

3D MODELING

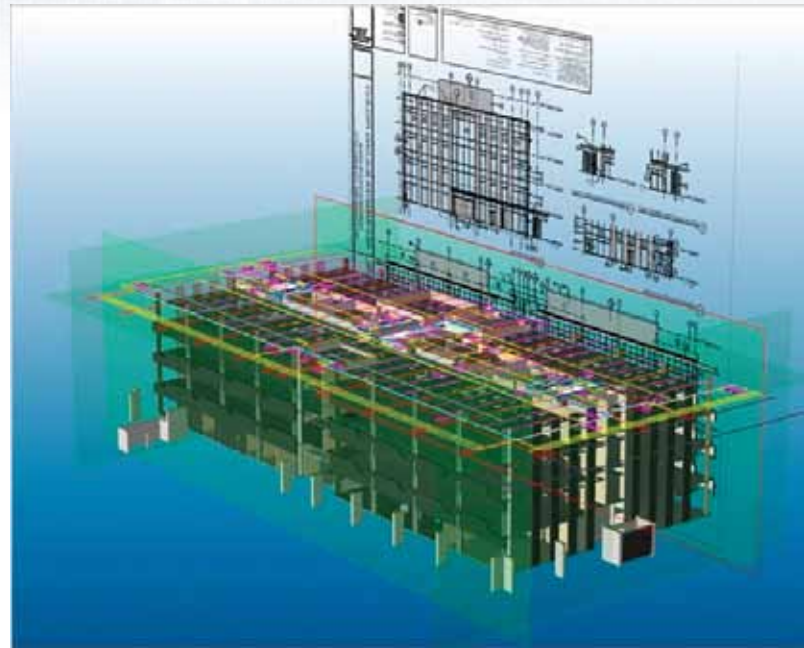
3D MODELING BASED ON 2D DRAWINGS

Purpose

Although the preferred approach of a GC/CM is to utilize models authored by design teams and subcontractors, not all extended project teams have players who can model for construction purposes. Design model quality may not be sufficient for coordination or a subcontractor whose scope is critical for coordination or quantity take-off has not even been bought out yet. Sometimes subcontractors are not willing to model and have to outsource their modeling anyway. In this case, it is often more cost effective for the GC to have subcontractors buy modeling services from one source so that the models will have consistent quality and to allocate the cost by invoicing the subcontractors.

Why use Trimble for 3D modeling?

Trimble has a large virtual construction team with a decade of experience. Over 400 projects have been modeled for construction purposes for Site, Structural, Architectural, Mechanical, Plumbing, Electrical, Fire Protection trades. These projects include billion dollar hospitals, high rise buildings and also very small projects, such as coordination of a single-family home. Additionally Trimble has experience with modeling miscellaneous metals, detailed curtain wall systems and drywall framing models. The models are purpose-built for various uses such as coordination, construction-caliber quantities, 4D schedules or logistics. All models built by Trimble can be easily used in Vico Office environment. Many formats are supported such as: Tekla, Revit, ArchiCAD, Sketchup, Duct Designer / Pipe Designer, Bentley Aecosim and CadMEP.



3D modeling options

Several options are available in the RFP document.

- Included design disciplines
- Level of Detail for each discipline
- Modeling platform for each discipline
- Bronze, Silver, Gold package
 - o Bronze: just the 3D model, no allowance for changes, no constructability report, follow assumptions rather than asking RFI's
 - o Silver: 3D model, fast-track RFI discussion, constructability report in Excel, no allowance for changes
 - o Gold: 3D model, more time for RFI's, constructability report in Excel + viewpoints in Tekla BimSight, contingency for changes

How to buy?

The process for getting proposals for 3D modeling is simple:

1. Contact the local BuildingPoint partner or Trimble regional manager
2. Fill in a simple RFP form with link to project drawings and description of what is required
3. Choose either Time and Materials or Fixed fee as the contract form
4. A BuildingPoint partner or Trimble regional manager will get back to you with estimated hours (T&M) or fixed price and a detailed list of scope (typical turn-around time for a price is 48 hours)
5. Review the scope and ask for adjustments as necessary. Scope changes will come with an updated estimate
6. Once scope is approved, Trimble or BuildingPoint will issue a contract for signature
7. Upon signature, Trimble Project Manager will schedule a kick-off meeting and the work will start

Time and Materials vs. Fixed Fee

Choose fixed price when:

- The scope can be clearly defined
- There is a tight budget and limited ability to take risk
- Direction changes are unlikely
- Choose Time and Materials when:
 - The scope is uncertain and will require refinement, or needs to be adjusted to match budget
 - Need to start quickly
 - There is the potential for multiple projects with the same team
 - Simple contract, inexpensive rates, transparent operation with red flags raised when forecast is above target