



DESIGN SCHEME OF SWEDISH PREFABRICATED CONTAINER HOUSE

NORDEWAY AB

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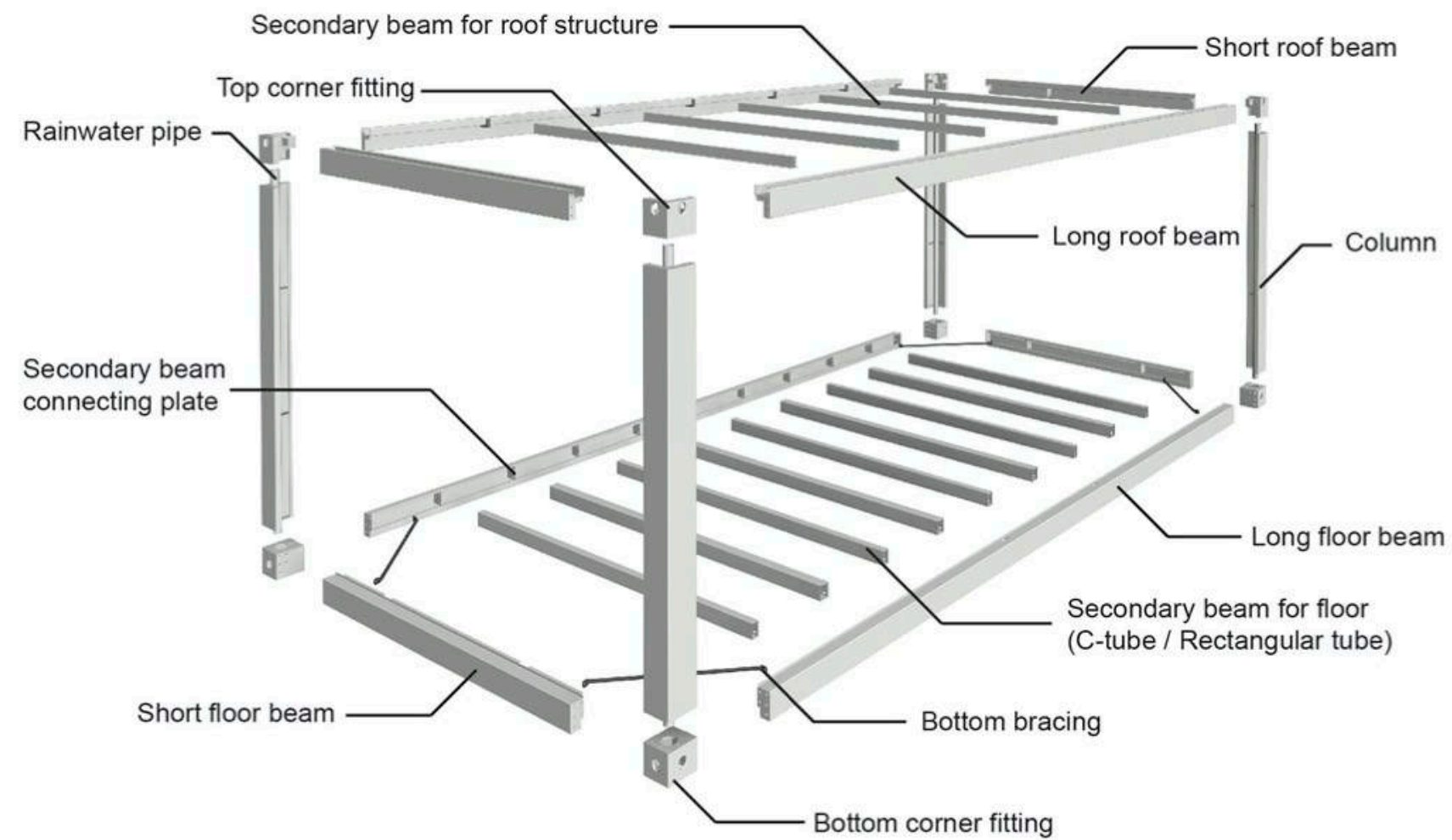
1. TECHNICAL INTRODUCTION & TRANSPORTATION



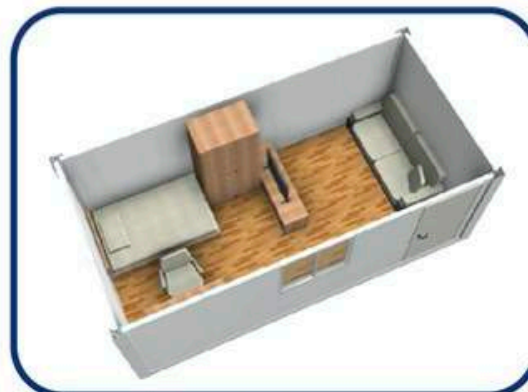
Standardised Container House Technical Introduction

Technique 1: Detachable

NEW SERIES DETACHABLE CONTAINER HOUSE



CONTAINER HOUSE TYPE



PTS 3*6A
Size:6058mm*3000mm*2791mm



PTS 3*6B
Size:6058mm*3000mm*2791mm



PTS 3*7C
Size:7038mm*3000mm*2791mm



PTS 3*8D
Size:8018mm*3000mm*2791mm



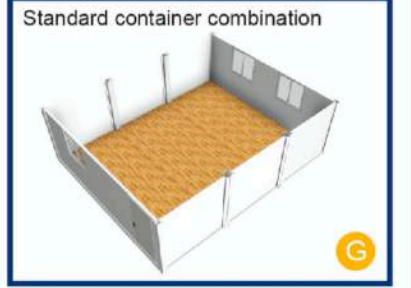
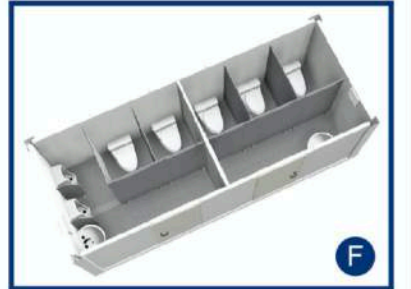
PTS 3*8*3E
Size:3*8018mm*3000mm*2791mm



PTS 3*9F
Size:8998mm*3000mm*2791mm



PTS 3*10G
Size:9978mm*3000mm*2791mm



CONTAINER HOUSE TYPE >> Standard size:2438mm*6058mm*2591mm/2791mm/2896mm

Parameter Description

Container room size parameter :

Width: Standard size are 2438、3000mm(External size), (2 types), specific specification should be customized.
Length: Standard size are 6000、6058mm(External size), could be adjusted based on the modulus of 965mm. Up with 1 modulus only, down to 1,2,3 modulus, shortest could be 2140mm.
Height: Standard size are 2600mm(External size), could be heightened based on modulus of 200mm, highest could be 3600mm.
Internal clear height=External height-335mm.

Wall panel parameter :

Core material: Standard configuration is glass wool, with other options of EPS, PU, MW.
Thickness: 50,60,75mm(3types), specific specification should be customized.
Colored stel sheets: standard is 0.4mm, with option of 0.5mm.

Container bottom parameter :

Floor deck board : Standard is 18mm calcium sulfate plate, with option of 18mm fiber cement board .
Floor cover board: standard with 1.5mm PVC floor , with option of aluminum alloy checkered plate , ceramic tile and so on.
Insulation: Standard without insulated ,with option of glass wool or MW,thickness with range of 50 -120mm.

Container roof parameter :

Roof sheet: Standard with 0.4mm corrugated colored steel sheet ,with option of 0.5mm.
Ceiling: Standard with 0.4mm colored steel ceiling ,with option of 0.5mm. Standard installation way is lower side of secondary beam, with option of under hanging. With under hanging type , it would hide the roof main beam while container house combination.
Insulation: Standard with 100mm glass wool.

Illumination system parameter :

Light: Standard with 2*36W, LED built-in ceiling lamp(200*500mm).
Switch: Standard with 1 switch ,with option of 2 or more double control switch . Socket: Standard with 2*10 A wildcard socket ,with option of more sockets, 16A AC socket
Distribution box: Standard with 1*12 circuit open mounted distribution box ,inside with 1pc of 2P/32A leakage circuit breaker, 1 pc of 1P/10A lighting circuit, 1 pc of 2P/16A socket circuit, 1pc of 2P/16A AC circuit.

Door and window parameter :

Door: Standard with 1 pc of steel security door.
Window: Standard with 1 pc of 1150*1200mm aluminum alloy single glazed sliding window ,with option of adding more.



Standard container house

After Sales Service

●Provide customers with detailed usage and maintenance manuals.

●Quality problems occur during using, communicate and solve actively.

●Committed to building a global network, better service for customers.

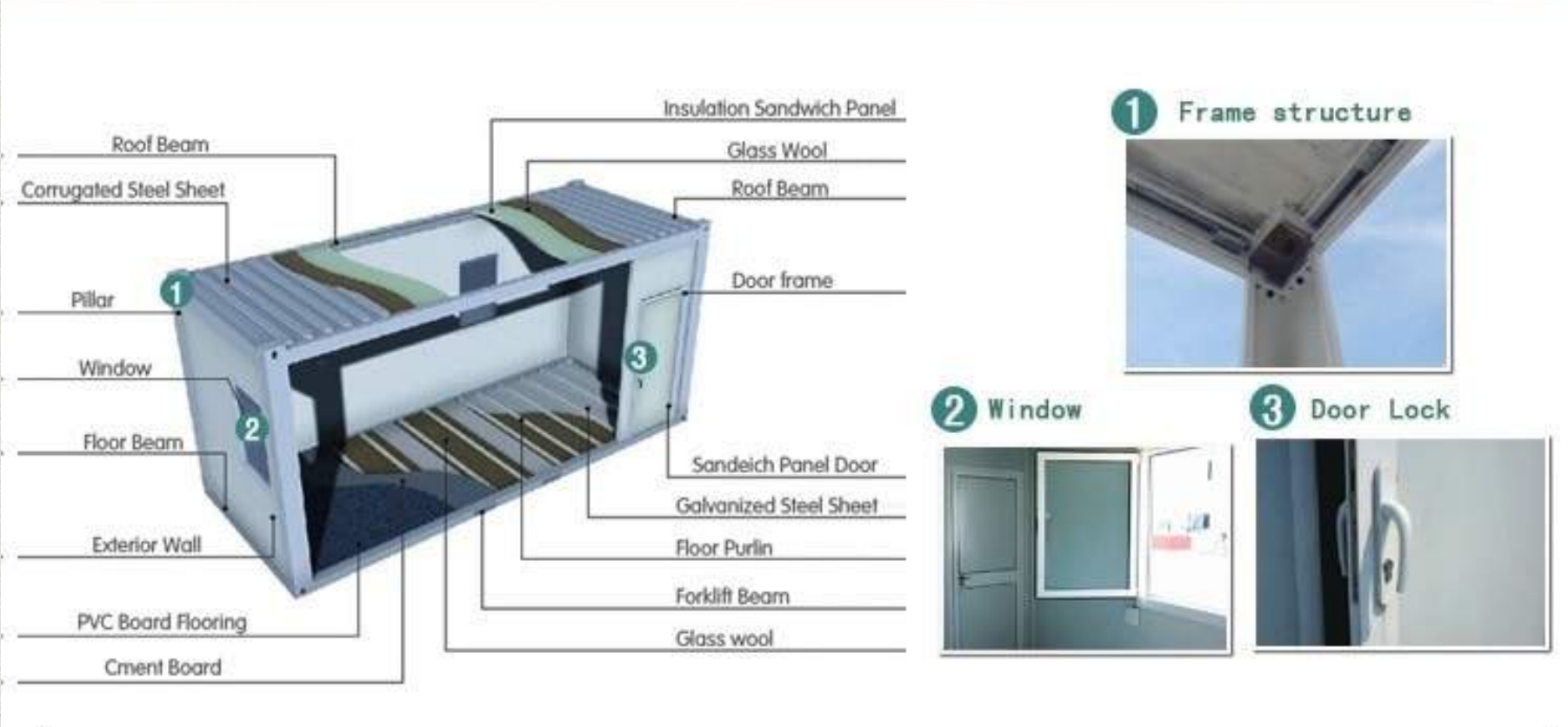
●Regular return visits and maintenance to customers.

Standardised Container House Technical Introduction (Con.)

Technique 2: all-in-one container

Applicable construction

Detailed prefiling



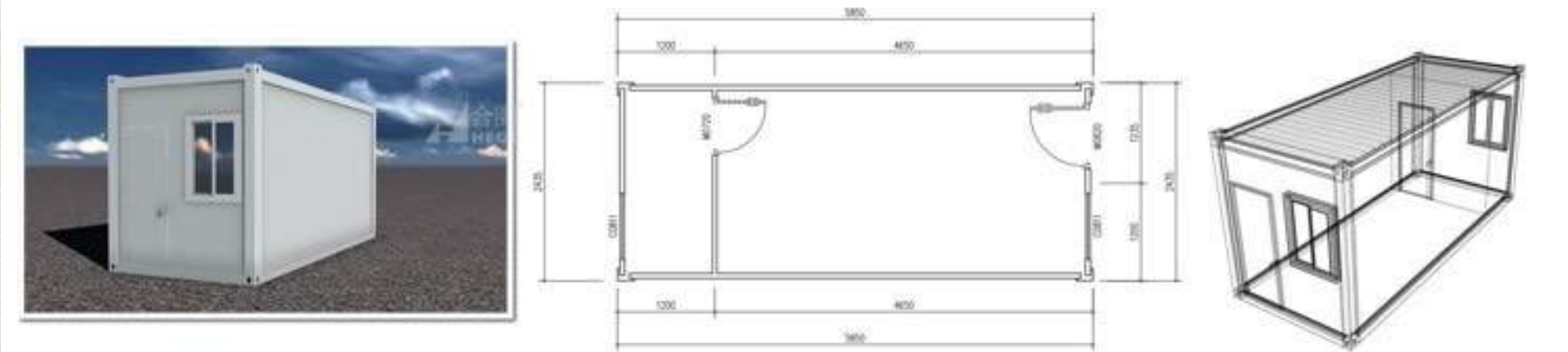
1 Frame structure



2 Window



3 Door Lock



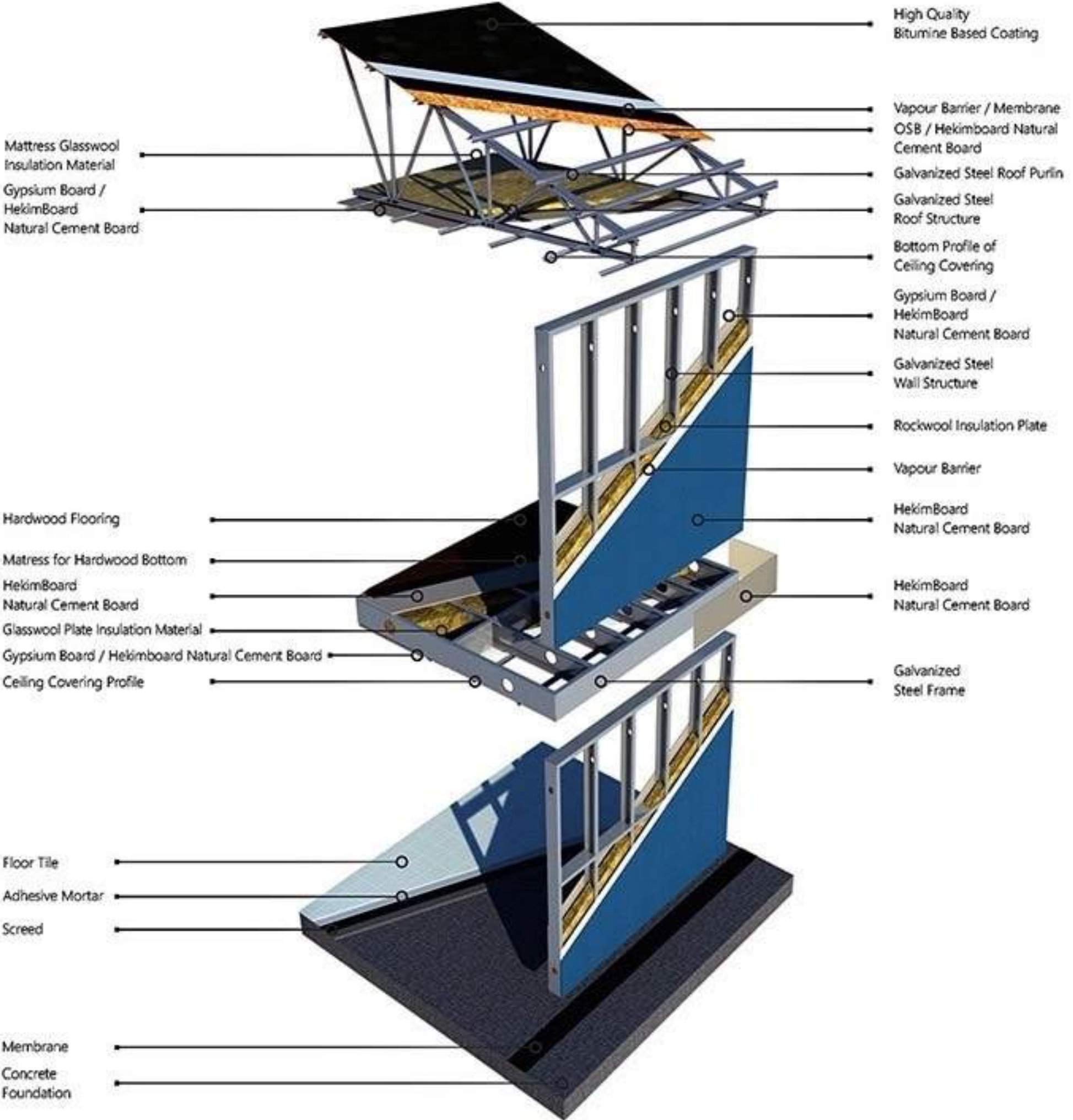
Products specification



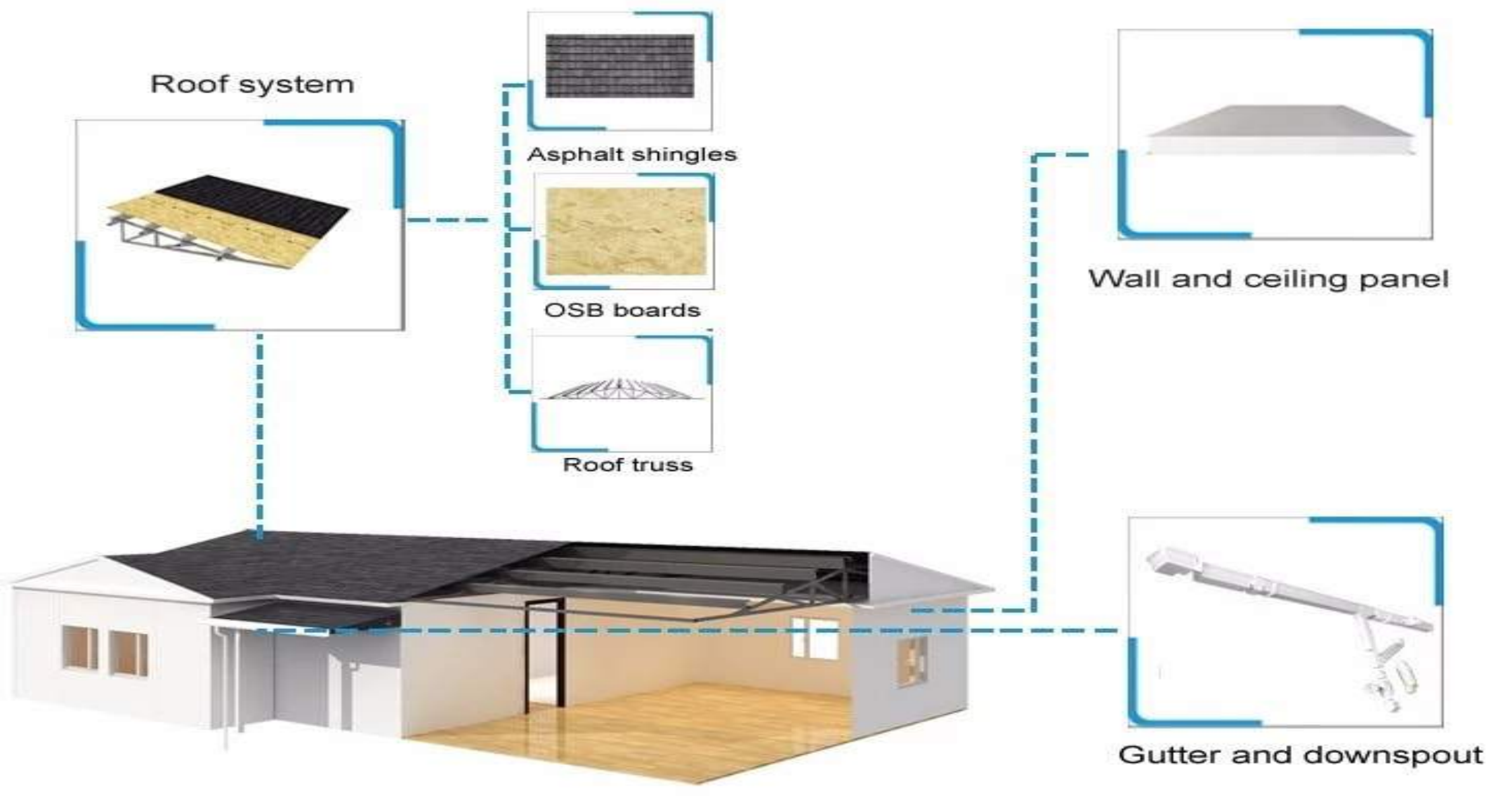
Standardised Container House Technical Introduction (Con.)

Technique 3: other customised construction

Main structure



Detail and specification



Standardised Container House Technical Introduction (Con.)

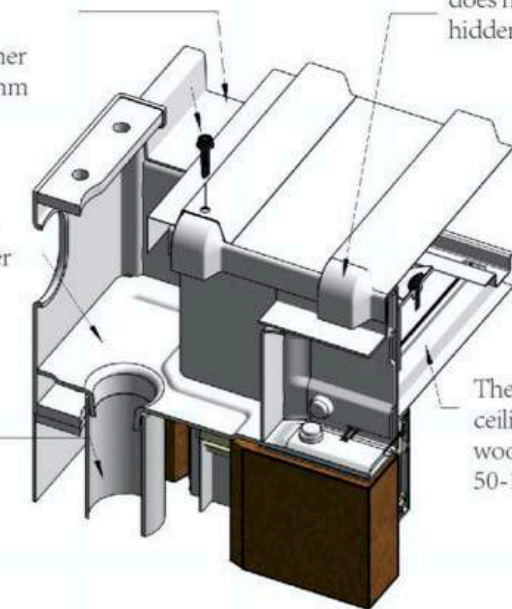
Container house interior details

Around of container roof sets with drainage channels 50mm*30mm (W*D), for water draining easily.

Use M5.5 self-tapping screw to fix container roof. Top plate is prefabricated with ϕ 6mm screw hole for easier installation.

The inner cavity of the corner fitting also serves as a drainage funnel. With big water collection, draining smoothly, and would not block easily Standard shipping container corner hole.

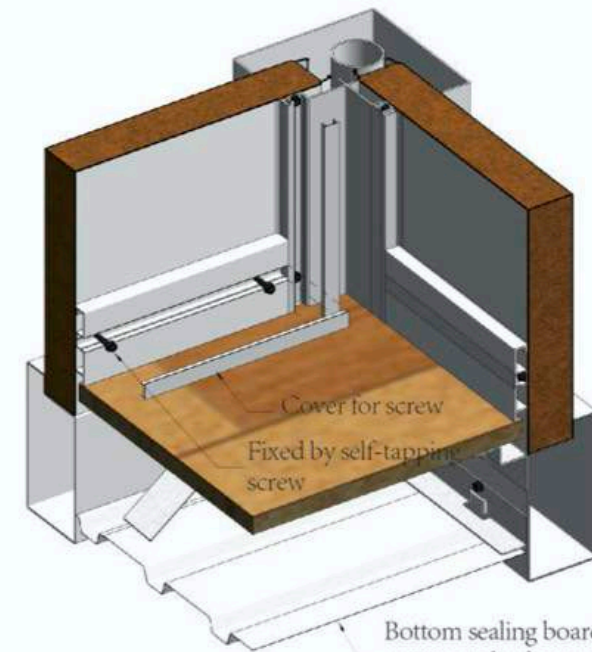
Φ 50mm PVC drainage pipe They are buckled to the outside of stretched corner fitting, draining smoothly and watertight. Pipes are sets with all 4 corners



Rooftop details

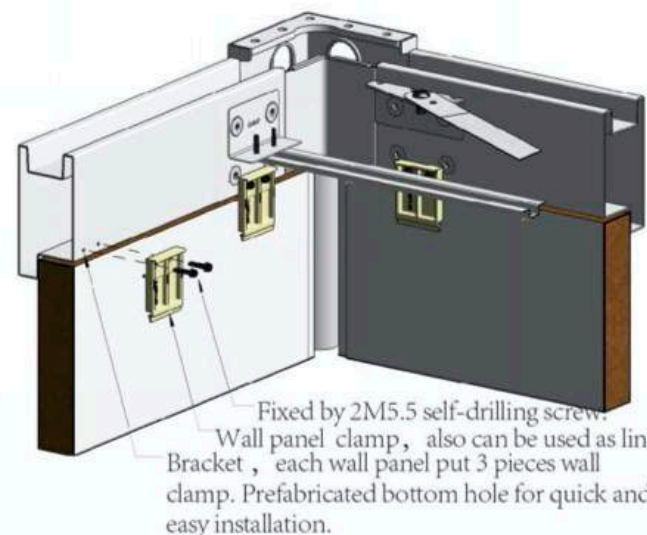
The end sheet of container roof is curved and designed to be buckled into the surrounding drainage channels. It does not seep water and does not hang up water droplets, and there is no hidden water leakage.

The insulation between top roof sheet and ceiling could be made of glass wool, rock wool or perlite. Thickness with range of 50-120mm.

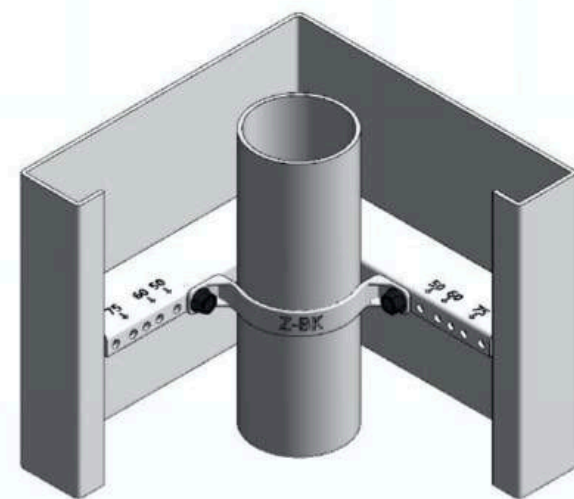


Bottom sealing board: 0.4mm corrugated color steel is required when the bottom needs filling with insulation material.

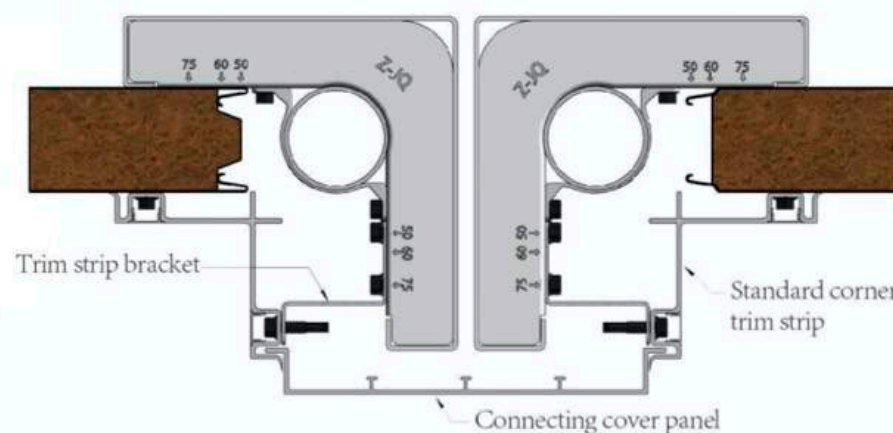
Details for chassis, wall panel & line



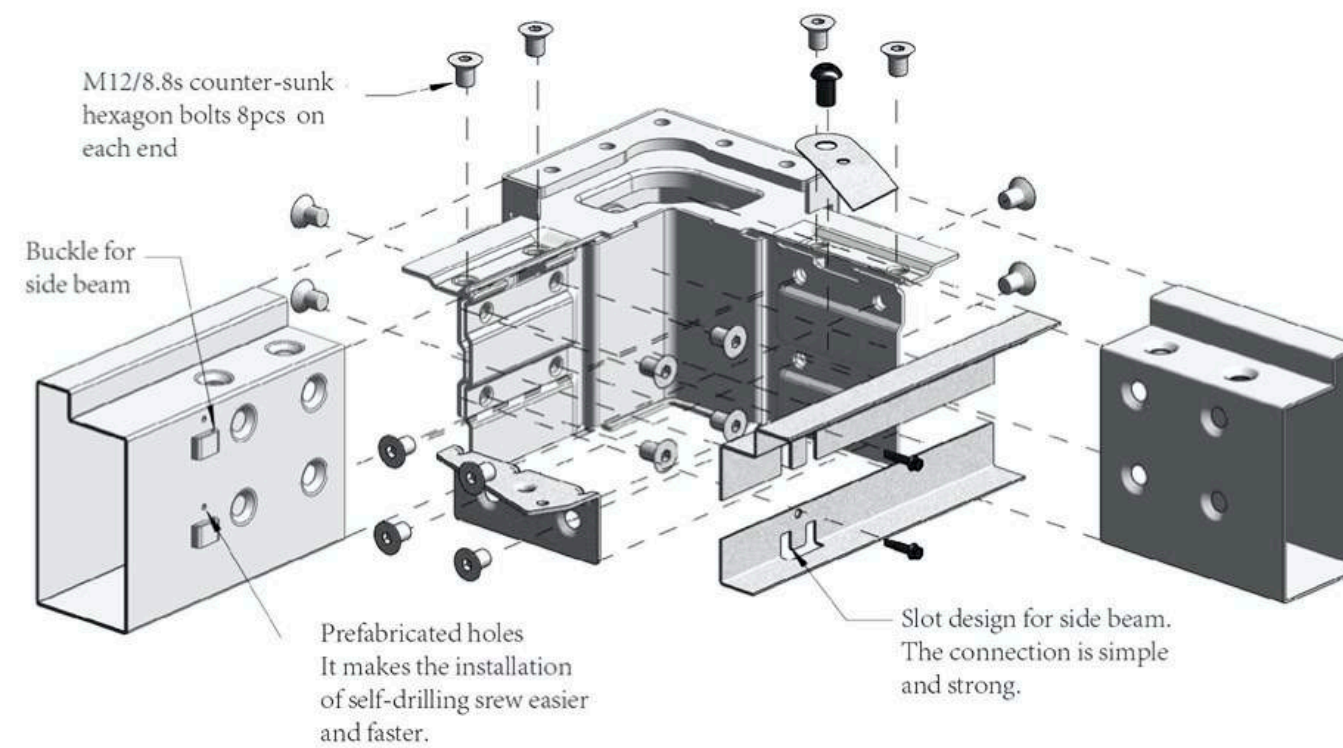
Wall panel installation



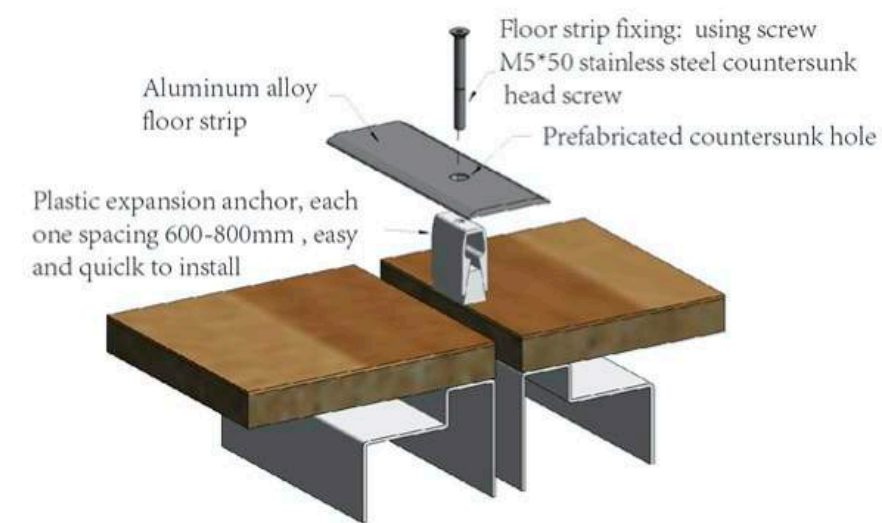
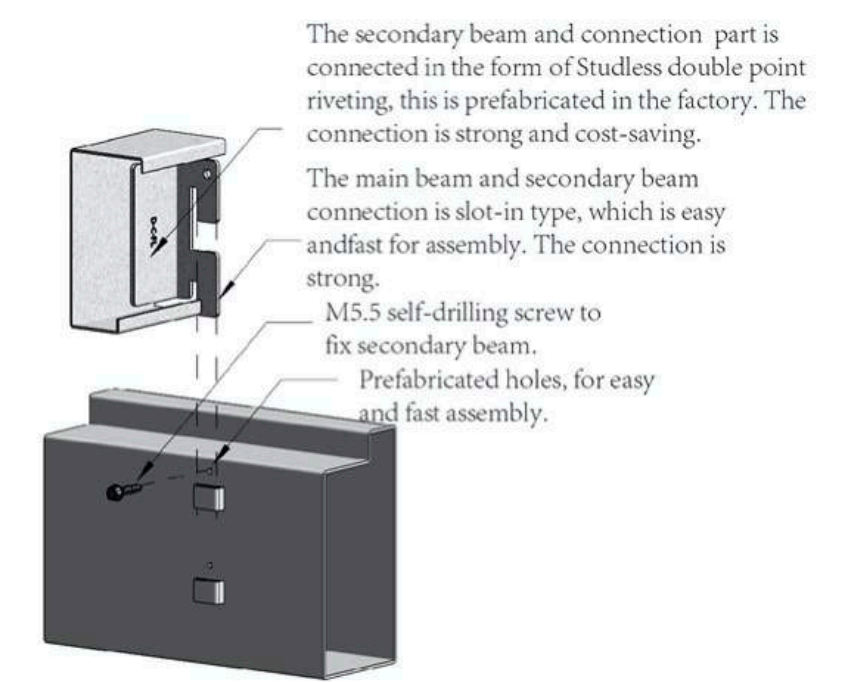
Conner post and downpipe



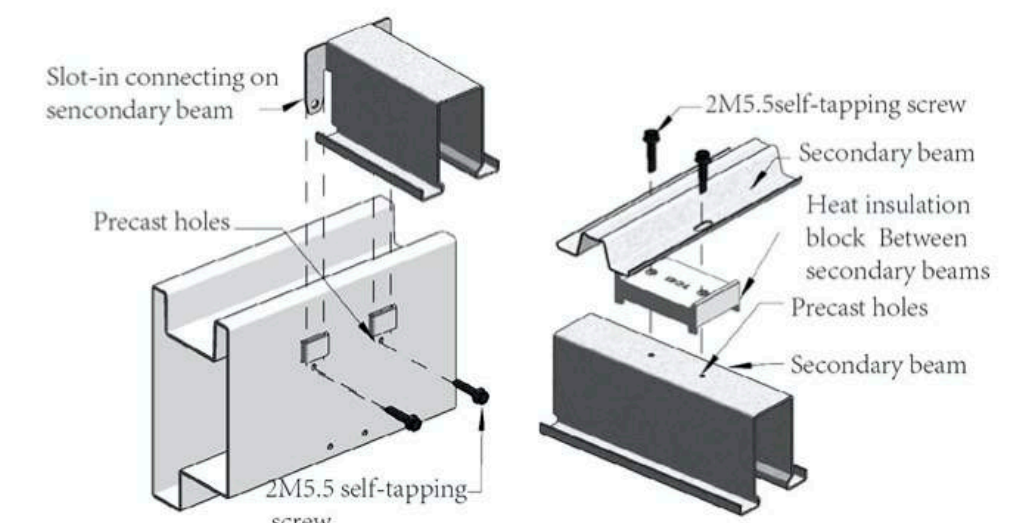
Connecting posts cover plan



Details of Container Chassis






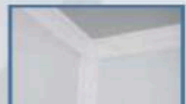



















Floor splicing decomposition diagram



Details of Container roof

Container house interior details

Standardised Container House Technical Introduction (Con.)

● Structure	● Wall Panel	● Accessories	● Electrical
 X1 Integrated roof with PU foaming	 X6 Panel-1	 X2 50 wall panel layering-1	 X1 8*19A economical decorative trimmings
 X1 Integrated chassis (full weld)	 X4 Panel-2	 X2 50 wall panel layering-2	 X1 8*19A economical connected accessories
 X4 Column	 X2 Panel with socket	 X1 8*19A economical wall panel connected accessories	 X1 Outside power plug
	 X1 Panel with window	 X2 8*19A hanging bar	 X1 Distribution box
	 X1 Panel with door	 X4 ø50PVC rain water downpipe	 X2 LED fluorescent lamp
			 X1 RVV 2*1.5mm
			 X1 RVV 2*1.5mm
			 X1 RVV 2*1.5mm
			 X2 RVV 3*2.5mm
			 X1 RVV 3*2.5mm

CEILING	 Sandwich Panel	 Steel Ceiling	
FLOORING	 PVC floor(Wood Grain)	 PVC floor (Blue Spot)	 PVC floor (Gray Spot)
WALL PANEL	 EPS Sandwich Panel	 Rock Wool Panel	 PU Panel
EXTERNAL DOOR	 Steel Door	 Aluminum Alloy Glass Sliding Door	 Double Opened Door
WINDOW	 Insect-proof Screen	 Windproof Rolling Shutter	 Security Bar
ROOF INSULATION	 PU Foaming	 Glass Wool	 Rock Wool
ELECTRICITY	 IEC Standard(International)		

*Besides the above common options, we can also customize any other requirements.

Material Description	
Container Frame	Q355B low carbon structural steel with hot dip galvanizing 100g/m2. After welding, the integral frame uses electrostatic powder spraying(100um).
Roof Panel	60mm PU foaming roof , PU density:45kg/m3. With two-side colored steel sheet, Aluminum Zinc Magnesium galvanized100g/m2+PE baking finish20/5um. Upper steel sheet is 0.45mm, color is optional. Lower steel sheet 0.40mm, color is milky white.
Column	3mm thick Q355B steel , 210x150mm
Wall Panel	50mm EPS sandwich panel, EPS density:12kg/m3. Material option is PU (density 40kg/m3) , rock wool(density 120kg/m3). Colored steel sheet is 0.40m. Panel's outside is color-optional with ribs, inside is milky white. The steel sheet surface is Aluminum Zinc Magnesium galvanized100g/m2+PE baking finish20/5um.
Floor	1.8mmPVC floor(The color of PVC floor is blue spot/wood grain)+18mm cement fiber board
Door	960x2080mm Steel Door
Window	980x1150mm PVC single glass sliding window (with screen window inside). Option: Aluminum alloy window; adding wind-proof rolling shutter
Electricity Standard	LED ceiling lamp: 2pcs x 30w LED ceiling lamps , L=1200mm Switch: 1pc xsingle control switch (national standard rocker single control) Socket: 2pcsx10A sockets , 1pc x32A 3-level outdoor waterproof inlet socket. Option: adding air conditioner socket Distribution box: 1pcx 8-circuit power distribution box , built-in 1pc x4P32A total circuit breaker (with leakage protection) , 1pcx 1P lighting circuit, 1pc x1P socket circuit
Bathroom Standard	This container house does not contain bathroom part

Standardised Container House Technical Introduction (Con.)

Container house advantage



Structural safety

All structural framing is cold formed, using high strength seamless steel. The main beams are to be inserted into the corner connecting parts and fastened with 8 sets of high strength bolts. The design live loads of the top and bottom frames are 1 kN/m² and 2.5 kN/m² respectively, with wind resistant to 1 kN/m². Other special loading parameters can be reviewed and accommodated with extra reinforcement.



Durability

All structural framing material is hot dip galvanized. Bake painting process will further enhance the corrosion resistance. All exterior wall panels are made of Zn-Al galvanized sheet with final paint finish. Product life expectancy is over 20 years.



Water resistant

The convex design of the container top will avoid water ponding which otherwise will create corrosion problem. The edges of the top are also curved, so that water will drain to the gutter naturally. When container units are assembled together, all joints will complete with water proof weather strips.



Fire proof

Structural framing is steel. Other components are made from inorganic materials; thermal insulation will be mainly fiberglass and mineral wool.



Easy assembly

Assembly of the container unit is based on easy DIY concept, with the insert connections, connecting holes and fasteners all pre-engineered and manufactured by fully automatic production equipment to mini meter tolerance. Components' weights are limited to 50 kg, so the entire assembly process is easy without the use of any heavy lifting equipment.



Flexible application with modular combination

The connections of each container unit are of industrial design and standardized production. Combination of container units can be done to suit customer's specification.



Good appearance

All interior joints will complete with decorative trimming to enhance its anesthetic appearance. The tug & groove joints of panels give a nice connection and additional noise attenuation.



Cost and economic advantages

All components are manufactured by automatic high speed production line, which can reduce the overall production costs; Design of uniformed parts can reduce the packaging volume, and save 50% space compared to traditional container module; Connection using insertion is easier and can reduce the assembly time. Heavy lifting equipment is not required, thus reduce the overall construction costs.

Standardised Container House Technical Introduction (Con.) & Transportation

INSULATION MATERIAL

聚氨酯产品性能指标 Ployurethane Product Specifications

项 目 Item	指 标 Norm	分 类 Classification	类 型 Type			
			I		II	
			A	B	A	B
密度 Density(kg/m ³)		不小于	30	30	30	30
压缩性能 屈服点时或形成 10% 时的压缩应力 (KPa) Compression Performance: compressive stress at the yield point or in the case of 10% of deformation		不小于	100	100	100	150
导热系数 Thermal Conductivity(W/(m·K))		不大于	0.022	0.027	0.022	0.027
尺寸稳定性 Dimensional Stability(70°C、48h)(%)		不大于	5	5	5	5
水蒸气透湿系数 Water Vapor Permeability (23±2)°C/0% 至 85%RH(ng/Pa·m·s)		不大于	6.5		6.5	
吸水率 Absorption(%)		不大于	4		4	
燃烧性 Flammability	垂直燃烧法 Vertical Burning	平均燃烧时间 Average Burning Time(s)	不大于	30		30
		平均燃烧高度 Average Height of Burning (mm)	不大于	250		250
	水平燃烧法 Horizontal Burning	平均燃烧时间 Average Burning Time(s)	不大于	90		90
		平均燃烧高度 Average Height of Burning (mm)	不大于	50		50

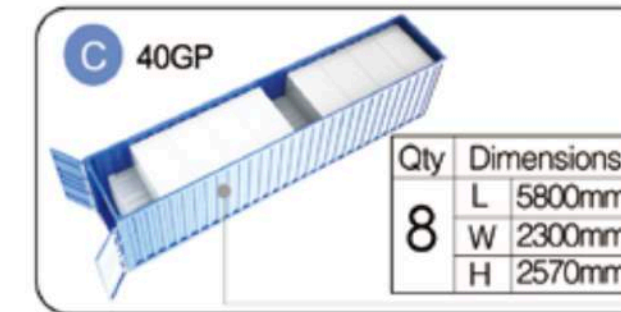
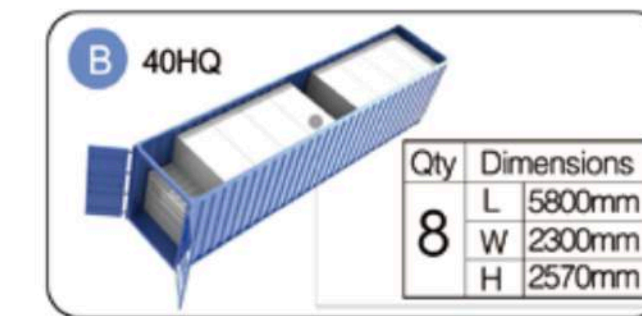
EPS 产品技术指标 Specifications of EPS Product

项 目 Item	单 位 Unit	性能指标 Performance Specification				
			I	II	III	
表面密度 Apparent Density	不小于	kg/m ²	15	20	30	
压缩强度 (即在 10% 形变下的压缩应力) Compressive Strength (Compressive Stress in the case of 10% of deformation)	不小于	kPa	60	100	150	
导热系数 Thermal Conductivity	不大于	W/(m·K)	0.041	0.041	0.041	
70°C 48h 后尺寸变化率 Dimensional Stability after 48 hours at 70°C	不大于	%	5	5	5	
水蒸气透湿系数 Water Vapor Permeability	不大于	(ng/Pa·m·s)	9.5	4.5	4.5	
吸水率 Absorption(%)	不大于	%	6	4	2	
熔结① Melting Nodal	断裂弯曲负荷 Breaking Load	不小于	N	15	25	25
	弯曲变形 Flexural Deformation	不小于	mm	20	20	20
氧指数② Oxygen Index(OI)	不小于	%	30	30	30	

岩棉板的物理性能指标 Physical Property Index of Rockwool

密度 Density	极限偏差 Limit Deviation(%)			导热系数 Thermal Conductivity W/ (m·k) [平均温度 Average Temperature (70±5)°C]	有机物含量 Organic Matter Content(%)	不燃性 Incombustibility	最高使用温度 Max.Temperature (°C)
	优等品 High-class Product	一等品 Fist-class Product	合格品 Qualified Product				
80				≤ 0.044			400
100	± 10	± 15	± 20	<0.46	≤ 04	A 级 Grade A	600
120							
150							
160				≤ 0.048			

PACKING AND SHIPPING



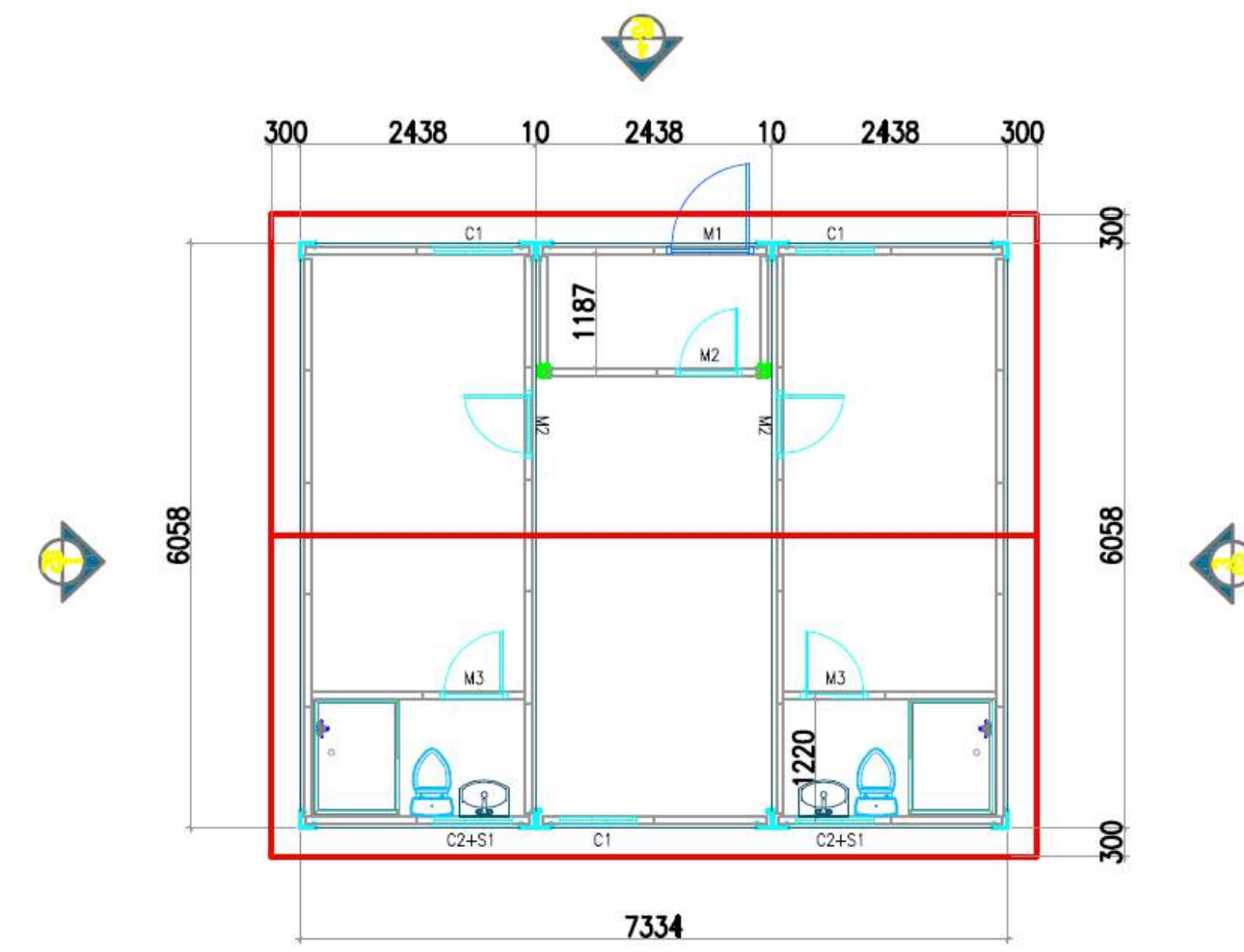
Fully assembled model



Note:
For ease of transportation, we produce container houses based on regular way of marine transportation. Shipping method will be determined by the order conditions.

2. PROJECT PROFILE & PROJECT EFFECT





Product Description :::

Description:

3*20ft container combined as one building, contains 2bedroom, 1 kitchen, 2bathroom, 1living room.

Wall panel: 100mmPU sandwich panel

Floor: 100PU insulation+fiber cement board+laminate wood floor

Window: triple glazed

Door: Insulated steel door

Electricity and plumbing: European standard

Design Criteria

Wind load: $q=0.55\text{kpa}$

Floor live load: 4.8kpa

Roof live load: 2.0kpa

Seismic load: $R_d=1.5$ $R_o=1.3$

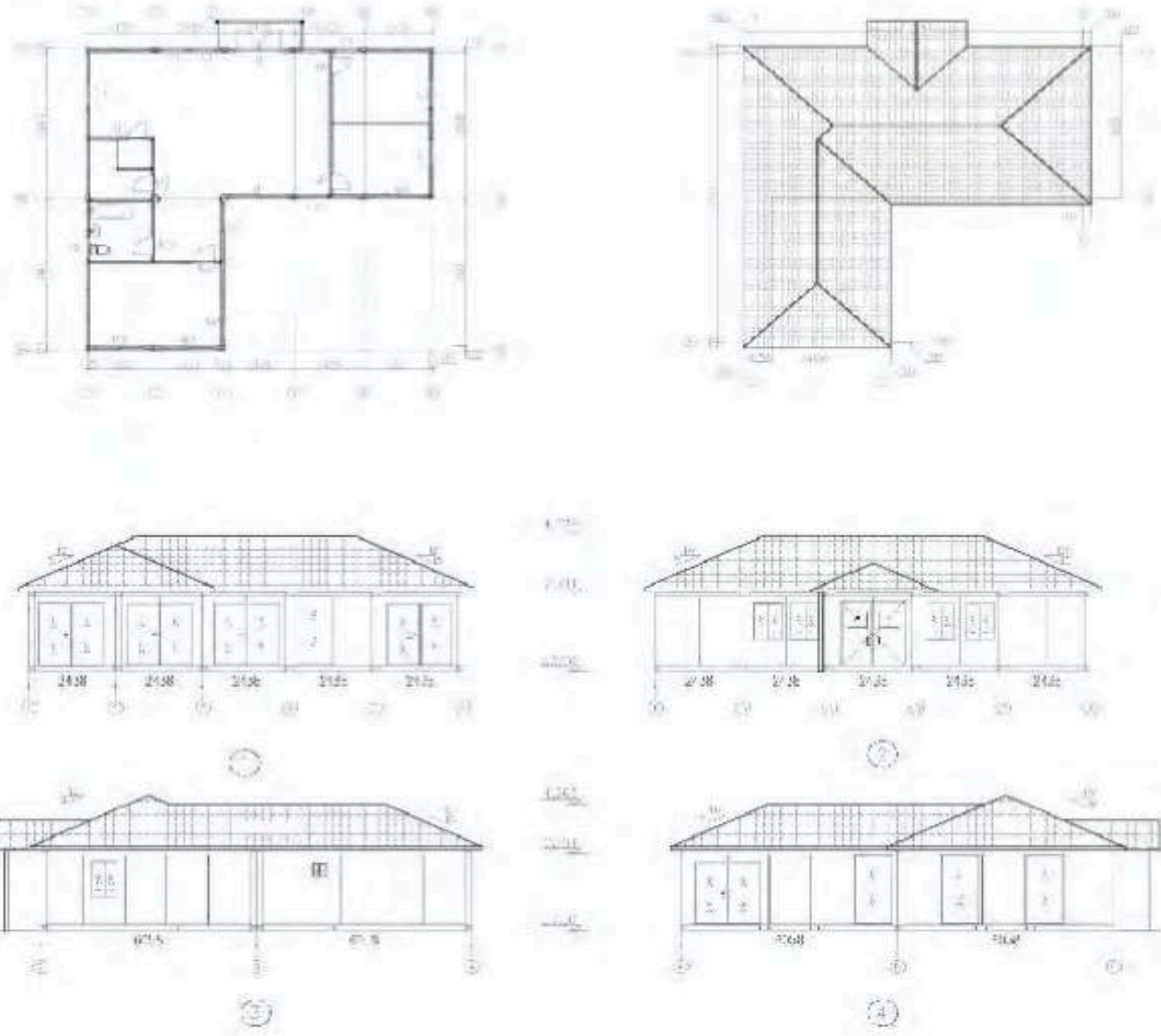
PROJECT PROFILE 1

FINLAND

Canada Container House

Location : Canada
Acreage : 3bedroom, 1 kitchen,
1bathroom, 1living room
Usage : Resort cottage near lake

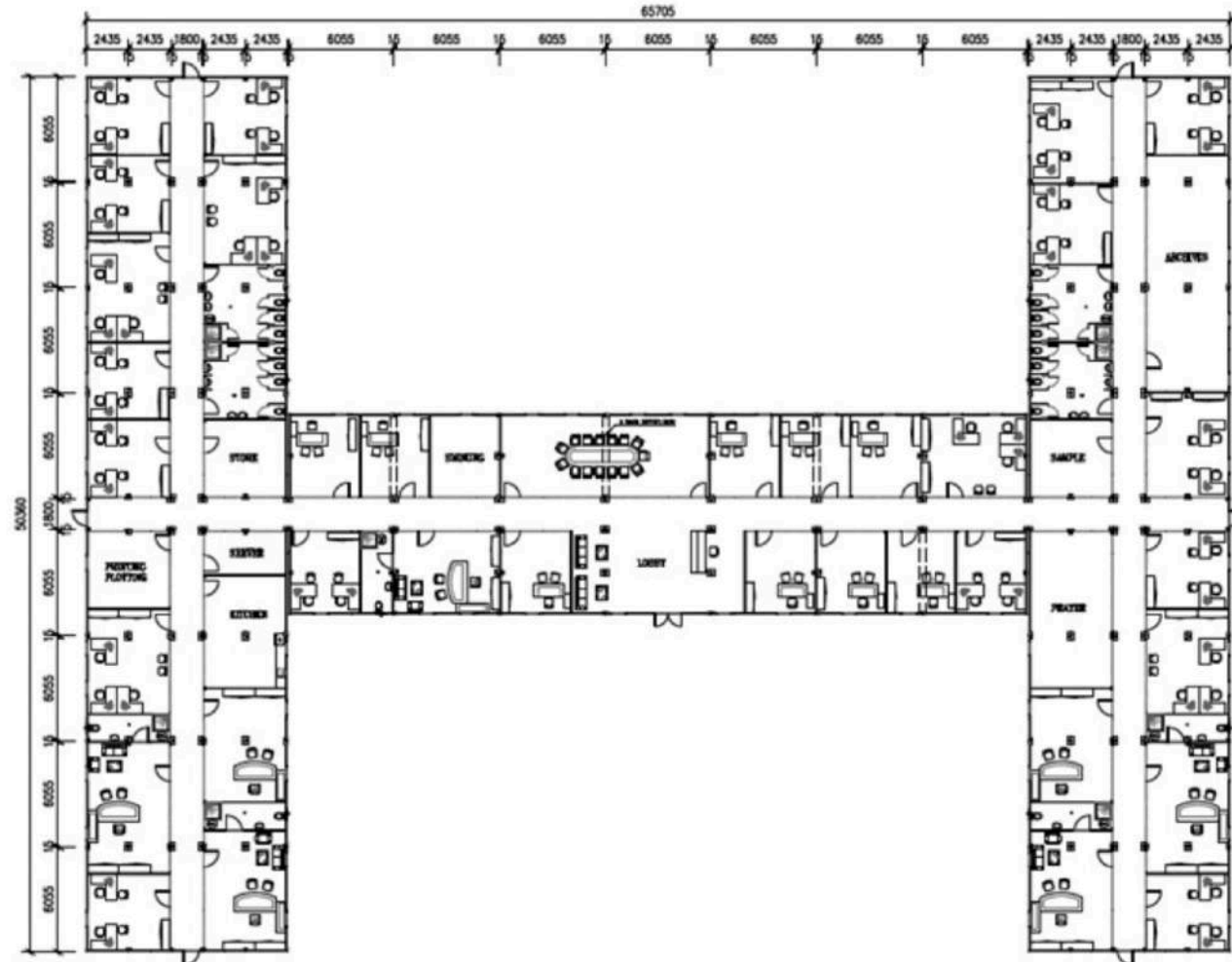
Wind load: $q=0.55\text{kpa}$
Floor live load: 4.8kpa
Roof live load: 2.0kpa
Seismic load: $R_d=1.5$ $R_o=1.3$



PROJECT PROFILE 2

CANADA

Project: Office
Style: 20GP flat pack container
Location: Spain
Date: 2016



Project: Student Dormitory
Style: 20GP flat pack container
Quantity: 124 *20GP
Location: Poland
Date: 2014



Client: CSCEC
Location: Shenzhen, Guangzhou
Period: 2016.6
Project Name: Guangzhou office building project
Area: 1500m2



Guangzhou office building project



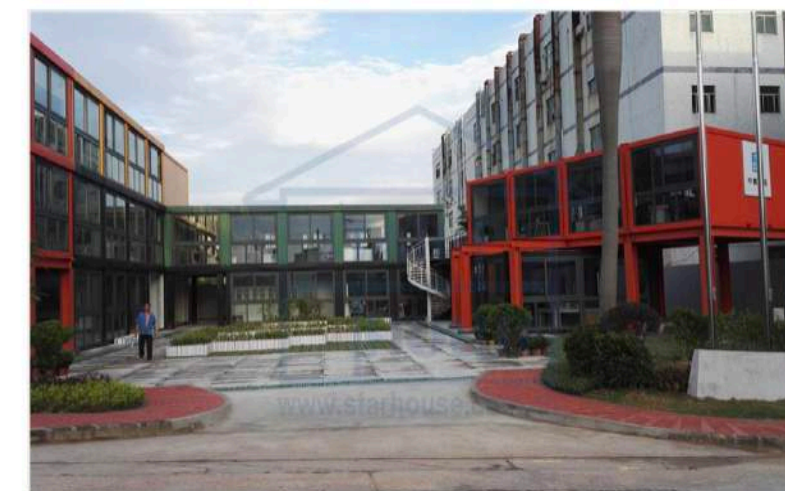
Guangzhou Office Building



Office Building Project



Office Building



Guangzhou Office Building Project manufacture



Office Building Project manufacture

PROJECT PROFILE 3 (SELECTION)

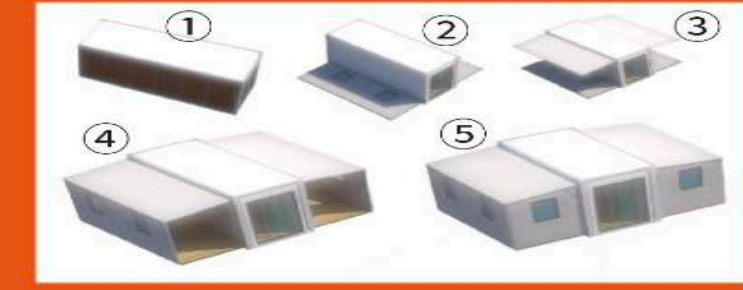
SPAIN, POLAND, CHINA

15 MINUTES OPEN A FOLDING HOUSE



2. 20FT EXPANDABLE FOLDING CONTAINER

Size:
 open: L5800*W6684*H2500mm,
 close: L5800*W2200*H2500mm
 Structure: Steel structure + insulated sandwich panel
 Fixtures: 2 bedrooms, 1bathroom, kitchen, living room,
 electrical, waterplumbing, easy to install, 10 minutes open
 a house by hand, save large labor and shipping cost
 Shipping: 1*40ft container can load 2 units



9. AUSTRALIA UNIVERSITY APARTMENT

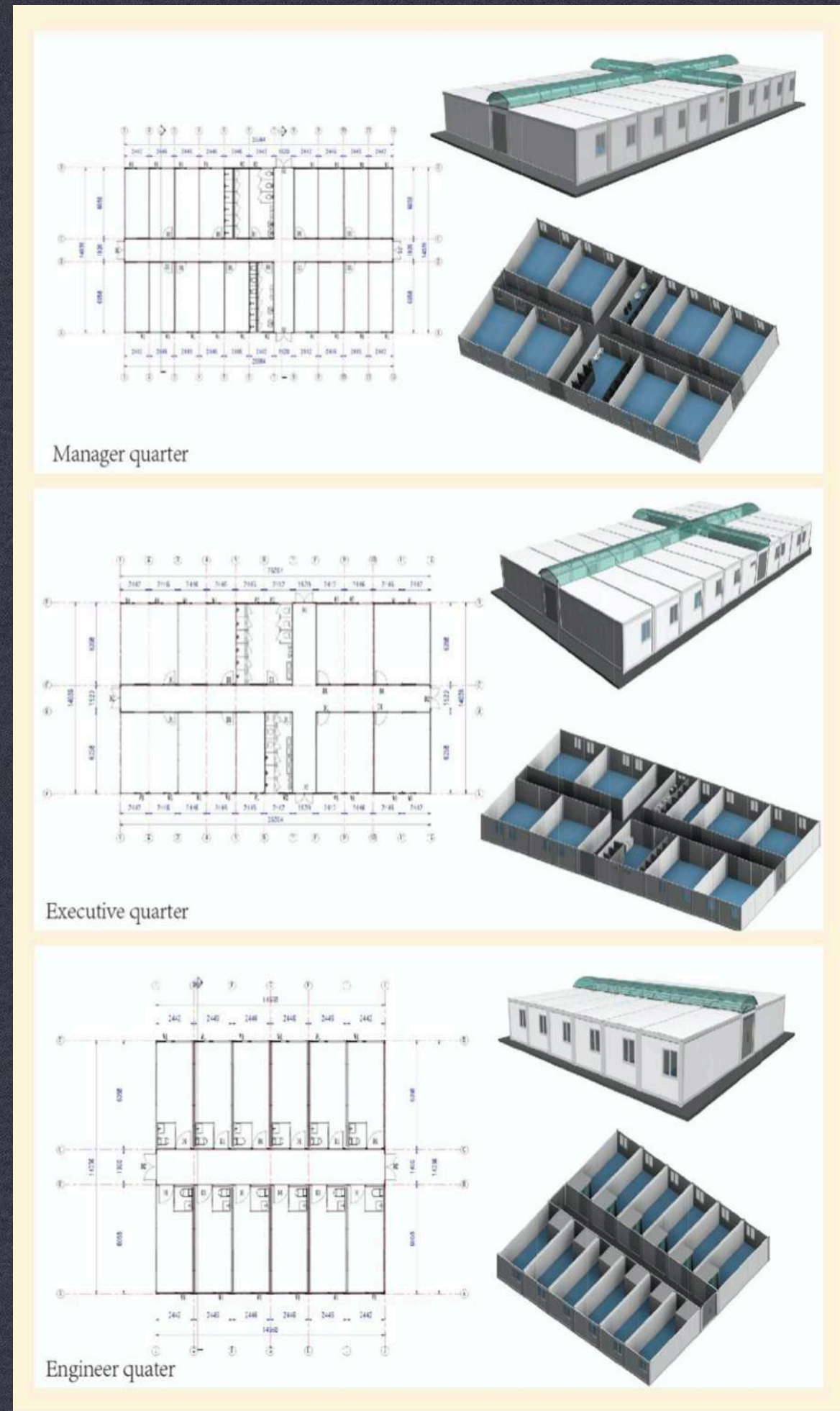
Size: L6058*W2438*H2591mm, different size is available
 Structure: Steel structure + insulated sandwich panel
 Configurations: 5 toilets, 2 urinals, 2 wash basin, electrical and waterplumbing, waste tank and clean
 water tank is optional
 Shipping: 1*40ft container can load 2 units completely or 5 units flat pack



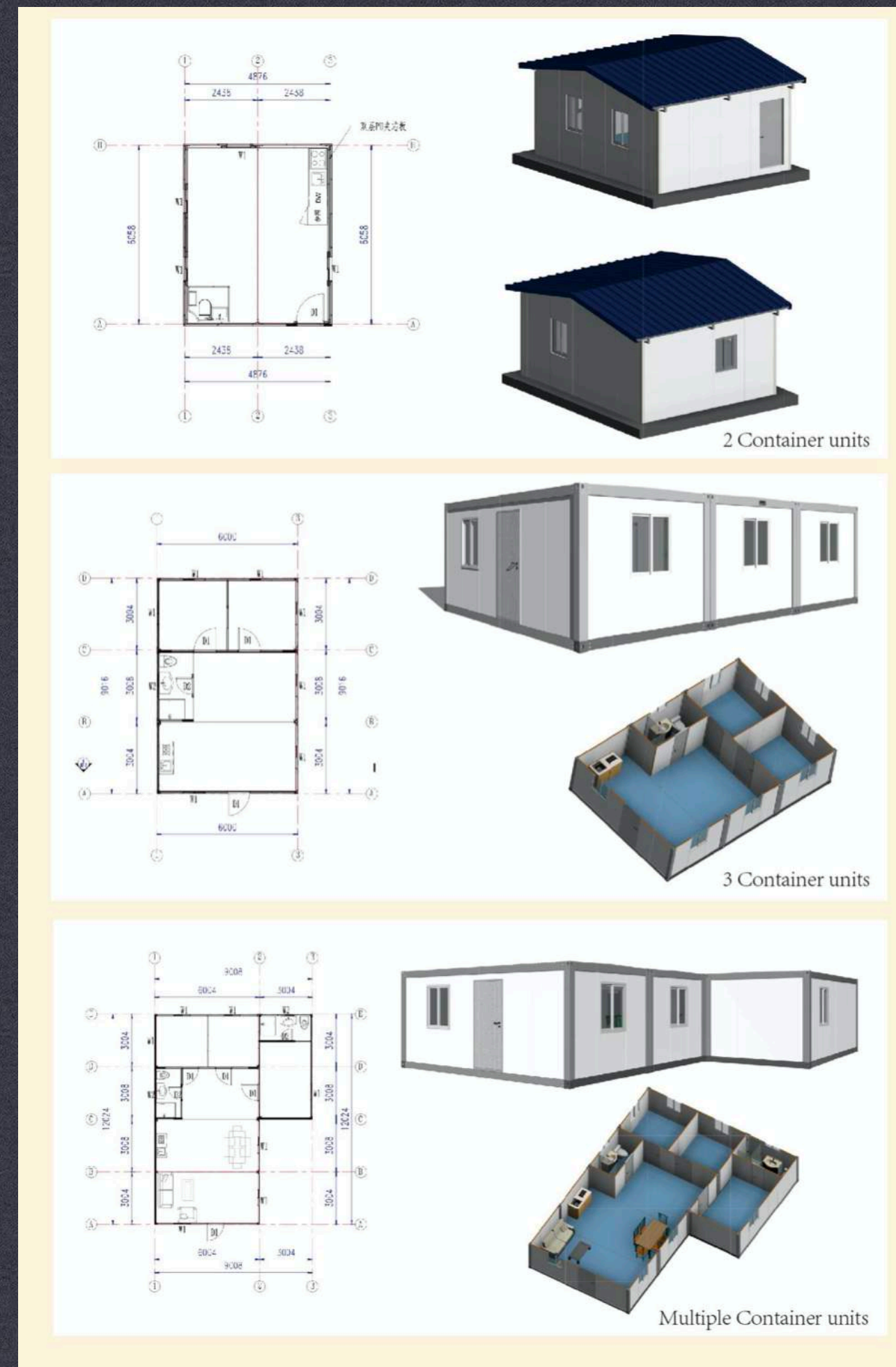
PROJECT PROFILE 4

AUSTRALIA

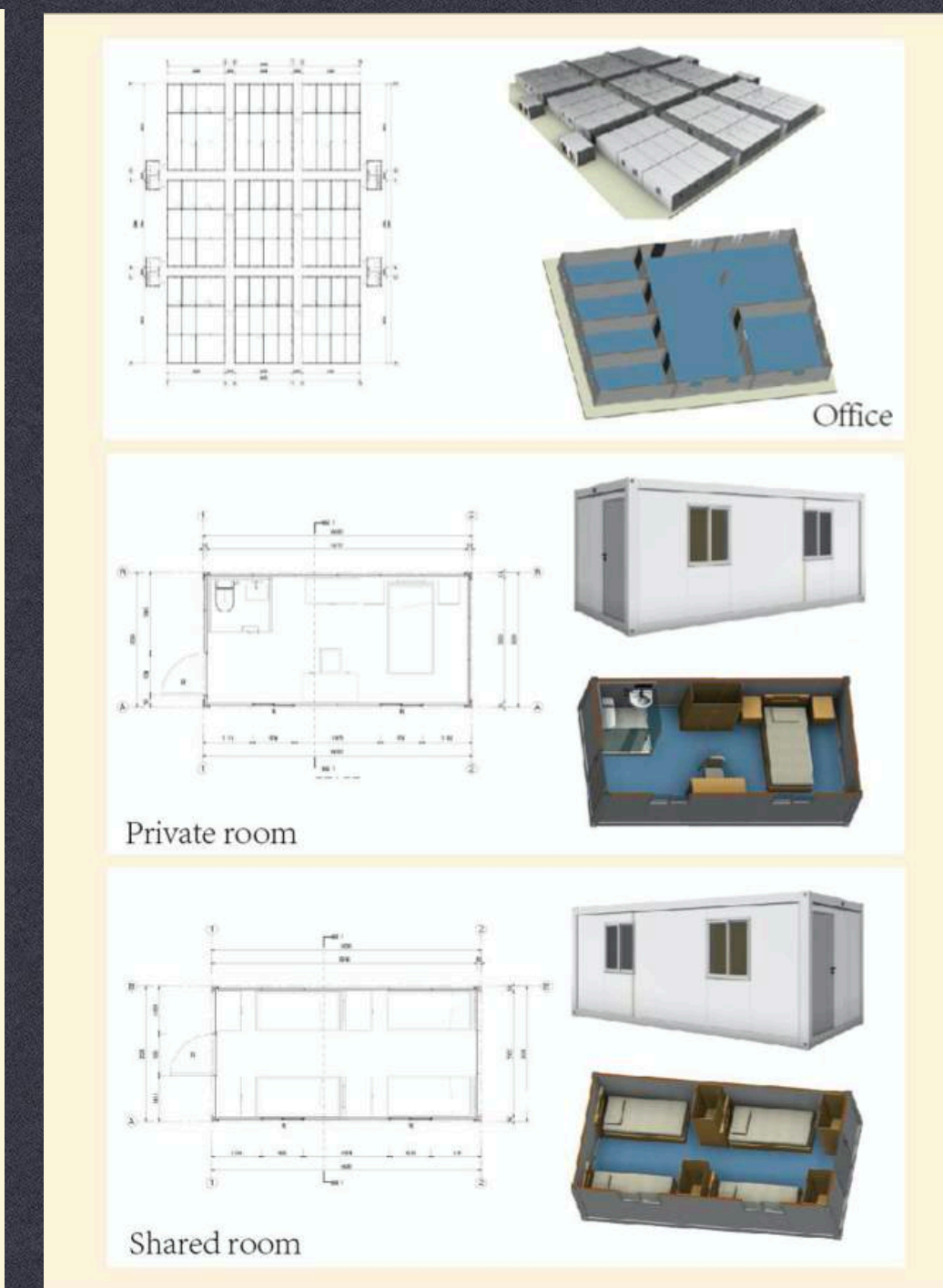
Dormitory



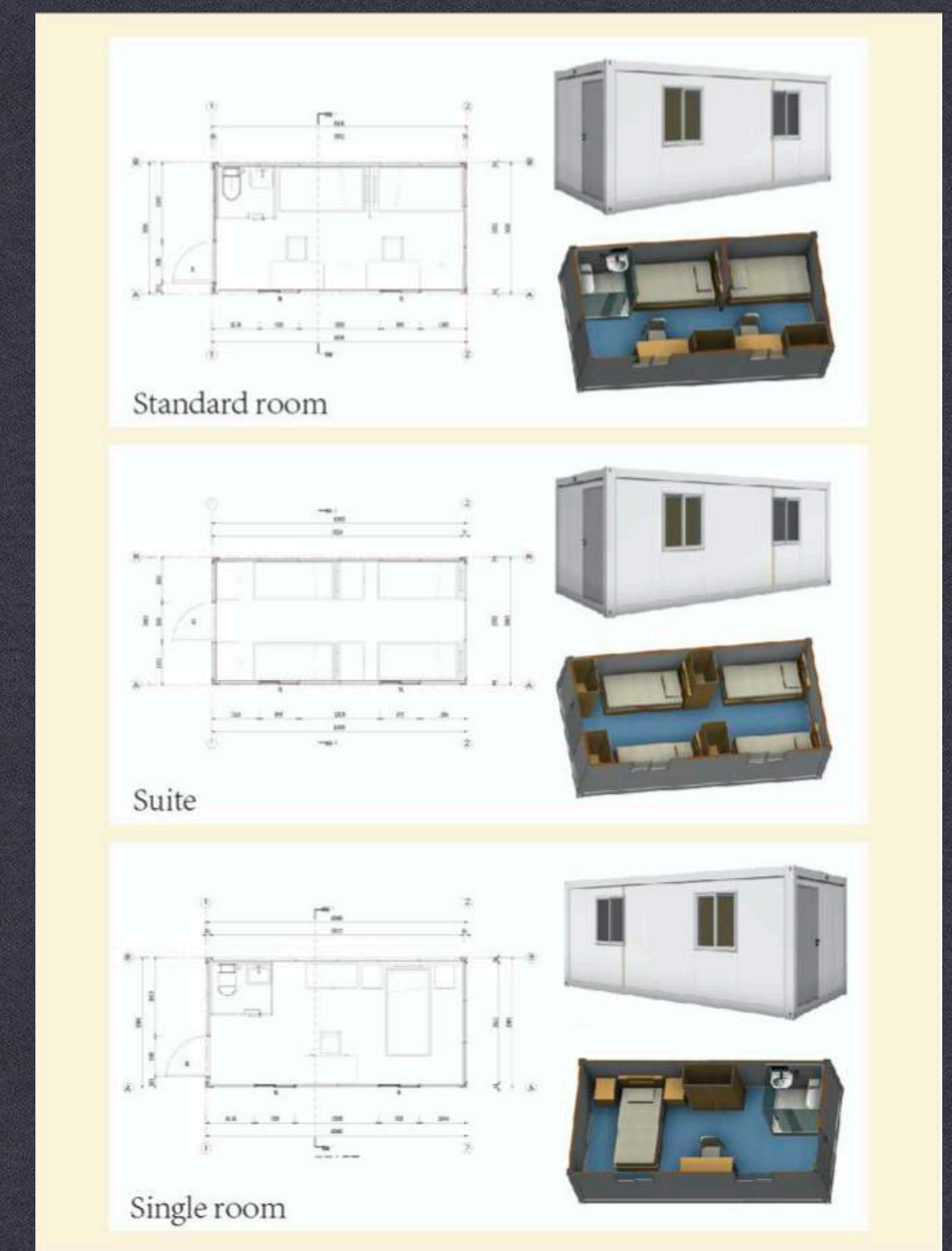
Residential Unit



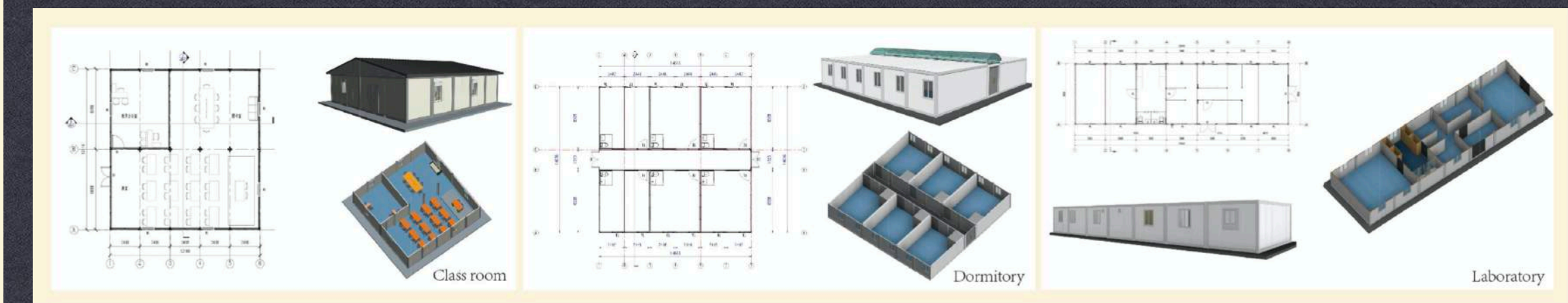
Hospital



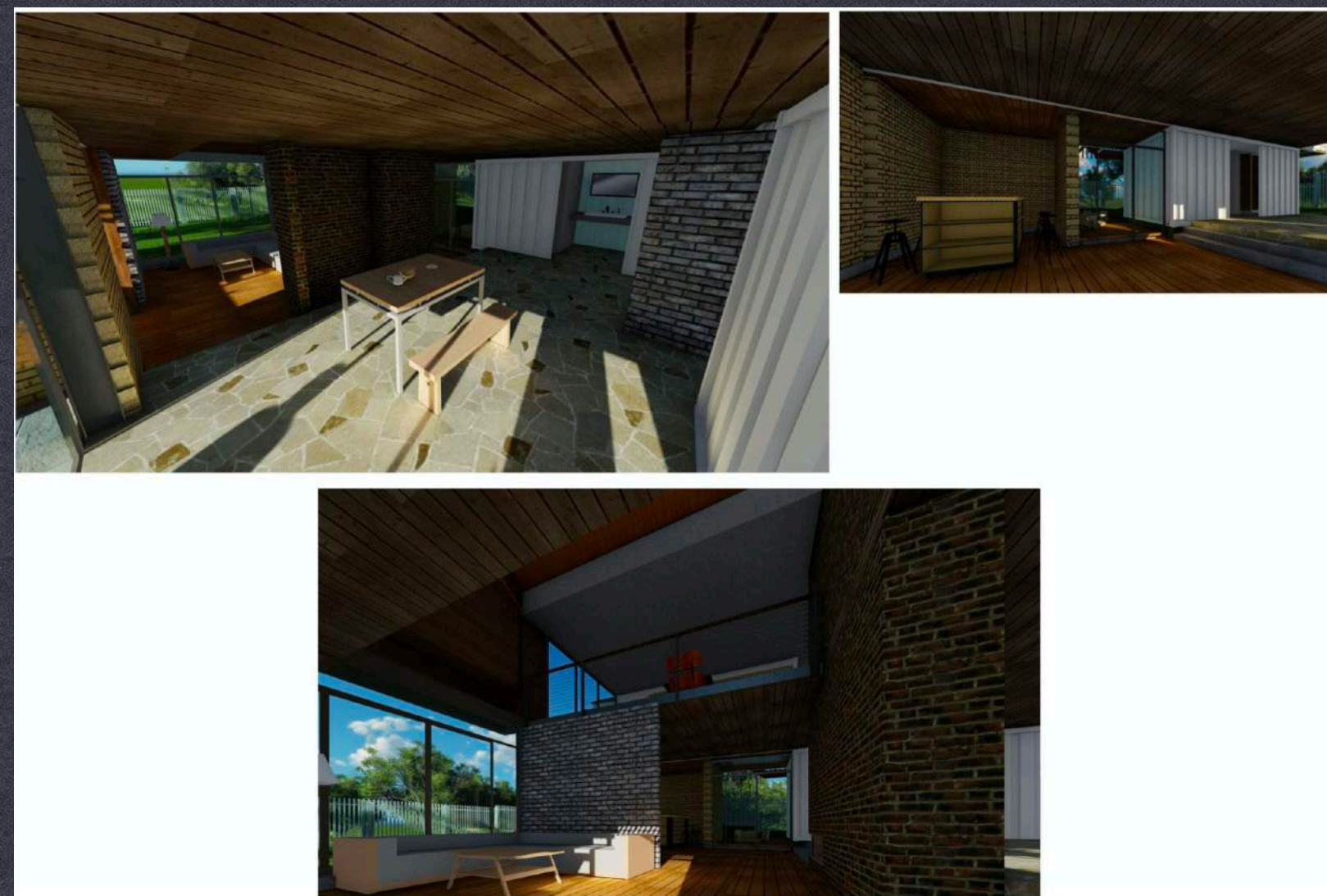
Hotel



School



OTHER PROJECT OPTION
EITHER FOR PUBLIC OR PRIVATE



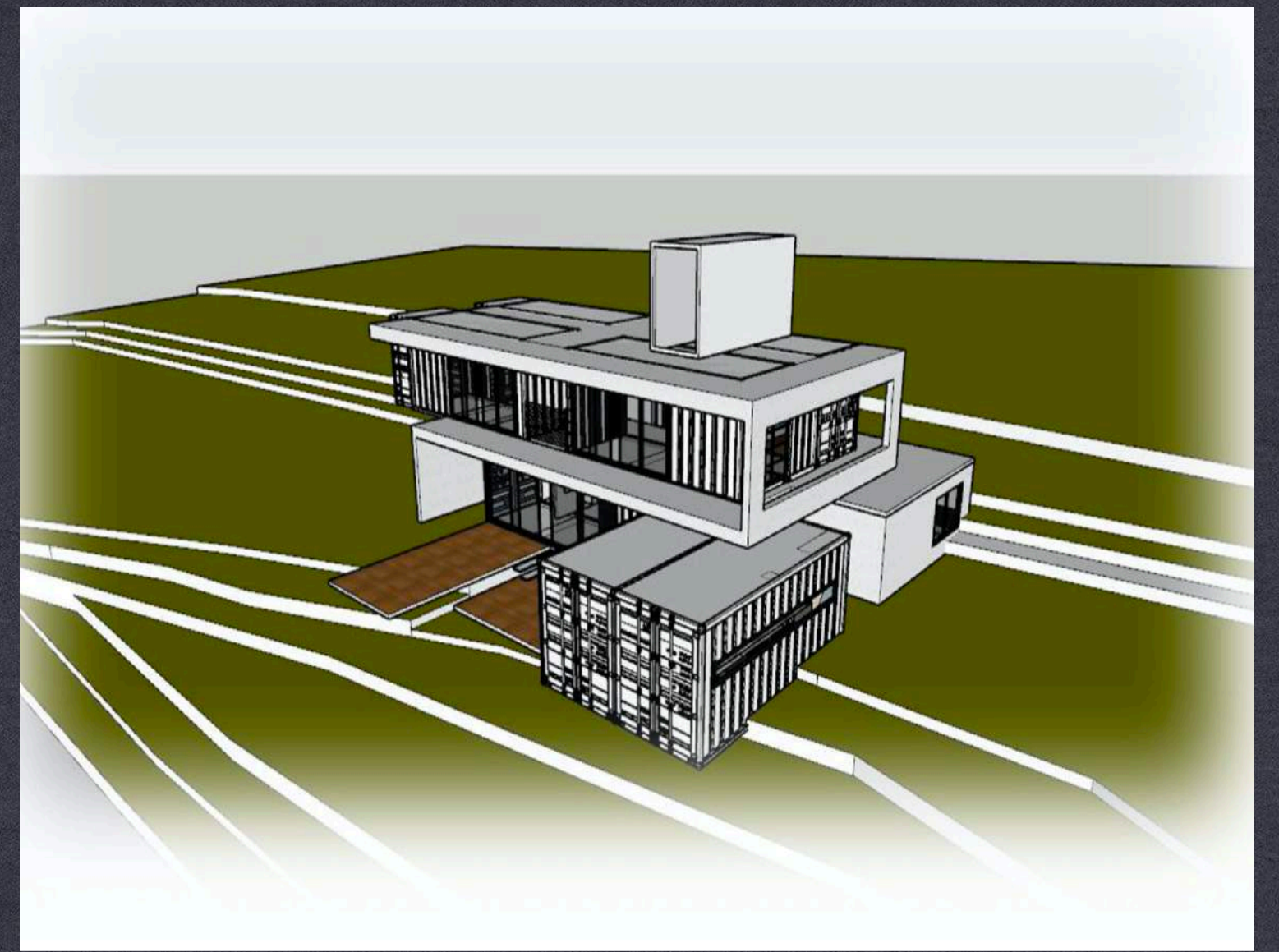
PROJECT EFFECT

PLOT A HOUSE TYPE A



PROJECT EFFECT

PLOT A HOUSE TYPE B



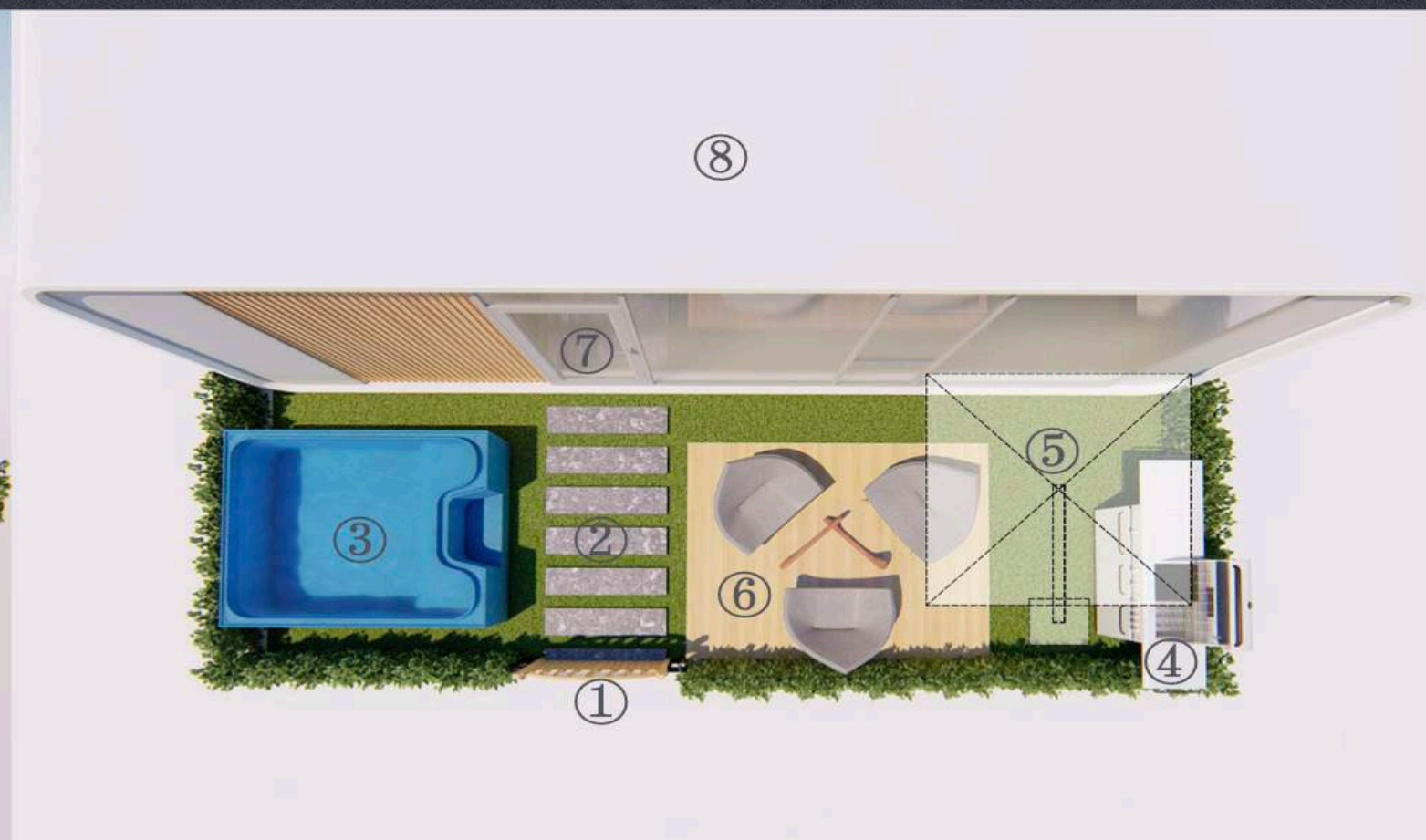
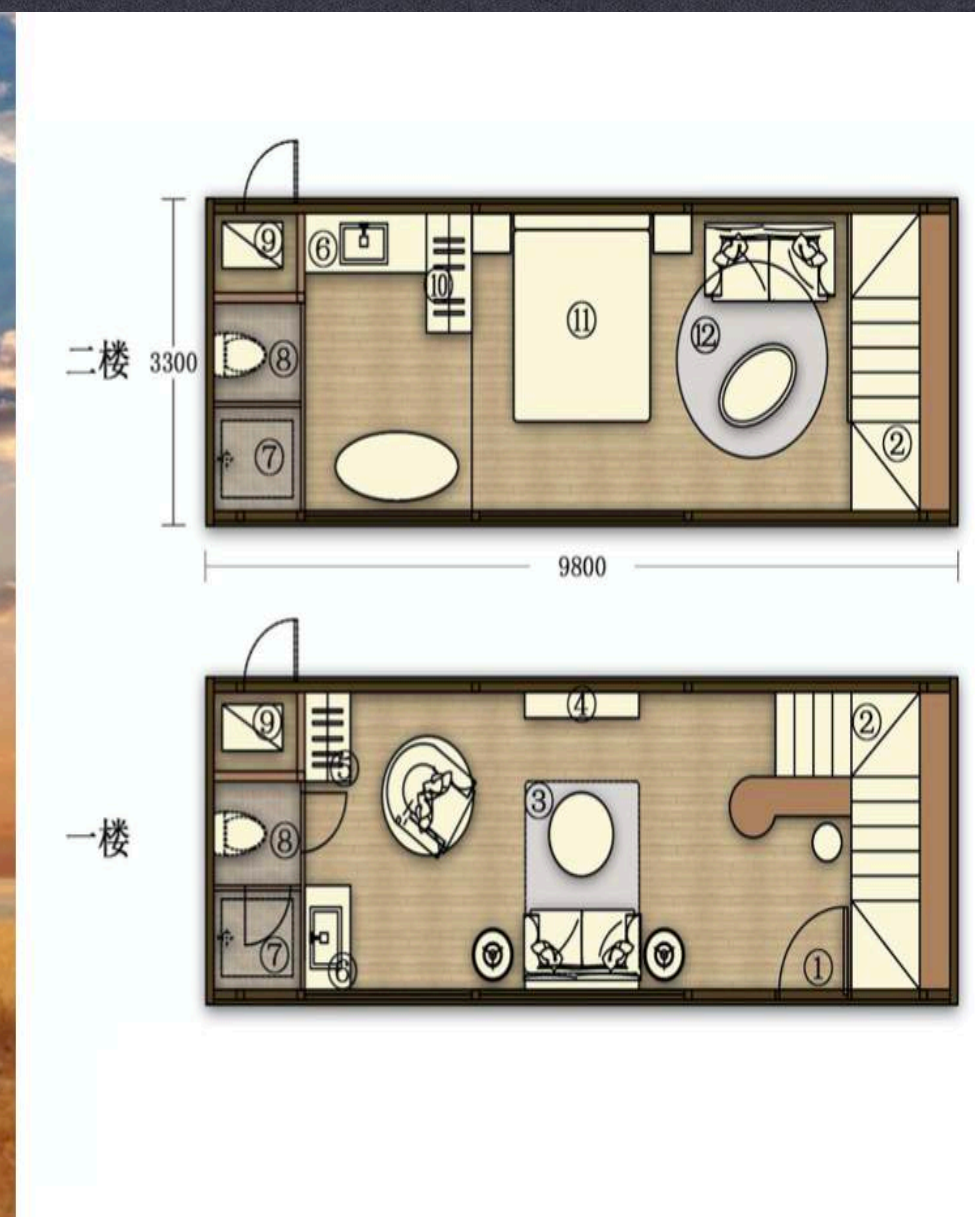
PROJECT EFFECT

PLOT B HOUSE TYPE A



PROJECT EFFECT

SERIES T6 (HOUSING LAYOUT & GARDEN)



PROJECT EFFECT

SERIES T9 (HOUSING LAYOUT 1 OR 2 FLOORS & GARDEN)



Back side



Front side



PROJECT EFFECT - SAMPLE ROOM

T SERIES (OUTSIDE)



PROJECT EFFECT - SAMPLE ROOM

T SERIES (INTERIOR)

3. DESIGN ANALYSIS



Design Description

Because the theme of these designs are container transformation, so from the characteristics of the container modularisation, as far as possible under the economic conditions, choose the same size of eight containers as the main structure of the building. By enclosing and stacking several containers, together with the combination of the materials, a simple and atmospheric villa is formed.

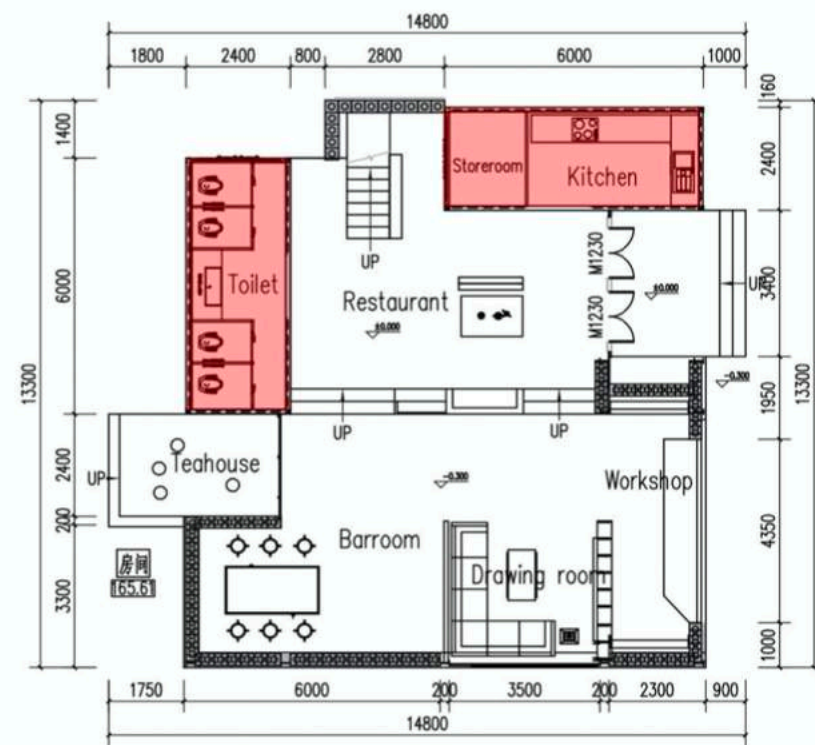
The Living room and dining room are separated from the outdoor space by glass doors and windows. By doing so, the indoor space can be flexibly expanded and the outdoor environment can be integrated into the indoor space, thus improve the quality of the residence.

The structure of the whole building is used with the original force structure of the container. When stacking and overlapping, it is considered that the stress frame of upper container corresponds to the lower container, which reduces the use of the other stressed components and saves the cost. At the same time, the simple dislocation overlap is convenient for construction, and at the same time, it can create beautiful architectural form.

Through the simple overlap of the containers, the formation of efficient and comfortable living space, as well as beautiful architectural form, has become the design of this case.

PLOT A



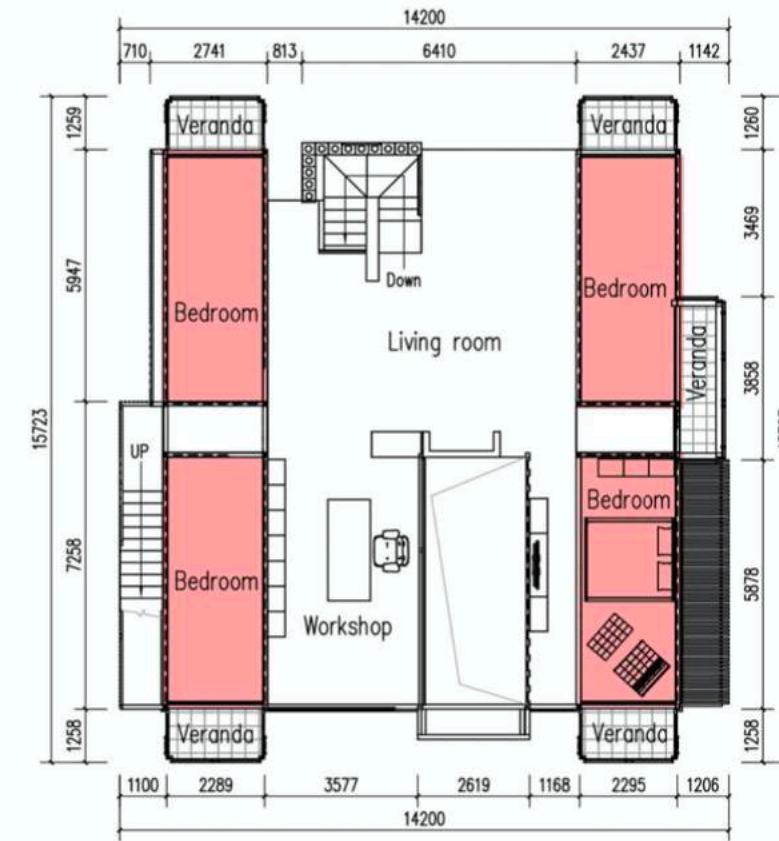


The first floor plan 1:100

充气混凝土
集装箱

Floor space: 165.61m²

A layer of: 144.65m²



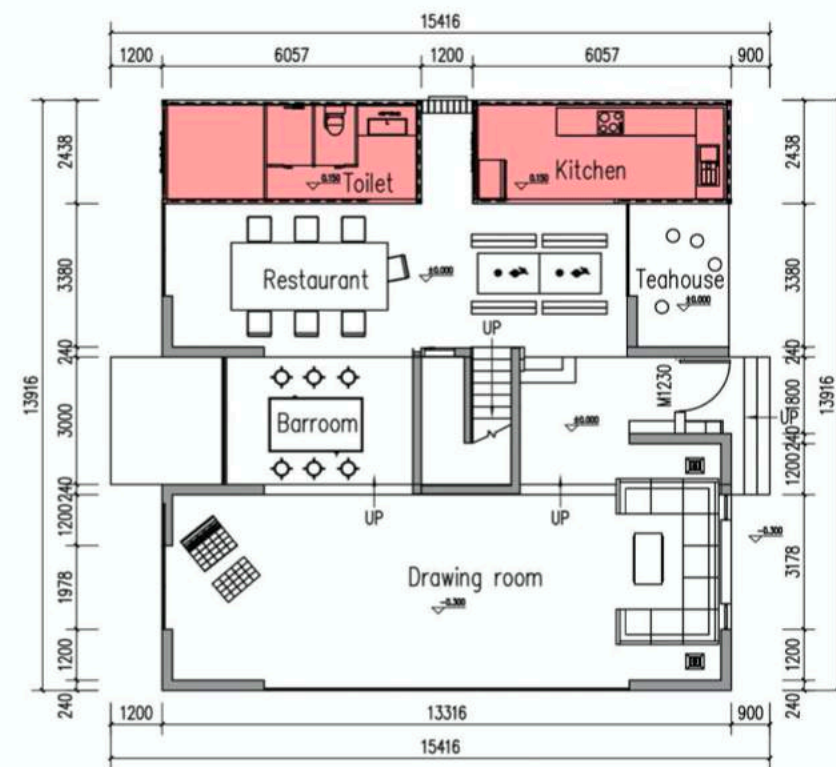
The second floor plan 1:100

充气混凝土
集装箱

A layer of: 158.61m²

CONTAINER HOUSE DESIGN SAMPLE 1

PLOT A HOUSE TYPE A

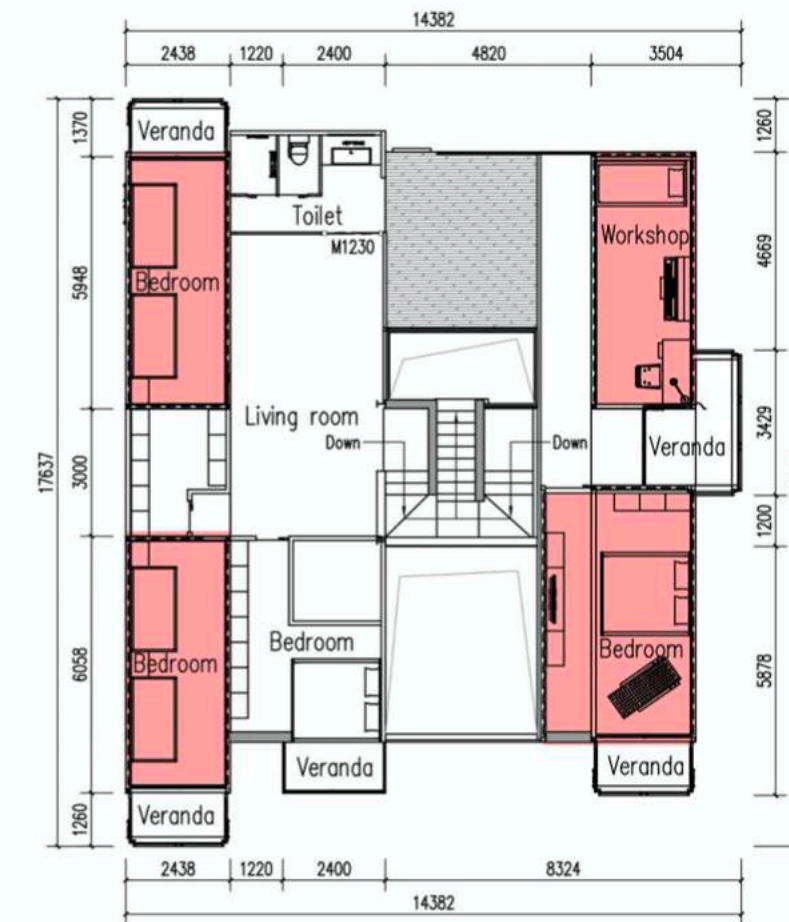


充气混凝土
 集装箱

Floor space: 191.62m²

A layer of: 181.10m²

The first floor plan 1:100



充气混凝土
 集装箱

A layer of: 187.94m²

The second floor plan 1:100

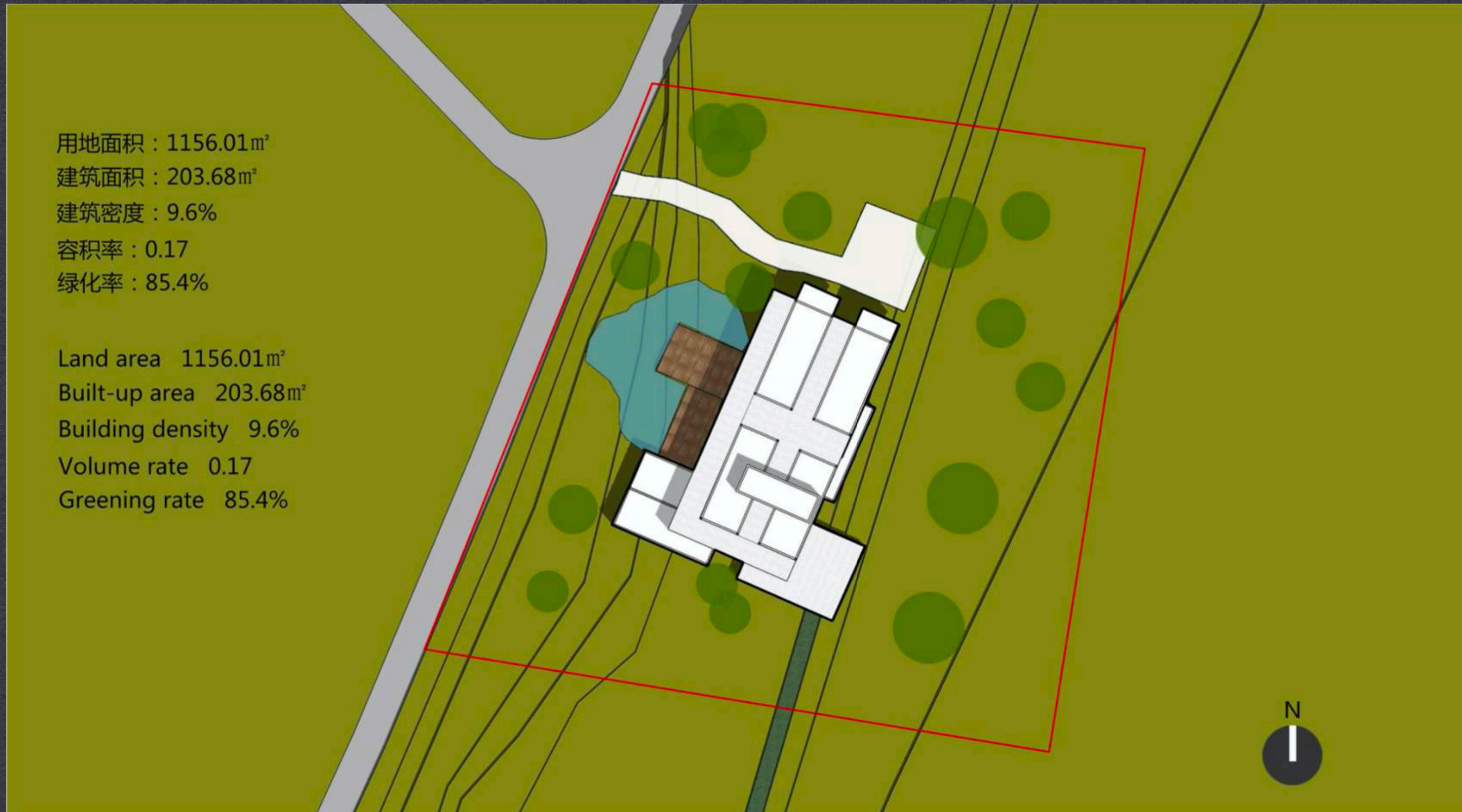
CONTAINER HOUSE DESIGN SAMPLE 2

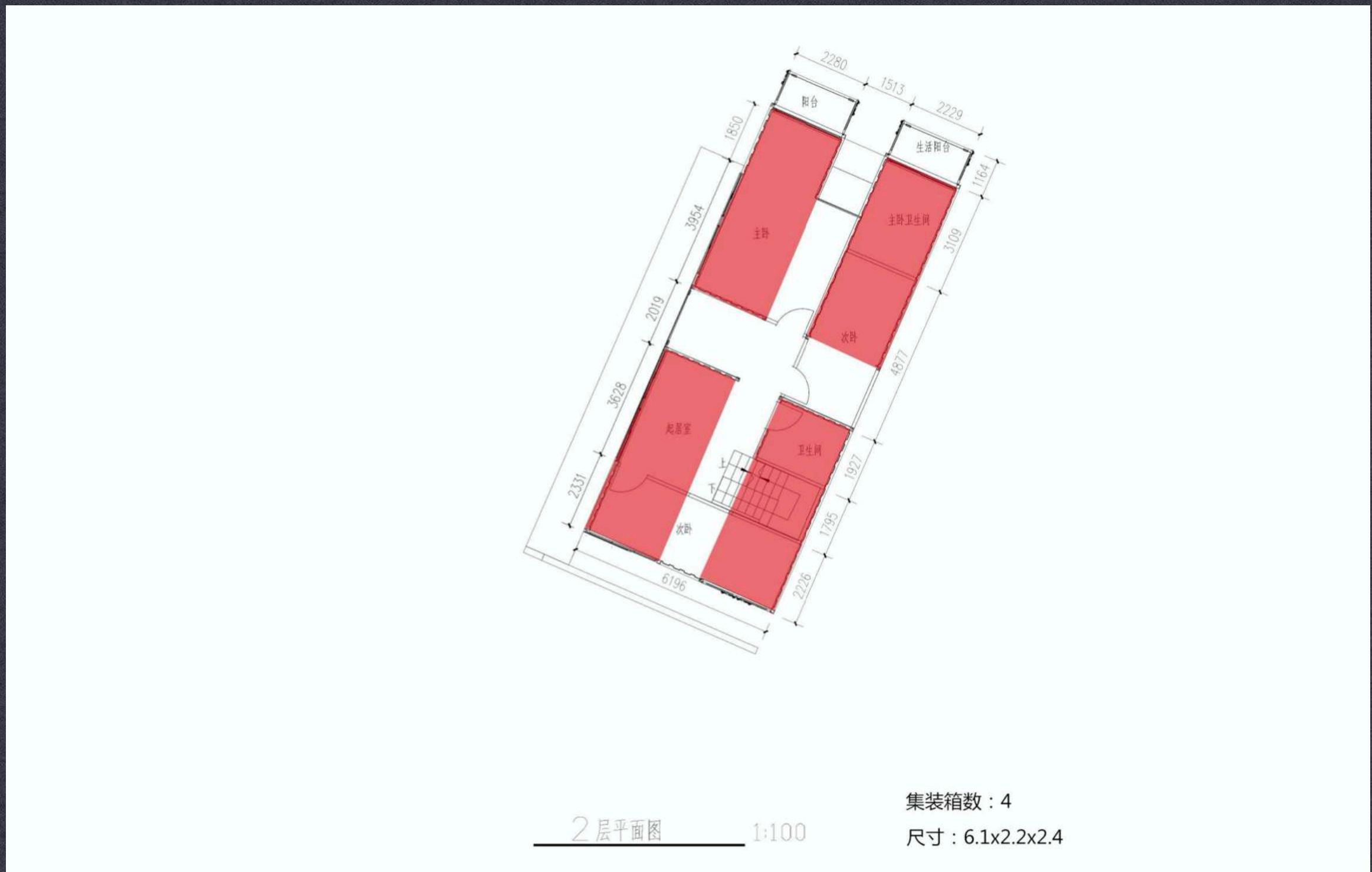
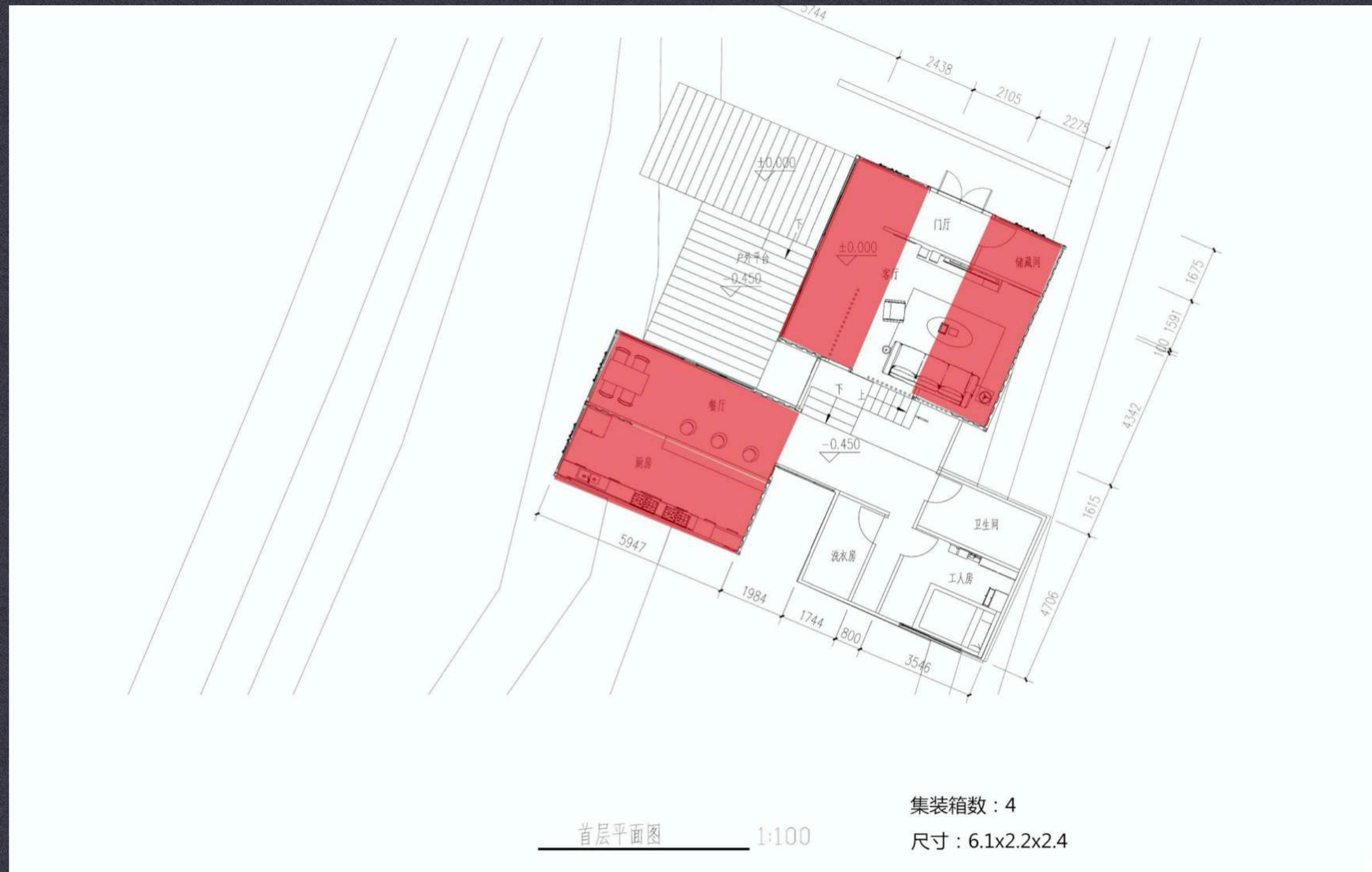
PLOT A HOUSE TYPE B

PLOT B

用地面积 : 1156.01m²
建筑面积 : 203.68m²
建筑密度 : 9.6%
容积率 : 0.17
绿化率 : 85.4%

Land area 1156.01m²
Built-up area 203.68m²
Building density 9.6%
Volume rate 0.17
Greening rate 85.4%





CONTAINER HOUSE DESIGN SAMPLE 3

PLOT B HOUSE TYPE A

4. LAND USE ANALYSIS



Plot A

Krossvägen 9

Bostadstyp Tomt Tomtareal 161 m² tomt

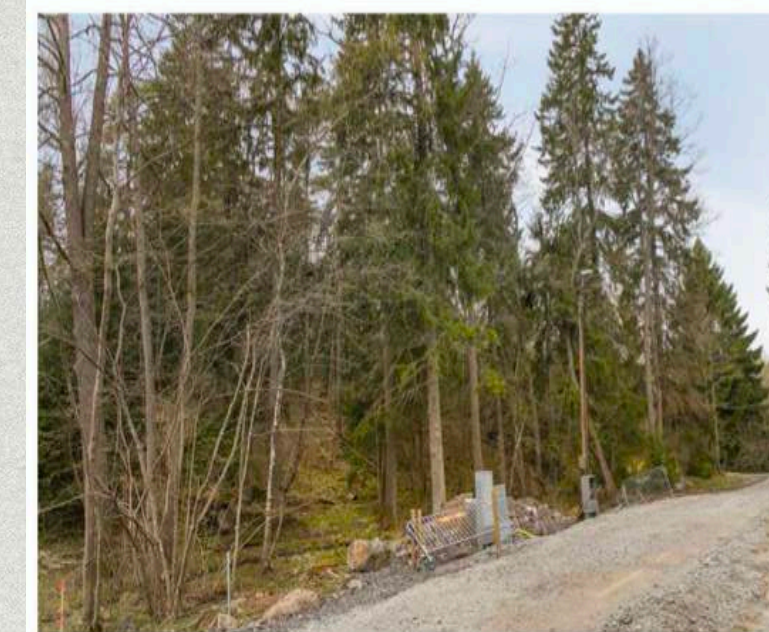
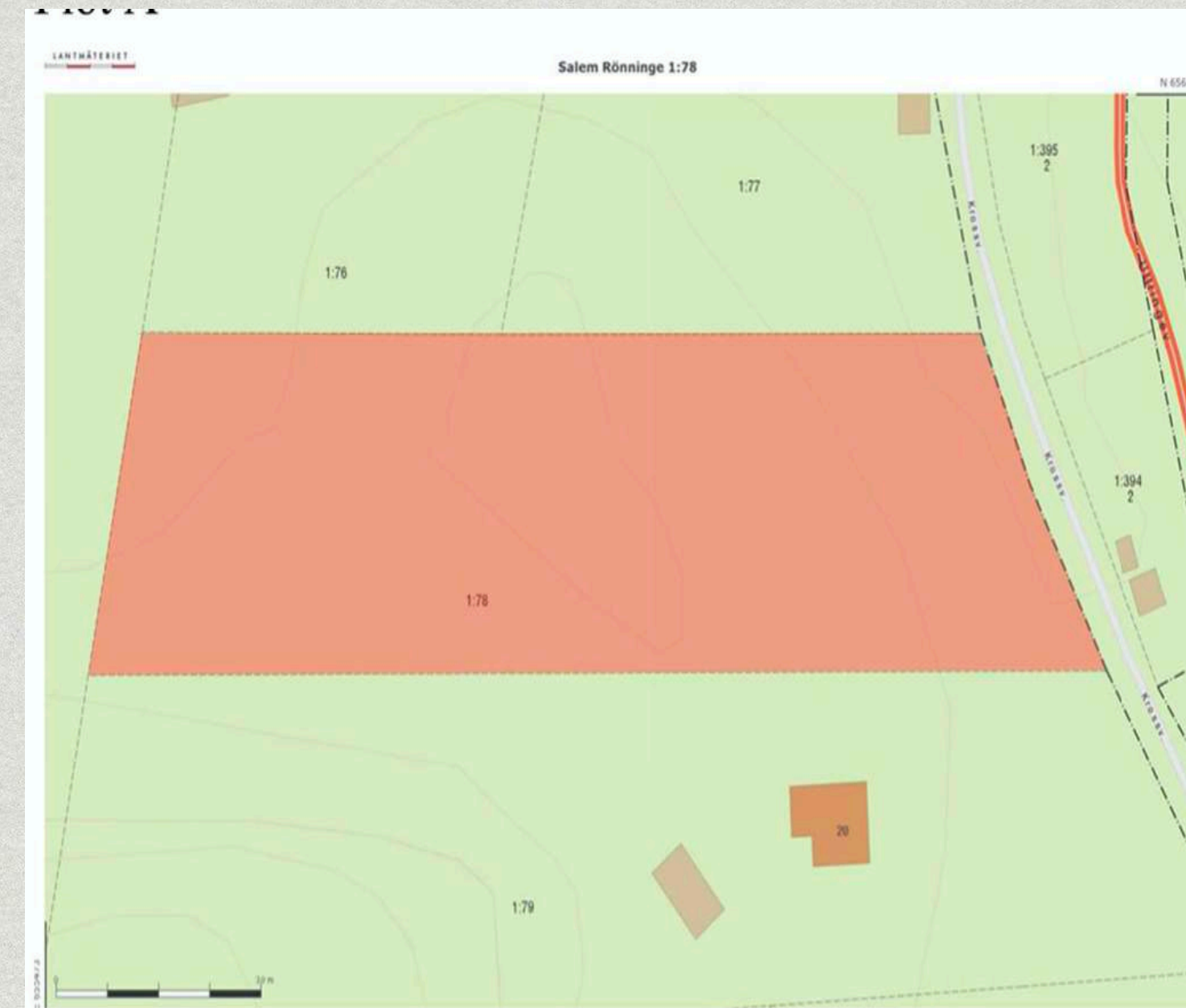
Rönninge, Salem Karta & restider

4 500 000 kr

Bevaka slutpriset

Styckningsbar tomt om 5240 kvm i detaljplanerat område med generösa byggregler. Tomten kan delas upp i två och på varje tomt kan ett en- eller tvåbostadshus byggas i två våningar tillsammans med en eller flera uthus. Den sammanlagda byggnadsarean kan vara hela 250 kvm. Utöver det finns även möjlighet att uppföra Attefallshus. Huvudbyggnaden kan vara en villa med en bostadsenhet på vardera plan eller ett parhus. För den kreativa finns här möjlighet att bilda en bostadsrättsförening genom att skapa ett flertal bostadsenheter med hjälp av uthus och Attefallshus. Vacker natur och fina badsjöar. Bra kommunikationer med pendeln till Stockholm och Södertälje.

Se vidare detaljplan och övrig information i bifogade pdf-dokument.



Plot B

Sollidenvägen 13

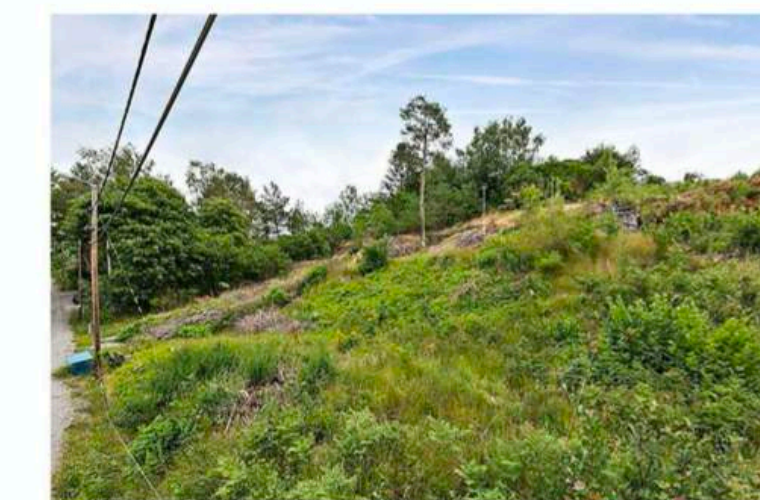
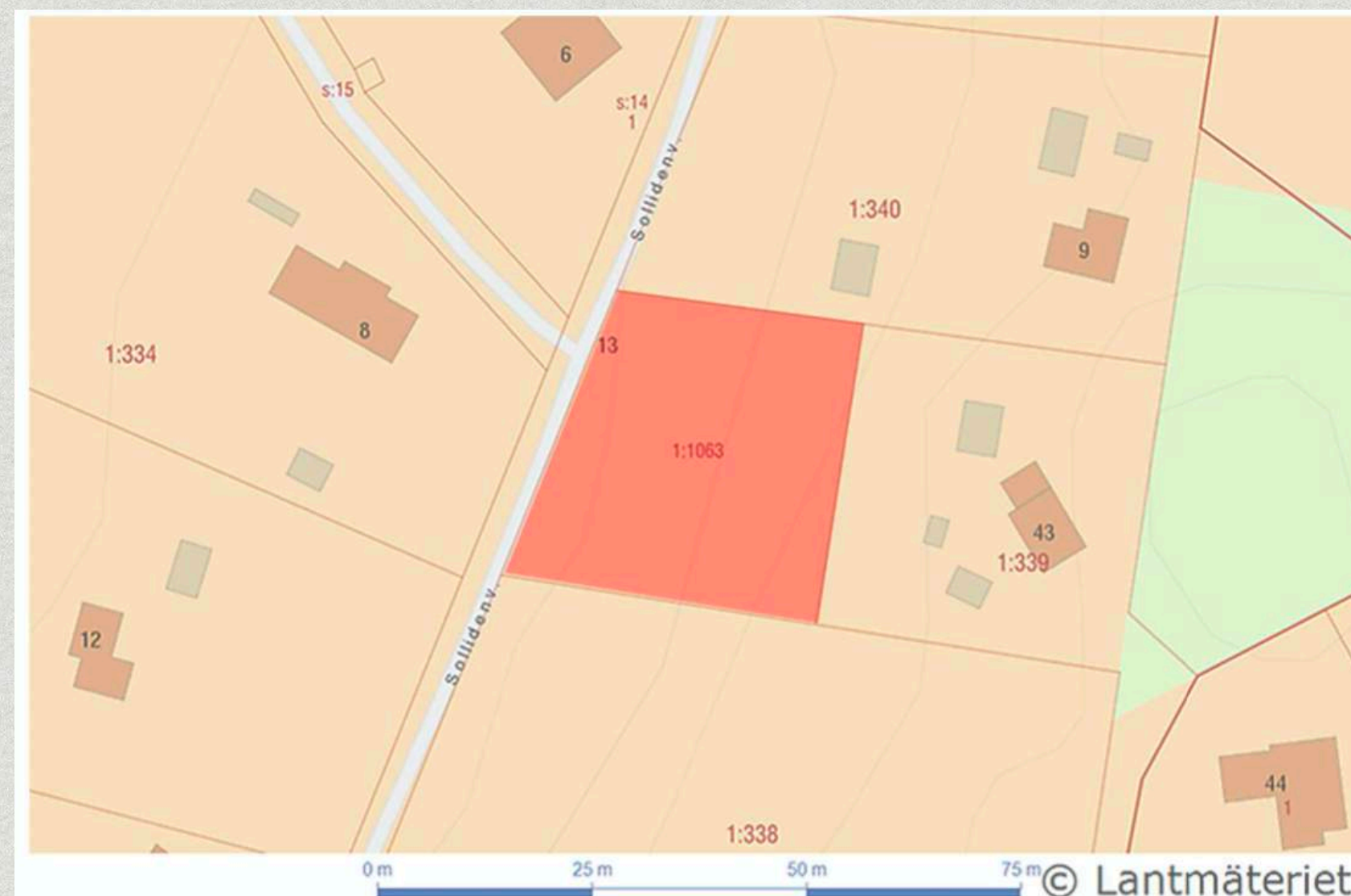
Bostadstyp Tomt Tomtarea 5 240 m² tomt

Rönninge, Salem Karta & restider

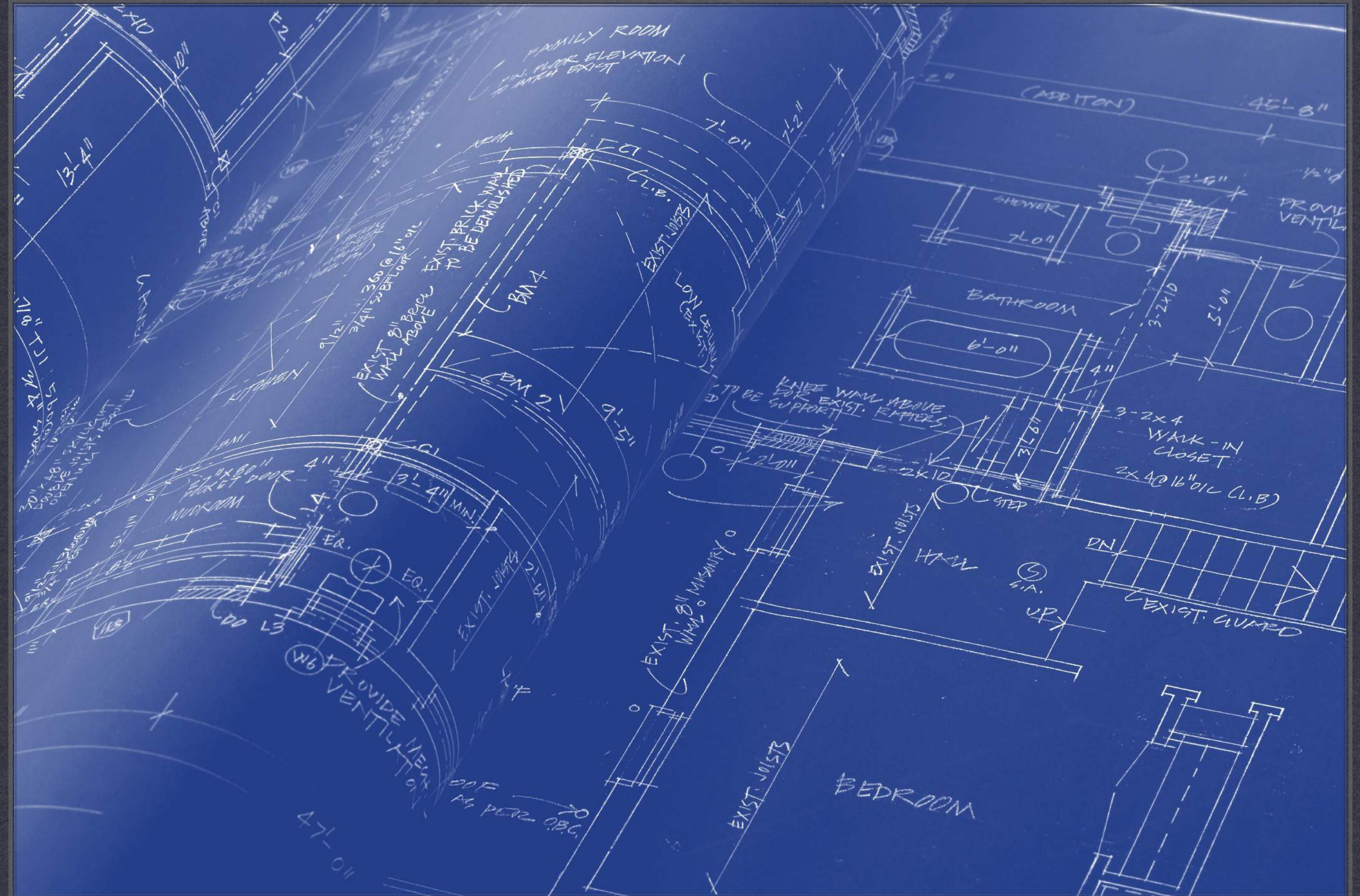
2 750 000 kr

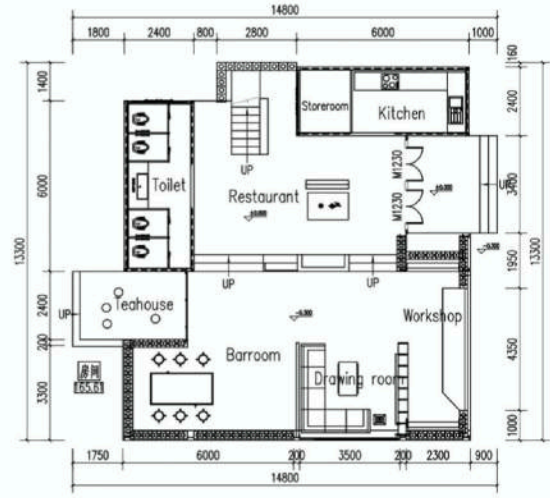
Bevaka slutpriset

En perfekt tomt med gångavstånd till Rönninge C. Optimalt för dig som vill bygga enfamiljshus eller parhus i två våningar med sutteräng. Den sammanlagda byggnadsarean kan vara hela 1/5 av totala tomtytan (232 kvm). Sidobyggnad om 50 kvm får byggas. Utöver det finns även möjlighet att uppföra Attefallshus. På tomt finns egen vattenbrunn med god vattenkvalité. I närområdet finner du vacker natur och fina badsjöar. Bra kommunikationer med pendeltåget till Stockholm och Södertälje samt närhet till motorvägspåfart. Se vidare detaljplan och övrig information finns hos kommunen. Möjlighet till privatvisning finns!



5. BLUEPRINT ANALYSIS





Floor space: 165.61m²

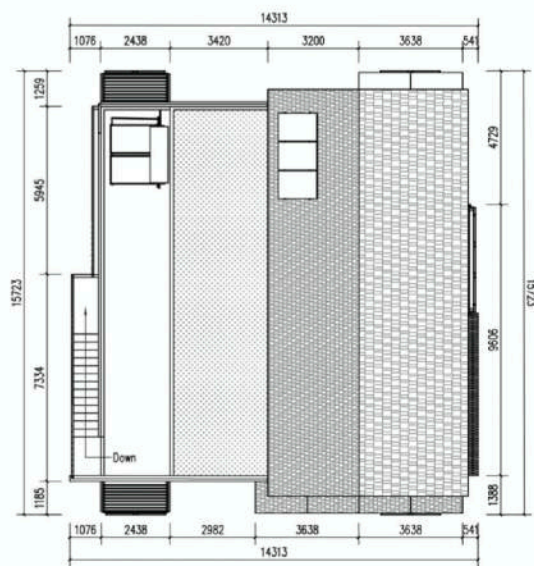
A layer of: 144.65m²

The first floor plan 1:100



A layer of: 158.61m²

The second floor plan 1:100



The roof plan 1:100



cross-section drawn



The north facade



The south facade



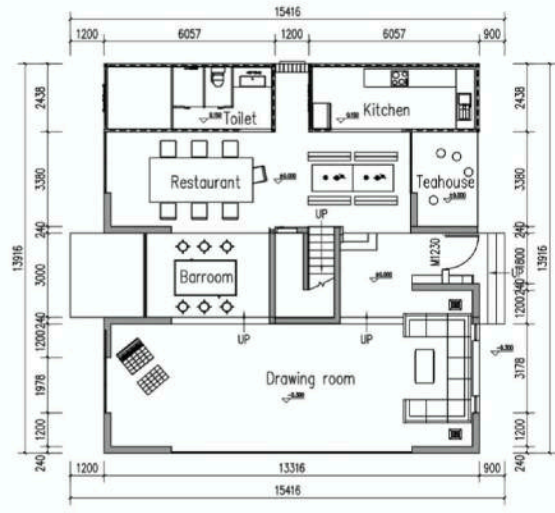
The west facade



The eastern facade

DESIGN SHOWCASE 1

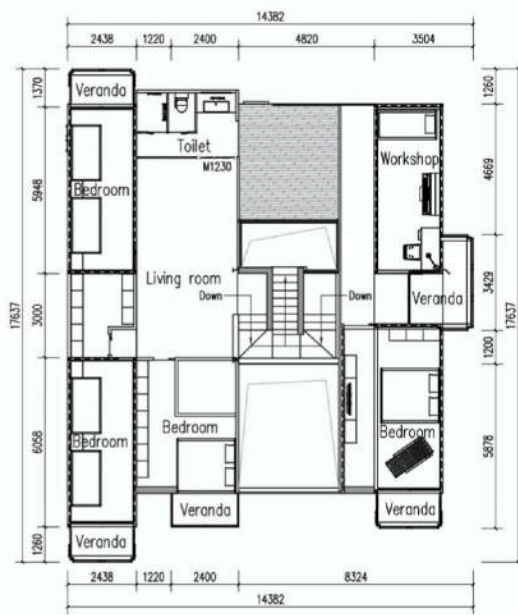
PLOT A HOUSE TYPE A



Floor space: 191.62m²

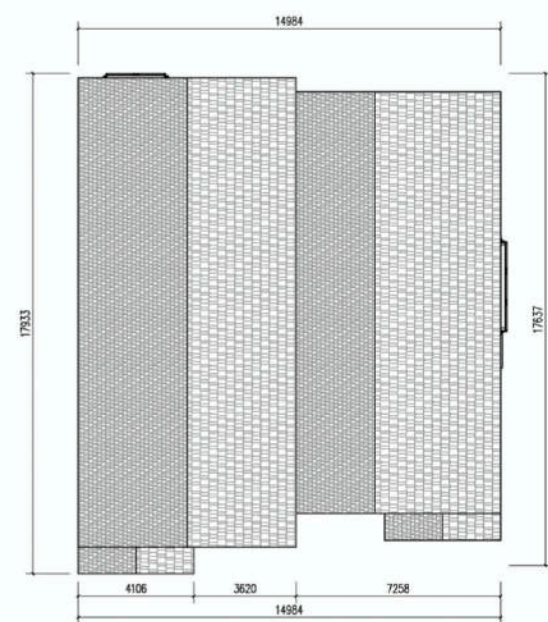
A layer of: 181.10m²

The first floor plan 1:100



A layer of: 187.94m²

The second floor plan 1:100



The roof plan 1:100



cross-section drawn



The north facade



The south facade



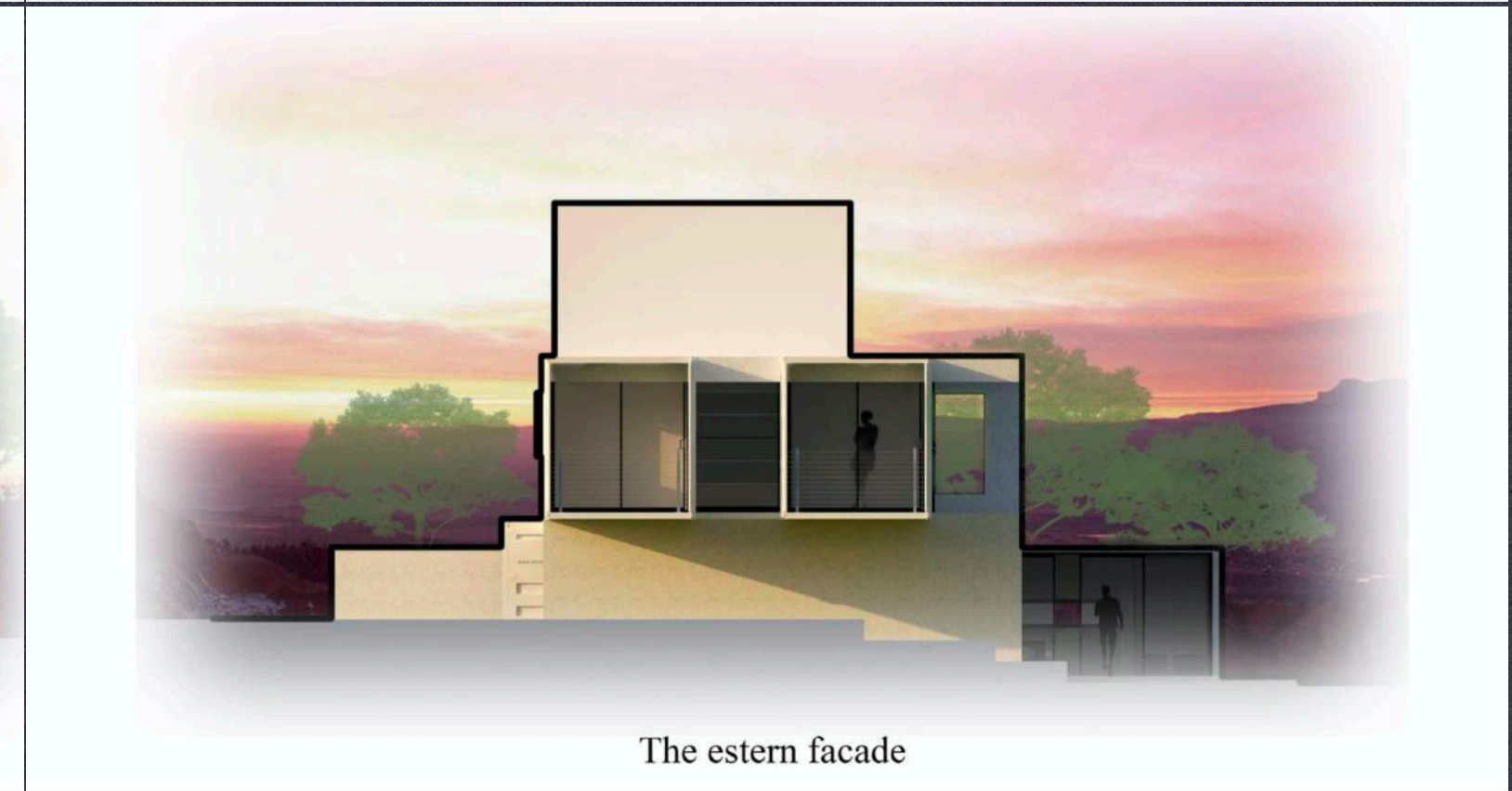
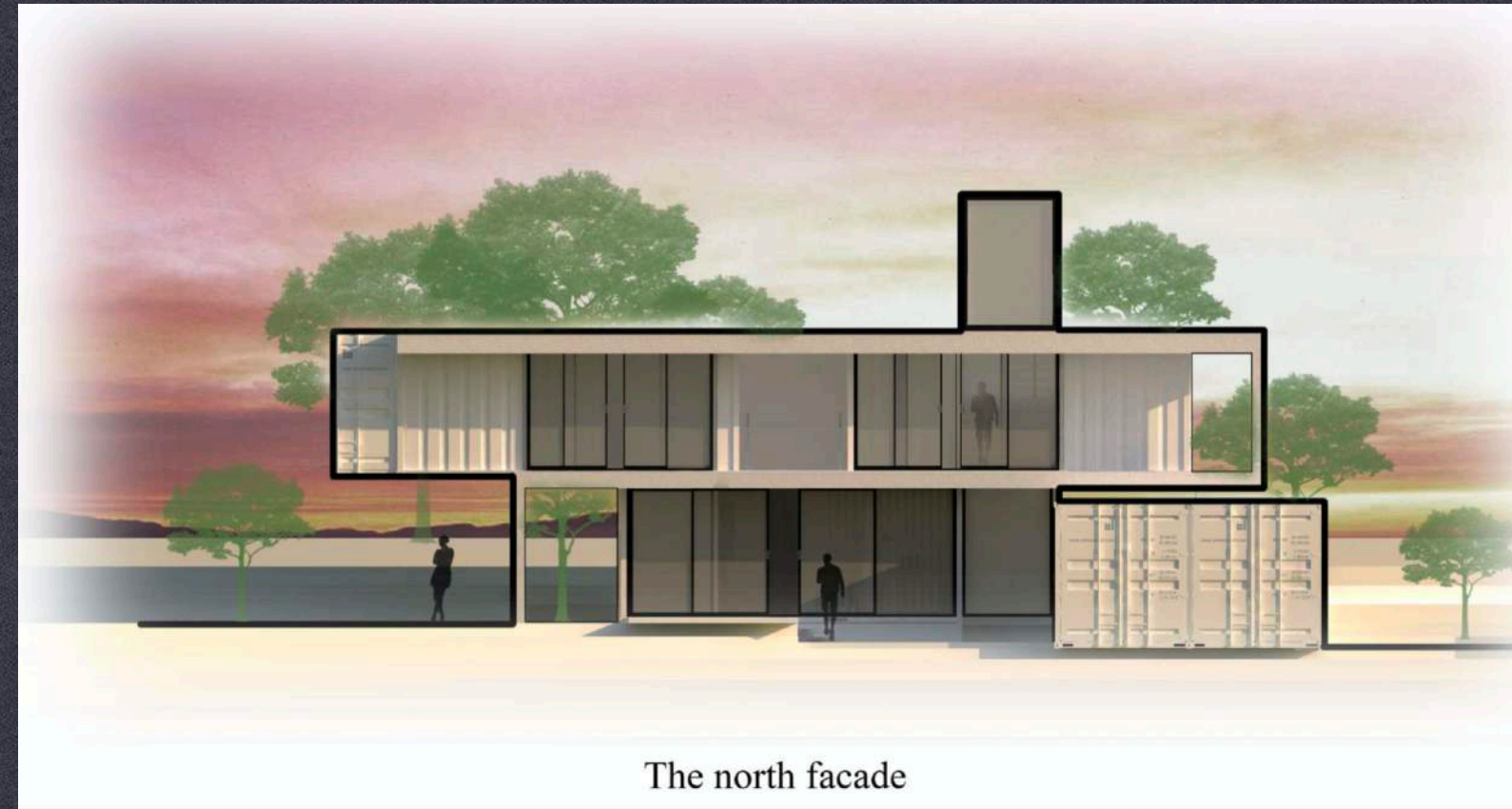
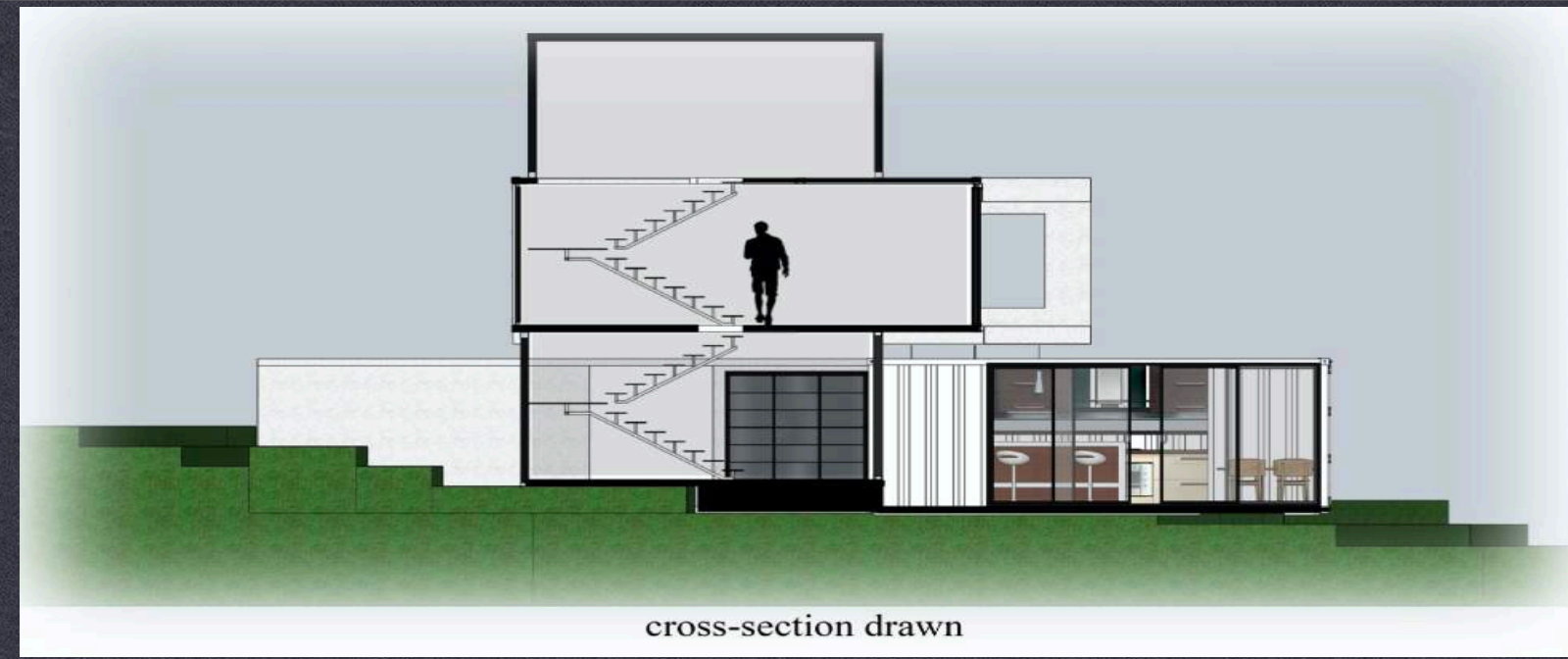
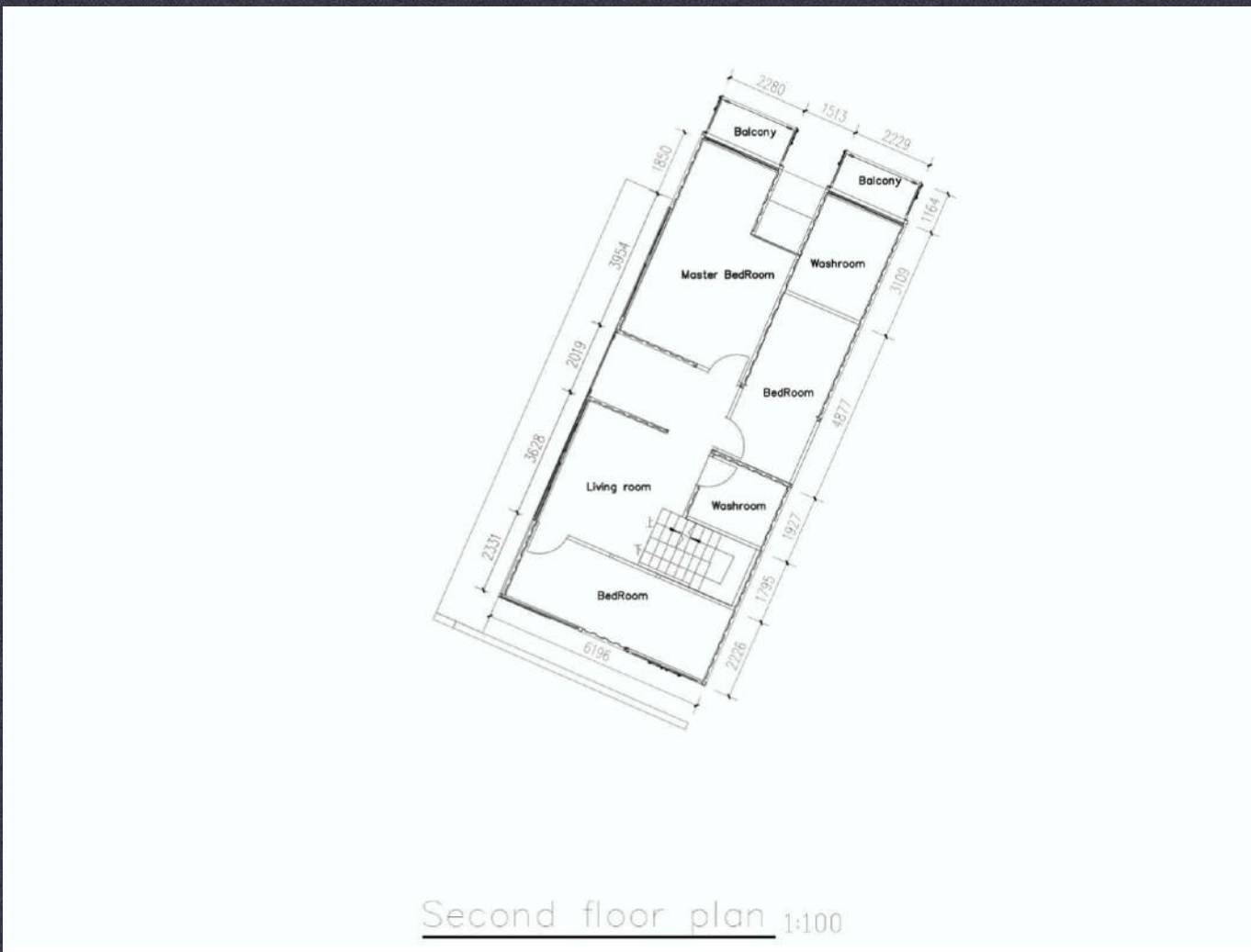
The west facade



cross-section drawn

DESIGN SHOWCASE 2

PLOT A HOUSE TYPE B



DESIGN SHOWCASE 3

PLOT B HOUSE TYPE A

6. OTHER DESIGN INSPIRATION

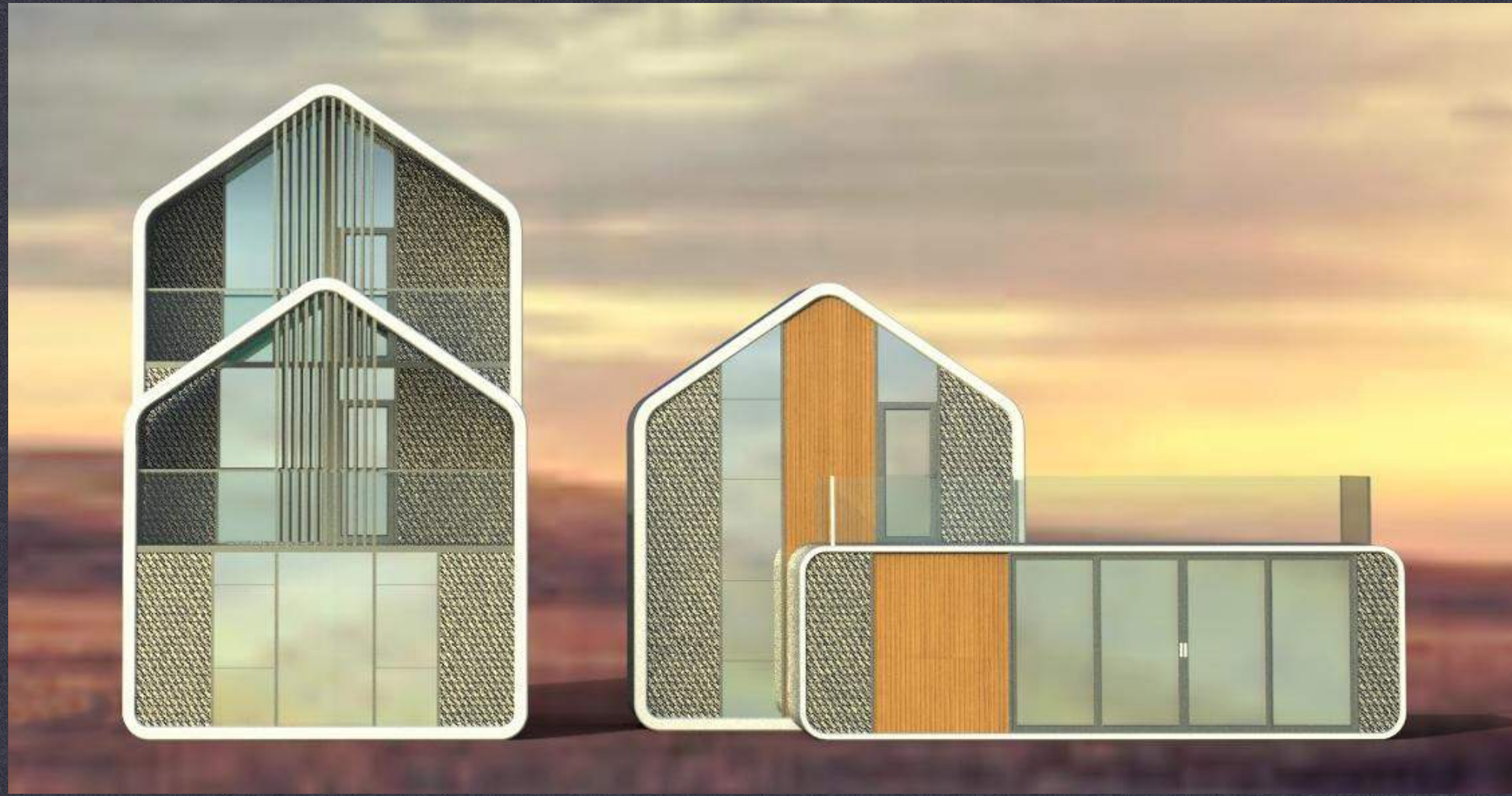




OTHER DESIGN INSPIRATION

ALL DESIGN COULD BE CUSTOMISED BASED ON CLIENTS REQUEST

Office



Public/Commercial



Real estate development



OTHER DESIGN INSPIRATION CON.

ALL DESIGN COULD BE CUSTOMISED BASED ON CLIENTS REQUEST

THANK YOU FOR YOUR INTERESTS

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TEL: +46 8 40886004

EMAIL: Joanna@nordeway.com

