

CitA

BIM GATHERING 2019



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Delivering **better outcomes**
for Irish Construction



An investigation into current procurement strategies that promote collaboration through early contractor involvement with regards to their suitability for Irish public work projects.



- Senior Electrical Quantity Surveyor/Estimator
- Joined Mercury in 2000
- Working on National Children's Hospital since 2016
- BSc Quantity Surveying and Construction Economics (TUD)
- MSc Applied Building Information Modelling and Management (TUD)



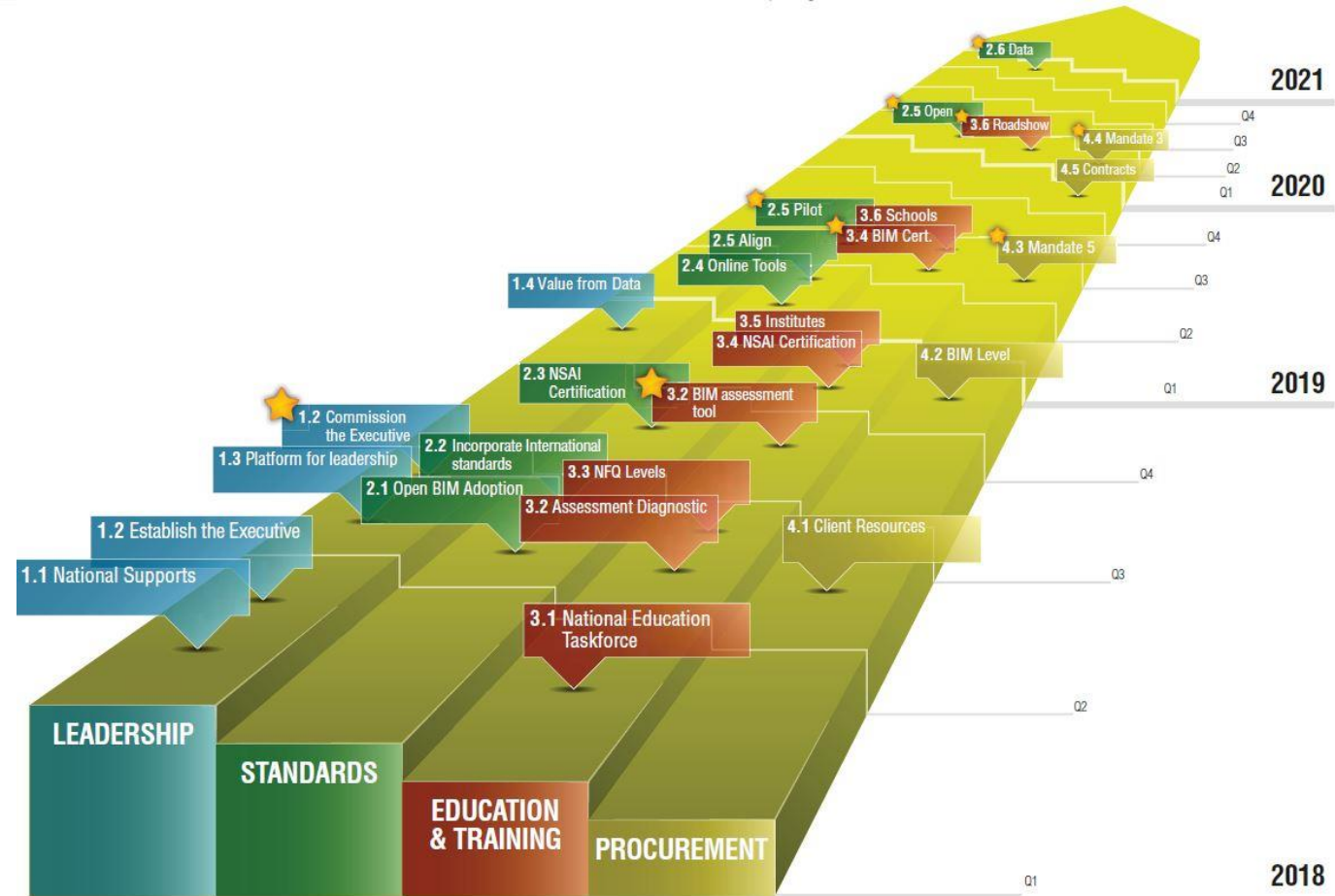


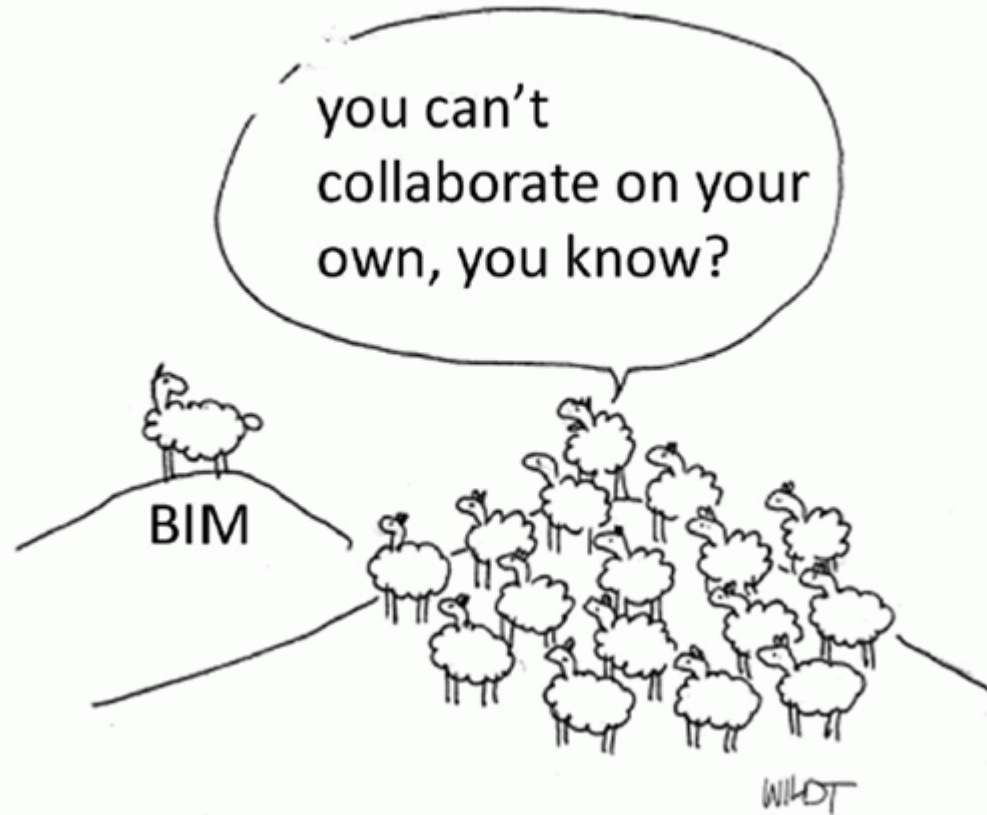
An investigation into current **procurement strategies** that **promote collaboration** through **early contractor involvement** with regards to their suitability for **Irish public work projects**



Roadmap to Digital Transition

For Ireland's
Construction Industry
2018-2021







- Current procurement methods are a barrier to collaborative working
- Appropriate procurement method can shape success of a project and some are better than others at promoting collaboration
- Clients are unhappy with traditional procurement and demand changes
- Selecting lowest bid rarely equates to value for money for the client



Literature Review

- Early Contractor Involvement (ECI)
- Public Work Procurement in Ireland
- Public Work Procurement in the UK
- Project Alliance and Integrated Project Delivery

Semi Structured Interviews

- Evaluation of collaboration and public works contracts in Ireland
- MEAT and Selection Criteria
- Early Contractor Involvement and Collaborative Procurement Methods

Case Study



Early Contractor Involvement (ECI)

Benefits:

- Improved collaboration
- Increased Buildability
- Reduced Risks
- Early Completion of Projects
- Savings on projects costs
- Reduced change orders
- Off Site Construction
- Overall better value for money
- Promotes BIM & Lean

Drawbacks:

- Difficult to implement: “defies established Standards”
- Challenge for public sector regulated by EU Procurement Laws.
- Requires new procurement methods (2 stage tender)
- Selection of winning bid based on qualitative criteria, not the lowest bid
- Absence of competition during 2nd stage.
- Contractor’s input needs to be compensated



Public Work Procurement in Ireland

Capital Works Management Framework (CWMF) Objectives:

- Greater cost certainty at the award stage
- Better value for money at all stages (Whole life cycle cost, not just capital cost)
- More efficient end-user delivery

Findings:

- Do not provide value for money
- Do not provide cost certainty due to incomplete design at tender stage



Forms of Contract for Public Works:

Nature of Works	Contract Type	Code	Form of Contract
Building Works	Traditional	PW-CF1	Public Works Contract for Building Works designed by the Employer
	Design and Build	PW-CF2	Public Works Contract for Building Works designed by the Contractor
Civil Engineering Works	Traditional	PW-CF3	Public Works Contract for Civil Engineering Works designed by the Employer
	Design and Build	PW-CF4	Public Works Contract for Civil Engineering Works designed by the Contractor
Minor Works, Building and Civil Engineering	Traditional	PW-CF5	Public Works Contract for Minor Building and Civil Engineering works designed by the Employer
Short Form, Building and Civil Engineering	Traditional	PW-CF6	Public Works Short Form of Contract for Public Building and Civil Engineering Works

Nature of Works	Contract Type	Code	Form of Contract
Investigation, Building and Civil Engineering	Traditional	PW-CF7	Public Works Investigation Contract
	Traditional	PW-CF8	Public Works Investigation Short Form of Contract
Framework Agreement		PW-CF9	Public Works Framework Agreement
Large projects (e.g. over €100 million), or technically complex projects on which Contractor input is required at an early stage PW-CF10 Public Works Contract for EARLY COLLABORATION		PW-CF10	Public Works Contract for EARLY COLLABORATION
Urgent maintenance requirements or where certain types of planned maintenance and refurbishment are envisaged		PW-CF11	Public Works Term Maintenance and Refurbishment Works Contract

(Office of Government Procurement (2009). Capital Works Management Framework Guidance Note - Introduction to the Capital Works Management Framework GN 1.0)



Winning tender:

- Should be chosen as Most Economically Advantageous Tender (MEAT) or best price-quality ratio
- Based on objective criteria to ensure transparency, non-discrimination and equal treatment

MEAT:

- Assessment combines price and quality
- Required on all project exceeding €2m in value
- Technical, Management and Commercial Criteria



PW-CF10 Public Works Contract for Early Collaboration:

- For large projects over €100m only
- Two-stage tender process which facilitates ECI
- Contractors paid an early service fee to take the design to a stage where they can offer a Guaranteed Maximum Price (GMP) for the work
- GMP should be lower than the Target Price tendered during the first stage
- Introduces concept of Initial Saving Share (percentage of the difference between the agreed Guaranteed Price and the tendered Target Price for a Task)



UK Government's recommended procurement models:

- Two Stage Open Book
- Cost Led Procurement
- Integrated Project Insurance

Forms of contracts endorsed by UK Government to support these procurement methods:

- ACA Partnering Contract PPC2000
- JCT Constructing Excellence Contract
- NEC3 Contract (& NEC4 since 2018)

Bidders chosen based on:

- Capacity
- Capability
- Stability
- Experience
- Strength of supply chain
- Profit/fees/overheads
- Other costed proposals



Project Alliance (Australia Model):

- Introduced in 1990s on oil & gas projects
- \$30bn worth of public sector projects completed or planned using Alliances
- 3 collaborative procurement methods: Early Contractor Involvement (ECI), Early Tender Involvement (ETI) and Managing Contractor
- Selection based on non-price and/or price elements (Full price, partial price or non-price)
- Non price criteria include capability, experience and financial capacities
- Price criteria include reimbursable costs, corporate overheads and profit margin
- Fixed margin as opposed to a percentage: contractor has no commercial motive to oppose cost saving design solutions



Integrated Project Delivery (IPD) – US Model:

- Selection based on qualitative non-price criteria
- Necessary as team is formed as early as possible (Before design is even started)
- Re-design and value engineering replaced by target value design process
- Open book estimating
- Budget monitored by independent consultant
- Fixed Margin as opposed to percentage

Challenges:

- How to select a project team that will collaborate effectively?
- How to ensure transparency and fairness with qualitative selection?
- How to prove value for money when there is no price competition?



Name	Company	Role
Participant A	Public Procurement Agency	Senior Architect - BIM Champion
Participant B	Public Procurement Agency	Senior Engineer Estate Management
Participant C	Solicitor	Procurement & Construction Law, Public Work Contracts
Participant D	Tier 1 Contractor	CEO
Participant E	Tier 1 Contractor	Director

Objectives:

1. Evaluation of collaboration and public works contracts in Ireland
2. MEAT and Selection Criteria
3. Early Contractor Involvement and Collaborative Procurement Methods



Key Takeaways:

1. More collaboration is needed to improve project outcomes, but it is not reflected in the current suite of public work contracts.
2. There is a knowledge, experience and expertise gap in the industry and public sector about ECI and other collaborative procurement methods.
3. Assessing qualitative criteria in a fair, transparent and consistent manner is challenging a move away from the price as being the main selection criteria.
4. The need to comply with local and EU procurement rules and getting value for money by price competition will challenge the creation and implementation of an IPD PWC.



How did it work?

- Client appointed IPD & Collaboration consultant to get people on board
- Use of IPD Features such as Collaboration, Co-location or Project Dashboards
- Daily meetings
- Each stakeholder had one vote

Benefits:

- Project was on budget
- Variations virtually eliminated
- Decisions were made quicker than on a traditional project
- Able to implement Lean Processes and Off-Site Pre-Fabrication thanks to ECI



Education & Training

Contractor Prequalification/Tender Evaluation

Develop collaborative working for public works

Develop Early Contractor Involvement



Thank you

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