



## ONLINE SPECIAL

# Digital Twins: A Data-Driven Approach to Sustainable Building Operations



A digital twin can enable the flow of information and data, increase collaboration through the supply chain, reducing silos and increase the understanding of existing assets, their current performance, limitations and opportunity for improvement. Looking beyond 2021, digital twin data on embedded materials could allow for more sustainable construction from materials re-claimed at demolition, giving the data long-term purpose and value.

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## | ADVANCED CONSTRUCTION



**Robotic Automation's Potential to Enhance Productivity, Efficiency and Safety on Construction Sites**  
By For Construction Pros.com



**Top Sustainable Construction Materials to Build a Better Future**  
By Autodesk



**World's First 3D Printed Facade in Chattanooga, Tennessee**  
By Global Construction

A new focus on health, safety and sustainability are catalysts for investment in robotics, while the shrinking pool of skilled labor means the construction industry needs robots to help keep pace with the challenges of urbanization and climate change.

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This article rounds up some notable examples of sustainable construction materials.

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Its façade is entirely 3D printed. It's the first commercial 3D printed building in the U.S. according to Branch Technology's Founder and CEO Platt Boyd.

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## | GREEN BUILDING TECHNOLOGY



**World Environment Day**  
**Discussion: Experts Urge Govt to Rein in Unbridled Construction**  
**By The Daily Star**

Experts called upon the government to rein in unbridled infrastructural development to protect the country from environmental pollution, a growing risk factor for lives.

They suggested opting for eco-friendly construction materials instead of bricks, as the production of bricks has detrimental impact on the environment.

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**The Future of Green Buildings**  
**By US Department of Energy**

The Biden administration is focusing on building decarbonization with the goal of tripling efficiency and seeing up to US \$200 billion in savings. This includes investing in worker training, a grid-interactive efficient buildings (GEB) "roadmap," and new building performance standards for the federal government, spearheaded by the Council on Environmental Quality.

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**Green Buildings Do More Than Keep Tropical Tenants Cool**  
**By Taipei Times**

Aside from environmental gains, building green offers significant cost savings, shorter payback periods and raises asset value.

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## | DIGITALISATION

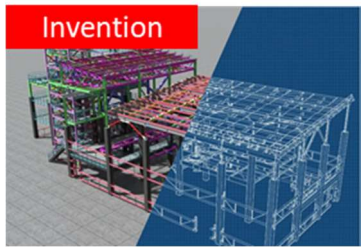


### **Accelerating Sustainability in Construction: How Technology Opens Opportunities**

By Autodesk

Autodesk partnered with Frost & Sullivan to commission new research on sustainability, featuring construction businesses across Europe. By looking across the industry, we can learn how different companies are approaching sustainability, responding to the opportunities ahead and recognising the role that technology can play.

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### **How Digital Optimisation and Collaborative Planning can Benefit Construction Projects**

By Building UK

The writer highlights the top three ways construction companies can benefit from incorporating BIM systems into their projects.

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### **Rise of the Platform Era: The Next Chapter in Construction Technology**

By McKinsey

A recent McKinsey report has predicted big changes across the construction industry over the next decade, adding that the bulk of short and long-term pandemic-driven issues will be solved with technology.

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## | YouTube Videos



### **Modern Prefab Homes & Fast Construction Housing Technology**

A review of some remarkably designed prefab houses. These are properties that are built off-site vs. on-site to make life easier when assembled on location, lowering costs and time on the job.



### **New Modern Construction Technology Today**

10 high-tech construction technology that allows people to build quicker and smarter, be more environmentally friendly, and house families in different ways. Find out how cutting edge technologies like AI, the Internet of Things, and modular



### **Flexible Buildings: The Future of Architecture**

The documentary presents current concepts and implementations from the core disciplines of architecture, development of building materials, and urban design.



construction, are rapidly transforming the face of the construction industry.

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## | UPCOMING WEBINARS

<b>14 Jun 2021</b> <b>(Monday)</b>	<b>Digital Design for DfMA &amp; Sustainability</b>  <b>Time:</b> 6:00 PM to 7:00PM (SGT) <b>Speakers:</b> <ul style="list-style-type: none"> <li>Adam Jordan, Asia-Pacific Lead, Bryden Wood – Computational Approach for DfMA,</li> <li>Ling Ban Liang, PhD Candidate/SUTD – Multi-objective Climate Optimisation in Residential Design</li> </ul> <b>Host:</b> Singapore Polytechnic	<a href="#">Register Here</a>    <a href="#">Microsoft Teams Login</a> 
<b>16 Jun 2021</b> <b>(Wednesday)</b>	<b>Embodied Carbon in the Built Environment: Design-based and Data-driven Approaches</b>  <b>Time:</b> 2:00 PM to 3:00PM (SGT) <b>Speaker:</b> Michael Budig, Assistant Professor, Architecture and Sustainable Design, SUTD. <b>Host:</b> SUTD	<a href="#">Register here</a>  
<b>22 June 2021</b> <b>(Tuesday)</b>	<b>World Cities Summit 2021: Liveable and Sustainable Cities: Adapting to a Disrupted World</b>  <p>The biennial World Cities Summit (WCS) is an exclusive platform for government leaders and industry experts to address liveable and sustainable city challenges, share integrated urban solutions and forge new partnerships.</p> <p>Webinars supported by MND Urban Sustainability R&amp;D e-Symposia 2021:</p> <ul style="list-style-type: none"> <li>10am to 11am: Complexity Science for Resilient and Adaptable Cities</li> <li>11am to 12pm: The Science to Building Social Resilience</li> <li>12pm to 1pm: Nature in Cities for Urban Sustainability</li> </ul>	<a href="#">Register Here</a>  

**Want to contribute for Tech Insights?**

We welcome written contributions from all who share a keen interest in advanced construction, green building technology, and digital innovation. Email us at [Stanley\\_Tan@bca.gov.sg](mailto:Stanley_Tan@bca.gov.sg)