural frame - 2ft. module**
 - STEEL: weather-resistant, resistant, made from partially recycled materials, recyclable, excellent insulation, easily assembled
 - OSB SIPs: made from locally sourced materials, available, excellent insulation, easily assembled
 - CONCRETE FRAMED WOOD: readily available material, accepted technology, able to integrate systems
 - ALUMINUM: lightweight, 100% recyclable, easily cut and used in application
- roof**
 - STEEL SIPs: weather-resistant, resistant, made from partially recycled materials, recyclable, excellent insulation, easily assembled
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- floor**
 - WOOD FRAMED: readily available and renewable, cheap, generally recyclable
 - CONCRETE FRAMED: possible for natural energy storage
 - SYSTEMS PRE-INTEGRATED: radiant, water, waste, heating/cooling
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- hardware**
 - CONSUMER HARDWARE: cheap, readily available, tested, warranted, durable
 - CONCRETE HARDWARE: tested, warranted, durable
 - INTEGRATED INTO WALL PANELS: all hardware will be pre-installed in exterior wall panels with established modules

selection

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