Green - Environmental Protection - Energy Conservation

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Shanghai Star House Green Building Trading Co., Ltd is the subsidiary of the Manufacturer Shanghai Star House Co., Ltd., which specializes in Light Steel structure (LSS) housing system. It integrates Construction, Design, Manufacture, installation, R&D and decoration. SBG takes the lead in introducing the most advanced Light Gauge Cold-Formed Steel Structures and the relevant High-Tech design software from North America, for the new energy efficient, environmental green building technology and products to the customer.

The lightweight steel structure has good functions: Heat Preservation, Energy Conservation, Saving and Green Environmental Protection, according with the country's industrial development direction, is new building technology which the country promotes with great effort.

In line with the “Green Construction, Humanism, Technical Integration, Nurse Resources” idea, the company devotes to the Light steel structure energy conservation environmental protection housing industry engineering research, providing high-quality service for the customer, advancing the steel structure enterprise’s development and innovation.
SHANGHAI STAR HOUSE CO., LTD adopt STARLITE GREEN BUILDING new style structure and environment-friendly building materials. All the products are self-manufactured and the site construction has low pollution to the environment. SGB housing is free from the influence of different seasons, environment, and regions. With SGB housing, you may enjoy new comfortable houses with construction period consistent with LGS standard by the Construction Ministry of China.

Starlite Green Building which Testing and Inspection Technology Co., Ltd has passed the assessment of China National Accreditation standardization. According to general requirements of several organizations and standards (equal to ISO / IEC 17025 : 2005), CNAS ratifies that GBS is the only one of all the private steel structure enterprises in Shanghai city which meets the requirements of the quality control system. It shows that GBS has reached a higher level in the field testing, technology, and control.

SGB is engaged in housing industrialization of China. According to our gist of “Green housing, Healthy life”. SGB spares no efforts in developing the domestic and overseas market and providing the customers with high quality, comfortable, elegant, and modern life.
The light steel structure construction system is a proprietary design. LSS building system constructed in multi-parts of new type of building materials, the housing technology integrated comprehensive technology’s application and the development are rapid. For the LSS housing applicability and stability, energy conservation and heat preservation, fire-proofing, sound acoustic insulation, properly and it will be the future important building structure development direction.

**INNOVATION TECHNOLOGY**

- Optimized: Integrated Optimization, level.
- Enhancement of performances and standards.
- Extension of services life, light weight, easy transports, soft.
- Anti-shake and water-proofing, good performance of
- Sound acoustic insulation and heat preservation.

**Technology Characteristic**

1. The structure is reliable, earthquake resistant performance is good;
2. Heat preservation energy conservation, warm in winter and cool in summer;
3. Green environmental protection, non-construction trash;
4. Facilitate construction, circulation use;
5. Light weight, adapt to all kinds of ground, and the foundation expense is little;
6. Product compatible, all materials used may coordinate the use;
7. Mechanical and Electrical, equipment pipeline arrangement is flexible and convenient;
8. Flexible arrangement, space saving;
9. Factory manufacture, standard component and high quality control;
10. Dry operations and installation on site, convenient, short period, less labours employment.
Starlite Green Building

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Green • Environmental Protection • Energy Conservation
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LIGHT STEEL STRUCTURE
Assembly-Type Villa House

- Green
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S G B - Light Steel Structure

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Light Steel Structure - Assembly type Villa House

The LSS housing greatly enhance the energy conservation and remarkably improve the utilization rate. The valid useable area could increase 8-10%. The LSS housing construction speed is 2-3 times the traditional architecture and the weight is 1/4 - 1/6, compare with the traditional construction, water conservation more than 90%, almost all of the materials and operation is dry without using of water.

All components are the standard factory specification and field installation, completely achieves the standard of without Construction rubbish, waste materials and pollution and this is greatly reduce the cost of production and the management. The house constructed with the cold-roll thin panel light steel structure above 90% materials can be recycled. The LSS is a new construction form conforms to the green, environmental protection, energy saving and ecological, the house also completely meets the cyclic international current.
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S G B- Light Steel Structure

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Light Steel Structure - Assembly type Villa House

Light Steel Structure Villas Pre-Design, Pre-Factory Fabricated, Assembly System, Reliable quality, Science, Industrialized, standardized, Generalized, Mechanized, Fabrication, and high reliability of quality. Fully satisfy the requirements of middle-and low storey building, Light steel Structure building and retaining wall at random to replace require.
Light Steel Structure – Villa Housing

Overall Cost Saving: Saving Materials, Manpower, Management, Maintenance, Times.
Green • Environmental Protection • Energy Conservation

SGB steel framed materials are made of highly erosion resistant, high intensity and cold formed galvanized sheet which avoid rusting of the steel plate effectively in the course of construction and application. Thereby, this can extend the lifespan of the Light steel structure members, and its lifespan can reach over 70 years.
Roof System

* Special designed interlayer, waterproof and storm-resistant, can provide nature texture.
* Unique ventilation equipment on ridges, keep the house with fresh air.

Floor System

* Composite floor of close spacing cold formed steel (CFS), solid and durable.
* A variety of ducting works and HVAC pipeline are installed inside the floor, which will reduce the building story height occupancy, thereby, improve the house space plot ratio.
* The interlayer is stuffed with fiber glass insulation, make acoustic insulation more effective.
Wall system

- Exterior Wall thickness is around 100 – 200 mm, Ducting works are laid in pre-reserved wall holes, leave no trace.
- The wall is stuffed with fiber glass insulation, and exterior wall is laid with XPS insulation and OSB board which is good insulating materials.
- Unique breathing paper and gypsum plank in interior wall can adjust indoor humidity intelligently and will make life more comfortable.

Foundation System

- LGS structure can cut down foundation cost in large scale due to its lightweight characteristic.
- LGS structure can take various forms as a strip foundation, crawl space, basement etc.
- Unique foundation insulation design can efficiently prevent underground and harmful gas from invading, which will make life more secure.
SGB - Starlite Green Building System integrates the advance building materials with good quality, green and environmental protection, which is a packet industrial resource integration. By mass purchasing of building materials, SGB focuses on supplying our customers the healthy, ecological housing products of highly efficient and cost-effective qualities.
Project Time and Phases

Phase (1) (Architecture Designing)
- 2-3 weeks
- Preliminary Architectural work
- Architectural team works in first presentation
- Clients review drawings, 3D models, and details

Phase (2) (Submission for approval)
- 1-2 weeks
- Obtain approval

Phase (3) (Manufacturing and earth work)
- 5-6 weeks
- Manufacturing process starts
- Earth work and site preparation
- Infrastructure and materials

Phase (4) (Packaging & Shipment)
- 3-4 weeks
- Packaging and shipment

Phase (5) (Site installation)
- External Decoration
- Internal Decoration
- MEP Works (Water, Electrical, HVAC, Plumbing)

Phase (6) (Decoration & Renovation)
- 2-3 weeks
- Site completion

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Regularised Construction

Construction Process

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Stage 1
Concrete Foundation

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Stage 2
Sectional Panels
Installation

Stage 3
Interior Wall Installation
Ceiling and Floors
Windows and Doors
Stage 4
Mechanical Electrical & Sanitary Bathroom
Plumbing Testing of Ductworks & Equipments

Stage 5
Interior Decoration
Exterior Installation
Landscaping
Stage 6
Final Checking by Construction team and Company Inspection

Green House Promote Healthy Life

- We are a professional LSS house structure / architectural / interior design and construction company.
- We devote ourselves to ecological green house construction.
- We integrate the most efficient green building materials and technologies.
- We focus on producing superior and comfortable high quality housing environment.

Green Environmental Protection Energy Conservation
Earthquake Resistance

The total GBS housing system’s frame consist of LSS members, with its light weight and good deformability can form solid “close spacing stud composite wall”. After finishing the structural sheathing and gypsum board such structure system can better to earthquake resistance and horizontal loads, Its earthquake resistance can be over 8 degree.
Durability

GBS Steel framed materials made of high erosion-resistant, high intensity, cold-formed galvanized sheet, can avoid rusting of the steel plate effectively in the course of construction and application, thereby, this can extend the lifespan of the LSS structure members, and its lifespan can reach over 70 years.
Thermal Insulation

GBS housing utilizes excellent fiber glass insulation and XPS insulation as the main insulating materials which play an important role in thermal insulation. Heat engineering calculation shows that the thermal resistance of 10cm thick fibre glass insulation is equal to that of 100cm thick brick wall. The XPS insulation using as exterior wall, can avoid “cold bridge” phenomena on wall. Consequently, the energy consumption of GBS housing system is only equivalent to 40% of traditional housing’s consumption, thereby, greatly cut down the building owner’s energy consumption cost.

Stand fire & Anti-fire

The Green Building System has the good performance in stand fire and anti-fire, at the same time; the necessary building materials have strong ability in anti-burn and flame-resistant. The fireproof time limit of main steel structure is amounts to above 1.5 hours, conforms to the international related standard completely.

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**Acoustic Insulation**

The effect of acoustic insulation will directly influence the living effect. The door and window system of GBS housing system all hold good air tightness and acoustic insulation performance, the effect of insulation can be over 40 dB. Furthermore, the effect of insulation in the unique GBS wall systems yet can reach 60 dB.

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**Ventilation and Environmental Protection**

Natural ventilation, adjust humidity intelligently: GBS housing system adopts special design on ventilation and the multifunctional composite wall has the powerful breathing function, which can adjust indoor dryness and humidity intelligently. At the same time, the perfect ventilation system can ensure the houses full of fresh air.
With such essence as high intensity, good stiffness and strong deformation, LGS structure can withstand hurricane wind speed of 50m/s, wind pressure of 1.4KN/m². Meanwhile, the roof frame has the capacity to resist snow-load up to 1.55KN/m². Consequently, the building owner can rest peacefully regardless of weather condition.
Advanced Design Software
A professional SGB design team by Building and Decoration Design office, using the Advanced LSS design software introduced from U. S. consulting company, can perform computerized structural design for various complicated LSS design and drawings.

Advanced Automated Facility
Introducing the most advanced manufacturing facility from U. S. which realize automatic production from design to manufacture through CAD, CAM and ERP software.
BREATHING PAPER
- Single-sided ventilation, effective moisture-proof
- Dry and comfortable indoorspace

OSB BOARD
- High mechanical property and dimension stability
- Low linear expansibility, deformable, uniformity texture, and strong nail holding ability.
- Consistent density, thickness and intensity.
- Thermo insulation, waterproof, strike-resistant and damp-proof.

XPS INSULATION
- 100% Continuous obdurate structure
- Un-vary and low conductivity factor
- Good dimension and atmospheric stability
- Prominent compressive strength
- Waterproofing
- Easy to transportation and construction

FIBRE-GLASS INSULATION
- Thermal insulation and ventilation
- Keeping stable indoor temperature
- Decrease HVAC consumption
- Acoustic insulation
- Optimizing acoustic environment creating audio-visual entertainments.

DRY WALL PANELLING
- Fire and earthquake resistant, flat surface
- Special gypsum materials, automatic adjustment indoor humidity
- Stable structure, convenient construction
EFFICIENCY OF SGB HOUSING SYSTEM

Light Dead Load

SGB Housing System dead load is only 1/3 of the traditional structure. This behavior reduces the requirement of foundation load bearing and cut down foundation cost on a large scale, resulting in lower cost of the whole construction rather than traditional structure houses.

Shorter Construction Period

The construction period of SGB housing is about 1/3 of the traditional structure, which will consequently shorten the construction period, accelerate the capital return and increase the profit of investment.

Environmental Protection

With neat and clean operation on construction site, SGB housing system will cause less pollution to the environment. The steel structure of the house is 100% recyclable, and most of the subsidiary materials can also be recycled.

Better Storm and Earthquake Resistance

Steel structure beam and steel column make the frame flexible enough to absorb part of the earthquake energy so as to resist the Earthquake above 8 degree. Thereby, SGB house is suitable to build in seaside areas with excessive wind and earthquakes.

Thin Wall Thickness

All the duct works can be hidden in wall and floor structure, which can substantially increase usable floor area, at least 10% more than that of traditional brick and concrete structure.

High Degree of Industrialization

Facilitated to form standardized building system, SGB housing system can achieve the goal of mass fabrication and mechanical construction which leads to the housing industrialization with stable quality.

Dry and Clean On Site Construction

The total structure parts adopt zinc – plating screw for connection and the construction is from the influence of different seasons.

Structure System and Self-contained Enclosure Materials

Structure system and Self-contained Enclosure Materials of SGB housing system is superior to the traditional structure in thermal and acoustic insulation.

Convenient Construction

It is convenient to change and repair the structural elements, and accordingly decrease the labor cost.
The Comparison Of Light Steel Structure Construction system And Reinforced Concretes Structure System

<table>
<thead>
<tr>
<th></th>
<th>Light Steel Structure Construction System</th>
<th>Reinforced Concretes Structure System</th>
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</thead>
<tbody>
<tr>
<td>Economy Cost</td>
<td>Reduced overall materials, labour cost and operation cost of more than 10%.</td>
<td>The materials, labour and construction operation cost is higher.</td>
</tr>
<tr>
<td>Construction Time</td>
<td>Pre-fabricated roofing frame, Hoisting place directly at the scene, Operating difficulty small, small workload.</td>
<td>The construction need times to continue the others following work. More heterosexual templates, Operating difficulty big, big workload.</td>
</tr>
<tr>
<td>Maintenance Time</td>
<td>After the installation it achieves 100% intensity without maintenance.</td>
<td>The maintenance need time to continue the following works.</td>
</tr>
<tr>
<td>Construction Conditions</td>
<td>Construct under all kinds of climatic conditions.</td>
<td>The construction need time to continue the following works</td>
</tr>
<tr>
<td>Construction Quality</td>
<td>Components are factory assembly line production, the quality is stable, low installation techniques, easily for the quality control.</td>
<td>There are many factors affecting quality control, quality control not easily to carried out.</td>
</tr>
</tbody>
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