Program Requirements:

Naples, Florida, with its recently thriving residential construction market, has seen land and construction prices increase dramatically over the past 2 years. It is home to a plethora of wealthy residents who fulfill their dreams of a second home in paradise with excessive square footage and little thought about energy consumption. The profit-driven developers are also back, who build luxurious communities, but have little to offer when its comes to “affordable” and environmentally conscious designs for year-round residents who still desire home-ownership and quality living. Therefore, the market has become saturated (again) with similar products that are overpriced, lack individual character and vision. These designs don’t respond to personal/local/regional/national/global problems such as affordability, blight, increasing housing costs and environmental concerns.

It is our hope/goal that the design for this 1,200 s.f. home shall prove that single family residences can be beautiful, unique, attainable, and sustainable. This project shall be a protoype and/or catalyst for several future residences with similar details and floor plans that provide functionality and flexibility and offer a solution for hard working middle class families where they can live/work/grow/play. This residence will be environmentally conscious and will be submitted for certification by the Florida Green Building Coalition.

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Building Area:
Conditioned Space: 1200 S.F.
Non-Conditioned Space: 484 S.F.

Anticipated Date of Completion:
_Summer 2015

Location of Project:
_Naples, FL

Type of Project:
_New Residence

Construction materials, mechanical systems or other pertinent information:

_Concrete Stem wall /Slab
_Steel Structural Insulated Panels (SIPS) walls with Fine Sand Stucco finish
_SIPS roof system, 1/8” slope
_Concrete deck
_Wooden slatted sliding panels
_CGI Windows and Doors

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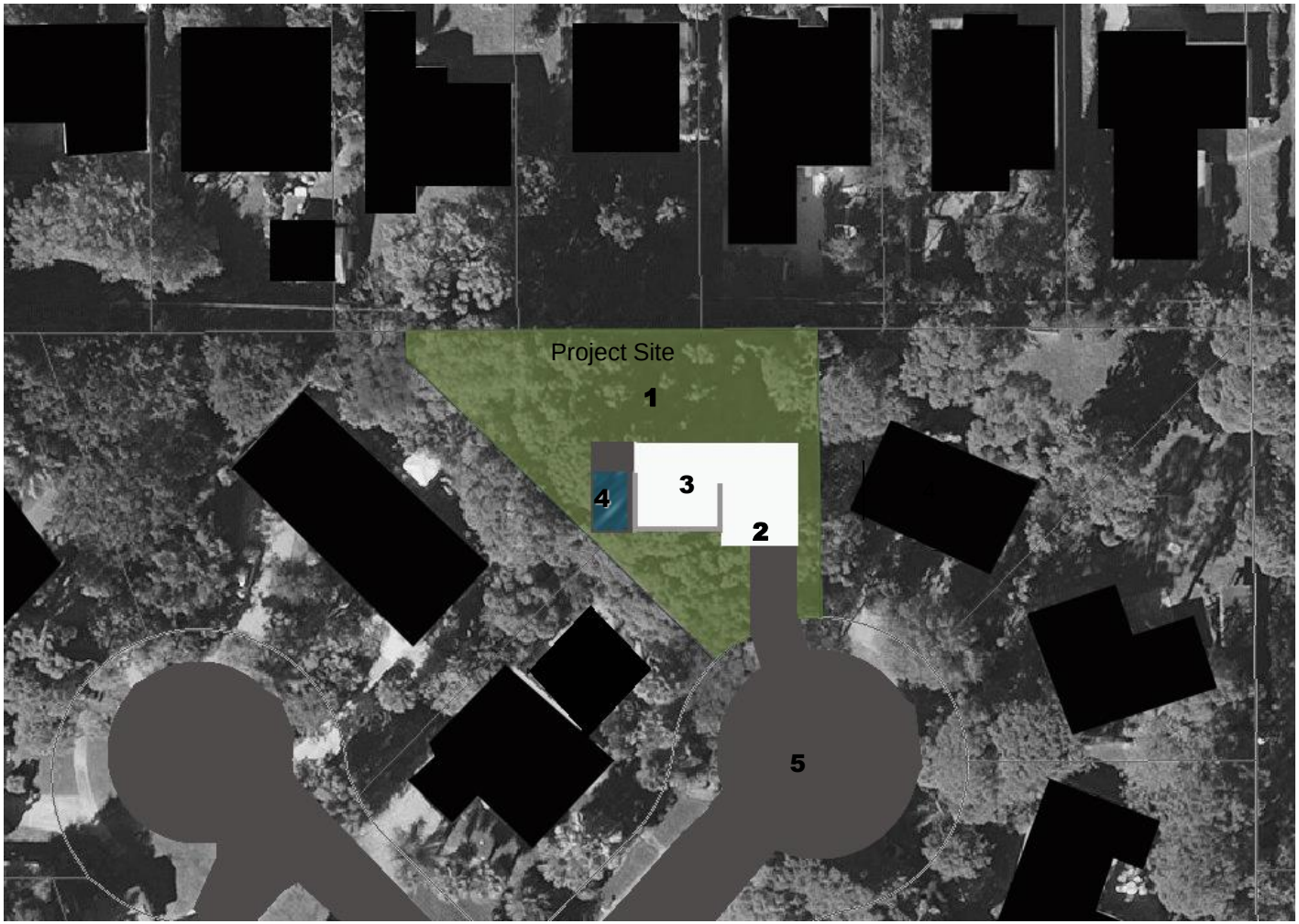
Aerial Overlay/Context

Located on a cul-de-sac in Naples, Florida, the project is set within a dense, older, urban community. The existing, surrounding residences are of a very modest price point and with an eclectic design style provides a natural sense of diversity that would allow itself to any style.

The neighborhood, although not far from the very upscale downtown area, allows for a small footprint, and more budget conscious residences.



Legend

1. PROPERTY
2. COVERED CAR PORT
3. MAIN LIVING
4. OPEN DECK WITH POOL
5. CUL-DE-SAC STREET

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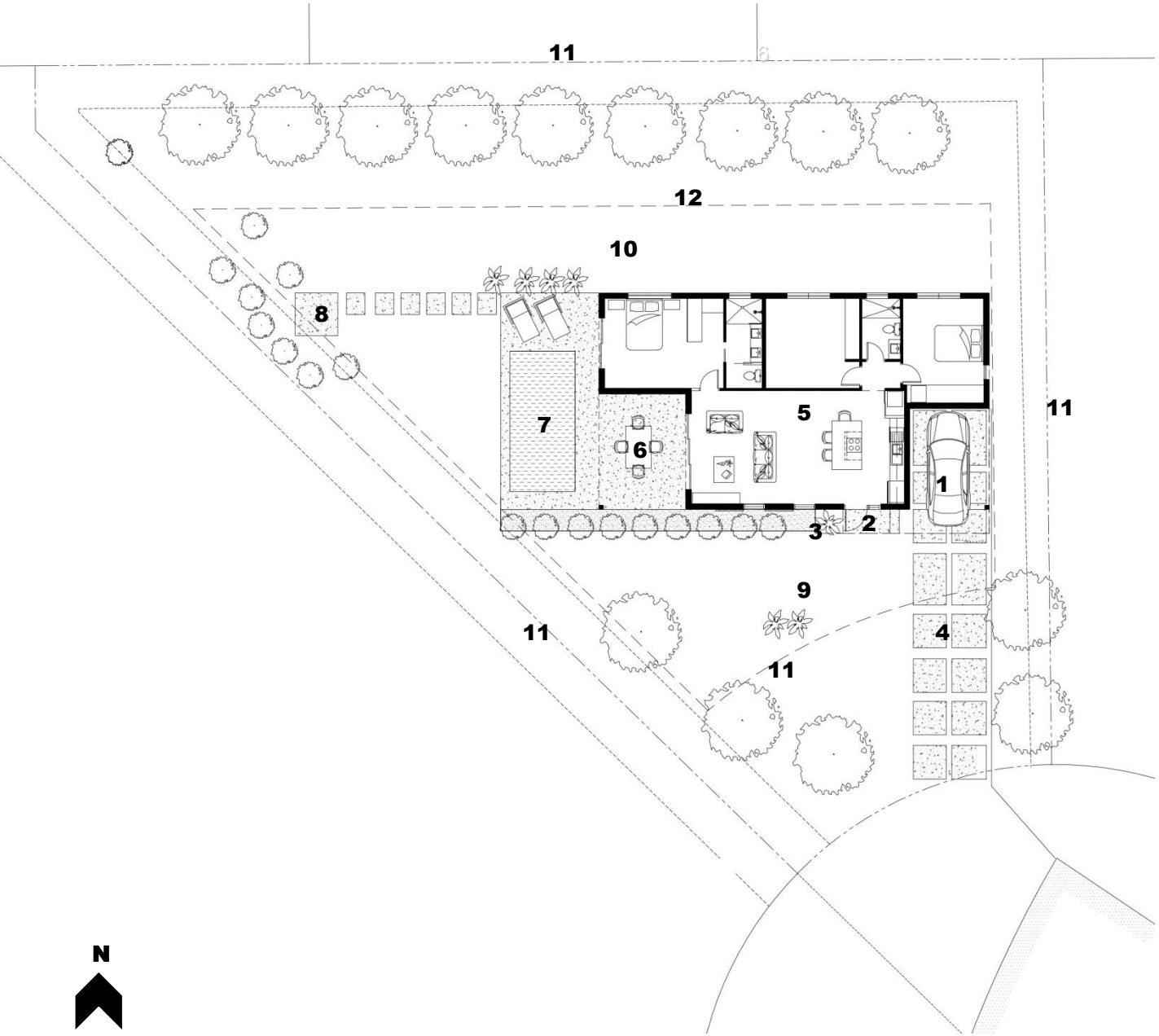

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Site Plan

The residence is positioned to maximize internal views as well as capturing sun for the pool/deck area as that is positioned to the south and west. Due to the size of the site, access was limited and a simple pervious concrete driveway with gravel joints leads from the cauldesac to the covered carport. The open living space is located to the front of the house for neighborhood interaction and the bedrooms are located to the rear of the site for more privacy.

Legend

1.COVERED CAR PORT
2.CONCRETE COVERED ENTRY PORCH
3.PLANTER
4.GRAVEL DRIVE WITH CONCRETE PAVERS
5.A/C LIVING
6.COVERED OUTDOOR LIVING
7.9’X20’ POOL
8.FIRE PIT: 4’X4’ WEATHERED STEEL FRAME W/ OPEN BOTTOM
9.MINIMAL LANDSCAPING WITH NATIVE PLANTS AND GROUNDCOVER
10.MINIMAL LANDSCAPING
11.PROPERTY LINE
12.SET BACK LINE

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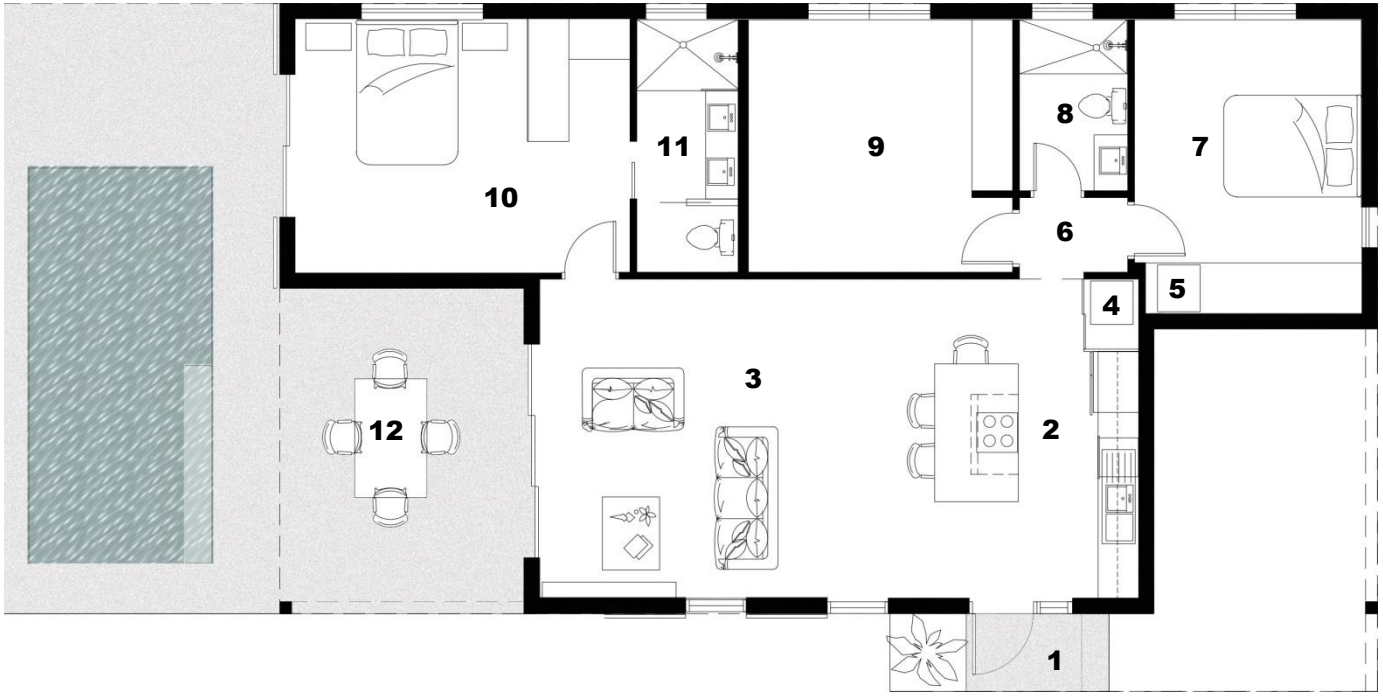
Floor Plan

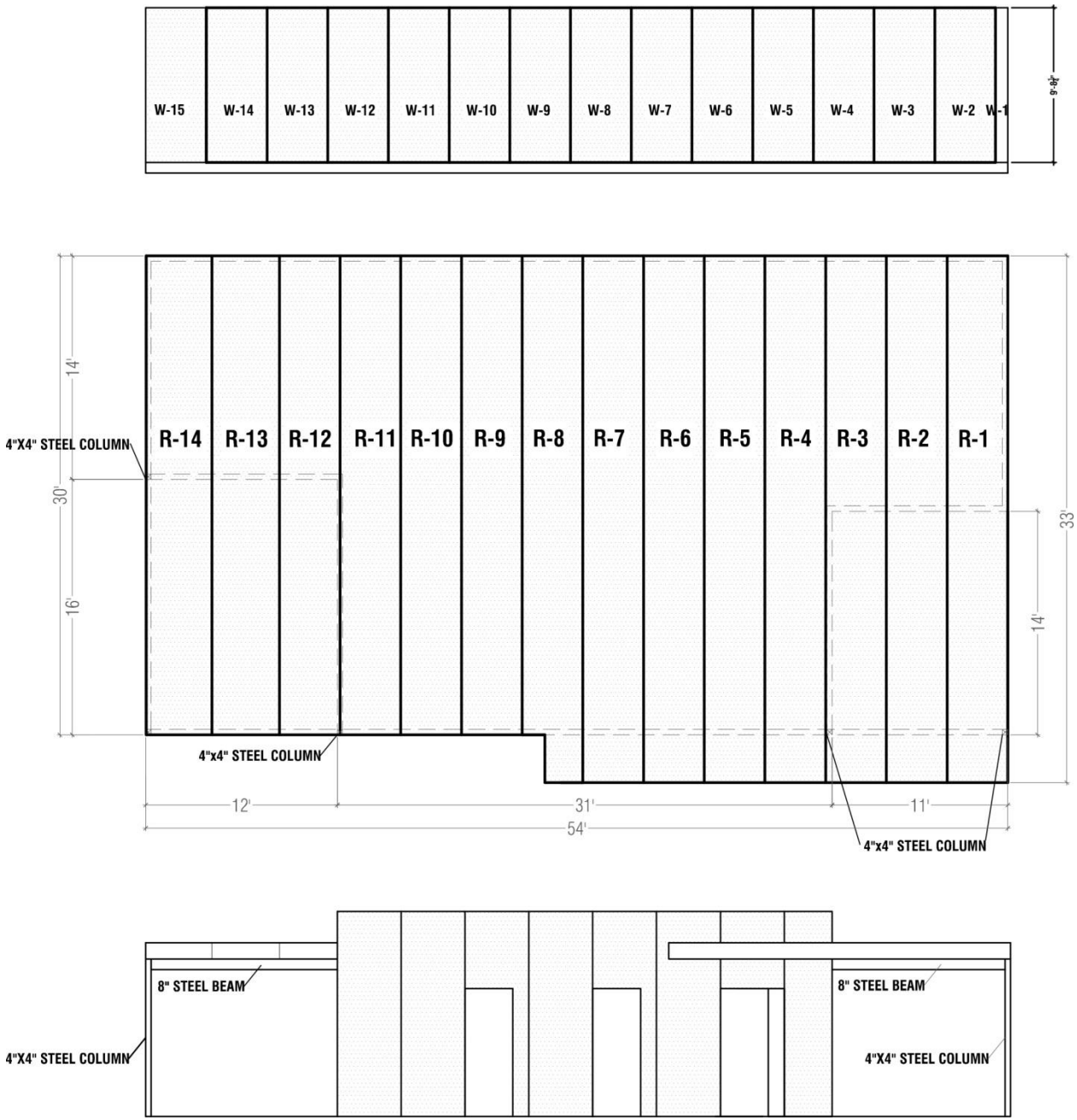
A simple/efficicent plan was organized around a simple rectangle with two voids (a covered porch and car port) for maximum efficiency.

There are two basic modules. The first located on the south consists of the open living/kitchen space which extends out to the covered deck. The second module houses master suite with views to the pool, a den centrally located and another bedroom with adjacent bathroom to the east.

Legend

1.ENTRY PORCH
2.OPEN KITCHEN
3.LIVING ROOM
4.WASHER/DRYER,WH
5.A/C
6.HALL
7.BEDROOM
8.BATH
9.BEDROOM
10.MASTER ROOM W/ OPEN CL
11.MASTER BATH
12.OUTDOOR DECK





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Panel Construction

The building envelope will be constructed using Steel faced Insulated panels (SIPs).
SIPs are high-performance building panels used in floors, walls, and roofs for residential and light commercial buildings. The panels are made by sandwiching a core of rigid foam plastic insulation between two structural skins of metal. The result is a building system that is extremely strong, energy efficient and cost effective with minimal waste.

Key Product Features:
-UL Rated Type 1 EPS Foam
26 Gauge AZ-50 Galvalume® Metal Skin: ASTM A792 Steel
-R-Value (ASTM C 1363-05) - 26.30 (4.3/inch)
-UL / ASTM E84 Fire Rated Foam Core - 20/150
-Conforms to Class “B” Fire Safety Standards

PROFILES:
The Panels have a flat surface finish, white color
PANEL WIDTH:
• 45.5”(1140 mm)
PANEL THICKNESS
•4” •
STEEL SKIN THICKNESS
•0.022-

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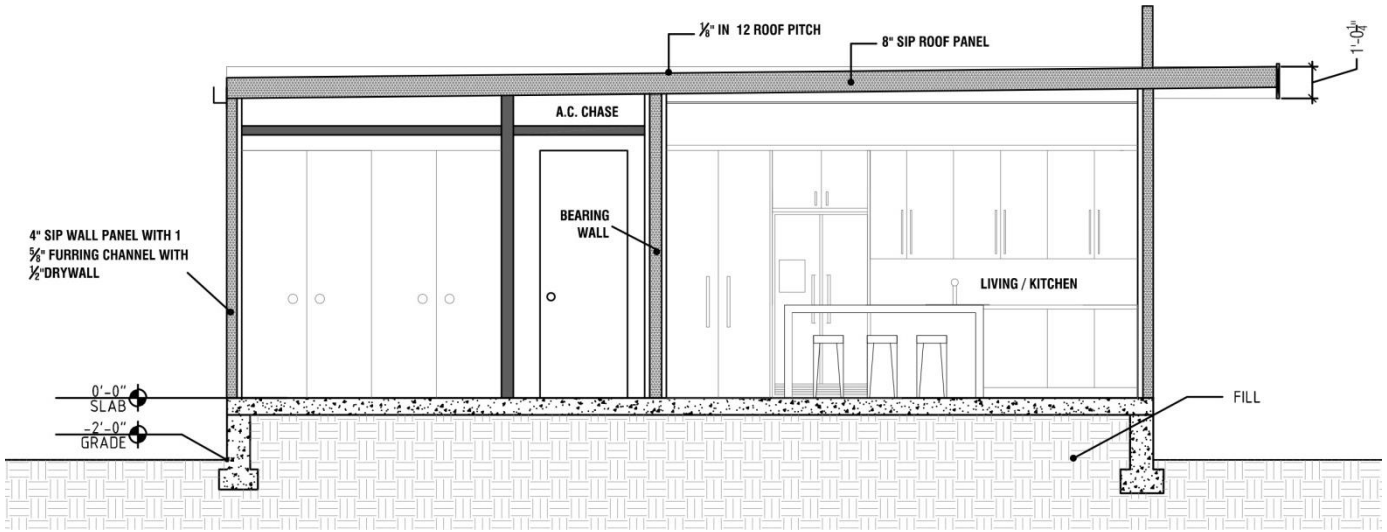
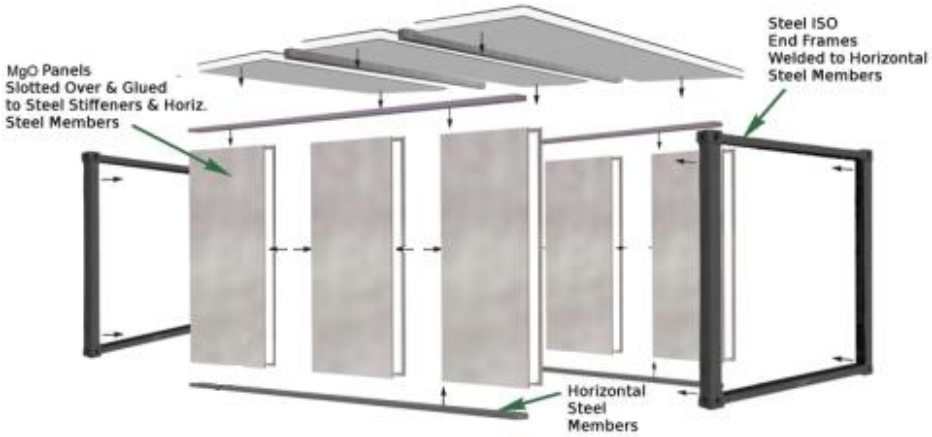
Sections

-To meet Flood Zone requirements, The structure will be raised with a 2' Concrete Stemwall.
-The SIPs will be anchored directly to the Floor Slab.
-The interior finishes are kept as minimal as possible with a polished concrete flooring throughout the building, Drywall finish and flush stained wood panels for doors, closets and cabinets will provide warmth.



Building Section



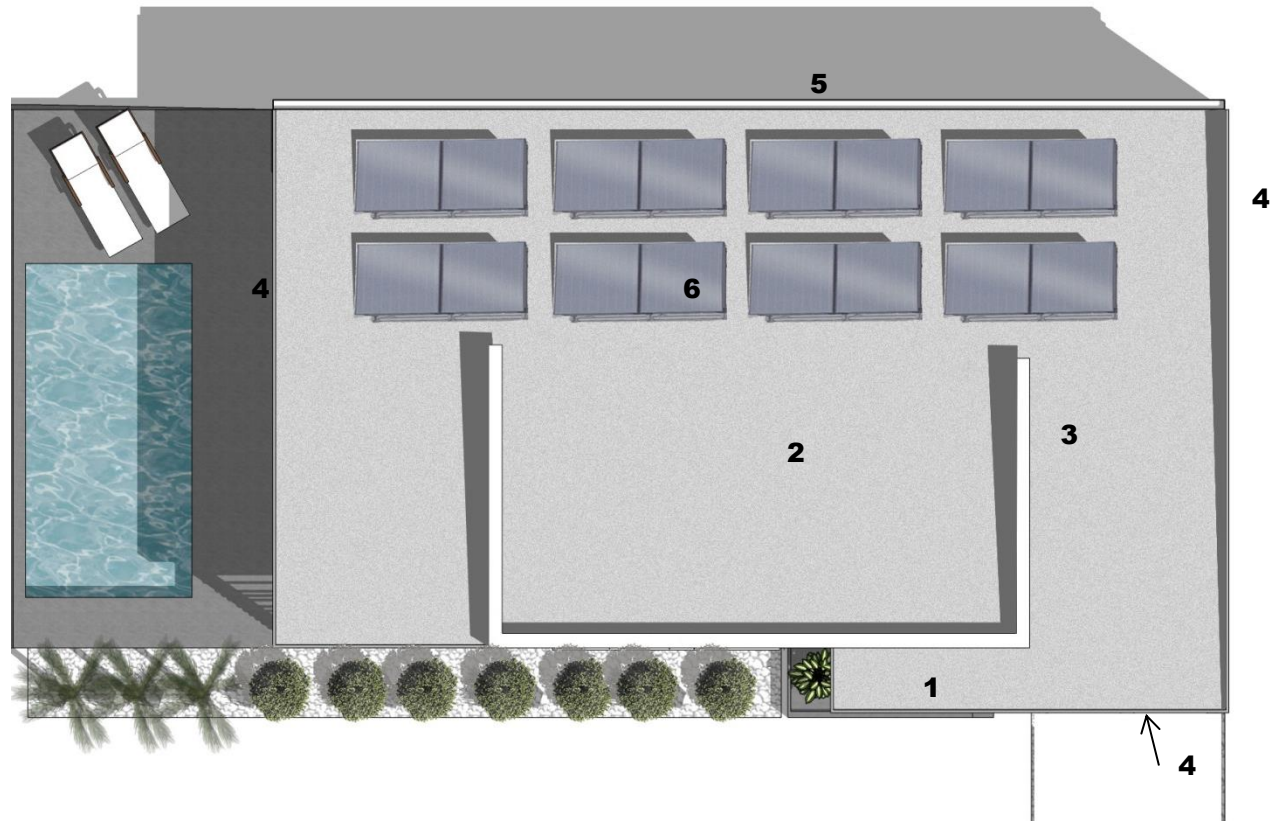
SIPs panel assembly

Horizontal SIPs panel

SIPs panel with window cut-out

Interior wood finish

Interior concrete floor finish



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Roof Plan

The roof is simple and maximizes areas for photovoltaic panels. With it's light reflective color, it will minimize solar heat gain.

The roof will be build entirely out of SIPs and properly waterproofed and sealed with a layer of thermoplastic membrane and SIKA roofing sealant.

Legend

1.Cantilevered roof over entry

2.1/8" sloped roof system

3.Parapet wall

4.12" straight fascia (PT Wd w/ painted fine sand stucco finish

5.Rain gutter w/ rainwater collection for irrigation

6.Solar panels

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Elevations

South (Front) Elevation

The elevations are kept simple with ample daylighting and a smooth stucco finish as the predominant material. The car port roof wraps around the corner and cantilevers over the entry for rain protection and subtle sense of entry.

The french glass entry door, with its side light provides light for the kitchen located right behind it. Sliding panels build out of reclaimed wood slats on either side of the great room windows act as additional sun protection to the south sun and add an interesting and ever-changing dynamic to the elevation.

Additionally, fixed slatted reclaimed painted wood panels attached to the porch will give additional sun protection, as well as some privacy to adjacent properties and street. It can also provide a spot for a vertical vegetable/herb garden for the client.

20’ 8’ 4’ 0’

West Elevation

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Elevations

The **South elevation** opens the Living room to the covered exterior deck giving plenty of protection from the hot Florida sun. Additionally, the slatted reclaimed painted wood panel attached to the south side of the porch will give additional sun protection, as well as some privacy to adjacent properties and street.

The Master room opens up to the pool deck as well. Reclaimed wood panels to either side of the sliding glass door are attached to tracks underneath the roof and can be used as additional sun protection. The panels, even when closed will allow for light to come through.

Materials:
-White stucco with scoring
-Low-e impact sliding glass doors
-painted stucco roof fascia.
-steel column wrapped with cypress wood

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Sections

The north/rear elevation is simple in nature and a fixed wood panel area is provided to break up the monotony and add some texture/warmth.

8’ 4’ 0’ 12’

North Elevation

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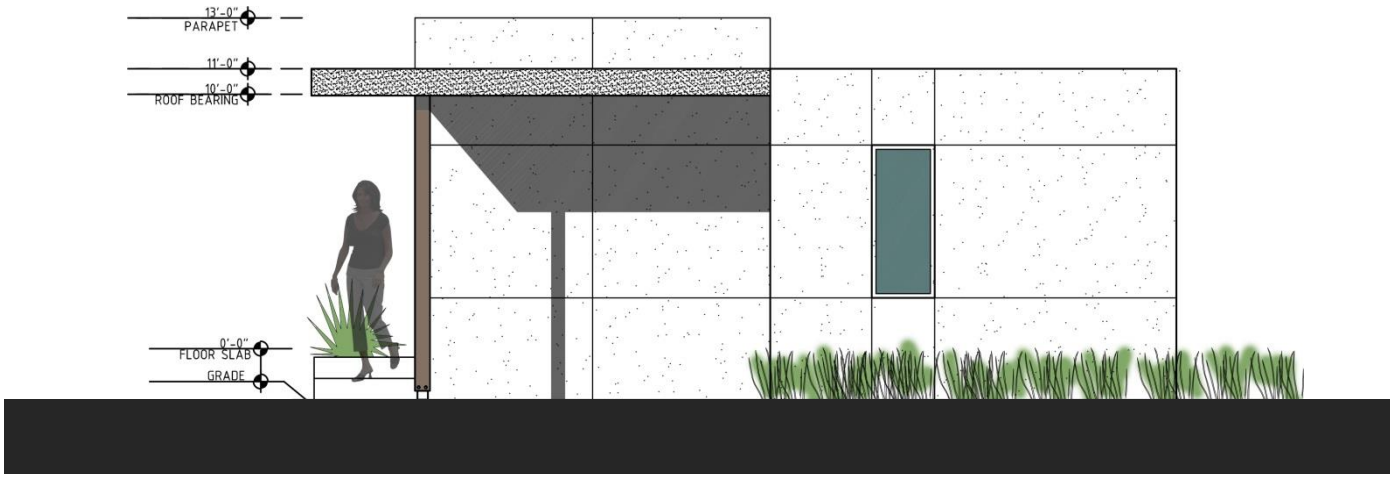
Elevations

The east illustrates the carport which has a steel column clad in cypress with exposed bolts. A tall linear window provides lighting into the rear bedroom.



East Elevation

0’ 4’ 6’ 10’

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Process Renderings

3D renderings were utilized to finalize the form and proportions of the residence as well as used for a framing layout in order to coordinate with the structural engineer and contractor.

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Final Perspective Rendering

3D renderings were utilized to finalize the form and proportions of the residence as well as used for a framing layout in order to coordinate with the structural engineer and contractor