



AQSA INTERNATIONAL CONGRESS 2023

Digital Construction and Sustainable Development: Opportunities and Challenges for the Construction Industry

Keynote Address by;

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16th May 2023
Kingwood Hotel, Sibul
Sarawak

Digital Construction

The use and application of **digital tools** to improve the **process** of delivering and operating the built environment.

Safer

Efficient

Collaborative

Better
outcome

| Sustainable Development

Meets the need of the present, without compromising the ability of future generations to meet their own needs.



Construction 4.0 Strategic Plan



A roadmap for the Malaysian Construction Industry to **embrace the IR 4.0** in ways that would transform its productivity and competitiveness.



12 Emerging Technologies



Prefabrication and Modular Construction



Building Information Modelling (BIM)



Autonomous Construction



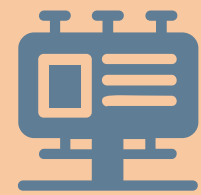
Big Data and Predictive Analytics



Artificial Intelligence (AI)



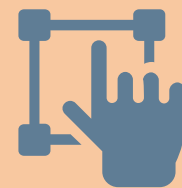
Advanced Building Materials



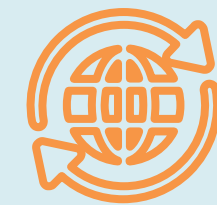
Augmented Reality and Visualization



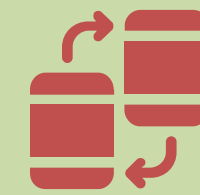
Cloud and Real Time Construction



3D Scanning and Photogrammetry



Internet of Things (IoT)



Block chain



3D Printing and Additive Manufacturing

Short Term
(less than 3 years)

Medium Term
(less than 3 years)

Long Term
(less than 5 years)



3D Printing





4 Key Enablers



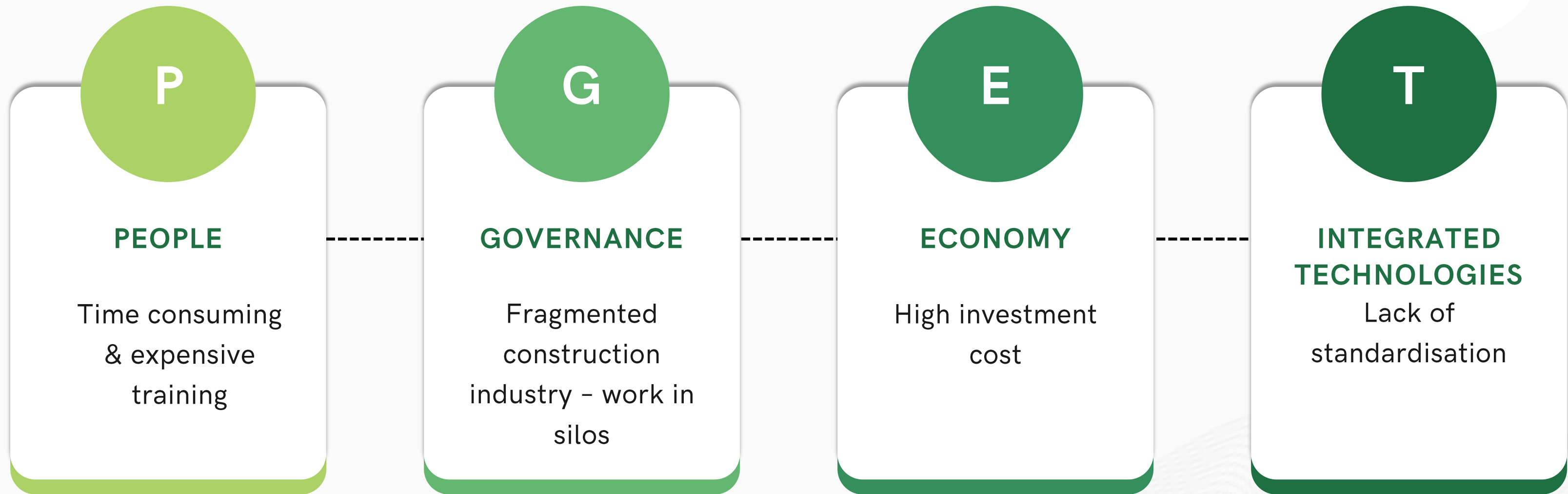
| Digital Construction - Opportunities

Knowledge Management

Efficient Construction

Whole Life Support

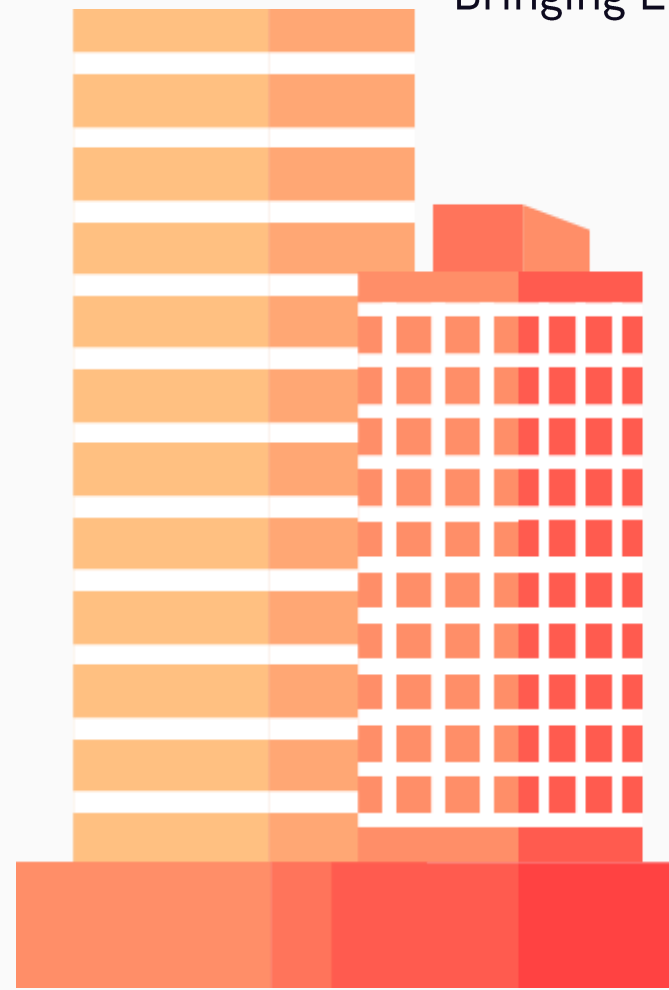
Digital Construction – Issues & challenges



39%

Carbon Emissions from buildings

Bringing Embodied Carbon Upfront Report, 2019



28%

Operational Emissions

11%

Materials & construction

The 17 Sustainable Development Goals






THE GLOBAL GOALS

Sustainable Construction



- Conserve
- Reuse
- Recycle/renew
- Protect nature
- Create non-toxic
- High quality

Sustainable Construction Method Examples

						
01	02	03	04	05	06	07
To cut & produce materials using exact measurements	Waste management - recycling materials	Constructing green buildings	Old building refurbishment	Managing the CO2 transmissions	Eco-friendly practices onsite	Using sustainable materials

Sustainable Construction Benefits



What Are the Challenges of Sustainable Construction?

Time and Money

The general consensus is that sustainable construction comes at a premium, with a higher cost than demand.



Thank You

for doing good for the planet.

- Let's start exploiting digital technology to do a lot more with a lot less and making construction sector a better industry.

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