



About Trinity College

Since its foundation four centuries ago, Trinity College Dublin has held rank as one of the world's great universities. It is ranked 88th in the world, 22nd in Europe, combining advanced research and scholarship with an educational environment that values the whole student experience.

Invitation to Tender for Design Team

In August 2013, the governance board of Trinity College Dublin included a vision statement for a new Business School in

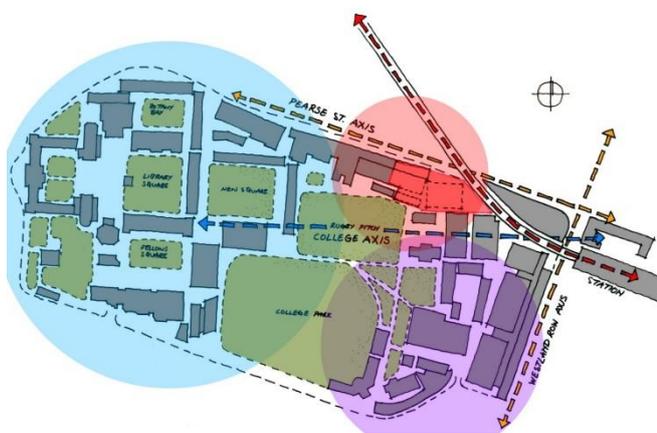
the invitation to tender for design team members circulated via the Irish Public Procurement Service. The Invitation to tender required the Project Team to develop the preferred design to a Level 2 maturity Building Information Model (BIM) to allow the procurement of a Construction Contractor (i.e. managed 3D environment held in separate discipline 'BIM' models and tools with attached data. The architect as lead designer was required to prepare a project strategy or plan that provides for information sharing between all key design/construction disciplines via BIM, including exchange formats and procedures. Key requirements included:

- BIM to be used for client "virtual walk through" at various stages of design.
- BIM to be utilised to achieve optimum Energy performance for design options
- Building information to be recorded within COBie parameters for handover to client

It was exciting to see that Trinity College Dublin were taking a lead by procuring a project to Level 2 BIM standards. Like the aspirations for the development of the new Business School, the advancement of technology and new processes to manage design brought challenges which required strategy and careful management. The design team combined a knowledge of BIM software systems from graduates, BIM management skills gained from working on projects in the UK during the lean years and the experience of project architects and engineers who have been involved in similar projects.

The Site

Trinity Business School is being located on a 0.518 ha site approximately, within the campus of Trinity College Dublin, Dublin 2. The site is principally bounded by Pearse Street to the north; the



existing railway line to the east; existing structures on Pearse Street to the west and the Trinity College campus to the south. The site also includes Nos. 183-188 Pearse Street (incl.), which are Protected Structures, which will be refurbished as a cafe and student accommodation with related ancillary uses. The development includes the demolition of the existing Sports Hall (Luce Hall) previously designed by Scott Tallon Walker Architects in the 1970s, the maintenance workshops and first floor WCs to the rear of Nos. 183-188 Pearse Street.

The Building

The development consists of the School of Business, Innovation and Entrepreneurship Hub, Auditorium, Restaurants and Pearse Street Terrace Refurbishment (Protected Structures). The proposed new building comprises six floors of lecture/office accommodation over two basement levels linked to Nos. 183-188 Pearse Street. The development also includes the refurbishment,

Trinity Business School – Case Study

including internal revisions, of Nos. 183-188 Pearse Street, which will be extended at the rear ground floor level to provide cafe use with student accommodation at first and second floor levels.



Entrances from Pearse Street and the campus are at ground floor level and give access to an atrium space which includes an Exhibition Area, access to a lecture theatre, access to the upper level of the 600-person auditorium, general circulation and informal meeting and gathering space. Stairs and passenger lifts give access to all lower and upper floors. The 600 seat Auditorium can

accommodate both large and small audiences for events such as the welcoming of new students, major award ceremonies, lectures, graduation events and conference plenary sessions. It is capable of being used in a number of modes: entirely flat floor, raked and flat floor, or subdivided into two separate 300 seat spaces, one raked and one flat.

Survey

In February 2014, Scott Tallon Walker, Arup and IN2 prepared a specification for procurement of a survey which included a Point Cloud Survey for the protected structures, and the adjacent buildings. The document set-out very prescriptive requirements for the information to be delivered which included a Full cartographical two dimensional (2D) topographical survey, Point Cloud Survey and Revit models to varying levels of detail. The contextual Revit models Coastway Surveys who were the successful bidder have been very useful for such as constrained and historic site.

Planning and Regulatory Compliance

A Planning Application was submitted in June 2015 and permission was granted in September 2015. Fire Safety Certificate and Disability Access Certificate applications were lodged in in September 2015.

Invitation to Tender for the Construction Team

In January 2016, Turner & Townsend prepared the construction tender documentation which included documentation from Trinity College Dublin and the Design Team. A comprehensive and updated Employers Information Requirements (EIR) document was prepared by Trinity College Dublin which captured the requirements for information in the model to be provided by the contracting team. Tender documents for the main contract and separate Mechanical & Electrical contracts were issued in March 2016.



Construction Team

Enabling works which included civil works and a temporary electrical substation was awarded to BAM. JJ Rhatigan and Company were awarded the main contract to construct the Business School in June 2016. T Bourke and Company were awarded the Mechanical Contract with the Designer Group being successful with the Electrical Contract.

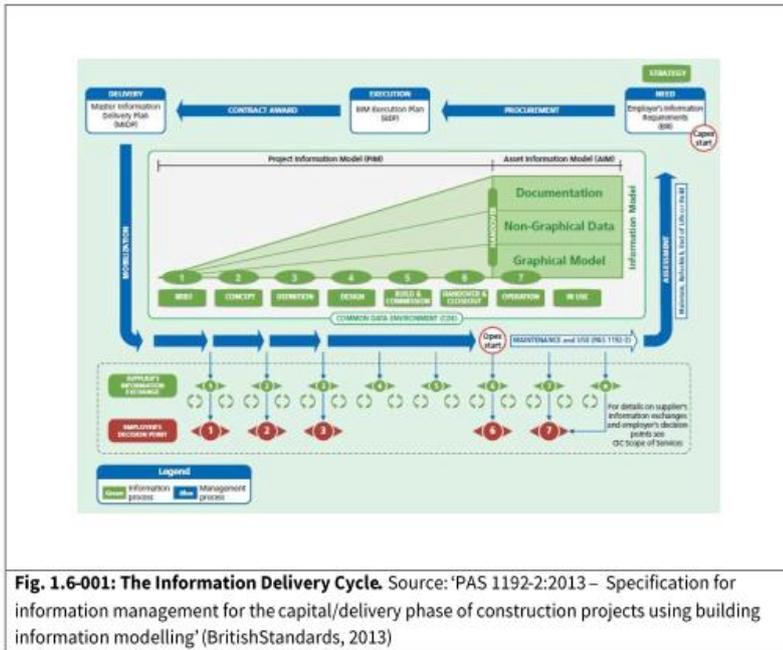


Fig. 1.6-001: The Information Delivery Cycle. Source: 'PAS 1192-2:2013 – Specification for information management for the capital/delivery phase of construction projects using building information modelling' (BritishStandards, 2013)

Data and Information Drop 1: (See Appendix 1)

Stage 1 – 'Preliminary Design'

Stage 2a – 'Scheme Design'

Data and Information Drop 2: (See Appendix 1)

Stage 2b – 'Developed Design and Planning'

Data and Information Drop 3: (See Appendix 1)

Stage 2c – 'Detailed Design and Tender Documentation'

Stage 3 – 'Tender Issue, Evaluation & Award'

Data and Information Drop 4: (See Appendix 1)

Stage 4 – 'Construction'

Data and Information Drop 5: (See Appendix 1)

Stage 5 – 'Handover and Final Account'

Stage 5 – 'Operations and Maintenance'

Key Statistics

- **Site Area:** 5,200 m²
- **Gross Internal Area:** 14,155 m² including protected structures
- **Contract / Delivery Type:** Irish Government Public Works Contract - PWC-CF1 v2.0 Jan 2016.
- **BIM:** Level 2 BIM in accordance with PAS1192-2:2013
- **Sustainability:** NZEB, BER A2

Design Team

- **Architects:** Scott Tallon Walker Architects
- **Structural/ Civil Engineer:** Arup
- **Façade Engineer:** Arup
- **Mechanical & Electrical Engineer:** IN2
- **Project Manager:** Turner & Townsend
- **Quantity Surveyor:** Turner & Townsend
- **PSDP:** Turner & Townsend
- **Fire Engineer:** Michael Slattery and Associates
- **Acoustics:** AWN Consulting
- **Sustainability:** IN2
- **Planning Consultant:** Tom Philips and Associates
- **Conservation Architect:** David Slattery Conservation Architects
- **BCAR Consultant:** Procert
- **Landscape Architect:** Mitchell & Associates
- **Catering Design:** QA Design

Construction Team

- **Enabling Works:** BAM
- **Main Contractor:** JJ Rhatigan and Company
- **Mechanical Services Contractor:** T Bourke
- **Electrical Services Contractor:** Designer Group

Contributors / Speakers

- **Michael Earley** – Scott Tallon Walker Architects
- **Liam Farrelly** – Scott Tallon Walker Architects
- **Adrian Ryan** – Arup
- **Celine O'Connor** – JJ Rhatigan and Company