

Rebuilding a Community. Rebuilding Tyndall Air Force Base.



Situation

- **In October 2018, Hurricane Michael Devastated TAFB.**
- **TAFB wants to rebuild.**
- **Shipping Containers are the solution.**
- **They are valuable to TAFB because they are innovative, enduring and adaptable.**



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Mission

Rebuild TAFB and surrounding city:

- **Efficiently**
- **To avoid future devastation**
- **To be “the base of the future”**
- **To adapt to changing needs over time [1]**



Solution

**Shipping Containers.
Innovative. Enduring. Adaptable.**

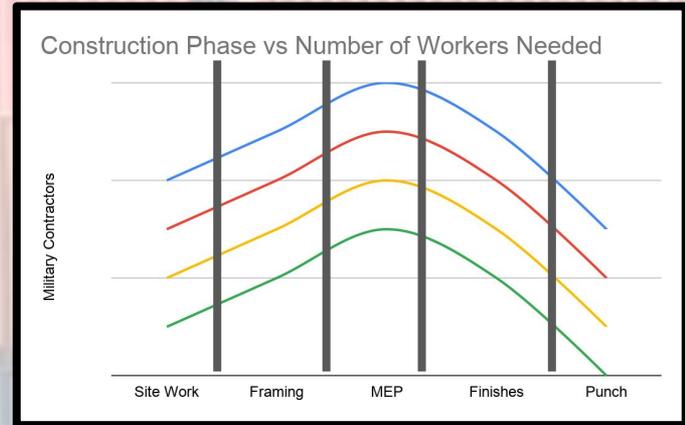
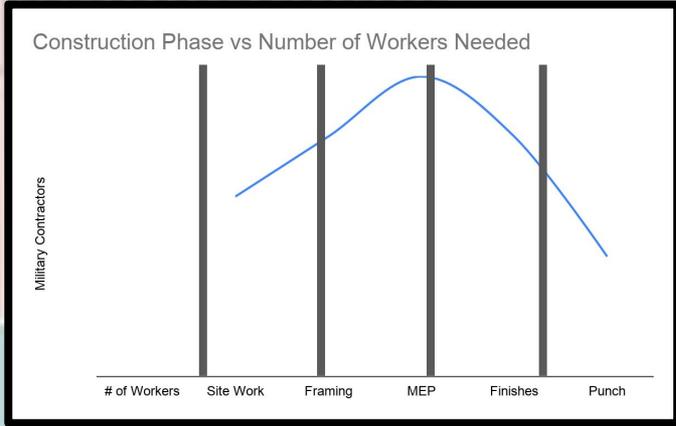


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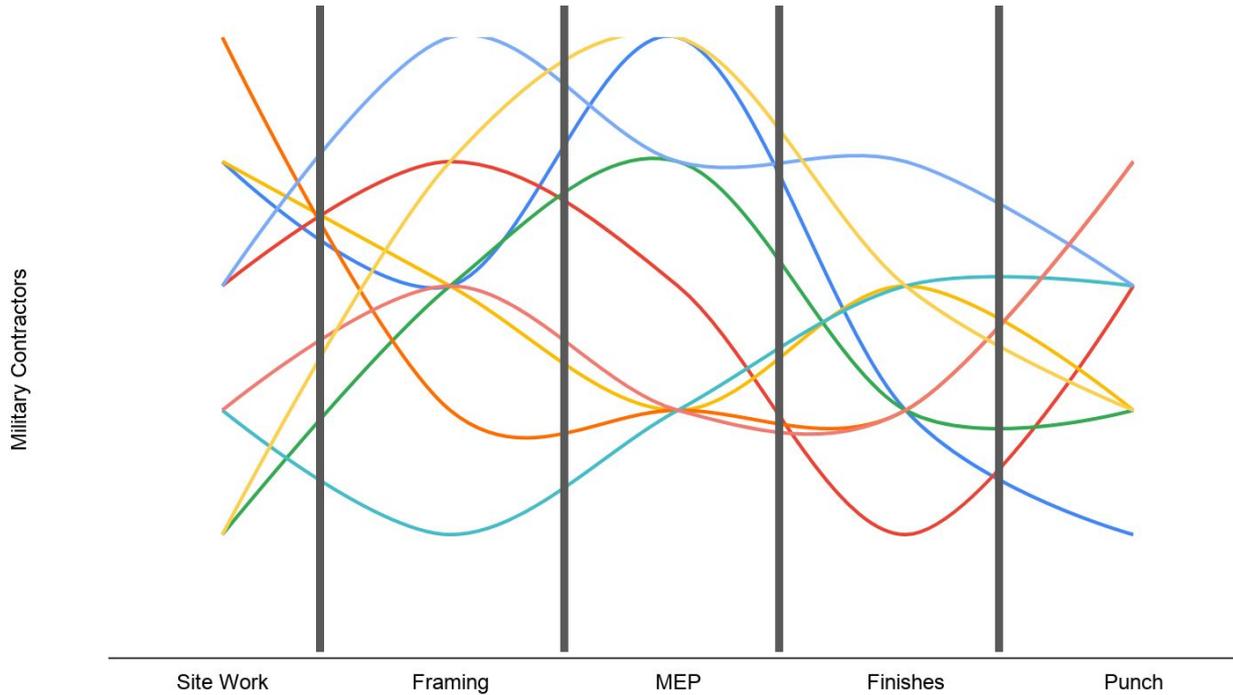
Execution: Rebuild TAFB and the surrounding city.

- Shipping Containers can be modified to be:
 - Offices
 - Homes
 - Schools/Classrooms
 - Mess Halls
 - Indoor ranges
 - Commissaries
 - Storage Facilities



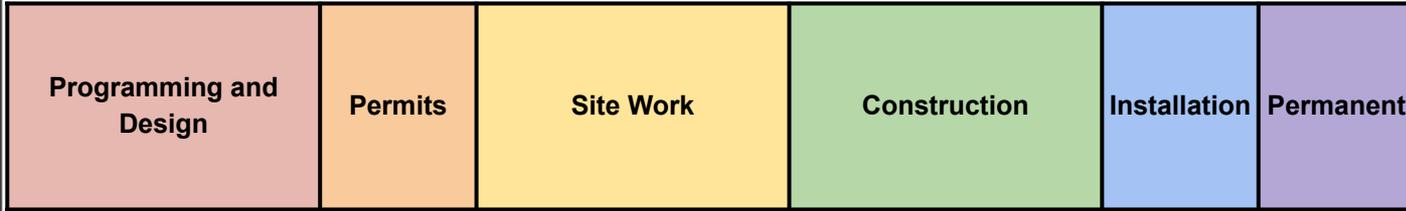


Construction Phase vs Number of Workers Needed



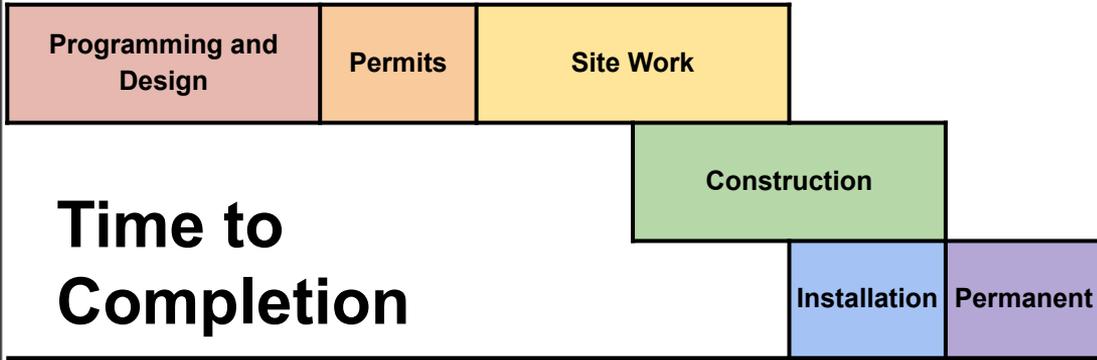
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Traditional Buildings



- Sell
- Donate

Shipping Containers



- Sell
- Donate
- Store
- Re-deploy

Time to Completion

Time →



Innovative. Enduring. Adaptable.

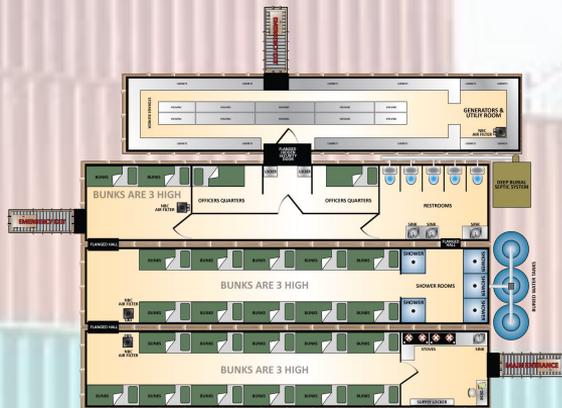
Shipping Containers vs. Brick and Mortar

- Weather-rated
- Mobile
- Resilient
- Durable
- Re-Usable
- Reliable
- Enduring
- Flexible Construction Technology



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The possibilities are endless...



Single Family

Single Family Residence Profile

Area: 320 ft² (29.7 m²)
Sleeps: 4-6*
Configuration: 2 bedrooms
Community Layout: Detached
Included Amenities:

- 3/4 bath
- Range
- Refrigerator
- HVAC*

The image shows a 3D cutaway rendering of a single-family residence. The unit is a rectangular box with a corrugated metal roof. The interior is furnished with a kitchen, a living area, and two bedrooms. The unit is shown in a detached community layout. Two small inset images show the interior and exterior views of the residence.



Temporary Solutions		
	Shipping Container	Traditional
Full Utility Service	✓	✓
Aesthetically Standard	✓	✓
Re-Deployable	✓	✓
Weather Rated	✓	✗
Durable	✓	✗
Mobile	✓	✗
Built off Site	✓	✗
Easily Adaptable	✓	✗
Labor Cost Savings	✓	✗
Deployment Time	✓	✗

Permanent Solutions		
	Shipping Container	Traditional
Full Utility Service	✓	✓
Aesthetically Standard	✓	✓
Re-Deployable	✓	✓
Weather Rated	✓	✓
Durable	✓	✓
Mobile	✓	✗
Built off Site	✓	✗
Easily Adaptable	✓	✗
Labor Cost Savings	✓	✗
Deployment Time	✓	✗

Value

- **Shipping Containers can be modified to adaptable and fully functioning living and working spaces in a matter of weeks.**
- **They can be modified with a high degree of specification to fit numerous end-uses.**
- **Shipping Containers can be permanent or temporary.**
- **They can be designed to meet installation standards and operational requirements.**



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Rebuild in an efficient manner.

Shipping Containers can be made and modified almost exclusively off-site and then shipped to Tyndall AFB, creating less hassle and need for labor on base.



Rebuild in such a way to avoid future devastation.

Tyndall AFB faced gusts of 139 mph during the hurricane.

**TYPICAL WEIGHT RANGES FOR EMPTY ISO SHIPPING CONTAINERS
VS
RESISTANCE TO OVERTURNING DUE TO WIND LOADS IN MILES PER HOUR (MPH)**

Container type	110	120	130	140	150
10-Foot Standard				2,350-3,000 (Steel)	
20-Foot Standard			3,600-3,800 (Aluminum)		4,800-5,200 (Steel / Fiberglass)
40-Foot Standard		6,200-6,800 (Aluminum)		8,000-8,600 (Steel)	
40-Foot High Cube	6,600-7,000 (Aluminum)		8,800-9,600 (Steel)		
45-Foot High Cube		8,400-8,800 (Aluminum)	9,700-10,500 (Steel)		



Rebuild to be “the base of the future” that can adapt to changing needs over time.

- Shipping Containers are an up and coming building material.
- Can be stacked, linked, etc.
- Can be easily moved and transported.
- Flexible to design to Installation standards and to meet operational requirements.



Case: Project 450



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Our concept design for a 450 home community from Shipping Containers. This was originally for housing for non-traditional students with families.

Case: Project 450



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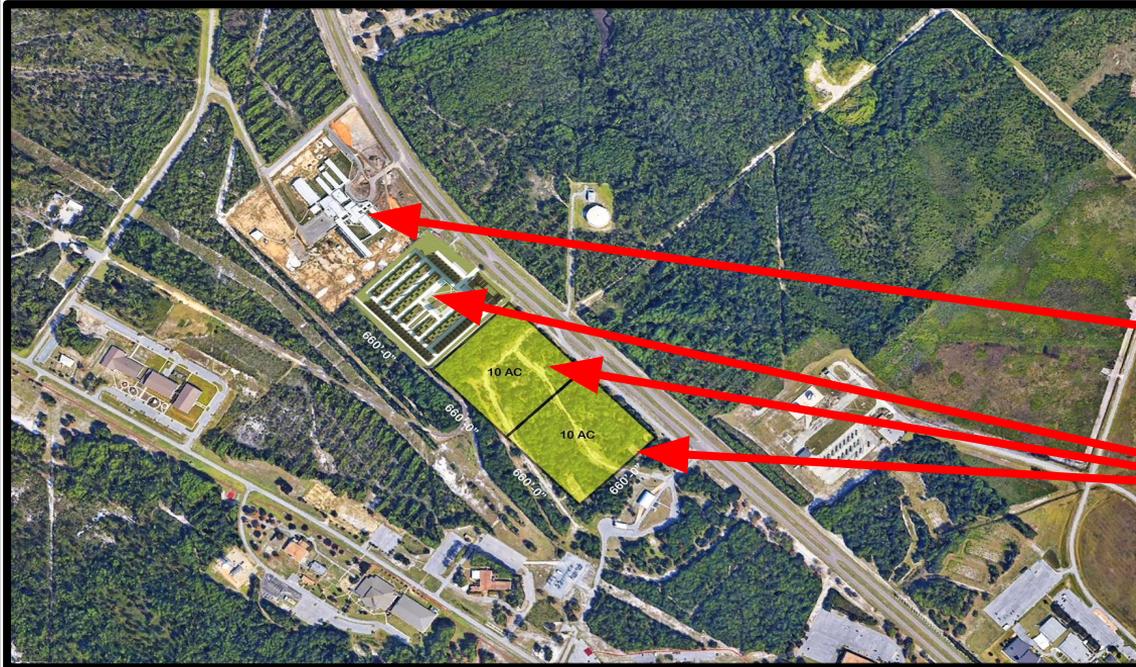
Case: Project 450



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Case: Project 450



While not originally designed for TAFB, Project 450 fits easily inside the base, and is scalable to cover as much ground as needed.

Tyndall Elementary School.

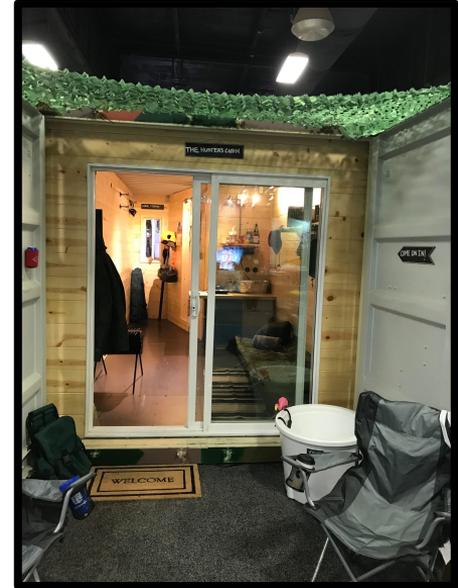
10 acres each.

Case: The Hunter's Cabin



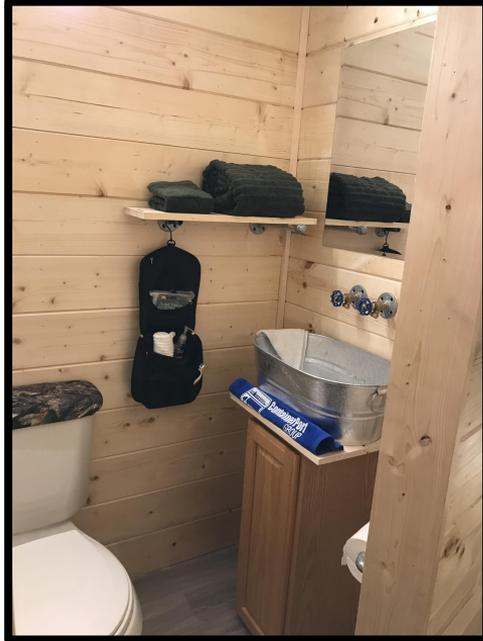
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**The Hunter's Cabin.
Created in Columbus.
Shipped to Kentucky
and Michigan.**



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Case: The Hunter's Cabin



**The Hunter's Cabin.
Created in Columbus.
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Case: The Hunter's Cabin

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Case: The Convenience Store



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**The Convenience Store.
Created in Columbus.
Shipped to Nebraska.**



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Summary

- **Shipping Containers can restore Tyndall Air Force Base.**
- **They are new-age building material.**
- **They offer flexibility and mobility that brick and mortar buildings cannot.**



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Thank You.



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4ptsdev.com
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We Don't Just Build. We Create. 25



Works Cited

1. Allen, G. (2019, February 12). Tyndall Air Force Base To Be Rebuilt As 'Air Base Of The Future'. Retrieved from <https://www.npr.org/2019/02/12/693549647/tyndall-air-force-base-to-be-rebuilt-as-air-base-of-the-future>