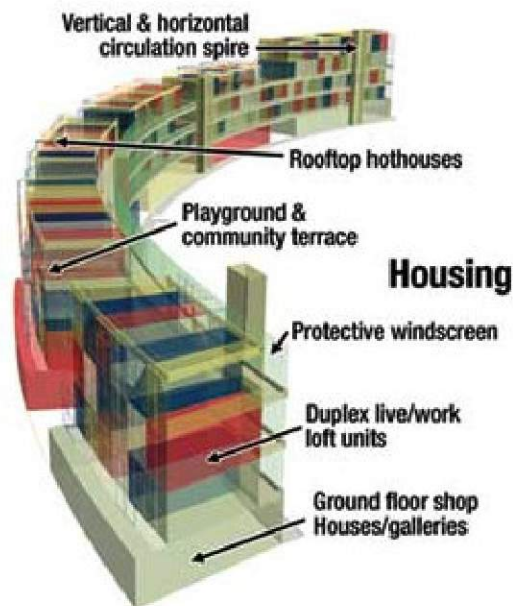




"Density is the next frontier in responding to sprawl and in rebuilding livable urban neighborhoods, but we have an irrational fear of it," says David D. Dixon, principal of Goody, Clancy & Associates, Boston, and BSA president. "Fox & Fowle developed an innovative solution allowing them to leverage the design flexibility inherent with density."

The Fox & Fowle team chose an 18.6-acre site in central Gloucester that included abandoned industrial property, open space and woodlands. It was also adjacent to a commuter rail station.

The Strauss team removed the sheathing and used the 8-ft-wide x 9.5-ft-high x 40-ft-long containers as structural components for 351 duplex loft-housing units consisting of four containers. Also included was 170,000 sq ft of commercial space, including a hotel, and 27,700 sq ft of civic/cultural space, incorporated in a crescent-shaped development. At-grade and below-grade parking for 593 cars was also provided. Together the plan utilizes about 3,000 containers stacked eight high on a 345,000-sq-ft footprint.



The team also noted fitouts could form the basis for an incubator industry in Gloucester. Costs for 5,000 containers could run about \$650 each, according to Philip K. Brewer, senior vice president of The Textainer Group, San Francisco, the world's largest lessor of containers. "There is real savings in the frame construction as compared to conventional block and plank construction but the modular components such as bathrooms and kitchens can be preassembled for even

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## buildings

### HOUSING

Shipping Containers Show Promise for Living Space 11/17/2003

By William J. Angelo

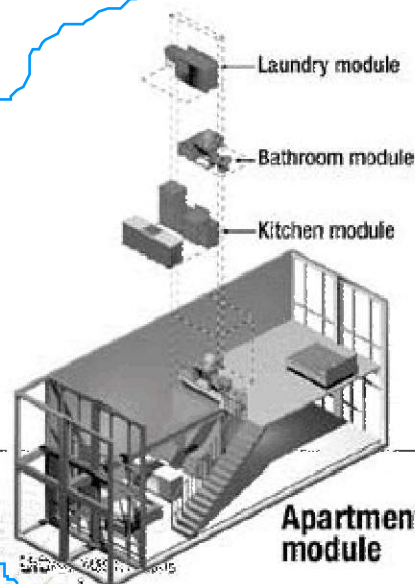
With tens of thousands of empty shipping containers cluttering America's seaports, one New York City architectural firm has developed a novel idea for converting the ubiquitous metal boxes into low-cost housing and working space. Firm officials are now talking with developers about making it a reality. [Click here to view image>>](#)

Mark E. Strauss, principal and director of planning for Fox & Fowle Architects PC, came up with the idea after receiving a speaker's package for a recent conference on building density. Strauss had been involved with post-9/11 New York City planning and decided to enter the national design competition sponsored by the Boston Society of Architects. BSA was seeking creative ways to help cities and towns deal with sprawl. Contestants were asked to find mixed-use alternatives supporting community life and a livable environment using one of three Massachusetts locations: Boston, Westwood or Gloucester.



be preassembled for even greater savings," says Strauss.

He formulated the plan after reading a paper by a teaching colleague at Baruch College, Barry Hersh, who had written about the problem of the surplus containers. "We wanted to recognize Gloucester's maritime heritage with something symbolic as well as functional," says Strauss. "Because of the trade deficit last year, 1.6 million containers came into the [Port] Newark-Elizabeth complex but less than 688,000 full containers left. These things cost about \$2,300 to build in China but cost \$900 to ship back empty from the East Coast."



Once containers are unloaded in the U.S., reuse options include shipping them back empty, selling for domestic storage or waiting for new lease opportunities. Brewer says there are about 17 million TEU's or 20-ft equivalent units worldwide, including 20-ft, 40-ft and 40-ft-high cube containers. A TEU is one 20-footer. "The amount spent moving empty containers every year is staggering, in the billions," says Brewer. "We sell about 50,000 containers annually and are always looking for alternative uses."

The Fox team received a \$5,000 cash prize at the conference, about one-fourth the cost of the winning effort, but bigger paybacks could be on the horizon. "We've been in discussion with a number of developers," says Strauss. "Many of the details still need to be worked out but we're all excited about its potential for cheap, affordable housing."



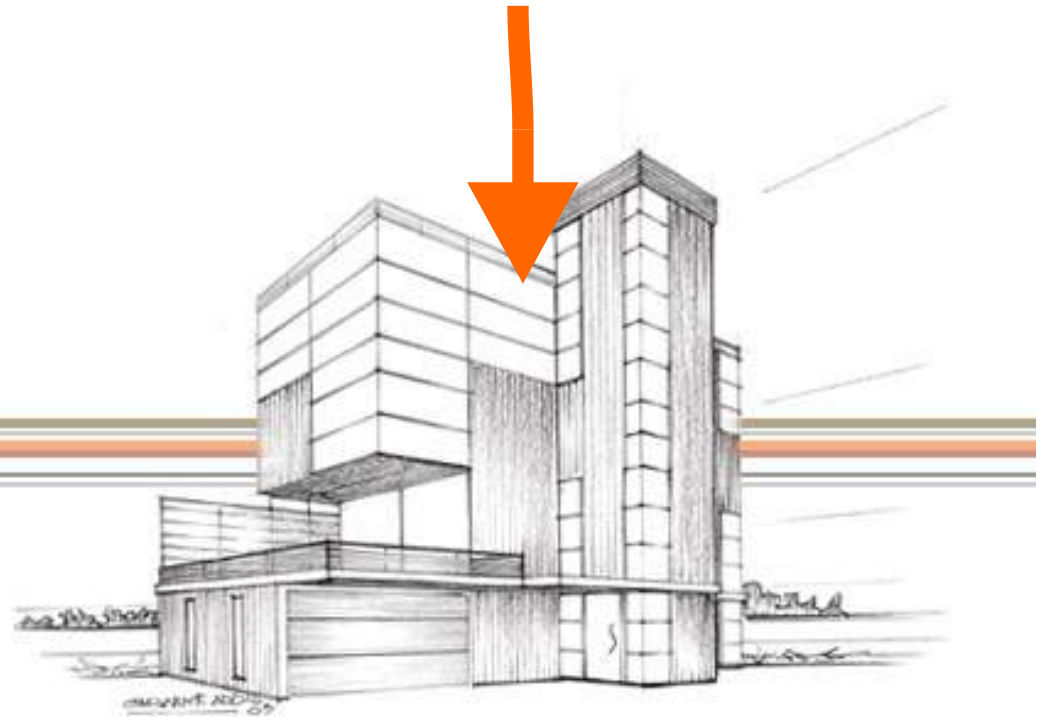
# MADE FROM SHIPPING CONTAINERS

Addis Containers  
www.containerarchitecture.co.nz

New Zealand pioneers in shipping container house design and construction, Addis Containers offer architecturally designed contemporary houses to suit your site and lifestyle.

One of the most exciting new trends in contemporary architectural design, Addis shipping containers offer numerous benefits over other construction techniques:

- Superior structural strength for low cost
- Contemporary finishes and interiors
- Modern clean lines



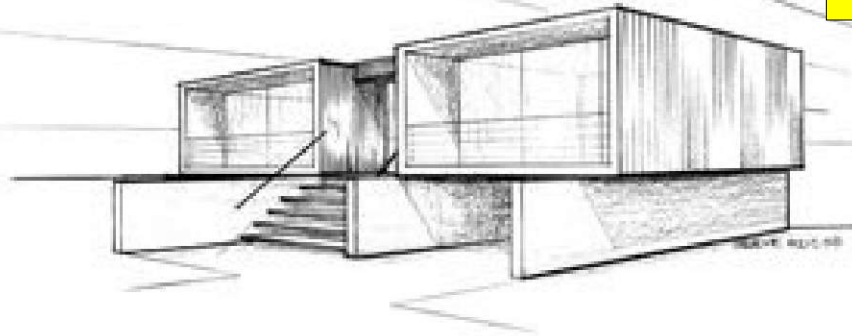
: [portfolio](#) :

: [benefits](#) :

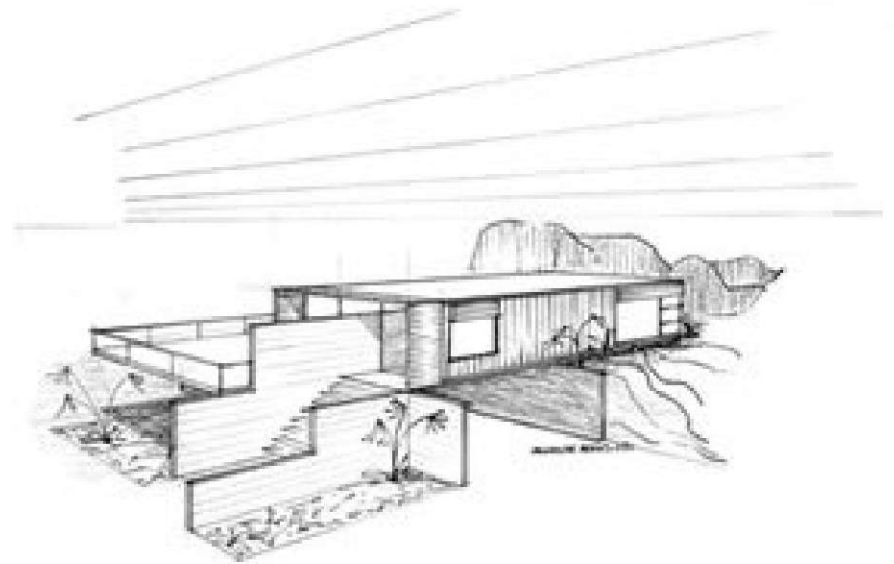
: [contact](#) :

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All container house designs and renderings by Graeme Addis.  
Web Design and Hosting by Ben McNicoll

**NEW ZEALAND ARCHITECTURAL COMPANY DESIGNS  
USING SHIPPING CONTAINERS**

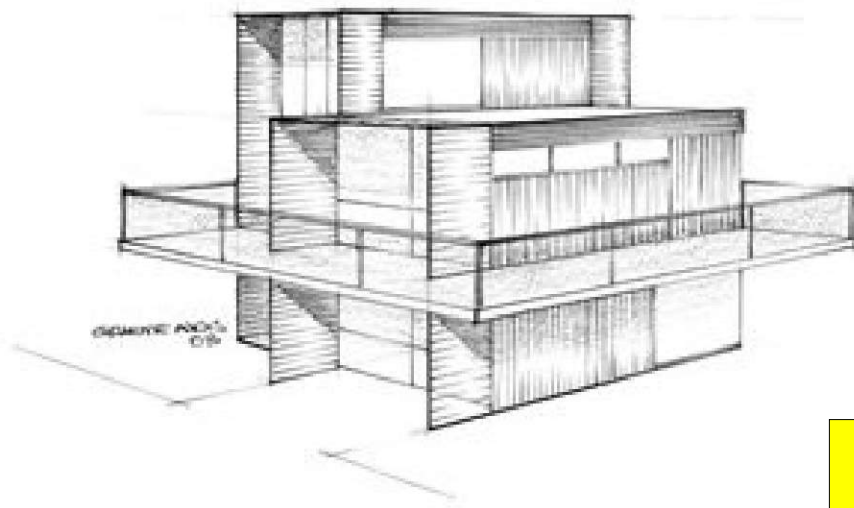


multi-modular



seaside city





townhouse 2

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USING SHIPPING CONTAINERS**

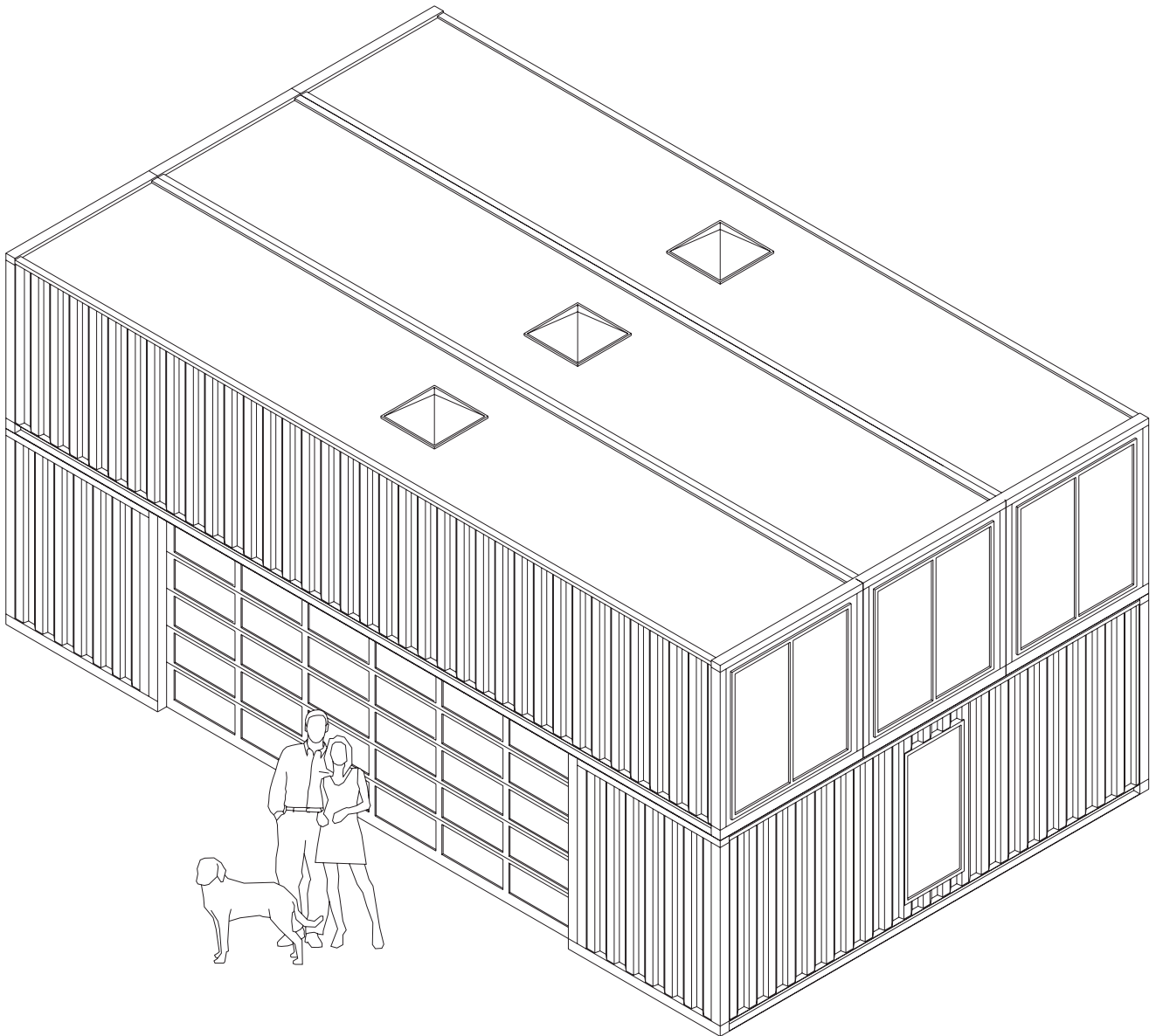


4 floor glass

**NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
USING SHIPPING CONTAINERS**

**Kalkin**

**QUIK HOUSE<sup>®</sup>**



Quik Satisfaction.

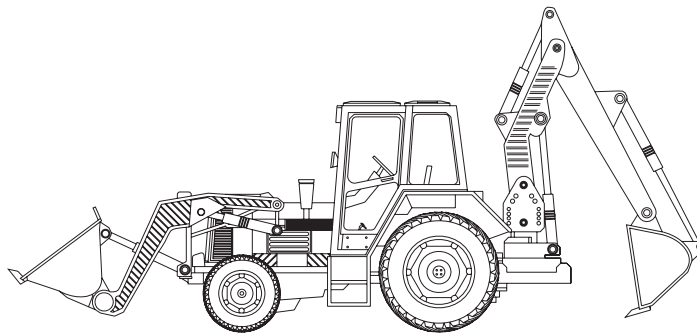
## Appendix C:

### Estimated finishing costs for **PREMIUM HOUSE KIT**

Shipping (based on destination).....	\$ 3,000
Site Preparation - excavation.....	\$ 2,000
- foundation and slab.....	\$ 6,000
- in slab radiant heat.....	\$ 5,000
Kit Assembly .....	<u>\$ 2,500</u>
Total estimated finishing costs for <b>PREMIUM HOUSE KIT</b> .....	\$18,500

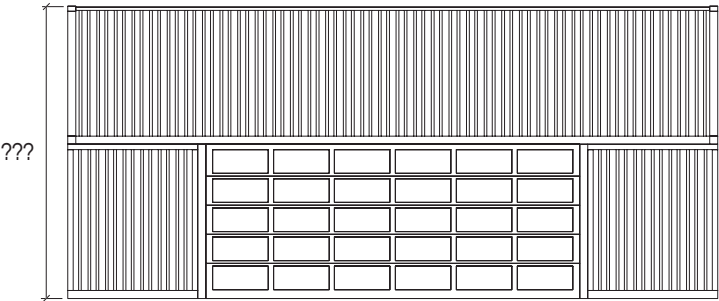
<b>PREMIUM HOUSE KIT</b> .....	\$160,000
Cost to finish .....	<u>\$18,500</u>
Total estimate .....	\$178,500
(or \$89.25 per square foot)	

**NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
USING SHIPPING CONTAINERS**

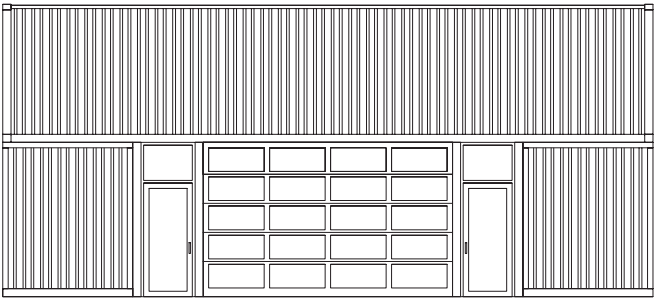
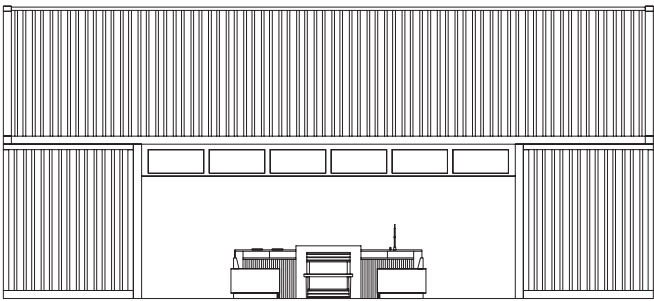


Your Exterior Door Choices- Front Elevation

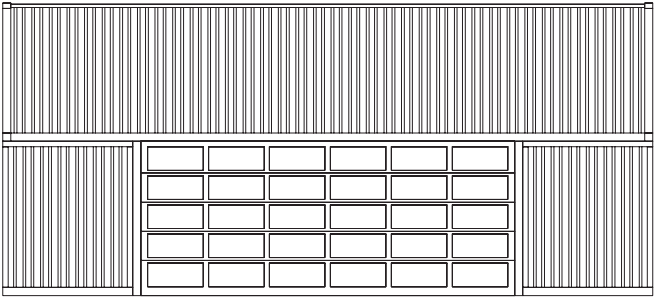
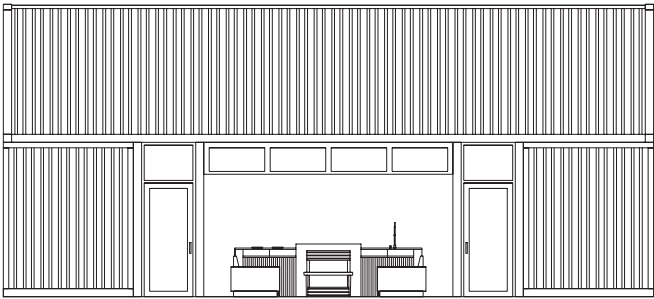
NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
USING SHIPPING CONTAINERS



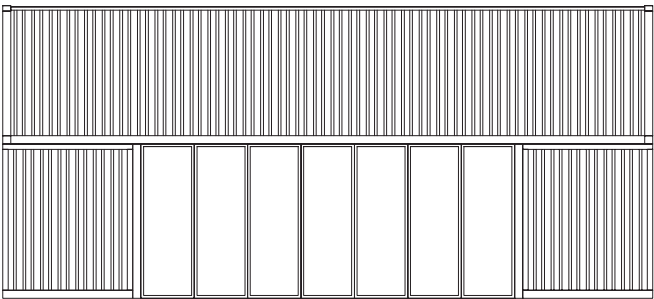
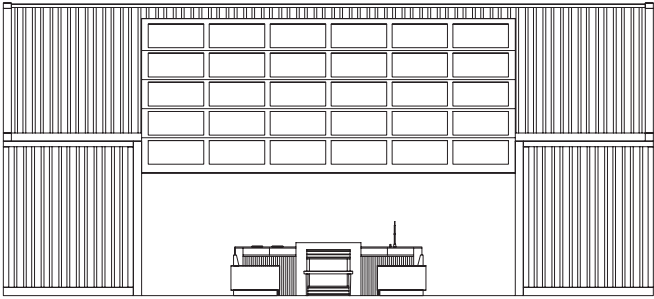
a. OVERHEAD



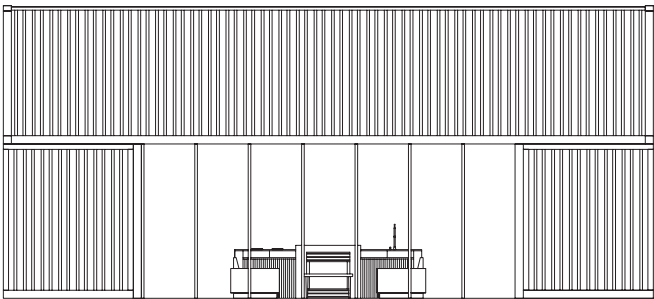
b. OVERHEAD with SIDE DOORS



c. VERTICAL LIFT

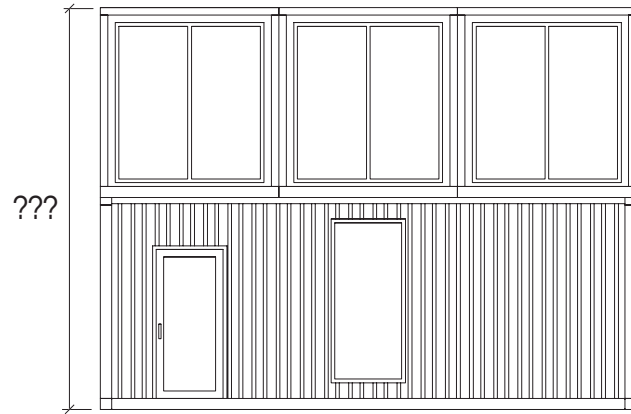


d. PIVOTING GLASS PANELS

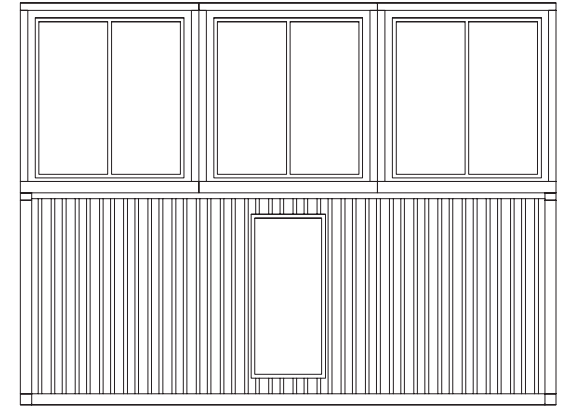




## Your Exterior Door Choices- Side Elevation



. with SIDE ENTRANCE



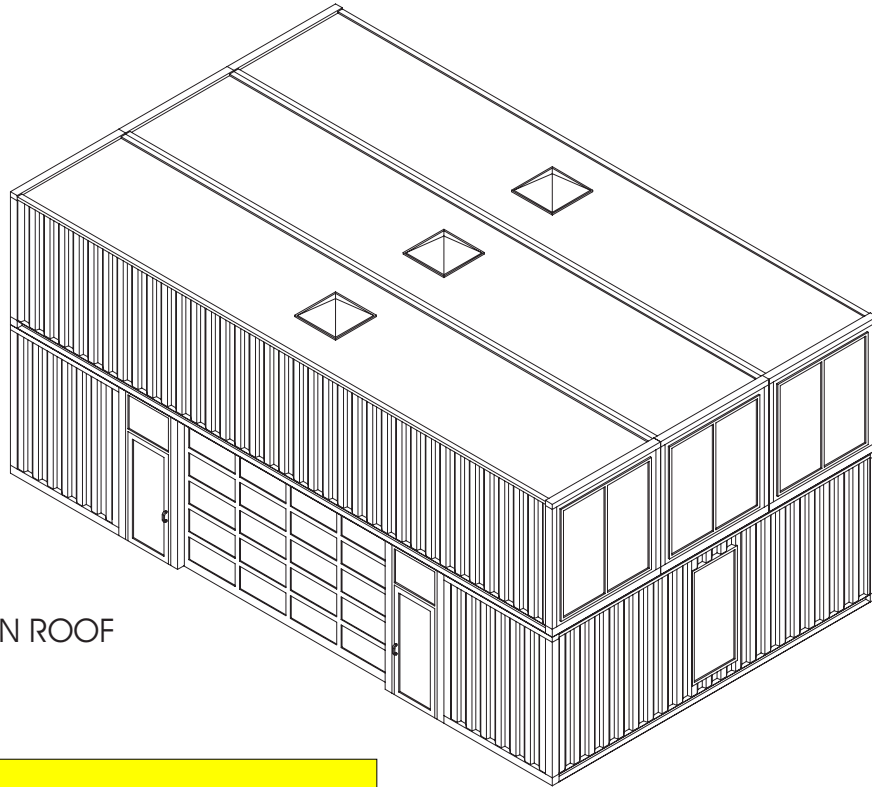
b. without SIDE ENTRANCE

**NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
USING SHIPPING CONTAINERS**

### Notes:

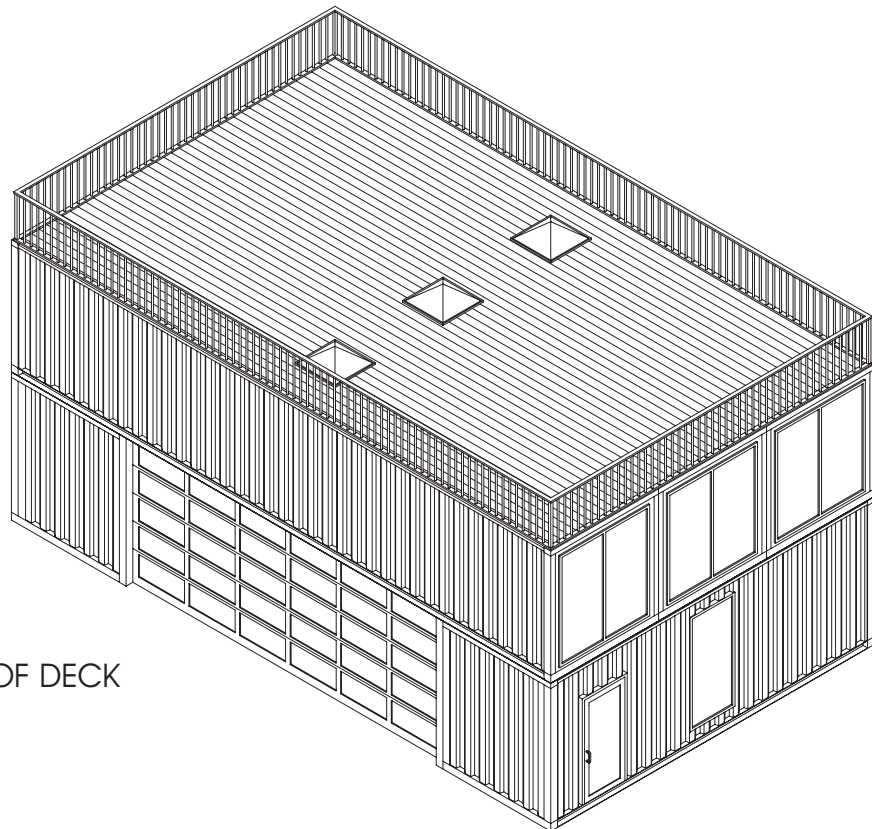
Depending on your site, we will recommend one of the exterior door configurations on the list.

## Your Roof Top Choices

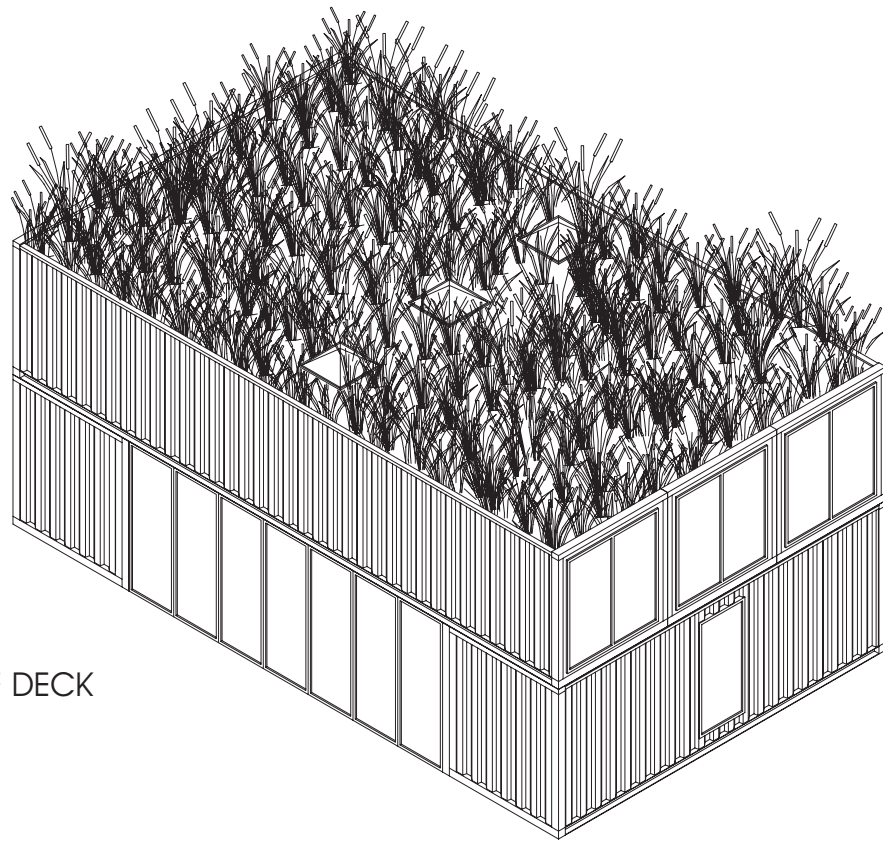


a. PLAIN ROOF

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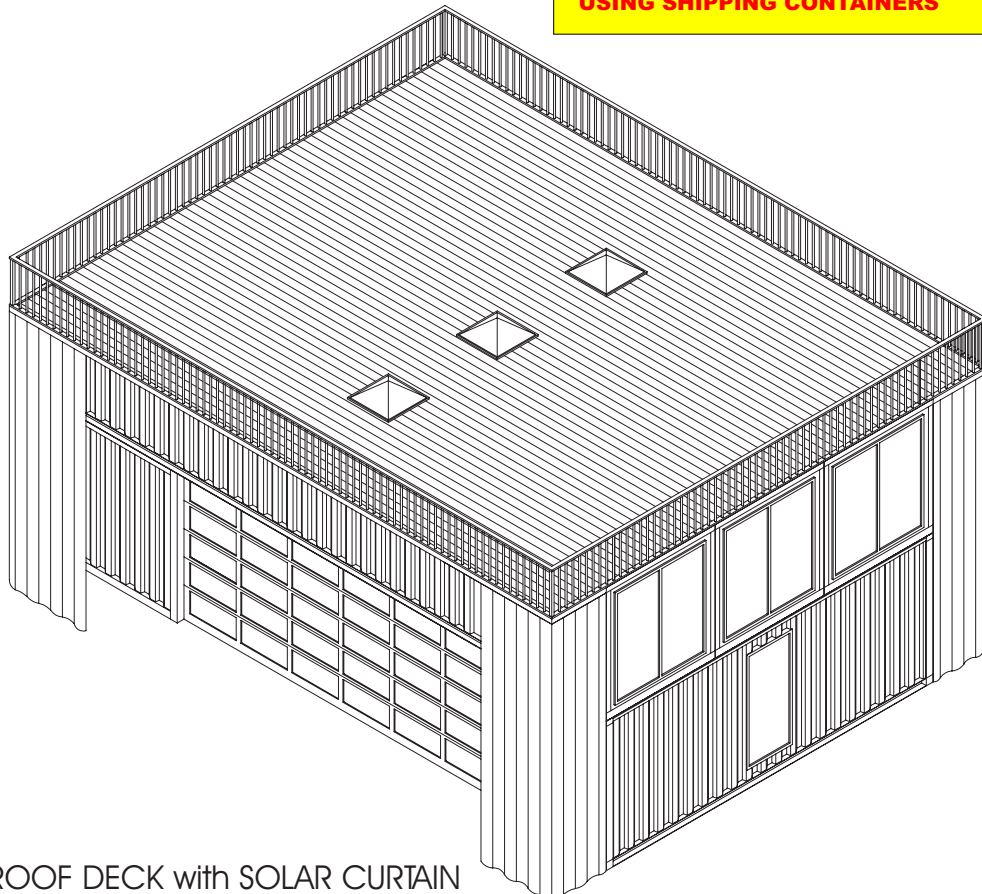


b. ROOF DECK

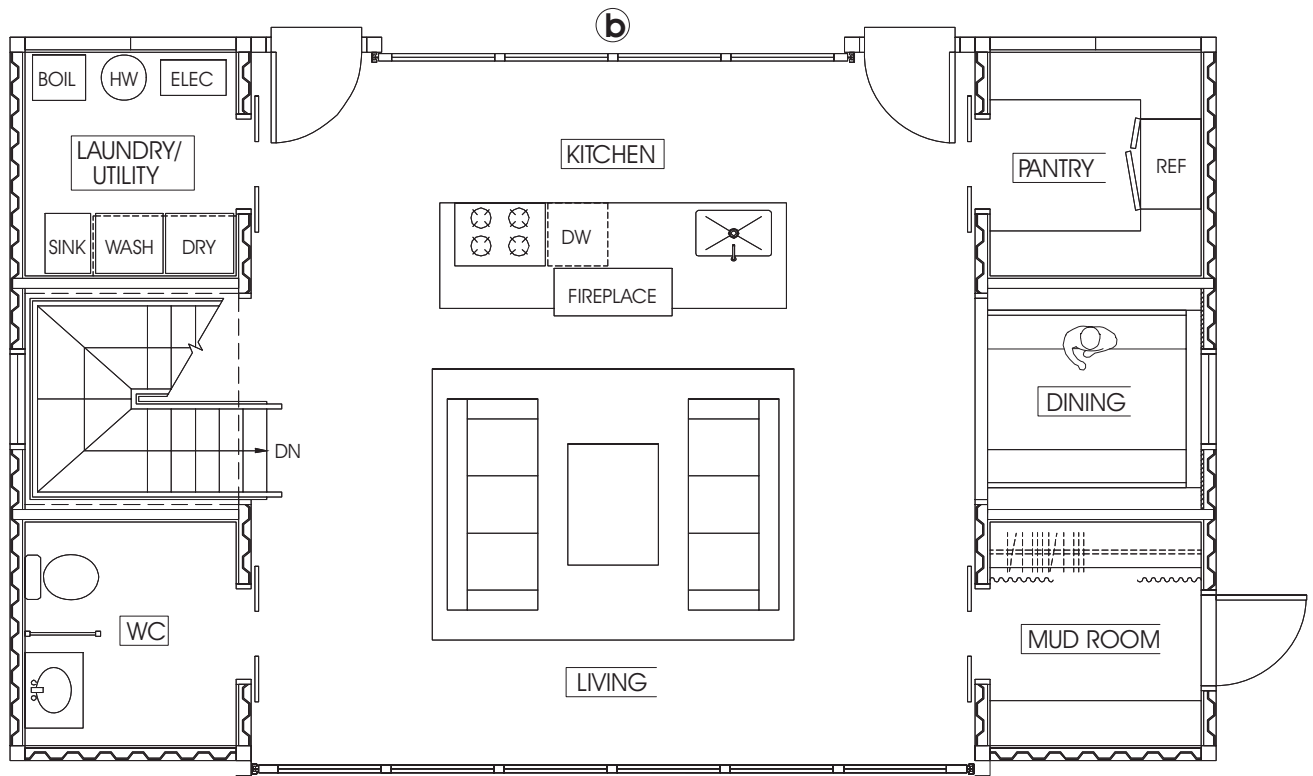


c. TURF DECK

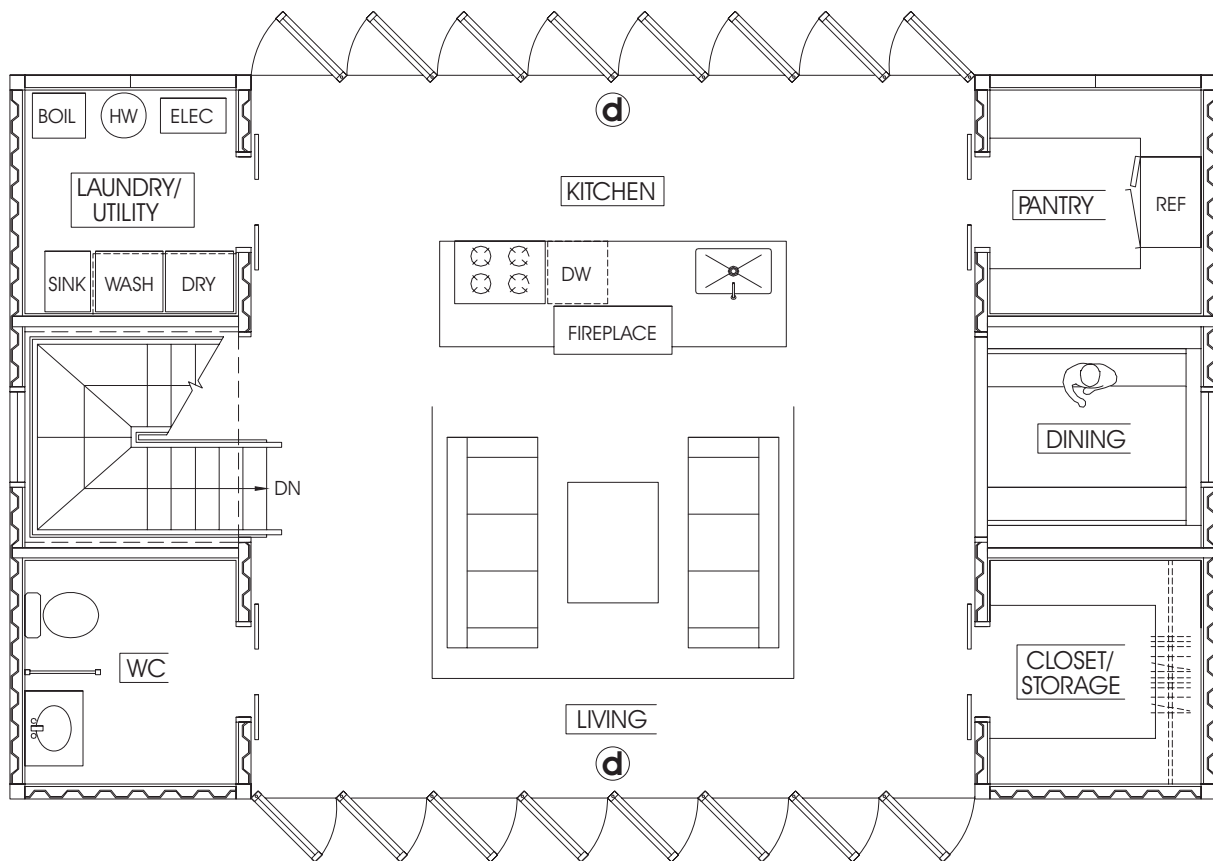
**NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
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d. ROOF DECK with SOLAR CURTAIN



iii. VERTICAL LIFT DOOR



iv. PIVOTING GLASS PANELS

**NEW JERSEY ARCHITECTURAL COMPANY DESIGNS  
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?????????? ????  
 ?????????????????????????????????????  
**Kalkin**?????  
 ????????? ① ??? ????? ?????

# Kalkin`? ?? ?

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# Shipping Container Costs

Shipping container costs are one of the variable costs of shipping container house building.

If you're considering the idea to have a **house built from shipping containers**, you have two options:

- to build it yourself;
- to buy such a house from a specialized company.

If you want to build it yourself, the first thing you want to know is the price of such a container. As we said, we're not specialists, but we searched the net and found some information about the **shipping container costs**. First of all keep in mind that **the price will vary** depending on the source, size and condition of the container.



The good news is that new and used shipping containers are available everywhere. You can try for yourself to search the net and see what you can find or you can check the local papers for classified ads. Maybe there's a company near you that has shipping containers for sale and you don't even know.

Of course, **used shipping container costs** are **the smallest** because used containers are being liquidated at bargain prices to make room for new ones.

Beside the price of the container itself you must take into consideration **other costs** as well:

- transportation and handling;
- modifications that include but are not limited to: cutting, insulating, connecting to the electrical and water infrastructures.

Our first intention was to draw a table with container manufacturers and their prices. In the end we will give you only a **list of manufacturers** and **other sources** as well from where you can buy new and used containers. We decided to do so because:

- you must request a quote;
- the price may vary according to the number of containers you want to buy, your location, their size and condition, various modifications you want.

As a rule of thumb you may expect a price of **1500-2000\$** for a **new standard 40' container**, without any modifications, transport and handling included. You can check our list in the resources section.

---



# Shipping Containers Housing Benefits

Let's see what are the shipping containers housing benefits. Shipping containers can be used to build houses, garages, shelters, offices and almost any type of building you can think of. Why would you wanna use them for such things instead of traditional construction materials?

- they are **ready available**. There are millions of empty shipping containers cluttering world's seaports. Only in New York there are about a million empty containers that overflow the seaport and jam storage yards.
- such **containers are cheap**. The average container life is 2-3 years, then they are liquidated to make room for newer leased models. Because of this you can find them at real cheap prices. More on this in our [costs section](#)
- they are **build to resist** in the not so friendly environment of the world's oceans: tough corrugated steel and tubular steel frames, one and a half inch thick marine grade plywood floors, vandal-proof locking steel doors, water-resistant welded seams, and all weather paint. Their rigid steel structure makes it easy to stack up to more building levels high. They **can be insulated** and **provided with windows and sanitary and electrical installations**.

These characteristics make the shipping containers **great candidates for land based buildings**. From the same reasons they can be used for larger projects such as a **low cost solution for entire communities**: students that can't afford high rents, peoples with low income, homeless people.



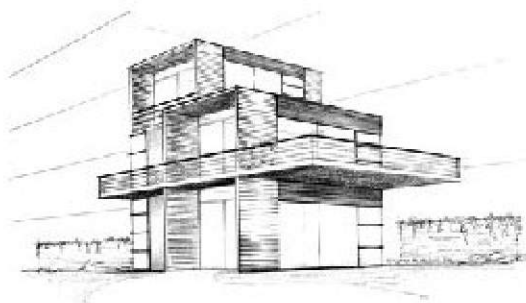
# Container Housing Companies

Let's take into consideration now the option of **buying a house from a container housing company**. Why choose one of their products instead of building yourself a house? We think that the main reasons for doing this are:

- you like the idea to have such a house because you want to **be different**;
- you **don't have enough time** for such a big project;
- you **don't have the necessary skills** to build yourself a shipping container house;
- you want **something more complex**, designed by an architect, with many rooms and floors, contemporary finishes and interiors, modern and clean lines and maximum comfort.

There are many finished or under construction projects all around the world that make use of containers for different purposes. Here you'll find **links to several container housing companies** that sell houses made from cargo containers.

- Addis Containers is a shipping container house design and construction company from New Zealand. They have several designs that can be modified according to your needs.



- Jones, Partners: Architecture - a good example of container housing company

Their Program Container System (PRO/con) is a **prefab house assembled from standard 20-foot steel shipping containers** that can be tailored to individual tastes and budgets.

PRO/con combines the shipping container unit with a system of prefabricated steel-frame infill panels: floor panels with recycled-wood flooring; window panels; and roof panels.

"The **loose modularity** of the PRO/con system," says Wes Jones, "does not view the house as finished product but as a continuously negotiated collection of products and their ultimate relation to the ever-changing American family."

1. The Quick House is a prefabricated kit house designed from **recycled shipping containers** and is distributed by kalkin & co. It has three bedrooms and two and one-half baths in its 2,000 square foot plan. It comes with a handy booklet and they can build it for you.



2. The 99,000\$ house



Rio Rancho, N.M.  
Cargo Container Home  
Side View of Garage



**NEW MEXICO HOUSE BUILT  
USING SHIPPING CONTAINERS**



**NEW MEXICO HOUSE BUILT  
USING SHIPPING CONTAINERS**



**NEW MEXICO HOUSE BUILT  
USING SHIPPING CONTAINERS**



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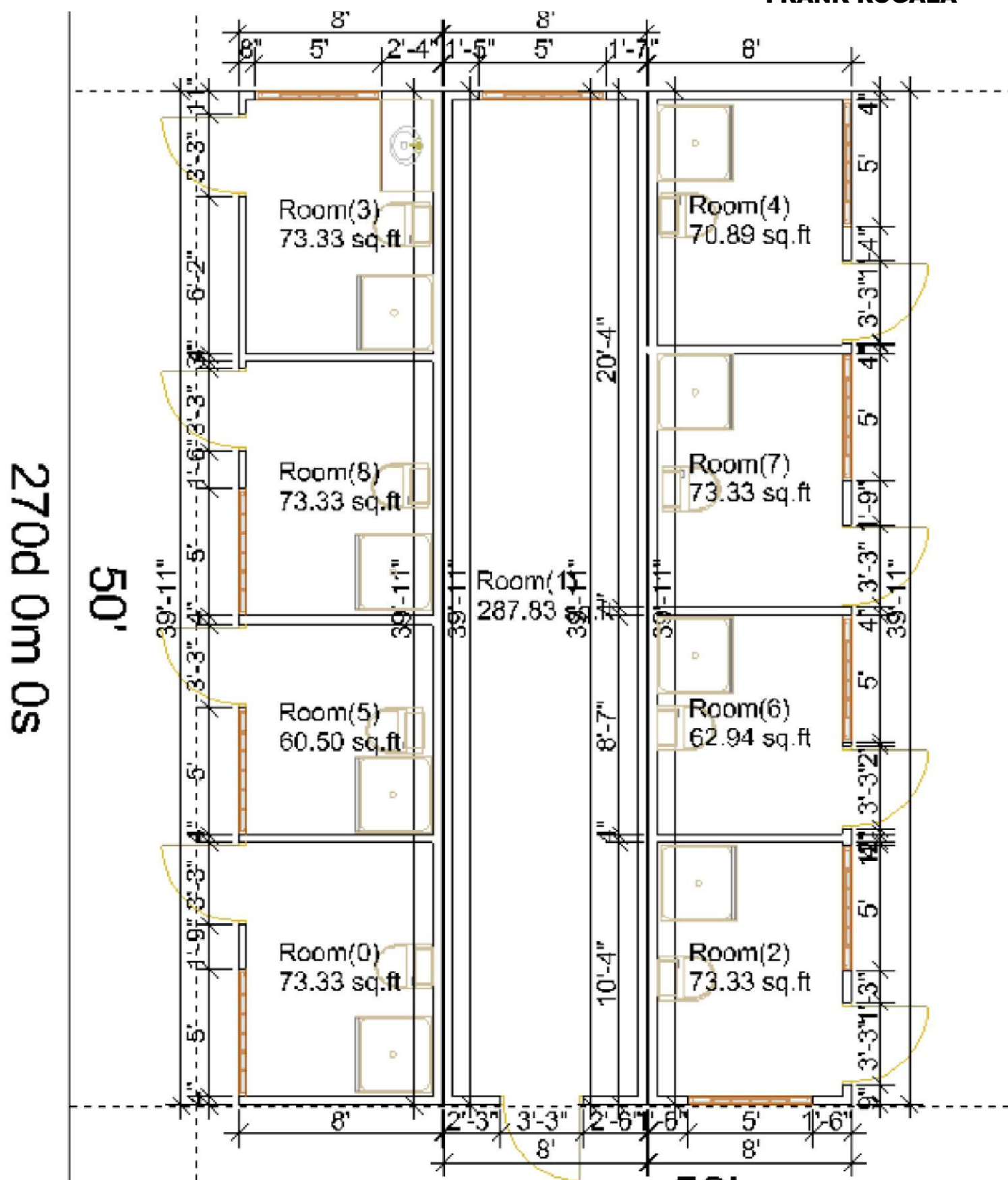




**NEW MEXICO HOUSE BUILT  
USING SHIPPING CONTAINERS**



**NEW MEXICO HOUSE BUILT  
USING SHIPPING CONTAINERS**

**FRANK ROGALA**



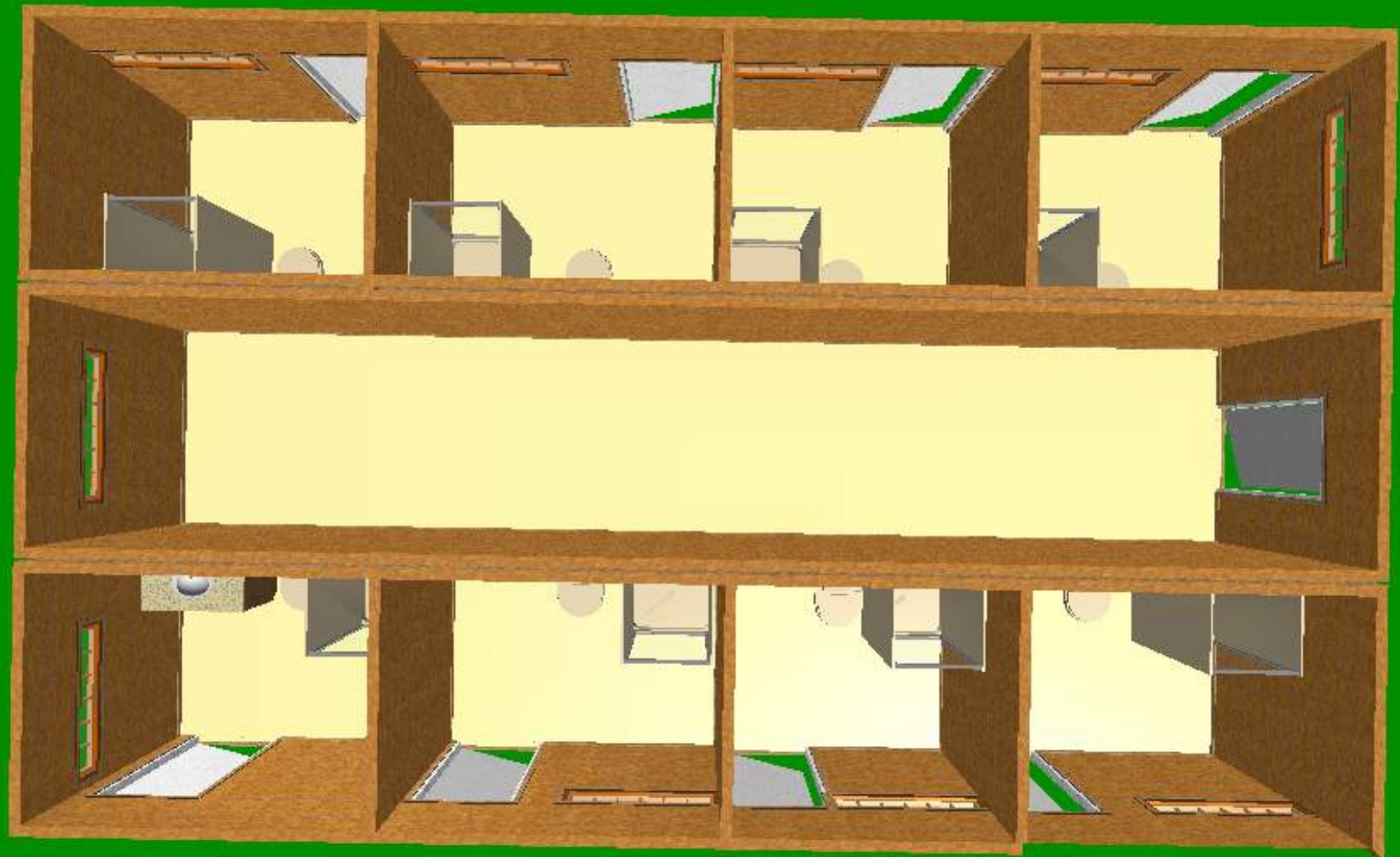
**CONTAINER BUILDING TOILET SHOWERS**  
**DESIGN FOR MACKINAW MILL CREEK CAMPING**  
**FRANK ROGALA**





**CONTAINER BUILDING TOILET SHOWERS**  
**DESIGN FOR MACKINAW MILL CREEK CAMPING**  
**FRANK ROGALA**





**CONTAINER BUILDING TOILET SHOWERS**  
**DESIGN FOR MACKINAW MILL CREEK CAMPING**  
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The architecture of the  
 Da Vinci Code



Sydney



NY Galleries



New York Architecture Images-[Chelsea](#)

## The Nomadic Museum

architect [Shigeru Ban](#), artist Gregory Colbert

location Pier 54, Chelsea, West Side.

date March 5 through June 6, 2005

style [Late Modern \(International Style III\)](#)

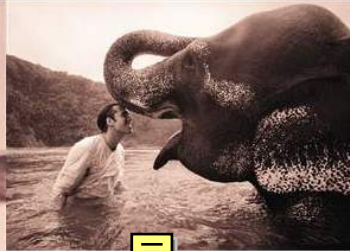
construction shipping container walls, steel roof supported by cardboard trusses

type [Gallery](#)

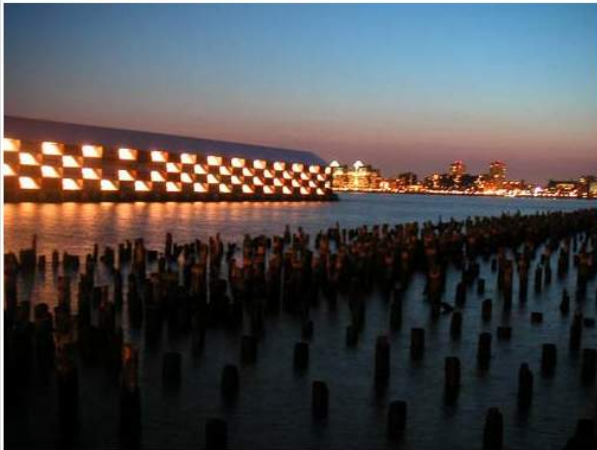
This is really quite good. It's almost churchlike within. Very peaceful, and a perfect setting for the artwork.



Photographs by Gregory Colbert



NY Walks  
please send me any  
NY architecture  
images.  
[Use of images](#)



A scene from the NBC show "Law and Order"











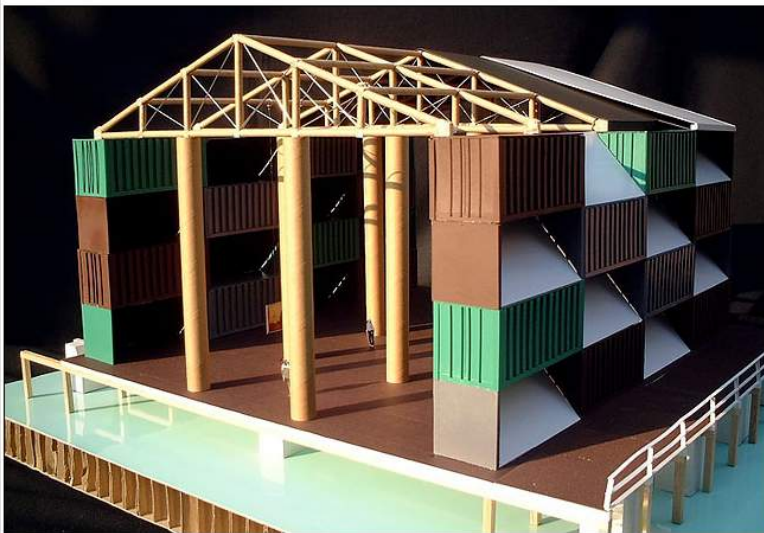
February 24, 2005

A Dockworkers' Strike? No, It's Art

By ROBIN POGREBIN



The 45,000-square-foot mobile museum on Pier 54.



A model of the museum.

**P**eople speeding down the West Side Highway could be forgiven for not looking twice at Pier 54; the shipping containers stacked there are not an uncommon sight on the Manhattan waterfront.

But in fact, they are passing not just the historic pier on the Hudson River at 13th Street where the Titanic's survivors were discharged, but also a new museum designed by the Tokyo architect Shigeru Ban.

The 45,000-square-foot structure was expressly built to display "Ashes and Snow," a show of 200 large-scale photographic works by the artist Gregory Colbert that opens March 5 and runs through June 6 before traveling to California and the Vatican.

It's not just the show that's going out on the road. The entire museum is to be packed in 37 of the 148 cargo containers that form its checkerboard walls. The temporary structure is composed largely of recyclable materials: the roof and columns are made of paper tubes, the steel containers stacked 34 feet high are used, and a handmade curtain to be suspended from the ceiling is made of one million pressed paper tea bags (used, with the tea leaves removed).

"Shigeru is the Mozart of sustainable architecture," Mr. Colbert said. "Also, from a philosophical point of view, he's done some great public buildings; he says that art shouldn't be for the privileged."

Mr. Colbert, whose work seeks to capture the mystical relationship between humans and animals, said he approached Mr. Ban because he admired his use of unorthodox materials. The architect's previous designs include the paper tube arch constructed in the sculpture garden of the Museum of Modern Art, the Paper Museum and Paper Church in Japan, and the Paper Refugee Shelter, made of plastic sheets and paper tubes for the United Nations high commissioner for refugees.

Mr. Colbert said he wanted the Nomadic Museum, like those other Ban projects, to seem accessible to a wide audience.

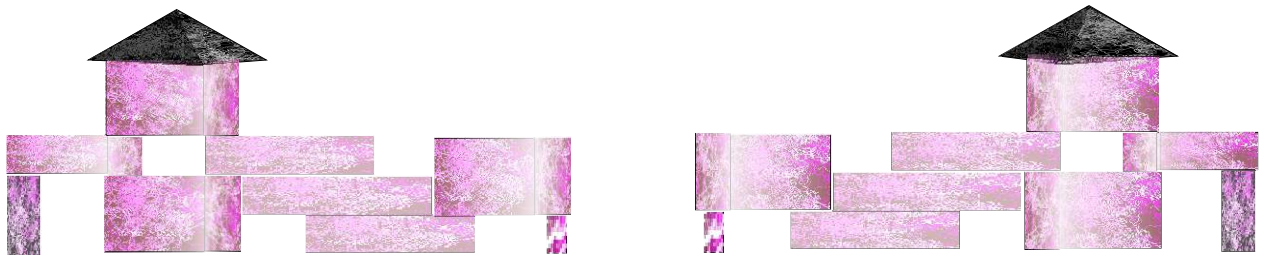
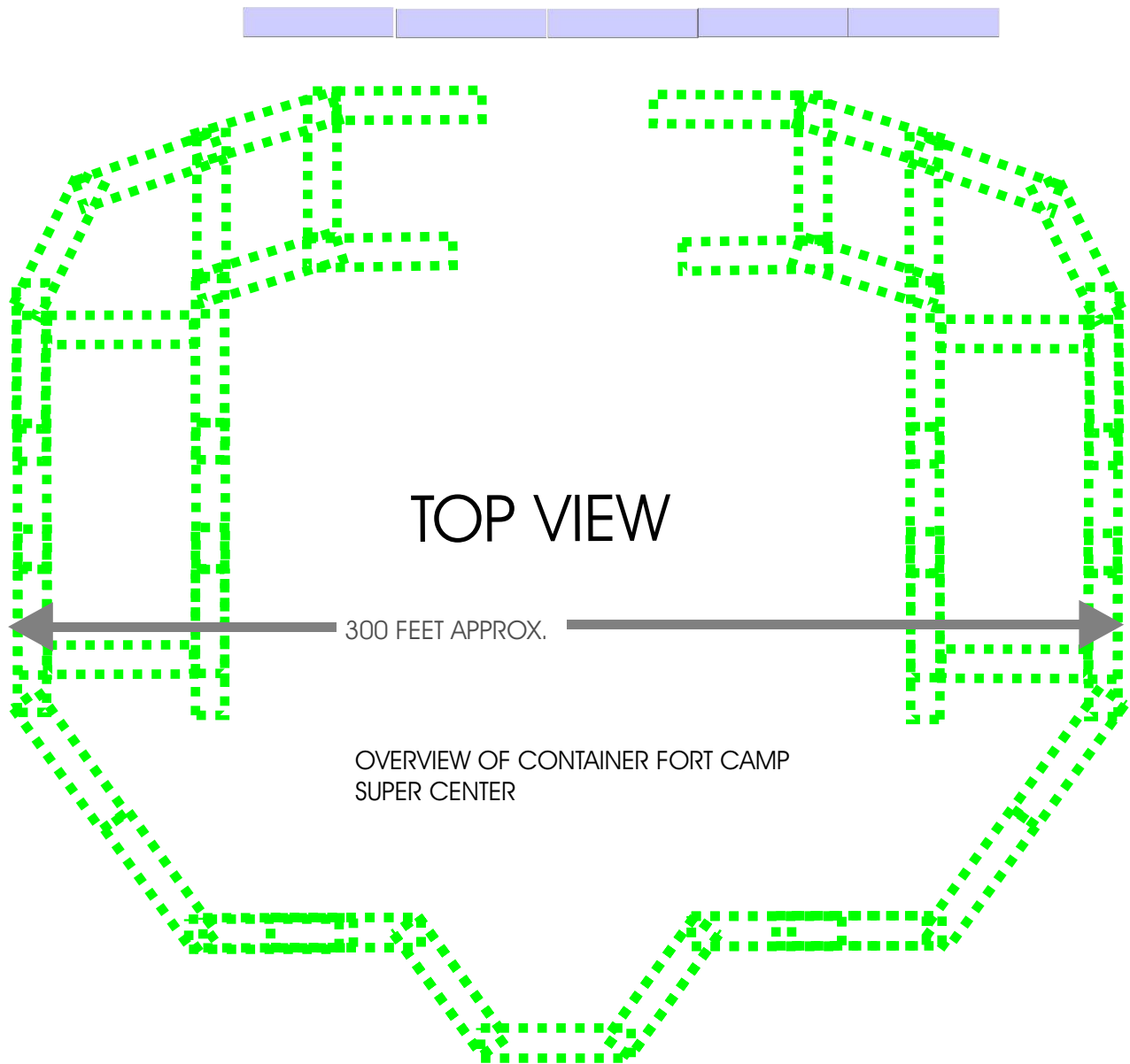
"The structure shouldn't be intimidating," he said. "It should feel really inviting. It's a bridge between the arts and the natural sciences. It's not art with a capital A."





- EXIT PARK (GATED OR TIRE DAMAGE PROTECTION)
- TOP FLOOR VIEW OF BRIDGE AND STRAITS OVER TREES
- OUT LANE FOR DELIVERY TRUCKS, CAMPERS WHO CHANGE THEIR MIND, ETC.
- GATED - CAN ENTER WITH SLIDE CARD AND EXIT HAS TIRE DAMAGE PROTECTION
- ALL INTERNAL VIEWS TO INSIDE WHERE POOL AND GARDEN - NO ROADS THIS SIDE
- ENTER ONLY - NO EXIT
- SEE SIZE OF RALLY BUILDING FOR IDEA OF SCALE





 = 40 FEET LONG X 8 FEET WIDE X 9.5 FEET TALL