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BCH
BROAD COVE HOME

BCH

BCH Modular Housing

HOUSING FOR THE WORLD'S POOR PEOPLE






Certificado de Mérito
Solo Tozorier
Diploma
NYC
CR7
Jeep

PRAGMATIC & SYSTEMATIC DESIGNS PROVIDE HOUSING FOR THE WORLD'S POOR PEOPLE

Today, although humanity has entered the age of AI, 1.1 billion people still live in slums and 300 million sleep on the street (according to UN-Habitat estimates)—that means 17 out of every 100 people on the Earth have no basic shelter; although governments around the world have announced one ambitious affordable-housing program after another, over the past 10 years the number of people living in slums or without a home has instead risen by 15%—human civilization is not advancing; it is regressing! Now BROAD is trying to stop this regression through practical, systematic design!

BCH Ultra-Low-Cost Housing

- After 17 years of R&D by more than a thousand people, and countless trials and failures, BROAD has finally found a technological solution that guarantees living quality and life safety while achieving ultra-low cost.
- Practical design and supply chain: remove all redundant functions and decoration; keep product types to a minimum; and buy materials in volume to secure lower prices.
- Maximum modern industrial efficiency: standardized modules; 100% factory prefabrication; transport within container dimensions; and building-block-style assembly.
- Remarkable structural engineering makes the cost of building a high-rise close to that of building a low-rise.

High-Rise Building Fire Safety Codes Need to Be Revised

Many poor people find their livelihoods in cities, but urban land is scarce, so high-rise buildings are unavoidable; current “High-Rise Building Fire-Safety Codes” make construction costs extremely high and deprive poor people of the chance to live in cities. BROAD extensive tests have proved that external escape stairs can replace expensive fireproofing materials and systems, not only cutting costs substantially but also making escapes in a fire more reliable. The problem is that experts and officials in each country must revise fire regulations that have been in place for decades—with a practical mindset and political courage.

Government support is needed

Provide free land, low-cost financing, tax relief, and a simple, fast approval process.

We need to work with contractors, property developers, and social welfare organizations in each country

BROAD serves as the module supplier and on-site installation guide; local partners serve as project developers and EPC contractors.

BCH’s target: cut construction costs by 70%—or even further

Disruptively reduce costs through technological, industrial, and standard innovation, policy support, and full mobilization of local resources.


Build BCH housing after clearing slums



Manila Slum


Jakarta Slum


Nairobi Slum

Note: UN-Habitat estimates of slum populations in selected cities in 2025 (a million people):
Mumbai 5.2; Kolkata 2.1; New Delhi 1.9; Karachi 4.8; Dhaka 3.4; Manila 3; Jakarta 2.8; Bangkok 1.15; Colombo 1.05; Lagos 4.5; Nairobi 2.5; Luanda 2.4; Dakar 1.2; Accra 1.25; Kinshasa 1.1; Johannesburg 2; Cairo 1.8; Mexico City 2.2; Rio de Janeiro 2.2; São Paulo 1.3; Caracas 1.3; Bogotá 1.15; Lima 1.1; Buenos Aires 1.05

BCH PRODUCT SPECIFICATIONS

No.	Item	Specification
1	Building use	Affordable housing and dormitories for the poor only (live load: 0.2 t/m²)
2	Delivery Mode	Fully fitted out, including lighting, switches, sockets, water supply and drainage, and sanitary fixtures
3	Number of storeys	1–30 F
4	Floor-to-floor height	2.5 m
5	Clear internal height	2.32 m
6	Clear internal width	3.16 m
7	Clear internal length	11.94 m (5.17 m after subdivision into rooms)
8	Standard unit type	Small unit: 35.2 m² internal area (42–45 m² gross floor area, including 25% of the balcony area and the unit's apportioned share of common corridors, stairs, and lifts)
9	Optional unit types	Medium unit: 52.8 m² Internal; large unit: 70.4 m² Internal; studio: 17.6 m² Internal;
10	Building type	Modular steel-structure building
11	Construction method	100% factory prefabrication of the structure, MEP and finishes followed by rapid on-site installation
12	Project design method	Combine standard modules; only foundation design is required
13	On-site assembly method	Connect the structure, balconies, stairs, and lifts with bolts; connect MEP services using standard plug-in interfaces
14	Construction duration	Structure: 3 storeys per day; interior fit-out: 2 storeys per day
15	Module weight	Approx. 8 t (unit self-weight: ≈0.2 t /m²; 6–8 times lighter than concrete buildings)
16	Shipping dimensions	12.19 m long × 2.5 m wide × 3.3 m high (fits 40-foot container transport dimensions)
17	Transport method	Transport modules on their sides (to meet container transport requirements)
18	Structural standards	Comply with the statutory standards of the project country (with comfort criteria appropriately compromised)
19	Fire-safety standard	Simple fire-safety measures only: non-flammable materials; provide external escape stairs
20	Acoustic insulation standard	Simple acoustic measures only: acoustic seals on doors; double-glazed windows; corrugated steel-sheet walls and ceilings with decorative panels; tiled floors
21	Design life	Structure 100 years, finishes 30 years, MEP 20 years

Note: The interior clear height shown in the table is only 2.32 m due to transport size constraints. However, this height meets residential standards in most countries. Only the residential standards in the following countries require a clear height more than 2.3 m: Italy, Portugal, the Netherlands, China, Singapore, Australia, and some states in the US.





MODULE STRUCTURE

BCH uses a single module size to create different building types. The project designer determines the number of columns based on the number of storeys, building aspect ratio, and wind speed.
Important: BCH is exceptionally lightweight and its steel structure is highly ductile; therefore, structural strength calculations are governed by wind loads alone, not by seismic action.

Main factors governing BCH structural strength calculations:

1. Number of storeys: the more storeys, the more columns are required.
2. Building aspect ratio: the greater the ratio, the more columns are required.
3. Basic wind speed at the project site: the higher the wind speed, the more columns are required.

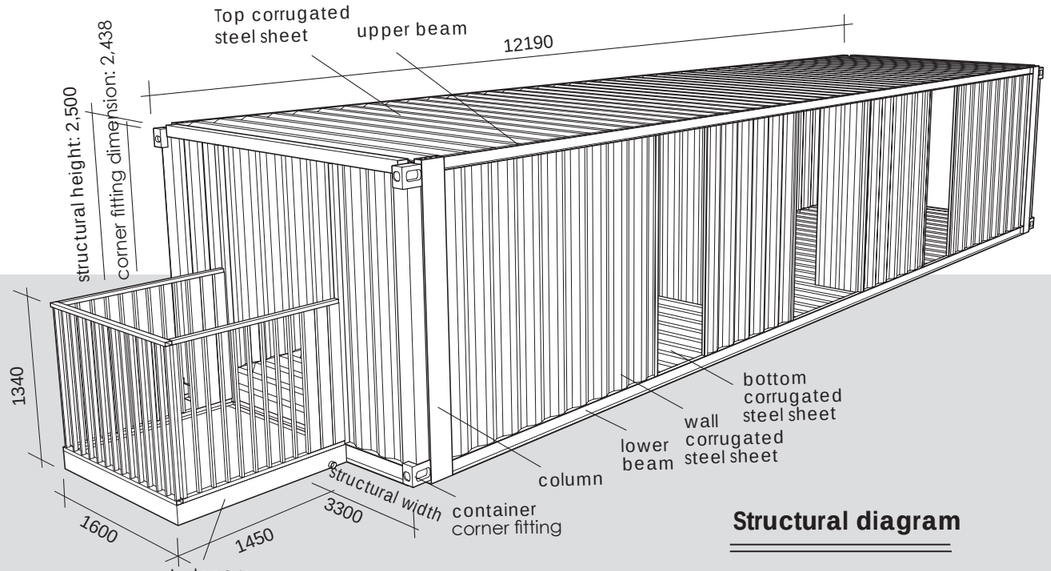
MODULAR STRUCTURE PARAMETERS

No.	Item	Specifications
1	Structural system	Steel frame with corrugated steel sheets
2	Column material	S355
3	Other structure material	S235
4	Steel elongation	≥22%
5	Fabrication	Electric welding
6	Installation	Bolt connection
7	Corrosion protection	Cold galvanizing
8	Inter-storey drift ratio	≤1/200
9	Top-floor cceleration	≤0.2m/s^2
10	Seismic performance	No collapse in Magnitude 9 earthquake

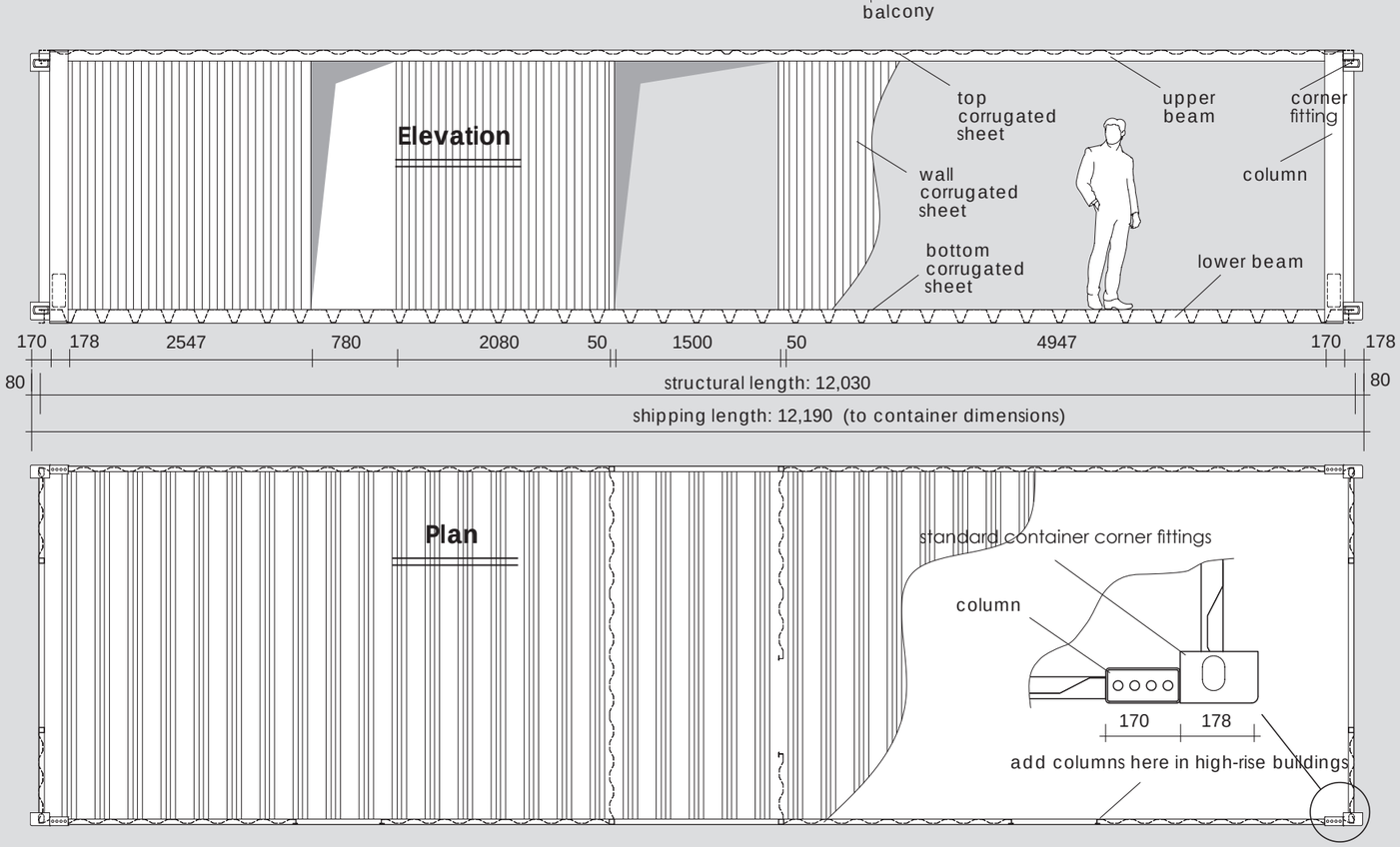
IMPORTANT NOTE:

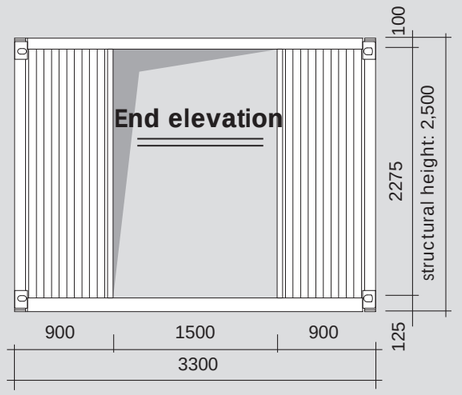
To build high-rises that poor people can afford, comfort criteria such as inter-storey drift and acceleration at the building top may be compromised as appropriate when designing buildings of 12 storeys or more in areas with a basic wind speed ≥20 m/s. However, the building must not collapse in Magnitude 9 Earthquake.

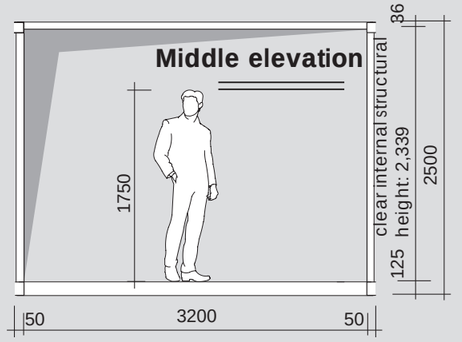
Structural calculations of project's building type may be completed by BROAD or the project designer, then submitted to a qualified professional organization in the project country for review and approval.



Structural diagram







Unit: mm

STANDARD MODULE

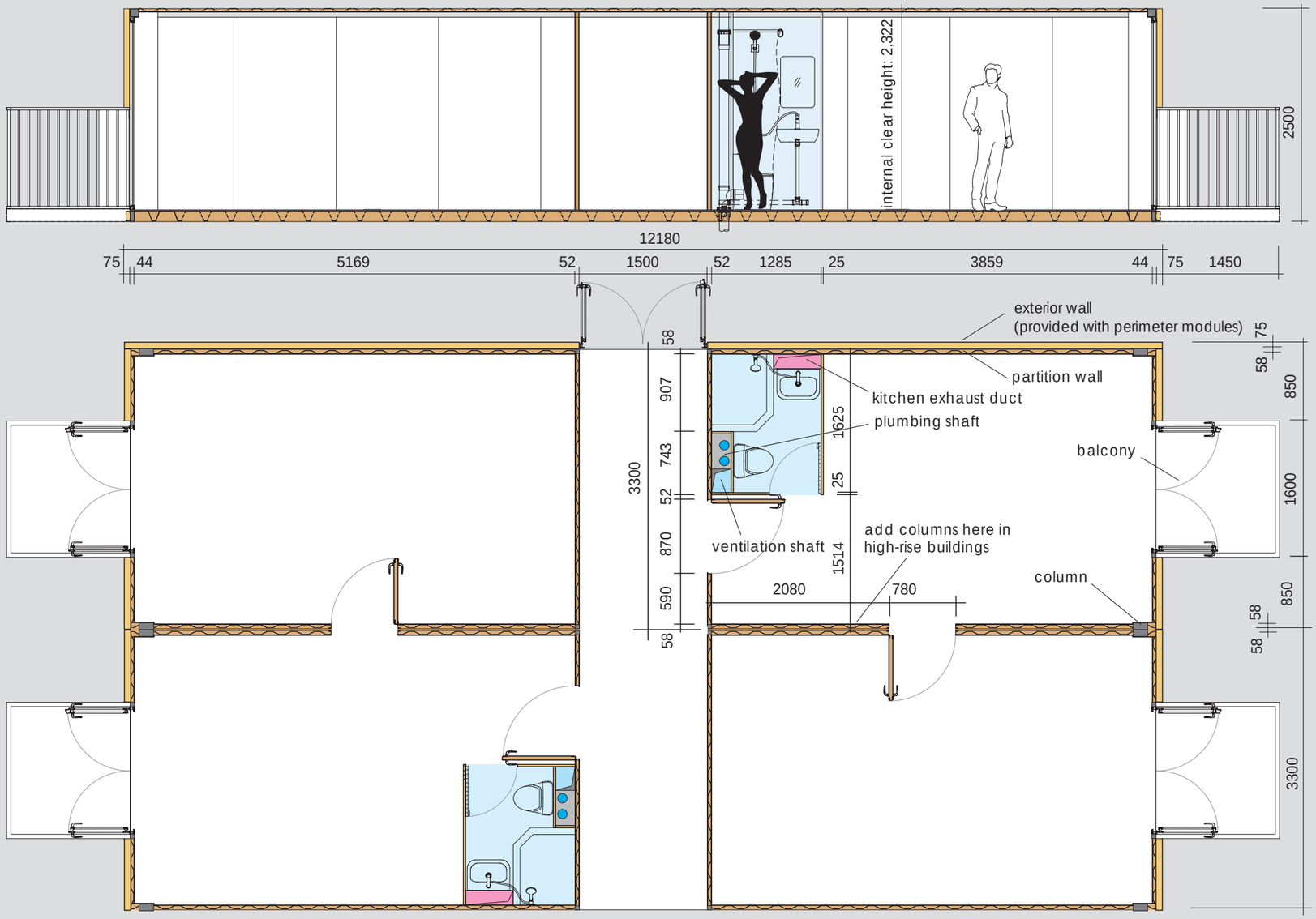
1. The module shown is BCH's only standard module; all its dimensions, materials, and functions are fixed, and it suits most building types and unit layouts. There are three non-standard modules. Only by keeping module types to an absolute minimum can BCH achieve the lowest cost and shortest delivery time.
2. Interior finishes meet only the most basic living needs. If clients have additional requirements, we recommend that they complete the secondary fit-out themselves.
3. The structure, finishes & MEP are 100% completed in the factory; on-site installation requires only tightening bolts and connecting wiring & piping. Site work is minimal, and construction quality is easy to be ensured.





Module Code: C B a

- a — Walls, doors and other features (lowercase letters)
- B — No. of Bathrooms: 1: B; 2: A; none: N
- C — Product series: BAH: A; BCH: C; BHB: H



BUILDING TYPES, UNIT TYPES, STAIRS AND LIFTS

Building type selection

The slab-type building is the lowest-cost form. Balancing economy and comfort, the 18-module combination shown below is the best configuration. We recommend a maximum length of 24 modules, so residents do not have to walk too far to reach the stairs.

Unit type selection

1.A building with a single unit type has the lowest cost. We recommend using no more than three unit types.
2.Unit layouts must be consistent from floor to floor throughout the building, so water-supply, drainage, kitchen-exhaust, and ventilation ducts can run continuously.
3.For taller buildings, BROAD BAH modules may be used on the ground floor: floor-to-floor height 3.3 m, clear height 2.98 m, improving the experience of shared areas.
4.In the standard module, one room is arranged on each side of the corridor; the blue lines in the drawing indicate simple partitions and doors for the client to install. BROAD can also supply them if this is specified in the purchase contract.

Stair and lift selection

1.For fire escape, stairs must be open and located outside the building; buildings of 4 storeys or more must have two staircases.
2.For economy, provide lifts only in buildings of 6 storeys or more; allow one lift per 3,000 m² of gross floor area; lift speed: 1 m/s.



W18F16; Slab-block example ≤16F



Building Type Code:

W 18 F20 abd

- Unit type; letters indicate different unit types
- No. of floors
- No. of single-storey modules

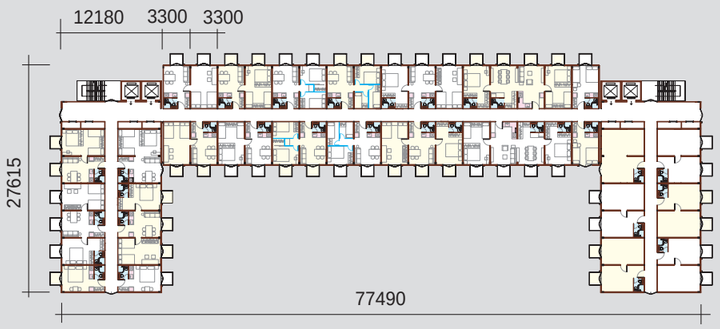
Building type: W slab block, L-shaped building, U-shaped building, T-shaped building or O-shaped building

Unit: mm

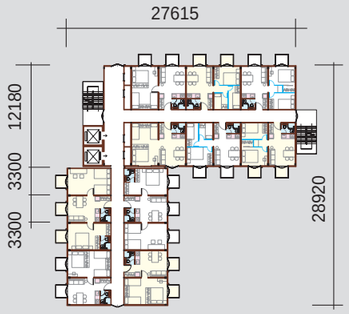
IRREGULAR-SHAPED BUILDINGS ≤ 24 F

The building types below are typical examples only. Project designers may make the block wings longer or shorter as required.
Note: Non-standard buildings cost far more than slab-type buildings; choose this type only in the following two cases:
1.When the building exceeds 16 storeys (the wider footprint of an non-standard building can improve structural stability).
2.When the site is irregularly shaped and more buildings need to be arranged on it.

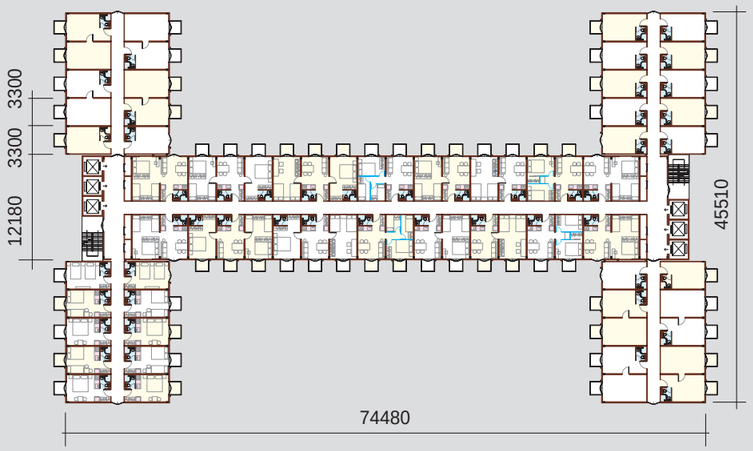
U26F24



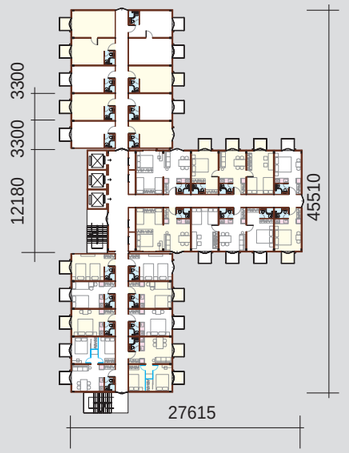
L12F24



H39F24



T17F24



Unit: mm



PERIMETER BLOCK ≤ 30 F

1. Perimeter-Blocks are structurally more stable than other building types, and are particularly suitable for 24–30 storeys.
2. To ensure structural stability in high-rise buildings, each side of a perimeter-Block must contain no more than 14 modules (46 m clear courtyard opening); however, if the building is too narrow, daylighting will be poor, so we recommend a minimum width of 8 modules (26 m clear courtyard opening).
3. We recommend openings through to the courtyard garden at the midpoint of all four sides at ground level, to improve building ventilation and garden views.



Unit: mm



ORDERING AND DELIVERY

BCH STANDARD AND OPTIONAL SPECIFICATIONS

No.	Item	Standard Configuration	Optional Items
1	External wall color	white	Orange, ochre, green, blue
2	Lift provision	One lift per 3,000 m²; provided only from 6 storeys upwards	Configured to client requirements
3	Lighting	1/room	2-3/room; a ceiling-perimeter cove-light strip may also be added
4	Switches	1/room	2–3/room
5	Power outlets	2/room	3-5/room
6	Electric water heater	None	1/bathroom
7	Air conditioning	None	1 unit/room
8	Fresh air system	None	1 unit/room
9	Interior finishes	basic grade	Medium or high grade
10	External wall insulation	75 mm polystyrene board	220 mm rock wool
11	Windows	Double glazing with plastic frames	Triple glazing with stainless-steel frames; sunshades; thermal curtains
12	Rooftop solar	None	0.2 kW/m²
13	Acoustic measures	Basic	To the acoustic standards of the project country
14	Fire safety measures	Non-flammable materials; external escape stairs	To the fire-safety standards of the project country
15	Building standards	BROAD corporate standard	To the building standards of the project country

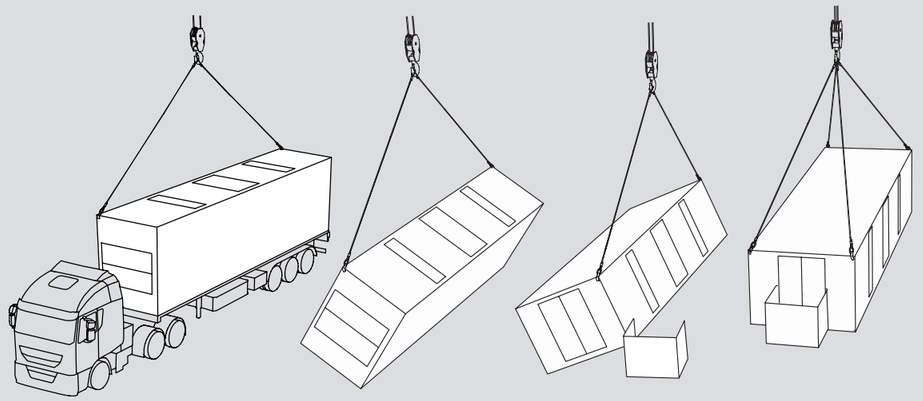
BCH SCOPE OF DELIVERY

No.	Item	Scope of Delivery
1	Structure	Carbon-steel structure
2	Building envelope	Exterior walls, external doors and windows, balconies
3	Interior fit-out	Interior walls, apartment entrance doors, room doors, floors, ceilings
4	Bathroom	Toilet, washbasin, shower tray, shower head, taps
5	Water supply and drainage	Water supply, drainage, rainwater
6	Electricals	Power distribution, lighting, switches, sockets
7	Balcony	2/module
8	Vertical circulation	Stairs and lifts

ORDERING NOTES:

1. Optional items can significantly increase the cost of many projects.
2. Projects are priced per building areas. Building area refers to the dimensions of the building's outer contour x storeys. Balcony area is counted at 25% when calculating the building area.
3. The building design must receive official approval in the project country before construction begins.





1. Unload
2. Set down
3. Turn upright and install balconies
4. Lift and install

TRANSPORT METHOD:
To meet container-transport dimensions, load BCH modules on their sides; after unloading, set them upright again (see illustration). Only use trucks, trains, and vessels designed specifically for 40-foot containers, or the modules may be seriously damaged. Lifting weight: 8 t; use the four corner fittings as lifting points; sling angle: ≤60°.

COMPARISONS OF BROAD'S 4 MODULAR BUILDINGS

No.	Comparison Item	BHB	BOB	BAH	BCH
1	Product Name	BROAD HOLON BLDG 远大活楼	BROAD OPEN BLDG 远大开楼	BROAD AVID HOME 远大理想家	BROAD COVE HOME 远大安居家
2	Primary Use	Residential (4 standard unit types only)	Data Center, Office, Hospital, Exhibition Hall	Residential, Hotel, Dormitory	Housing for low-income residents, Dormitory
3	Secondary Use	Hotel, Dormitory	Multi-Storey Car Park, Warehouse, Cold Storage, Indoor Farm, General Factory, Heavy-Duty Factory	Office	Budget Hotel, Temporary Emergency Shelter (additional fit-out can create mid-range residences)
4	Cost-optimal No. of Storeys	20-40F	20-40F	12-20F	2-16F
5	Maximum Building Height	120F (CONJOINED TOWERS)	230F	130F	30F
6	Floor-to-Floor / Clear Height (m)	3.3 / 2.98	①3.3/2.46 ②4/3.16 ③4.8/3.96 ④6/5.16 ⑤8/7.16	3.3 / 2.98	2.5 / 2.32
7	Column-Free Clear Span (m)	11.7 x 4.8	59 x 11.8	11.7 x 3.1	11.94 x 3.16
8	Structural System	Dense-Column Steel Frame System	Mega-Column Steel Frame System	Steel Frame with Corrugated Steel Sheet	Steel Frame with Corrugated Steel Sheet
9	Structural Material	Columns & Beams: Duplex Stainless Steel S32001; Floor Slab: Austenitic Stainless Steel 1.4372	Columns: S550Q; Beams & Floor Slabs: S460	Columns: S355/S460; Others: S275/S235	Columns: S355; Others: S235
10	Floor System	Stainless Steel Core Slab	BROAD Core Slab, Corrugated Steel Sheet	Corrugated Steel Sheet	Corrugated Steel Sheet
11	Column and Beam Type	Rectangular Hollow Section	Columns: Rectangular Hollow Sections; Beams: I-Sections	Thin Rectangular Hollow Sections	Channel Sections & Angle Sections
12	Column Density (Tributary Area per Column)	12 m²/Column	140 m²/Column	5 m²/Column	10 m²/Column
13	Module Transport Dimensions (L × W × H), mm	12,190 × 2,438 × 3,300 (Container-compatible dimensions)	12,190 × 2,438 × 2,591 (Container-compatible dimensions)	12,190 × 3,300 × 3,300 (Width exceeds standard container dimensions; occupies two container slots)	12,190 × 2,500 × 3,300 (Module transported on its side; container-compatible dimensions)
14	Module Floor Area	57m^2	≈240m^2	40 m² (60 m² with an extension room)	40 m²
15	Factory Prefabrication Rate	97%	≈80% (Columns, beams, floor slabs, walls, doors, windows, and MEP components prefabricated; assembled on site)	100%	100%
16	On-Site Workload (vs. Conventional Construction)	≈10%	≈30%	≈3%	≈3%
17	On-Site Construction Scope	Connect inter-module bolts, piping, and electrical systems; unfold the movable floor panels and install the walls and doors on them	Connect columns, beams, slabs, and bolts; install wall, door/window, piping, and electrical modules	Connect inter-module bolts, piping, and electrical systems	Connect inter-module bolts, piping, and electrical systems
18	On-Site Construction Speed (1 day)	Exterior: 3 floors / Interior: 0.5 floor	Exterior: 1 floor / Interior: 0.3 floor	Exterior: 3 floors / Interior: 2 floors	Exterior: 3 floors / Interior: 2 floors
19	Structural Design Life	1,000 years	200 years	100 years	100 years
20	Summary	Premium Quality, Low Transport Cost	Vast Space, Wide Applications	Diverse Unit Types, Multiple Building Configurations	Low Cost

This product

key strength

limitation

This table compares the key characteristics of BROAD's four prefabricated building systems. Despite their differences, all four share the same core principles: advanced decarbonization, durability, cleanliness, and safety, supporting the sustainable development of both society and the global environment.And these four systems serve different markets:

BHB
Mid-andhigh-Mid /highrise housing in developed countries
BOB
Public buildings worldwide
BAH
Residences,apartments,and hotels worldwide
BCH
Residences in less developed countries

COMPANY PROFILE

Founded in 1988, BROAD Group has more than 3,000 employees and 2.5 km² industrial communities. Through original innovation, it has developed a full range of central air-conditioning and clean fresh-air systems, and has led the global non-electric central air-conditioning industry for over 30 years, serving markets in more than 80 countries.

In 2009, BROAD began developing modular buildings. It committed more than 1,000 employees and invested over US$1 billion in the effort, successfully developing 4 types of modular building products. These products have since been deployed in six countries, and BROAD is now actively expanding into global markets.



Global Awards for BROAD Prefabricated Buildings

Modular Building Institute (MBI) **FIRST PLACE in Multifamily Category** (2022)
EXCELLENCE IN INNOVATION AWARD (2026)

CTBUH/CVU
INNOVATION AWARD (2013, 2022)



BROAD Modular Building R&D and Manufacturing Base

Located in Xiangyin, Hunan. It covers an area of 1.5 km², with 230,000m² workshops and 120,000m² offices and residential areas built in 2010

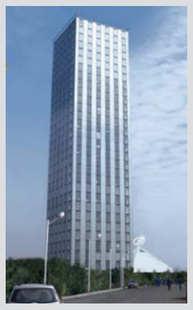
2010



Steel-Structure Modular Buildings, the 3rd Building of the 1st Generation: BROAD Pavilion at World Expo Shanghai

Of the 13 corporate pavilions at Expo 2010 Shanghai, BROAD Pavilion was the only one retained for 15 years; in December 2024, it was relocated to Baoshan, Shanghai. Built in one day yet preserved for years, it leaves a legacy of a Green Expo and a Technology Expo for future generations

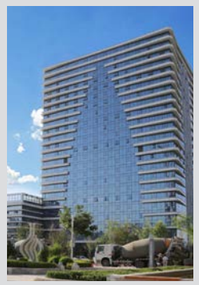
2011



The 4th Building of the 2nd Generation: T-30 Hotel (30-Floor)

Built in 15 days, YouTube video over 2 million clicks per day

2013



More than 30 Residential Buildings, Hotels and Office Buildings were Built with the 2nd Generation

Located in 7 provinces in China and Mexico, all in operation

2014



202 Floors / 838m Building Designed with the 3rd Generation

On May 4, 2014, it received approval from China's "National Super High-Rise Review Committee". Over three years, USD150 million was invested in design, testing, approvals, and foundation work. However, due to concerns about market demand, the project was not constructed

2015



The 2nd Building Of the 3rd Generation: 57 Floors, was built in Just 19 Days

YouTube over 5 million clicks

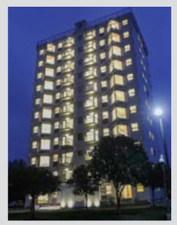
2020



6th-Generation Technology Stainless-Steel Modular Buildings Version 1.0

From March to May 2020, two negative-pressure isolation hospitals were built in South Korea to combat COVID-19. This was the fourth HOLON building constructed using stainless steel Core Slabs

2021



Version 7.0 Residential Building

This building marks the maturity of HOLON residential building

2023



Version 15.0 Residential Building

More than 10 similar buildings of V12.0-15.0 have been built in China, South Korea Indonesia and Philippines

2025



Version 16.0 Residential Building

The first was built in the UAE and named "Earth Tower" by its developer, Alabbar;
The BOB modular system for public buildings was invented

2026



Successfully developed BAH and BCH carbon-steel modular housing.