



# LODESTAR STRUCTURES Inc.

## Precast Concrete Modular Building System

A BETTER WAY TO BUILD

**PATENT  
PENDING**



[www.LodestarStructures.com](http://www.LodestarStructures.com)  
[Sales@LodestarStructures.com](mailto:Sales@LodestarStructures.com)

**833.LODESTAR**  
**833-563.3782**

November 2023



- L O D E S T A R S T R U C T U R E S I N C .
- ✓ Modular Connectivity
  - ✓ Non-Combustible Building Material
  - ✓ Weather Resistant Exterior & Roof
  - ✓ Integrated Support Columns



# Precast Concrete Modular Building System

*Unlocking the secret  
to rapidly build a better  
tomorrow*





**L O D E S T A R S T R U C T U R E S I N C .**  
 **Modular  
Connectivity**

 **Non-Combustible  
Building Material**

 **Weather Resistant  
Exterior & Roof**

 **Integrated  
Support Columns**

**WHO we are**  
**and WHY we DO what we DO**



54 years  
Experience

Precast Experts

Innovative Designs

Efficiency Focused

Community Centric

Environmentally  
Accountable

Waste Adverse

## 54 Years of Excellence

1969



### Anchor Concrete Products Limited

Specialists in Designing and  
Manufacturing Custom Precast  
Concrete Products for **over 54  
years**

2001



### Anchor Rebar Supply

Specializing in forming and  
assembling custom reinforcing  
solutions  
(rebar fabrication)

2021



### Lodestar Structures Inc.

Patent Holder of Lodestar  
Structures Inc.

Product design and development

Master Global Licensor of  
Lodestar Structures Precast  
Concrete Modular Building  
System







L O D E S T A R S T R U C T U R E S I N C .  
✓ Modular  
Connectivity

✓ Non-Combustible  
Building Material

✓ Weather Resistant  
Exterior & Roof

✓ Integrated  
Support Columns

Our mission is to create an **environmentally responsible building system** that provided added benefits for the construction industry as well as the building owner, a system **that could be easily adopted by builders, designers, and developers.**





“You never change things by fighting the existing reality.

To change something, build a new model that makes the existing model obsolete.”

R. Buckminster Fuller

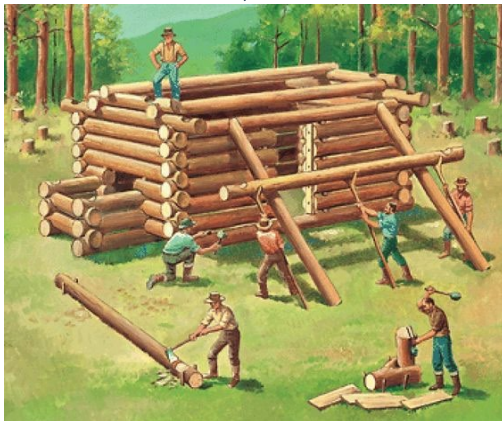




- L O D E S T A R S T R U C T U R E S I N C .
- 
**Modular  
Connectivity**
  - 
**Non-Combustible  
Building Material**
  - 
**Weather Resistant  
Exterior & Roof**
  - 
**Integrated  
Support Columns**

Historically advancements in building materials has influenced building construction and design: **other materials**

### Earlier times



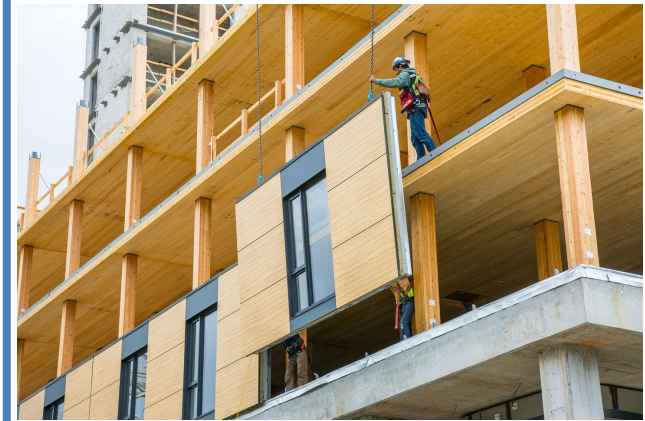
- Imperfections were unavoidable
- Limited to local raw material form
- Labour intensive

### Recent



- Multiple levels
- Off-Site material preparation
- Accelerated construction

### Modern



- Engineered materials
- Extended spans
- Reducing waste in material manufacturing







- L O D E S T A R S T R U C T U R E S I N C .
- 
**Modular Connectivity**
  - 
**Non-Combustible Building Material**
  - 
**Weather Resistant Exterior & Roof**
  - 
**Integrated Support Columns**

Historically advancements in building materials has influenced building construction and design - **concrete**

### Earlier times



- Introduction of Concrete materials
- Larger buildings & structures
- Custom built components
- Use locally sourced material

### Recent



- Requires volume of skilled-labour
- Time intensive
- Consistency challenges
- Exposed to elements
- Scheduling challenges
- On site management intensive

### Advanced System



- Engineered Structural and enclosing product
- Manufactured in factory-controlled environments
- Quality assurance – factory-controlled & audited process
- Delivered ready to install for Rapid Construction
- Controlled Construction Schedule (stage product)
- Reduces on-site labour







Our objective was to create an environmentally responsible building system that provided added benefits for the construction team as well as the building owner, that could be easily adopted by builders and developers.

Providing  
**A BETTER WAY TO**  
**BUILD**



## Lodestar Structures Scorecard

- ☐ **Rapid Construction**
- ☐ **Affordable & Attainable**
- ☐ **Resilient**
- ☐ **Modular** - offsite construction
- ☐ **Efficient Design** - Manufacturing, Usage, & Delivery
- ☐ **Extended Life-cycle** of the finished Buildings
- ☐ **Minimal Environmental Impact**
- ☐ **Reusable & Recyclable**
- ☐ **Minimal Re-tooling & Re-learning** for builders





L O D E S T A R S T R U C T U R E S I N C .  
 **Modular  
Connectivity**

 **Non-Combustible  
Building Material**

 **Weather Resistant  
Exterior & Roof**

 **Integrated  
Support Columns**

## The Lodestar Structures Building System uses traditional building materials in an innovative & responsible way.

- Designing out excess and unwanted components
- Refining product design through advanced engineering
- Quality assurance in factory-controlled processes





- L O D E S T A R S T R U C T U R E S I N C .**
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**

## Lodestar Structures – Modular Building System



**A**

### Prepare the foundation

Lodestar Precast Modular Base, pier footings, slab-on-grade, or traditional basement & footings

**B**

### Install the Module(s)

**C**

### Enclose and complete the structure





- L O D E S T A R   S T R U C T U R E S   I N C .**
- 
**Modular  
Connectivity**
  - 
**Non-Combustible  
Building Material**
  - 
**Weather Resistant  
Exterior & Roof**
  - 
**Integrated  
Support Columns**

## Lodestar Structures – Modular Building System



A

&amp;

B

**Prepare the  
foundation**

**Install the  
Module(s)**

C

**Enclose and complete the  
structure**







L O D E S T A R   S T R U C T U R E S   I N C .

✓ **Modular Connectivity**   ✓ **Non-Combustible Building Material**   ✓ **Weather Resistant Exterior & Roof**   ✓ **Integrated Support Columns**

## Lodestar Structures – Modular Building System



- Engineered Structural and enclosing product
- Manufactured in factory-controlled environments
- Quality assurance – factory-controlled & audited process
- Delivered ready to install for Rapid Construction
- Controlled Construction Schedule (stage product)
- Reduces on-site labour





## Products: Structural Building Units

Reinforced concrete designed to withstand extreme elements, exposure to moisture, fire, seismic, wind, insects, and erosion.





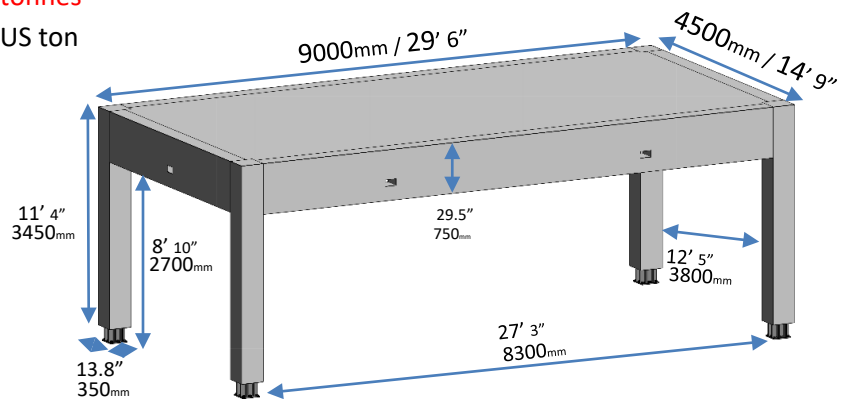
## Lodestar Structures - Model C series

### DOUBLE LENGTH – MODULAR BUILDING UNIT

**MBU-436-4** ( 436 Sq ft )

**28.21 tonnes**

31.09 US ton

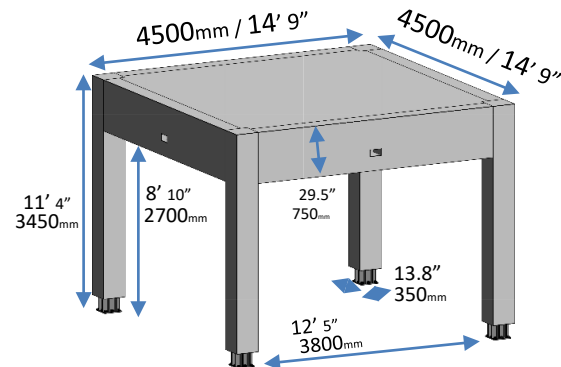


### SINGLE LENGTH - MODULAR BUILDING UNIT

**MBU-218-4** ( 218 Sq ft )

**17.81 tonnes**

19.63 US ton



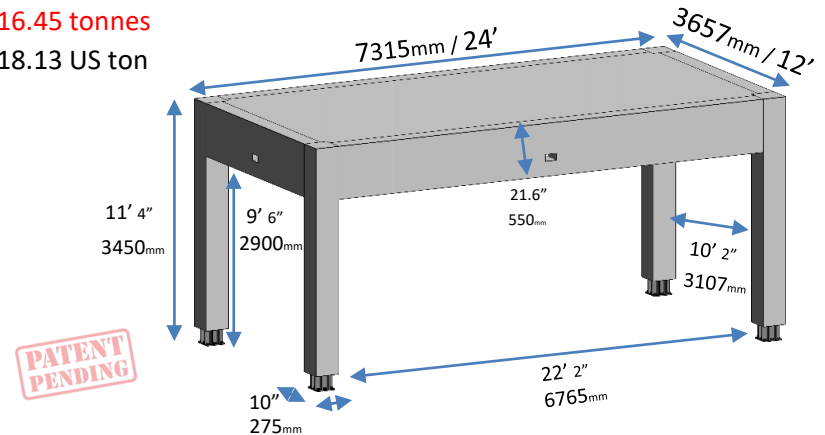
## Lodestar Structures - Model R series

### DOUBLE LENGTH – MODULAR BUILDING UNIT

**MBU-288-4** ( 288 Sq ft )

**16.45 tonnes**

18.13 US ton

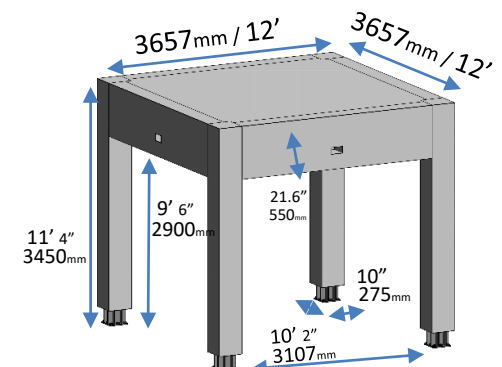


### SINGLE LENGTH – MODULAR BUILDING UNIT

**MBU-144-4** ( 144 Sq ft )

**10.54 tonnes**

11.62 US ton





## Products: Building Foundation Base Units

- Designed to receive Structural Building Units
- Provides an instant structural foundation
- Provides floor slab
- Temporary or permanent installation
- Manufactured offsite, immediate placement







**Modular  
Connectivity**



**Non-Combustible  
Building Material**



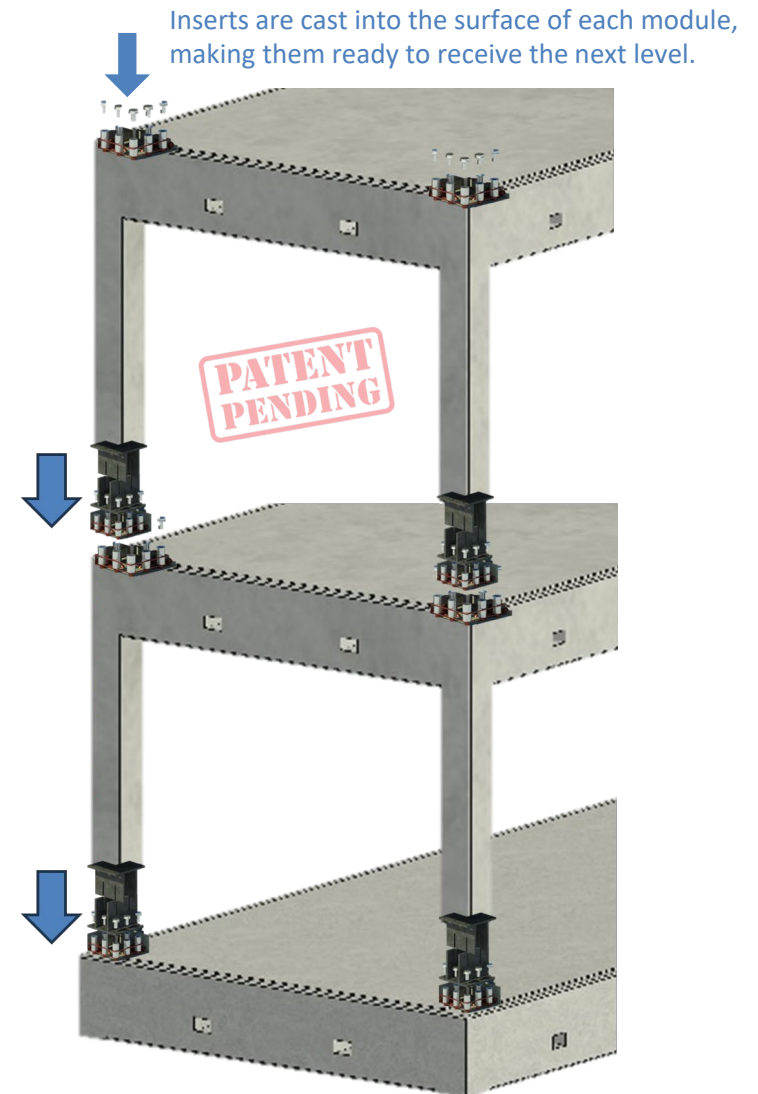
**Weather Resistant  
Exterior & Roof**



**Integrated  
Support Columns**

## Module Connection Assemblies

Connecting columns to footings or lower unit & base





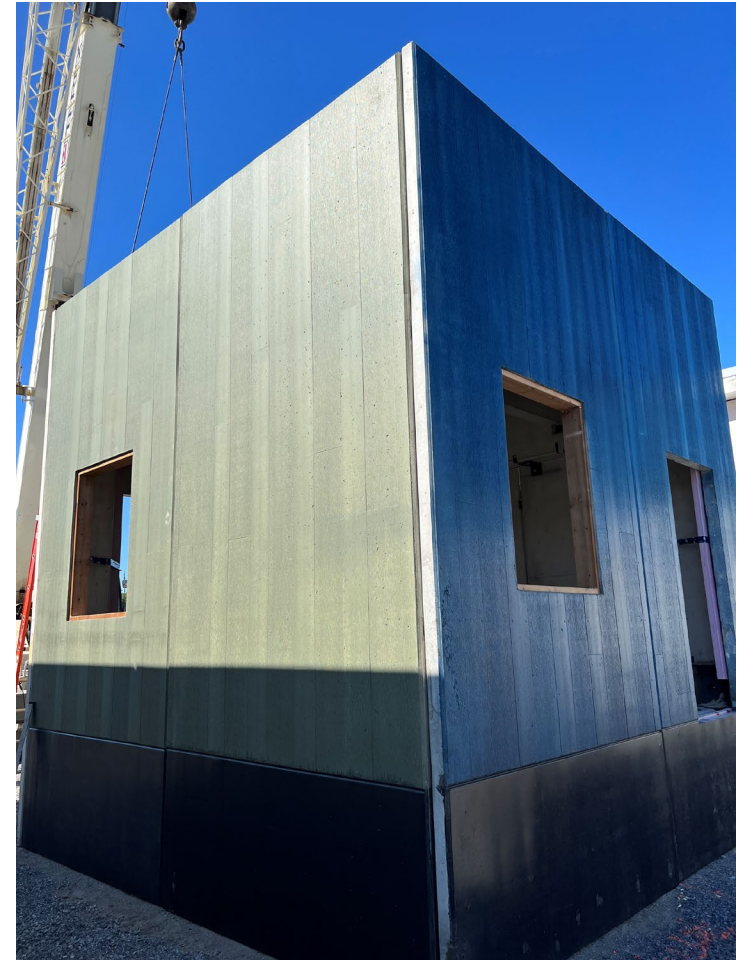
L O D E S T A R   S T R U C T U R E S   I N C .

✓ **Modular Connectivity**   ✓ **Non-Combustible Building Material**   ✓ **Weather Resistant Exterior & Roof**   ✓ **Integrated Support Columns**

## Products:

# Precast Concrete Architectural Wall Panels

- Architectural pattern
- Multiple (custom) pattern options
- Stained or painted to suit project requirements
- Rapid installation using proprietary “Set-n-Pin” mounting hardware
- Allows for temporary or permanent installation
- Manufactured offsite and delivered ready for placement

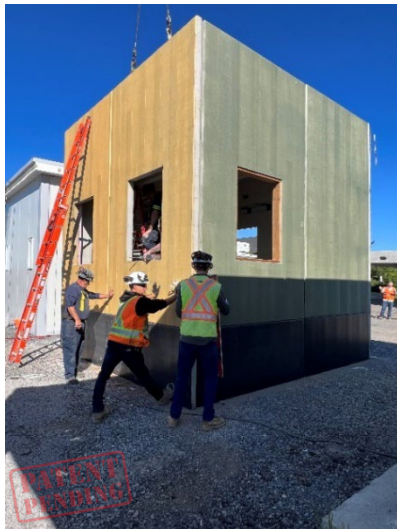
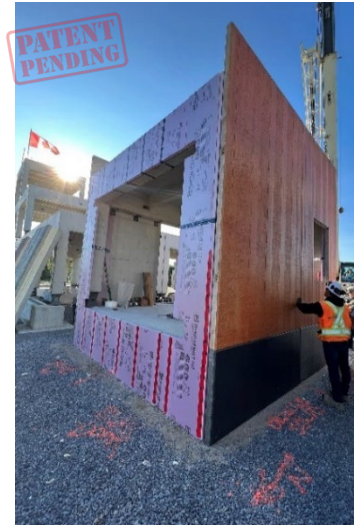
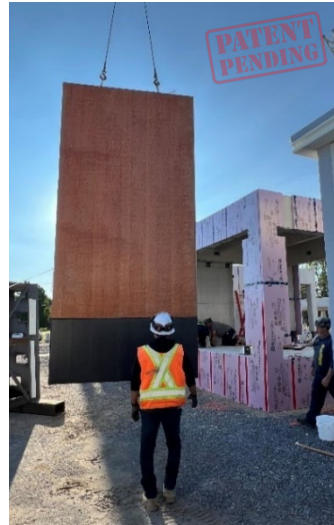






- L O D E S T A R   S T R U C T U R E S   I N C .**
- 
**Modular  
Connectivity**
  - 
**Non-Combustible  
Building Material**
  - 
**Weather Resistant  
Exterior & Roof**
  - 
**Integrated  
Support Columns**

## PRECAST CONCRETE ARCHITECTURAL WALL PANELS



Assembly of a building, completed in 3 hours:

- Foundation Base
- Structural Building Unit
- Architectural Wall Panel with designer finish
- Window and Door openings cast into panels





L O D E S T A R S T R U C T U R E S I N C .  
 **Modular  
Connectivity**

 **Non-Combustible  
Building Material**

 **Weather Resistant  
Exterior & Roof**

 **Integrated  
Support Columns**

# CONFIGURATION & ASSEMBLY EXAMPLES







**L O D E S T A R S T R U C T U R E S I N C .**  
 ✓ **Modular Connectivity**

✓ **Non-Combustible Building Material**

✓ **Weather Resistant Exterior & Roof**

✓ **Integrated Support Columns**

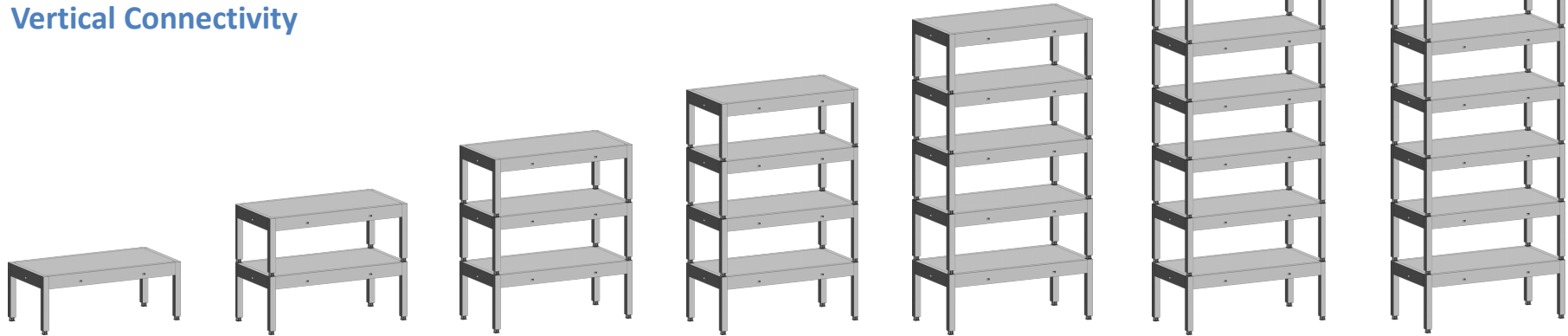
## CONFIGURATION OPTIONS TO BUILD THE PERFECT SPACE

**PATENT PENDING**

### Horizontal Connectivity



### Vertical Connectivity



### Horizontal & Vertical Connectivity





**Modular  
Connectivity**



**Non-Combustible  
Building Material**



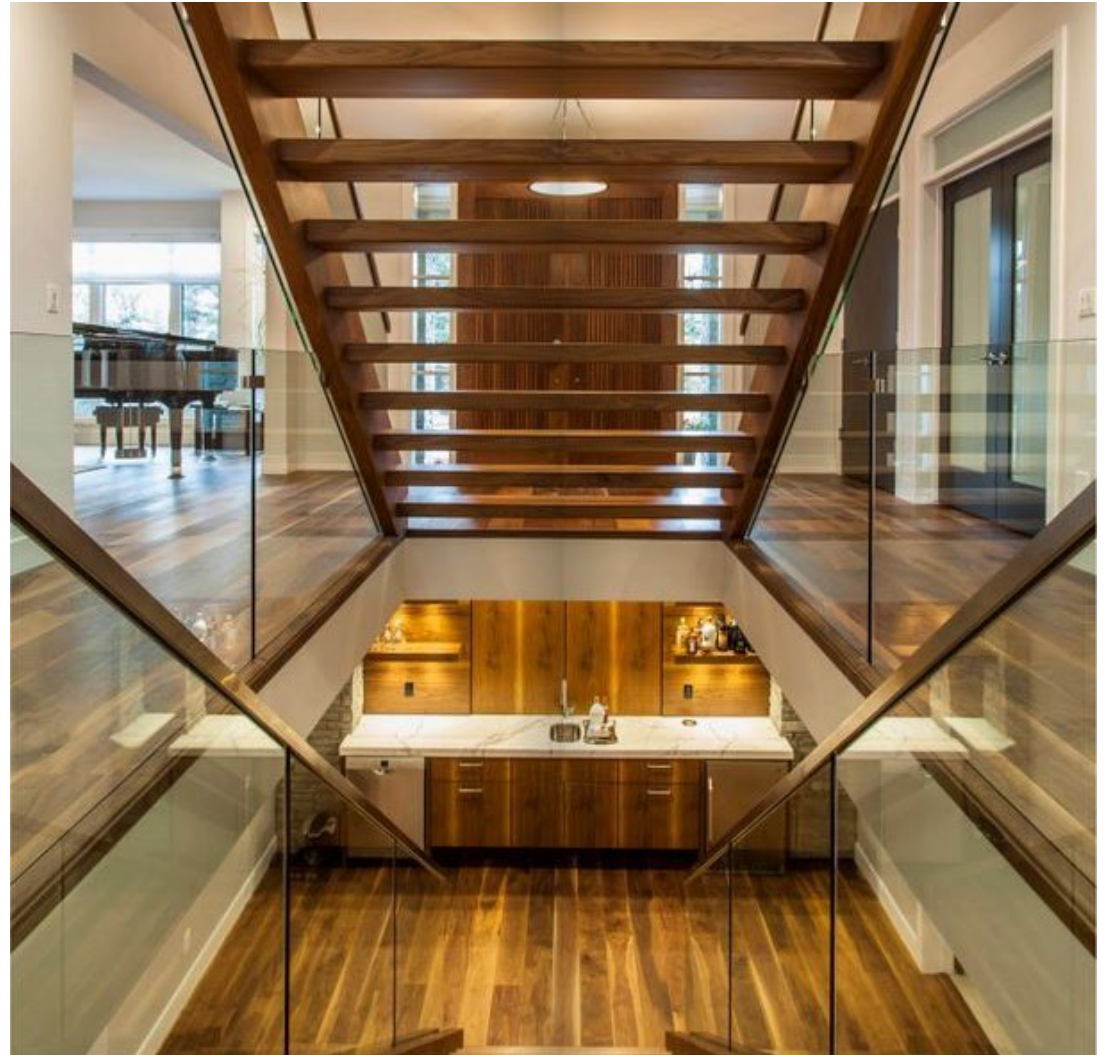
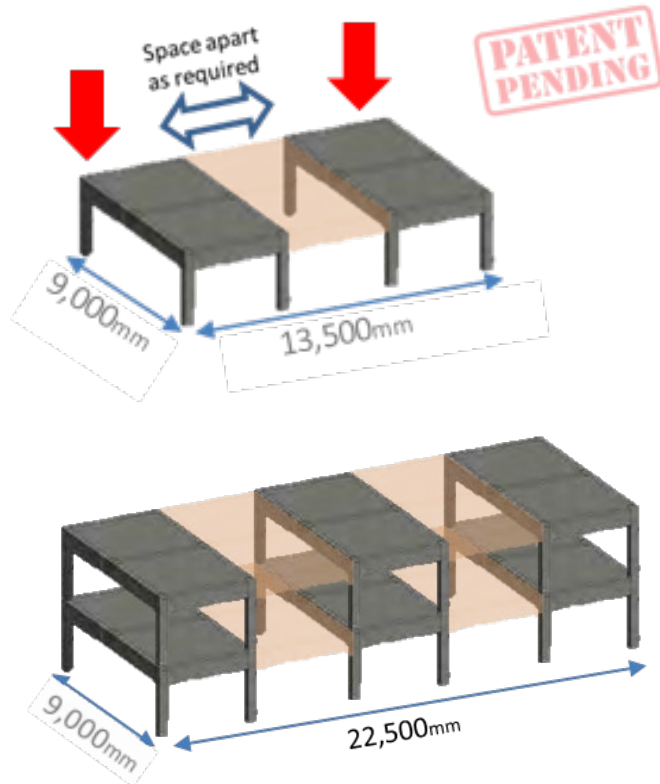
**Weather Resistant  
Exterior & Roof**



**Integrated  
Support Columns**

## CONFIGURATION EXAMPLES

Modules can be spaced apart, infilling the space between with alternative building material.





L O D E S T A R S T R U C T U R E S I N C .



**Modular  
Connectivity**



**Non-Combustible  
Building Material**



**Weather Resistant  
Exterior & Roof**



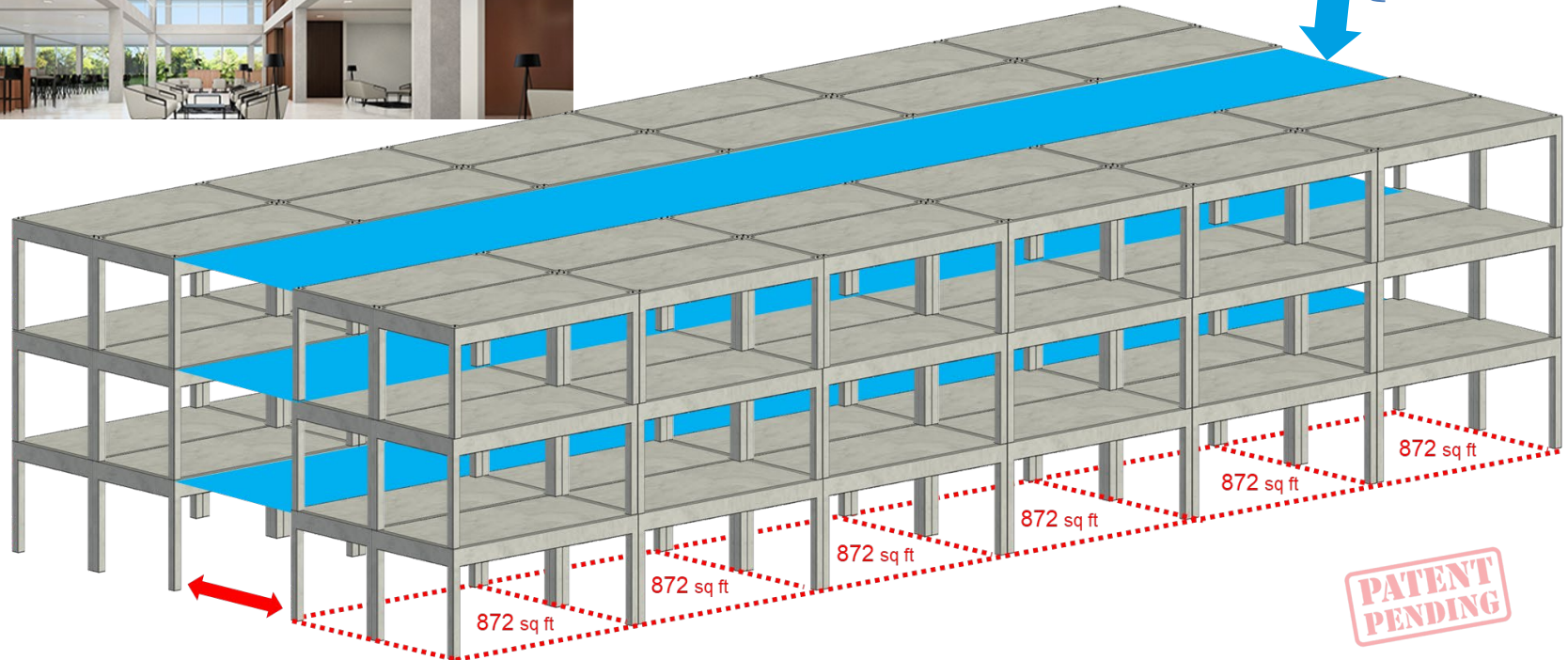
**Integrated  
Support Columns**

## MULTI LEVEL – MULTI UNIT BUILDINGS



Space modules apart to  
accommodate

- Stairs
- Services
- Corridors
- Elevators
- Skylights



**PATENT  
PENDING**







- L O D E S T A R S T R U C T U R E S I N C .
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**

## CONFIGURATION EXAMPLES



Modules can be used  
below-and-above grade







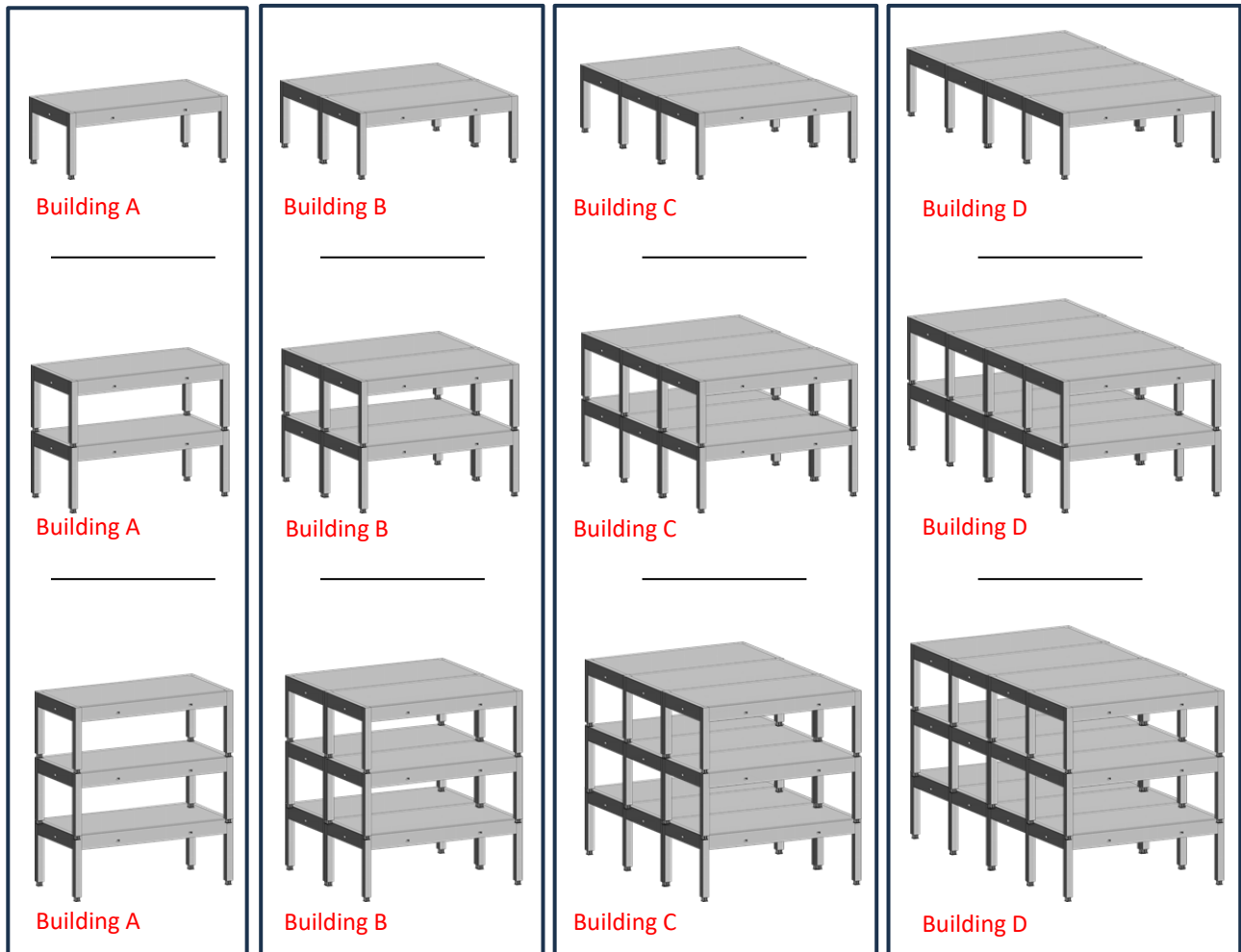
## EXPANSION OVER PHASES AS NEEDS CHANGE

**PATENT  
PENDING**

**PHASE 1**  
Build to current needs  
and requirements

**PHASE II**  
Expand to meet changing  
needs and requirements

**PHASE III**  
Continue to expand to  
meet ongoing needs





## RAPID AND EFFICIENT CONSTRUCTION

to help create communities which are financially and ecologically sustainable, where people can all live, learn, work, and play in clean, natural surroundings that promote our health, welfare, and happiness.





- L O D E S T A R   S T R U C T U R E S   I N C .**
- 
**Modular  
Connectivity**
  - 
**Non-Combustible  
Building Material**
  - 
**Weather Resistant  
Exterior & Roof**
  - 
**Integrated  
Support Columns**

## Precast Concrete STRUCTURAL BUILDING UNITS



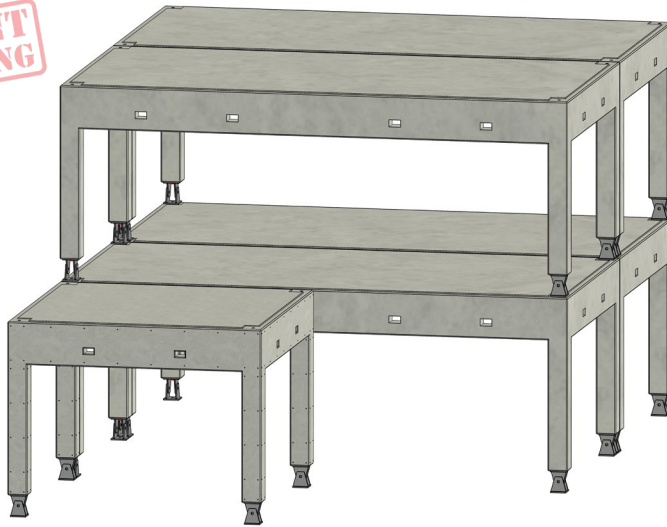




**L O D E S T A R S T R U C T U R E S I N C .**

- ✓ **Modular Connectivity**
- ✓ **Non-Combustible Building Material**
- ✓ **Weather Resistant Exterior & Roof**
- ✓ **Integrated Support Columns**

**PATENT  
PENDING**



#### Module Configuration

#### Interior Space

#### Rooftop Space

**4** MBU-436 - 436 sq ft ea.    **1,744** sq ft interior-space    **872** sq ft rooftop patio

**1** MBU-218 - 218 sq ft ea.    **218** sq ft interior-space    **218** sq ft rooftop patio

**5 Modules**    **1962** sq ft interior-space    **1090** sq ft rooftop patio space

**1 Day** to assemble modules

**3,052** Total square foot usable space

#### Scope of project: Residential

The customer wanted a building designed to minimize sightline impact, and to provide maximum usable floor and rooftop space.

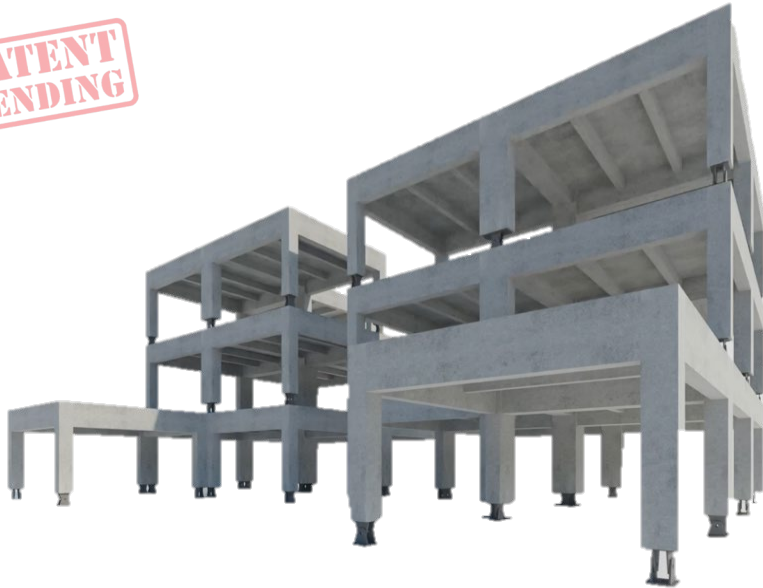




L O D E S T A R S T R U C T U R E S I N C .

✓ **Modular Connectivity**    ✓ **Non-Combustible Building Material**    ✓ **Weather Resistant Exterior & Roof**    ✓ **Integrated Support Columns**

**PATENT  
PENDING**



### Module Configuration

12 MBU-436 - 436 sq ft ea.

2 MBU-218 - 218 sq ft ea.

**14 Modules**

### Interior Space

**5,232** sq ft interior-space

436 sq ft interior-space

**5,668** sq ft interior-space

### Rooftop Space

**1,744** sq ft rooftop patio

436 sq ft rooftop patio

**2,180** sq ft rooftop patio

**2 Days** to assemble modules

**7,848** Total square foot usable space



### Scope of project: Mixed-Use

The approval decision would be based on the ability to provide maximum usable space within a challenging footprint, meeting an extremely lean construction schedule.





**Modular  
Connectivity**



**Non-Combustible  
Building Material**

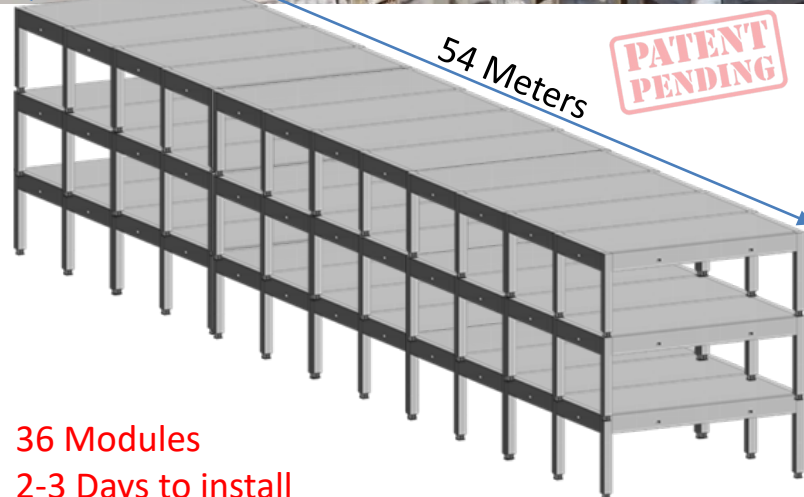


**Weather Resistant  
Exterior & Roof**

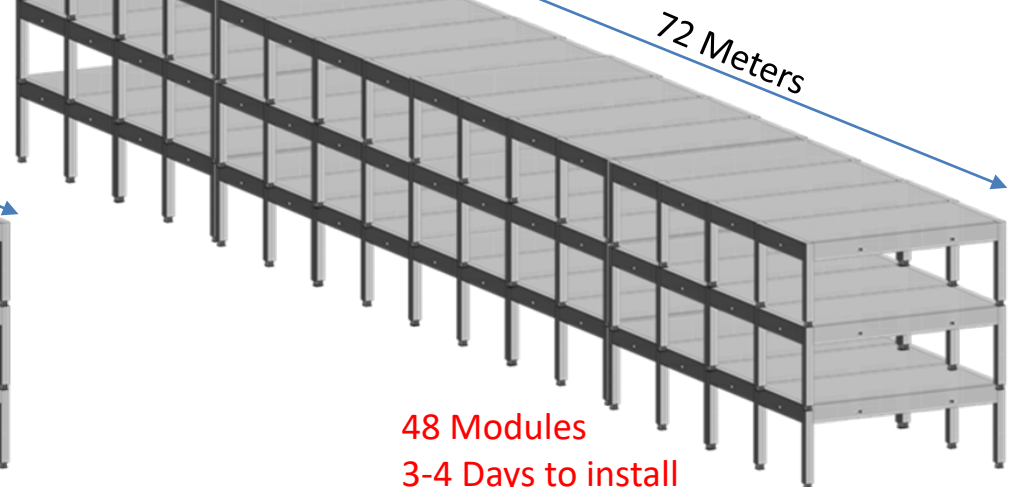


**Integrated  
Support Columns**

## Rapid Community Construction – with added benefits



**36 Modules**  
**2-3 Days to install**



**48 Modules**  
**3-4 Days to install**







Modular  
Connectivity



Non-Combustible  
Building Material



Weather Resistant  
Exterior & Roof



Integrated  
Support Columns

## Examples of Designs and Features

### Buildings:

Residential  
Commercial  
Recreational

Hospitality  
Educational  
Mixed & Multi Use

Warehouse  
Storage  
Other

### Features:

Rooftop Gardens  
Outdoor Hospitality  
Rooftop Patio

Solar Roof  
Water Harvesting  
Private Outdoors paces (community housing)

Rooftop Classroom  
Max. use of floorspace





- L O D E S T A R   S T R U C T U R E S   I N C .
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**

## MULTI-UNIT BUILDINGS with ROOFTOP AMENITIES







## SAFE, SECURE, AND SUSTAINABLE STRUCTURES

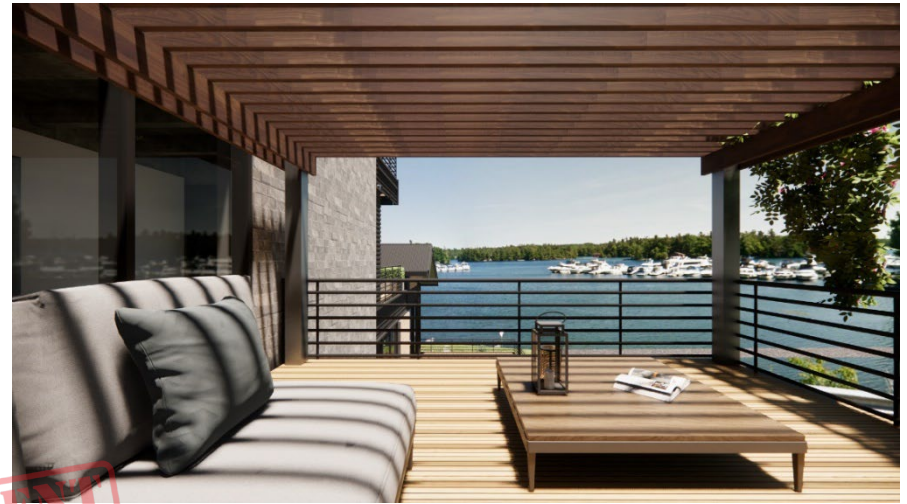






- L O D E S T A R   S T R U C T U R E S   I N C .**
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**

## GREEN ROOF, ROOFTOP GARDEN, and ROOFTOP PATIO





## DELIVERY SYSTEM







- L O D E S T A R S T R U C T U R E S I N C .**
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**



## EFFICIENTLY DELIVERING Lodestar Structures directly to the construction site.

Our custom lifting system can be affixed to a standard flat-deck trailer, allowing the operation to back under a module and lift & transport them without the need for cranes or loading equipment.



## SELF-LOADING & SELF-UNLOADING DELIVERY SYSTEM MINIMIZING COSTS & MAXIMIZING EFFICIENCY







## What's next?



- Our R & D and engineering teams, supported by senior leadership, are determined to refine existing products and to innovate new products to evolve the Lodestar Structures roadmap.
- Our focus is to eliminate waste by designing out unwanted components and feature that contributes to waste.
- We believe everyone on the planet has the right to a safe and attainable place to work, play, learn, and live. We will continue our mission to make it a reality.





- L O D E S T A R S T R U C T U R E S I N C .
- ✓ Modular Connectivity
  - ✓ Non-Combustible Building Material
  - ✓ Weather Resistant Exterior & Roof
  - ✓ Integrated Support Columns

To ensure communities around the World have access to the Lodestar Structures Building System, a Network of Licensed Manufactures would produce Lodestar Structures for their communities.



A scalable and rapidly deployable solution, equally available to remote communities and urban regions.





**L O D E S T A R S T R U C T U R E S I N C .**  
☒ **Modular Connectivity**

☒ **Non-Combustible Building Material**

☒ **Weather Resistant Exterior & Roof**

☒ **Integrated Support Columns**

## Our Mission Scorecard



Based on industry and customer feedback, we are confident Lodestar Structures deliver

**A BETTER WAY TO BUILD**

☒ **Rapid Construction**

☒ **Affordable & Attainable**

☒ **Resilient**

☒ **Modular** - offsite construction

☒ **Efficient Design** - Manufacturing, Usage, & Delivery

☒ **Extended Life-cycle** of the finished Buildings

☒ **Minimal Environmental Impact**

☒ **Reusable & Recyclable**

☒ **Minimal Re-tooling & Re-learning** for builders

☐ **Continue to Innovate and refine**







- L O D E S T A R S T R U C T U R E S I N C .
- ✓ **Modular Connectivity**
  - ✓ **Non-Combustible Building Material**
  - ✓ **Weather Resistant Exterior & Roof**
  - ✓ **Integrated Support Columns**

## AWARD WINNING - STRUCTURAL ENGINEERING – PRECAST CONCRETE BUILDING SYSTEM

