SUSTAINABLE BUILDING SOLUTION

beSteel

FASTER - LIGHTER - CIRCULAR

Sustainability at beSteel company.

> **Bringing a positive impact** to the global humanitarian challenges **through the built environment.**

At beSteel, we are determined to create a **positive impact**, striving to make a difference to the environment for **a better and more sustainable planet,** the construction industry and the lives of our partners and colleagues.

We want to rethink the construction sector to build like never before, with new construction methods (design and production) and with more efficient, sustainable and circular buildings.

By integrating cutting-edge technologies and sustainable materials, we aspire to transform traditional construction practices by setting new standards for the environment. Let's create a healthy planet for you, your kids and their future kids.

Unsustainability of the construction sector.

Did you know that the construction industry is **responsible for around 39% of global carbon emissions.** And construction activities account for **around 50% of the world's raw materials consumption?**

Construction activities are **responsible for the destruction of natural habitats and loss of biodiversity** through deforestation, land-use change, and soil erosion.

DECARBONIZING THE CONSTRUCTION INDUSTRY

Light steel frame is one of the most effective construction methods for helping the construction sector reduce its carbon emissions, and **the best way to meet the European Union's target of cutting waste production by 30% by 2030.**

THREE MAIN SOLUTIONS

- The use of correct materials in the right place and in optimized quantities.
- The use of digitalized design.
- The off-site production.

03 ADVANTAGES

Our first driving point in everything we do.

At beSteel, building sustainably is our core. That's why we work with lightweight steel frames. Lightweight steel frames not only offer less polluting solutions but also a safer, more efficient site.

At beSteel, we aim to offer you the most sustainable building solution for your project.

You can minimize your material consumption through Lightweight Steel Frame Structures. Lightweight steel outperforms most of other construction materials thanks to its exceptional combination of strength, weight, durability, and recyclability.

When lightweight steel, a sustainable and recyclable material, is combined with offsite fabrication, where the building components are built in factories rather than on site, it leaves no waste behind, and helps to significantly reduce the construction industry's carbon emissions.

Steel frame advantages

STRENGTH AND EFFICIENCY

Steel frame's great strength-to-weight ratio allows us to achieve the same structural integrity with fewer materials. This enhances the efficiency of construction projects and reduces our overall material consumption.

RECYCLABILITY

Steel is one of the most recyclable materials, with a recovery rate of 90%. In contrast to wood, while wood is recyclable, treated wood poses challenges for easy reuse. Also, burning wood can release carbon into the atmosphere.

DESIGNED FOR DECONSTRUCTION

Our steelframe structures are designed for easy dismantling. This dry construction method allows for the mounting and dismantling of structures with minimal waste generation.

ENVIRONMENTAL IMPACT

By using lightweight steel frames, the construction industry can reduce its carbon footprint by 44% by 2050.

Offsite construction advantages

WASTE PRODUCTION

Off-site manufacturing significantly reduces waste production. Our designers and engineers precisely calculate and plan the material usage beforehand, and we make sure to minimize waste as much as possible.

REDUCE TRANSPORTATIO N NEEDS

Offsite manufacturing reduces the need for on site transportation, resulting in huge reduction of vehicle emissions. All building components delivered on site are useful and ready to use.

SPEED OF CONSTRUCTION TIME

Offsite manufacturing results in 20-40% faster construction time with less impact on the area and therefore less disturbance on the environment and the neighbours!

NEED OF ON SITE LABOUR

Offsite construction includes a precise and controlled production process, which results in reducing the need for on site extensive labour by 60% – so this means there are fewer people on site!

04 SCIENTIFIC STUDY

Let's take a look through a real life example.

A STUDY OF ALTERNATIVES FOR THE DESIGN OF SUSTAINABLE LOW-INCOME HOUSING IN BRAZIL

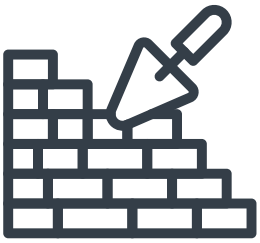
The objective of this study was to analyse and compare the environmental impact of three different buildings in Brazil, built with different construction systems: Reinforced concrete, masonry and steel frame.

THE RESULT

We can see from the results of this study that **the steel frame building has the lowest embodied GWP compared to the other buildings with traditional building methods.** GWP is measured in kg CO2 eq/m2.

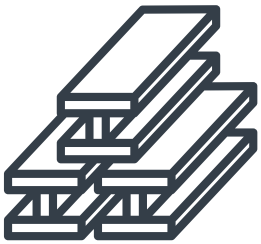
GWP OF REINFORCED CONCRETE

417.73



GWP OF MASONRY

391.06



GWP OF STEEL FRAME

246.23

HOW MUCH CO2 DOES BESTEEL AVOID?

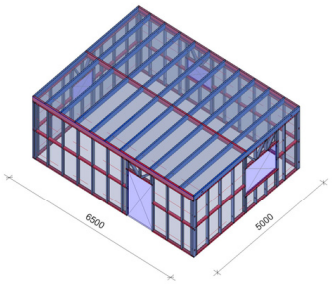
Additionally, we took the average number of the carbon saving from this study and another one made in Egypt (126.49 kg C02-eq/m^2) and multiplied it with the total number of square meters of our projects per year.

And the result is that beSteel can save up almost 60 000 tonnes CO2 from today to 2031!

05 LIGHT WEIGHT STEEL

Lightest building solution.

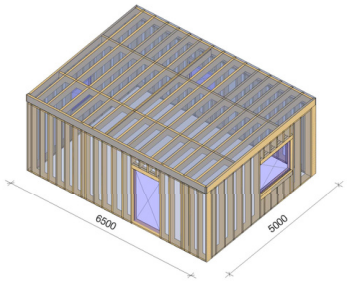
LGS FRAME - STRUCTURE



8,10 kg/m2

Light steel framing is 4.4 times lighter than wood and 40.7 times lighter than concrete.
It is just the lightest building material you can find.

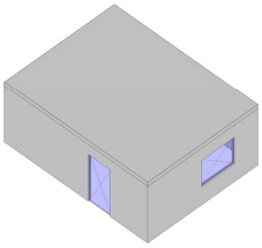
WOOD FRAME - STRUCTURE



35,62 kg/m2

Wood is 9.3 times lighter than concrete.

REINFORCED CONCRETE - STRUCTURE



330,17 kg/m2

Concrete is the heaviest material you can find. Its production is resource-intensive, and its heavy weight increases transportation emissions and requires stronger foundations.

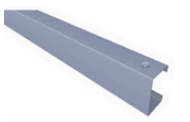
WHY THE STEEL FRAME?

Steel frame is the lightest building material compared to all traditional construction methods. Thanks to the lightweight of steel frame, it can lower transportation emissions and reduce foundation requirements. The high strength-to-weight ratio of steel means that less material is needed to achieve the same structural performance, reducing the overall resource consumption.

06 TECHNOLOGY

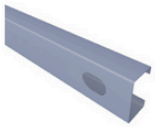
A sustainable material.

beSteel profiles are made from Arcelor Mittal Magnelis® steel. They have high quality and are corrosion resistant. Consisting of 3.5% aluminum and 3% magnesium.



SCREW HOLE

For a quick, simple and precise assembly.

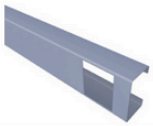


SERVICE HOLE

For electrical applications.

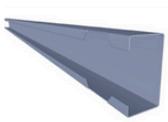
INDEX HOLE

For connections with bolts.



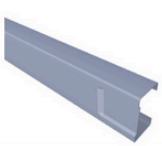
WEB NOTCH

Profiles fit together horizontally.



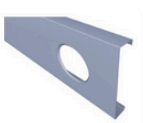
LIP NOTCH

For mounting profiles easily.



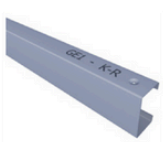
SWAGE ENDS

For precise fixing of profiles.



UTILITY SERVICE HOLE

Hole of 120-140 mm for sanitary elements and ventilation.



PRINT ID LABEL

For time-saving, well-organized installation.

07 SUSTAINABILITY IS PRIORIRTY

On the road to carbon neutrality.

CRADLE TO CRADLE CERTIFICATION

The Cradle to Cradle Certified® program is a multi-attribute standard used globally for designing products for a healthy, equitable and sustainable future.

beSteel was analyzed in 2019 and we received Bronze.

This means that steel structures are 100% recyclable and offer a solution that can be dismantled without compromising quality.

XCARB® - TOWARDS A CARBON NEUTRAL STEEL

beSteel is convinced that steel has an essential role to play in helping society to decarbonize, and that it will be a large part of the solution to this problem.

That's why we are proposing the XCarb® program to reduce Europe's CO2 emissions from steel production, and are aiming for carbon-neutral steel by 2050.

With the XCarb® certifications, you can save up to 2110 kg C02/Ton Steel.

XCarb® | ArcelorMittal
Towards carbon neutral steel

TRADITIONAL CONSTRUCTION OR LIGHT STEEL CONSTRUCTION? THE OBVIOUS ANSWER.

It may come as a surprise to you, but it takes more steel (reinforcement) to build reinforced concrete than steel-frame.

Cold bending of sections improves steel's performance and load-bearing capacity. This results in a solution that's efficient in terms of raw material use, and environmentally friendly thanks to its ease of disassembly and recycling at end-of-life.

beSteel team and its values.

beSteel teams want to treat others with the same respect as they expect to receive. beSteel values the unique talents of individuals and fosters a spirit of cooperation.

beSteel is determined to create a positive impact, striving to make a difference to the environment, the construction industry and the lives of our partners and colleagues.

beSteel is committed to excellence in everything we do; improving, innovating, and setting high standards for quality and performance.

beSteel believes in cultivating long-term partnerships with its customers and suppliers.

ULTRA FAST CONSTRUCTION

Off-site production and assembly, avoiding delays on site thanks to controlled conditions for fast, precise on-site assembly.

SUSTAINABLE AND LIGHTWEIGHT

30% lighter than wooden construction methods. A hybrid module made of light steel helps to reduce the CO2 impact of the construction sector.

360° EXPERTISE AND DIGITAL FOLLOW-UP

Production of lightweight steel structures and complete monitoring. So that your project meets the most strict technical and stability requirements, all in-house.

CONTACT

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SCAN THE CODE FOR MORE ABOUT OUR PRODUCTS AND SOLUTIONS

BESTEEL IS A PROUD MEMBER OF THE BUILDUP COMPANY