



Partnerships and Collaboration in Practice

Gerry Carty | Managing Director RPS | Consulting UK & Ireland

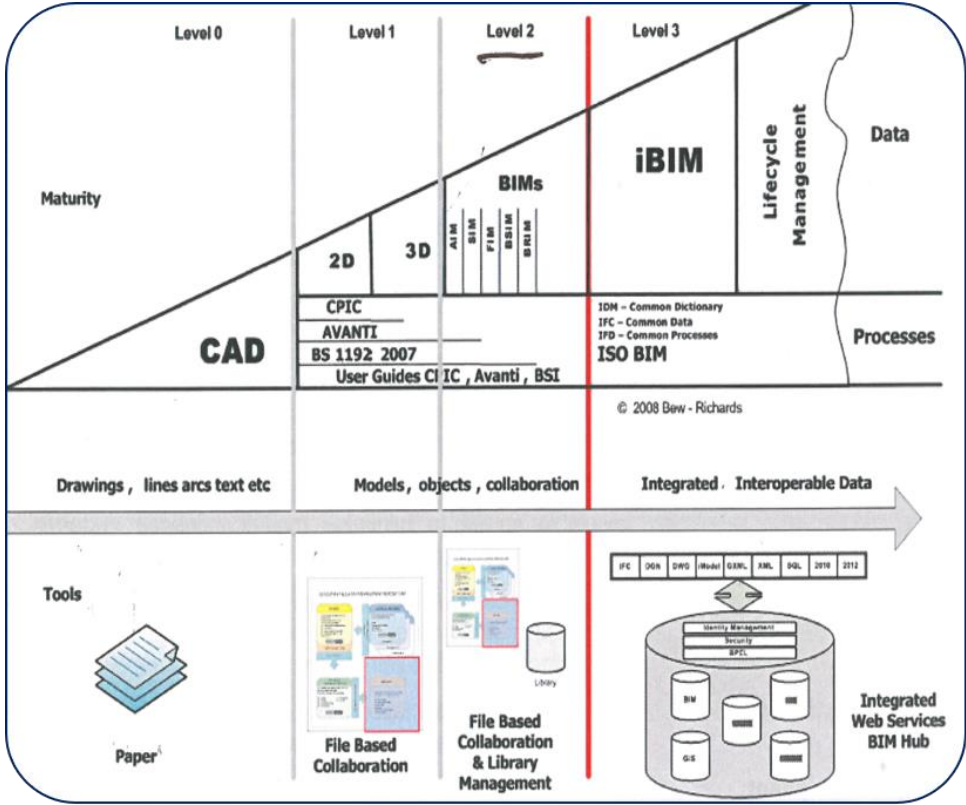
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Digital Transition in Ireland



ROAD MAP FOR DIGITAL DESIGN & COLLABORATION

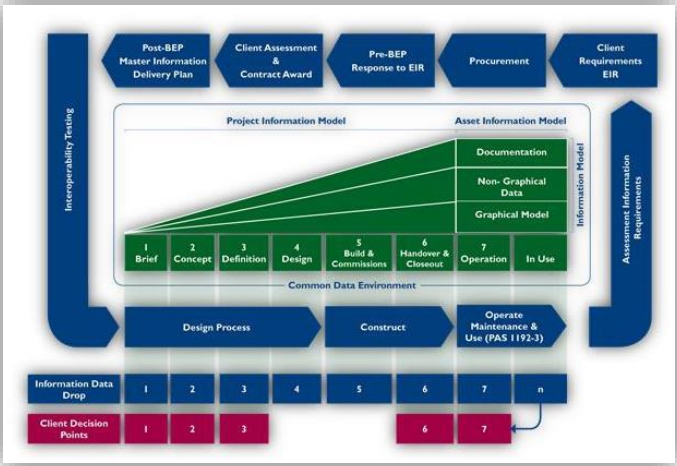
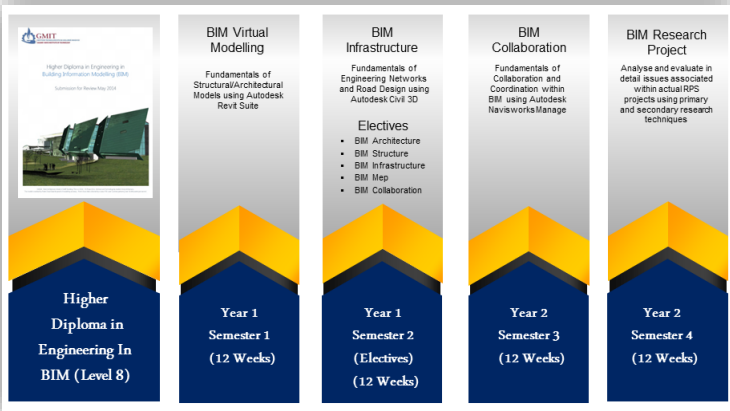


ROAD MAP FOR DIGITAL DESIGN & COLLABORATION

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

Edmund Burke (1729 – 97)

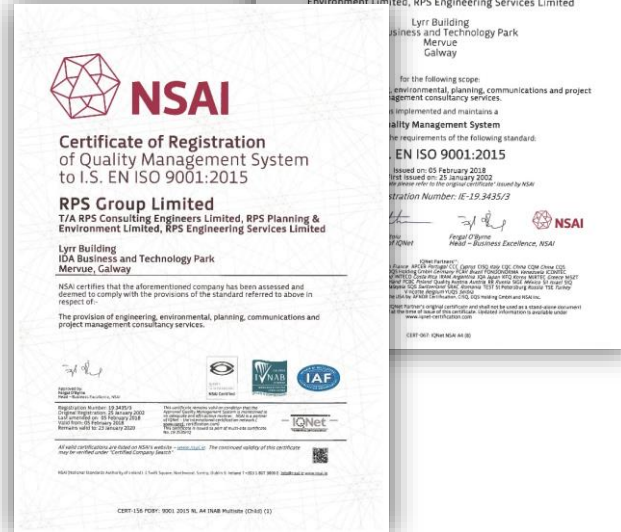
RPS – OUR DIGITAL JOURNEY: DEVELOPING PEOPLE, PROCESSES & PROJECTS



CERTIFICATION



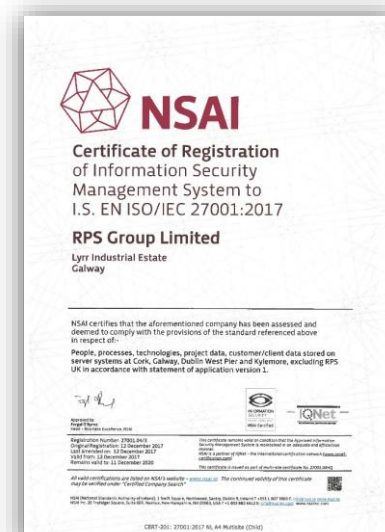
NSAI 14001:2015



NSAI ISO 9001:2015



NSAI Cert 18001 OHSAS 2017



NSAI 2700:2017

Level 2 BIM Standards – Information Management

BS 1192:2007+A2:2016

BRITISH STANDARD

Collaborative production of architectural, engineering and construction practice

bsi.

PAS 1192-2:2013

Incorporating Corrigendum No. 1

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



bsi.

INTERNATIONAL STANDARD

ISO 19650-2

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 — phase of the assets

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 — de réalisation des actifs

Reference number ISO 19650-2:2018(E)

© ISO 2018

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

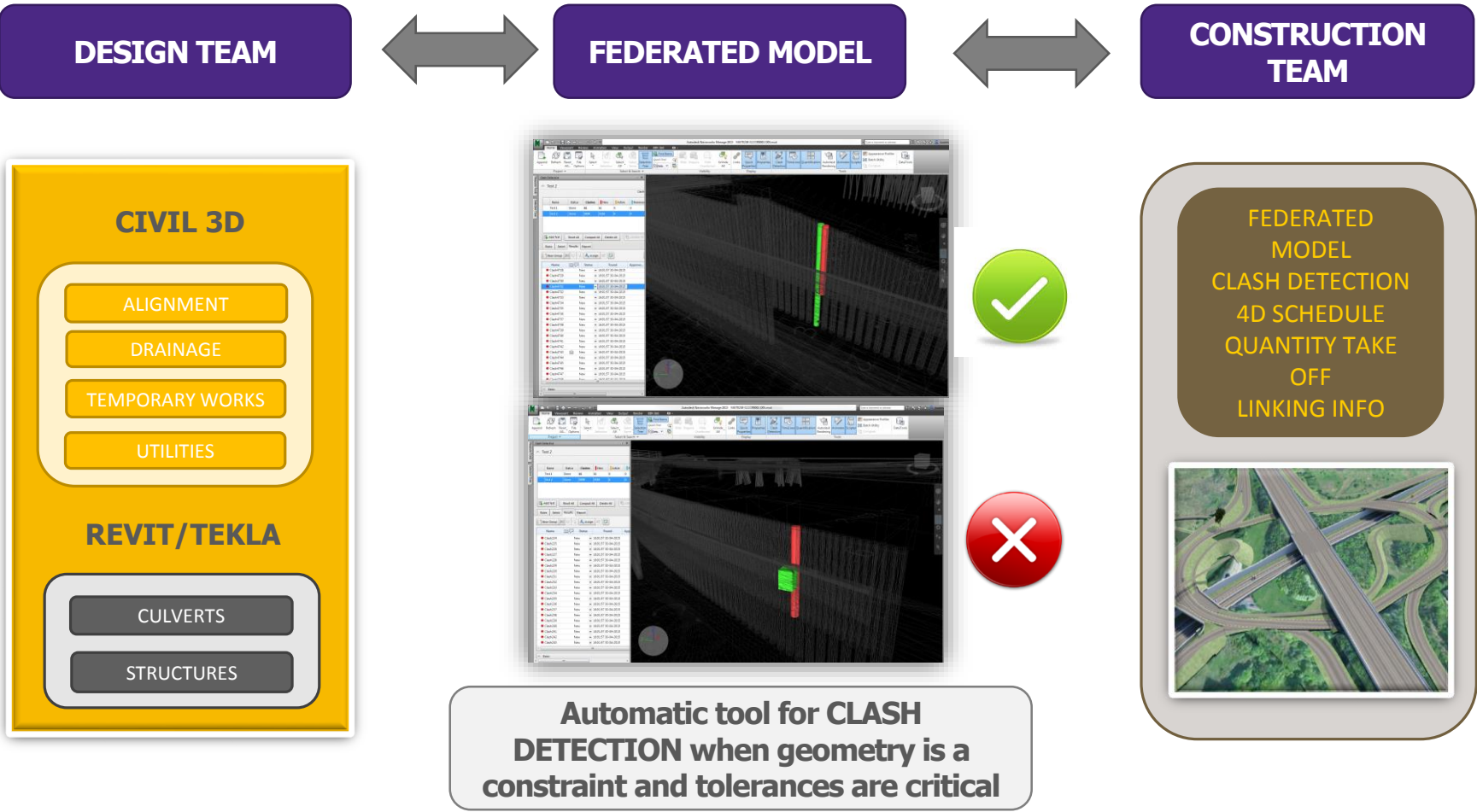
Organisation et numérisation des informations relatives aux bâtiments et ouvrages de génie civil, y compris modélisation des informations de la construction (BIM) — Gestion de l'information par la modélisation des informations de la construction — Partie 1: Concepts et principes

Reference number ISO 19650-1:2018(E)

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ISO

TOOLS, TECHNOLOGIES AND LICENSES



Digital Design & Collaboration

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

To 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.

DIGITAL DELIVERY SKILLS & PROCESSES

How

Develop suitable people and teams, equipping 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 - in partnership with academia
- Equip leaders to present/interact (on digital) and communicate with clients who own / manage major assets
- Obtain office certification to BS EN ISO 19650 (will super-seed PAS 1192)
- Implement digital standards consistently and rigorously that support efficient workflows and processes
- Train staff in best practice collaboration behaviours
- Utilise this deep expertise on multi-disciplinary projects

Partnerships

How

- Work with our supply chain and our client's supply chain 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 (bring O&M in from commencement)
- Learn to cope with the increasing demands and pressures that '**instant delivery**' bring

Working Together Productively

Positive results are anticipated on number of levels:

- Staff engagement - will improve
- Millennial energy - new challenges will motivate them
- 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
- Increased fees – value added will generate higher fees and better margins
- Rewards – potential to generate longer term income streams

COLLABORATIVE WORKING – BEST PRACTICES



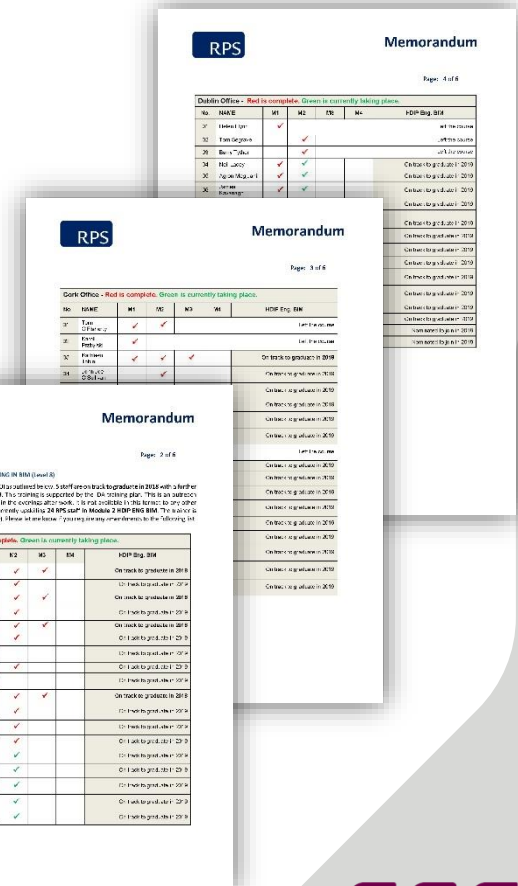
Common Data Environment

- Document and data management system – Cloud Storage
- WHY - Information is often unstructured, poorly co-ordinated and difficult to find
- CDE to be the single source of information for the project, used to collect, manage and disseminate documentation
- Information is managed in four phases – **Work in Progress, Shared, Published and Archived**
- CDE's on the market might not meet your Client security requirements

Higher Diploma in Engineering in BIM

(Level 8 Hons)

- Training on-going across RPS in Ireland - 5 staff graduated in 2016
- 15 staff graduated in 2017 and 5 staff on track to graduate in 2018
- 40 staff on track to graduate in 2019
- Multi-award winning outreach training programme (after work training)
- Currently upskilling 24 RPS staff in Module 2 (Infrastructure Elective)
- New Spring Board (Blended) Programme Launched 2019



RPS – THE BIM JOURNEY – DEVELOPING PROCESSES, PROJECTS & PEOPLE

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Karol Friel, Topcon presents ICE Award for Third Level Course to Gerald Nicholson, GMIT, Jim O'Connor GMIT, Willie Madden and Mark Costello, RPS.

RPS – The BIM Journey – Developing Processes, Projects & People

BY THE EDITOR ON SEPTEMBER 24, 2018

IN THE NEWS, TOP STORIES

Mark Costello, RPS Director of BIM talks about developing BIM capability in RPS – from successful collaboration with academia and staff education, to project implementation, awards and accreditations.

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HIGHER DIPLOMA IN ENGINEERING IN BIM (Hons Level 8)



.... Winner Best Academic Paper at the CITA BIM Gathering International Conference 2015....



.... Business Collaboration Award recognising excellence in the third level education sector in Ireland....



.... recognition on a national scale of Ireland's leading construction projects and the teams behind them....

HIGHER DIPLOMA IN ENGINEERING IN BIM (Hons Level 8)



....recognition of the collaborative academia industry approach taken by RPS and GMIT...

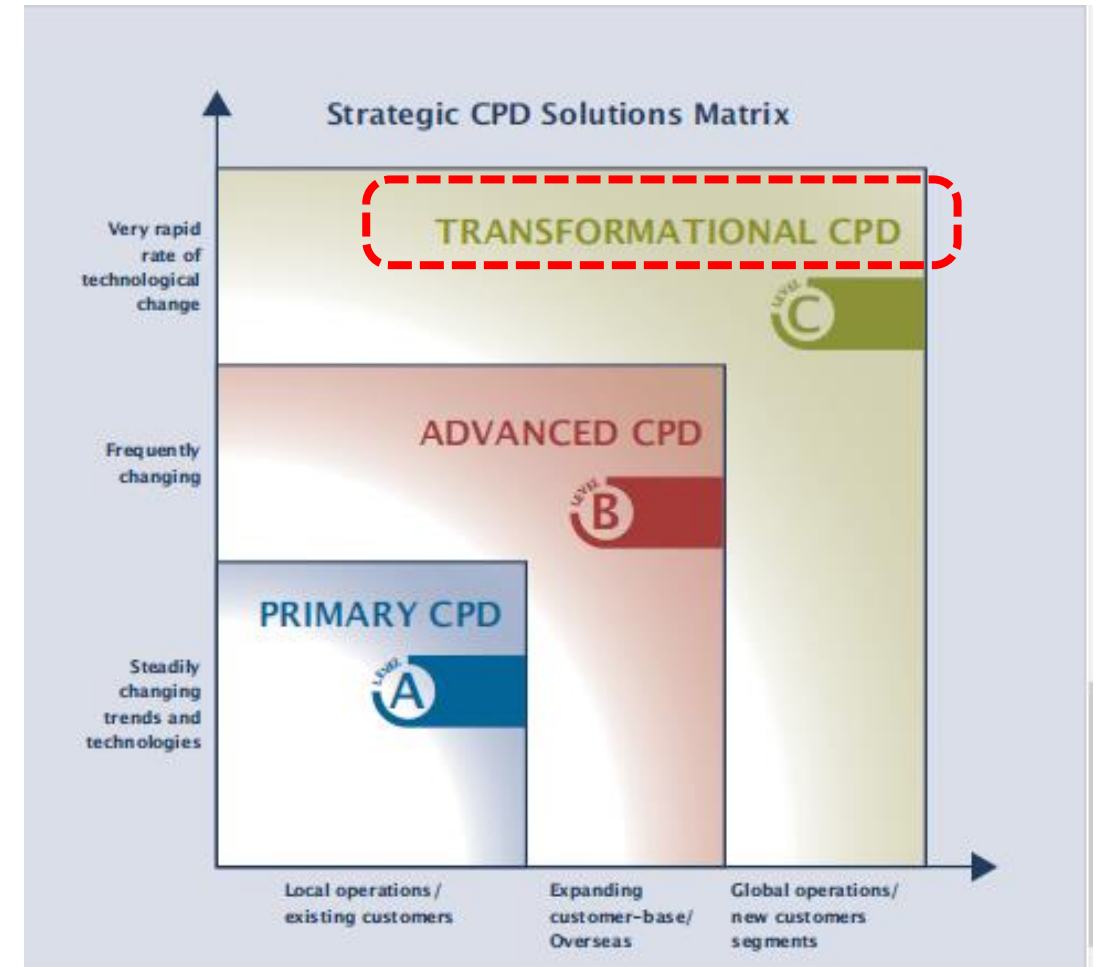
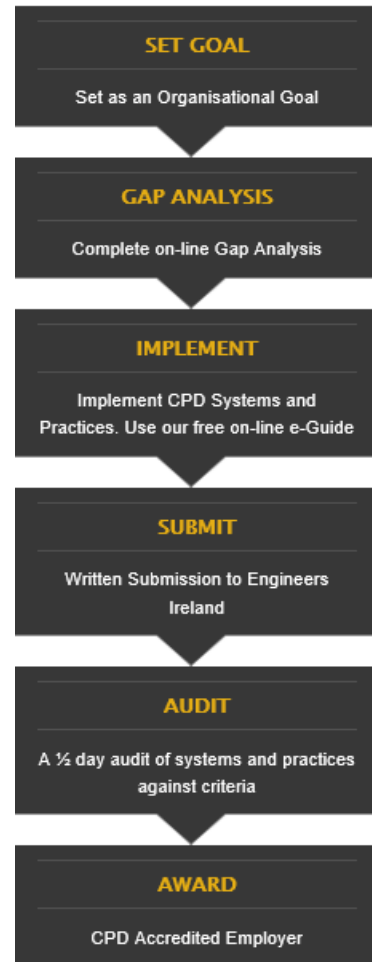
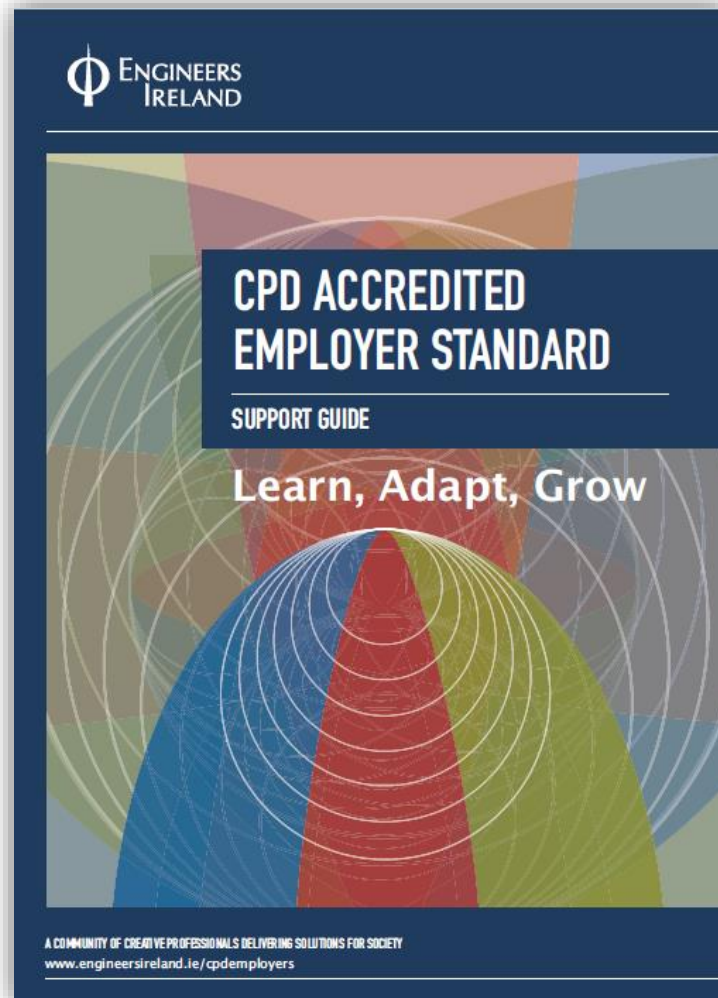


.... judged across the five key criteria of Excellence, Exceptionality, Impact, Communication and Authenticity to the Discipline....



.... recognising performance excellence in Ireland's construction industry, highlighting achievements across a full range of construction disciplines and project categories.....

RPS – THE BIM JOURNEY – DEVELOPING PROCESSES, PROJECTS & PEOPLE





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, CEILINGS PACKAGE

Deployment of BIM on M8/M73/M74, Ferrovia/Lagan/AMEY, 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

Gold Coast Airport, GCA, 2018



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

RPS design teams responsible for the deployment of BIM on this project including the creation of an existing conditions BIM model

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

MLC Retail Redevelopment Stage 2, GPT RE Ltd, 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 was used for future design and construction works planned for 2019 / 2020.

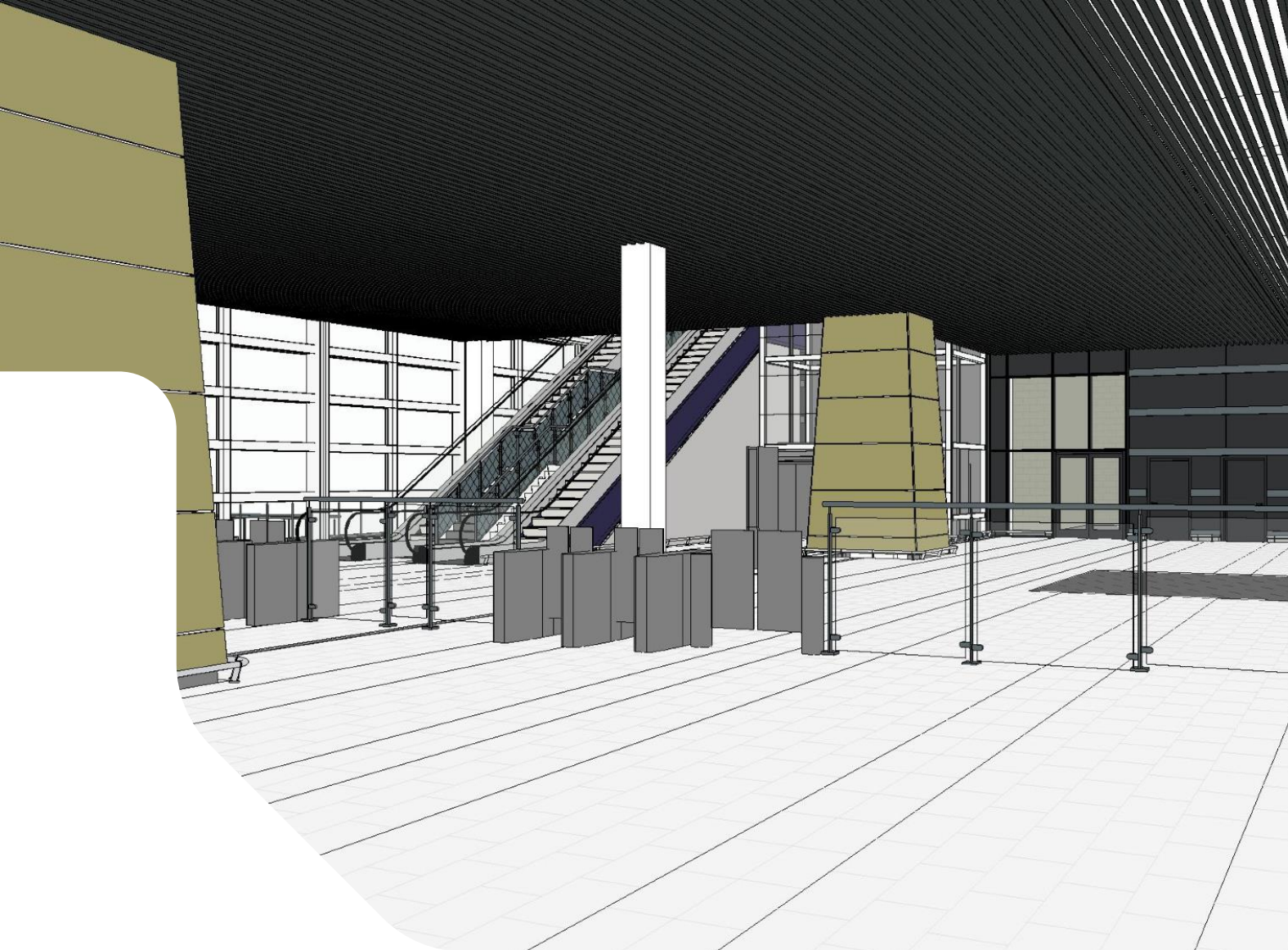
RPS design teams based in Sydney were responsible for the deployment of BIM on this project, including the creation of an 8,750 square metres existing conditions BIM model.



LONDON MEDWAY PLOT 1A



LUTON DART, PARKWAY STATION



Federated Revit Model

- Federated model used for stakeholder engagement and basis for VR model

**LUTON DART,
PARKWAY STATION**

residential leisure and sport activities. A green wall incorporating vertical farming, visually and acoustically shields the storage, retail and logistics activities to the rear of the building, and the mixed use / public facilities to the front of the building. On the ground floor visitors can either pick up or return goods ordered online, or visit the on-site co-op and retail store. To the upper levels there is a gym, cinema, home working and 1, 2 and 3 bed residential apartments. On the top deck there is a roof garden with community allotments.

To view the internal space in more detail please scan the QR code adjacent in order to generate a Virtual Reality simulation on your phone.

Beneath ground, the building links into the existing underground system for both goods distribution and public access. Resident parking is arranged underground in a vertical storage system, maximising capacity. Given the urban context, maximisation is paramount, with both the storage and retrieval system, and the residential portion of the building being constructed from prefabricated modular blocks which can be dropped into place to expand capacity.

Back of house, HGV access brings goods into the centre of the building and straight into the automated storage and retrieval system via rapid goods lifts. These goods are then stored and distributed, as required, to front of house for last mile delivery via autonomous delivery robo-pods. These robo-pods can navigate pedestrian footpaths, learn routes via AI and deliver goods to the front door. Larger robo-pods will bring the store to the street, providing a shop front in the neighbourhood, backed by residents via mobile device.

Sustainability is crucial and the solar leaf graphene facade will act as a solar array, creating electricity, storing it, and allowing it throughout the building at peak times, whilst rain water harvesting provides water for the vertical farm.



Competitions and Marketing

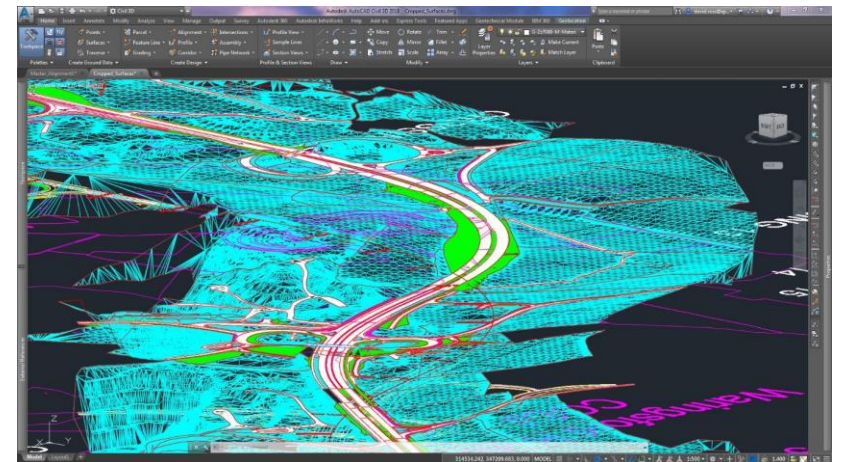
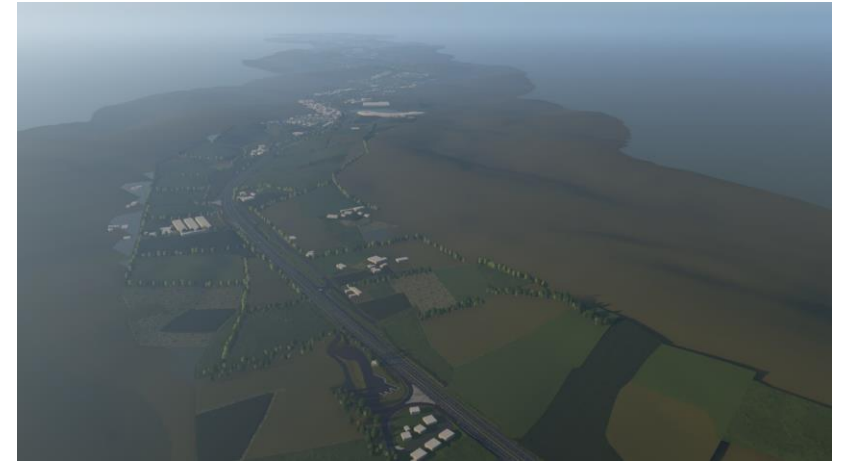
- Utilising links to models via QR codes in presentation material as well as on live projects



PROJECT SPROUT, PROPERTY WEEK

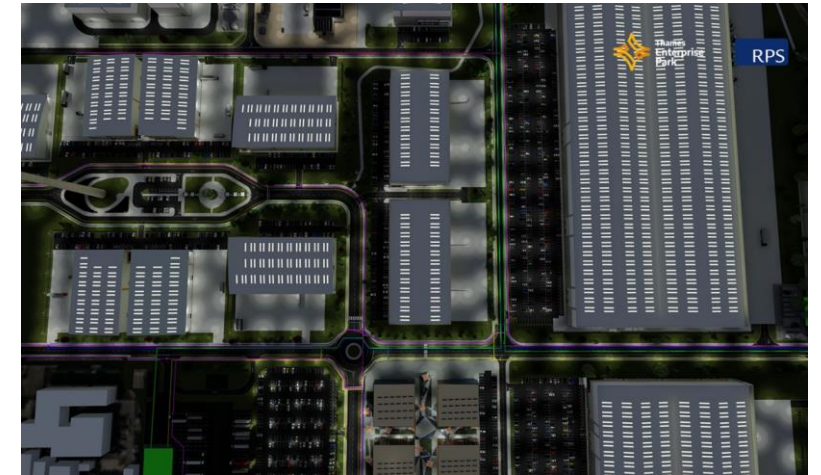


VIRTUAL REALITY



A1 Junctions – March 2019, Key Points – Accurate 25km 3D Model along a 2km Corridor

Note: <https://youtu.be/gwNZM2YS-7E>.



Thames Enterprise Park, London – March 2019, Key Point – Online Delivery System for Output



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