

# ~ 480ECO *STACKED* ETHER HOME


2515 Alabama Street

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## Overview

Residential construction and the market are in need of significant change to help define what is affordable. How does design influence constructability within the parameters of affordability, sustainability, climate resiliency and the growing demand for modernized aesthetics. Meeting this design challenge with creativity and innovation, using emergent appropriate technologies and circular industry production, we introduce Eco Modular Design | Build's steel- framed *Stacked* ECO model, Ether Home; a 480 sqft one bedroom, one bath living space, placed on a 65' x 110' 'Open Category' lot at 2515 Alabama St.



The 480ECO is designed to create space to reimagine urban infill in narrow city or backyard lots.

## Affordability and Constructability

With a pre-fab, off-site, factory-assembled approach to construction, this simple but influential factor inherently brings with it many layers of ease and efficiency that changes the game of construction costs and channels them into modular predictability. This allows for better understanding affordability from the design phase. Machines and processes that are geared towards meeting modular design priorities and values. Over time, the precision of pre-fab planning will afford this replicable model economies of scale that are unmatched with on-site traditional building methods.

1. Adhering to modular design principles adds significantly to the speed of construction and design, adding factors of affordability into labor and material costs. Timelines for project construction can be reduced by upwards of 50%, generating significantly less waste than traditional building sites, both which contribute greatly to affordability.
2. Constructability is based on principles of 'green' manufacturing; efficiencies met through repetitive methodologies of fabrication, integrated workflows and adherence to processes that produce less waste, meaning a cleaner and safer work space.
3. The upfront costs associated with this structure; steel framing and siding, a well insulated, thermally-broken building envelope, hydronic radiant floors fed by an incredibly (100%) efficient electric boiler. Solar panels and water catchment also contribute to saving significant run/utility costs and maintenance.

## Sustainability and Resilience

Our passion for a better future drives us towards greater sustainability in our design and building standards as a fabrication house. With resilience deliberately factored into sustainability, we take the necessity of climate resilience in our structures to the next level.

1. Climate resilience is a quintessential benefit when it comes to metal buildings. Steel structures inherently provide remarkable durability. The structural I-beam

moment-frame and deck system serves as an exo-collar for the modules, providing exceptional anchoring strength, earthquake resilience and provides unmatched load bearing strength. .

2. We sustainably seek to buy from mills and yards that prioritize production of Net-zero green steel or Circular Steel; new stock that is produced from recycled scrap, using low- emissions EAF (electric arc furnace) technology. This introduces a 'deep loop' material into the equation as a renewable energy source. An exciting reimagining of the steel industry.
3. Refining sustainability over time can be realized through our choices in smaller 'Euro style' energy-efficient appliances. High-performance material choices also add great value to the thermally resolved building envelope.
4. An hydronic radiant (aircrete) slab beneath strategically placed highly efficient, tilting windows and doors, interlaced with Lunos GO HRV systems provide for a consistently temperate and comfy interior climate experience, year round without forced air systems.
5. Our volumetric building blocks are upcycled surplus available all over the globe; an appropriate technology. Saving 8000kWH of energy to recycle, we upcycle using only 400kWh to refurbish changing its DNA from Industrial to Residential.

## Innovation and Creativity

Replication of modular units offers many opportunities to optimize and creatively trim use of space. Innovation especially where MEP efficiencies overlap when configuring units together between shared manifolds.

1. The main floor is open, minimal and flexible. An understated elegance achieved through essentialism, showcasing the essence of industrial design merged into the residential market through modular principles and construction methods.
1. Our 2nd floor deck structure is an insulated roof for the unit below and a chaseway for utilities to pass through to respective manifolds, leaving elevated interior ceiling space for elegant low profile lighting and amenities. It also serves as a cantilevered cover for the structure's main floor entry, suspending a green wall for shade, cooling, privacy and enjoyment.
2. The second-floor bedroom comes with a built-in platform riser for sleeping and storage beneath. The kitchen interiors boast simple, colorful, utilitarian floor to ceiling cabinets, pantry and wardrobe storage. All CNC flatpacks designed and assembled in-house.



## Conclusion

We want to provide for a generational and global ecological change in philosophy. We see modular 'affordable' housing, smaller urban infill units and modular communities as a viable solution for this middle housing gap.