

I PRO 339

Container Housing
for
Chicago

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From a shipping container....



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Quick construction at a low cost....

To a Chicago house



IPRO Group Organization

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Energy

Exterior Envelope

Housing Design

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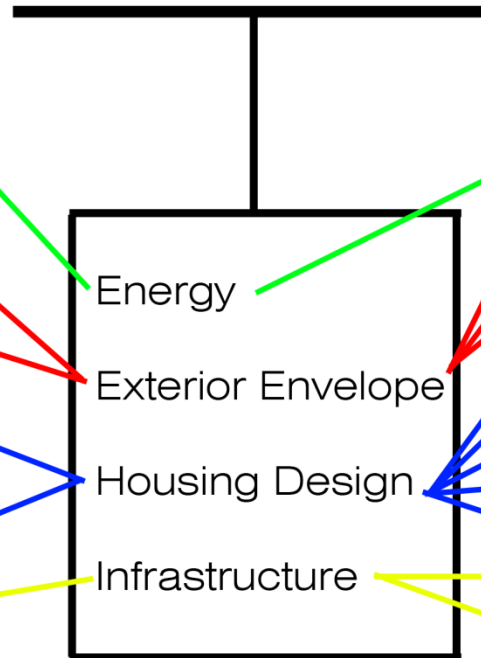
Michael Cullen

Anton Llakmani

Christopher Spedale

Rosa Villalpando

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Objectives

Affordable

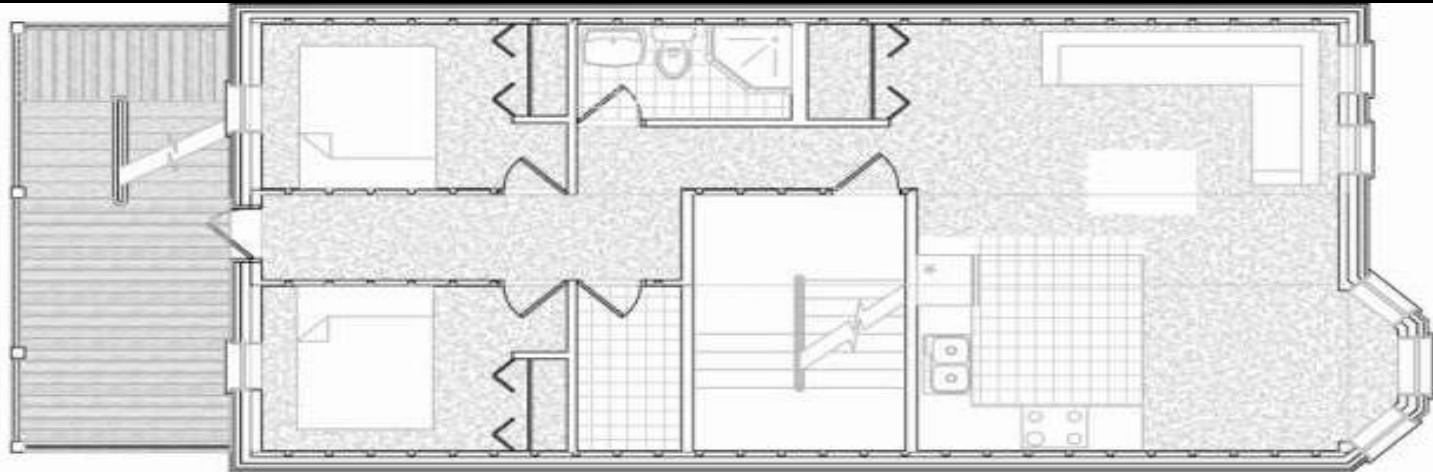
Easy/quick to construct

Finding available site

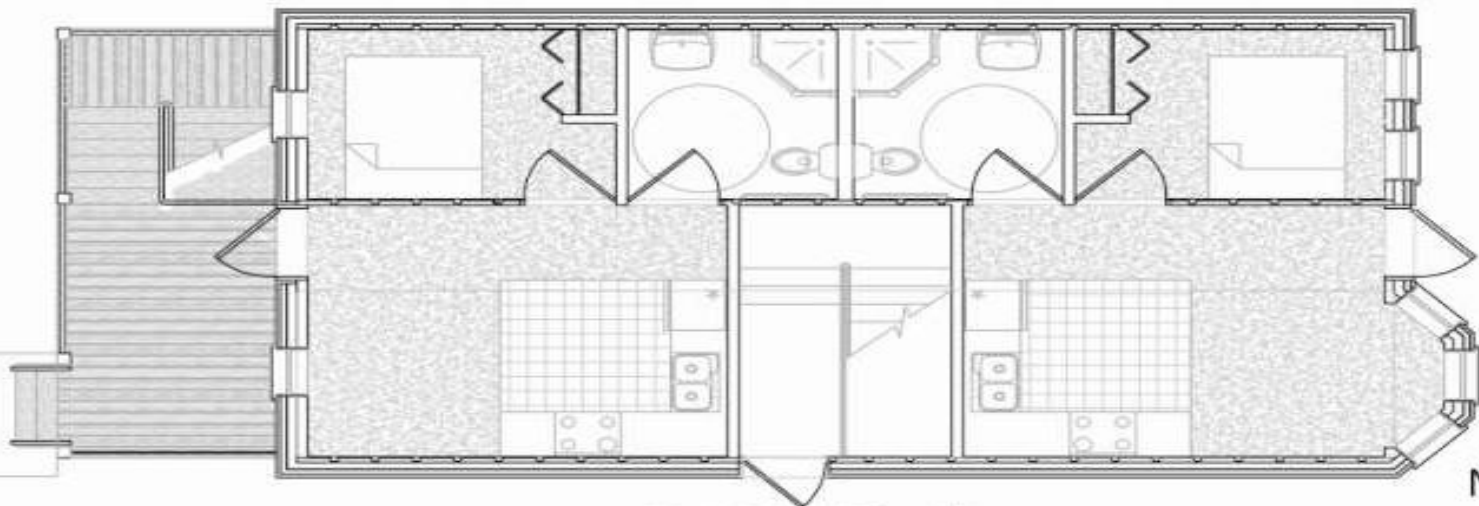
Collaboration with masonry institute

2016 Olympics

Final floor plan

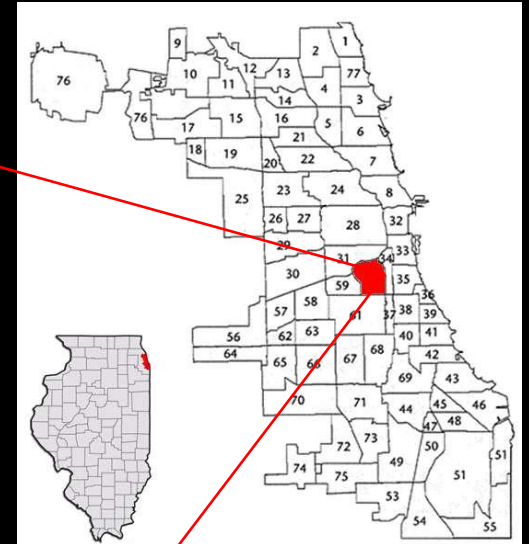


Typical Second Floor Plan

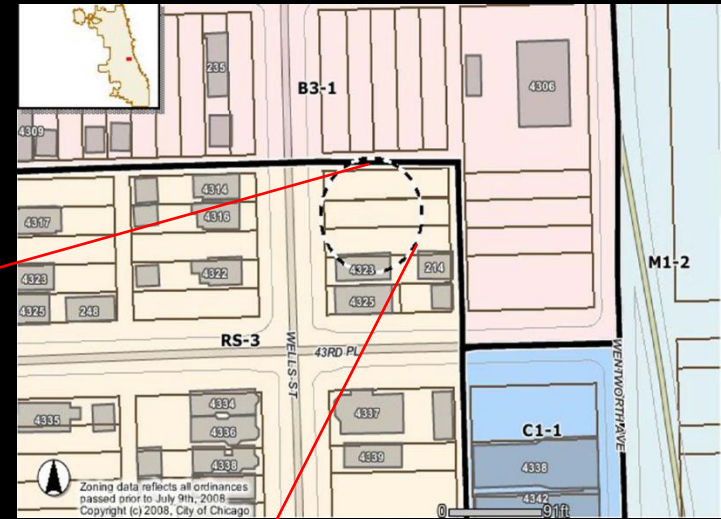
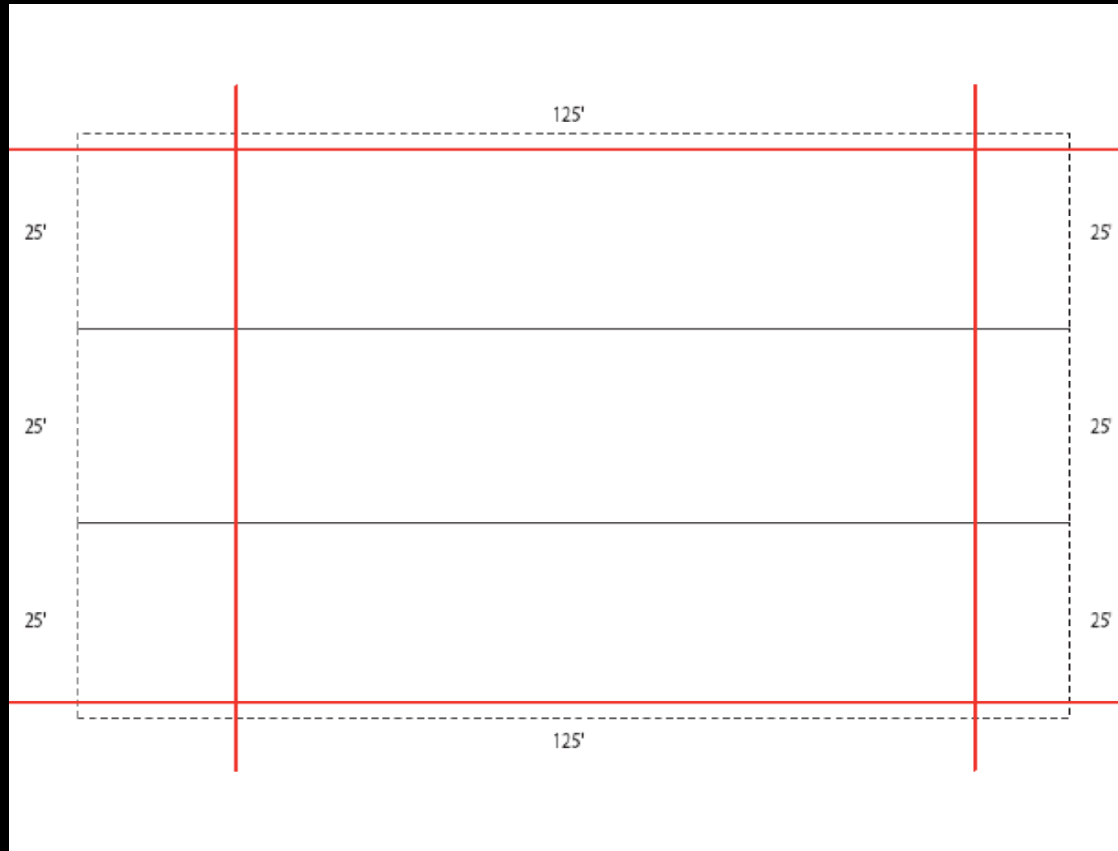


Typical Ground Floor Plan

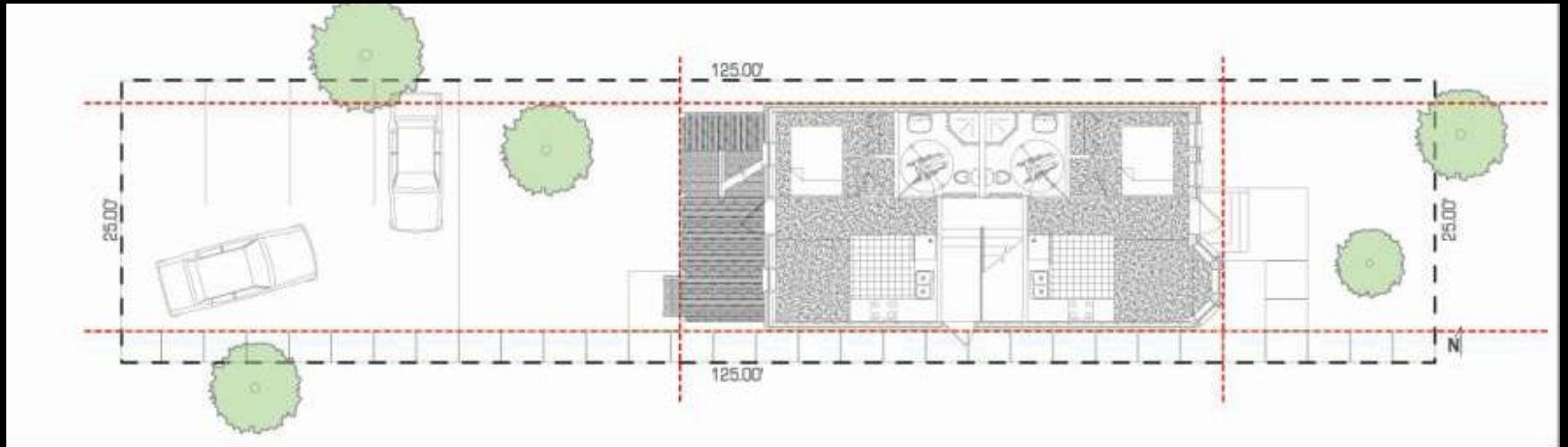
Available sites in Bridgeport



4317 – 21 s. well st.



Site plan



Appearance of final building



Exterior Envelope

Match Chicago Vernacular

Easy to Assemble

Affordable

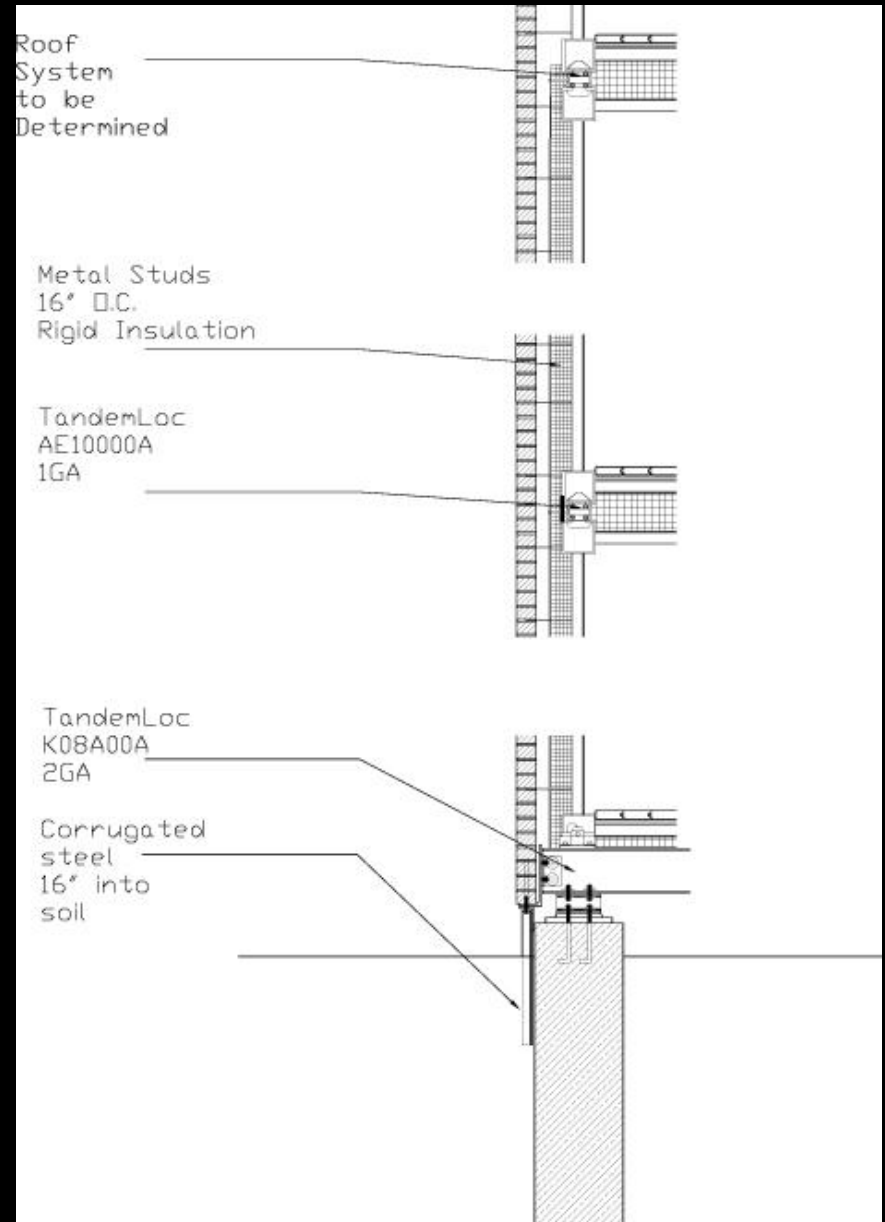
Energy Efficient

Durable

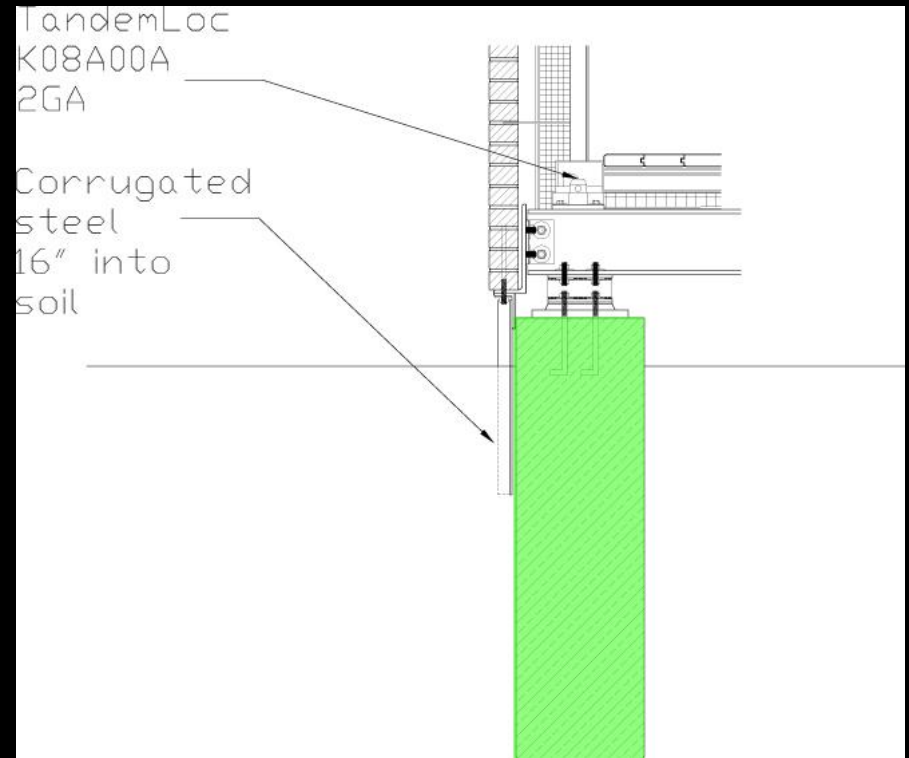


Exterior Envelope

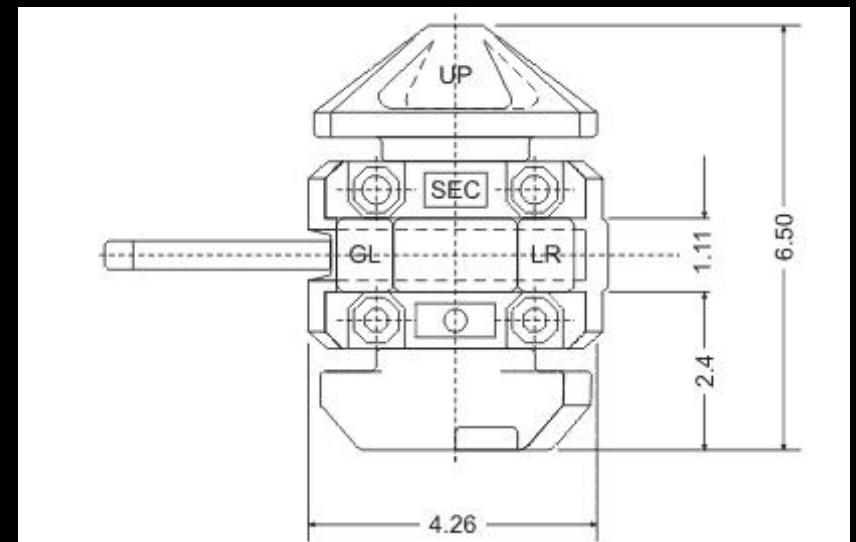
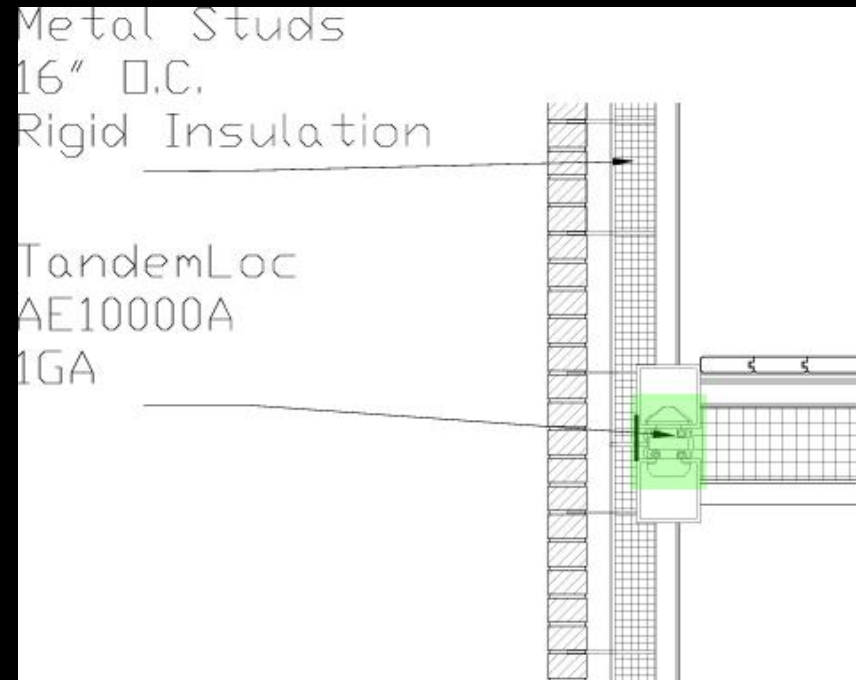
- Brick face
- Efficient Insulation
- Tandemloc connections
- Energy Efficient
- Utilization of existing structural properties



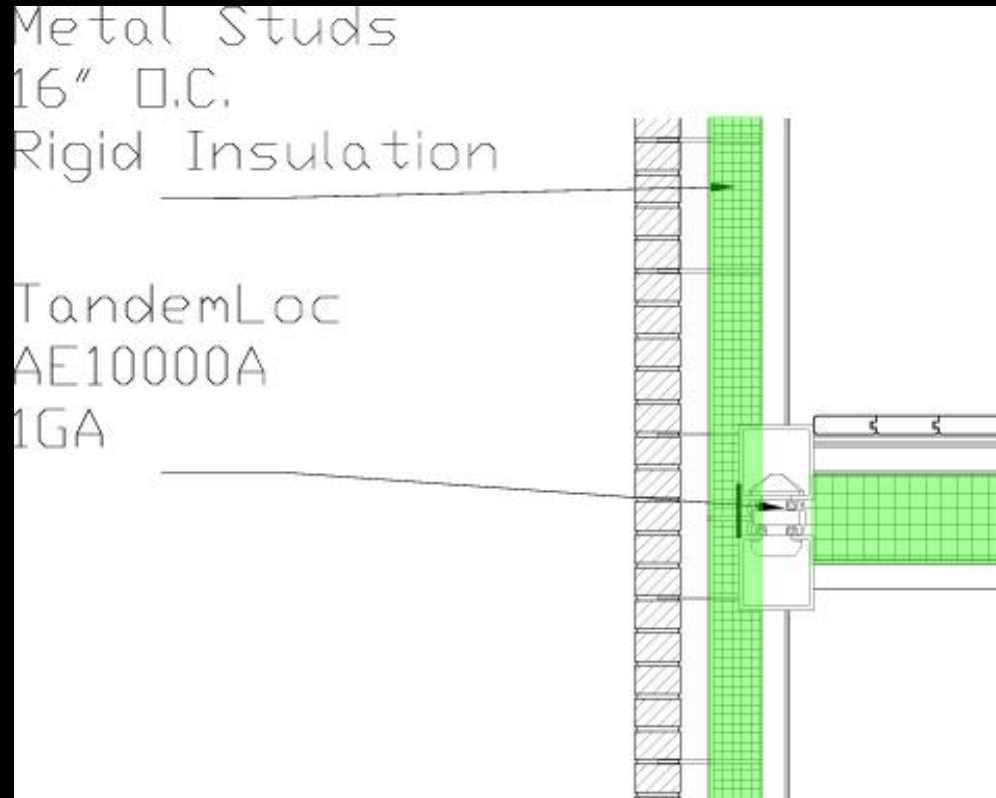
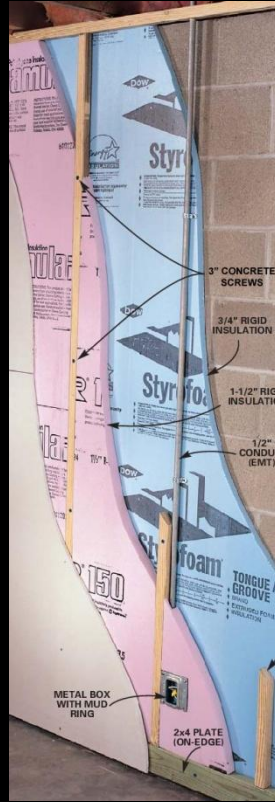
Pier foundations
cut down on cost,
time, and impact
to the site



TandemLoc Connections



Exterior Envelope



Utilizing Both Rigid and Sprayed Insulation, we are able to create a strong barrier to thermal leaks.

Objectives

- Create an energy model of standard double container units, approximately 16' x 40'
 - Through use of energy modeling software
- Determine the energy usage of a single living container
- Research alternative energy resources
- Model an HVAC system

Energy Model

- Determine R-value of wall, roof, and floor assemblies
- Implement enclosure systems into energy model
- Determine natural gas and electrical usage for a single living container
 - Isolate HVAC to determine gas usage
 - Make a separate energy model with internal loads to determine effect
 - Compare electricity usage to average consumption

INSULATION

ISOCYANURATE

- BioBased soy based insulation
 - R-19 at 3.5” thickness
 - Two parts: part A polymeric isocyanurate component with a part B resin based component
- Isocyanurate: Cyanuric acid, a component in bleaches, herbicides, and disinfectants



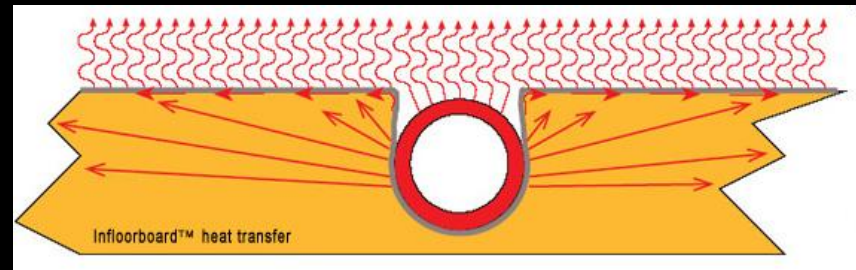
Objectives

- Talking and collaborating with the RV Association in order to get shipping containers outfitted with plumbing, electrical and other permanent fixtures.
- Researching connection pieces that will allow shipping containers to be attached to each other as well as to a foundation.
- Finding ways to collect rainwater for utilization in the in the unit.

Research in the past weeks:

Has provided us with information on outfitting the shipping container with

- Radiant Flooring



- Grey water Storage



Cont.

- Shipping Container connections



Olympics 2016



Olympics 2016



Chicago container housing

