Construction Gone Digital: 
The Importance of a Global Digital Construction Workforce.

Technology Trends, BIM and the Future of Construction.

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Established in the UK 2013

Global Client Base

UK, Canada, China and Australia.
Our Client Base

- British Standards Institute - Global Training Providers
- Government: DPTI, Transport NSW, Vic Government
- Contractors / Architects / Engineers / Surveyors
Our Aim
WiB
Recognising & Supporting
Women in BIM

UK BIM ALLIANCE

DIM SA
What is today about?

- Current Situation & Predictions
- Construction Trends 2018-2025
- Current Situation / Processes and Policies
Context
The current world population of 7.3 billion is expected to reach 8.5 billion by 2030, 9.7 billion in 2050 and 11.2 billion in 2100.
Project World Population - 2050

1990: 5.3 billion
2015: 7.3 billion
2030: 8.5 billion
2050: 9.7 billion

11.2 Billion by 2100
As a result of Population increases the Global Construction market is set grow with it to hit US$10.5 Trillion by 2025.

We will need.

More Buildings.

More Infrastructure.
What are the issues with this?

- Skills shortages - Labor and Digital
- Government Commitments - Standardisation
- Lack of Consistency
Skills shortage are a common theme in this edition of our survey with 24 of the 43 markets analysed suffering from a skills shortage.
The Hunt for Efficiency

Leading firms are adopting advances in on-site factory and off-site manufacturing and assembly, 3D printing, automation and robotics to improve efficiencies.

Developments such as integrated design and asset management (design, asset, cost and schedule all linked and visualised) are helping better understand the asset.

In the near future, the application of blockchain technologies will streamline contractual processes and exciting progress in machine learning will help predict issues in construction and optimise maintenance and operations.
So what do we do?

Education is Key.

What is coming?
Future Skills (Review Current Trends)

Current Conditions (BIM / Digital)

Consistency (Standards / Processes)
Future Skills

What are the technology trends which may impact the future of the Construction Industry?
Gartner Hype Cycle for Emerging Technologies, 2017

- Event Title

- Plateau will be reached in:
  - less than 2 years
  - 2 to 5 years
  - 5 to 10 years
  - more than 10 years

- As of July 2017
Global Spending on augmented and virtual reality (AR/VR) will nearly double from $9.1 billion in 2017 to $17.8 billion in 2018.
Gartner estimates that there are more than 8.4 billion “Things” available on the internet today, up more than 30% from a year ago.
Cloud Computing will allow small business to connect to a wider global environment.
Tools, processes and methodologies for offsite fabrication will be commonplace.
“To obtain the highest value from digital twins, the enterprise must address the digital ethics issues raised by different parties interacting with the data from not just the enterprise, but also its partners and customers.”
Drones will become more widely used to evaluate jobsites and act as building and contractor surveillance. Rather than paying for security personnel drones are able to take the place of humans.
Wearable Technologies will form part of Construction processes during design, Construction and Operation.
BLOCKCHAIN
Current Requirements

What do we need to address now which will support industry?
Government Construction Strategy - May 2011

Level 2 BIM 2016
Consistent Processes / Standards
UK BIM Level 2 and the Standards, Processes and Framework are now being adopted Globally.
“Standards play an important role in ensuring the wider adoption of BIM technologies, processes and collaboration by ensuring the same accurate data can be accessed throughout the supply chain”

Mark Bew, Chair of the HM Government BIM Task Group
PAS 1192-2:2013
Specification for information management for the capital/delivery phase of construction projects using building information modelling

PAS 1192-3:2014
Specification for information management for the operational phase of assets using building information modelling

PAS 1192-5:2015
Specification for security-minded building information modelling, digital built environments and smart asset management

PAS 1192-6:2018
Specification for collaborative sharing and use of structured Health and Safety information using BIM
In Australia alone, the reference to PAS 1192-2 is happening across the majority of our State Government Departments.
ISO19650 STAGES

PART 1:

deals with concepts and principles and applies to the whole life cycle of a built asset.

PART 2:

deals with the delivery phase of assets and enables the client and/or appointing organisations to establish their requirements for information during the delivery phase of assets.
Education is key.
Global working is our future.
In order to stay ahead of the curve our employees do not need to be faster or cheaper than machines.

Organisations should focus on helping employees develop, hone and capitalise on the capabilities that are uniquely human, such as collaboration, communication and integration.
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