“Mandates? We don’t need no…”
BIM in Australia

Wesley Benn
RTC Events Management / UNSW / BD Group

RTC EVENTS MANAGEMENT

“A gorgeous calamity in scale”

Lyndsay Faye

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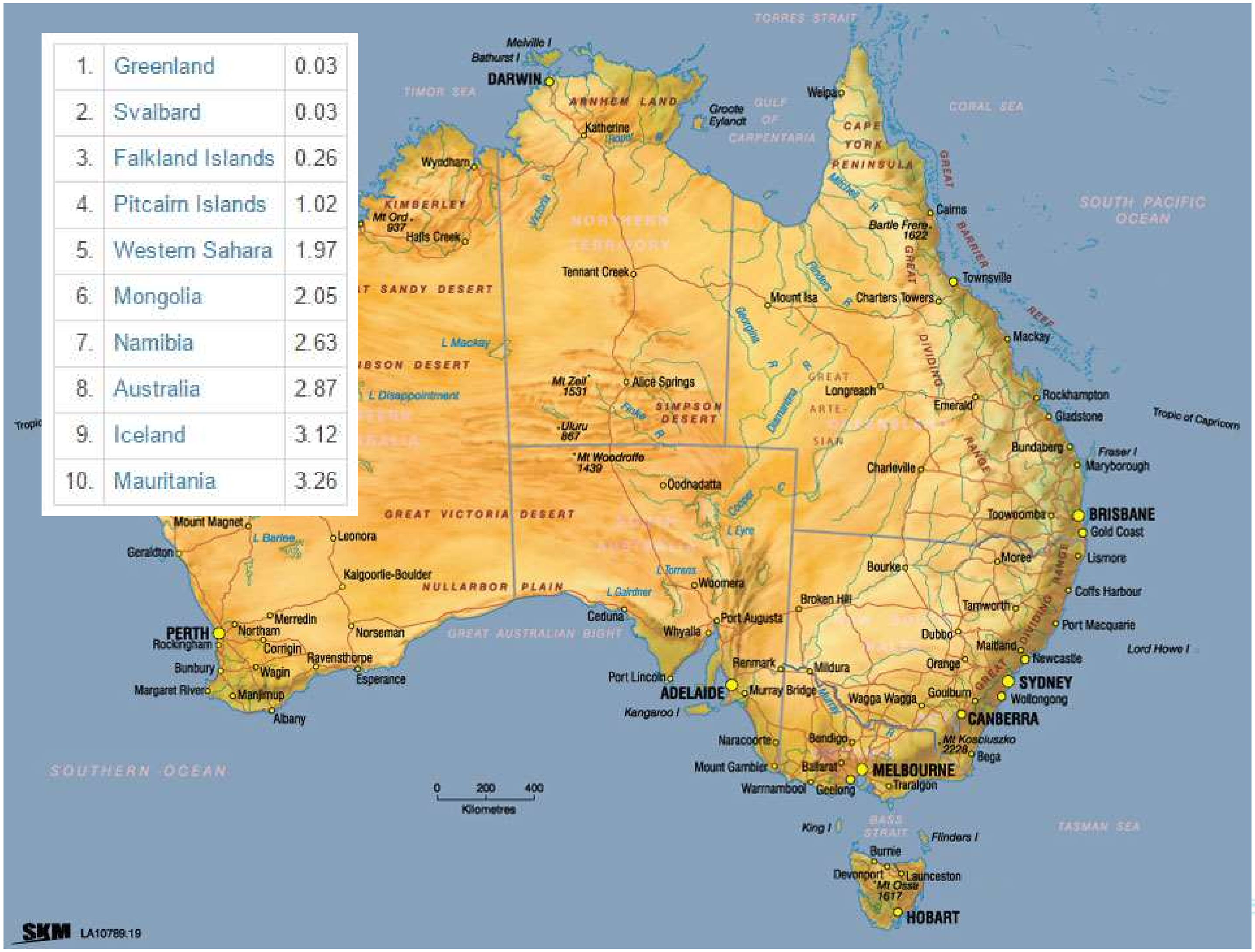
1.	Greenland	0.03
2.	Svalbard	0.03
3.	Falkland Islands	0.26
4.	Pitcairn Islands	1.02
5.	Western Sahara	1.97
6.	Mongolia	2.05
7.	Namibia	2.63
8.	Australia	2.87
9.	Iceland	3.12
10.	Mauritania	3.26



Australia

Landmass:

7,692,024km^2

Population:

23.9 million

Denmark

Landmass:

43,094km^2

Population:

5.7 million

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“The Tyranny of Distance”

Geoffrey Blainey

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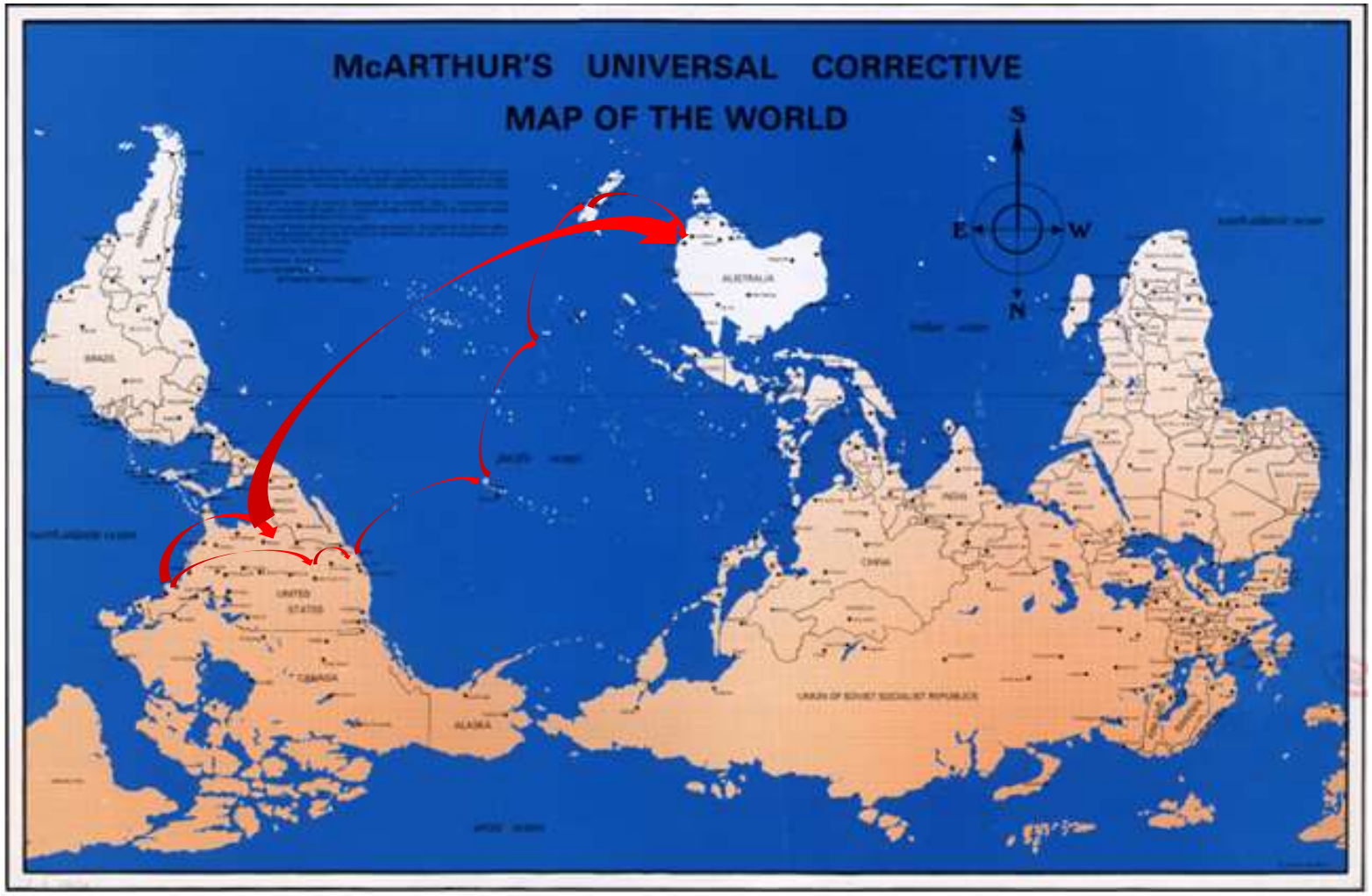
Anna Creek Station:

16,000 Cattle

19 staff

24,000km^2



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EMERGENCY
Emergency Patient Parking
Main Entrance
Physician Parking
GH SCHOOL

CARING FOR OUR COUNTRY

REVIT RTC TECHNOLOGY CONFERENCE

- Victoria
  - Department of Housing "working on a framework"
  - 2013 Government created a BIM based RFP
  - Pilot projects have commenced in 2015

- New South Wales
  - CSI has reviewed NSW BIM documentation
  - TfNSW started 3 years ago, stalled, has restarted

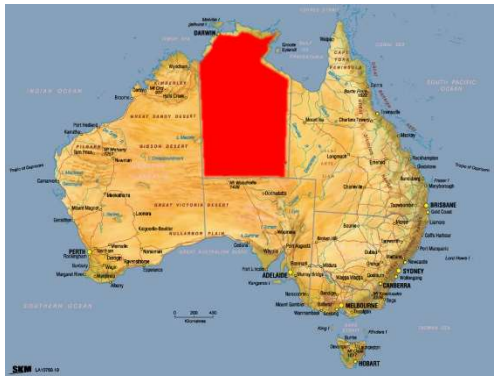
Victoria

New South Wales

- Queensland
  - Department of Health
  - Project Services Group
- Northern Territory
  - Ummm….
  - “looking at a mandate”

Queensland

Northern Territory



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- West Australia
  - BIM briefing document developed (via PWC)
  - Applied to major infrastructure projects
  - Perth Children's Hospital
  - Resource sector

- South Australia
  - Road Map to Mandate - 2012
  - ……
  - Shut down in 2014

West Australia

South Australia

- Tasmania
  - BIM initiative commenced
  - Never realised

- ACT – the Australian Capital Territory
  - Seat of the Federal Government
  - And, ummm…..
  - Let's move on….

- Federal Agencies
  - Defense
    - Defense housing has been an active user of BIM, internally
    - Promised BIM based contracts in 2012, still waiting
  - Health
    - Excellent early progress
    - Centred on Queensland and South Australia
    - Has largely died out as funds disappeared for projects

Tasmania

ACT

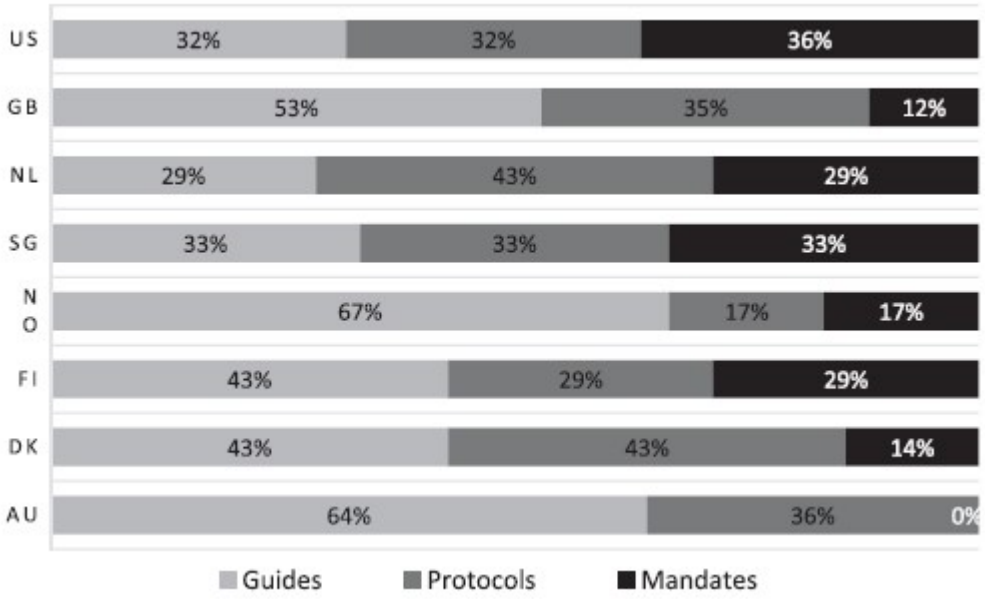
Federal Government

- Prime Minister Tony Abbott
  - Avowed climate sceptic
  - Endorsed coal as the future
  - Considers windmills an ‘eyesore’
  - Removed funding to research and innovation groups
  - Reintroduced knighthoods, and knighted Prince Phillip
  - Shut the clean energy fund – which was making a profit!
  - Demoted the science ministry from a cabinet to minor position
  - And on
  - And on…
  - And on
- Traditional Industry Organisations
  - AIA / ICE
  - buildingSMART
  - BEIIC
  - NATSPEC

Australia

REVIT RTC TECHNOLOGY CONFERENCE

- New Zealand
  - Government more active
  - Include BIM requirements in RFP
  - No longer trying to match Australia
  - Have surpassed Australia
  - Now following the UK model



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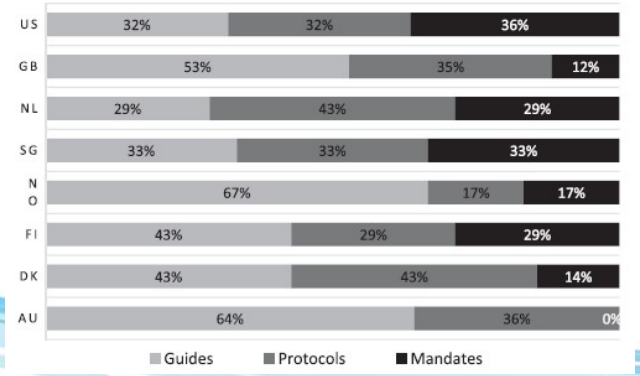
WOW!

- Tony Abbott isn't our Prime Minister
  - Malcolm Turnbull, Prime Minister of Australia
  - New high-level government positions in Science, Innovation, IT
  - Reinstituted funding

- That distance thingy
  - Australia has a mindset of fierce independence
  - Everyone else is too far away to help…
  - So we build it ourselves
  - New economy associations
  - Industry derived guidelines and protocols



ANZRS Australian and New Zealand Revit Standards

collaborate

RTC EVENTS MANAGEMENT

BIM-MEP AUS

BrisBIM Technology Innovation in the Built Environment

acif Australian Construction Industry Forum

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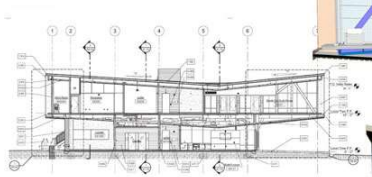
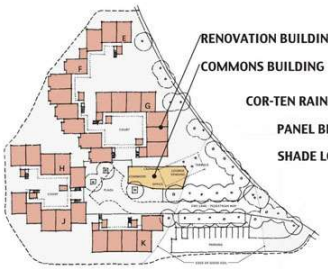
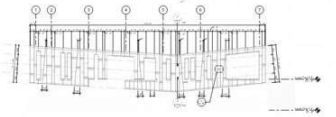






INTEGRATION/

This project is for the redevelopment and extension of the Faculty of Engineering (FoE) City campus buildings.

The buildings are intended to provide accommodation for the co-location of the five Engineering departments; two of which are currently geographically spread across the City campus. This will see the Electrical & Computer Engineering and Engineering Science Departments returned to the Sector. It is envisaged that these moves will provide increased opportunity for inter-disciplinary interaction and collaboration with the potential benefit of growth in externally funded research.

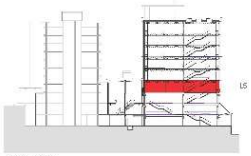
The addition to the existing building involves demolition of the current timber roof structure and construction of a new structural steel exoskeleton which wraps around the existing five level building and adds an additional five levels and plant.

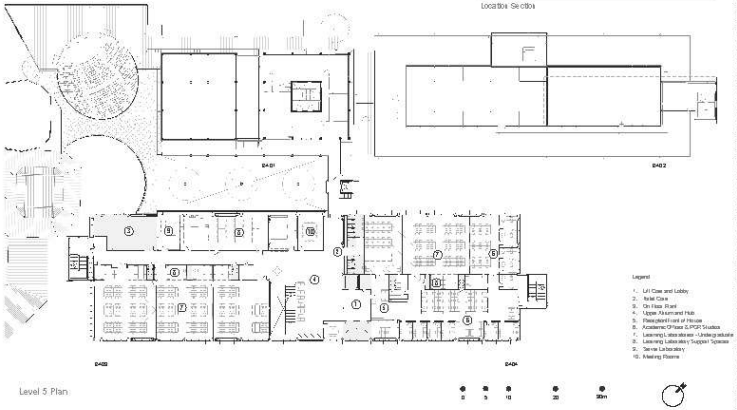
An accurate existing survey file was was created in Revit Architecture and used as a base. Massing exercises within Revit Architecture were undertaken to define the scope of the building and then Sketch Up was utilised to generate design iterations for the facade which were then 'live linked' into the Primary Revit file to develop floor plans, sections and elevations.

Renderings were created with a hybrid of Revit and Sketchup geometry and post production completed in Photoshop.

All design consultants are working in Revit, and files are transfered between offices via FTP on a regular agreed basis.

As the portions of the design become confirmed, the Sketch Up Facade model is slowly being replaced with Revit geometry.





Level 5 Plan

The common room looking towards the upper Atrium and Hub.

The upper Atrium & Hub to the research & innovation levels showing the stairway.

The learning corridor looking towards the level 3 breakout and Hub.

Upper atrium knob with meeting spaces.

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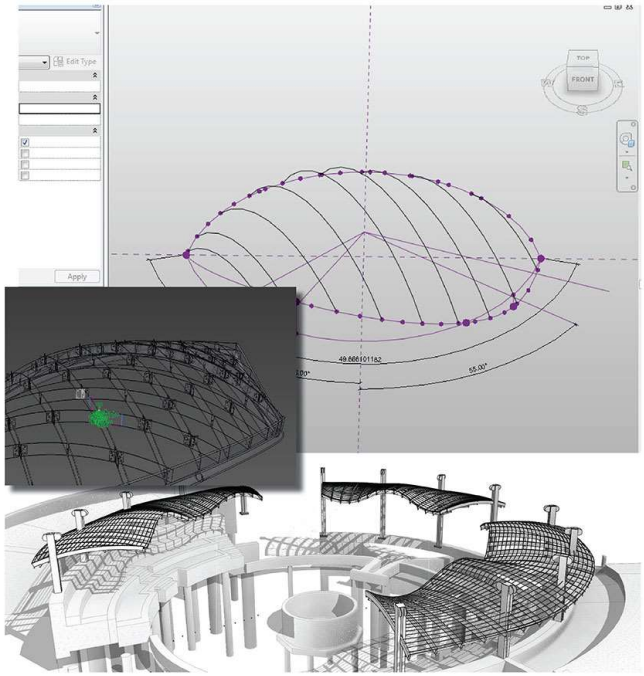
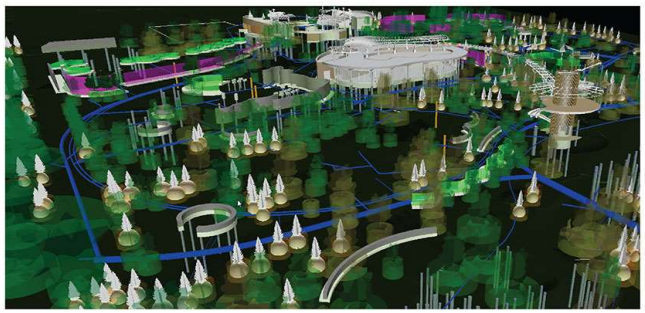
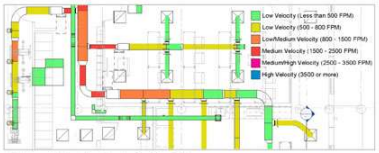
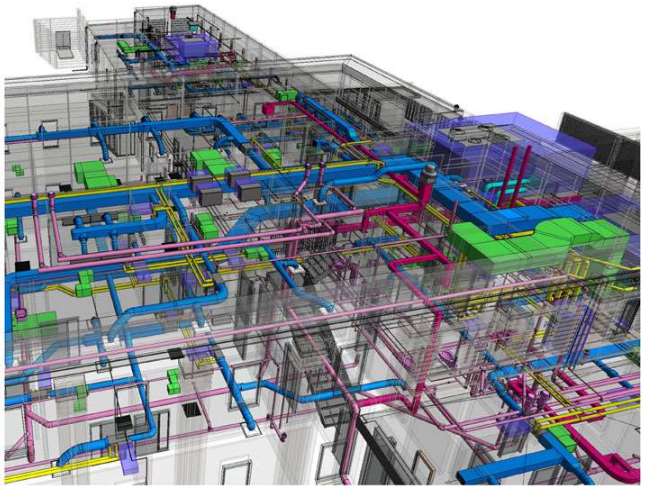


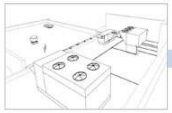




Airflow Velocity Analysis (*Revit*)

Lighting Analysis (*ElumTools using Revit*)





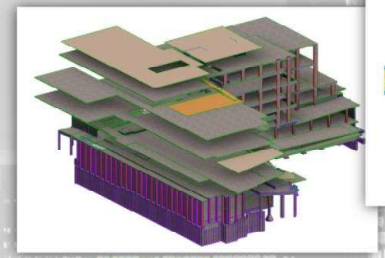
Design Concept

Complete Coordination

Accurate Construction

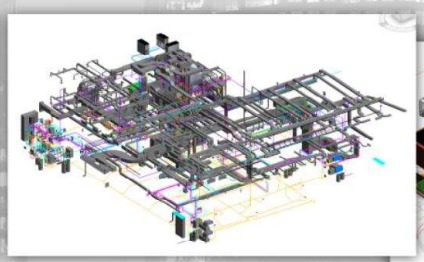
REVIT RTC TECHNOLOGY CONFERENCE

INTEGRATION REMAI ART GALLERY OF SASKATCHEWAN

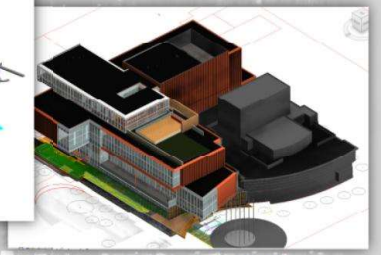


REVIT STRUCTURE
CONCRETE

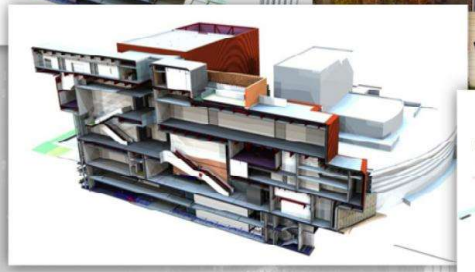
TEKLA STRUCTURES
STRUCTURAL STEEL

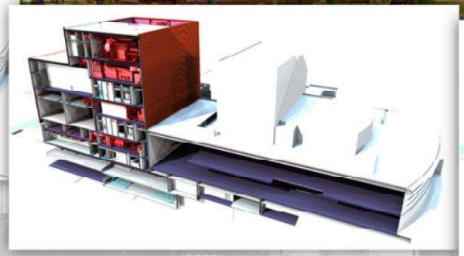


REVIT MEP
MECHANICAL



REVIT ARCHITECTURE
ARCHITECTURAL





INTEGRATED MODEL SECTIONS

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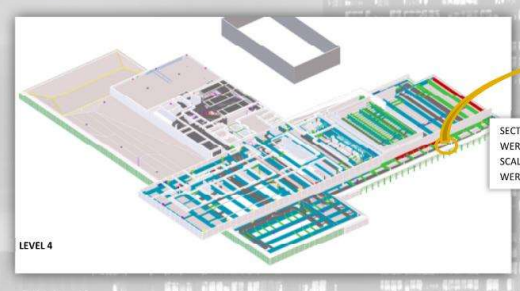
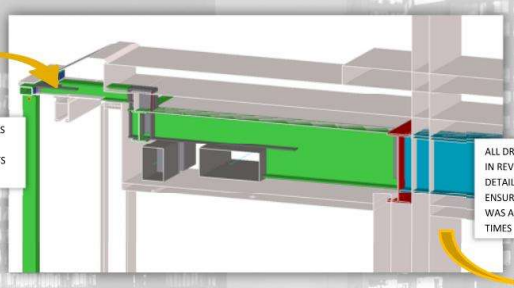
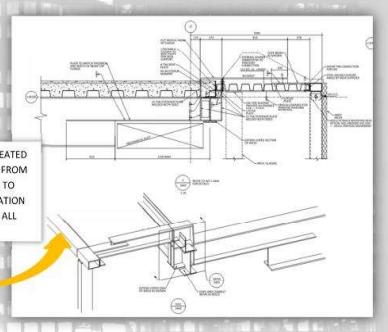
INTEGRATION REMAI ART GALLERY OF SASKATCHEWAN

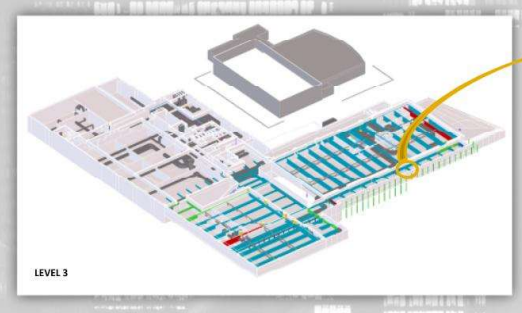


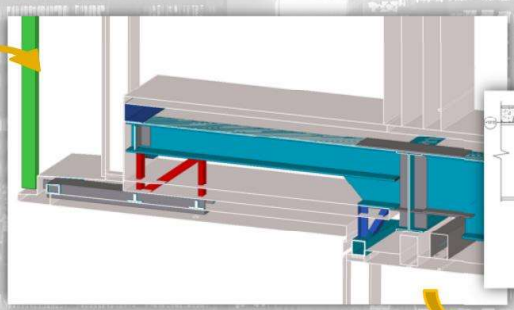
SECTIONS AND CONNECTIONS WERE DETAILED TO PRECISE SCALES TO ENSURE CONCEPTS WERE ACHIEVABLE

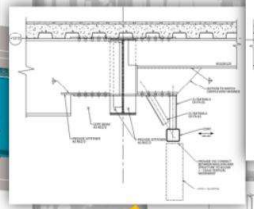


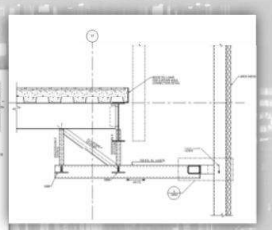
ALL DRAWINGS CREATED IN REVIT DIRECTLY FROM DETAILED MODELS TO ENSURE COORDINATION WAS ACHIEVED AT ALL TIMES

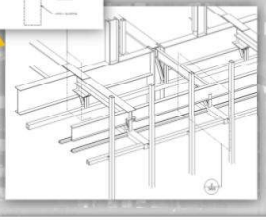


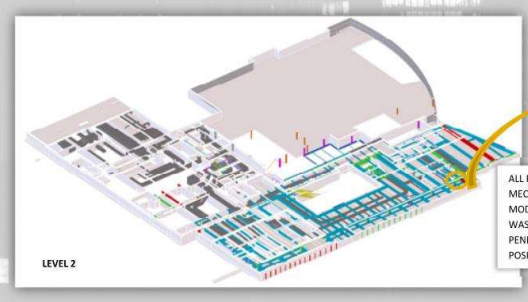




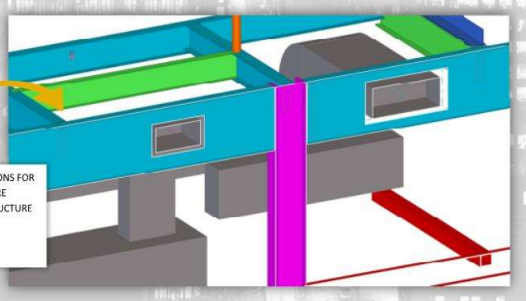








ALL REQUIRED PENETRATIONS FOR MECHANICAL SYSTEM WERE MODELED TO ENSURE STRUCTURE WAS ADEQUATE AND PENETRATIONS PROPERLY POSITIONED



OBJECTIVES ACHIEVED:

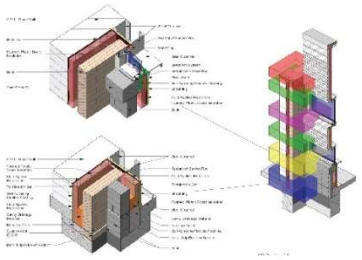
→Fully integrated model and documents.

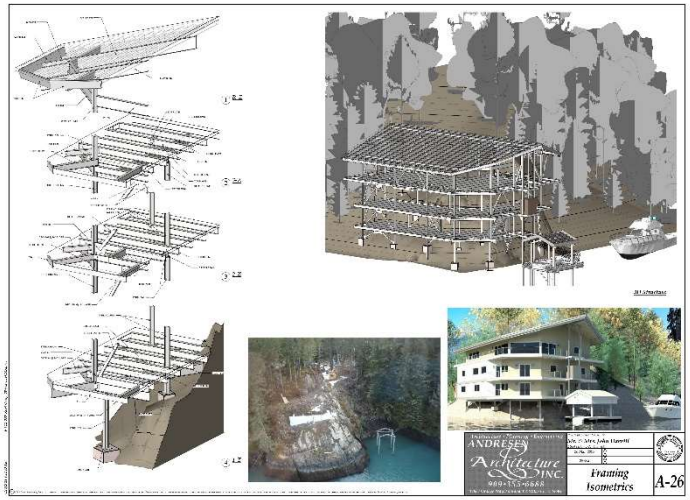
→ Internal workflows developed to make Revit work effectively with our structural analysis software.

→ The basis for steel fabrication is complete.

→ Proved that Revit is capable of producing documents from other model sources with the advantage of keeping all sheets in a single Revit file.

Façade Installation Drawings





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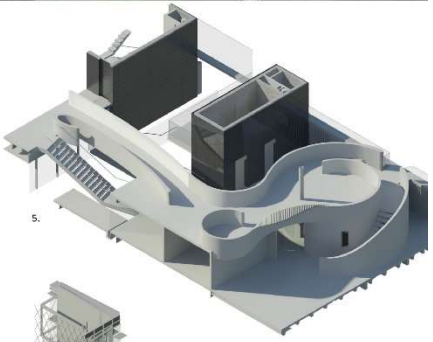
2.

3.



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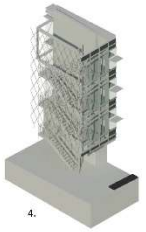

4.

Facade and Circulation Exploration:
Facade and circulation exploration (Figures 2, 3, 4 & 5) native Revit renders. Figure 1 rendered in 3dsMax Design using an FBX file exported from the Revit Model.

Steelwork & Concrete Quantities

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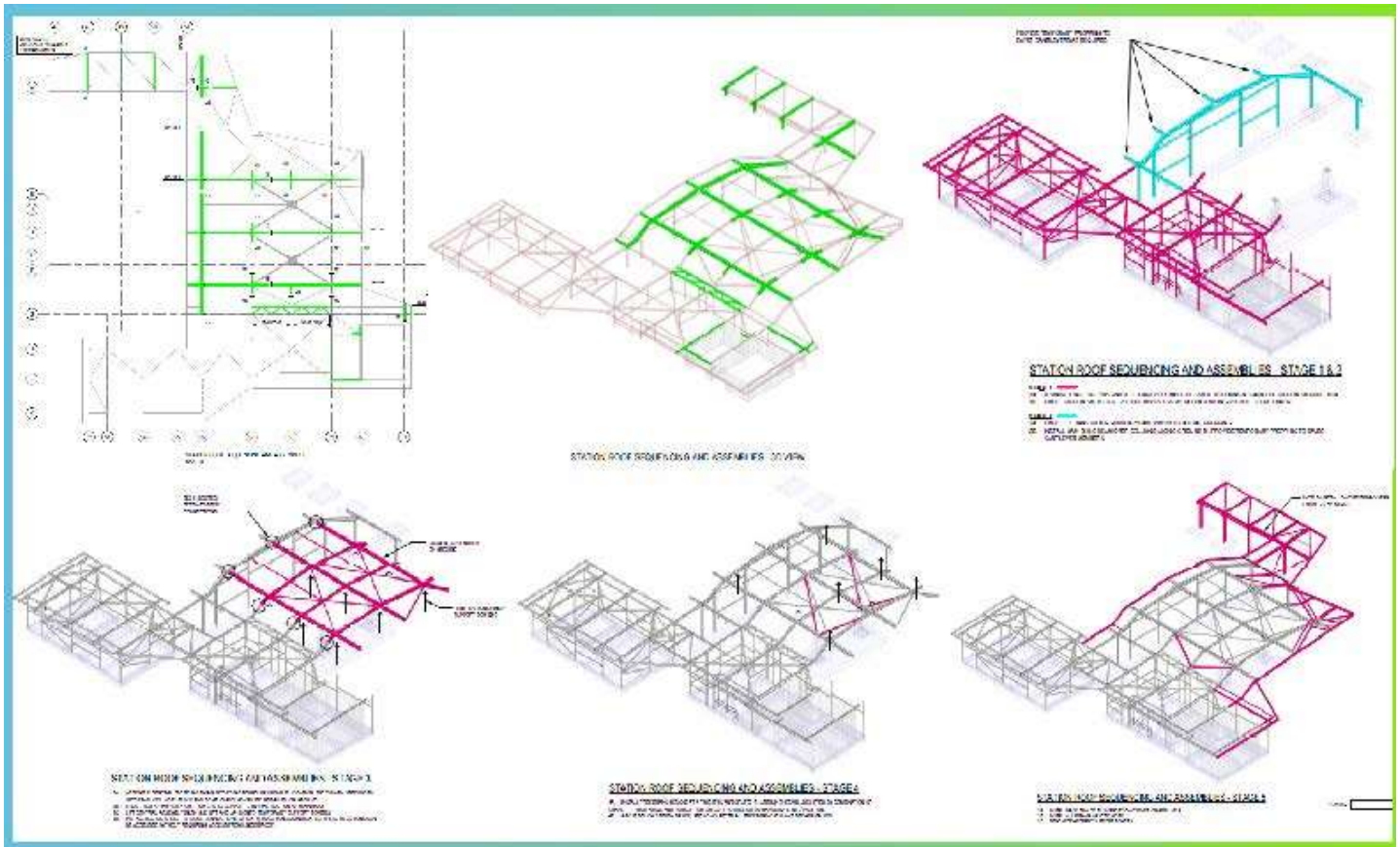

Steelwork Roof Sequencing
Welded Members & Bolted Members

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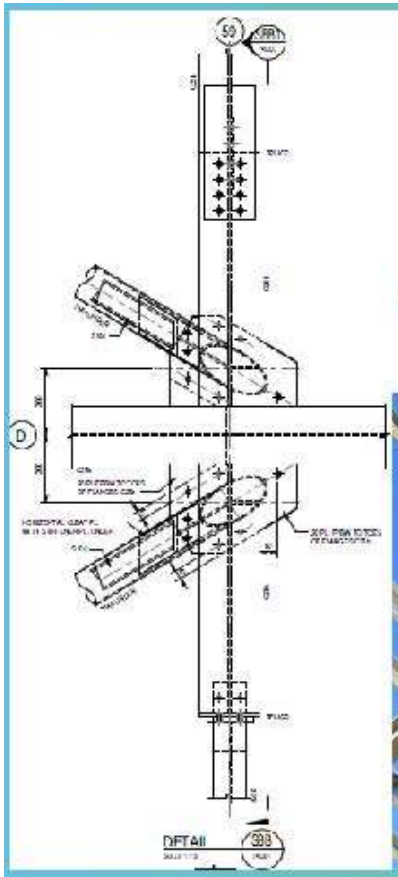
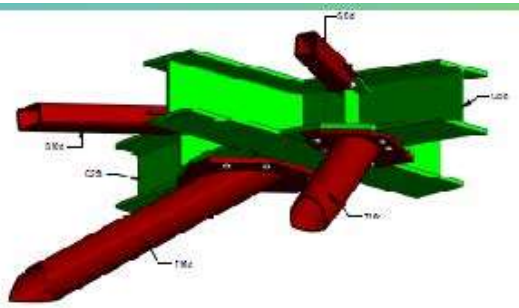
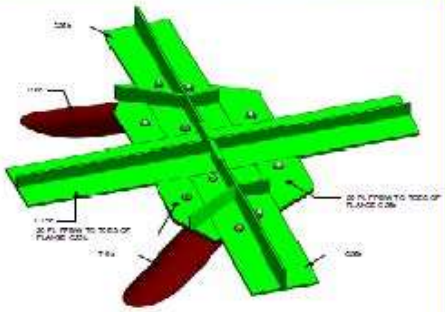




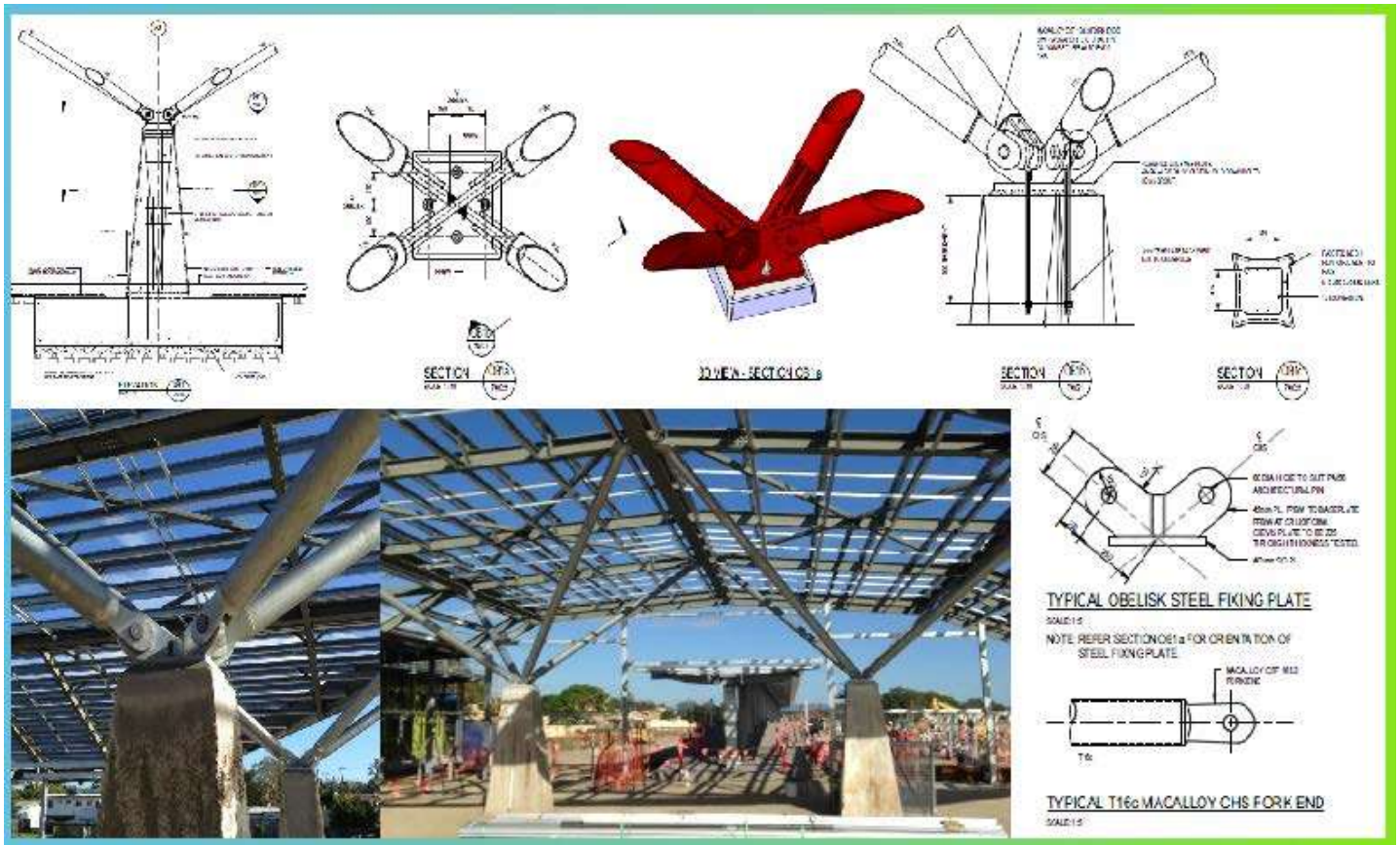
3D VIEW - DETAIL SBB



3D VIEW - DETAIL SBB TREE COLUMN TOP PLATE DETAIL

Steelwork Roof Structure Details & Site Photos

REVIT RTC TECHNOLOGY CONFERENCE



Steelwork Roof Supports Details & Site Photos

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KUALA LUMPUR
CONVENTION CENTRE
SKYDECK

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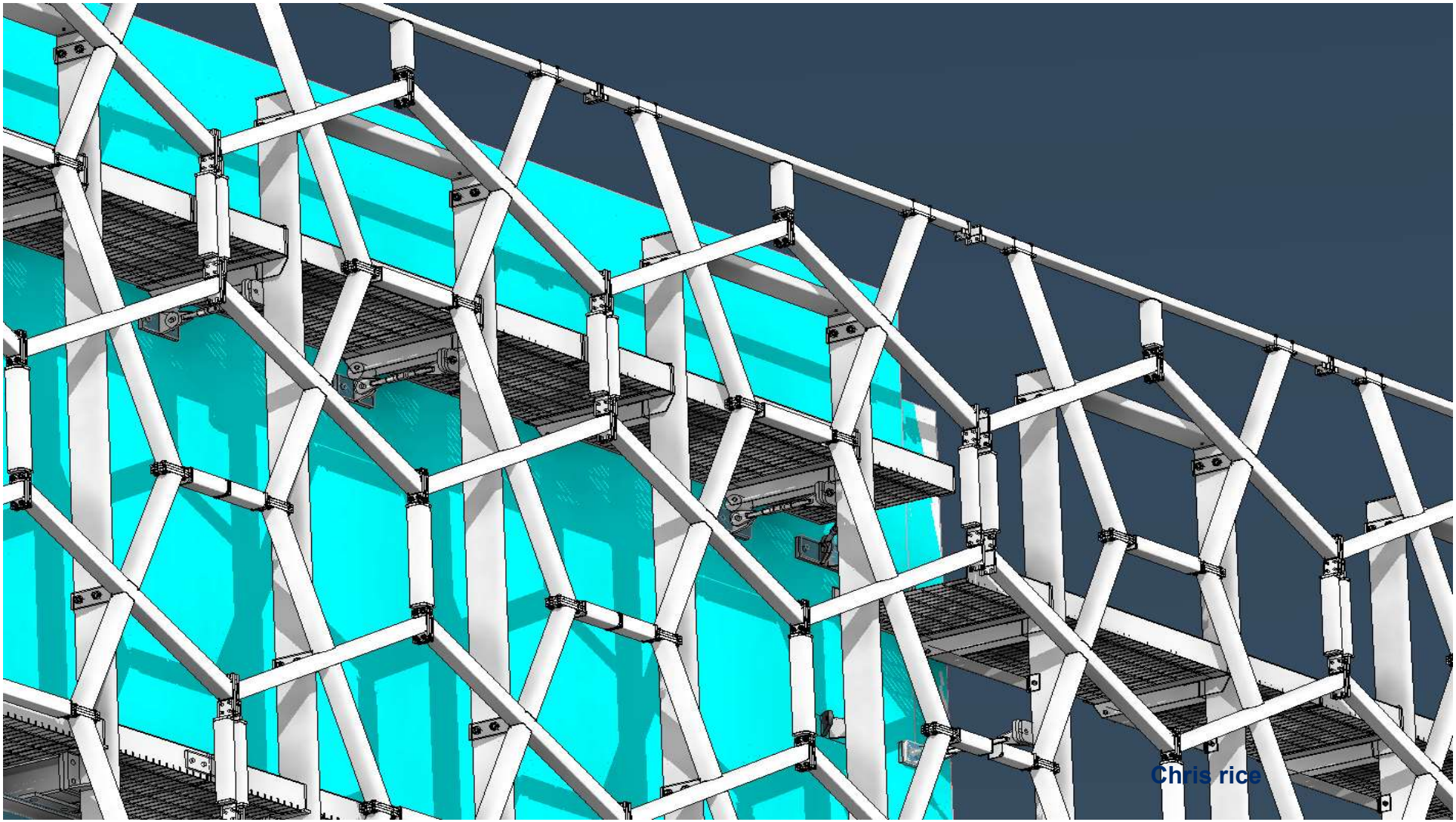
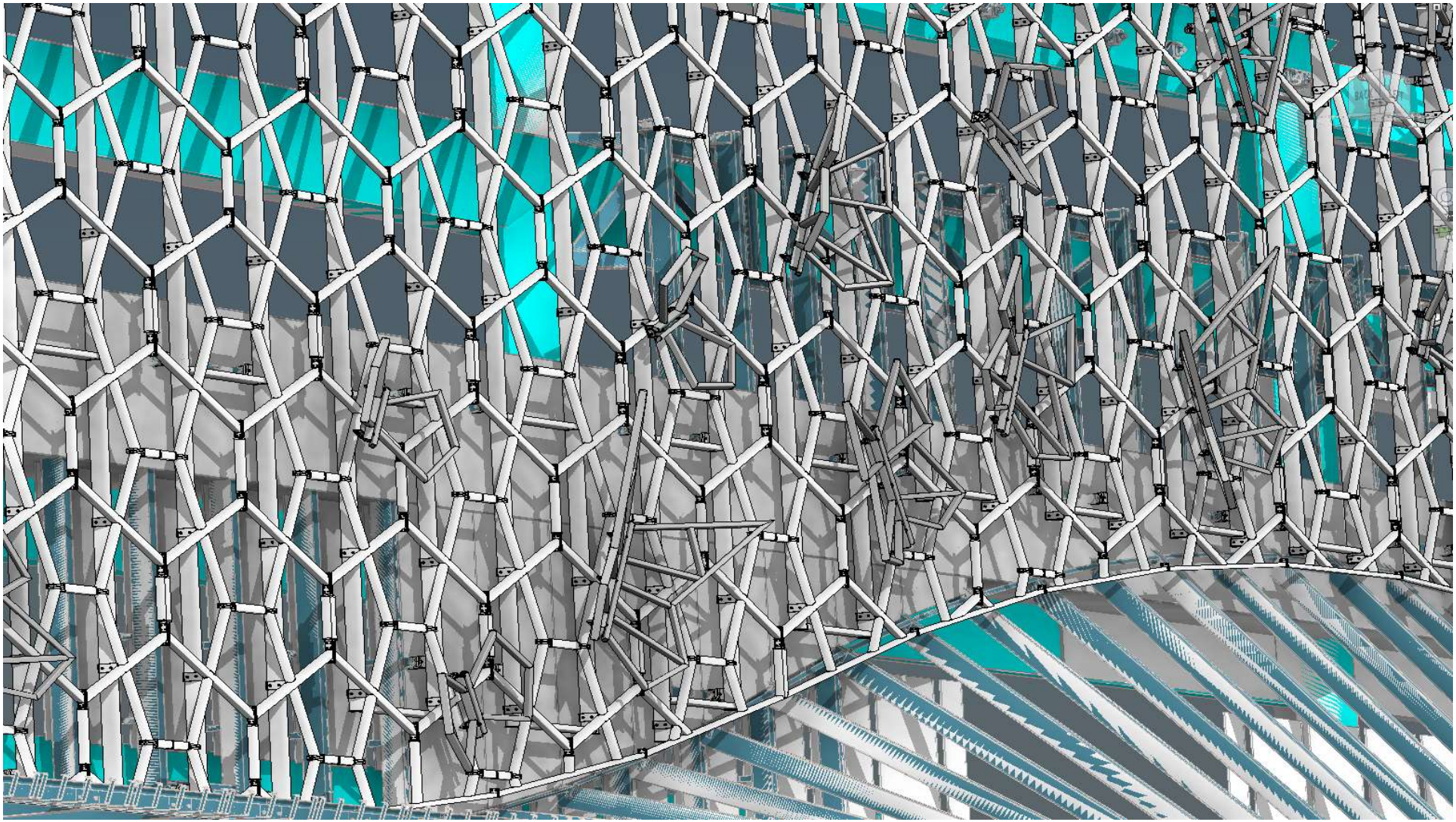
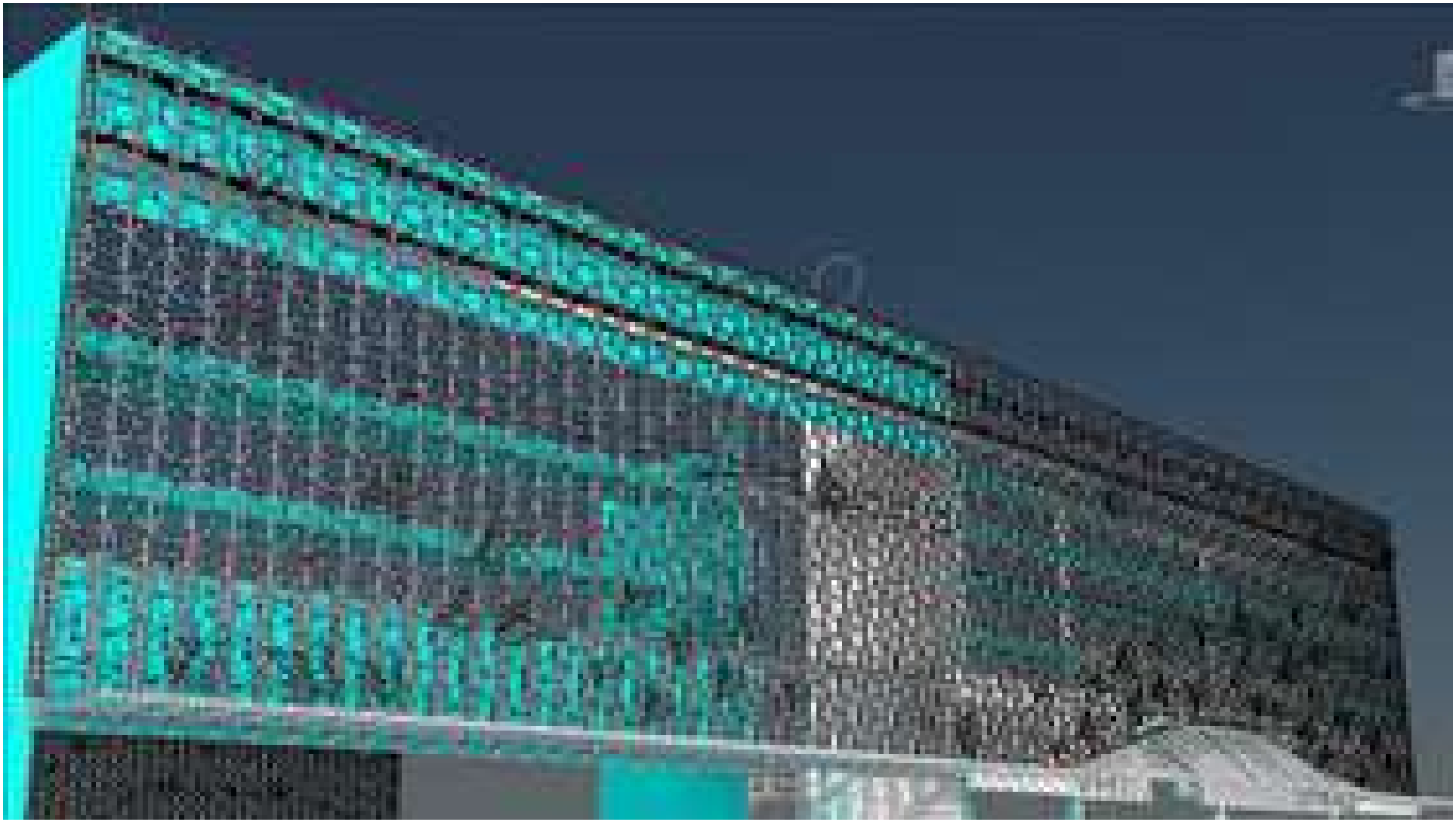

Chris rice





Port Lincoln Airport New Terminal

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Port Lincoln Airport New Terminal

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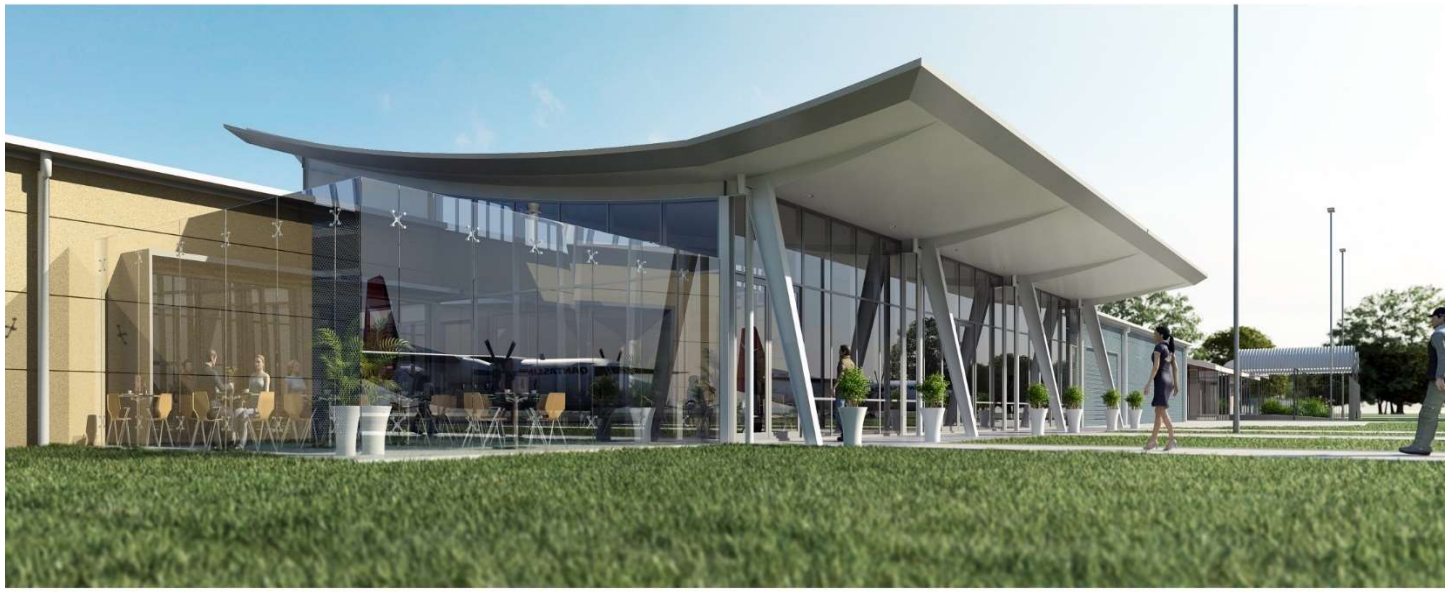

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- Tony Abbott isn't our Prime Minister
  - Malcolm Turnbull, Prime Minister of Australia
  - New high-level government positions in Science, Innovation, IT
  - Reinstituted funding
- That distance thingy
  - Australia has a mindset of fierce independence
  - Everyone else is too far away to help…
  - So we build it ourselves
  - New economy associations
  - Industry derived guidelines and protocols
- Australia's BIM culture is "bottom up and middle out"

ANZRS
Australian and New Zealand Revit Standards

collaborate

RTC EVENTS MANAGEMENT

BIM-MEP AUS

BrisBIM
Technology Innovation in the Built Environment

acif
Australian Construction Industry Forum

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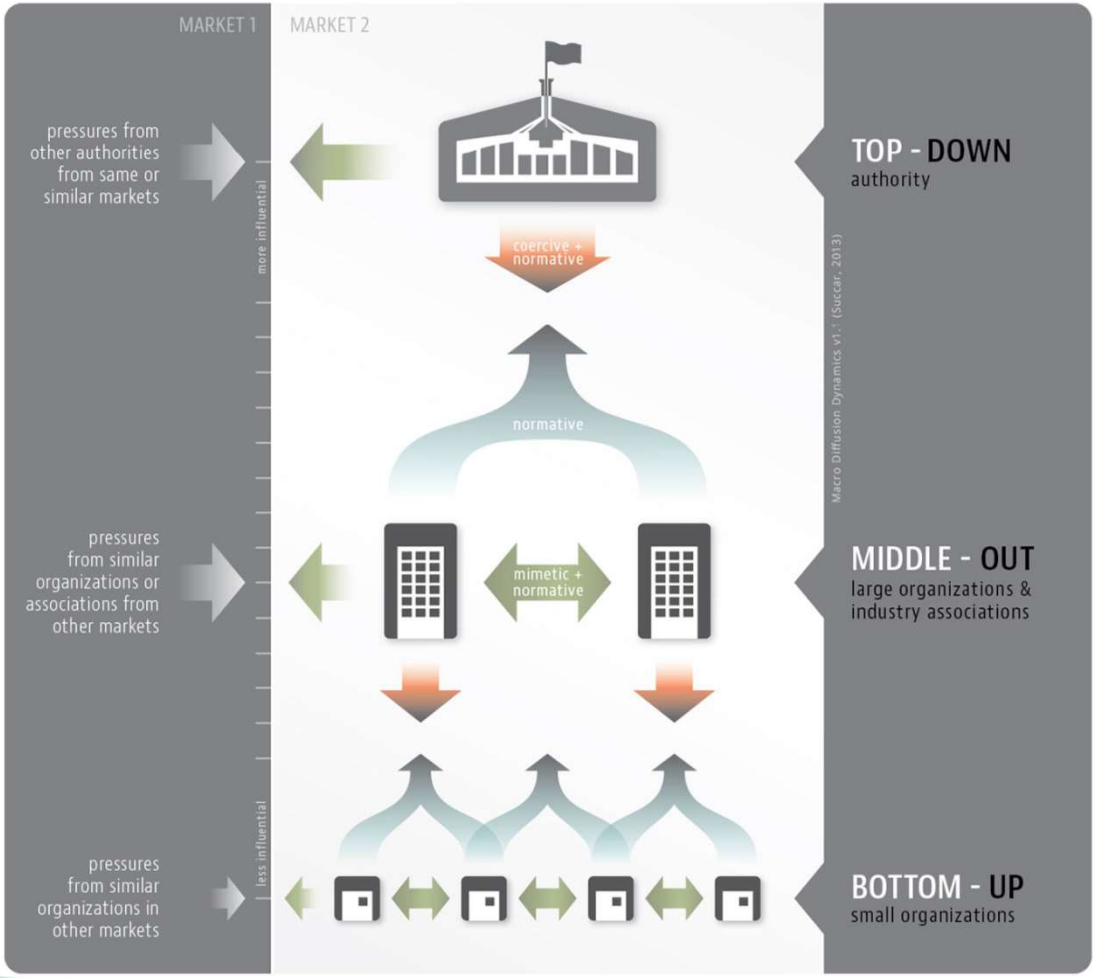
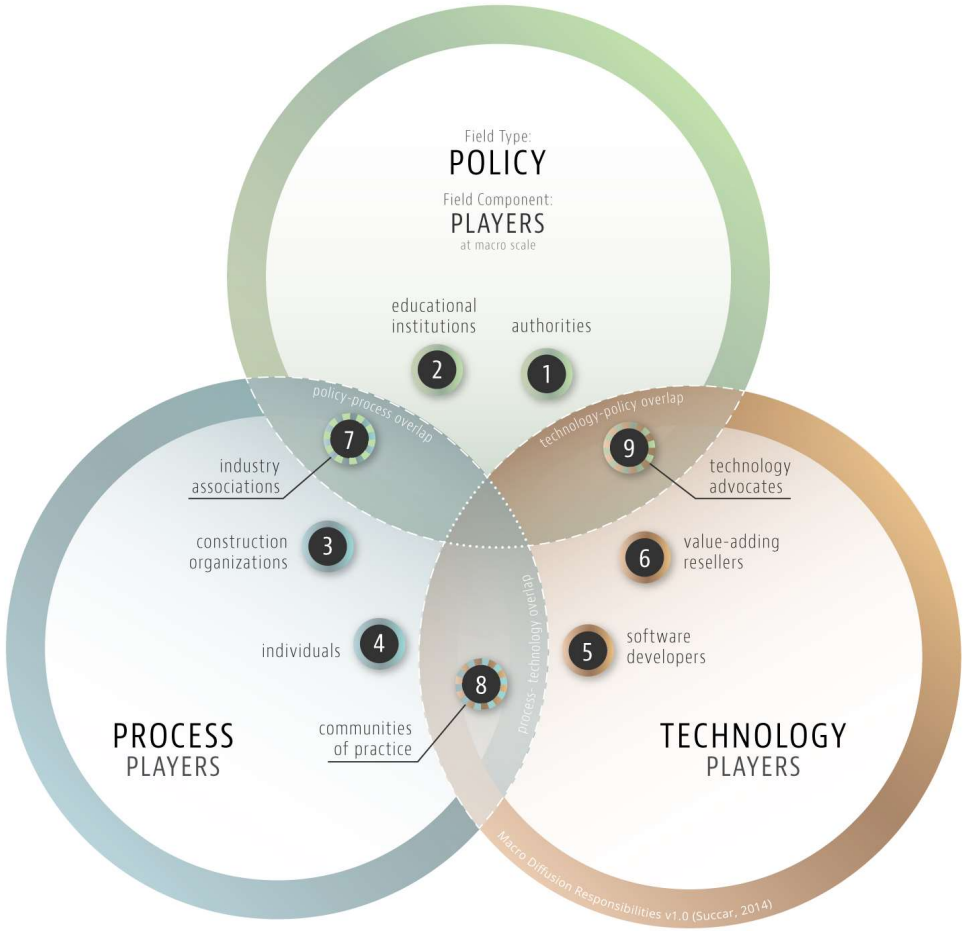


Courtesy of M Kassem, B Succar



Courtesy of M Kassem, B Succar

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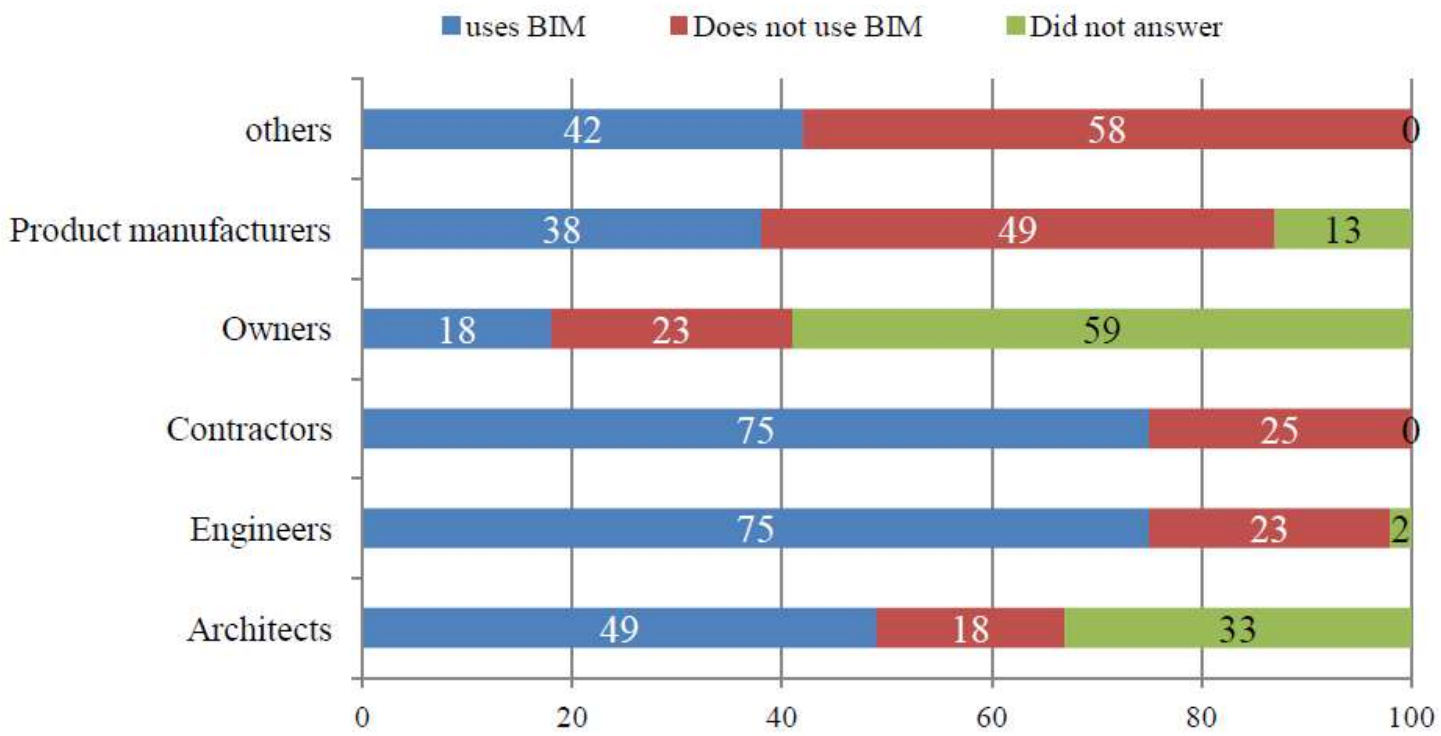

Figure 2: BIM adoption rates in Australia (adapted from BEIIC, 2010)

Revit Technology Conference

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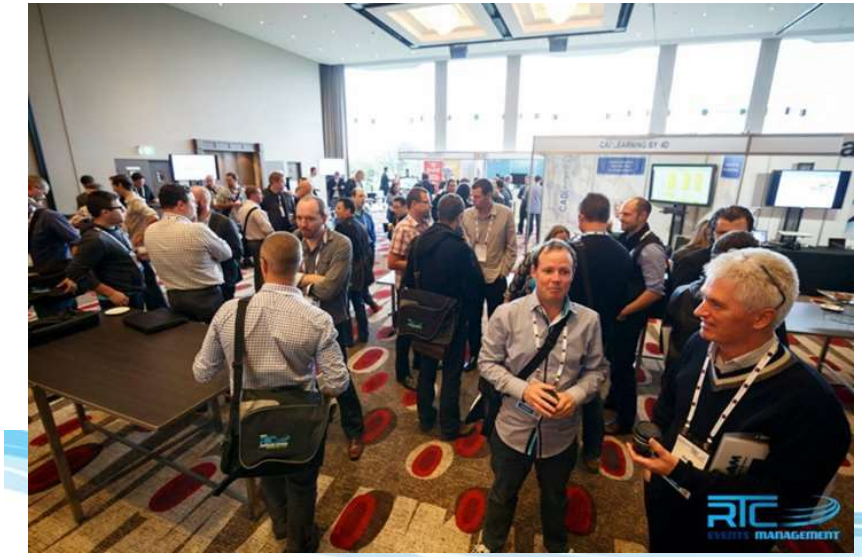

The Crowd….

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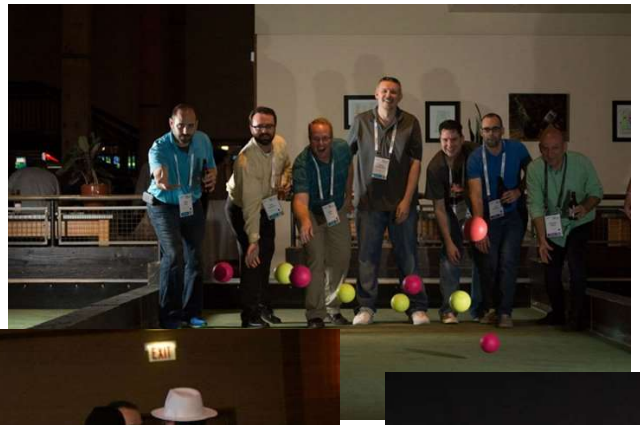
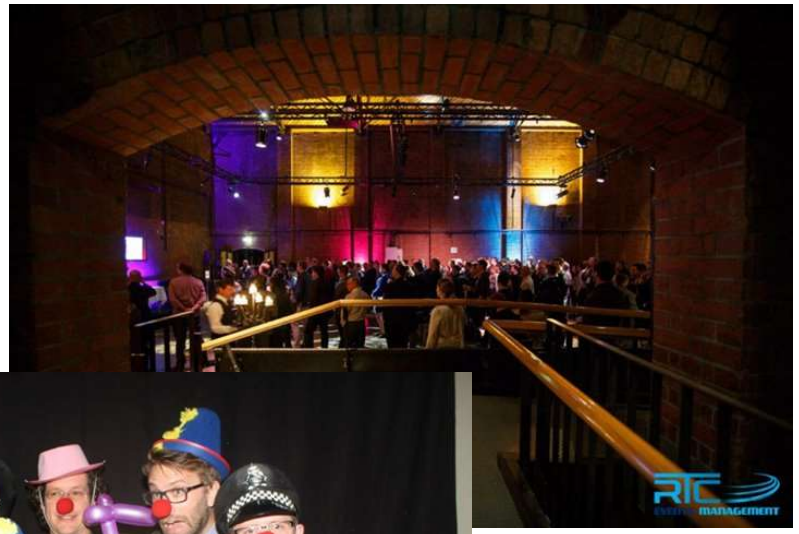
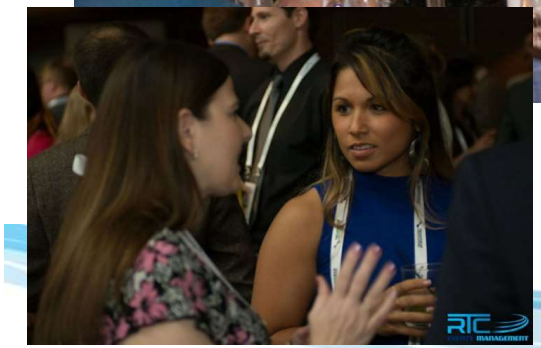
The Classes….







The Community….

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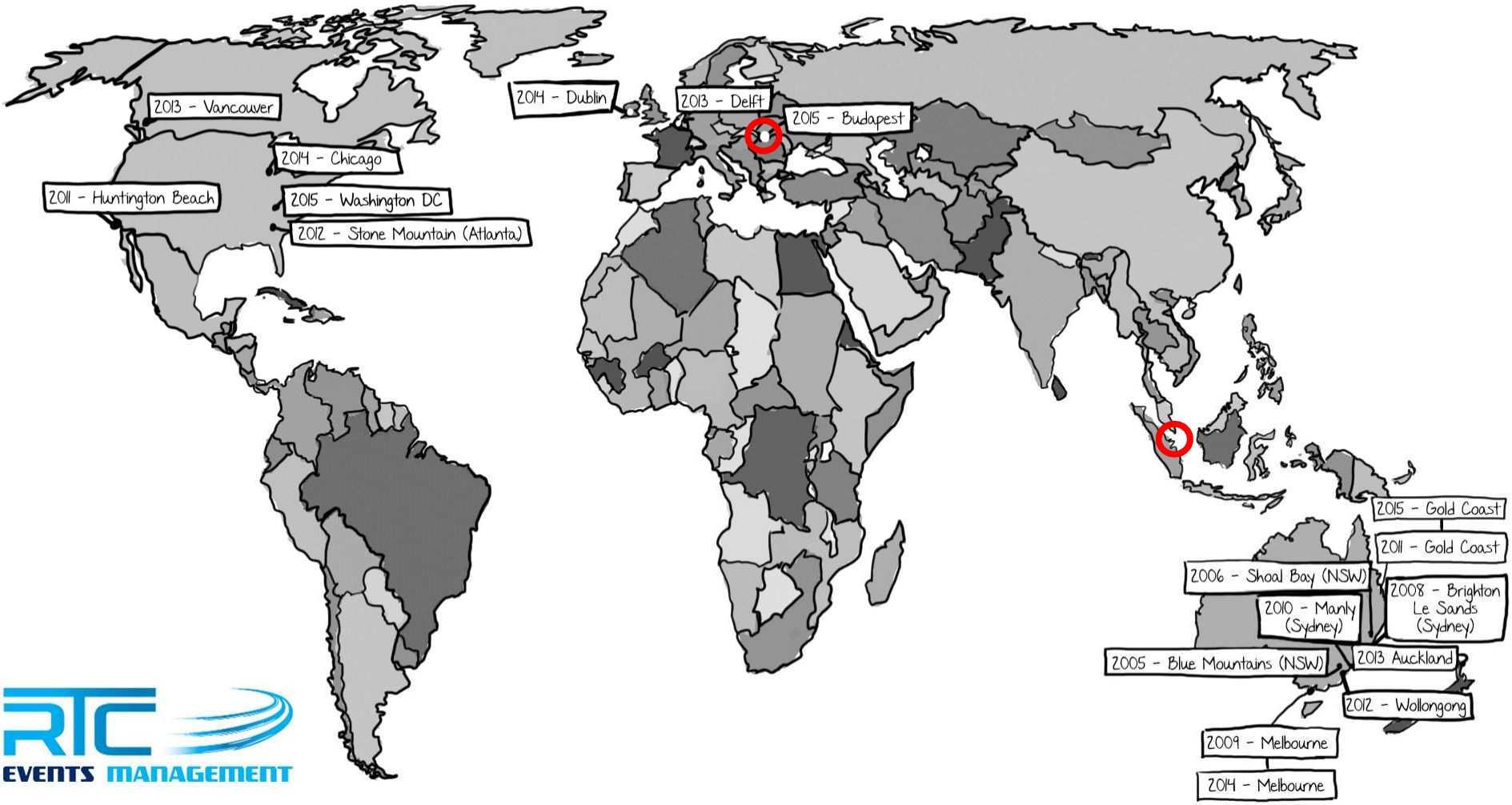

RTC
EVENTS MANAGEMENT

Stats

- 30 International events
- 49 countries
- 340+ sessions in 2015
- 2,000 delegates
- Next event
  - Europe!
  - Budapest, October 29-31

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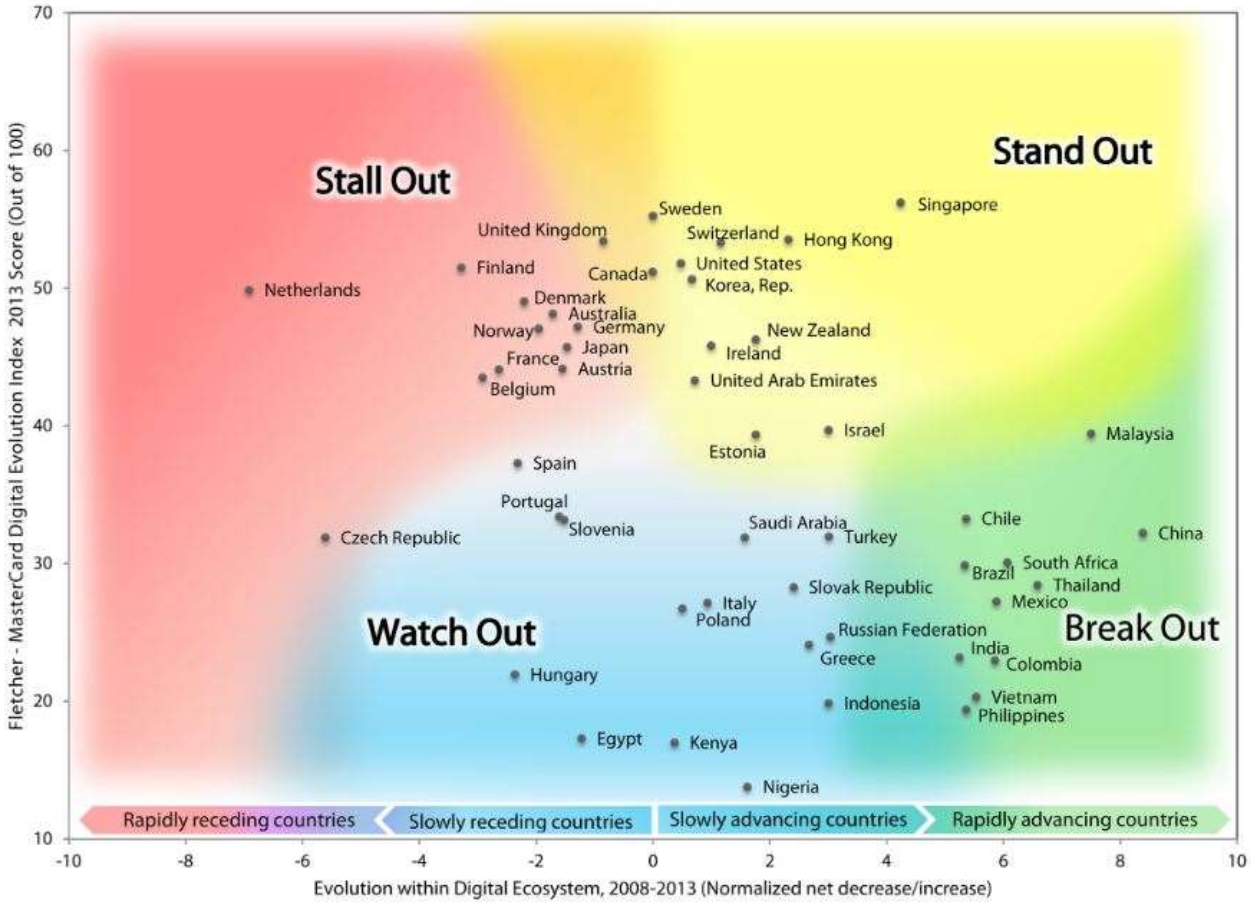
FIGURE 1: TRAJECTORY CHART

The 50 countries in the Index as they align with the four Trajectory Zones



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Email: wesley.benn@rtcevents.com
Twitter: @wesleybenn
WeChat: doohicky
WhatsApp: Wesley Benn
LinkedIn: https://au.linkedin.com/in/wesleybenn

Life of an Architect.com

"Good ideas come from everywhere.

It's more important to recognize a good idea than to author it."

Jeanne Gang