

Partnership and Collaboration in Practice – Delivering Value in 3D; do we have a choice ?

Gerry Carty | Managing Director RPS | Consulting UK & Ireland



We are RPS





RPS – INTEGRATED MULTI-DISCIPLINARY DESIGNERS & PROJECT MANAGERS

GLOBALLY

6,500 staff

IRL, UK, NL, NR, Australia, USA, Canada

IRELAND

700 staff

GALWAY

Lyrr 2, IDA Business Park, Mervue

140 staff

Delivering projects in IRL, UK, USA, Australia



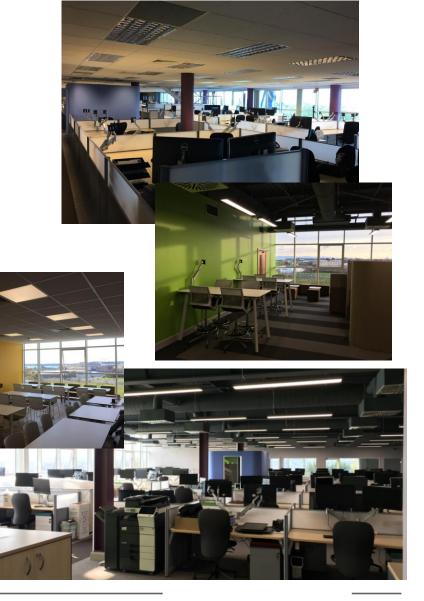


RPS IRELAND

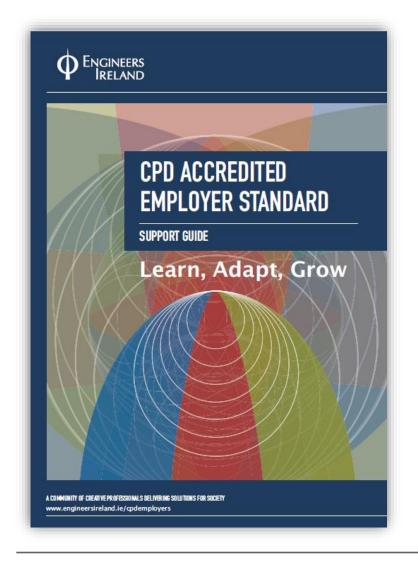
ROI Staff Numbers

Total	462
Sligo	12
Dublin	180
Cork	131
Galway	139

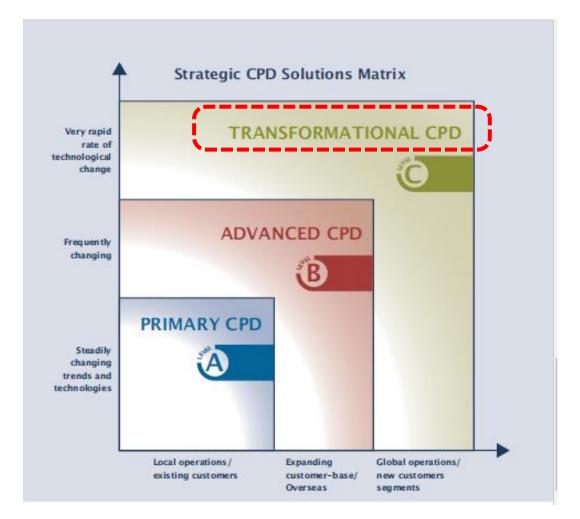




RPS – TRANSFORMATIONAL DEVELOPMENT









DIGITAL TRANSITION ROADMAP



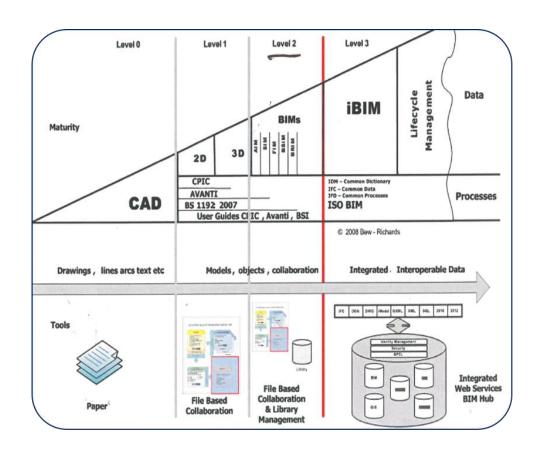
Roadmap to Digital Transition

For Ireland's Construction Industry 2018-2021





DIGITAL DESIGN & COLLABORATION – Levels, Processes (Chunk the Elephant)



Timelines

Months?

Years?



Adapt or become obslete



PARTNERSHIP - CRITICAL TO SUCCESS

How

- Work with our supply chain and our client's supply chains to create digital models that add value at every stage of the design, delivery and asset management processes
- These models will be cloud based, interoperable models for use by the client, contractors, service providers and facility managers
- Understand the Client / Customer, their segment, their processes (e.g. asset management) and be agile
- Use best in class mobility tools
- Begin with the end in mind Soft Landings (asset + O&M from commencement)
- Learn to cope with increasing demands that 'instant online delivery' brings



DELIVERING VALUE & RECOGNITION

"Those who carry on great public schemes must be proof against the most fatiguing delays, the most mortifying disappointments, the most shocking insults, and worst of all, the most presumptuous judgement of the ignorant upon their designs."

Edmund Burke (1729 – 1797)



CERTIFICATIONS: Processes demonstrate capabilities and competencies













NSAI Cert 18001 OHSAS 2017

NSAI 27001:2017



NSAI 14001:2015

CERT 162 FORY: 14001 2015 NJ A4 Plublishe (Chich (1)

NSAI ISO 9001:2015

EVOLUTION OF Level 2 BIM Standards – Information Management

BS 1192:2007+A2:2016

BRITISH STANDARD

Collaborative production of architectural, engineering and ction tion – practice

PAS 1192-2:2013

Incorporating Corrigendum No.

Specification for information management for the capital/delivery phase of construction projects using building information modelling



ERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

bsi.

INTERNATIONAL

STANDARD

ISO 19650-1

> First edition 2018-12

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)—
Information management using building information modelling—

Part 1:

Concepts and principles

Organisation et numérisation des informations relatives aux bâtiments et ouvrages de génie civil, y compris modélisation des informations de la construction (BIM) — Gestion de l'information par la modélisation des informations de la construction —

Partie 1: Concepts et principes

INTERNATIONAL STANDARD ISO 19650-2

First edition

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling —

Part 2:

Delivery phase of the assets

Organisation et numérisation des informations relatives aux bâtiments et ouvrages de génie civil, y compris modélisation des informations de la construction (BIM) — Gestion de l'information par modélisation des informations de la construction —

Partie 2: Phase de réalisation des actifs



ISO 19650-2:2018(E)

e ISO 2018

E

Reference number

© ISO 2018



RPS ACHIEVES ISO 19560 STANDARD - 2019

RPS achieves new ISO 19650 international **BIM** standard



RPS BIM / DIGITAL JOURNEY – step by step process, staff education, staff development, working in a multi-user live online environment



Our Journey

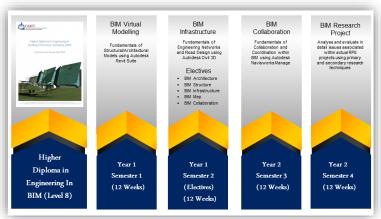


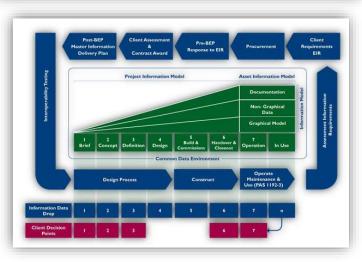
New Markets / New Projects - Model creation & Point cloud data extraction for Gold Coast Airport Australia / Addition of Health & Safety data into a multi-disciplinary HS2 model / Use of Photogrammetry surveys for use in large Motorway Projects - Public Consultations / Model creation & Point cloud data extraction for MLC Shopping Centre Australia.



RPS: DEVELOPING PEOPLE, PROCESSES & PROJECTS











MULTI-AWARD WINNING HIGHER DIPLOMA IN ENGINEERING IN BIM (Hons Level 8)







Education Awards 2017

Business

Collaboration

Award





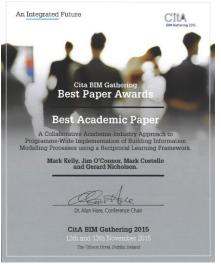














WINNER

EXCELLENCE IN



GMIT

RPS – RECOGNITION FOR DEVELOPING PROCESSES, PROJECTS & PEOPLE









TOOLS, TECHNOLOGIES AND LICENSES

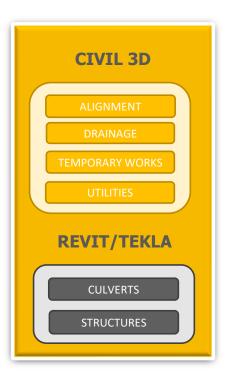
DESIGN TEAM

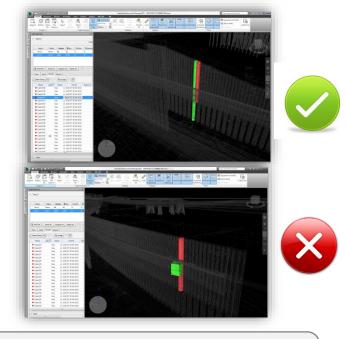


FEDERATED MODEL



CONSTRUCTION TEAM



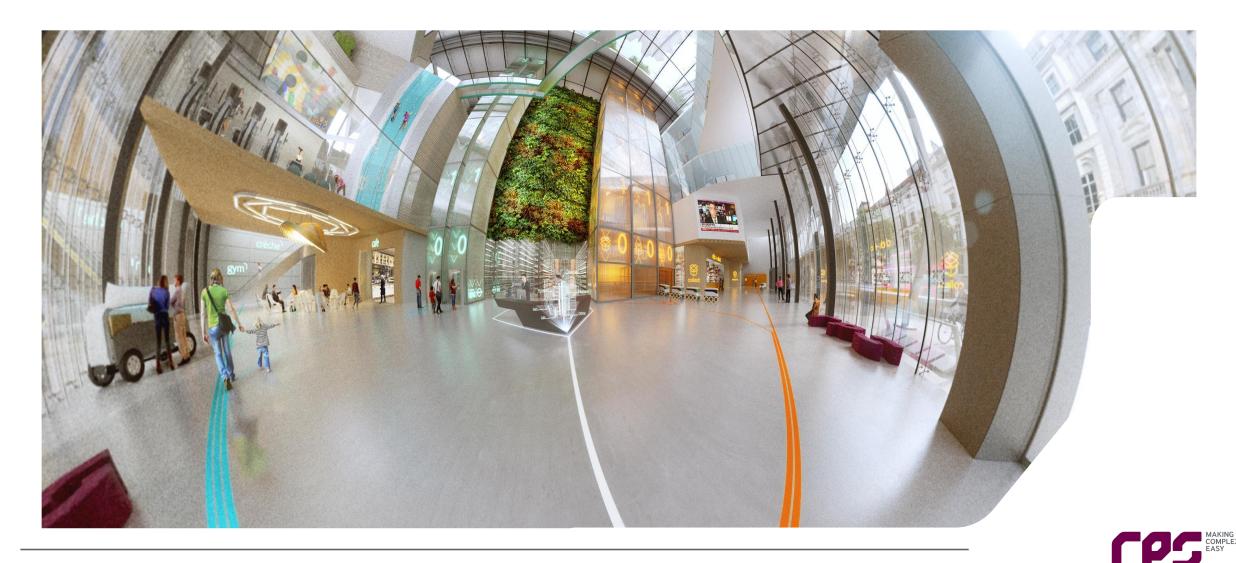


Automatic tool for CLASH DETECTION when geometry is a constraint and tolerances are critical FEDERATED
MODEL
CLASH DETECTION
4D SCHEDULE
QUANTITY TAKE
OFF
LINKING INFO





DIGITAL TWIN – VIRTUAL REALITY





Scan Me

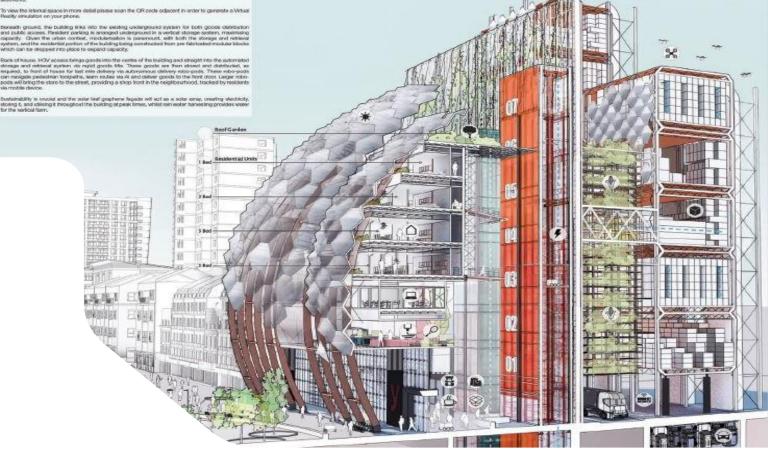
PROJECT SPROUT

exists the storage, intrinsical and registron startings to the river of the building, and the impediture in particular in particular in the starting, and the impediture in the starting and the impediture in the starting control ordered entire, or start the on-site code and static store. To the upper feeds these to a given establish principle and 1, 2, and 3 back entirely apartments. On the top decid these to a given establish principle manner in the starting and 1, 2, and 3 back entirely apartments. On the top decid these is a river of greater with community.

beneath ground, the building ship into the existing underground system for both goods deterbation and public access. Pleaded porting is analoged underground in a vertical domain poster, maximising opposity. Own the under continuity, machineration is presented, with both the strongs and referred system, and the residential portion of the building being continueded from per-filter cated modular blocks witch on the opposit risp place to expand outgoodly.

Back of hisses. HGV agrees brings goods into the centre of the building and shright into the externable strongs and network synthem via rapid goods life. These goods are then stoned and distillations, as requests, to his ring of howers for their site delivery or authernance dishibing solicipations. These solicipation in registe packetters hodgetts, along solicies as all as all all called goods to the final door, building solicipation, to the final door, building solicipation and the solicipation of the solicipation of the final door, building solicipation and solicing solicipations are solicipated as a solicipation of the neighbourhood, toolsely by including and solicipations are solicipated as a solicipation of the neighbourhood, toolsely by including and strong and solicipations are solicipated and solicipations are solicipated as a solicipation of the neighbourhood, toolsely by resident and solicipations are solicipated as a solicipation of the neighbourhood, toolsely by resident and solicipations are solicipated as a solicipation of the solicipation and the solicipation and the solicipation are solicipated as a solicipation are solicipated as a solicipation and the solicipation are solicipated as a solicipation and the solicipation are solicipated as a solic

storing it, and utilizing it throughout the building of peak times, whilst rain eater harvesting provides was



Competitions and Marketing

• Utilising links to models via QR codes in presentation material as well as on live projects







COLLABORATIVE WORKING - Where?



Common Data Environment (CDE)

- Document and data management Cloud Storage
- Data is often poorly structured, little used and difficult to find
- CDE becomes the source of information for the project, used to collect, manage, update and disseminate documentation
- Information is manged in four phases Work in Progress, Shared, Published and Archived
- CDE's Ensure client data, own data is secure
- Lots of issues and risks to be managed



DIGITAL DELIVERY SKILLS & PROCESSES

How

Develop people and teams, equip them with appropriate skills using best available technologies and processes to transition to full 3D delivery in architecture, engineering and construction (AEC).

The steps to consider are:

- Develop a talent (people) pipeline partner with academia/suppliers/clients
- Equip leaders to present/interact (on 3D) and communicate with clients
- Obtain certification to BS EN ISO 19650
- Implement standards consistently and rigorously to support efficient workflows and processes
- Train staff in best practice collaboration behaviours
- Utilise this deep expertise on multi-disciplinary projects



ACHIEVING EXCELLENCE

"Excellence is not something we are born with, it is the habitual practices we form and habits we embed"

.....Aristotle

Centre of Excellence

Introducing smart methods of working within business streams and extending these practices into all corners of the business thus maximising value, creating efficiencies and making complex easy

Objectives

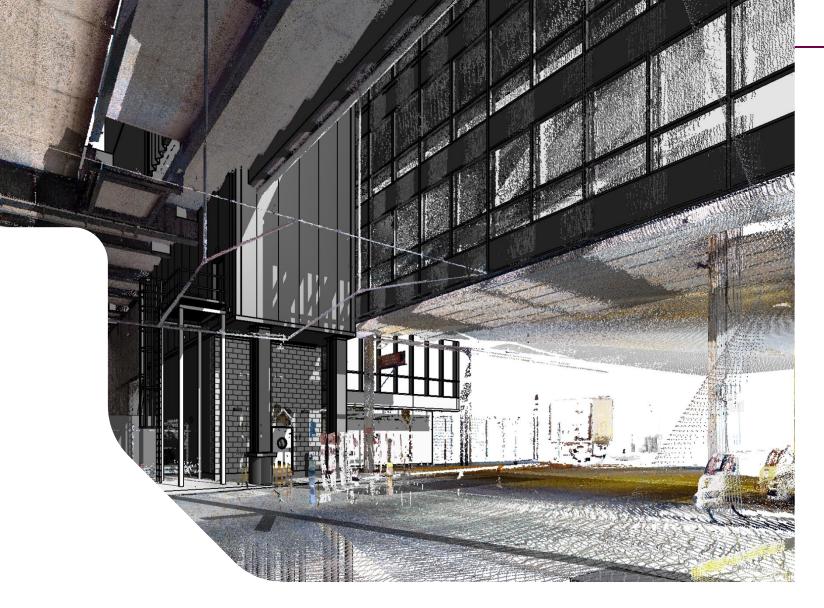
Inspire and create opportunities for design teams and team members - enabling them to influence what we deliver, how we deliver, embracing digital working and best available technologies to become a leader in digital delivery of infrastructure.



WHY

- Staff engagement will improve
- Millennial energy new challenges will motivate staff
- Retention higher value / advanced projects are of more interest to staff
- Recruitment digital delivery attracts high calibre people to our industry
- Client trusted advisor add value pre-construction and post construction
- Fees value added will generate better fees
- Rewards potential to generate longer term income streams
- Project capital cost reduces
- Project lifecycle cost reduces





SURVEYING ANS SENSORS

Point Cloud Survey Data

- Use of point cloud data is increasingly being used for work on existing assets such as at Gatwick Airport and Neasden Depot
- Models developed in both Autodesk Revit and Bentley MicroStation formats

GATWICK AIRPORT



TRANSPORTATION M8/M73/M74 2014-2016



Ferrovial/Lagan/Amey/RPS mutual objective to develop BIM capability in infrastructure

The 2016 UK mandate was fast approaching

No Client EIR at the time

RPS/AMEY prepared a joint proposal to Ferrovial/Lagan – The EIR

Joint BIM Execution Plan (BEP) agreed

Transport Scotland Exemplar project



GOLD COAST AIRPORT AUSTRALIA, 2018



Gold Coast Airport is one of Australia's fastest growing airports, now welcoming more than 6.5 million passengers annually

RPS design team deployed BIM on this project including the creation of an existing conditions BIM model

Point cloud data captured by local RPS survey team in Sydney used for future design and construction works planned for 2019 / 2020



MLC RETAIL REDEVELOPMENT Stage 2, GPT RE Ltd, Sydney, Australia, 2018



The MLC Centre is one of Sydney's most iconic commercial towers, designed by renowned architect, Harry Seidler The tower offers 67 levels of high quality office space over 70,000 square metres

Point cloud data captured by local RPS survey teams based in Sydney used for future design and construction works planned for 2019 / 2020

RPS design team deployed BIM on this project and created a full 3D BIM model in our Galway office



AIRPORT AND RAIL CONNECTIVITY



LUTON DART, PARKWAY STATION



M28 Cork to Ringaskiddy, Cork Ireland











Partnership and Collaboration in Practice – Delivering Value in 3D; do we have a choice ? – **Thank You!**

Gerry Carty | Managing Director RPS | Consulting UK & Ireland

