



# CASE STUDY



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## REVIT BIM COLLABORATION FOR STRUCTURAL CONCRETE TRADE

Construction professionals are using Autodesk Revit software application for producing the 3D Concrete BIM Model to meet various project objectives such as:

- Creation of 3D Concrete Model for Clash Coordination & Production of Shop Drawings
- Constructability Review through Model Update for reflecting changes from Design Changes, RFI Generation & Update
- Generation of Concrete Lift drawing such as:

- Slab & Slab Soffit Drawings ◀
- Wall & Column Layout Plan ◀
- Embed Layout Plan ◀
- Detail Drawings ◀
- Wall Elevation ◀
- Pouring Sequence Plan ◀





## Top 5 Challenges Involved in the Structural Concrete Projects:

### 1 Aggressive Project Deadline:

Often, several project stakeholders get involved in model execution. Hence, it becomes hard to progress smoothly in the same project. If the project is spread over a large area, it would be more difficult to resolve the coordination challenges within the stipulated time.

### 2 Work Detailing for Slab on Grade:

Engineers often have to include numerous detailing for model creation and shop drawing.

### 3 Managing Structural Components:

Due to the involvement of various structural components such as the beams & ramps, there could be different elevations, making it tough for adjusting the beams and ramps, throughout the floor.

### 4 Inadequate Drawing Information:

Sometimes, it becomes difficult to obtain information from the input drawings & engineers need more information and reference for project execution.

### Setting up the Shop Drawing Standard: 5

Often, it is difficult to set up shop drawing standards in comparison to the client's requirement during the project onset.







## BIM Solutions in respect of the 5 Challenges:

### The solution to Aggressive Project Deadline:

Engineers using BIM can deliver files on time, creating 3D BIM Model and producing shop drawings from it.

### The solution to Work Detailing for Slab on Grade:

The engineers can create various detailing work such as the thickened slab, sloped slabs, and slab edge using BIM Revit Families much ahead of time. As a result of which, the hour consumption gets reduced, resolving the problems smoothly.

### Solution for Managing Structural Components:

Revit BIM Tools help in creating Beam Systems where the structural engineers can easily make several beams simultaneously.

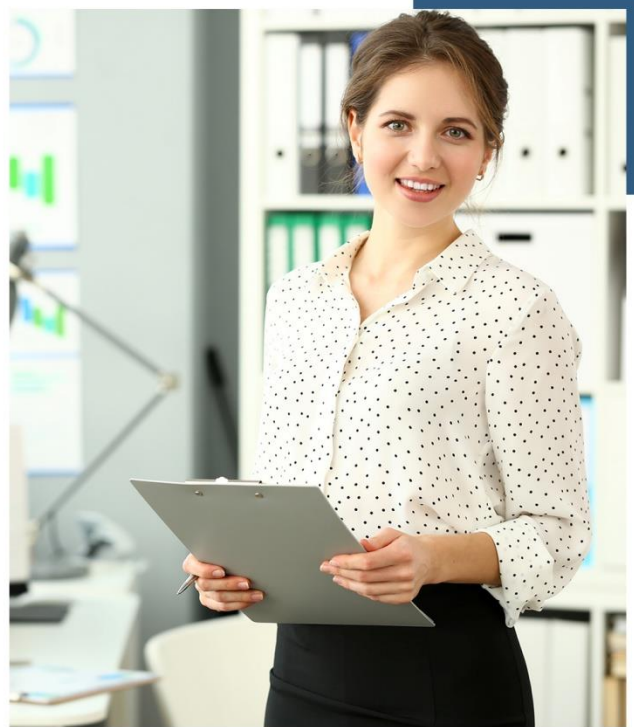


## The solution to inadequate Drawing Information:

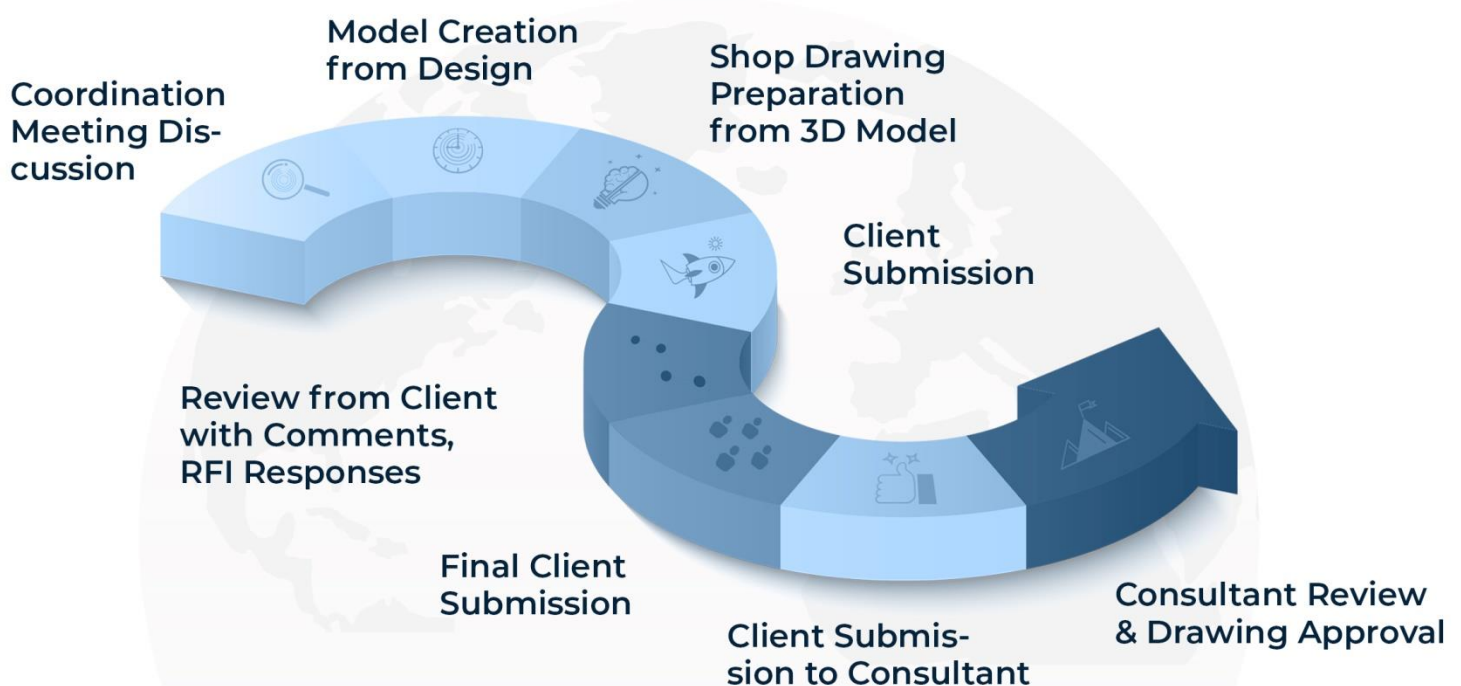
BIM helps in identifying drawing inconsistency for which the engineers can raise RFIs to the client for attaining the right solution.

## Solution for Setting-up the Shop Drawing Standard:

Mock up can be created for a specific level with BIM and can be shown for general comments to the clients. After obtaining the feedback from the client, one can start making other sheets. Colors can be used in the drawings for detecting elements, elevations, and footings in output, facilitating clients in quick segregation.



## Work Process of Revit BIM Collaboration for Structural Concrete





## The opinion of Structural Engineers from BIM Implementation



- ✓ Revit BIM facilitates planning using intelligent 3D BIM models, allowing anticipation, planning, and coordination of every facet of project design & detailing.
- ✓ Revit BIM helps in detecting constructability issues before construction, identifying clashes, thus avoiding work stoppage, rework & wastage of time & material.
- ✓ Managing projects through Revit helps to emphasize on better engineering & client satisfaction.
- ✓ Revit BIM software automates workflow about RFIs, mark-ups, submittals, document approvals, and communication, making a productive team, slashing the time consumed, and helping the project move forward.

### Result:

- 1 Autodesk Revit BIM helps in producing quality output for structural concrete with less effort.
- 2 Improved Quantity of Production at lesser time.
- 3 Ensured ease of access for maintenance provisions and facility management.

## Road Ahead:

Revit will continue to simplify **BIM (Building Information Modeling)** doption, streamliningproject operations in various sectors including public, private & government. Revit integrated BIM providesproficient project collaborations, streamliningproject information management, document control, and resolution of design problems through RFI management. Hence, the Revit-BIM platform will be used for model & information aggregation.

## Call to Action:

Call Tejy Inc. at ☎ 202-465-4830 or email at [info@tejy.com](mailto:info@tejy.com) ✉ to discuss your requirement with Construction Management, Building Information Modeling, Architectural, Engineering Service & Permit Expediting Services in Maryland (MD), Washington DC (DC), Virginia (VA), Maryland (MD), Baltimore, New York, New Jersey, Delaware, Richmond andPhiladelphia areas in the USA.

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