

# DSI PREFABRICATED HOUSES





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01

# WHAT IS A PREFABRICATED HOUSE?

## DSI Prefab Advantage

### QUICK TO ASSEMBLE

DSI units are quick to put together and only require two to three workers to put the units together.

### BUILDING BLOCKS

Just like building with legos DSI prefab houses are easy to put together, open, and stack on top of each other.

### TURNKEY SOLUTION

DSI provides full solutions for life camps. may include services, civil works, furniture, and specialty equipment.

### OFF-SITE CONSTRUCTION

DSI units are manufactured in a controlled factory environment to ensure efficiency and quality.

### STANDARD SIZES

Standard sizes are used for mass production and ease of assembly as best practice module construction.

### SHIPPED EFFICIENTLY

DSI units are designed to be deployed anywhere in the world including remote places.



Prefabricated Houses are Modular Units that are manufactured Off-Site in a controlled environment such as a factory.

This in turn allows for fast mass production whilst maintaining quality assurance.

The units are typically deployed in a short amount of time and may be shipped by truck or containers anywhere in the world.

The prefabricated units are engineered and designed to minimize work on site. And assembled with only the use of hand tools.

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PREFAB TYPES

# PREFAB TYPE COMPARISON

DSI Prefab units may be delivered in 3 different forms depending on the final use, accepted dimension, and shipping limitations.

## FULLY ASSEMBLED

- ✓ Completely Assembled
- ✗ Can Fit 1-2 Units Per Truck
- ✓ No Additional Internal Work On site
- ✓ Wider Units

*For Truck Shipments*

## FLATPACK

- ✓ Semi-Assembled
- ✓ Minimal Work On Site Required
- ✗ Limited Width
- ✓ Can Fit 4-8 Units per container

*For 40ft HQ shipment*

## DEMOUNTED

- ✓ Dissembled Kit
- ✗ Assembly Site Work Needed
- ✓ Wider Units
- ✓ Can Fit 6-12 Units per container

*For 40ft HQ shipment*



## FULLY ASSEMBLED

*“If you intend to ship by truck and transport fee is fair than this is the best choice for you .”*



Fully Assembled prefab are units that are sent to site fully installed with the walls and all the accessories put in. If you intend to ship by truck this may be the most suitable option for you.

Typical Sizes: 6x3m (20x10ft), 12x3m (40x10ft) – custom sizes available. Can go up to 4m wide per module. Width controlled by transportation and local road width.



## Shipping

DSI Fully Assembled Prefabs are sent to site as complete modules on either on a Truck (with 7Ton Crane) or a Trailer.



## INSTALLATION

DSI Fully Assembled Prefabs are easily installed in place by using a crane to take the unit off the truck and set it in place. If the unit is up to 6 meters length and the placement of the unit is only 1-2 meters away from the truck then the Truck with 7ton Crane is sufficient for offloading. In the case where the unit is longer than 6 meters and is transported on a trailer or if the placement of the unit is further away than 1-2 meters from the truck then an additional larger crane will be needed to place the Prefab Unit.



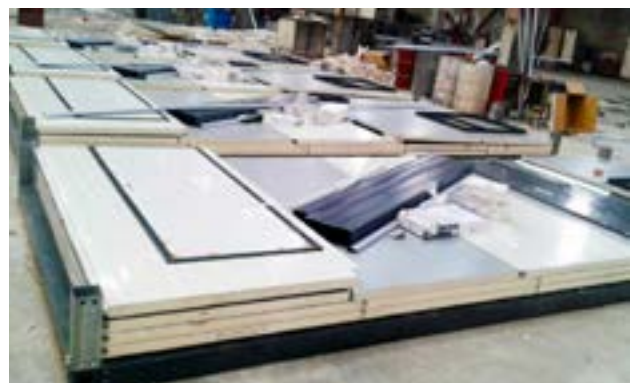
# FLAT PACK

*“If you intend to ship by containers and could adjust the design to have modules of no more than 8ft wide than this is the best option for you. Keep in mind you may always open two modules to each other for wider space.”*

Flat Pack Units are Semi-Assembled units whereby the floor and roof are already preassembled in factory. With doors and windows pre-installed in wall panels. Electrical cabling may be pre-installed. The only thing left onsite to do is install the walls, the sanitary and electrical sockets.

Typical Sizes: 5.9x2.44m (20x8ft), 11.8x2.44m (40x8ft). - Width controlled by 40ft HQ container height.

Shipping: 4-8 per 40ftHQ container. Depending on size and accessories required





## INSTALLATION

Quick assembly with semi-assembled parts. Installation manual and video sent with order.



**Step 1:** Transport the modular stack to the required location



**Step 2:** Single Modular Unit ready for assembly



**Step 3:** Single Modular Unit ready for assembly



**Step 4:** Assemble the corner posts and roof



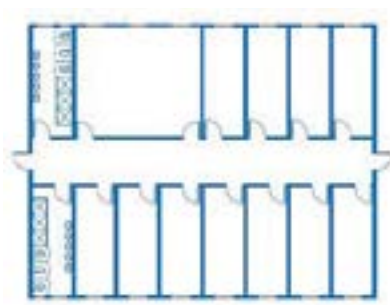
**Step 5:** Slide in the panels and connect the wiring



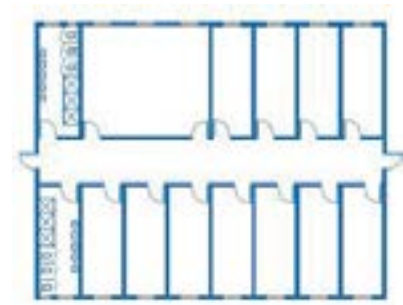
**Step 6:** Fully Assemble DALAL Modular Unit and ready to use



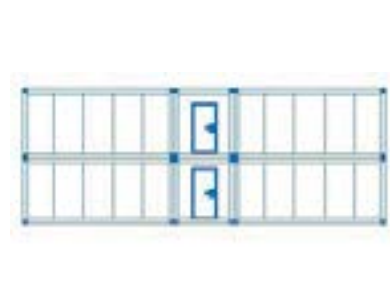
## MULTIPROPOSE ACCOMMODATION



• Ground Floor



• First Floor



• Elevation

## PACKAGING



- Packages are prepared by placing temporary short corner beams between top and bottom frames.
- Sizes of packages are (width x length x height) 2440 mm x 5900 mm x 540 mm.
- Each package contains materials to be used for itself

They are bottom frame, top frame, and 4 corner beams, sandwich wall panels equipped with doors and windows and the required electrical materials.

## SHIPPING



- Shipped by sea: On a vessel  
OR
- Shipped by land: On a truck

8 Open Room Units (Size: 5.9mx2.44m) can fit in a 40ft H.C. Container or on a truck

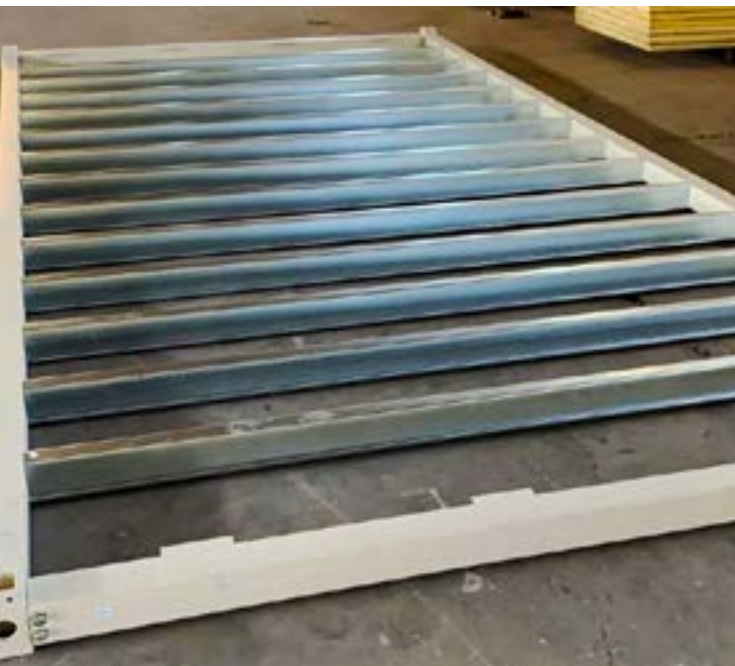
Transportation of units is %75 more efficient than a standard converted container.





## DEMOUNTED

*“If you intend to ship by containers and need to have modules more than 8ft wide and cannot adjust the design to use a flat pack than this is the best option for you.”*



Demounted Units are fully disassembled in a kit. With all materials cut to length, predrilled and painted to have all items easily and quickly fit in place.

Typical Sizes: 6x3m (20x10ft), 12x3m (40x10ft)  
– custom sizes available. Can go up to 4m wide per module.

Shipping: 6-12 per 40ftHQ container.  
Depending on size and accessories required



## INSTALLATION

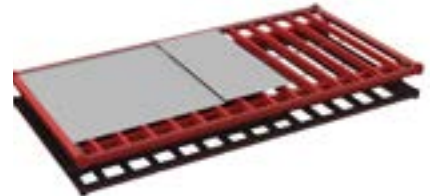
Quick to assemble with only the use of handtools. Installation manual and video sent with order.



Step 1



Step 2



Step 3



Step 4



Step 5



Step 6



Step 7



Step 8



Step 9

## PACKAGING



DSI Demounted Prefab Units are sent as pieces that are pre-drilled and cut to length and made to have all items bolted together, with no welding, by only the use of hand tools

## SHIPPING



All the pieces that compromise the pre-fab unit are put on a skid and packed into a container to ship to site.





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WHAT IS IT  
COMPOSED OFF

# PREFAB SPECIFICATIONS

## Standard Specifications

### Design Live Load

Floor Live Load	200 kg/m <sup>2</sup>
Roof Live Load	57 kg/m <sup>2</sup>
Snow Load	100kg/m <sup>2</sup>
Wind Load	120 km/hr
Additional Load Considerations	None

### Floor

Main Frame	Composed of galvanized steel sections with corner lifting blocks
Floor Joist	Cold-formed galvanized steel profile spaced at 41cm
Floor Substrate	Fiber Cement Board 16mm
Floor Finish	1.8mm Full PVC Roll

### Roof

Main Frame	Composed of galvanized steel sections with corner lifting blocks
Type	Stackable - Polyurethane Sandwich Panels

### Wall

Wall Type	50mm Polyurethane Sandwich Panel / Aluzinc Micro-ribbed surface liner both
Wall Color	Off-White (RAL 9002)

### Doors

Door Frame	1.5mm galvanized steel profile
Door Leaf	45mm Polyurethane Insulated Door Panel / Aluzinc Surface Liner Both Sides
Accessories	3 hinges, handle with standard lock, rubber gasket & door stoppers
Door Color	Off White (RAL 9002)
Doors Dimensions	As Per Drawings

### Windows

Type	Single Glazed / 6 mm
Accessories	Fly Screen and Steel Bars
Dimensions	As Per Drawings

### Sanitary

Armatures	Cold Tap / (Hot Tap - only if water heater is installed)
Portable Water Pipes	PPR-C Pipe and Fittings
Sewage Water Pipes	PVC Pipe and Fittings
Lavatory	Ceramic Lavatory - Size 44.5 x 35cm
Shower	80x80cm Shower Tray + PVC Curtain
Water Closet	Western Type - Ceramic - Size 68 x 35.5 cm
Kitchenette	Stainless steel sink underneath wooden closet
Water Heater	50 L
Accessories	Mirror, Ceramic Shelf, Water Spray, & Tissue Paper Holder

### Electrical

Electric Supply	Electric Supply 220V, 50 Hz, 1 phase   Main Panel Board (Circuit Breakers: Differential 3x40A, Sockets 1x16A, Air Condition 1x16A, Lighting 1x10A)
Electrical Tubes	Exposed PVC Tubes
Internal Lighting	30cm round LED Internal Lighting
External Lighting	LED External Lamp
Switch	Standard Lighting Switch
Sockets	European Sockets

*DSI Prefabricated Units may be designed according to the customer need.*



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## HOW TO PREPARE YOUR SITE FOR YOUR PREFAB

# Prefab Site Preparation

*What are the site works that need to be done in order to prepare you land to receive your prefab units..*



## Step 1: Foundations

### Option 1: Concrete Pad

Pour a concrete slab to the dimensions of the prefab plus an additional 20cm from each side. The slab thickness will be determined by the site and soil conditions but no less than 15cm.

This option is recommended as it leaves a clean finish and aesthetic and prevents grass growing underneath the house.

### Option 2: Concrete Footings

If the ground is soil - best to make cast in place footings with tie beams for the prefab to sit on.

If the ground is asphalt can put precast concrete footings placed on site for the prefabs to rest on. However only for single story and non-heavy load use - otherwise cast in place or footings with tie beams.

Footings should be spaced at a maximum distance of 3 meters, along the length and width. For Example, a prefab of size 6x3m will need 6 footings. Size 6x3.5m would need 9 Footings. If you have two 6x3m units next to each other (total 6x6) you need 9 footings - each 2 legs can sit on same footing.

Footing dimensions should be minimum 35x35cm, and height dependent on site conditions but no less than 15cm.

This option is recommended for large areas where the cost of pouring a slab is made out to be more expensive.

Can also instal footing and tie beams with gravel underneath the units to keep a clean finish.



## Step 2: Electrical

Extend the main powerline to the point at which the main panel board of the prefab building is the connection box is usually placed the beneath the prefab at the location of the main panel board - unless otherwise specified.

Preferably done through an underground network - unless site conditions determine otherwise.



## Step 3: Plumbing

### Waste Water

Extend the waste water lines from the septic tank or local sewer connection to the outlet locations of the sanitary ware in your prefab unit.

### Clean Water

Extend the clean water line to the well or water tank or local water lines to the inlet locations of the sanitary ware in your prefab unit.

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# PREFAB APPLICATIONS

## PREFAB APPLICATIONS

DSI Prefabricated units may be designed according to the customer need, and to fit several applications - such as:

- ACCOMODATION
- OFFICE
- ABLUTION
- RESIDENTIAL
- SCHOOLS
- CLINICS & HOSPITALS
- COMMUNITY CENTERS
- LIFE CAMPS
- SECUTIRY CABINS
- KIOSKS
- COMMERCIAL SPACE
- TELECOM



### ACCOMMODATION

Accommodation for labor workers, military camps and refugees, we provide turnkey camp solution including living units, kitchen, dinning halls, gymnasiums.

Typical Uses: Labor workers, Military personnel, Refugee camps



### OFFICE

From site office to full fledged office buildings. DSI office camps are easy to install, are relocatable and have 30 year life span. They can be individually placed or opened up to one another. Also can be stacked up to 3 stories.

Typical Uses: Site office, office camps, meeting rooms, server rooms.

## PREFAB APPLICATIONS



### ABLUTION

DSI prefabs can be used as ablation units for sites, camps, and events. DSI provides turnkey solutions with all sanitary accessories required.

Typical Uses: Toilets and shower facilities



### SECURITY CABINS

Security guard booths for buildings and plot entrances.

Typical Uses: Toilets and shower facilities



### KIOSKS

DSI popup shop, retail stores, restaurants and cafes are designed for both functionality, space and aesthetics as needed.

Typical Uses: Restaurants, kitchens, cafes and kiosks



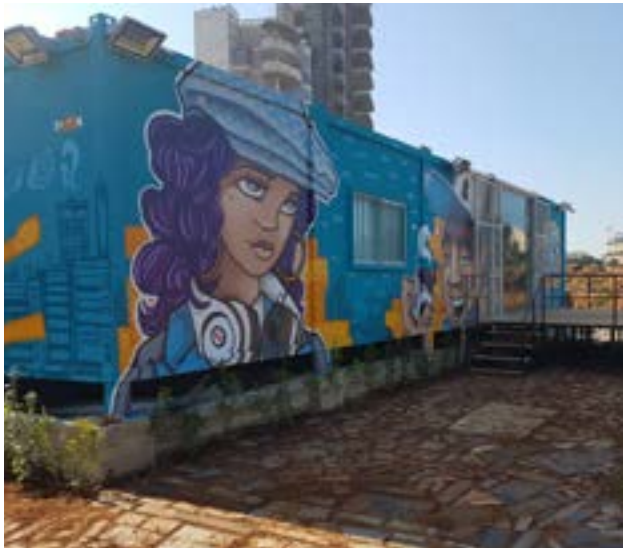
### RESIDENTIAL

Complement with aesthetic finishing DSI prefab are converted into beautiful homes for living. Ideal for fast installation. You can move into your home from 1 week to 3 months depending on the size of the house. Also the beauty is that the asset of the prefab home is that it is independent from the land as modularity allows the unit to be disassembled.

Typical Uses: Permanent resident bungalows, guesthouse, hotel and apartment complex.



## PREFAB APPLICATIONS



### COMMUNITY CENTERS

Public facilities and community centers are build easily using DSI prefab system.

Typical Uses: Facilities, Municipality quarters, Community centers, Community kitchens, NGO relief stations.



### COMMERCIAL

Car showroom and popup retail stores are commonly made from DSI Prefab houses.

Typical Uses: Car showroom and pop-up shops.



### CLINICS & HOSPITALS

DSI modular units are ideal for building fast hospitals and clinics in time of crisis and disaster relief. Also we commonly build extensions to exiting hospital facilities.

Typical Uses: Patient ward, Emergency Room, X-Ray, ICU, Morgue, Sterilization Room, Scrub Room



## TELECOM

Insulated shelters prepared to take the load and installations for electrical equipment, servers, and hardware for telecome and Data centers

Typical Uses: Telecom, Data centers, Mining hubs .



## SCHOOLS

DSI prefabs are used to build classrooms and school faciities. we have built schools worldwide. Structures are design to suit the schooling requirements from kindergartens to High schools.

Typical Uses: Classrooms, Lab Rooms, Preschool, Kindergarten.



## LIFE CAMP

Complete Turnkey lifecamps including Accommodation, office, gymnasium, Dining, kitchen, Recreational, and Laundry facilities.

Typical Uses: Army Camp, Labor Camp, Refugee camp, Residential complex

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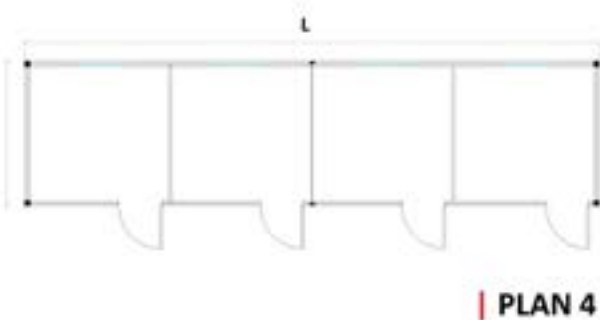
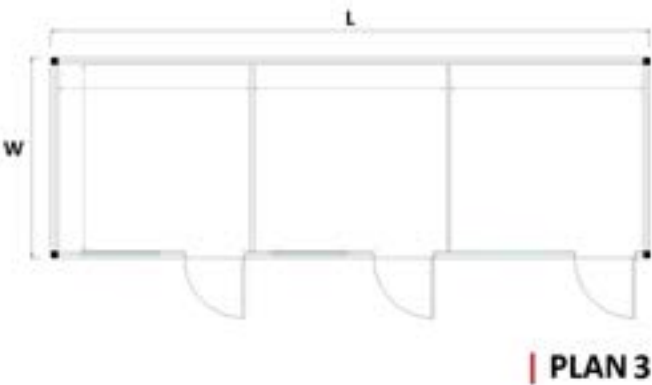
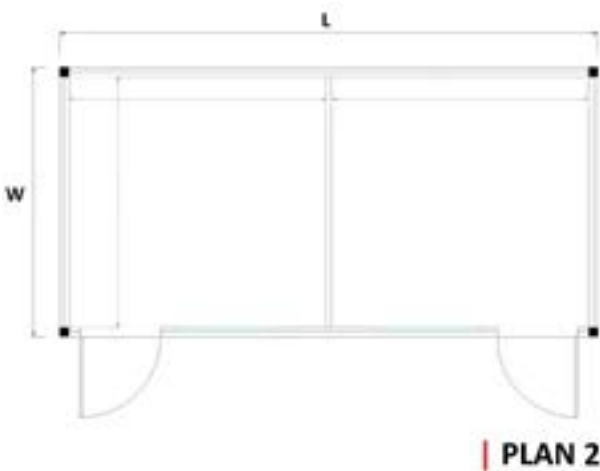
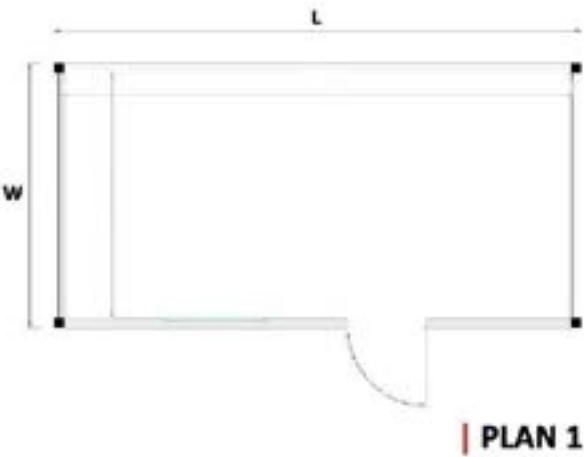
STANDARD PLANS



# EMPTY

## Typical Dimensions (LxW)

Standard	Extra Wide
4.5x3m	4.5x3.5m
6x3m	6x3.5m
7.5x3m	7.5x3.5m
9x3m	9x3.5m
Flat pack	
2.95x2.44m	
5.9x2.44m	
11.8x2.44m	



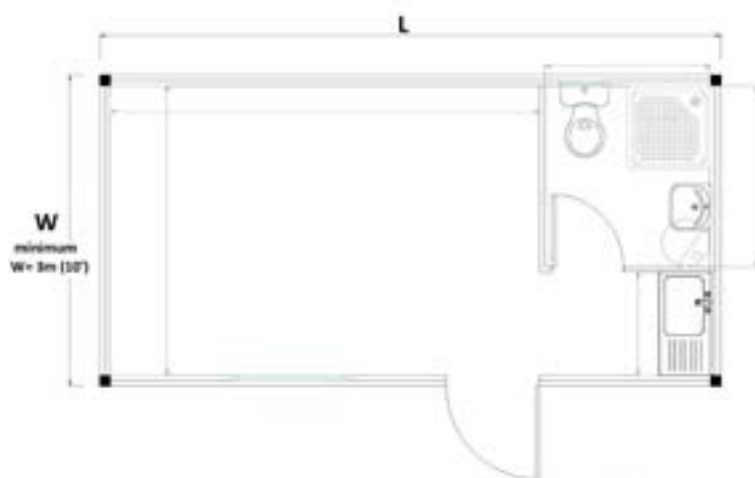
\* Flat pack Type must limit width to 2.44m (8')



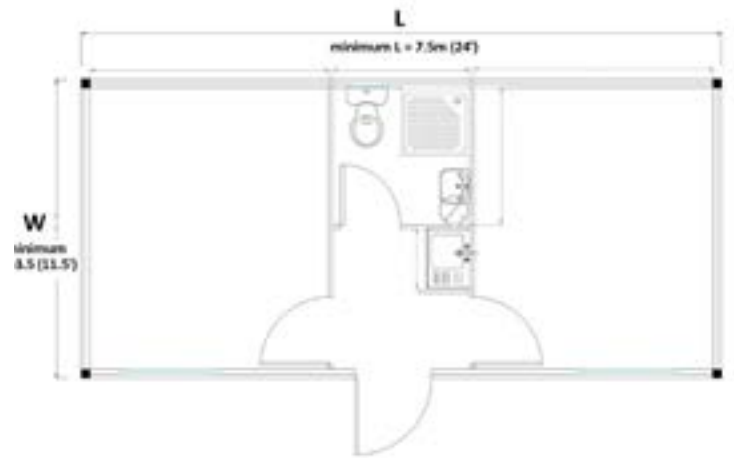
## ACCOMODATION

### Typical Dimensions (LxW)

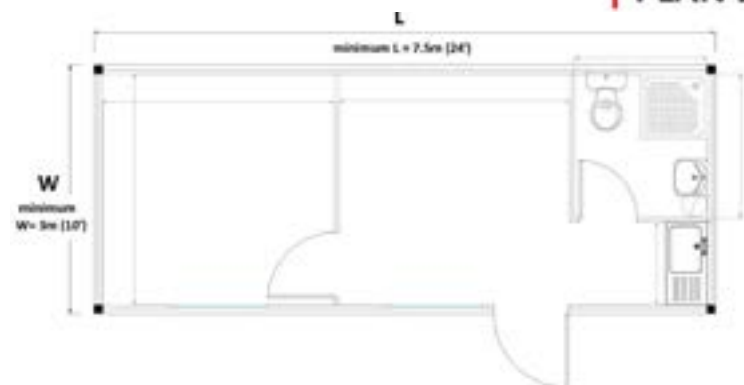
Standard	Extra Wide
4.5x3m	4.5x3.5m
6x3m	6x3.5m
7.5x3m	7.5x3.5m
9x3m	9x3.5m
12x3m	12x3.5m
Flat pack	
2.95x2.44m	
5.9x2.44m	
11.8x2.44m	



PLAN 1



PLAN 3



PLAN 2



FLATPACK PLAN 4

\* Plans 1,2,3 are only applicable for Fully Assembled or Demounted Type. Plan 4 for Flat pack Type.



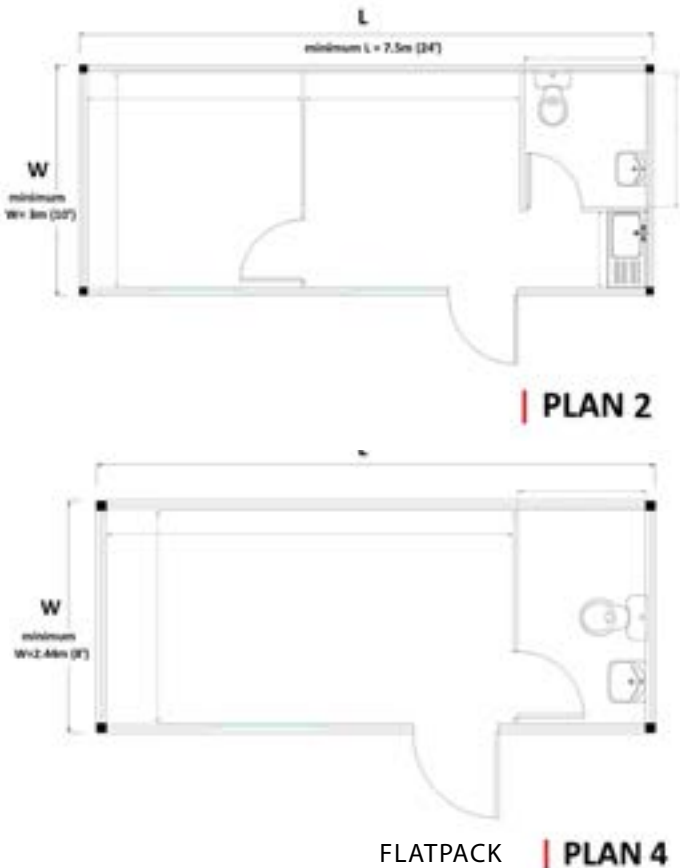
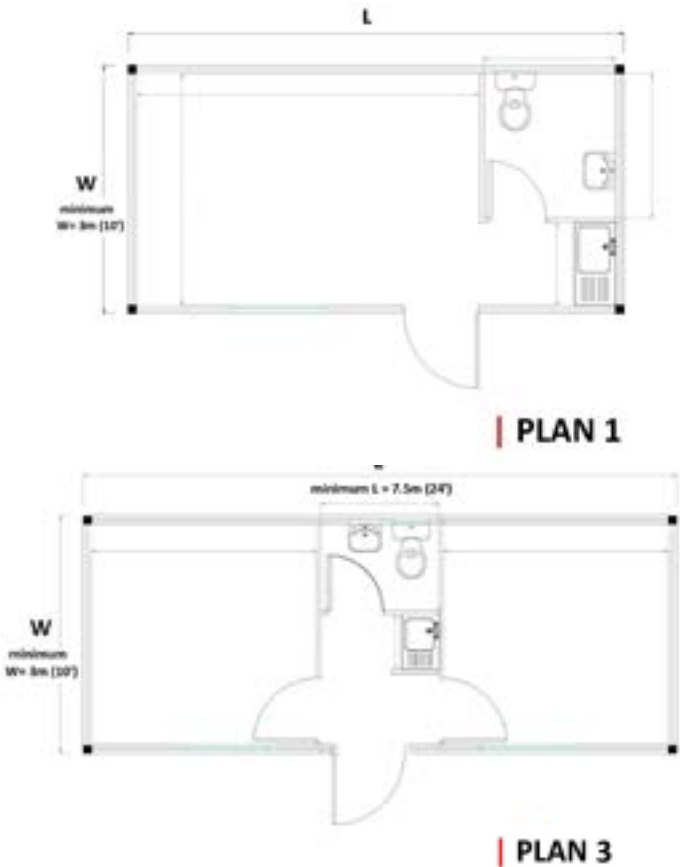


# OFFICE

## Typical Dimensions (LxW)

Standard	Extra Wide
4.5x3m	4.5x3.5m
6x3m	6x3.5m
7.5x3m	7.5x3.5m
9x3m	9x3.5m
12x3m	12x3.5m

Flat pack	
2.95x2.44m	
5.9x2.44m	
11.8x2.44m	



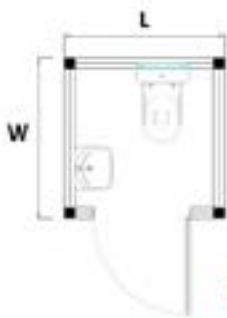
\* Flat pack Type must limit width to 2.44m (8')



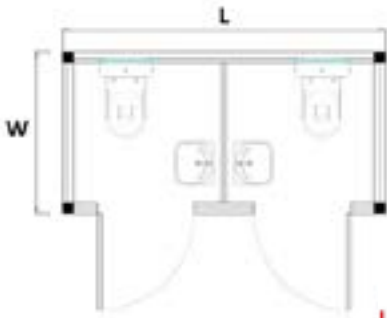
# W.C

## Typical Dimensions (LxW)

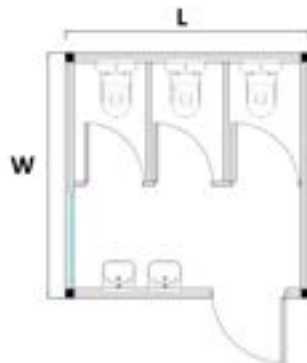
Standard	Extra Wide
1.5x1.5m	-
3x1.5m	-
3x3m	3x3.5m
4.5x3m	4.5x3.5m
6x3m	6x3.5m
Flat pack	
2.95x2.44m	
5.9x2.44m	



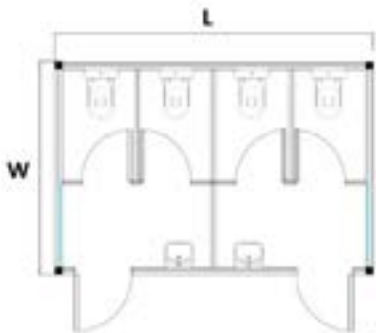
1 WC



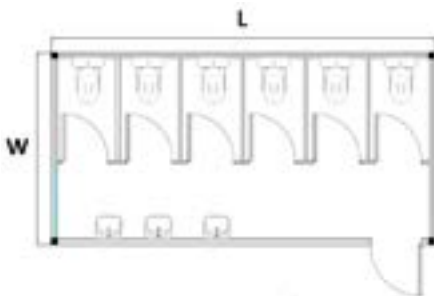
2 WC



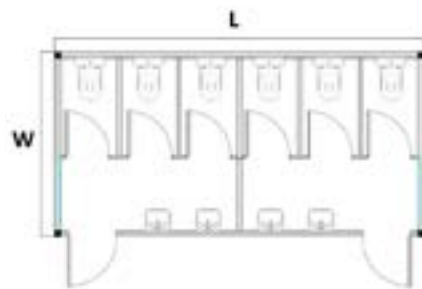
3 WC



4 WC



6 WC / Single



6 WC / Double

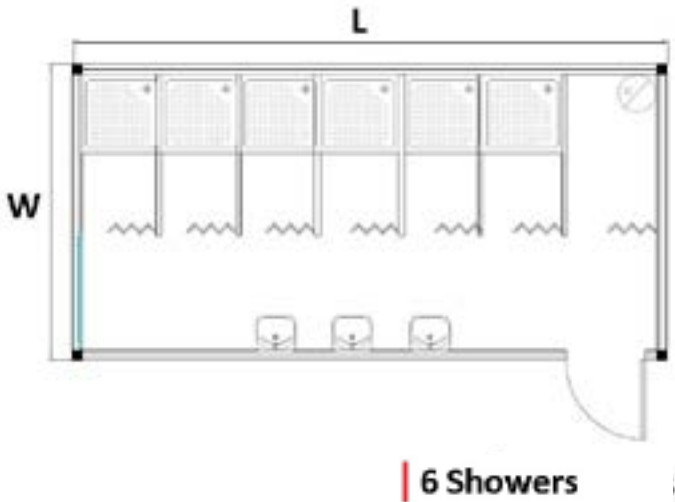
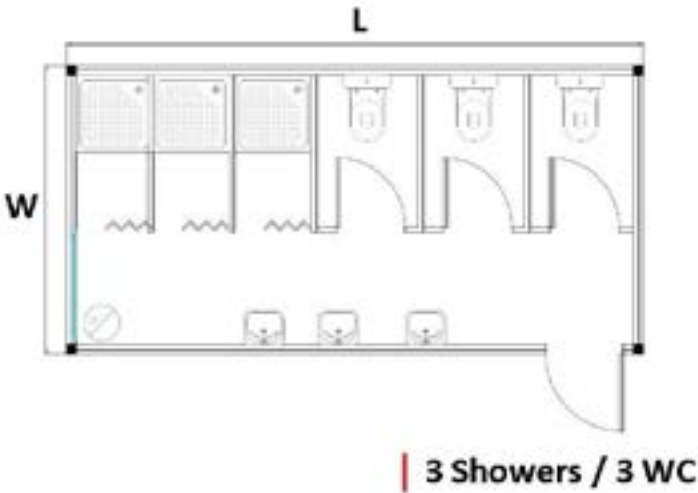
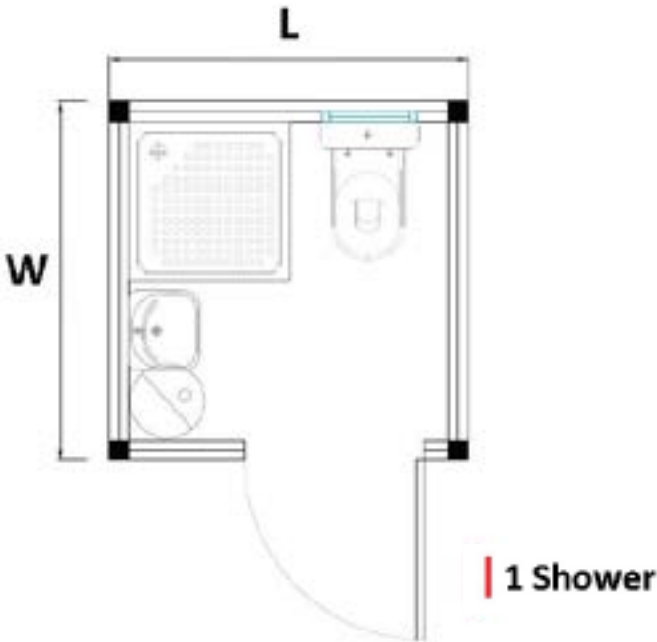
\* Flat pack Type must limit width to 2.44m (8')



# SHOWER

## Typical Dimensions (LxW)

Standard	Extra Wide
2x2m	-
6x3m	6x3.5m
Flat pack	
2.95x2.44m	
5.9x2.44m	



\* Flat pack Type must limit width to 2.44m (8')



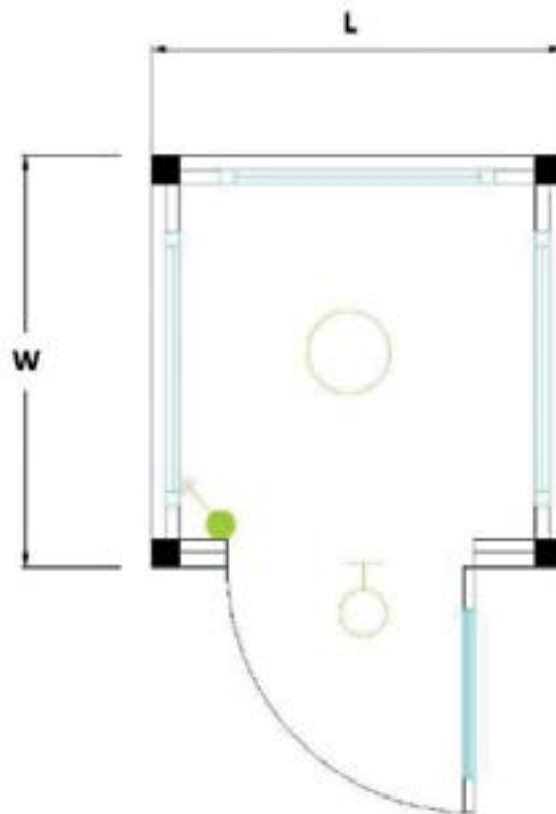
# GUARD BOOTH

## Typical Dimensions (LxW)

Standard

1.16x1.26m

1.3x1.26m



\* Flat pack Type must limit width to 2.44m (8')



# OPTIONS

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- Partitions
- Sanitary fixture can be added
  - W.C
  - Shower
  - Lavatory
  - Sink
  - Water tanks - Septic tank
  - water heater
- Steel staircase and walkaway in case Units
- Ceramic Tiles for wet areas.
- Solar panels
- Doors and windows
- Floor insulation
- Fire retardant insulation panels
- Decorative finishing



07



## PARTNERS OF SUCCESS

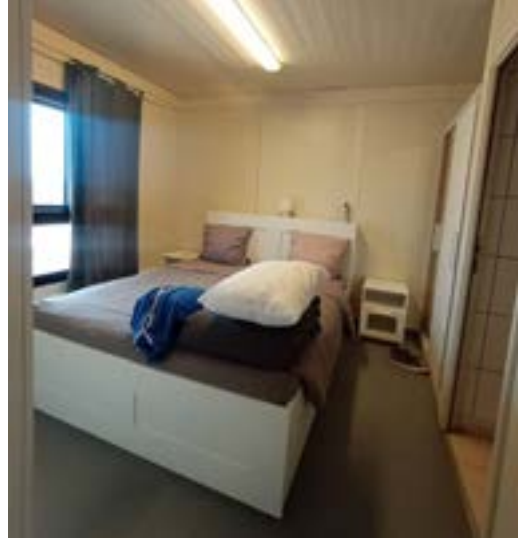
Over 35 Years, DSI has delivered its products  
to clients around the world.

Over 35 Years, DSI has delivered its products to clients around the world.



## NOTABLE PROJECTS ITB EKO-ATLANTIC NIGERIA

Dalal Steel Industries Manufactures and Installs Flat Pack Modular units at the prestigious ITB Eko-Atlantic land reclamation project in Victoria Island, Lagos, Nigeria. 3 stories, 450 units, 150 apartments.





# UNIFIL ARMY LIFE CAMP

Dalal Steel Industries Manufactures and Installs Modular units at the for quick deployments of UN Accommodation Camp.

The Camp include all Accommodation, Clinic Canteen, Dining, Sanitary, Laundry, and Prayer Halls. DSI has deployed over 10,00 units to the South of Lebanon with the UNIFIL.





## MANUFACTURERS OF

Steel Buildings  
Prefab Houses  
Containers  
Sandwich Panels  
Covering Panels  
Cold Storage  
Cranes  
Steel Bridge  
Warehouse Solutions

'ONE COMPANY FOR ALL YOUR STEEL BUILDING NEEDS'

