Embracing the digital era: revolutionising the construction industry with people at the core

THE CONSTRUCTION INDUSTRY IS UNDERGOING A REMARKABLE DIGITAL TRANSFORMATION, WITH PEOPLE PLAYING A PIVOTAL ROLE IN ITS SUCCESS.

This paradigm shift requires a focus on technology, processes and most importantly, the individuals within the industry. While the pace of this transformation may appear gradual, undeniable progress can be seen through the integration of Building Information Modelling (BIM), digital platforms and the rise of industrialised construction methods. These technological advances have been extensively tested and are readily available for implementation in the construction sector.

However, the true challenge lies in guiding organisations through the digital transformation journey and effectively managing the associated change. Recognising that each organisation is unique, tailored approaches are essential to ensure a streamlined and efficient transition. To embark on a successful digital transformation journey, consider incorporating the following key elements into your road map:

1. **Gain an in-depth understanding** of the current state of your processes: before initiating any transformation, it is crucial to assess the existing processes fully, identifying strengths, weaknesses and areas ripe for improvement.

2. **Develop a digital solutions portfolio** to achieve the desired future state: design a comprehensive set of digital solutions that align with your organisation’s goals and vision. This portfolio should encompass various technological tools and platforms that enhance productivity, collaboration and efficiency throughout the construction lifecycle.

3. **Evaluate the organisation’s level of digital maturity** and conduct a cost-benefit analysis: assess the organisation’s readiness to embrace digital transformation by evaluating its current digital maturity. This evaluation should include an analysis of potential costs and benefits associated with the transformation, ensuring a well-informed decision-making process.

4. **Implement and manage change**: execute the digital transformation plan, ensuring that effective change management strategies are in place. Encourage employee engagement, provide extensive training and facilitate open communication channels to support a smooth transition. Sustaining the transformation requires ongoing monitoring, evaluation and adjustment to address emerging challenges and opportunities.

It is important to note that change management is often one of the most demanding aspects of any transformation project. Shifting the mindset of individuals to embrace new ways of doing business involves a cognitive journey, starting from acknowledging initial incompetence to ultimately achieving unconscious competence. Nurturing and supporting employees throughout this transformative process is key to unlocking the full potential of digitalisation within the construction industry.

By embracing the digital era and recognising the critical role of people, the construction industry can revolutionise itself, paving the way for increased productivity, enhanced collaboration and sustainable growth in the ever-evolving marketplace.
Unleashing Innovation: How Start-ups are Revolutionising the Construction Industry

IN RECENT YEARS, THE CONSTRUCTION INDUSTRY HAS WITNESSED A SURGE IN CON-TECH START-UPS THAT ARE HARNESSING CUTTING-EDGE TECHNOLOGIES TO TRANSFORM THE WAY PROJECTS ARE EXECUTED.

This wave of innovation has ushered in new perspectives and fresh thinking, driven by the convergence of technology enthusiasts and the construction sector.

Technology is now being integrated across various stages of construction, revolutionising traditional practices. Our extensive market research reveals the emergence of five prominent types of con-tech start-ups that are leveraging these technologies to reshape the industry.

1. **Design configurators:** These start-ups are at the forefront of generative design, using algorithms to generate multiple design options based on user requirements and constraints. This enables architects and engineers to explore innovative and optimised solutions.

2. **Artificial intelligence:** Artificial intelligence (AI) has permeated every facet of construction. From computer vision progress monitoring to big data analysis extracted from construction sites, AI is streamlining operations and enhancing decision-making processes.

3. **Drones and UAVs:** Start-ups are leveraging the capabilities of drones to revolutionise construction practices. Drones provide accurate volumetric scans of site works, perform automated safety and quality checks, and enable efficient data collection and analysis.

4. **Virtual and augmented reality:** Although their adoption may be progressing at a slightly slower pace, virtual and augmented reality (VR/AR) technologies are making their way into construction. These technologies are employed for progress monitoring, clash detection and immersive visualisation, enhancing communication and collaboration on construction sites.

5. **Automation and robotics:** Robotics is increasingly becoming an integral part of the construction industry. From industrialised construction processes to on-site monitoring, robotics is paving the way for enhanced productivity, precision and safety.

Start-ups are also placing a strong emphasis on sustainability. They use advanced technologies to enable sustainable practices through data monitoring, concrete technology advancements and CO2 capturing techniques. By leveraging real-time data and intelligent systems, construction is becoming more efficient and environmentally conscious.

The rise of con-tech start-ups is driving a paradigm shift in the construction industry, propelling it into a new era of innovation and efficiency. By embracing these technological advancements and sustainable practices, the industry is poised to meet the demands of the future while minimising its environmental impact.

Through collaboration and a willingness to embrace change, the construction industry can harness the transformative power of start-ups and create a sustainable and progressive built environment for generations to come.
Driving Decarbonisation in Construction: Harnessing the Power of Gamification

BUILDINGS CONTRIBUTE 39% OF ENERGY-RELATED GREENHOUSE GAS EMISSIONS.¹

With the world’s population projected to approach 10 billion, the global building stock is expected to double in size, amplifying the need to address emissions from the construction sector.

Within the construction industry, achieving “net zero” ambitions is paramount for countries worldwide. While operational carbon contributes 28% of building emissions, the remaining 11% arises from embodied carbon, which encompasses the energy used in constructing buildings and producing building materials. As buildings become more energy-efficient during use, the proportion of emissions from embodied carbon becomes increasingly significant.

To meet government targets and achieve sustainable goals, it is crucial that new buildings, infrastructure projects and renovations attain net zero embodied carbon by 2050. Additionally, all buildings, including existing ones, must strive for net zero operational carbon. One promising avenue to reduce carbon emissions effectively is the adoption of digital twins.

Digital twins leverage real-time data to simulate information from the physical world. By monitoring key environmental factors like indoor air quality, HVAC systems and electricity consumption, digital twins provide valuable insights for reducing energy consumption and emissions. The integration of gamification principles takes this a step further, transforming the collected data into an interactive and user-friendly digital twin environment.

Through gamification, individuals and teams are engaged and motivated to participate actively in sustainable practices. The interactive nature of the digital twin creates an immersive experience, enabling users to visualise the impact of their decisions and make informed choices to reduce carbon footprints. This innovative approach fosters collaboration, empowers stakeholders and drives a collective commitment towards decarbonisation in the construction industry.

By harnessing the power of gamification and leveraging the capabilities of digital twins, the construction sector can pave the way for meaningful and measurable reductions in carbon emissions. This transformative approach not only aligns with global sustainability goals but also creates a more resilient and environmentally responsible built environment for future generations.

¹ Bringing embodied carbon upfront - World Green Building Council.
Accuracy partners and professionals are available to discuss your needs and design an appropriate solution with the relevant experts.