

La maraVilla de Moho

Along the Moho River in the Toledo District, Belize

OUR STORY

Three women met during a vacation at the Cottonwood Lodge. All equally inspired by the location and way of living, they realized they had three different lifestyles but saw a common goal. One - married with no children and moving to second phase in life, another - still working but the kids are gone she desires simpler life, the last - professionally driven and uninterested in having children but is headed toward marriage.

All three no longer want the commitment to owning a house. They thrive on the idea of a simpler life with shared responsibilities and helping the environment with others of like mind.

While a business venture, La maraVilla de Moho is also a place we want to call home.

- *Ainsley, Tina & Pandi*

WHY BELIZE?

-Inexpensive - Uncharted Territory - Weather - Natural Resources -

-One of the few places that offered everything each of us wanted-

After much time spent in negotiation with the owners of the Cottonwood Lodge, both parties have agreed upon a purchase arrangement. Mara Villa will grow out of the existing footprint of buildings, gardens, and irrigation systems of the Cottonwood Lodge. Since our new community will be a permanent residence for its occupants, we will modify the existing structure currently used as vacation accommodations, and turn them into permanent homes. Improvements to the the kitchen and dining structures will be made. Additional buildings will be constructed housing a gym, work spaces, bunkhouses and entertainment areas. We will live off the grid, with the addition of a solar field to power the community.

A COMMUNITY OF INDIVIDUALS WITH THE COMMON GOAL OF:

Living in an integrated environment, slowing down without surrendering modern amenities, living sustainably as we work with nature – not destroy, not find a place we fit in but, create a place tailored to our needs;

- use native materials on our steel build homes
- build within existing parameters with minimal impact
- leverage local resources such as river, solar, rich soils, local plants, fruits, veggies, animals, fish
- a site that has river and road access
- embrace surrounding communities not push them out.



Call La maravilla "HOME"...

Village Homes: A Case Study In Community Design

COMMUNITY LIVING CASE STUDY:

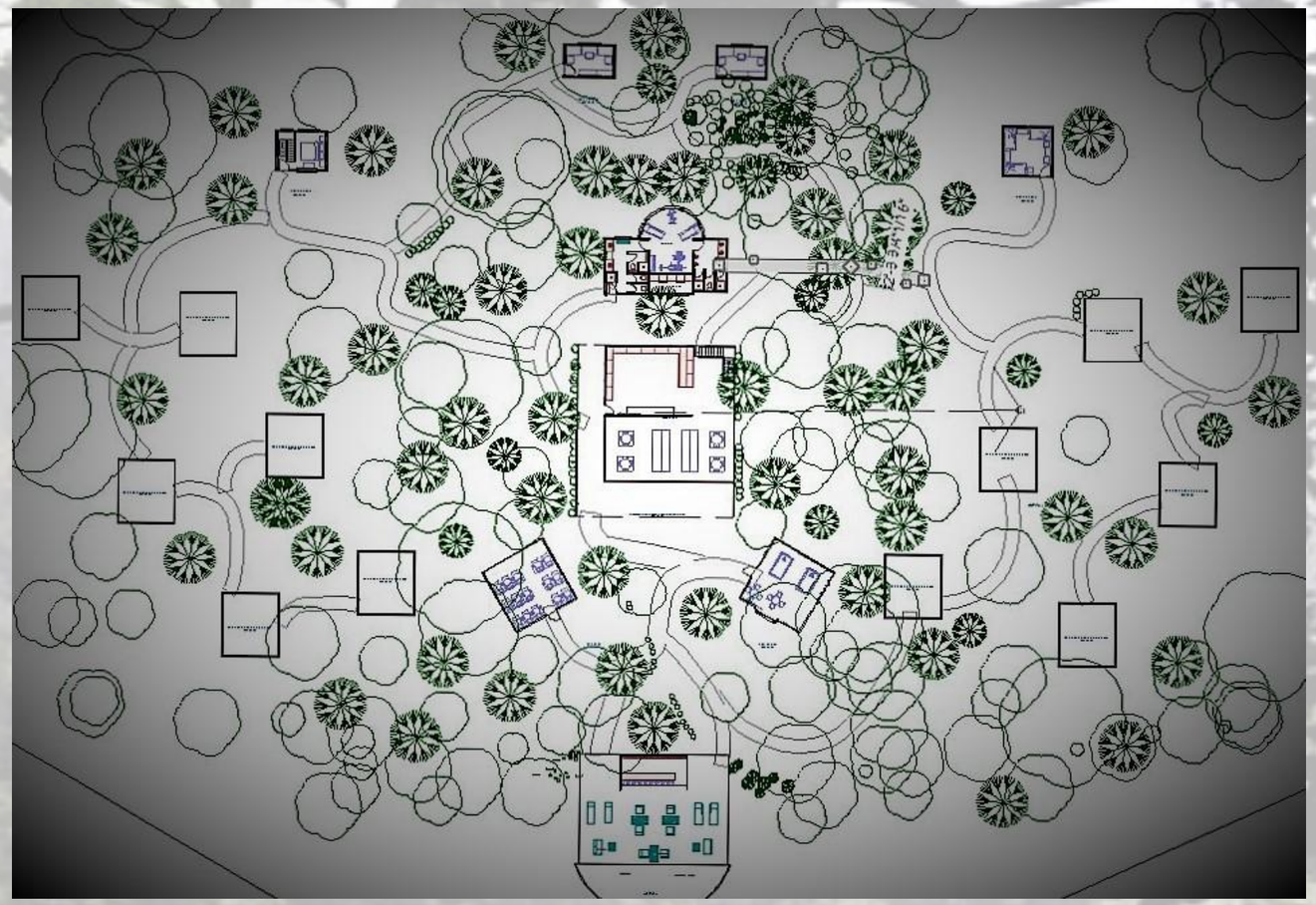
Village Homes was created to be a sustainable community designed with landscape architecture. The plan was essentially created by the developers, but they built in opportunities for residents to participate. Much of the plant material in the community is either edible or native - using community gardens that all residents are able to contribute to and take from. The community center is no more than a five minute walk from the farthest houses. They incorporated open channel draining and efforts to reduce energy consumption.

Mark Francis



<u>In adherence to the National Environmental guidelines provided by the Brazilian Ministry of Natural Resources MaraVilla will abide by the following principles in all of its building practices and land utilization:</u>

- No building permit is required, only need a building permit in Belize City, Cayes, and Belmopan regions.
- Buildings will be built off ground on deep pilings, and off ground to prevent water damage to the structures.
- To reduce insurance costs, do not build with thatch - Insurance will not cover thatch roofs.
- Structures will be built with steel framing, reducing insurance costs from 5% of the value of the structure for stick built, to 1.2% value of building.
- No municipal sewer lines – create a self-contained system.
- Any over water structure will be built with strong natural materials, or those that look natural.
- Construction on the property will take place during low water times of year.
- Cleared sections will be revegetated.
- Vegetation from disturbed building areas will be preserved in our gardens and available for replanting in disturbed areas once construction is completed. All vegetation will be added back into the natural environment.
- Any lights will be directed away from the river & must be on a motion sensor (sct. 4)
- No construction material will enter a waterway.
- No use of stains and paints used on over-water structures.
- Bar will cover less than 500 square feet of water way.
- Structures over 6 feet wide will be constructed of translucent material as to not inhibit plant growth along waterways.
- All over-water structures will meet energy demands by using up to 50% renewable energy.





Philosophy in action....

Organic Linens - WHY WE USE BAMBOO

Sustainable
Bamboo is amazing – it is one of the fastest growing plants in the world. Once harvested, bamboo can replenish itself within a year and some species grow a whopping 120cm per day! It is a naturally prolific and resilient plant, which does not need fertilisers to boost its growth, or pesticides to protect it, since bamboo is naturally pest-resistant. This sets it apart from cotton or timber, which needs to be replanted at every harvest and requires extensive spraying and watering to achieve optimal growth.

Eco Friendly
Since bamboo requires very little water to grow, it is an environmental wonder-plant. As if this were not enough, bamboo absorbs more carbon dioxide from the air than either cotton or timber. It also releases more oxygen into the environment which improves air quality.

Biodegradable
Bamboo is 100% natural and biodegradable which gives conscientious consumers real peace of mind. Once you have no further use for a bamboo product you can rest easy, knowing that it will return to the Earth leaving minimal environmental impact. It is so much better to enjoy a product that has a small environmental footprint and leaves barely a trace.

CASE STUDY - Water Treatment

Ecological Sanitation in Brazil and Central America takes place via reedbeds for the treatment of black water & greywater to improve sanitation. Constructed reedbeds served a 4-household community. 5 Reedbeds were studied, and the best of the 5 produced the following results: The beds used only local resources, and incorporated low-maintenance design features. The local plant species Coix Lacryma-jobi was identified as being the most efficient at creating greater root biomass and thus able to filter greater amounts of grey/black water. Incorporating PET (plastic bottle segments) as a media in the reedbeds replacing rock and gravel, the plastic removed comparable amounts of fecal coliform and BOD, reducing the cost of producing these reedbeds. These reedbeds were able to treat graywater in Latin America according to current treatment requirements.

Stewart C. Dallas

Sustainable "Cradle to Cradle" Water Efficiency:

Belize has a high water table and due to plentiful rainfall Belize replenishes, annually, its water table, that is depleted through use of wells.

- La maraVilla will use river water to irrigate our gardens and water our animals.
- Filtered well water will be used in all living areas of the villa.
- An engineered Reed Bed will be used to filter black and grey water before returning it to the water table.

Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment.
Solutions to one problem must be solutions for all.

Ban Ki-moon

AMENITIES



5000 Square Feet of Community Living located in the heart of the Belize Jungle.

- Enjoy 2,425 sq/ft of indoor outdoor dining. Sit with your friends, or enjoy some quiet time with a loved one. Ascend to our fully enclosed glass second story containing lounging areas and a fully stocked bar, or sit on our patio and enjoy a cool evening breeze next to a fire. Enjoy cooking? Take advantage of our state of the art commercial kitchen and prep areas. The farm to table experience is just out your back door, and at La Mara Villa, always fresh!





- Boasting two bunkhouses, family and friends can visit you in Belize and take advantage of 500 sq feet of sleeping accommodations. Provided, is a true “bunk-bed style” bunk house and, a second two story house that accommodates two families at a time.

- Part of the sustainable lifestyle, is staying fit. The Villa provides its residence access to our 675 square foot - Gym/ Bathhouse/ and Laundry facilities. Who wouldn’t want to spin away while enjoying views of a garden growing, and farm animals grazing in their own backyard.



- Two library workspaces are provided for residents, providing 300 square feet of workspace. They house six separate work areas, copy, print, and fax capabilities. Life along the Moho may be out in the middle of paradise, but it is fully connected with High Speed Internet.



- In the evenings, we can accommodate whatever you are in the mood for. Want to relax and watch a movie? Enjoy our 424 sq ft. theatre experience. Want to play games? With 431 sq. ft. of billiards, poker and shelves full of board games, you will find exactly what you are looking for.

- The Highlight of living the Moho lifestyle is the river, so living here would not all it could be if it was not for our river front deck. Overhanging the Moho River, it is large enough for yoga in the morning and bands and dancing in the evening. It boasts a 200 square foot bar, that serves as a juice bar in the morning, and a fully stocked bar in the evening. Backing to it are additional powder rooms.

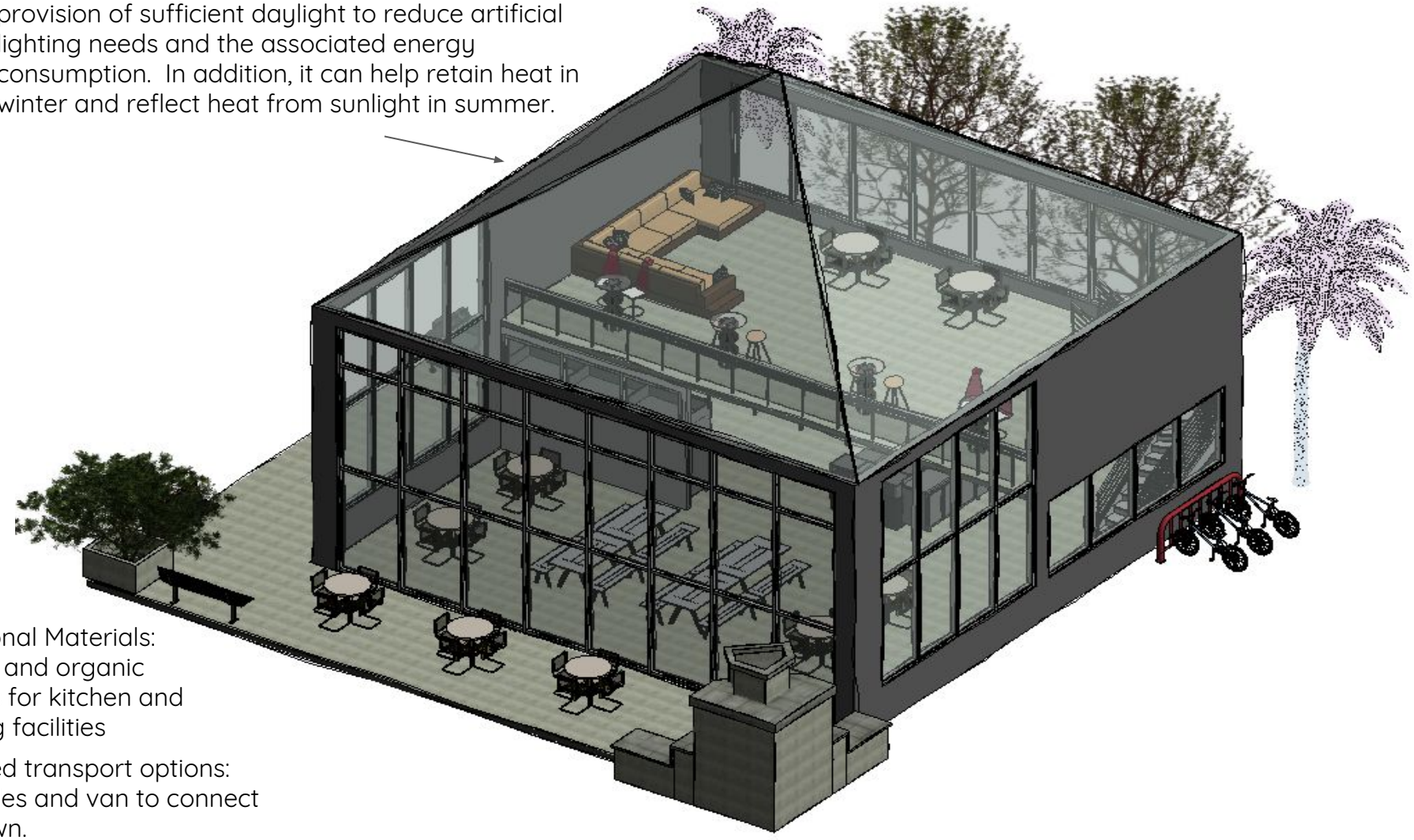


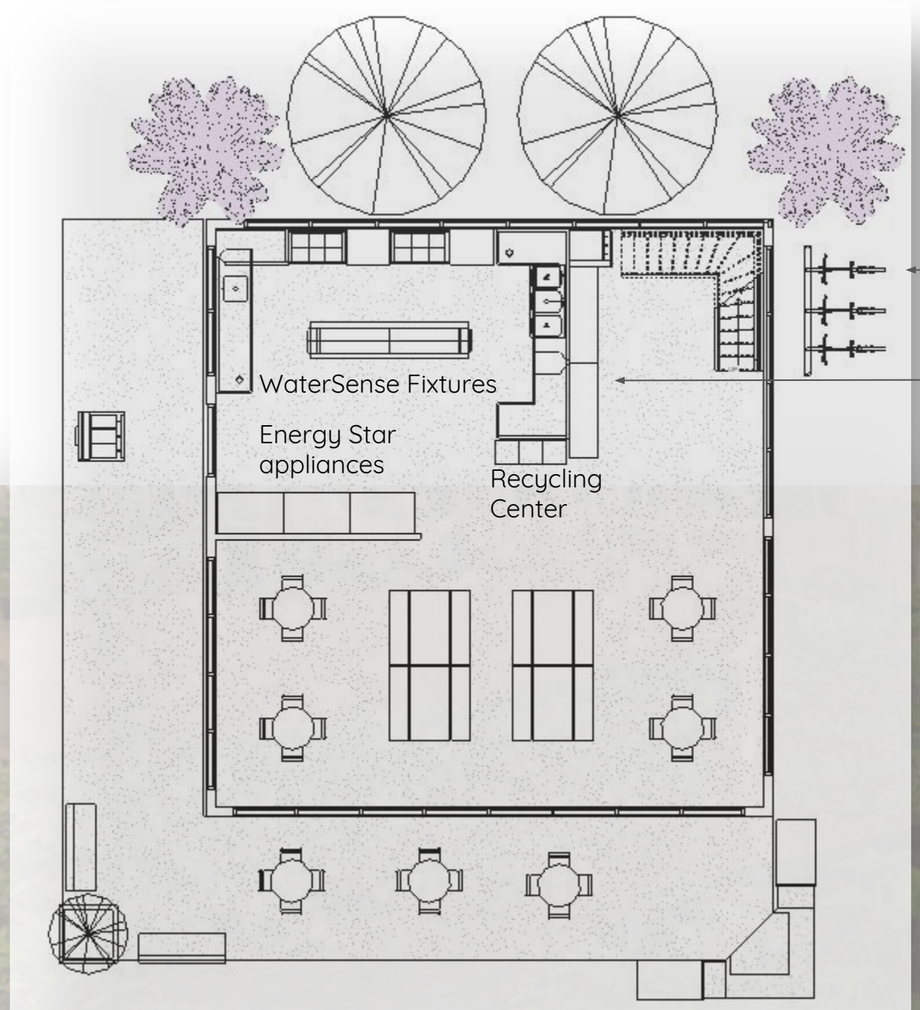
DINING FACILITIES

CASE STUDY - IEQ

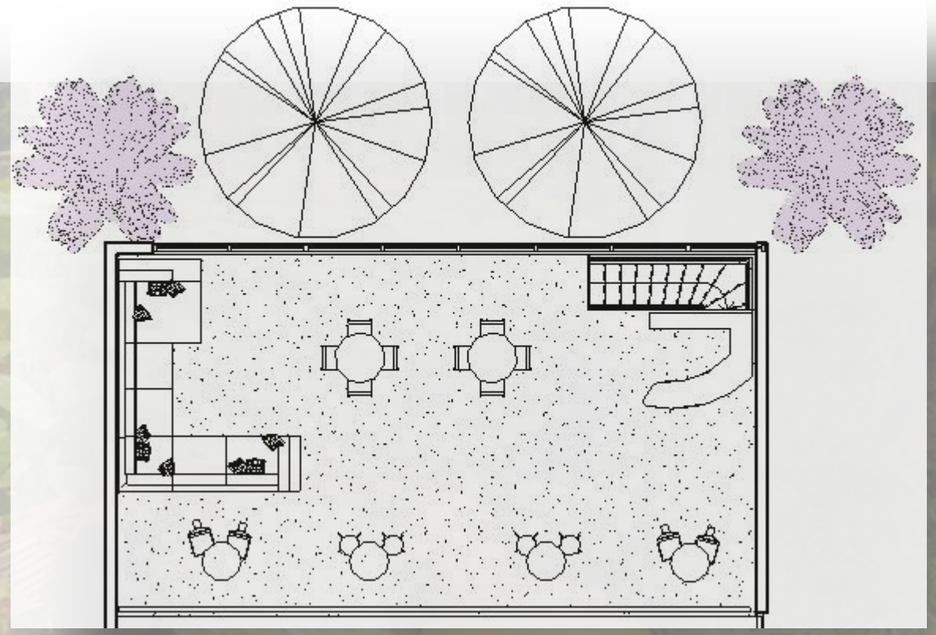
NanaWalls were used in the first LEED Platinum home in CA. Architects tend toward the low window-to-wall ratio because even high-performance triple-glazing and similar solutions rarely approach the U-values offered by opaque envelope materials. However the construction manager for this project took on that challenge. With natural daylight and ventilation in mind, NanaWall's SL60 Standard Thermally Broken Aluminum Framed Folding System were specified for the opening to his patio. "They allow us to extend living space in our projects, by bringing the outdoors inside, and vice versa. Our homes 'live larger,'" McDonald boasts.

Low-e glazing offers both a positive balance of energy through the building envelope, and the provision of sufficient daylight to reduce artificial lighting needs and the associated energy consumption. In addition, it can help retain heat in winter and reflect heat from sunlight in summer.





- Regional Materials: Local and organic linens for kitchen and dining facilities
- Shared transport options: bicycles and van to connect to town.
- Material Reuse: Fixtures and Appliances Stainless steel is a resilient, 100% recyclable, hygienic material



Main Level: 1514 SF
Upper Level: 817 SF
Total: 2331 SF

Sustainable building materials....

At Villa, our goal is sustainable community living. When you join our community in Belize, you can rest assured that you are living and building Green. Not only will the buildings be Green, but all work done will be completed by local artisans and craftsmen enlisted to help create our new community from landscaping using only local vegetation, to building and creating cabinet and millwork. All furniture will be sourced within Belize.

Materials used in all structures from community living areas to private residences will incorporate the following materials in their buildings:

All new structures will be steel frame construction – buildings built to last, reduce maintenance and over the long term due to durability reduce the need for structural building repairs.

All buildings will be insulated with Green Spray Foam Insulation – An airtight insulation that has low VOC emittance as it is sprayed. Sealing all metal and protecting against moisture and mold.

EXTERIOR SURFACES:

ROOFS: Thatch, Metal, Terracotta or Low-e glass. *Note homeowners will accept the loss of insurance when choosing a thatch roof.
SIDING: Stucco, Cementous Siding, Natural Stone, Metal

INTERIOR FINISHES:

Native woods, Cement Board, Non-VOC Paint (Harmony – Sherwin Williams, Tile, Nora Floors, Nana Walls

- **STUCCO -** eco stucco™ is a range of proprietary lime plasters designed to provide healthy, functional, and sustainable mineral finishes for interior, exterior walls and ceilings. These finish systems decorate and embellish walls & facades in the form of artistically hand-troweled artisan plasters. Essentially composed of natural mineral with minimal but expert preparation, eco stucco™ results in a long lasting crust of calcium carbonate derived from both the presence of sand and the carbonation of lime. Stone exterior *limestone is native and popular.

- **FLY ASH -CEMENTITIOUS SIDING -**A maker of fiber cement siding, Nichiha, joins CertainTeed in using fly ash—a waste residue of coal combustion—rather than silica. Nichiha also boasts of observing a host of best practices in their production process, sourcing material locally, recapturing 95% of the water used in its facilities, and recycling 100% of the scrap material it creates

- **NATURAL STONE –** large limestone quarries are available in Belize, allowing stones to have limestone construction similar to the structures built by the Maya.

- **METAL:** roofing and siding that is rated with a: G90 Galvanised Coating- Hot-dipped.

- **NATIVE HARDWOODS -** One of the treats of building in Belize is the incredible variety of native hardwoods that are available. You can have an open beamed ceiling that shows off some of these woods in the beams against a sheetrock surface, or you can go for having the entire ceiling of hardwoods and left open. **Zericote, Jatoba, Mahogany, Poisonwood, Granadillo, Santa Maria, Prickly Yellow, and Black Cabbage Bark.**

- **TILE:** In the colonial Belize ceramic tiles from Portugal and Holland were rapidly incorporated to the national culture as ceramic tiles are impermeable, thus protecting from humidity. They are easy to wash and also the pieces reflect the sun providing good thermal environment when used on facades.

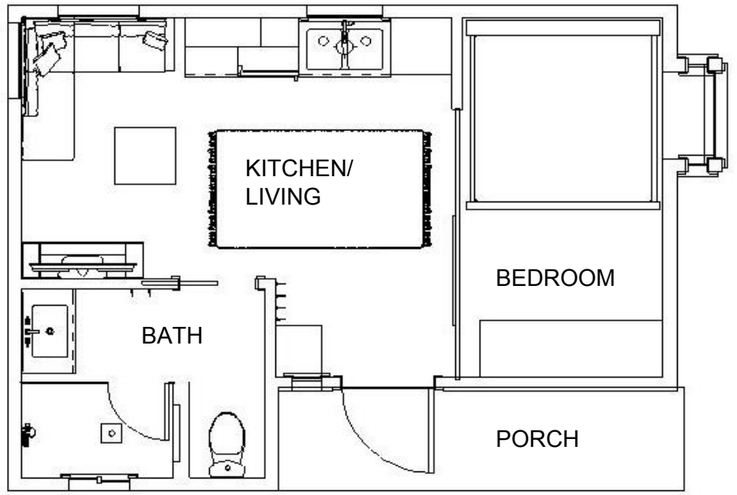
- **NANA WALLS:** for doors and windows

- **NORA** Floors in the gym/ guest houses and guest restrooms

MODEL #1 -
"Los Tortolitos"

320' of Single - Story Living
- Kitchenette
- Large Private Bedroom
- Spacious Living Area
- Solar Power
- Motion Sensored Lights
- Locally-Sourced Materials
- Community Amenities Nearby
- Private Bathroom
- Indoor Shower w/ Rainhead
- Front Porch
- Waterfront Access Optional





This tiny home is perfect for a couple. It offers a private bedroom area without sacrificing a living space or modern amenities. Enjoy an evening cocktail on the porch, with or without your friends. The choice is yours!

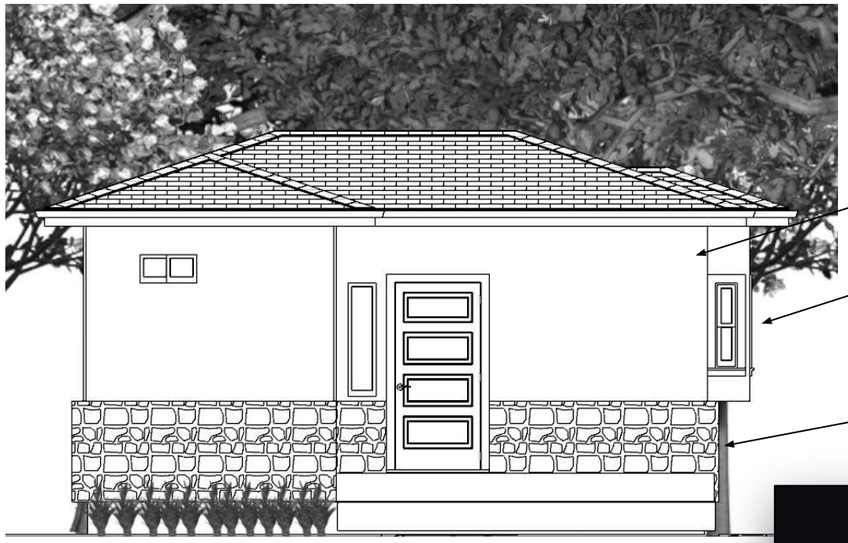


SOLAR PANELS:

The Marlboro Mushrooms Farm implemented a ground solar field to power their business. Their system, supplied by SunPower, has performed above the projected energy consumption savings, and they do not feel the use of solar is any less powerful than their previous supply. In fact, at some times they are generating more solar electricity than they are using, and no longer need to rely on the grid.

For our facility: All fixtures contain lamps that are solely LED, from our cans to pendants, walkways to accent lighting. All electricity is supplied by a solar panel field that is built to heat all onsite water and provide power to all structures, and the irrigation system. Backup generators are onsite in case of emergency.

Modern Jungle Living



TX Active EcoStucco

All Windows Low-E & Triple Glazed

Native Limestone Accent

Native Xeriscape Plants



Dark Terracotta Shingles

Mahogany Accent Siding and Deck



A STUDY IN MOTION SENSORS:

Energy use from lighting makes up a large percentage of energy consumed. Oftentimes lights are in use or left on longer than necessary. The result of using motion sensors can reduce peak demand charges as well as total energy consumption.

Occupants tend to claim responsibility for their own spaces, and therefore are conscious of their energy use. This did not often occur in shared spaces, and energy use was much higher. Results of simulation tests show motion sensor controls produce significant energy reduction in all categories.

LED Lamps powered by community's Solar Panel field



Reclaimed cabinets, finished with zero-VOC paint

PaperStone Countertop

Recycled tile, hand painted by local craftsmen

Repurposed hardwood floors

Recycled tile for floor and shower walls; native stone applied to floor and shower niche



MODEL #2 -
"Eutierria" - At one with nature

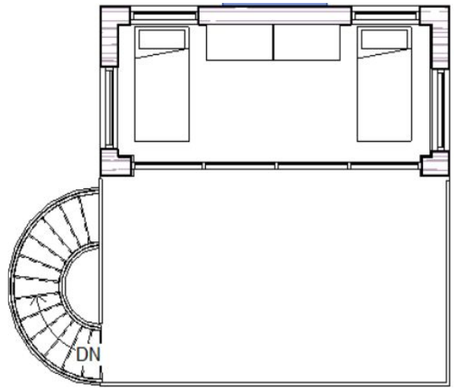
320' of Two - Story Living

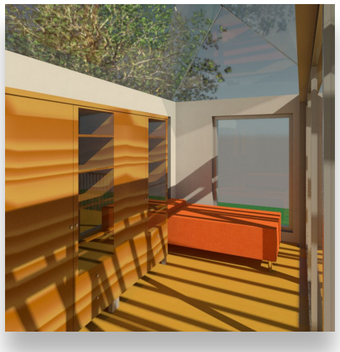
- Kitchenette
- 2nd Floor Bedroom
- Spacious Living Area
- Water Closet
- Outdoor Shower
- 2 Decks
- Waterfront Access Optional



Harmonious Living

This tiny home is perfect for two - three friends. The first floor living space provides a kitchenette, lounging area and space-saving sleeping area. The second floor living quarters features a glazed ceiling that gives new meaning to sleeping under the stars. Two outdoor patios and personal care areas enable you to reach "Eutierria" -- being one with nature.



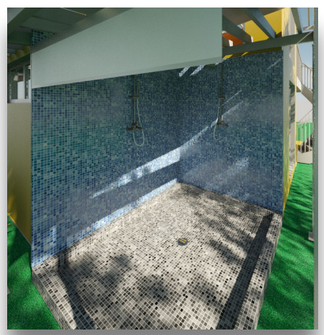


Star Studded Dreams

Imagine lying in bed each night enveloped in a blanket of stars.

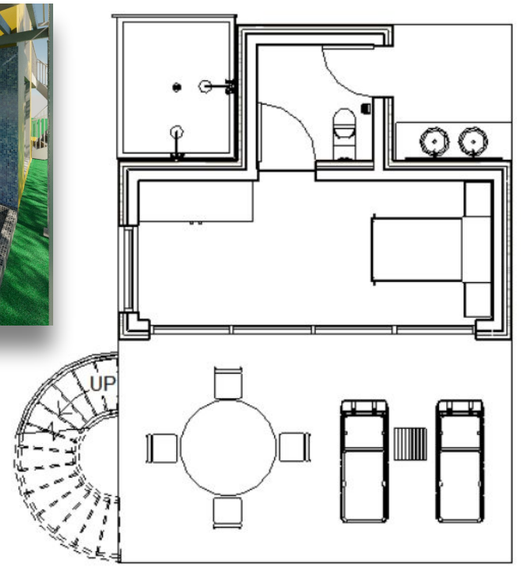
Composting Programs Revamp Resource Utilization

The U.S. Navy's Naval Station Great Lakes, near Waukegan, Illinois initiated a campaign to add a composting component to their waste management program. The composting project alone amounted to more than 300 tons of food scrap and landscape waste diverted from area landfills. Separation of biodegradable wastes at source allows for the promotion of home composting, or composting within our Moho community. This management route for biodegradable wastes has two major advantages: the environmental impacts of waste transport and handling are avoided; and we will use the compost product In our community garden. Additionally, separating our own waste stream raises the awareness of our community dwellers regarding waste generation and will increase a sense of responsibility for resource utilization.

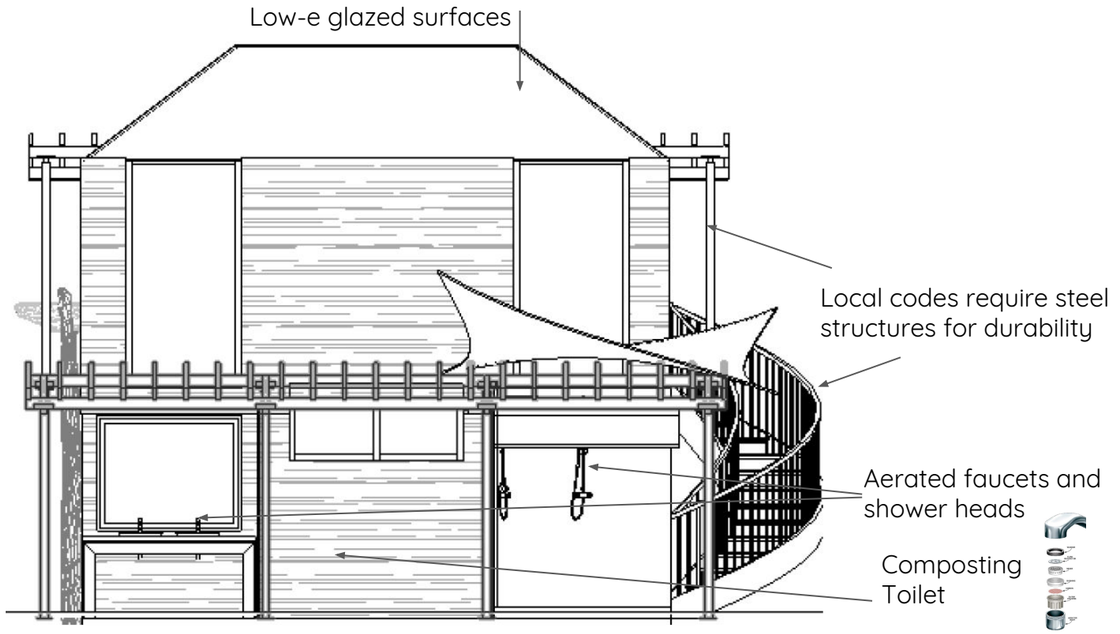


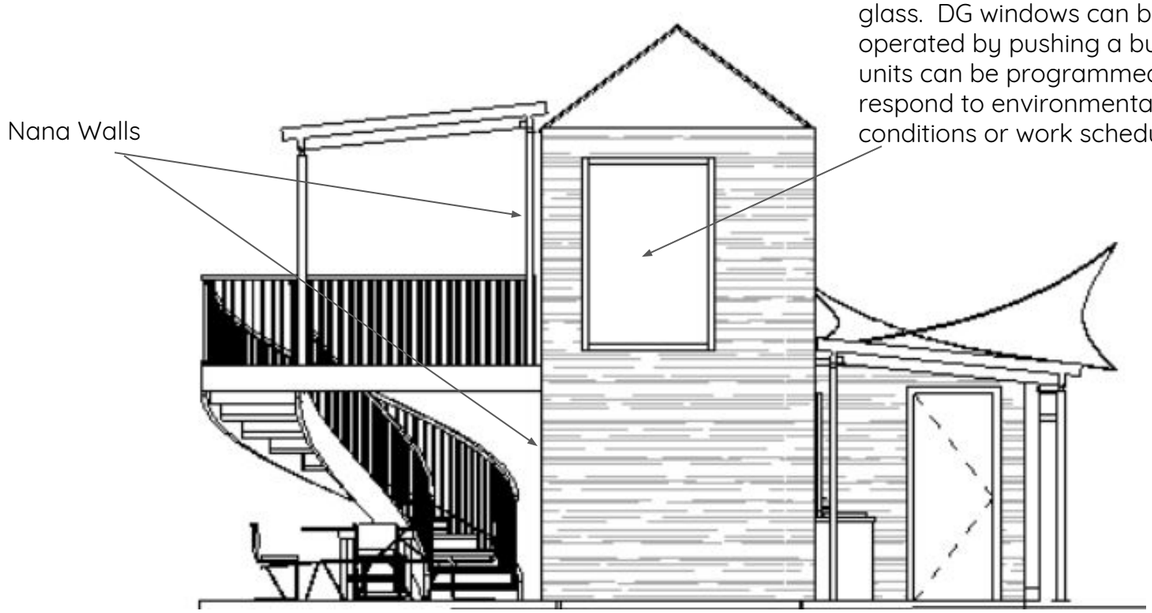
Lather in Luxury

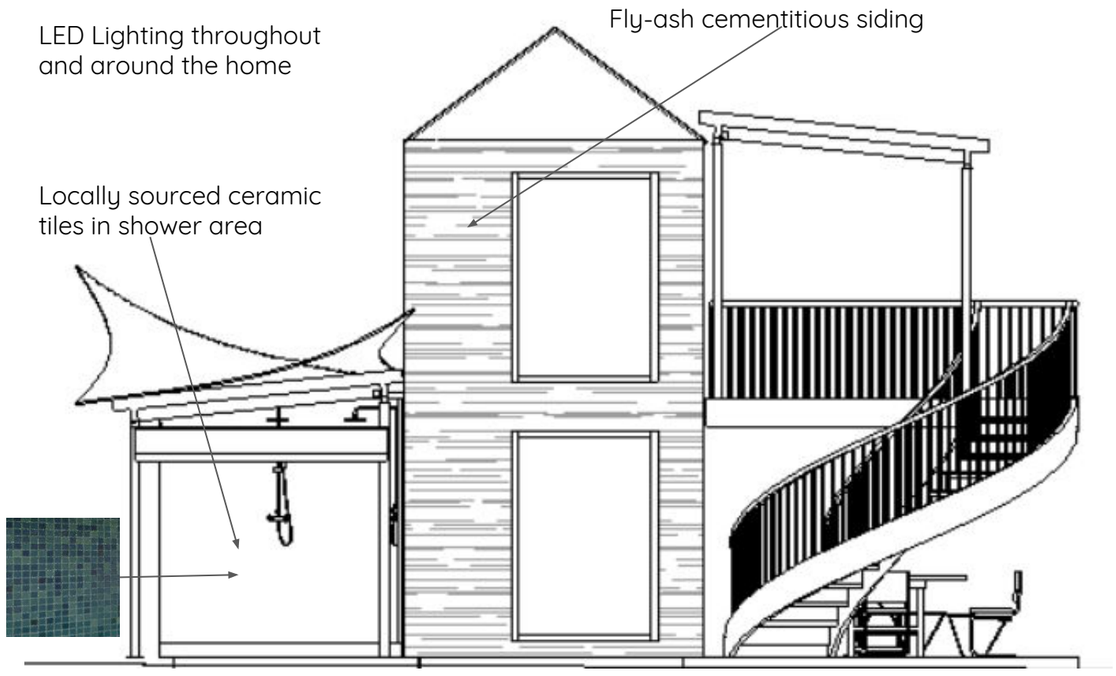
Lather away in the outdoor shower unit with adjustable privacy screens.



"Eutierria"







Key contributions of glass to sustainable, low energy buildings.

While we all take for granted that buildings must be equipped with glass, its numerous benefits in buildings are mostly ignored. Glass is a major contributor to energy efficient buildings.

Half a century ago, even before the advent of modern glass technologies, energy savings minded architects were using glass in a smart and innovative manner to design what we now call ‘nearly-zero energy’ buildings. One pioneering example was the design and construction of St George’s School in Wallasey, UK, back in 1961. The school successfully captured free solar heat gains to minimise heating needs to the extent that its heating system did not have to be used for the first 16 years.

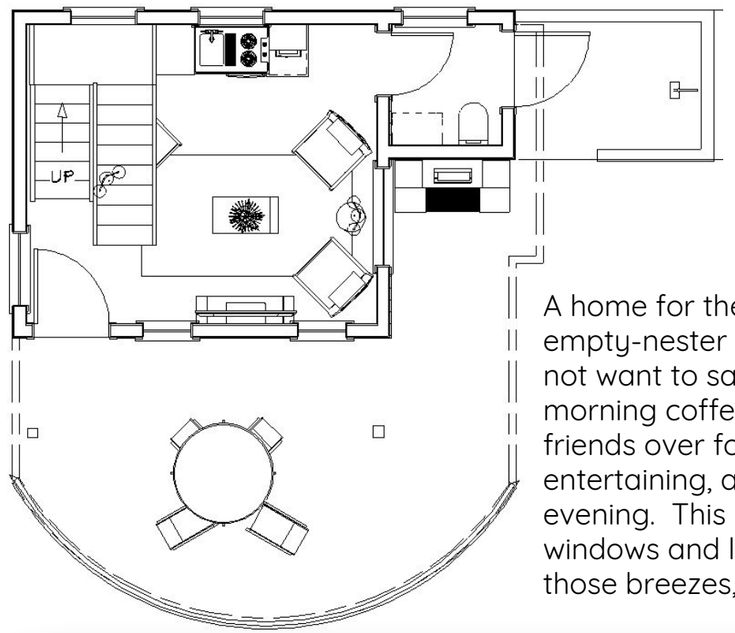
The increased focus on intelligent building design and constant technological advances in glass products mean that integrating large glazed surfaces in low energy buildings has now become even more achievable. Technological innovation such as the use of double and triple glazed units with inert gas filling and invisible low emissivity coatings have significantly improved the insulation properties of windows and facades. Such glazing products allow maximum natural daylight into buildings and can maximise or limit solar heat gains, depending on the desired thermal objectives and energy balance.

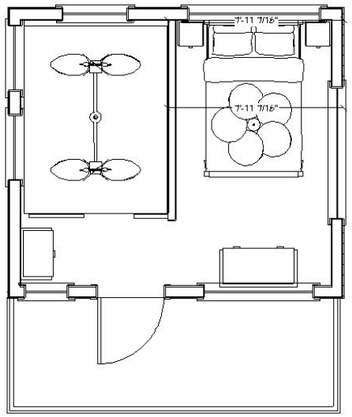
MODEL #3 -
El Pequeno Grand Hombre

320' of Two - Story River -Side Living

- First Floor - 213 sq/ft
- Loft - 112 sq/ft
- Spacious Living Area
- Kitchenette
- Loft Bedroom
- Solar Powered Exterior Lighting
- Outdoor Built-in Grill
- Water Closet
- Outdoor Shower
- 2 Decks
- Waterfront Access Optional







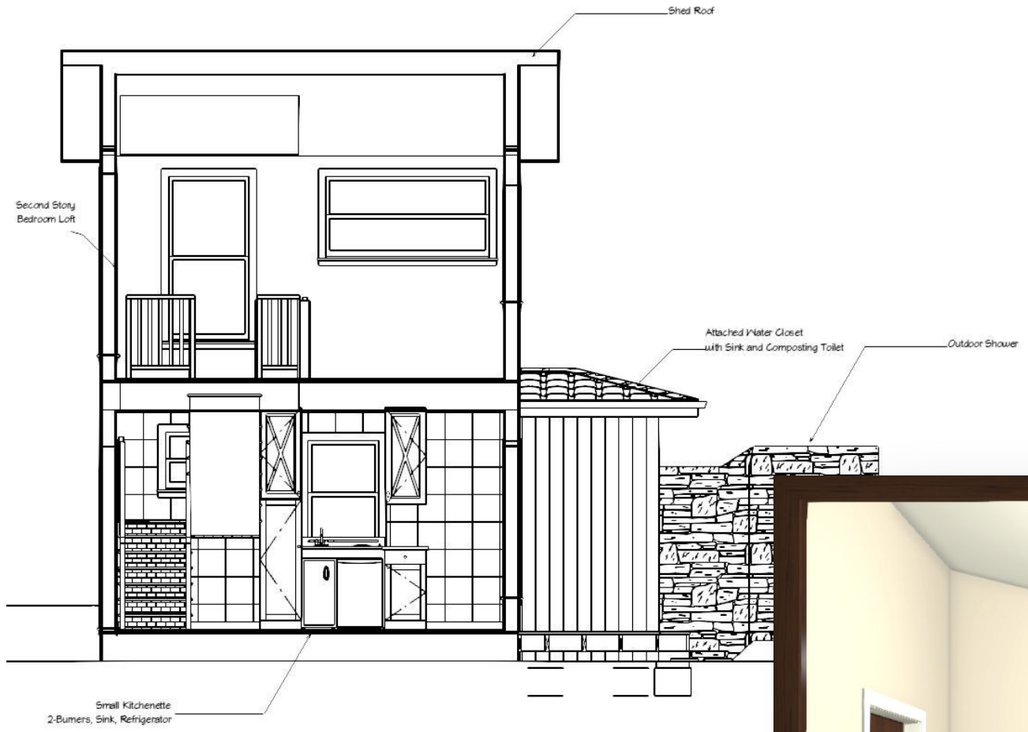
A home for the empty-nester that does not want to sacrifice morning coffees, inviting friends over for entertaining, and watching TV together in the evening. This home has fully operable windows and large fans for capturing all those breezes, keeping living cool and comfy.



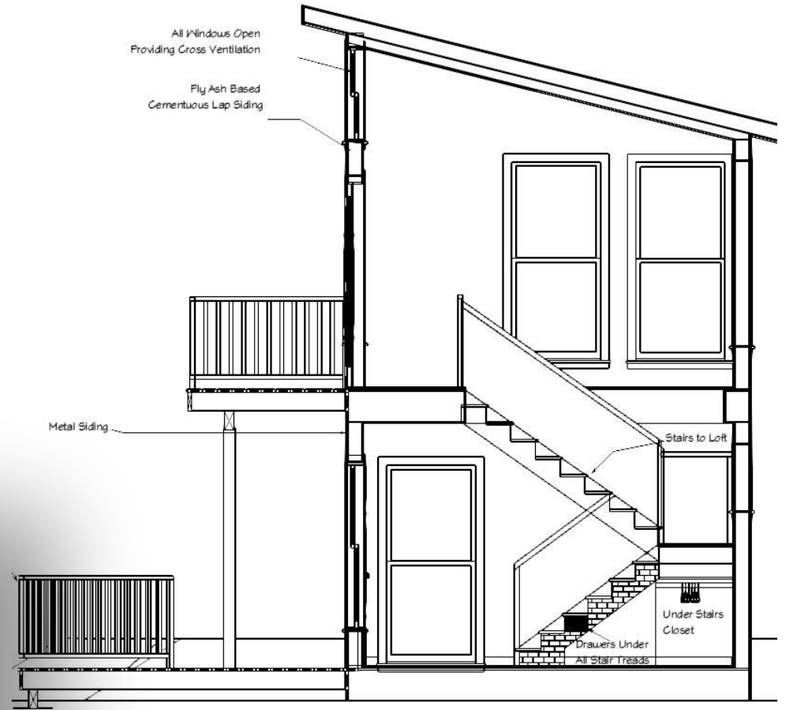
COMPOSTING TOILETS:

All of our models and public facilities feature composting toilets, drastically reducing our carbon footprint. Charles Sturt University used Composting Toilets throughout their facilities, and documented the ability for them to be capable of handling traffic, even in their cafeteria areas. Our traffic will be much smaller. Any excess liquids are directed to reed bed filtration systems. Maintenance requirements are simply: adding a bulking agent weekly, and humus turning and removal as necessary.

Not so Tiny, Tiny Living...







A STUDY IN CROSS VENTILATION:

The El Pequeno takes advantage of being a two story building thus being able to take advantage of the stack effect, providing cross ventilation for warming/ cooling in place of AC and a furnace, further reducing its carbon footprint.

Hot air rises and with windows on all 4 walls and fans able to draw in two directions, warm air can be drawn in and forced down, and warm air can be drawn up and forced out. Fans in place of mechanical devices, add to the ambiance and noise reduction over mechanical noise.

