

# Lifelong Project Value through Digital Asset Information Management (DAIM)

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**Will Hackney, Aurecon**

# Industry Drivers



- Construction industry looking to embrace benefits of digitalisation
- Client demands
- Pressure on O&M budgets
- Streamline the supply chain from design to construction to asset management

# The Journey Towards Digital Asset Management

Prof Xiangyu Wang

- Curtin-Woodside Chair Professor for LNG Construction and Project Management
- Director of Australasian Joint Research Centre for BIM
- Chair of Curtin Advanced Technology Research and Innovation Alliance (CATRINA)
- College of Experts, Australian Research Council (ARC)

# Digital Engineering and Construction



## 2.24 Integrated Project Environments – Leveraging Innovation for Productivity Gain through Industry Transformation

This research will contribute to realising productivity benefits of digital modelling and integrated project

Processes

Completed

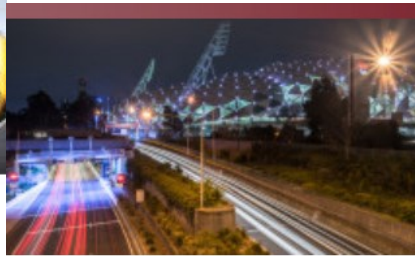


## 2.34 Driving Whole-of-life Efficiencies through BIM and Procurement

In 2013, the Australian Department of Industry identified lifting productivity and economic growth as

Processes

Completed

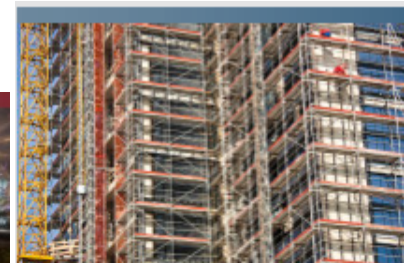


## 2.51 Developing a Cross Sector Digital Asset Information Model Framework for Asset Management

Project 2.51 Fact Sheet Asset management in the built environment has been the

Processes

Current



## 3.27 Using Building Information Modelling (BIM) for Smarter and Safer Scaffolding Construction

Information Sheet (544Kb, Sept 2014) Temporary structures like scaffolding have a significant impact

Productivity

Completed



## 3.28 National BIM Guidelines and Case Studies for Infrastructure

Information Sheet (472Kb, March 2015) Mechanisms that improve collaboration and communication in the

Productivity

Current



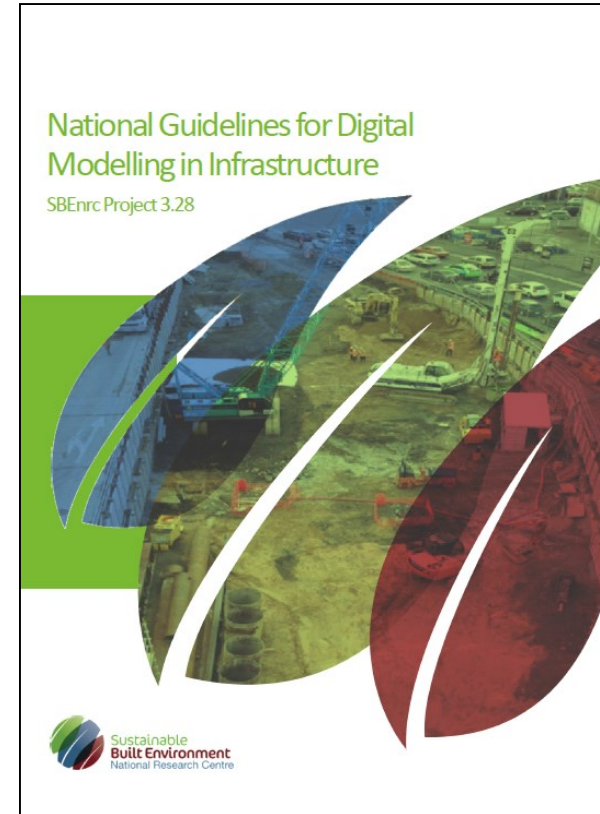
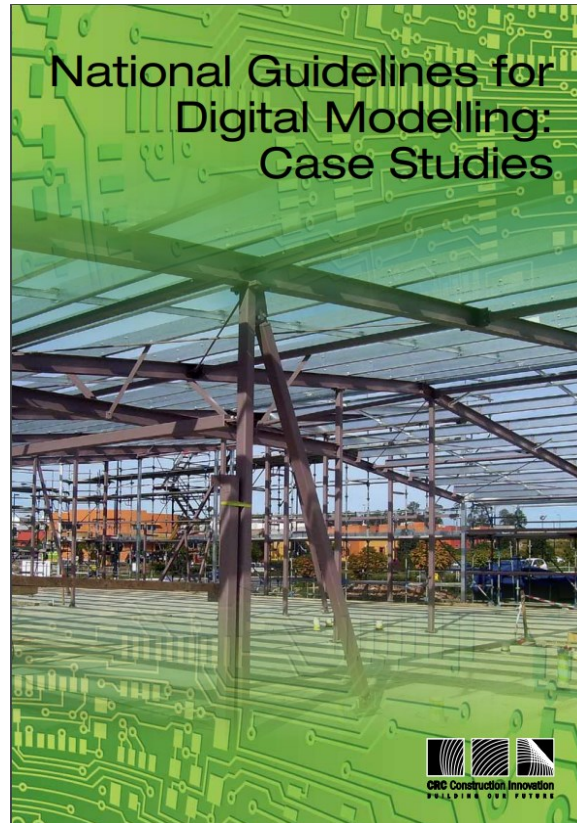
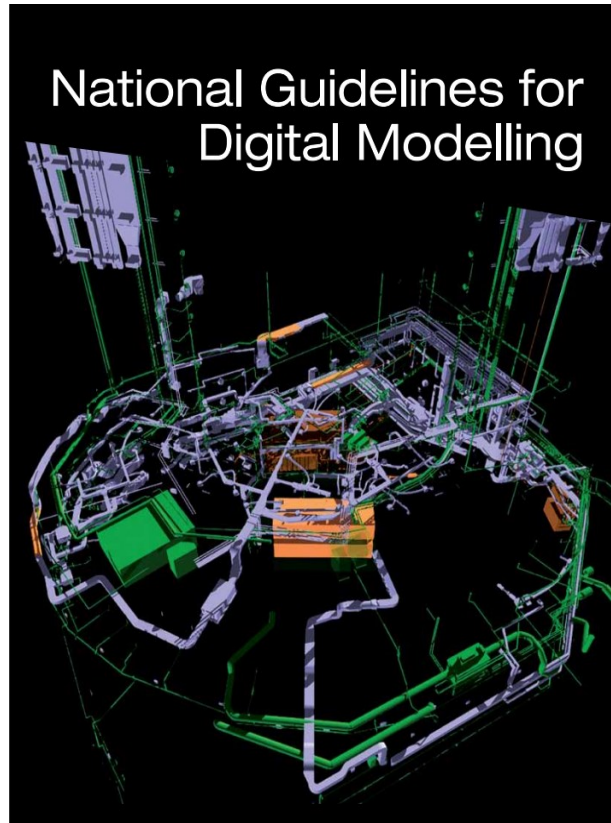
## 3.48 Sustainable Asset Management: Selecting Optimal Maintenance Strategies Based on Multi-criteria Decision Making

Project Fact Sheet In an economic downturn, it is of critical importance to

Productivity

Current

# Two National BIM/DE Guidelines



# Australian Research Council (ARC)

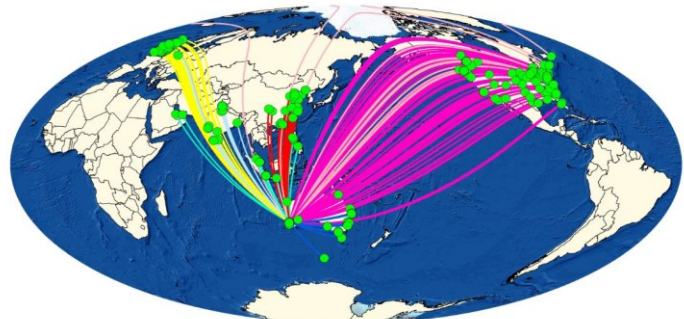
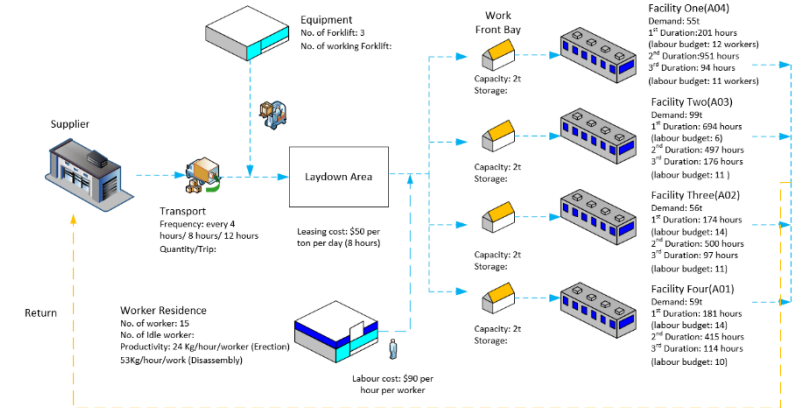
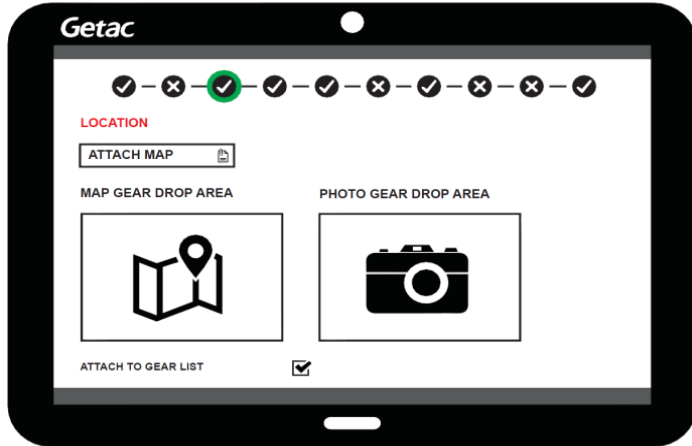


**Australian Government**  

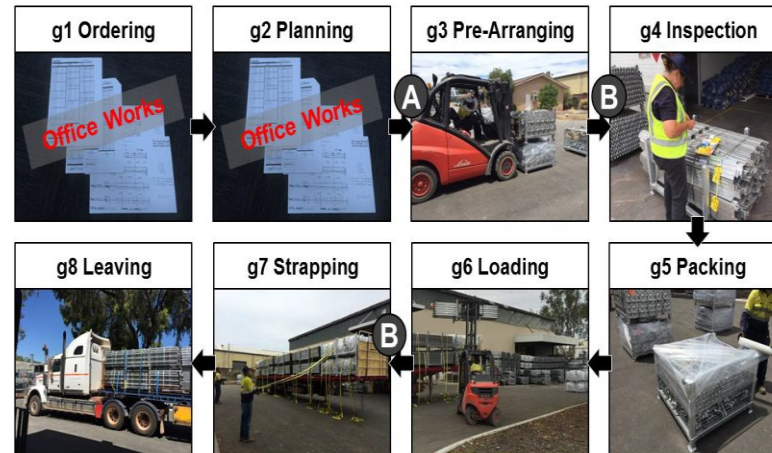
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**Australian Research Council**

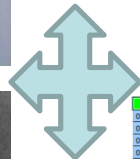
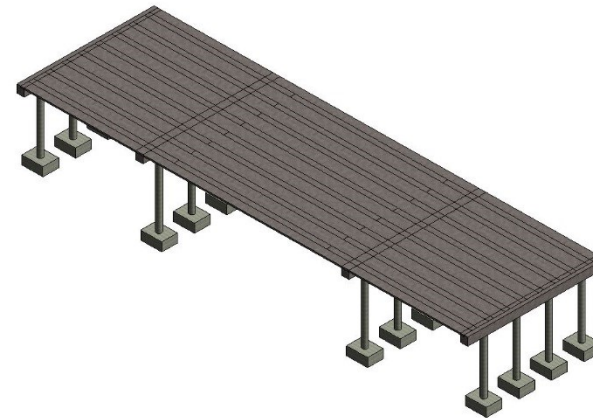
# ARC Project 1: Scaffold Life Cycle Management



- Country of suppliers
- Scaffold Company
  - Australia
  - Canada
  - China
  - Germany
  - HongKong, China
  - India
  - Indonesia
  - Ireland
  - Malaysia
  - Philippines
  - Qatar
  - Singapore
  - United Arab Emirates
  - United Kingdom
  - United States



# ARC Project 2: Bridge Performance Assessment



Date & Time	MRWA SS E1	MRWA SS E2	MRWA SS G1	MRWA SS G2	MRWA SS G3	MRWA SS G4	MRWA SS G5	MRWA SS G6	MRWA SS G7	MRWA SS G8
02/09/2015 10:34:07	0.00303161	0.001205	-0.000947654	0.000613883	0.00052256	0.000236899	0.000573218	0.000392221		
02/09/2015 10:34:07	-0.0030724	-0.000321001	-0.00247156	0.000613883	-0.00405574	-0.0012891	0.000573218	-0.00113378		
02/09/2015 10:34:07	0.00303161	-0.000321001	-0.000947654	0.000613883	0.00052256	-0.0012891	0.000573218	0.000392221		
02/09/2015 10:34:07	0.00105061	-0.001205	0.000578247	0.000613883	0.00204825	0.00176291	0.000573218	0.000392221		
02/09/2015 10:34:07	-2.04E-05	-0.001847	0.000578247	0.000613883	-0.00100374	-0.0028151	0.000573218	0.000392221		
02/09/2015 10:34:07	0.00303161	0.00425701	0.000578247	0.000613883	0.00204825	0.00328891	0.000573218	0.00344422		
02/09/2015 10:34:07	-0.00154638	-0.003373	0.00210425	-0.000912115	-0.00100374	0.000236899	0.000573218	-0.00113378		
02/09/2015 10:34:07	-2.04E-05	-0.001205	0.000578247	0.000613883	0.00052256	0.00176291	0.000573218	0.000392221		
02/09/2015 10:34:07	0.00105061	-0.000321001	0.000578247	0.000613883	0.00052256	-0.0012891	0.000573218	0.000392221		
02/09/2015 10:34:07	-0.0030724	-0.000321001	-0.000947654	-0.000912115	-0.00100374	-0.0012891	0.000573218	0.000392221		
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02/09/2015 10:34:07	-0.00154638	-0.002713	0.000578247	0.000613883	0.00204825	0.00176291	0.000573218	0.000392221		
02/09/2015 10:34:07	-0.00154638	-0.000321001								
02/09/2015 10:34:07	0.00105061	0.001205								
02/09/2015 10:34:07	-2.04E-05	-0.001847								
02/09/2015 10:34:07	0.00105061	-0.001205								
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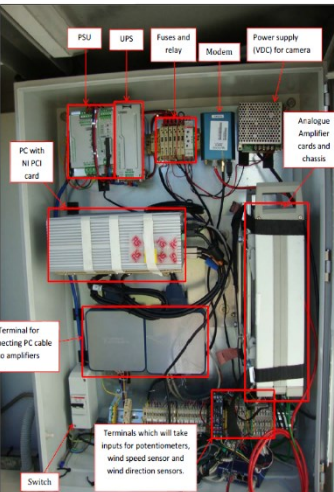
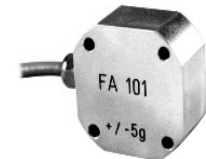
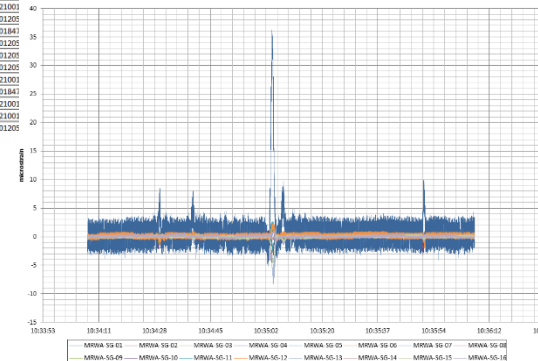


Figure 1: Data Acquisition Enclosure 1

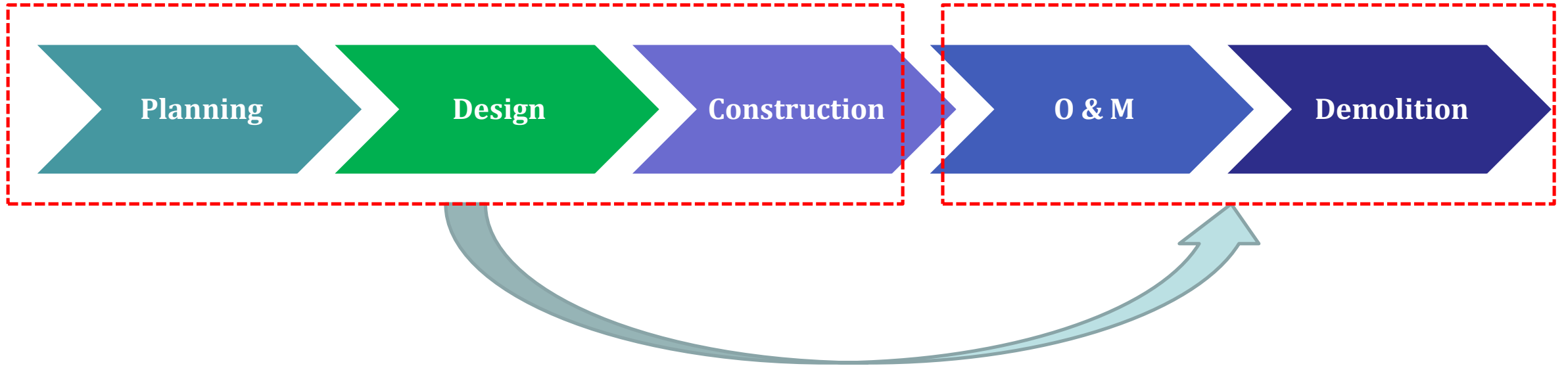


- Topic 1:** Multi-Criteria Optimisation for Sensor Deployment
- Topic 2:** Reserve Capacity Estimation Based on Error Domain Structural Identification
- Topic 3:** BIM Integrated Decision Support System





# From D&C to Asset Management



# Adopting BIM for Facilities Management

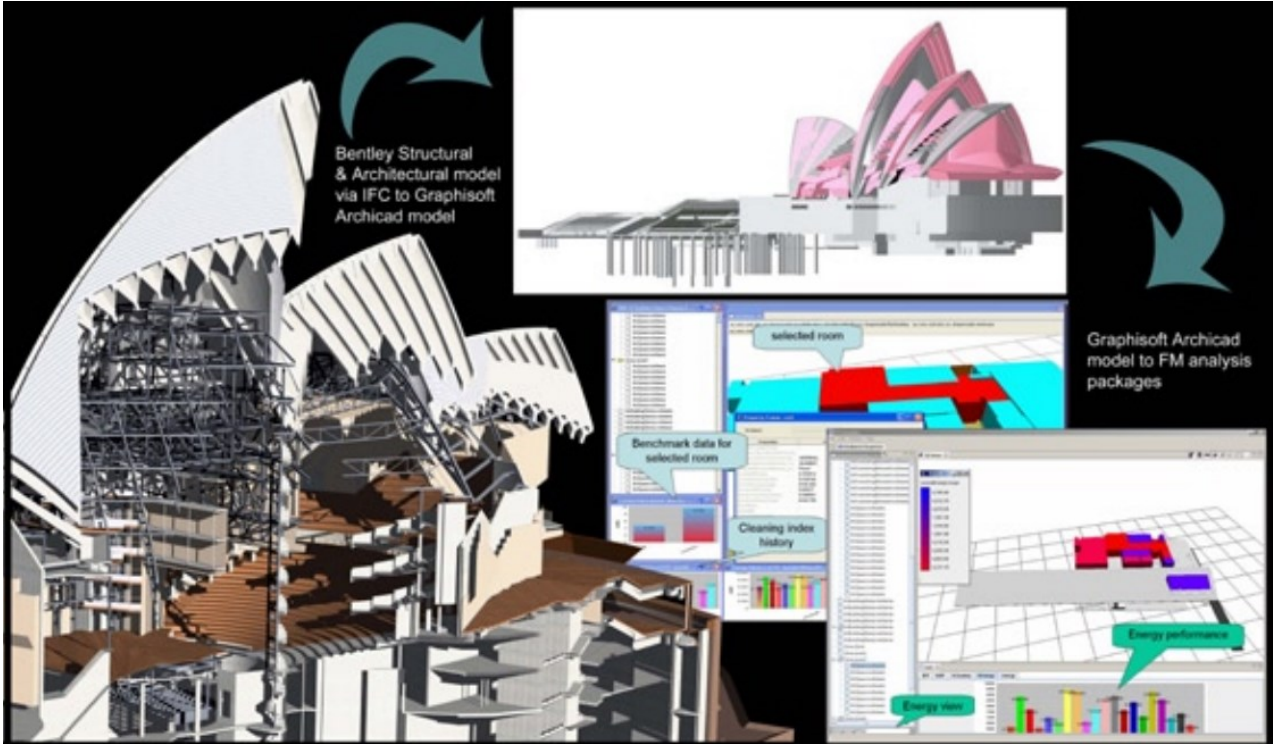


CRC Construction Innovation  
BUILDING OUR FUTURE



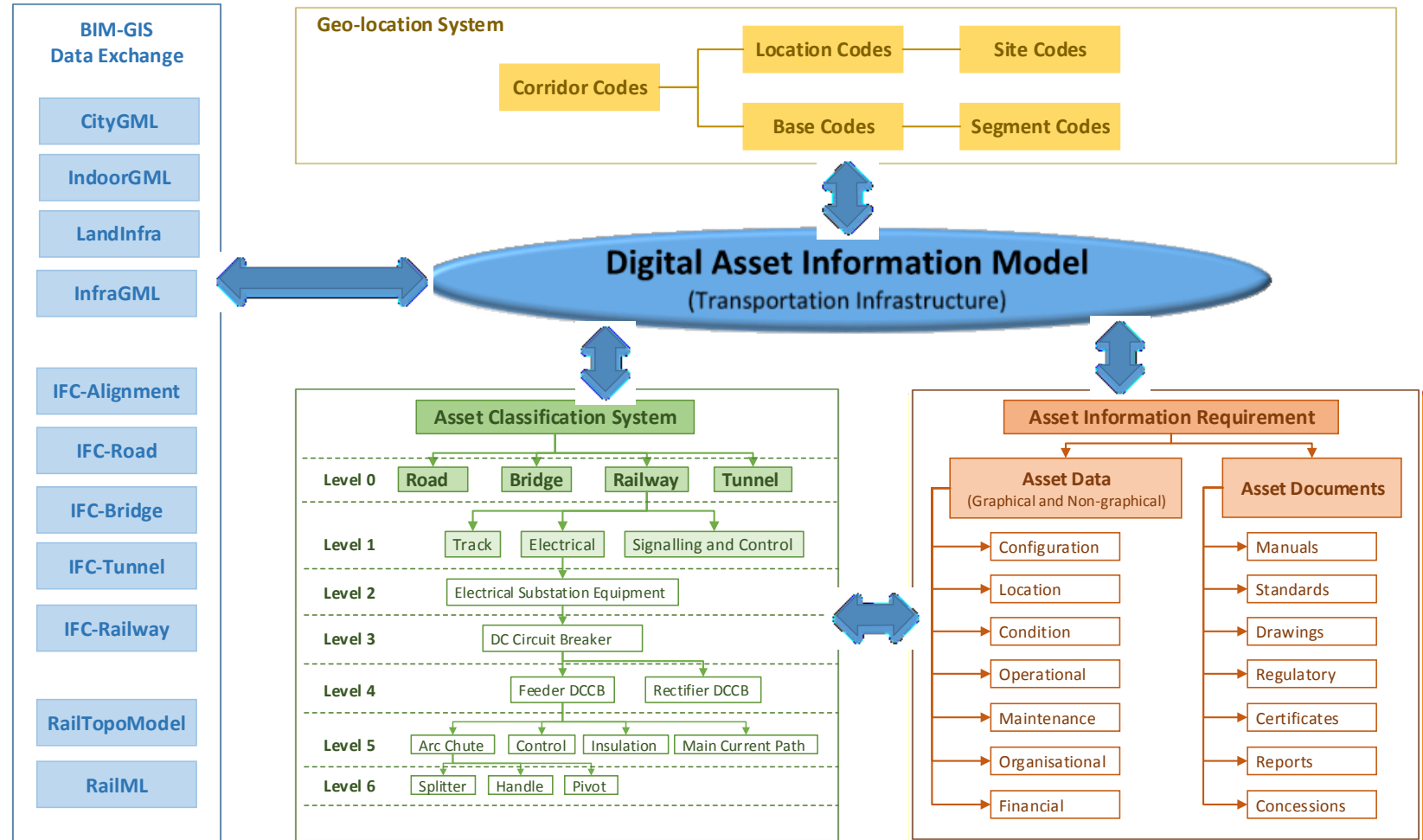
Adopting BIM for facilities management

Solutions for managing the Sydney Opera House

A vertical banner image. At the top is the CRC Construction Innovation logo. Below it is a 3D BIM model of the Sydney Opera House showing its complex structural framework. The bottom section features a photograph of the actual Sydney Opera House building against a blue sky, with a bridge visible in the background.

# Digital Asset Information Model Framework

- Asset Classification System
- Asset Information Requirement
- Asset Information Model
- Asset Information Delivery Manual



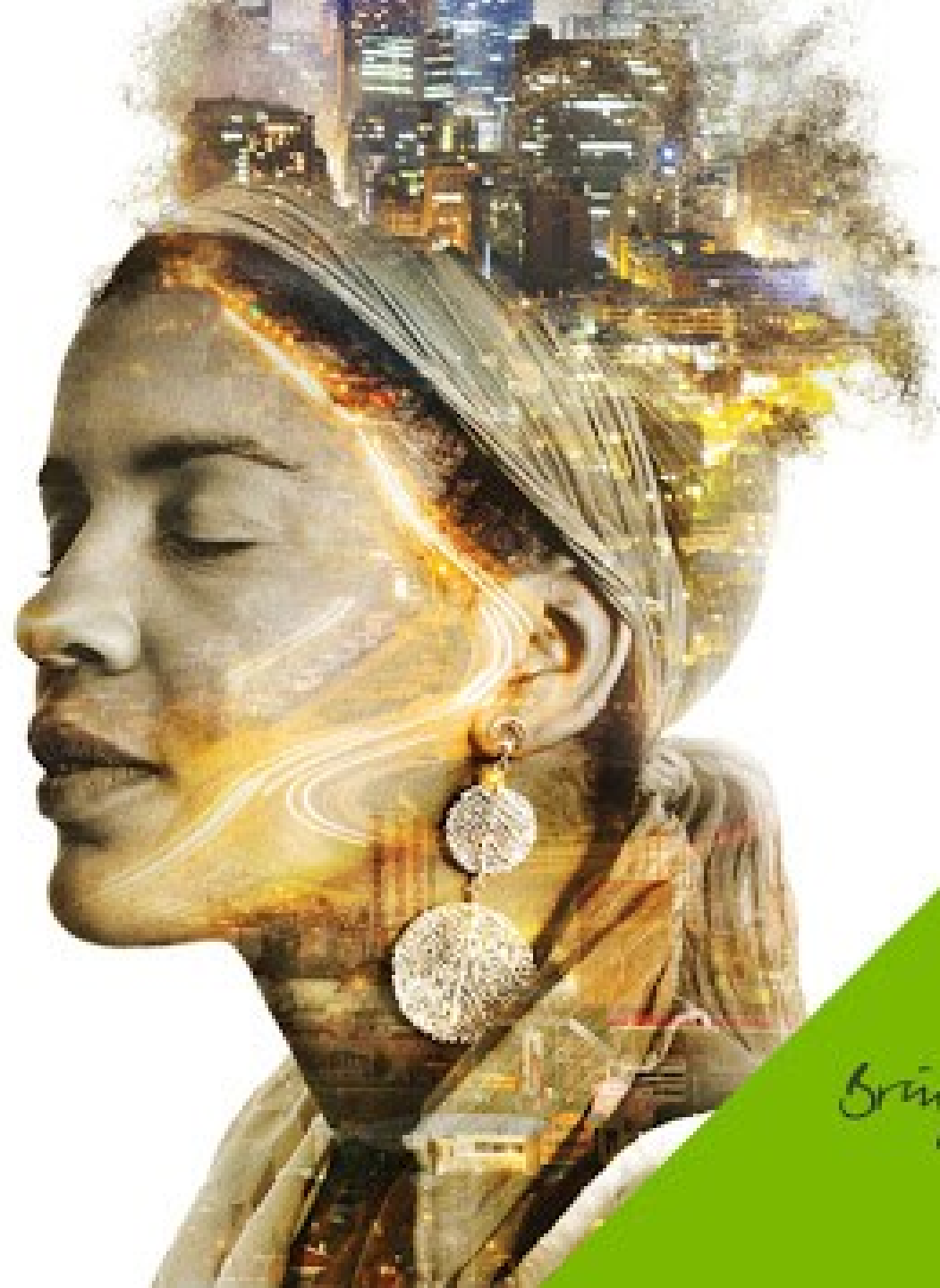
The Aurecon logo features a small green square above the letter 'a' in the word 'aurecon', which is written in a bold, black, sans-serif font.

Leading. Vibrant. Global.

# Will Hackney

*Digital Leader, Infrastructure*

*SBEnc Research Utilisation  
Committee (RUC) Chair*



*Bringing ideas  
to life*





HORIZON 1

HORIZON 2

HORIZON 3



СТЕКЛО









**aurecon**

Thinking


Expertise

News

Projects



**Aurecon** > *Bringing ideas to life*



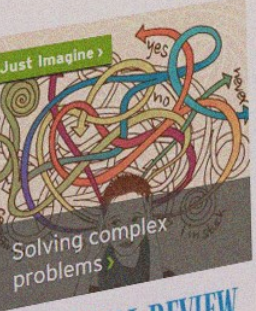
Consulting engineers who bring ideas to life >

**Thinking** >



Improving roadworks' safety & traffic management >

**Just Imagine** >



Solving complex problems >

**Expertise** >

-  Airports
-  Asset management
-  Bridges & civil structures
-  Building design
-  Bulk transport

**FINANCIAL REVIEW**

**CLIENT CHOICE AWARDS 2016**

Aurecon scoops two Financial Review Client Choice Awards

