

An Introduction of

Prefabricated Light Steel Light Panel Building System



Beijing Qiancheng Integrated Housing Company Ltd.

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- System Introduction
- Application Types
- Collaboration Methods

System Introduction

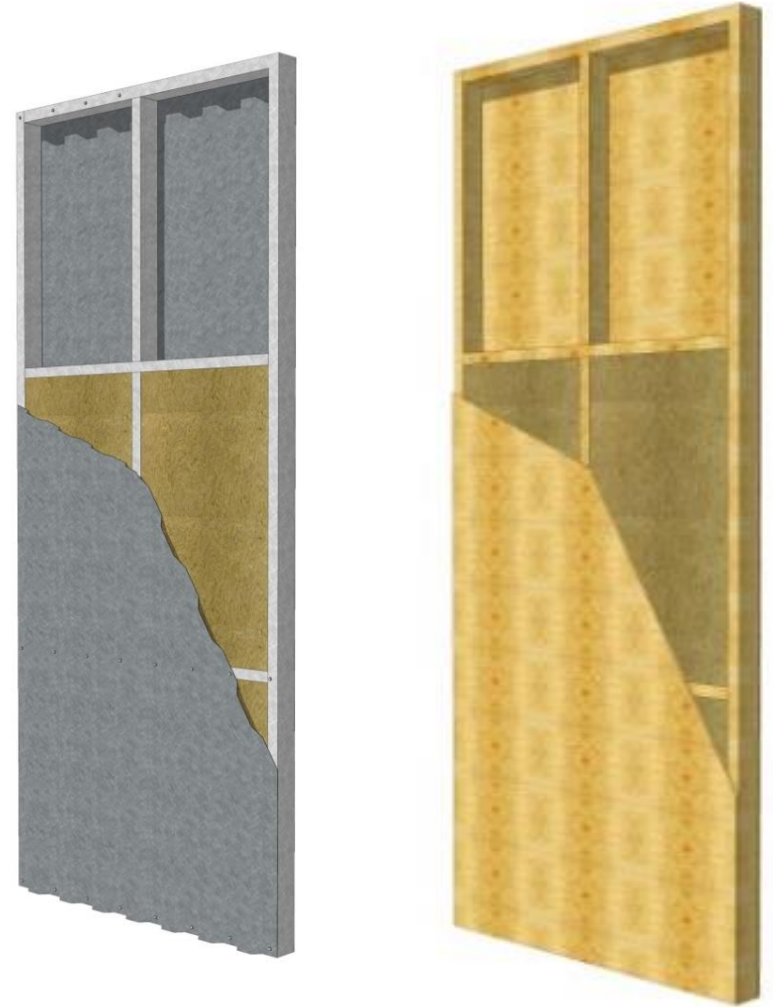


- China has the biggest construction market globally, with an annual construction capacity of about 2 billion square meters, which is roughly 50% of the global construction market.
- The Chinese government proposes upgrading the construction industry, developing prefabricated buildings, shortening construction period, improving quality, reducing on-site labor, encourage energy saving and environmental protection
- Beijing Qiancheng Integrated Housing Co., Ltd. participated in the national assembly building industrialization project and developed a light-steel structure building system that can be used to build low-rise, multi-story and high-rise buildings.

System Introduction – Light Steel Light Panel Building System

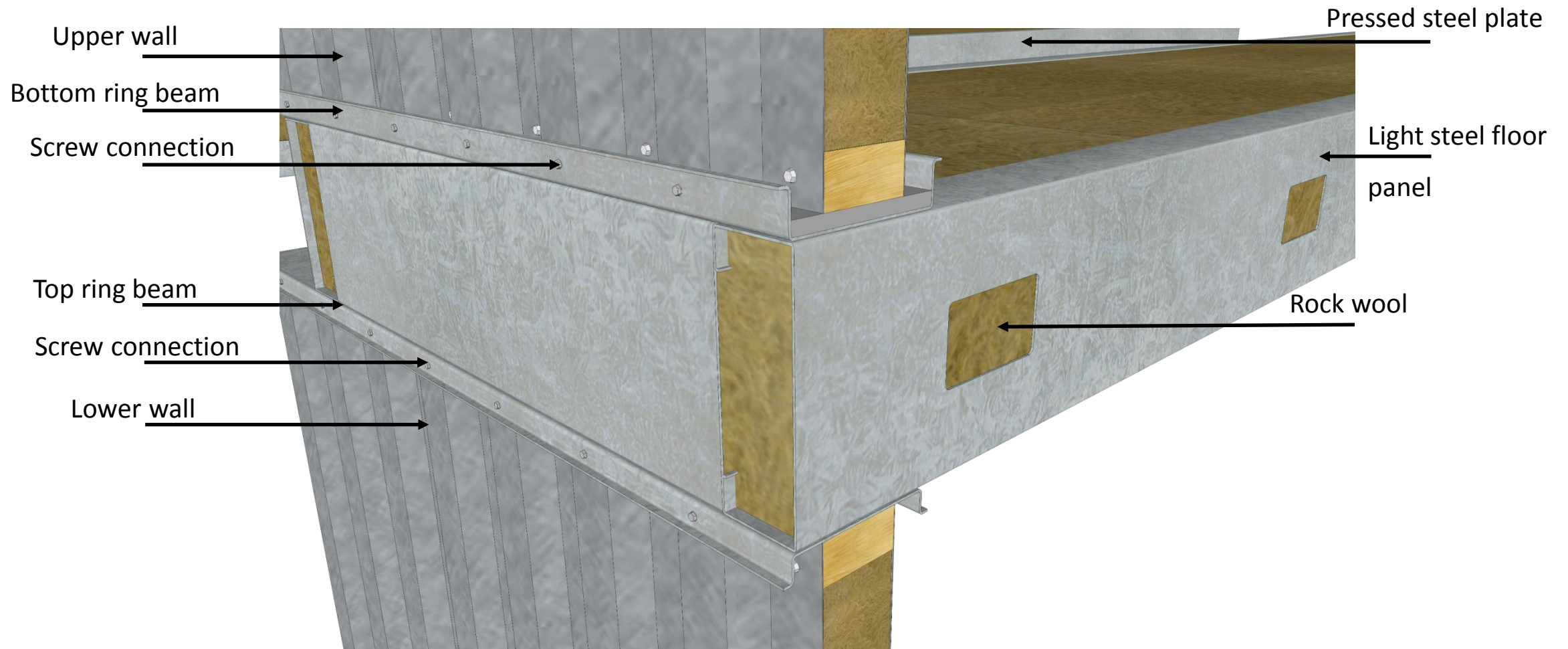
Light Steel Light Panel Shear Wall

- Wall panel: thin-wall light steel rolled into steel keel, riveted, framed, then filled with thermal insulation material, install pressed steel plates on both sides
- Other materials can be used base on functionality of the building, for example:
 - Wooden keel + rock wool + pressed steel plate
 - Wooden keel + rock wool + wooden boards
 -
- The wall panel can be used for load-bearing walls of low-rise buildings or enclosure walls of high-rise buildings



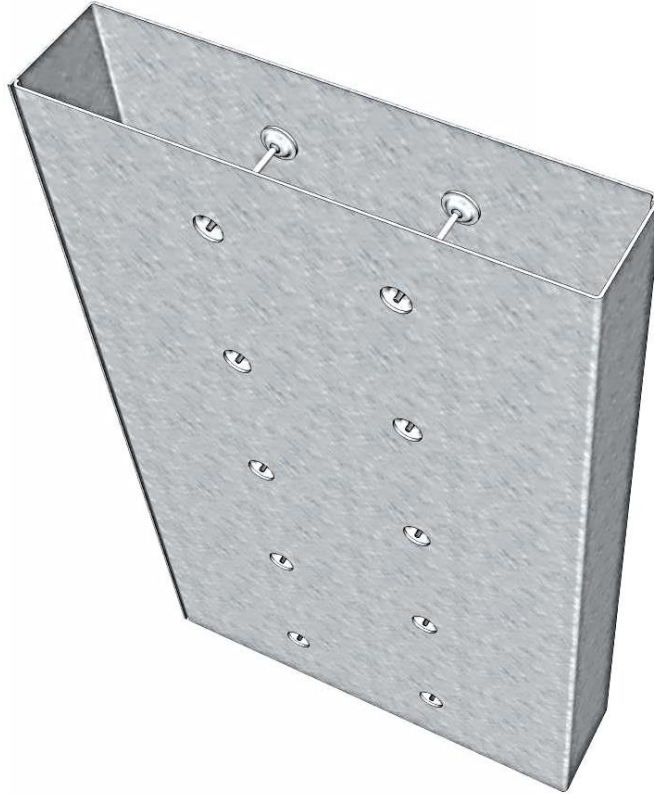
System Introduction – Light Steel Light Panel Building System

- Detail of a sample connection between wall and floor panels

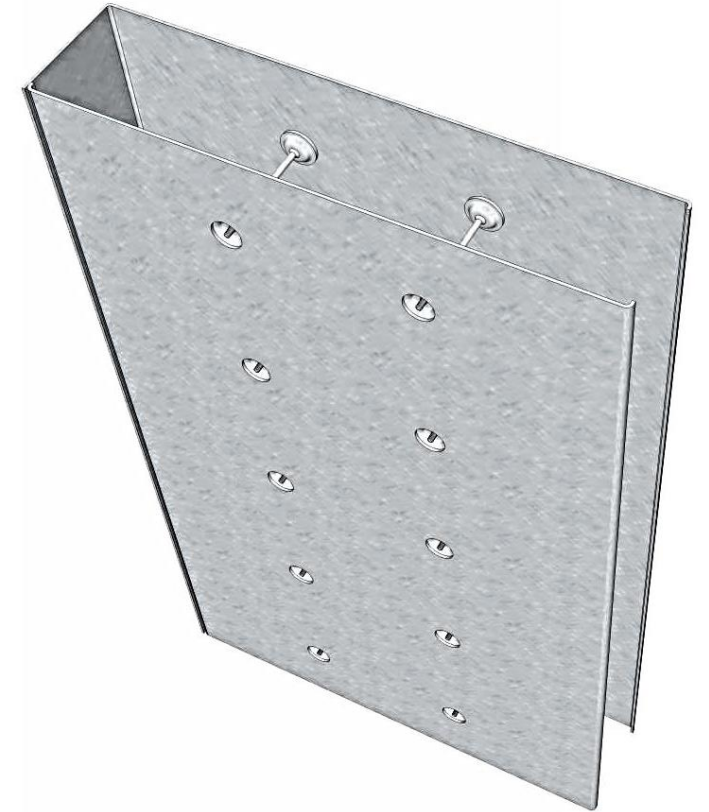


System Introduction – Open Hole Shear Wall System

- Q345B Galvanized steel plate with thickness of 3~8mm
- Standard component
Width: 600/900/1200mm
Thickness: 160~240mm



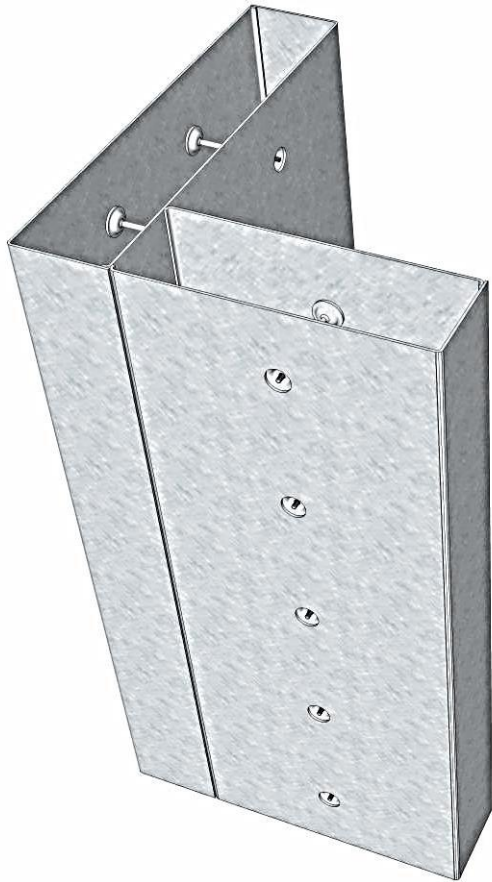
Closed Component



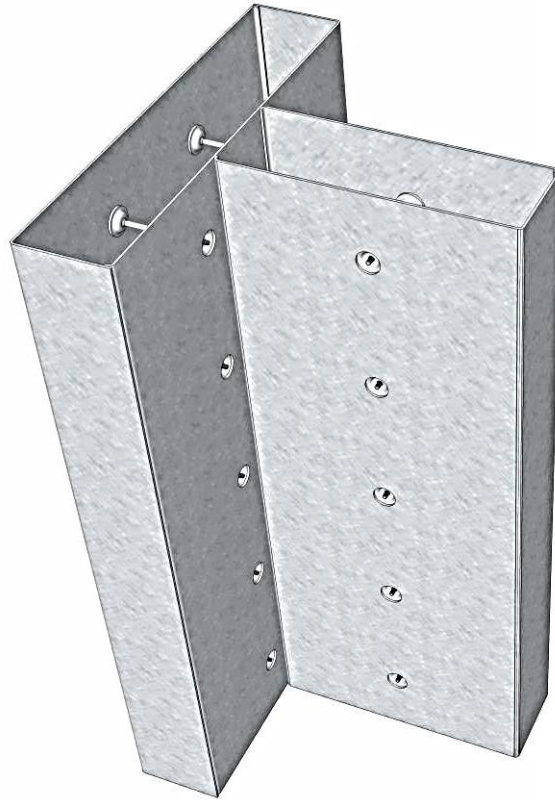
Open Component

System Introduction – Open Hole Shear Wall System

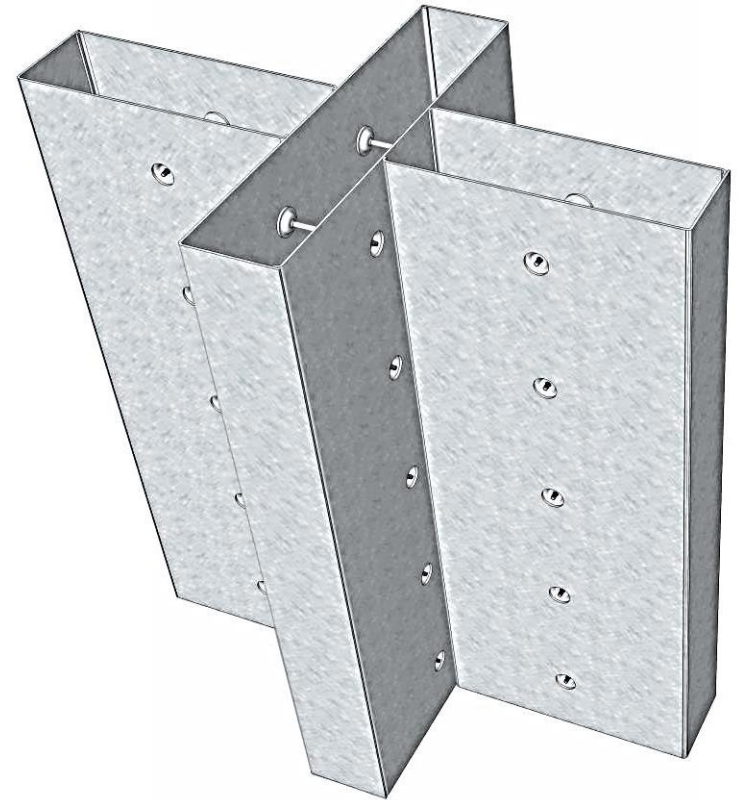
Basic Components



L Shape



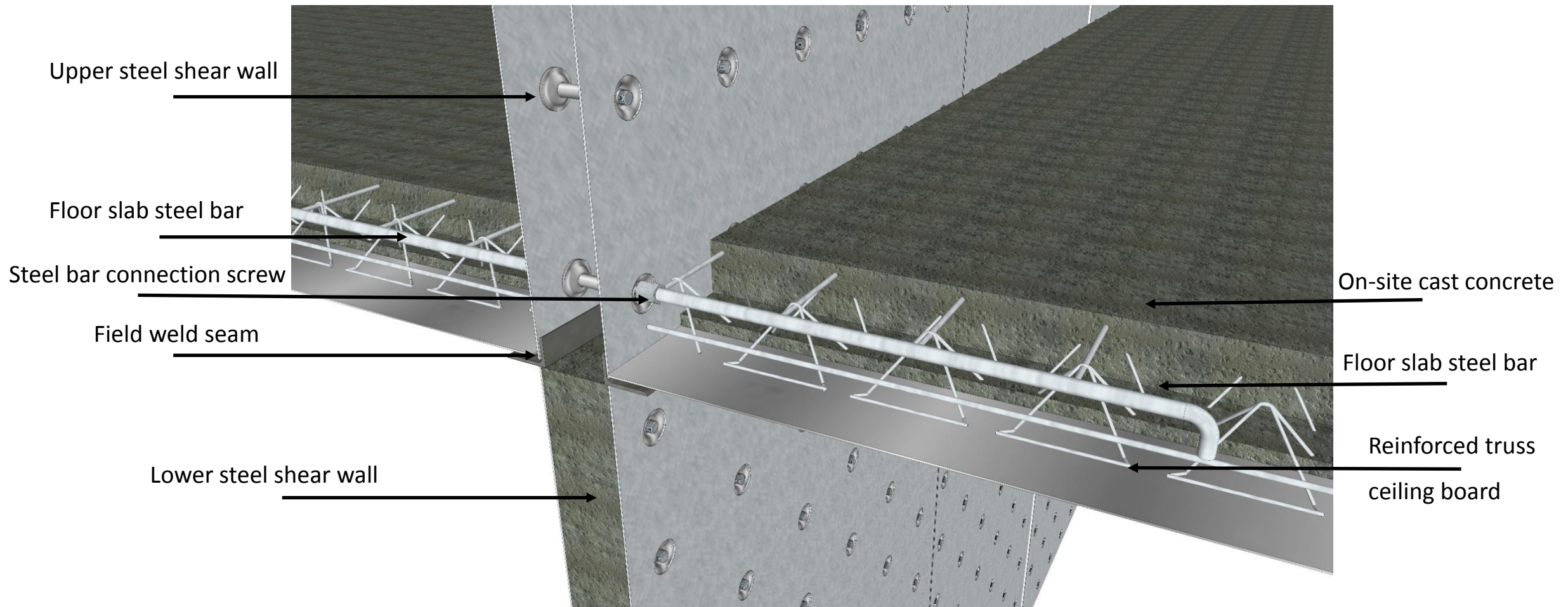
T Shape



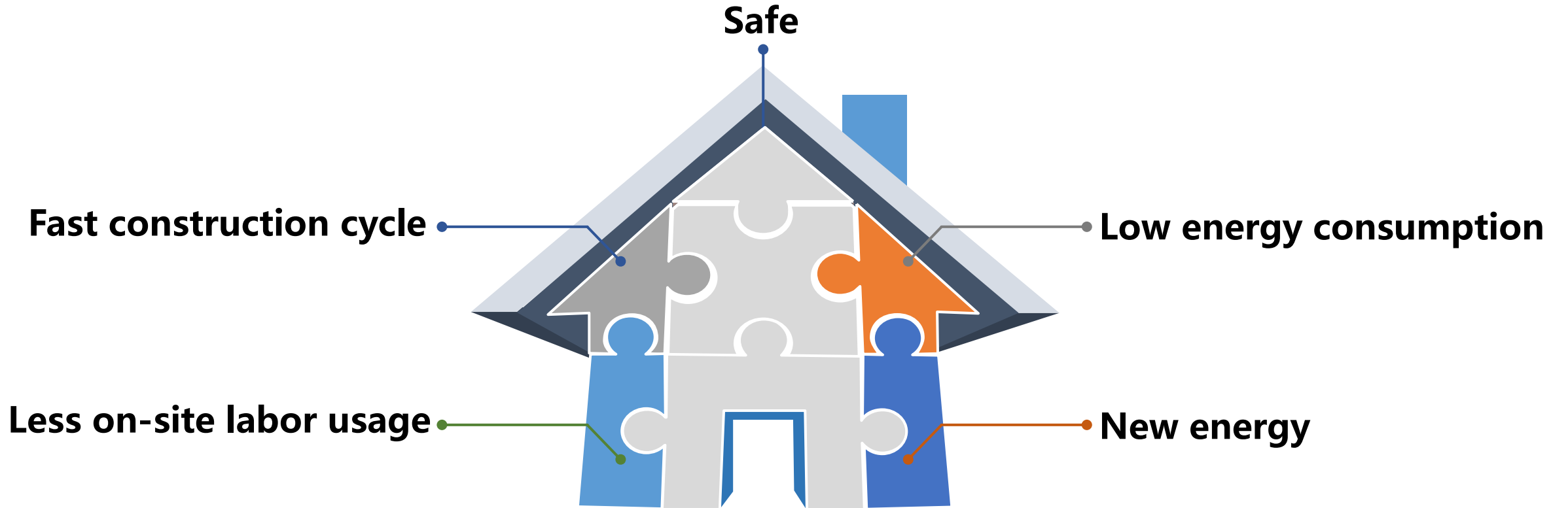
Cross Shape

System Introduction – Open Hole Shear Wall System

- Detail of a sample connection between wall and floor panels

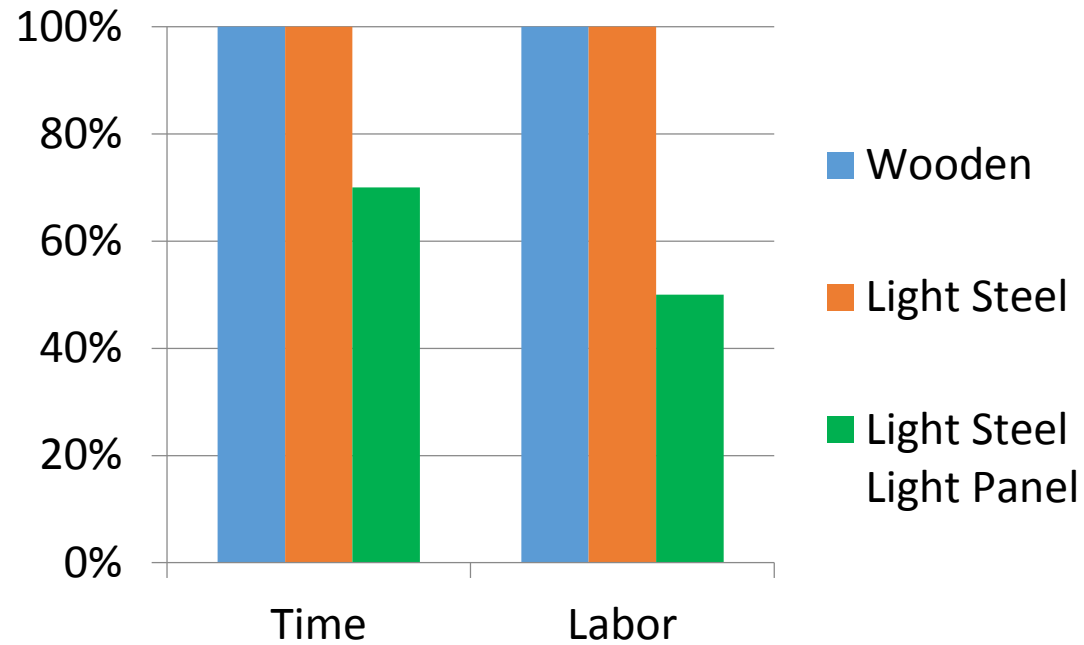


System Introduction - Advantages



System Introduction – Time and Labor

Light Steel Light Panel Building System VS Wooden structure and Light Steel structure



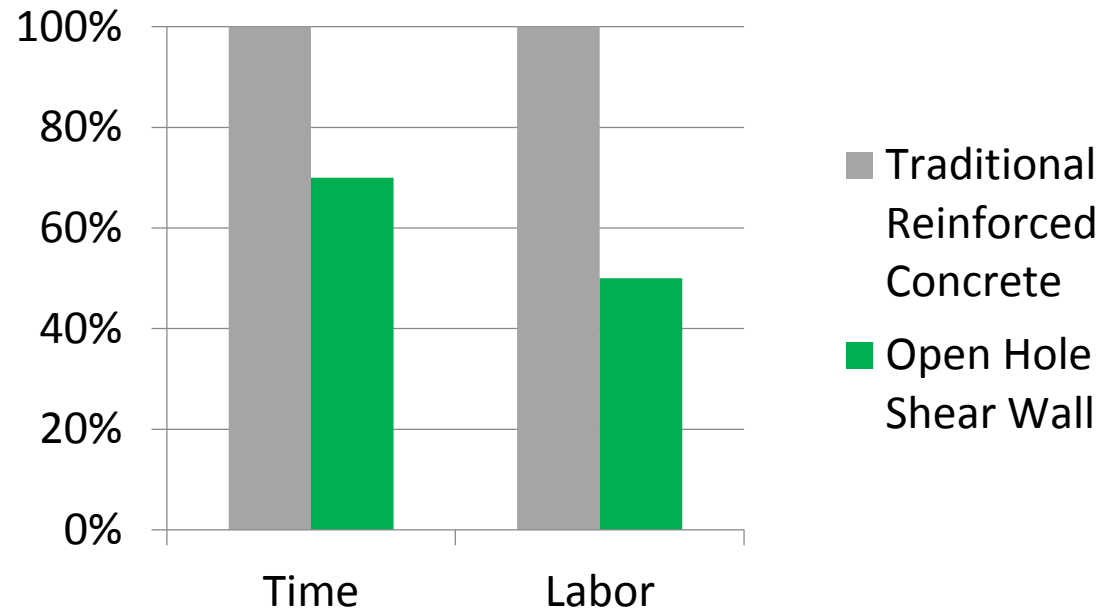
Fast construction cycle

Less on-site labor usage



System Introduction – Time and Labor

Open Hole Shear Wall System VS Traditional Reinforced concrete structure



Fast construction cycle

Less on-site labor usage



System Introduction – International Standards

➤ China

冷弯薄壁型钢结构技术规范 (GB50018-2002)

Cold-formed thin-walled steel structure technical specification

低层冷弯薄壁型钢房屋建筑技术规范 (JGJ227-2011)

Technical specification for low-rise cold-formed thin-walled steel house construction

钢板剪力墙技术规范 (JGJT380-2015)

Steel plate shear wall technical regulations

➤ Australia

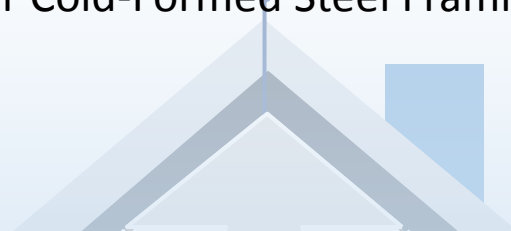
NASH STANDARD Australia Residential and Low-Rise Steel Framing

➤ North American

AISI S200-07: North American Standard for Cold-Formed Steel Framing

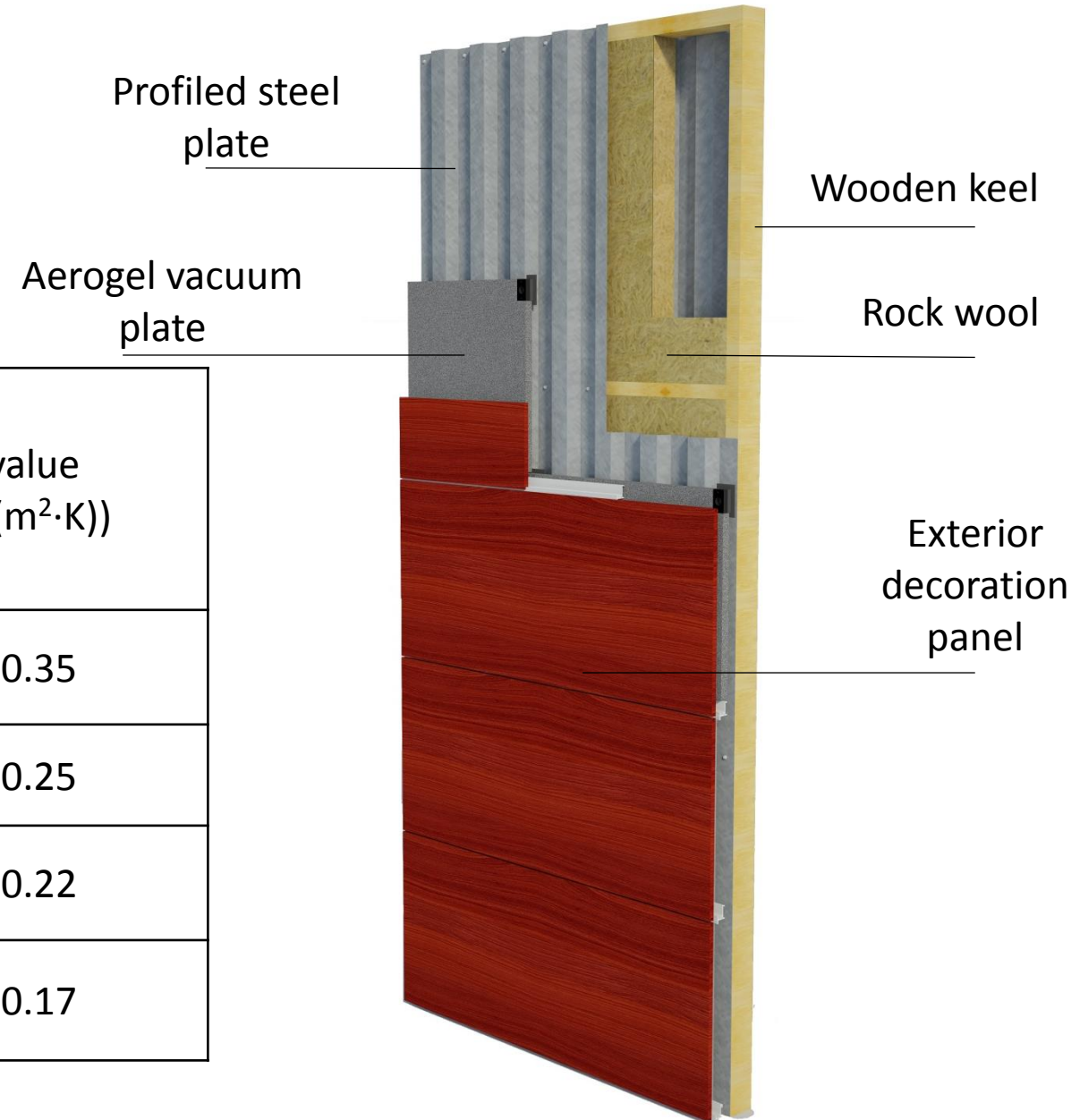


Safe



System Introduction – Energy Saving

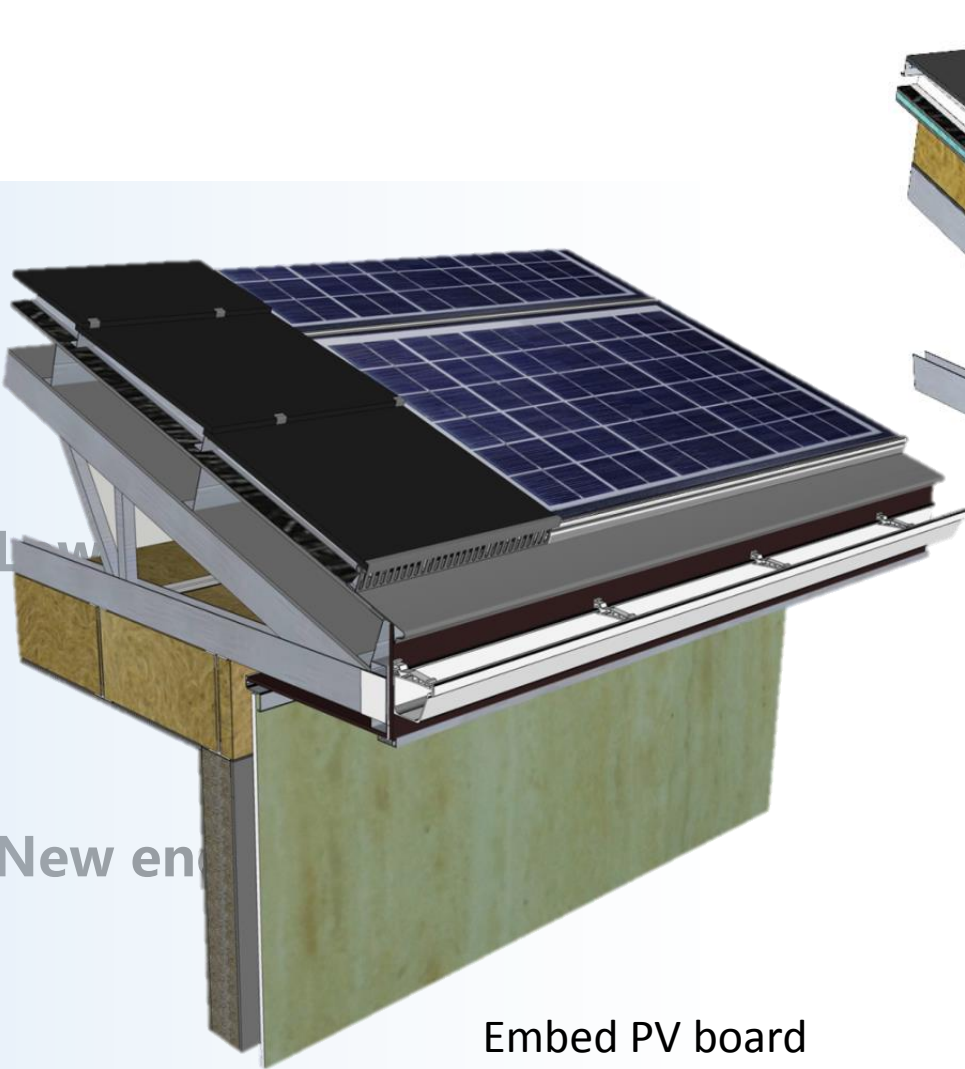
Exterior insulation	Thickness (mm)	K value (W/(m ² ·K))
<i>Base structure:</i> Profiled steel plate + Steel keel + Rock wool	213	K=0.35
<i>Base structure</i> + 60mm Rock wool	273	K=0.25
<i>Base structure</i> + 50mm Polystyrene board	263	K=0.22
Base +20mm Aerogel vacuum plate	233	K=0.17



• Low energy consumption

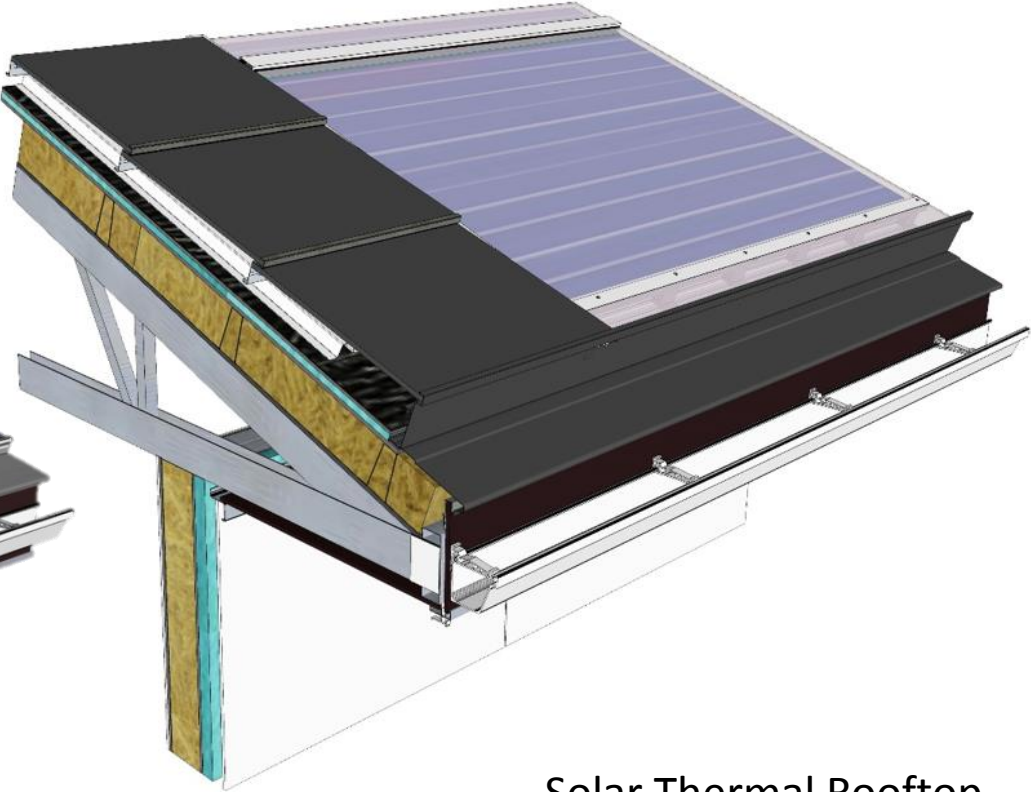
New energy

System Introduction – New Energy



New en

Embed PV board



Solar Thermal Rooftop

Application Types

Low-rise building

- Villa



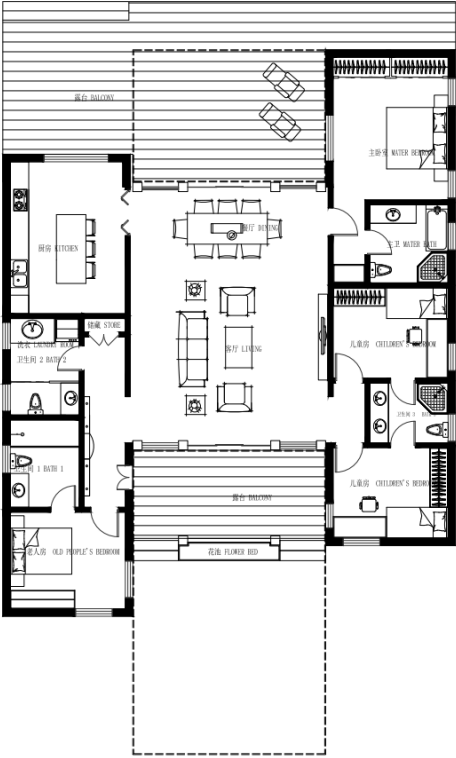
397.22m²



Application Types

Low-rise building

- Villa



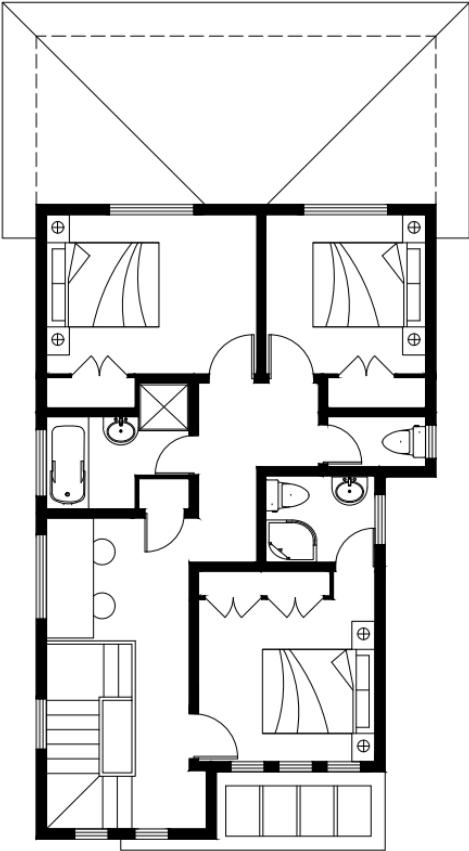
186.50 m²



Application Types

Low-rise building

- Villa



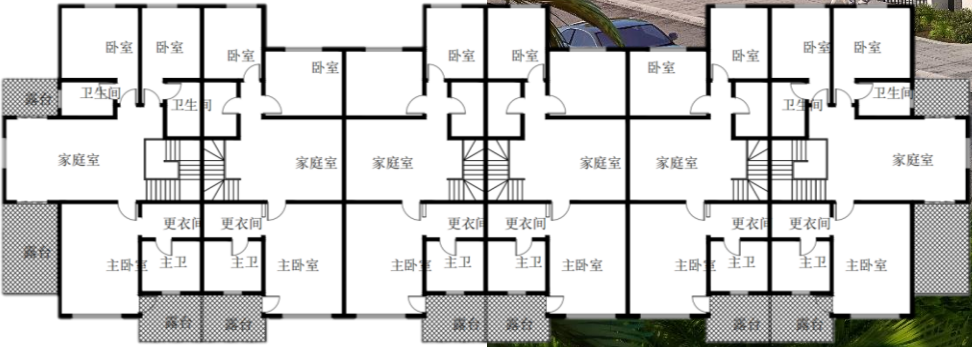
152.52m²



Application Types

Low-rise building

- **Townhouse**

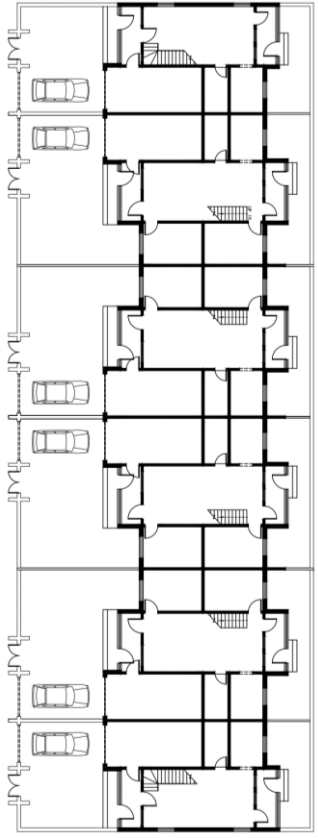


1296m²

Application Types

Low-rise building

- **Townhouse**



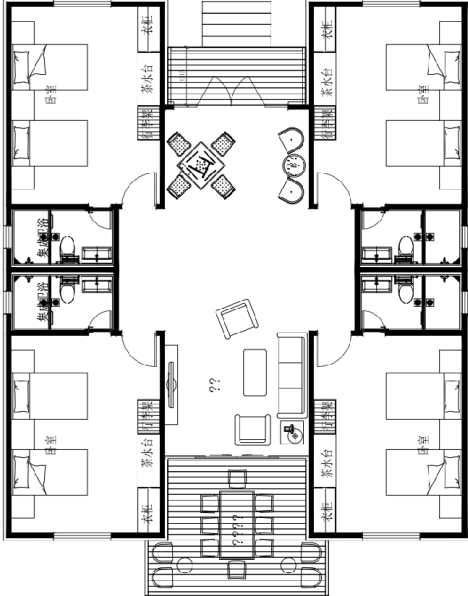
1152m²



Application Types

Low-rise building

- Tourism Camp



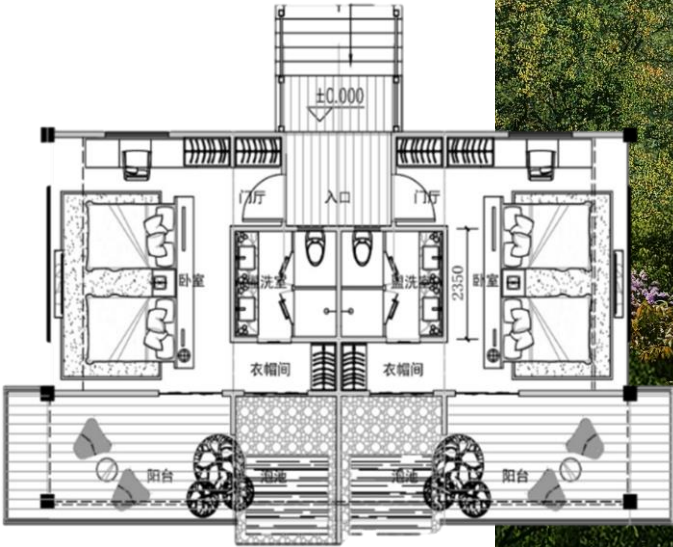
133.88m²



Application Types

Low-rise building

- Tourism Camp



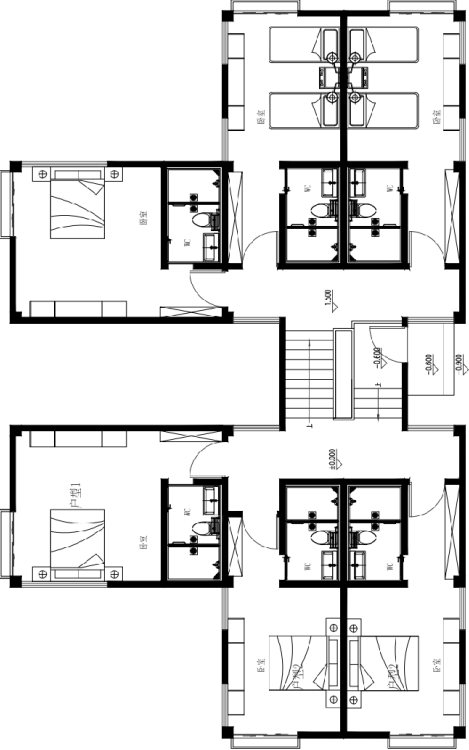
69.21m²



Application Types

Low-rise building

- **Tourism Center**



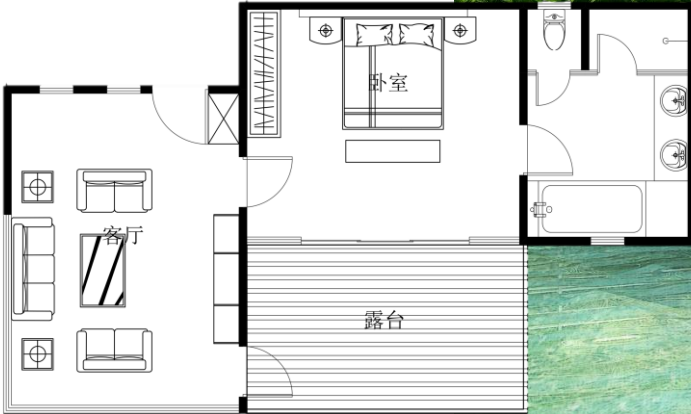
361.33m²



Application Types

Low-rise building

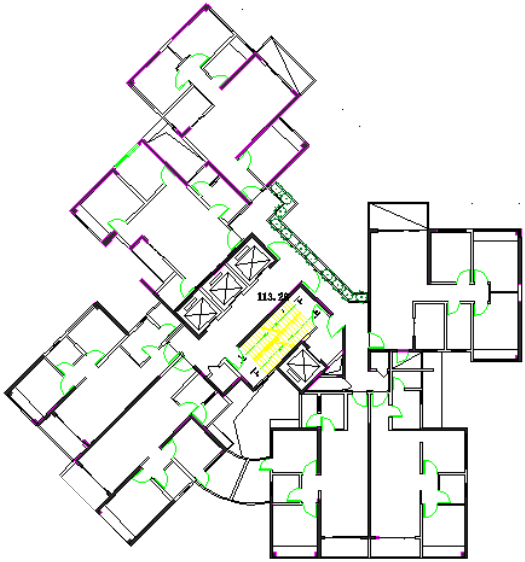
- Tourism Hut



53.19m²

Application Types

High-rise building



25949m²



Application Types

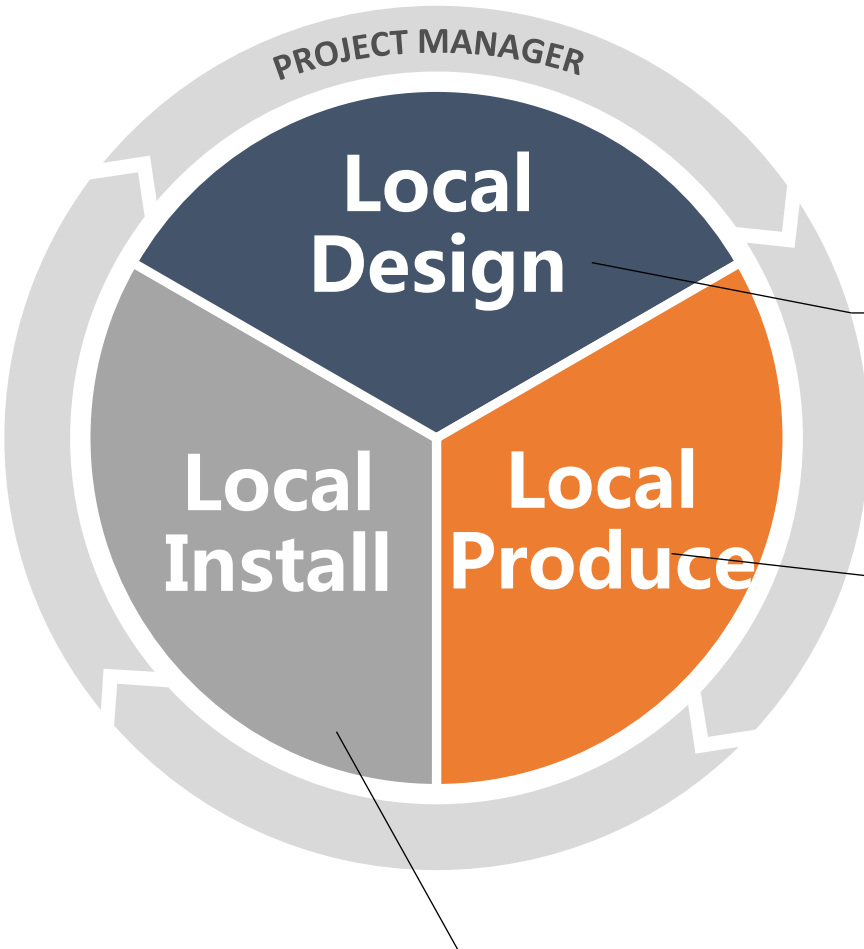
Public building



23650m²

Collaboration Methods

Establish local industry capabilities - technology transfer + industry support



- Communicate with local team during system design
- The local design team conducts project design and our design team provides consulting services
- The local design team completes drawings, reports and on-site services

- Provide list of components and materials
- Assemble locally
- Prepare for logistic base on contract

- Construct by local qualified general contractor
- Purchase components and materials from the local manufacture company
- The general contractor undertakes the business and maintenance responsibility

Collaboration Methods

- Total area: ~20,000m² (includes showroom)
- Main building: factory ~8,000m² (includes business center and logistic center)
- Main functionality: display and reception, manufacture, logistic
- Facility investment: 1.5 million USD (excludes factory and land)
- Annual production capacity: 50,000m² of buildings



Contact Us

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THANKS

谢谢