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.

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. It utilizes locally, 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 reused. 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 functions of insulation, structure, and skin, therefore reducing individual parts and joints. The exterior walls and roof have no structural framing 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 frames of the house are welded steel pieces that are light and easily installed, as well as 100% re-usable and recyclable.
METAL FRAMED - fire and termite resistant, lightweight, true dimensions, adaptable building material.

All of the componentry for the Remote Home was selected after setting strict criteria and weighing the benefits of portability, module organization, solar orientation, view opportunities, and more. The goal of establishing these criteria was to allow the design to adapt in the future with a different site or more restricted set of materials available. This underscores the focus on the project's prefabrication—investigating an automated organization of diverse components, which can be pre-assembled into a house-like envelope. This approach reduces the number of parts and components used by any fabricator using local materials according to availability and labor skills. Since there are no specific parts, just simple and structural components, no field layout is needed, and the design is flexible enough to accommodate any smallsite building materials.