



# TOBIN

Consulting Engineers

[www.tobin.ie](http://www.tobin.ie)



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@tobinengineers

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# About TOBIN Consulting Engineers...



Building & Infrastructure



Water Services



Energy & Environment



## Tradition

Founded by Patrick J. Tobin in 1952, our company is based nationwide with offices in Galway, Dublin, Castlebar and Shannon. We also have an office in Westminster in central London. Today, we operate as a complete multi-disciplinary engineering consultancy firm, employing over 100 professionals throughout our offices.

Since our inception, we have continued to work closely with local authorities, government departments, state bodies, architects, private developers, building contractors and planning consultants to provide innovative solutions to a wide range of challenging and complex engineering and building projects in both Ireland and the UK.

*Patrick J. Tobin*



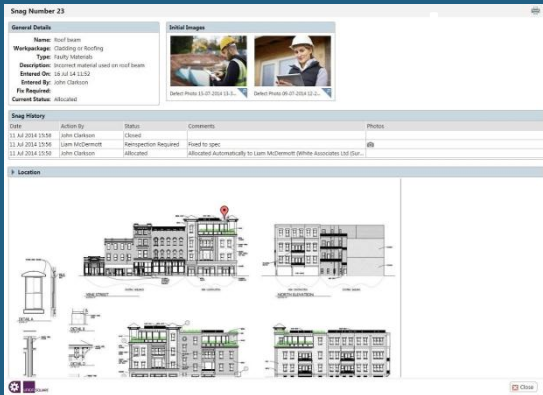


# TOBIN Accreditations



TOBIN Consulting Engineers operate a completely integrated business management system (BMS) which is based on the most up to date versions of **ISO 9001** (Quality Management System), **ISO 14001** (Environment Management System) and **OHSAS 18001** (Safety Management System).

## ISO 9001:2015 Clause 6 Planning Risk Management



We have introduced a Risk Management process that identifies, records, scores, evaluates and monitors risk within the organisation/business and also within our projects.

The scoring system helps us prioritise high risk issues. Our Risk register is reviewed at regular intervals to ensure highest priority items are being worked on. Its a live database

We have assigned responsibility for Risk Management to a Director within the organisation.



Changes regarding documented information detailed in ISO 9001:2015 clause 7.5

These new requirements coincided with TOBIN planned document changes. We were also implementing a lean approach to our documents

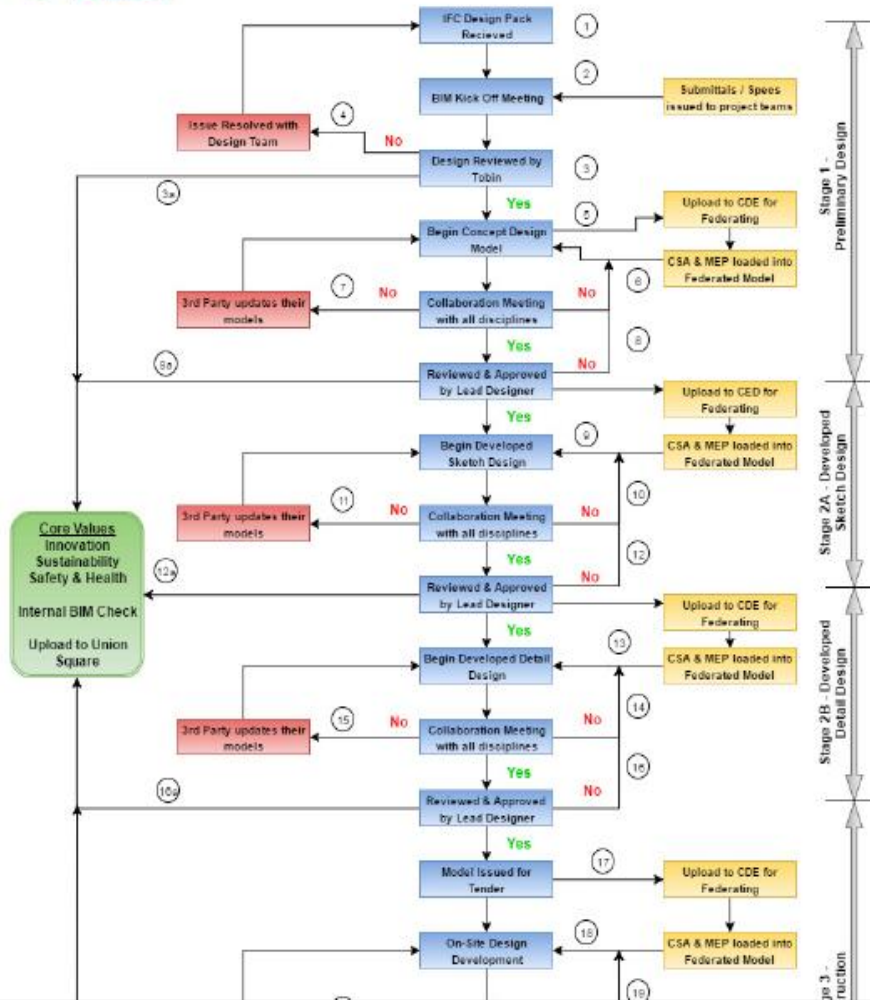
Using lean, we have started to think all of our activities as processes, with defined inputs and expected outputs. (This language is easily understood in an engineering environment). We have also generated a visual process flow for all processes, with responsibilities and references and internal audit checks included

These process flowcharts, when complete, will make up our NEW quality manual

# Example of a process flowchart



## BIM Level 2 Project Workflow



### PROCESS STEPS

- Contract awarded. Design Model and IFC design drawings are issued by the client / lead architect.
- BIM Kick-off meeting is held where the project BIM manager and management team review the BEP. All required information is requested by the BIM Manager and the submittals issued to the project team.
- 3a & 4. The Tobin project team review the design information and plan the design process focused on Tobins Core Values of Innovation, Sustainability and Health & Safety. If there are issues with the design then Tobin need to work with the design team in order to rectify any problems.
- The design team begin preparing the concept design and detailing the concept model. All models are uploaded to the CDE and appended into the federated model and clash detected weekly. The CSA models are appended along with the MEP model to produce a federated model.
- 6 & 7. A collaboration meeting is held between all disciplines. If there is a clash the affected discipline remodels. This will be adjudicated within the collaboration meeting.
- 8 & 8a. Once the model has been agreed upon it is reviewed and approved by the Tobin Lead Designer and BIM Team Lead. The Lead Designer will perform a check in accordance with Tobins Core Values, ensuring that the design is Innovative, Sustainable and focuses on Health & Safety. The BIM Lead will perform a detailed model validation review in accordance with Tobins BIM Standards, to ensure that the model complies with the BEP. If not approved then the affected designer must remodel their model depending on the design team need. Upon approval a record model is locked and uploaded to Union Square.
9. The design team then begin preparing the developed sketch design. All models are uploaded to the CDE and appended into the federated model and clash detected weekly. The CSA models are appended along with the MEP model to produce a federated model.
- 10 & 11. A collaboration meeting is then held between all disciplines. If there is a clash the affected discipline remodels. This will be adjudicated within the collaboration meeting.
- 12 & 12a. Once the model has been agreed upon it is reviewed and approved by the Tobin Lead Designer and BIM Team Lead as per Step 8 & 8a. Upon approval a record model is locked and uploaded to Union Square.
13. The design team can then begin preparing the developed detail design. All models are uploaded to the CDE and appended into the federated model and clash detected weekly. The CSA model is appended along with the MEP model to produce a federated model.
- 14 & 15. A collaboration meeting is then held between all disciplines. If there is a clash the affected discipline remodels. This will be adjudicated within the collaboration meeting.
- 16 & 16a. Once the model has been agreed upon it is reviewed and approved by the Tobin Lead Designer and BIM Team Lead as per Step 8 & 8a. Upon approval a record model is locked and uploaded to Union Square.
17. Once all models are agreed upon and deemed to be clash free by the

### ROLES & RESPONSIBILITIES

**Roles:**

- BIM Manager – External
- BIM Manager – Internal
- BIM Team Lead
- BIM Detailer
- Lead Designer
- Senior Project Engineer
- Design Engineer

**Responsibilities:**

The BIM Manager (External) works for They ensure that all BIM procedures are adhered to and interact with the project at a high level.

The BIM Manager (Internal) works for is responsible for implementing Tobin Standards on all projects and managing and hardware requirements.

The BIM Team Lead ensures that all BIM milestones are met on a given project direct point of contact for the BIM Manager. Each design team has a Project Manager.

BIM Detailer is responsible for 3D detail detection, 2D drawings and model verification.

Lead Designer is an associate level engineer is responsible for approving all final model drawing submissions.

Senior Project Engineers are chartered who are responsible for the main design assisting BIM detailers with design issues.

Design Engineers will assist the Senior with the design and verification of a BIM model.

**KEY:**

- BIM – Building information Modelling
- BEP – BIM Execution Plan
- IFC – Industry Foundation Classes
- CDE – Common Data Environment
- CSA – Civil Structural Architectural



# ISO 9001:2015 Clause 10 Improvement

**Lessons Learned (Project Based)**  
**CAPA (Business or Project, we don't meet a requirement)**  
**Business Change (significant change in the organisation)**

**Lesson Learned Philosophy**  
 Lessons can be learned from every project  
 Lessons are positive and have to be communicated and available to all staff.  
 Lessons = knowledge and are part of the "company memory"

**Business Change database**  
 Capture all the significant changes within the company. Require a budget, and resources to implement. A monitoring team oversees the implementation.

