



ELEVATIONS WITH LIGHT
STEEL FRAMING

beSteel
FASTER - LIGHTER - CIRCULAR

Why elevate with light steel frame?

When it comes to constructing buildings, one important aspect to consider is elevation. With unmatched durability and design flexibility, steelframe solutions will take your building to new heights.



An elevation refers to increasing the height of a building's exterior from the ground level up. One way to approach elevation in construction is through light steel frame construction.

With light steel frame construction, elevations can be easily customised to meet specific design requirements, allowing for a wide range of architectural styles and features.

Elevations with light steel frame construction also offer a number of benefits for both builders and occupants.

Elevations with light steel frame construction can be a great option for densification projects in urban areas. By raising existing buildings with light steel frames, it's possible to create new living and working spaces without modifying the building's footprint.

This can be particularly beneficial in cities with limited space for new construction, and can help to promote responsible, sustainable urban development.

Advantages



LIGHTWEIGHT AND STRONG

Lightweight steel is a material that offers great strength while being much lighter than other materials such as concrete and wood. This means that lightweight steel framing will be able to support the extra load of the extension while being easier to handle and install.



SPEED OF INSTALLATION

Light steel framing is prefabricated at the factory, which allows faster installation on the site. This reduces construction time and allows a faster return on investment.



LOWER COST

Light steel is often less expensive than other building materials, such as concrete or wood. In addition, labor costs can be reduced due to the speed of installation.



DURABILITY

Light steel is resistant to corrosion, termites and mold. It does not expand or contract with temperature changes, which can reduce the risk of cracking in walls and floors.



DESIGN FLEXIBILITY

Light steel framing can be customised to meet the needs of each project, allowing great design flexibility. Architects and engineers can work together to create lightweight, elegant and efficient structures.

Why elevating buildings is a good idea?



LACK OF SPACE

- The development of neighbourhoods on the outskirts, based on the sole use of the car, has reached its limits.
- The re-urbanisation of cities, which began in the early 2000s, reflects a desire for denser cities.
- The elevation of existing buildings in an already dense fabric seems to be one of the only possible options.
- The scarcity of available land space considerably limits the choices.
- The elevation of existing buildings in an already dense fabric seems to be the only possible option.

TO INCREASE ENERGY EFFICIENCY

- Improving a building's energy efficiency can be a complex problem, but there is an affordable solution - installing a suitable envelope.
- It is undoubtedly the first energy saving to be achieved because it allows to improve the insulation of the roofs which represent nearly 25% of the losses, while promoting the realisation of new housing in accordance with standards at the cutting edge of thermal performance.

TO OPTIMISE THE PRODUCTION OF RENEWABLE ENERGY

- The two-slope roofs of urban buildings are rarely optimally oriented to capture solar radiation, not only thermal but also photovoltaic.
- Raising the roof allows the reconfiguration of the roof to optimise the installation of renewable energy systems, but also to use passive solar gain.

References.

**ANTWERPEN (BE)**

This 'residential hotel' has 130 beds in both dorms and various private rooms in a sleek design.

**LEUVEN (BE)**

Elevation of a residential building to create a new floor, in the center square of the city.

**ARNHEM (NL)**

A total of 129 Lofts were made into towers, which are intended for rental.

**ASTRON (NO)**

Height increased to 3 floor apartment building, with added stability and durability due to steel frame.

**AMERIKALEI (BE)**

Light steel framing elevation in the city, installed in 2 days with no disturbance to neighbours.

OUR PROJECTS

Scan the code and have a look online.



Why to elevate with beSteel?



POINT CLOUD EXPERTISE

Our steelframe solution for elevations are tailor-made. We use point clouds for an accurate representation of the existing situation.

CONNECTIONS

beSteel's engineers have developed several ways to connect our new construction to the existing and join it into a solid structure.

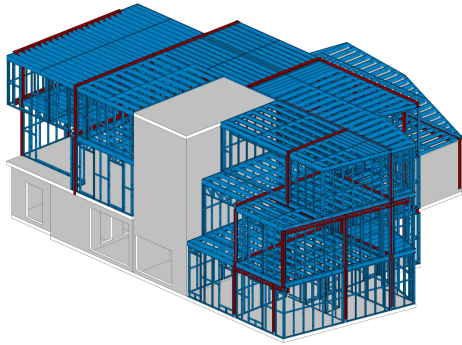
DEDICATED LOGISTICS SERVICE

Taking into account the requirements of the project (environmental characteristics and features of the building), we custom-made the transport and size of delivered panels are.

100% BIM QUALITY CONTROL

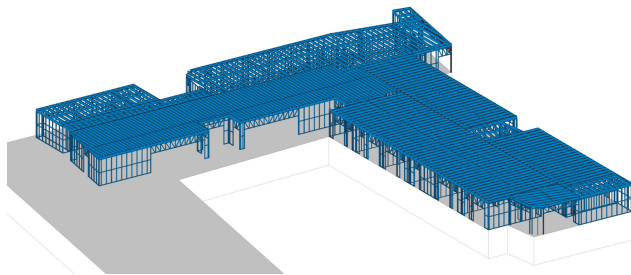
beSteel works 100% in BIM! For every project beSteel creates an 3D digital twin in collaboration with the architect and contractor. With this workflow we ensure the quality of our delivered projects.

From design to site.



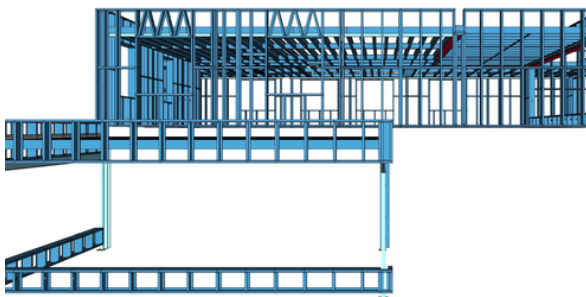
INTERNAL DESIGN AND ENGINEERING OFFICE

Our architects and experts digitally monitor each project in our 3D BIM portal. In this way we ensure that your project meets the strictest technical requirements and rules for stability.



3D DESIGN OPTIMISATION

Our designers and engineers optimise the 3D designs and calculations to make sure your project complies with the current Eurocodes.



MEETING THE HIGHEST STANDARDS

Our team of experts conducts regular quality checks to ensure that every aspect of your project is up to standard. This includes verifying that all materials used meet the required standards for durability and safety.

How to elevate your building?

There are a couple of steps you need to keep in mind when deciding to increase the height of your building.



1

OBTAIN NECESSARY PERMITS AND APPROVALS

Before any work can begin, you will need to obtain all necessary permits and approvals from your local building department.

3

CHOICE OF CONSTRUCTION METHOD

beSteel will be involved in this. We carry out the feasibility study for your project and refer you to the best construction partner in Belgium, France and the Netherlands. Let us show you the way. Without the proper guidance, this method can sometimes prove to be an obstacle course. In close collaboration, the architect, beSteel, the construction company and the stability engineer form a working group to deliver the framework of your project in less than 8 weeks.

2

CO-OWNERSHIP AGREEMENT

(if applicable). When multiple parties share ownership of a building, it is important to ensure that everyone is on board with the plan to elevate the building.

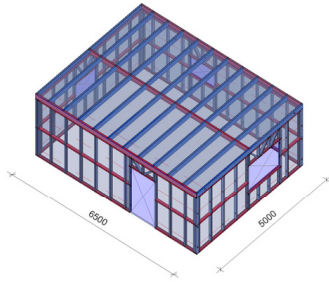
4

OPENING OF THE EXISTING

Roof (if necessary) and construction of the new elevation.

Let's compare structure weight.

LGS FRAME - STRUCTURE

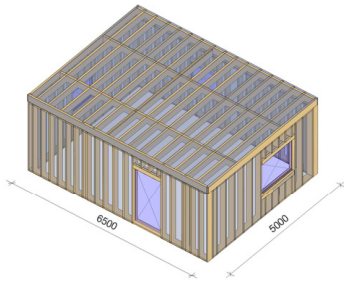


8,10 kg/m²

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.

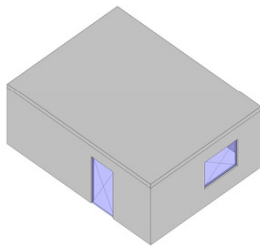
WOOD FRAME - STRUCTURE



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, and therefore not suitable for elevating because it can damage the existing foundations.

WHY THE METAL FRAME?

In 75% of the cases, raising the height of the buildings is impossible using other construction methods because the point loads are too high. With light steel, the weight is no problem: the steel frame avoids the need to reinforce the existing foundations.

Elevate and create new housing.

HOUSING SHORTAGE

In large cities like Berlin, London and Paris, and in the centers of other major cities, the housing shortage is a growing concern. These cities can no longer create new additional living space.

But there is a solution - raising buildings through elevation can free up surface area to create new apartments.

ELEVATING FOR SUSTAINABLE URBAN HOUSING

Compared to building new structures from scratch, raising existing buildings can save time, money, and resources.

Moreover, elevating buildings can also bring a unique aesthetic to urban landscapes. With creative architectural designs, elevated buildings can become iconic landmarks that add to the city's identity and character.

REVOLUTIONISING URBAN LIVING

By elevating existing buildings, we can create more space for new apartments without having to build on new land. This not only helps to address the housing shortage but also reduces urban sprawl and its impact on the environment.

Elevating buildings with light steel frame also presents a unique opportunity to modernise and update existing structures. This can include adding insulation, improving energy efficiency, and installing new features such as elevators or renewable energy systems.



Flat roof or pitched roof?

WHICH CAN HAVE THE HEIGHT INCREASED?

The height of any type of building can be increased: offices, the top floor of a building, or a house in the countryside, a flat, sloping or terrace roof... Anything is possible.

WHAT DOES IT TAKE TO UPGRADE?

beSteel will carry out a feasibility study and do the calculations and then provide a detailed load diagram of the structure. The feasibility of the project is then checked. However, steel construction means beSteel has been able to fulfil 100% of all requests it has received.



ULTRA FAST CONSTRUCTION

With offsite production and assembly in a controlled environment, we avoid delays on site, allowing us to do the installation quickly and accurately.

SUSTAINABLE AND LIGHTWEIGHT

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

360° EXPERTISE AND DIGITAL FOLLOW-UP

We produce your light steel frame and monitor your project internally from A to Z. You can be sure that it meets the strictest technical requirements and rules for stability.

CONTACT

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SCAN THE CODE FOR MORE ABOUT
OUR PRODUCTS AND SOLUTIONS



**BESTEEL IS A PROUD
MEMBER OF
THE BUILDUP COMPANY**