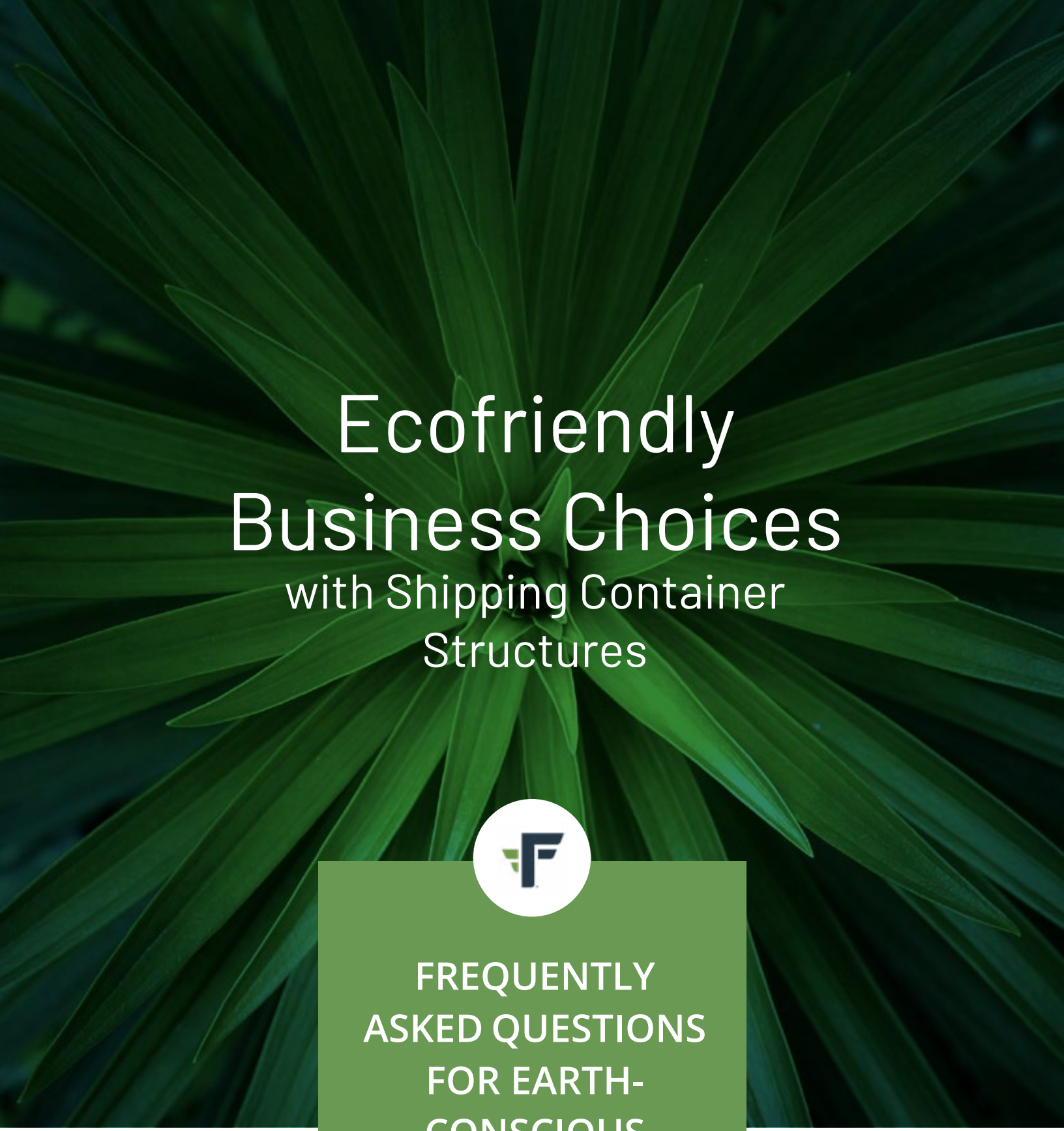


Ecofriendly Business Choices

with Shipping Container Structures

FREQUENTLY ASKED QUESTIONS FOR EARTH-CONSCIOUS COMPANIES

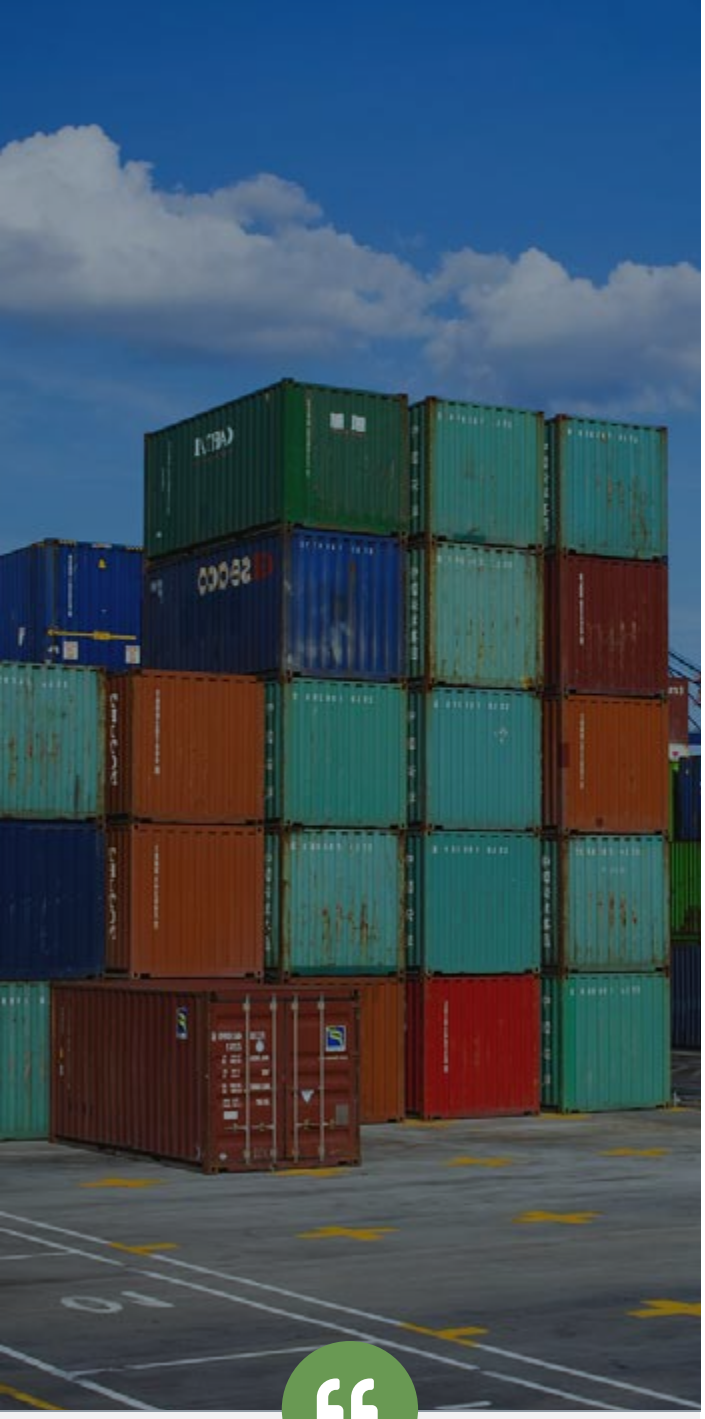
AN ECO-FRIENDLY CHOICE

From “pop-up” boutique hotels to enclosures for water treatment equipment, shipping containers now play a leading role in eco-friendly and modular development. Constructed with heavy duty Corten steel, these containers are durable enough for decades of reuse.

If your company is in the market for portable office space, onsite storage solutions, or temporary housing units, you’re probably comparing options. Modified shipping containers rival factory-built alternatives and site-built structures in both cost and customization. Because their production is energy and resource efficient, repurposed shipping containers create less landfill waste with a smaller carbon footprint.

In this guide, we address some of the frequently asked environmental questions including:

- Where repurposed shipping containers come from.
- Modular building and its impact on the environment.
- Energy efficiency.
- The carbon footprint of a container structure.
- Tax credits.



Containers can hold 55,000 lb. and are strong enough to be loaded and stacked nine high.

Q: WHY SHOULD SHIPPING CONTAINERS BE REPURPOSED?

Tens of millions of shipping containers pass through United States ports every year. In 2018, 17.5 million TEUs—a TEU is a measure of volume equal to one 20-foot shipping container—were moved through Los Angeles and Long Beach ports. The port of New York and New Jersey took over 7 million TEUs alone. The traffic is expected to grow.

Currently, the United States imports more loaded shipping containers than it exports. In 2018 the United States ran a $621 billion trade deficit. Thus, many of those containers have no return destination. It's often cheaper for companies to purchase brand new containers in the region of export than to retrieve the unloaded containers they have sent to the United States.

Steel shipping containers can hold as much as 55,000 lb. and are strong enough to be stacked nine loaded containers high. Containers also maintain 50% of their original buying value for 25 years. It doesn't make sense to treat something so robust and long-lasting as disposable.

Q: HOW USING RECYCLED BUILDING COMPONENTS HELP THE ENVIRONMENT?

Whenever a natural resource is extracted, there is an environmental cost. Leaders in the lumber and mining industries are making strides to reduce ecosystem disturbances, but energy expenditure and greenhouse gas emissions from manufacturing and transport are difficult to avoid. Consuming natural resources is an inevitable part of participating in modern society, but we can make an effort to consume much less. Part of the solution will be reusing and recycling what we already have.

In 2015, construction and demolition in the United States created 548 million tons of waste. Not only will this waste sit in a landfill, but it also means that more virgin materials will be used to construct the next building. Socially conscious companies are looking for ways to reduce their global footprints. By reusing shipping containers, they can remove huge elements from the country's waste stream.

Plus, when a shipping container outlives its use in a particular location, it can be picked up and moved to the next location. Modified shipping containers can save even more resources by preventing the construction and eventual tear down of immobile structures.

Q: WHAT IS MODULAR BUILDING?

The Modular Building Institute (MBI) defines modular building as, “a process in which a building is constructed off-site, under controlled plant conditions, using the same materials and designing to the same codes and standards as conventionally built facilities.”

In layman’s terms, an offsite factory creates standardized components of a building and then delivers them. These components, or modules, may be built to stand alone as offices or storage, or they may be stacked into a larger building. Falcon’s mobile shipping container offices are an excellent example of a modular structure.

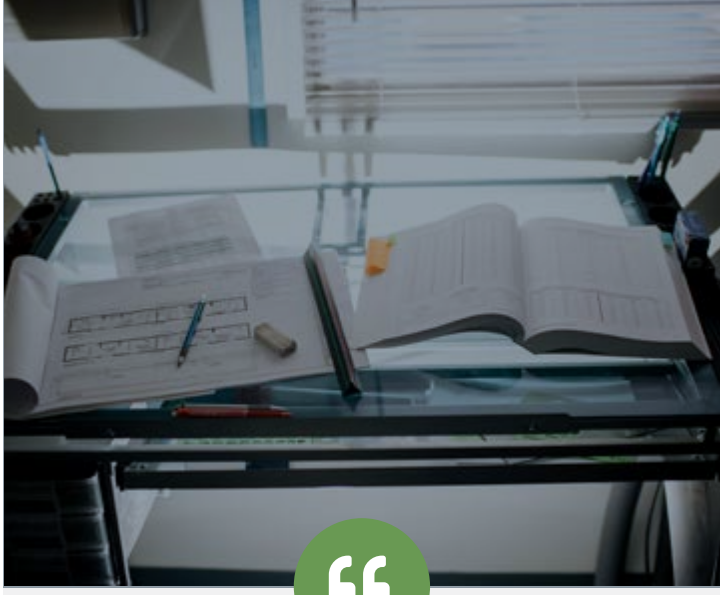
Modular construction projects can be completed 30-50% faster than traditional construction.

-Modular Building Institute

Q: WHY IS MODULAR BUILDING GOOD FOR THE ENVIRONMENT

Modular buildings can save energy and resources by increasing efficiency. The controlled manufacturing environment prevents material loss from weather intrusion and theft that may happen on a construction site.

Repeating designs also means the fabrication process can be perfected and streamlined. Knowing the exact amount of material that needs to be ordered for a project minimizes waste.



77% of building professionals reported reducing waste when using modular construction.

-McGraw-Hill Construction Smart Report

Q: ARE CLIMATE CONTROL SYSTEMS IN SHIPPING CONTAINERS MORE ENERGY EFFICIENT THAN A MOBILE HOME'S?

It's difficult to compare the two groups categorically. In large part energy efficiency depends on the kind of insulation and HVAC system a building contains. Any structure can minimize its carbon footprint with proper planning and quality construction.

That said, shipping container structures are often more conducive to energy efficiency measures. They lack the nooks and closets that can create competing micro-climates.

Choosing insulation with higher R-values can make your container structure more energy efficient.

Q: DO CONTAINER STRUCTURES HAVE SMALLER CARBON FOOTPRINTS THAN STICK BUILT STRUCTURES?

Construction of a mixed material building with the same dimensions as a 40-foot shipping container is estimated to release 9.9 tons of carbon. Producing, transporting, and installing a Falcon 40-ft dual office made from a recycled container releases around half of these emissions if no foundation is required. (Build Carbon Neutral)

1. Fewer New Materials

The creation and transportation of construction materials uses energy. Since most of a shipping container structure is recycled, it reduces the emissions associated with procuring virgin materials.

2. Efficient Material Use

Falcon Structures' modular building approach makes production material and energy use more efficient.

3. Foundation Free and Mobile

Single container structures don't need a foundation if the ground is flat and dry. Skipping a ¼-foot thick concrete foundation for a structure with the dimensions of a 40-foot container saves 5.9 tons of carbon emissions!

ARE THERE ENVIRONMENTAL TAX CREDITS AVAILABLE?

Since shipping container structures are relatively new, regulatory bodies have not yet come to a consensus on environmental tax credits. However, federal and state tax credits for energy efficiency measures are always subject to change.

It's worthwhile to research current codes before buying, building, or designing any business asset. Typically, green tax credits and qualifying LEED points only apply to permanent structures. The Modular Building Institute has also made headway in determining how modular construction can qualify for LEED credits.

If you're planning to build a shipping container-based structure, you'll want to register your project through LEED Online and the U.S. Green Building Council (USGBC), and consult with your local tax advisor.

Read the Modular Building Institute's white paper on LEED credits HERE.

DO RECYCLED CONTAINERS HAVE DAMAGE FROM THEIR PREVIOUS TRAVELS?

Falcon Structures has strict quality control standards. We never use containers that have lost structural integrity or are otherwise unsafe. That being said, many safe, structurally-sound recycled containers will have superficial dents and scuffs.

A fresh coat of paint can go a long way to beautifying a recycled container. Still if a project calls for a more polished appearance, we can use a one-trip container. One-trip containers have transported cargo only once and are less likely to have dents and dings. However, containers which have had a long life transporting cargo will always be the greener option.

We suspect many eco-minded companies won't mind a few bumps when they consider the environmental benefits of recycling. Our office is made of recycled containers, and we think it looks great!

Used shipping containers have more dents but are the greener option.

WHO CAN I CONTACT TO LEARN MORE?

Construction
Construction & Demolition Recycling Association

Restaurants
The Green Restaurant Association

Building Design
Leadership in Energy and Environmental Design (LEED)

Modular Building
The Modular Building Institute

Oil and Gas
The Intermountain Oil & Gas Best Management Practices Project

Construction Carbon Emissions
Build Carbon Neutral

Shipping Container Structures
Falcon Structures

If you have any questions or need assistance along the way, we're here to help. Just give us a call at

877-704-0177

Have questions or need additional resources? Let's talk.

While the majority of our clients' container applications fall into one of our standard product categories, we regularly complete custom container modification requests too. If you're not finding the tools or insight you need here, contact us. We can walk you through the process and share additional resources to help transform your vision from concept into reality.

ABOUT FALCON STRUCTURES

When we repurpose steel shipping containers, we're not just leveraging a stronger, more readily available building material; we're creating long-lived business assets. Whether your business plans to quickly deploy a field camp or assemble a multi-story apartment complex, Falcon Structures can provide code-compliant modules for your project. Countless industries now rely on our modified containers to create modular container buildings with superior quality. Founded in 2003, Falcon Structures is based in Austin, Texas.

Contact Falcon Structures today for information on modified, steel shipping containers for your next project.

FALCON STRUCTURES

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sales@falconstructures.com