



What's driving sustainability in the construction industry?

Introduction

Sustainability has shot up the global agenda in recent years. The top five risks identified by the World Economic Forum in The Global Risks Report in 2020 all related to the environment. More recently, COVID-19 has underlined the fragility of processes and supply chains, driving home the importance of embedding resilience, including sustainability.

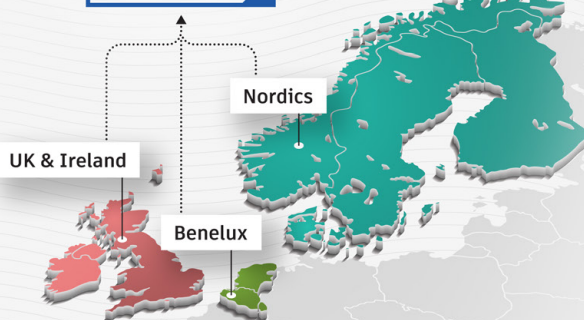
Sustainability frameworks – from the UN's sustainable development goals to the EU Green Deal – are mandating change in every industry, including construction. Just in March 2021, the UK's Construction Leadership Council released Construct Zero, a nine-point plan for reaching zero emissions by 2050. This new research from Autodesk explores how construction businesses are approaching sustainability and the role that technology can play.

How do construction companies see sustainability?

All the companies surveyed have at least some focus on sustainability, but for 35% it's an important part of their considerations and for one in ten it's a cornerstone of their corporate strategy (9%). Customer relationships appear to be at the heart of this policy; construction professionals point to customer retention (87%), customer expectations (84%) and competitive advantage (75%) as their main driving forces.

Unsurprisingly then, customers and clients are identified as the most important influencers behind sustainability policies (84%). However, employees (67%) and the supply chain and partners (64%) are also significant – underlining the importance of sustainability for attracting and retaining new talent as well as partners. As Asvor Brynnel, Head of Communications and Sustainability, Assemblin explains, *"It is unacceptable nowadays to not have sustainability goals. Our employees and customers expect us to be doing more. Nobody wants to work for an archaic company that isn't playing their part."*

198
CONSTRUCTION
COMPANIES
SURVEYED



Research demographics

- Quantitative survey of 198 construction companies in the Nordics, Benelux and UK, all with some focus on sustainability
- Qualitative 1:1 interviews with nine heads of sustainability representing construction firms across the region

On average, construction companies are planning to invest €900,000 in becoming a more sustainable company over the next five years – which is lower than their equivalents in manufacturing (€1.2m) and architecture and engineering (€1.4m).

Companies are already seeing a number of benefits from sustainability initiatives, with better use of resources leading the way (75%). That might mean designing less material intensive assets, or minimising errors and therefore waste. Sustainability initiatives are also leading to reduced energy consumption (62%) and improved project quality (50%) – which can also improve business performance.

Technology adoption has sped up during the COVID-19 pandemic – and digital tools are also supporting sustainability initiatives. Many companies are already using technology to make it easier to collaborate with the supply chain and partners on sustainability (52%): for example, communicating and measuring sustainability KPIs for contractors.

Using data to make better decisions is an important part of sustainability – and simplifying the capture and reporting of sustainable approaches (51%) and gaining new data and insights capabilities (44%) are two further priorities for technology at construction firms.

Building Information Modelling (BIM) is among the most common digital tools used in sustainability initiatives (36%). Establishing dynamic BIM data today will also be central to the development of digital twins, digital reflections of physical entities, which will help people achieve better outcomes throughout the lifecycles of products, buildings and infrastructure.

“One of the challenges is that right now we tend to design intuitively tapping into many years of experience rather than using data to gain intuition. By embedding carbon data, for example, into BIM models and strategies that then moves us from that intuitive environment to a data and evidence driven environment.”

However, construction companies point to key challenges to overcome on the path to sustainability, including a lack of financial resources (40%), access to skills and training (35%) and lack of customer buy in (33%).

But positively, COVID-19 has actually helped to spur sustainability efforts in many cases. Construction professionals highlight the increased adoption of digital tools and clients requesting more adaptable – and therefore sustainable – assets for the future.

However, perceptions about sustainability remain an important obstacle. Half of the construction companies view it as a cost driver, compared to only 16% that view initiatives as in any way cost-saving. Tackling this belief – and ensuring that companies are tracking key outcomes like cutting waste, enhancing quality and improving productivity – will be important for establishing these programmes.



Future opportunities

Looking to the future, construction companies see material alternatives (57%) and lean construction (54%) as promising areas for increasing their sustainability over the next two years. Sustainability as a service (47%), net zero energy buildings (55%) and smart infrastructure (59%) are all seen as further opportunities.

At an industry level, companies view prefabrication as the approach with the biggest potential to lower carbon emissions (53%) – with one company reporting a 20% reduction in embodied carbon thanks to using a design for manufacture methodology.

Circular construction is also seen as a significant opportunity (43%) – and BIM could play a key role in ensuring that eventual asset owners are aware of the materials used during the construction process for both maintaining assets and recycling or de-constructing them.

Construction businesses also view improved BIM implementation to reduce errors (39%), building retrofits (39%) and data-driven procurement (33%) as important ways to improve sustainability throughout the building lifecycle.

“Just this year at the Forge in Southwark, London, we’ve designed a building for it to be assembled as if out of a kit of parts. In doing that, we also happen to optimise and reduce the amount of materials we need. So for that building, we’ve shown a reduction of about 20% in embodied carbon compared to the same product being built traditionally.”

–Nils Rage, Sustainable Design and Innovation Manager, Landsec

Sustainability in construction: A win-win

COVID-19 has underlined the need for resilience in our built environment. But importantly, it’s also shown that things can change very quickly when they need to – so this is a great opportunity for companies to accelerate their efforts to become more sustainable.

Sustainability initiatives aren’t just about going greener, but come with other key outcomes like better quality, less waste and adaptable assets for owners and occupants. But to realise these advantages we’ll need joined up thinking across construction, from design through to reconstruction.

Technology can play a central role in making these plans a reality, whether it’s supporting data-driven decisions and collaboration today or powering new approaches like prefabrication and circular design for the future.

LEAN CONSTRUCTION ADOPTION RATE

47%



Lean construction

Almost half of construction companies are using lean construction today (47%) – and the majority see its role increasing for the future. Importantly, by minimising waste and increasing quality, lean construction can not only support sustainability but improve performance. For companies, access to data is key to this approach; a common data environment gives teams access to real-time data, streamlining design and construction and enabling projects to be more efficient.

Lean construction also has clear benefits for owners, as Helen Hough, Sustainability Lead at Bryden Wood, explains: “Obviously the fewer material you use, the cheaper it becomes for clients and potentially you have opportunity then to specify more high-quality products that actually get your embodied carbon down.”

To download the full report, please visit <http://autodesk.com/Digitalisation>

