



RECONSTRUCTING
CONSTRUCTION
FOR GOOD

Press file

Under embargo till 17th November 2021, 8 pm

BESIX Group and BuildUp

Joining forces for the CO2-neutral construction sector of the future

Former beSteel makes transition to new company BuildUp and commits to digitalised offsite construction in a sustainable context.

EXECUTIVE SUMMARY

Aarschot, November 17, 2021 – The world has reached a point of no return in recent years. The transition towards sustainability of companies is no longer a nice add-on, but a fundamental *must do* in the perspective of our planet's future. And the construction sector has to participate. Despite its huge importance for the economy, however, the sector is struggling with a slow increase in productivity and a very high ecological footprint. The main problem? A lack of disruption. The industry consumes about 50% of all raw materials in the world, while it is responsible for almost 40% of all CO2 emissions¹. It urgently needs entrepreneurs who shake the age-old tree through disruptive innovation, based on digitization. That's why today, Hélène de Troostembergh announces the foundation of her company BuildUp, evolved out of the former beSteel. BuildUp aspires to reinvent conventional methods, thanks to a groundbreaking system based on digitized offsite construction. A method that is the driving principle behind a new breed of entrepreneurs within the construction sector. Entrepreneurs who dare to commit themselves to delivering homes on time, within the agreed budget and aligned with a far-reaching ambition to be sustainable. The news that market leader BESIX Group is investing in BuildUp, through its subsidiary Vanhout, confirms its confidence in the ambition of the promising Belgian entrepreneur Hélène de Troostembergh (33).

1 2020 Global Status Report for buildings and construction, UN Environment Programme. 2020 (<https://drive.google.com/file/d/1k2X0oASPI-RUsi90RdKLMkrBfalv29yW/view>)



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The traditional construction sector in decline

Globally, companies are being forced to reinvent themselves to meet the necessary and increasingly stringent sustainability standards. However, there is one sector that is lagging behind: the construction industry. There may be the will, the courage less so. Despite the many sustainable innovations in building materials, the sector seems to be having trouble to abandon the outdated techniques of conventional construction, making it difficult to rule out uncertainties in timing, budget and errors. Nevertheless, there is belief and ambition within the community to lift the construction industry to a future-proof level as well.

Introducing BuildUp.

BuildUp is a company that evolved out of the former beSteel, founded 5 years ago by CEO H  l  ne de Troostembergh, with steel frame construction as its core business. Together with her 90 employees, CEO H  l  ne de Troostembergh today rebaptizes beSteel as BuildUp, a company that challenges the construction sector to reinvent itself with digital offsite construction.

Digitized offsite construction as the new normal

BuildUp has succeeded in developing a method that, thanks to a fully automated process, can guarantee delivery within a given time and budget, and all this within a fully sustainable framework.

First, each plan is translated into a digital design by the engineers at BuildUp. This design then moves on to production in an automated offsite construction process. Concretely, this means that the construction of a project is prepared as much as possible at the BuildUp site. The result? At the BuildUp workshop, complete walls roll off the production line, as it were, including windows and doors, insulation and cladding. These are placed in its entirety on a truck and then delivered to the construction site. The contractor assembles all the elements on site. This way, a house



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could in principle be built in one day. You can compare this method with the automotive sector. All parts are assembled in the same place.

The supplier guarantees the quality of each part individually and, consequently, of the finished product that rolls off the line. The entire process is fully digitized and therefore future-proof.



Hélène de Troostembergh, CEO of BuildUp, is certain she has a strong case: “Today, building a house means a slow, laborious process. We are in a situation where project developers and construction companies actually know from the start of a project that it will be virtually impossible to stick to the estimated timing and budget.” Building offsite only has advantages. Thanks to the digitized process, BuildUp knows perfectly in advance how much time and budget it will need to implement a project and can save on the intensive processes that are typical for the sector. This way, builders will no longer be faced with unpleasant surprises. Moreover, this method of modular construction promises time savings of 20 to 50 percent. In contrast to conventional construction, offsite construction is also minimally subject to the weather, an advantage not to be underestimated for Belgium, a country known for its unpredictable weather conditions.”

According to de Troostembergh, offsite construction is also the solution for our rapid urbanization. Thanks to the hybrid systems made possible by automated machines,



with BuildUp it will now be possible to assemble a house on a construction site in one day, on time, within budget and in accordance with a clear sustainable ambition.

The process is so efficient that buying a house will soon feel like purchasing a valuable product rather than embarking on a long-term project.

Sustainability is key: 'BuildUp aspires to carbon neutral buildings'

Being responsible for 40% of total energy consumption in the European Union and producing almost 40% of total CO2 emissions, the construction sector is the most energy-intensive and polluting industry in the world². In addition, 35% of all waste in the European Union comes from demolition and construction³. With the actual state of the planet's climate, however, there is an urgent need for a reversal, for a disruptive approach in which sustainability plays a central role. And that's exactly what BuildUp provides an answer to, with sustainability at the core of its DNA and in every step of the process.

The company only works with sustainable and certified materials, which are purchased locally as much as possible and whose origins are fully traceable and with a guaranteed quality. Since the production process is centralized at one location, there is also a lot less waste and transport with its related pollution is significantly reduced. "As a person, as an entrepreneur, but also as a mother of 3 children, I'm deeply concerned by climate change. If we want a safe and healthy world for our children, we must have the courage to go all the way for a new, future-oriented construction sector. Sustainability is the starting point of everything we do at BuildUp. It's our ambition to assemble CO2-neutral buildings in the shortest possible time," says H  l  ne.

Ambition to renovate the European social housing park

Housing policy is becoming increasingly complex and is at the crossroads of several challenges: social, environmental, economic and fiscal. These challenges require

² The next normal in construction: How disruption is reshaping the world's largest ecosystem, McKinsey Global Institute, June 2020.

³ A diagnosis of construction and demolition waste generation and recovery practice in the European Union - Paola Villoria S  ez & Mohamed Osmani, 2019 (<https://bit.ly/3jFD09m>)



reconciling urban planning and development, controlling urban sprawl, increasing housing density and preserving residents' quality of life.

43 million social homes in Europe are currently awaiting renovation. Despite significant government investments in recent years, they still consume too much energy: a pernicious situation, both climatologically and socially. If Europe is to achieve its climate ambitions for 2025, a swift acceleration is necessary.

BuildUp offers an answer to this problem on a European scale with its sustainable, efficient and fast approach. Houses are given an energy-efficient exterior by placing a new outer shell against the existing building, consisting of materials that significantly optimize the energy performance of the house. An efficient way to make homes energy-efficient in literally 1 day. The company is a pioneer of this approach and is currently fulfilling its promise in the north of France with the renovation of 7 homes per day, in a total order of 160 homes. It's the first step towards 43 million homes. With this renovation method, BuildUp also meets the standards defined by Energiesprong ("Energy Leap"), in the pursuit of CO2-neutral housing.

43 million

The number of homes to be renovated in Belgium, the Netherlands, France, Germany and the United Kingdom by 2050⁴

100%

Percentage of buildings in France in need of renovation to meet the requirements of the 2015 Energy Transition Law

5.7%

The average growth margin for the European offsite construction market for the next 5 years⁵

4 Interreg North West – Europe Must Be 0

5 The next normal in construction: How disruption is reshaping the world's largest ecosystem, McKinsey Global Institute, June 2020.



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Endless creative freedom for architect and builder

Critics would say that BuildUp delivers standardized prefab homes, but nothing could be further from the truth. After all, system construction ensures that material choices are adapted to the specific needs of each project. For example, steel frame construction will be the optimal choice for one construction, while timber frame construction is the solution for another project. The technical aspect of the assignment is entirely in the hands of BuildUp, which offers architects the opportunity to fully focus on the creative part. In addition, architects save a lot of time because they need less presence on construction sites and don't have to update measurement statements. Offsite construction also stands for unlimited creative freedom for client and architect. Everything is nonetheless custom made, which means that an infinite number of combinations are possible.

Welcome BESIX Group

The benefits of building offsite sound promising and key industry players are becoming increasingly curious about it. The fact that BuildUp can now count BESIX Group among its investors, through its subsidiary Vanhout, gives the company a strong tailwind. A clearer statement from an established value in the construction industry is hardly imaginable.



"The construction and real estate sector are worldwide a major emitter of greenhouse gases. But while our sector is part of the problem, we at BESIX are convinced that we are also part of the solution. For several years, BESIX has been investing, developing and experimenting with new technologies, new materials and new construction methods to make our buildings positive actors in the energy transition. Our alliance with BuildUp is part of this same dynamic. We believe in BuildUp because the company brings sustainable solutions with modular, industrialized and off-site constructions. This approach will contribute to significantly improve the environmental footprint of our sector: the industrialization of the construction process allows us to reduce waste and optimize the use of materials, as well as improve operational performance on site", adds Pierre Sironval, Deputy CEO BESIX Group.

"We received several proposals from major players in the construction industry, but in the end we chose Vanhout with full conviction. It quickly became clear that we share a



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common vision about the future of the construction industry and the essential role that offsite construction and sustainable building will play in it. BESIX Group reinforces its innovative vision by consistently investing in start-ups in the sector. The fact that BESIX Group gives us the necessary flexibility and freedom to be able to completely steer our own course, was a decisive factor,” says H  l  ne.



Ronny Eijckmans, Managing Director at Vanhout, adds: *“I have complete confidence in the power of BuildUp to shake up the construction industry with digitized offsite construction. At Vanhout, we have been thinking about modular construction for more than 5 years, but completely changing course is for a large company not so simple. That’s why we believe in the power of the freedom we give BuildUp to further develop itself, independent from the larger holding.”*

END OF PRESS RELEASE



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About BuildUp

BuildUp is a Belgian SME that evolved out of the steel-frame construction company beSteel (spin-off from LPW in 2015), founded in 2016, and based in Aarschot (Flemish Brabant). BuildUp is the market leader in steel frame construction in the Benelux and is now differentiating itself from conventional construction by marketing a broader offsite construction proposition. BuildUp realizes complete projects: from calculation, design and engineering to production. This is done in-house, automated and digitized in accordance with the strictest regulations. As CEO, H  l  ne de Troostembergh leads a team of around 90 employees.

BuildUp consists of several departments:



**STRUC
TURES**

Focus on lightweight structures



**RETRO
FIT**

Focus on energetic renovations of homes, (public) buildings, old schools, hospitals, nursing homes, etc.



**TOTAL
FIT**

Focus on custom-built new projects



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Representative projects

Wingergreens

(Tielt-Winge, Belgium)

Wingergreens is a Totalfit project from BuildUp that comprises a project development of 6 semi-detached buildings. The client came to BuildUp in search of a partner for the entire project, from design to construction. At BuildUp, the building plans were translated into a digital design and prepared to be produced completely offsite. For the project developer and the architect, the advantage was that they could give all attention to the creative design of the housing units, whereby the time on the site could be reduced to 1 day per house.

Energy neutrality is central to the project. Each home is equipped with solar panels and a heat pump. In addition, providing a technical prefab module from Lito Box ensures that the installation of these technologies is also reduced to 1 day.

The use of certified sustainable materials is guaranteed, including stones from Nelissen and glass parts from Reynaerts aluminum.

By relying on BuildUp, the project developer could be confident not to be confronted with unpleasant surprises regarding timings and budgets during the project.





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BuildUp Structures project Hubertusplein

(Schaffen, Belgium)

On the Hubertusplein in Schaffen, a sub-municipality of the Flemish Brabant Diest, BuildUp Structures was responsible for the construction of apartments anchored on an existing old bank building and two enclosed housing structures.

Initially, the design was based on a traditional building style in common bricks. However, the project developer was confronted with the reality of the town center of Schaffen, which offers very little room for manoeuvre, and a number of very complex elements in the design. Therefore, an alternative building structure was wanted that could be built very quickly and that eliminated the challenges in the design. The project developer soon found a partner in BuildUp. The entire process was carried out by BuildUp: the switch from the initial traditional construction plan to steel frame construction, the new design, adjusting the dimensions, engineering, frame, production and the supervision of the installation by the contractor. Customization to the millimeter made it possible to graft a steel frame structure onto the existing building and thus to optimize the use of the available space.





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Energetic renovation of 160 homes

(Wattrelos, France)

In Wattrelos in the north of France, BuildUp is working on an energetic renovation of 160 homes built in 1950, falling within the standards defined by Energiesprong in the pursuit of CO2-neutral housing. The project includes the insulation and airtightness of facades and roofs, replacement of exterior joinery and renovation of kitchens and bathrooms. The facades and roof cladding are manufactured offsite and delivered on site with insulation, waterproofing membrane, PVC joinery, etc., and are attached to the existing facades of the houses by a certified integrator.

The project in Wattrelos is the third project in France that is part of the Energiesprong renovations. The basic conditions for this are:

- Energy-neutral renovations with a 30-year guarantee
- Activities that are limited to 1 to 2 weeks per home
- The possibility to carry out the renovation in an inhabited location
- A strong reduction in costs due to the size of the project





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BuildUp keeps its sustainability promise here as well. The steel used for the construction is 100% recyclable. The use of LEAN manufacturing has helped to minimize waste in the factory. The 30-year performance guarantee provides certainty that the materials used will be effective in the long term. This contributes to efficient use of resources.

The list of benefits of this type of project is rather long. The most basic advantages are:

- Limited time on site and therefore less nuisance to neighbors due to dust, noise, downtime, truck traffic
- Better production quality thanks to the industrialized process
- The use of BIM and a digital mock-up makes it possible to estimate and order exactly the necessary materials, thus avoiding wastage of materials
- Industrialized construction allows the work to be carried out in a controlled environment, protected from the weather, so that the insulation and other materials are correctly installed.

Completion of the final project is scheduled for February 2022.

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