

**CitA**  
BIM GATHERING 2019

# A Critical Appraisal of the potential for public work's contracts and design-build Clients in Ireland to leverage benefits from BIM processes

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Delivering **better outcomes**  
for Irish Construction

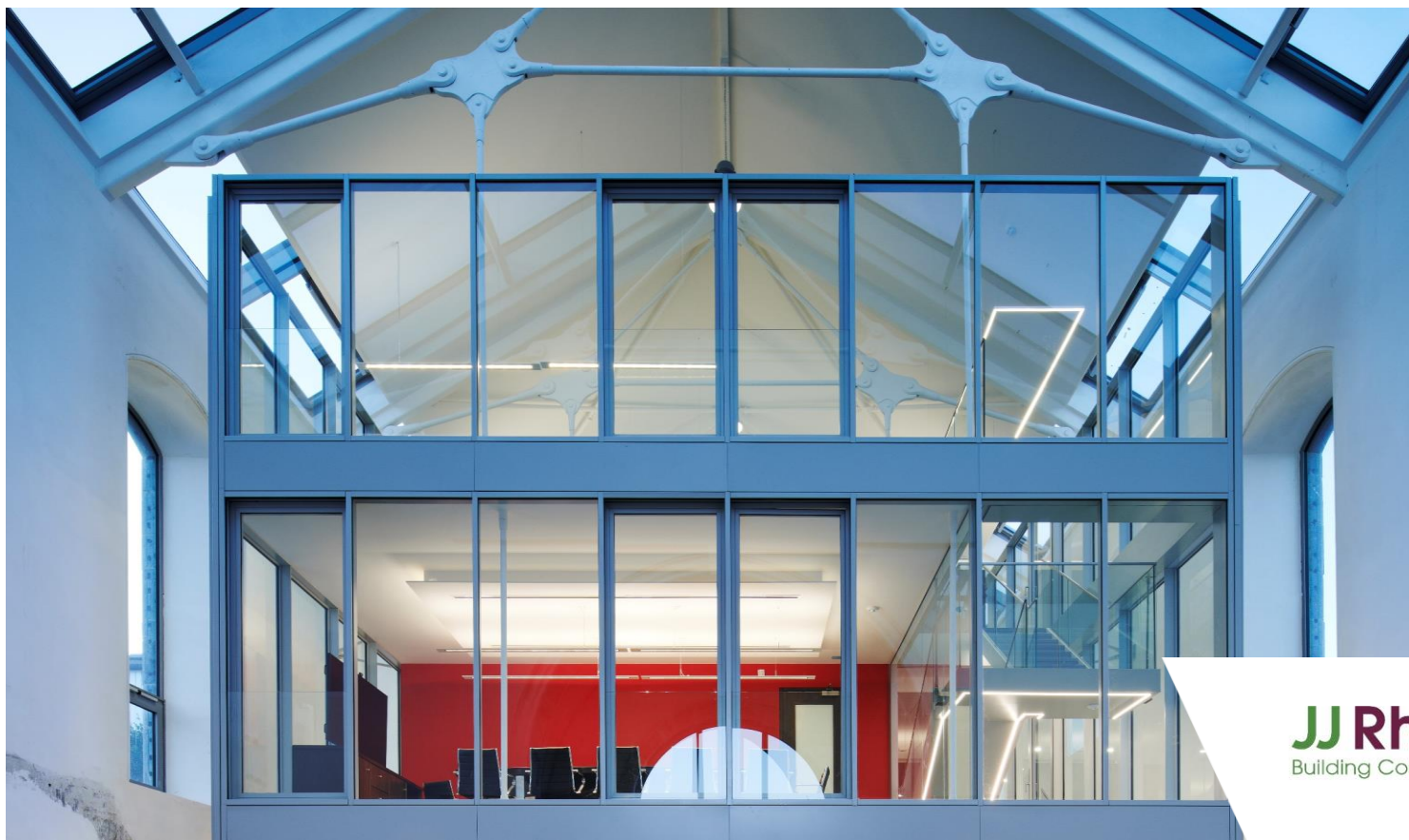


## About the speaker

Trina Turner is BIM Manager/ Senior Project Information Manager with JJ Rhatigan & Company, and is assisting in the delivery of BIM Level 2/ ISO 19650 compliant projects. Trina is a dedicated professional, and BIM advocate, and achieved first class honours in the Master's degree in Building Information Modelling & Management from the Technological University of Dublin (TU Dublin). Trina is a Registered Architect (MRIAI) with over 20 year's experience in the Irish and British construction industry, who has delivered many projects in the commercial, educational, residential and corporate sectors, including protected structures. Trina also attained first class honours in the Master's Degree in Public Relations and Communication at the Technological University of Dublin (TU Dublin).







- Irish owned company established since **1952**
- **Tier 1** Award-winning main Contractor
- One of the **Top 5** Main Contractors in Ireland
- **€341m** Turnover in 2018
- **590+** employees across **5 locations**
- **BSi ISO19650 Certified** company (2019)
- Made strategic decision to transition to BIM in 2013
- Actively using BIM across all projects

**JJ Rhatigan**  
Building Contractors

**ICE** Awards  
**Irish Construction Excellence Awards 2019 Winner**





## Clients don't know what they need from BIM...

BIM is at the heart of **digitisation**- it is transforming the built environment

Construction industry has been **slow** to embrace digital technologies- this is beginning to change

Major advantages to **building the building 'twice'**:

- All clashes can be identified and eliminated
- Accurate quantities derived from models
- Better sequencing & project delivery outcomes
- Improved operational savings possible etc. etc.

So why the **barriers**? What is the **problem**?







## Objectives of the Research:

1. Critically appraise the **current state** of Client BIM engagement on public works and design-build projects in Ireland
2. Critically examine the **barriers to Clients** and why these occur
3. Perform a **Gap-analysis** between BIM process and EIR, OIR, AIR and BEP
4. **'Toolkit' (set of solutions)** to be derived from the literature and interviews
5. **Evaluate the 'Toolkit'** (set of solutions) proposed to overcome the suggested barriers



## Research Methodology:

1. Qualitative methodology comprising interviews with selected stakeholders of the AECO industry in Ireland
1. Critically examine the literature : existing publications, annual surveys by CitA , Engineers Ireland, RIAI, PW contracts etc. to examine **barriers to Clients** and why these occur
2. Perform a **Gap-analysis** between BIM process and EIR, OIR, AIR and BEP
3. '**Toolkit**' to be derived
4. **Evaluate the 'Toolkit'** (set of solutions) proposed to overcome the suggested barriers





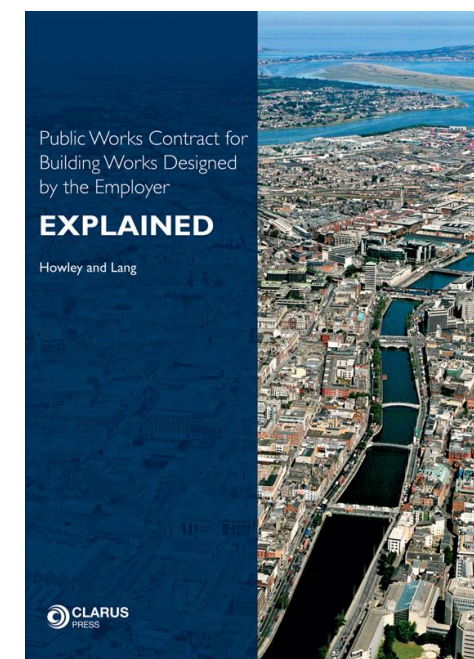
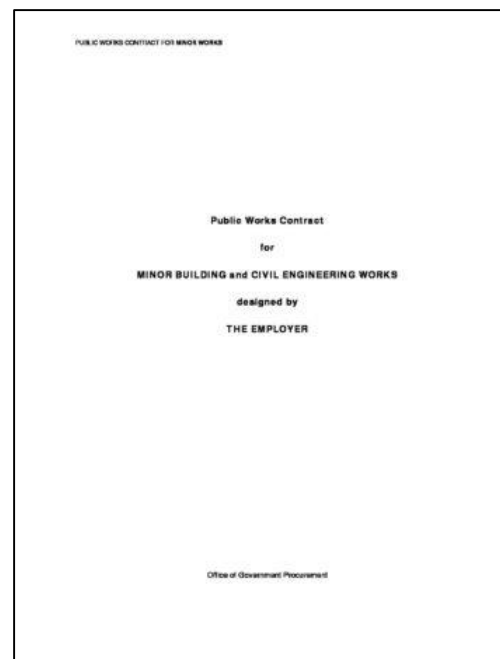
## Methodology of the Literature Review & Findings:

1. Critically appraise the **findings of the Literature Review**
2. **Literature identifies all benefits of BIM to client:** early synchronisation, enhanced analysis/ simulation/ improved outcomes etc.
3. Critically examine the **barriers to Clients identified in the literature review** and suggested reasons why these occur
4. **Gap-analysis** between BIM process and EIR, OIR, AIR and BEP- Gaps in EIR and BEP cause issues to Client further down the line during procurement and into the operations phase
5. **Guthrie:** 'Clients still do not understand what they are asking for or what BIM is'.
6. **Chevin:** 'Clients...basically see BIM as a cost'.
7. **Moore:** 'Education is needed'
8. **Matthews:** 'New roles may be required for BIM processes'



## CCCC Public Works Contracts (2009):

1. 10 Contracts in number: PW-CF1 up to PW-CF10, each for different purposes
2. The objectives were to provide:
  - Greater cost certainty at Contract award
  - Value for money
  - More efficient delivery of projects
  - Accepted tender prices= Final Outturn costs
  - Fixed price contracts with optimal transfer of risk to contractor
  - **NO Reference to BIM**







## Interviews completed with Key Stakeholders

| Stakeholder Type | Architect Practice                                  | Main Contractor                                | City Local Authority                           | Major Government Mixed-use development Agency | Tier 1 Main Contractor                      | Government Development Agency                | Facilities Management Company  | Leading Solicitor Practice                                     | Major Government Campus                       |
|------------------|---|--|--|---|---|--|--|--|---|
| Architect        | Architect 1: Company associate & software developer |  | Architect 2: Experienced architect (20+ years) |   |   |  |  |  |   |
| BIM Manager      |   | BIM Manager 1: BIM Manager & Project Architect |  | BIM Manager 2: BIM /Information Manager       | BIM Manager 3: Digital Construction Manager |  |  |  |   |
| Solicitor        |   |  |  |   |   |  |  | Solicitor 1: Senior solicitor specialising in construction law |   |
| Client           |   |  |  |   |   | Client 1: Sector Head & Development Director |  |  | Client 2: Head of Capital projects & Planning |
| FM Consultant    |   |  |  |   |   |  | FM Consultant 1: Director of Property & facilities Management Agency |  |   |

- 10 interviews with Key Stakeholders
- Cross section of AECO Irish Industry represented
- Insight gained across multiple projects
- Perspective from different disciplines working on the same project
- 9 no. one-to-one interviews took place
- David Philp, Global BIM/IM Director of CIOB, was also interviewed
- Proposed 'Toolkit' (set of solutions) interrogated at interviews for suggested improvements



## Interviews completed with Key Stakeholders: Key Findings (1)

- Architect 1, Client 1, BIM Manager 1 & Client 2 noted that Public Works Contracts had no reference to BIM & suggested that this should be inserted as a separate clause to PW Contracts
- BIM Manager 3 referred to the term 'Building Information Modelling' as a barrier, because it is "about documentation":
- 'BIM is the Holy Trinity: the graphical model, the non-graphical model, and documentation'.



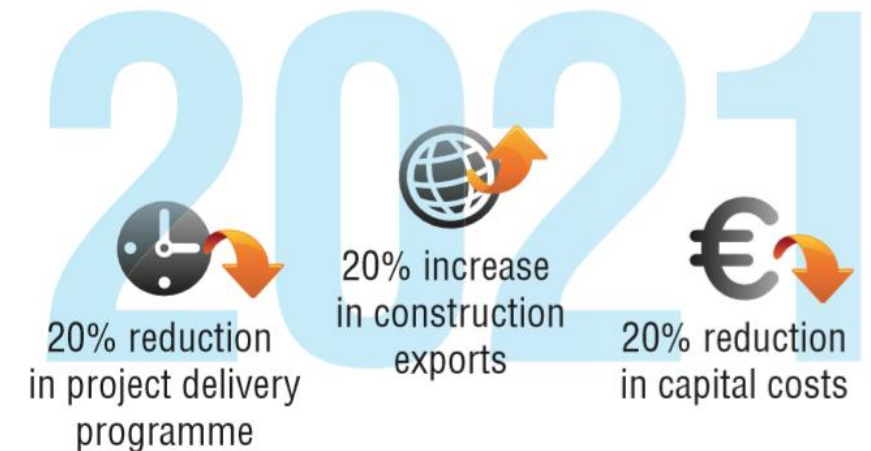




## Interviews completed with Key Stakeholders: Key Findings (2)

- FM Consultant 1: who is really making the 'savings'?  
Not always the Client
- Client 2 & BIM Manager 3: BIM enables Asset Information to be defined from outset- streamlined move to operations phase & CAFM /BM systems
- Client 2: clients only care about operations phase of a asset
- Philp "totally" agrees that lack of education is a major barrier

### 2021 - Key Roadmap Performance Targets





## OUTCOMES

### 4 Key Insights derived from Research & Interviews with Stakeholders & Analysis:

1. Improved Education & a BIM online portal to be provided by the Government
2. The urgent revision of GCCC Public Works Contracts to include reference to BIM technologies, standards and processes, and include confirmation of Client ownership of the BIM model
3. A new role of Client BIM Consultant to be included in the Mandate from Government
4. The requirement of a BIM Mandate for Ireland in order to drive engagement







## OUTCOMES

### Key Insights No.1:

'Improved Education & a BIM online portal to be provided by the Government'

1. No real improved education & no BIM online portal
2. Education is probably biggest barrier to engagement in AEC industry
3. Real opportunity for the Government to drive Ireland as leading proponents of BIM in Europe (Brexit)
4. On-line portal would assist entire AEC industry & Clients & Public to understand BIM-easy accessible





## OUTCOMES

### Key Insights No.2:

‘The urgent revision of GCCC Public Works Contracts to include reference to BIM technologies, standards and processes, and include confirmation of Client ownership of the BIM model’

1. The issue of **Client ownership of the BIM model** is still an issue on many ISO compliant/ Level 2 BIM jobs
2. Client/ Appointing Party -renting out to Tenant, that may use a **separate Fit-Out Team**
3. Currently, this means getting agreement with Design team and subcontractors, and attaching caveats to shared ‘developing’ model, but should be definite **clause** in Contract documents







## OUTCOMES

### Key Insights No.2:

‘The urgent revision of GCCC Public Works Contracts to include reference to BIM technologies, standards and processes, and include confirmation of Client ownership of the BIM model’

- GCCC Public Works Contracts which were revised in June 2019 still make no reference to BIM
- This means that the BIM Protocol Second Edition (2018) is even more important than ever
- The GCCC have committed to rewriting the CIC BIM Protocol (UK) to suit the “Irish contractual environment”- Why?
- UK is a common law jurisdiction: Ireland would have benefit of any decisions that are made there in relation to the CIC BIM Protocol (UK)



## OUTCOMES

### Key Insights No.3:

‘A new role of Client BIM Consultant to be included in the Mandate from Government’

1. There is **no role/ function** specified in the OGP phased BIM ‘ strategy’
2. The OGP BIM ‘strategy’ is **not well communicated**- some people in AEC industry not aware it exists
3. BIM Manager 3 stated that role/function of Client BIM Consultant was “absolutely necessary”. 9 interviewees also agreed that this role was required
4. Employers Representative (ER) also having this role means it is “generally conflicted”
5. This role should be independent and impartial from the design team



## OUTCOMES

### Key Insights No.4:



‘The requirement of a BIM Mandate for Ireland in order to drive engagement’

1. There is still **NO BIM Mandate**.
2. The **OGP** has ‘suggested’ that **BIM** is implemented on a **phased** basis : BIM to be implemented on complex projects in 2019; & medium & simple projects in 2020 & 2021
3. However, it is up to procuring authorities to implement that in their works requirements- **inconsistent!**
4. No overall **specific date** which would drive engagement- ‘**line in the sand**’ required!
5. Philp : Mandate would “**focus client engagement**” & in UK, mandate “helped **accelerate industry adoption** and build an apposite pipe line for industry to respond to and invest in”





Thank you