3D Modeling from Point Clouds

OUR EXPERTS TURN YOUR SCANS INTO 3D MODELS

Laser scanning is a quick and accurate way to get data on existing conditions. Applications for General Contractors and Construction Managers include understanding as-built conditions for coordination in renovation projects, calculating quantities for demolition and quality-checking work in place. Although some questions can be answered by simply investigating the point cloud in Trimble RealWorks ® software, other use cases require converting the point cloud data into a BIM model. For example, using the point cloud for coordination or quantity take-off requires the modeling of intelligent and quantifiable BIM elements based on point cloud geometries and within construction tolerances. The resulting model represents an as-built environment that can be used for the lifetime of the building, for planning and tracking maintenance or renovation. The model can be measured and quantified in areas that are often difficult to access, and can be queried using a number of user-defined parameters via the BIM database.

Modeling from point clouds is a manual process that requires significant effort and subject-matter expertise. With the assistance of Trimble VDC Services, our clients can take advantage of our modeling experts to begin working with comprehensive 3D models faster and without the specialized skills to do the work in-house.

Why use Trimble for 3D modeling?

Trimble has industry-leading experience in developing surveying and scanning technologies and a large virtual construction team with a decade of experience in 3D modeling and BIM technologies. Modeling from point clouds requires a different skillset and process than modeling from 2D drawings and many providers underestimate the effort required. This leads to cost overruns, schedule delays and poor quality. Trimble's experience with hardware, software and 3D modeling is a unique combination and helps contractors mitigate these risks and to define a scope that fulfills project requirements with minimal cost.

Scan-to-model options

Several options are available and a Trimble Project Manager will help to choose the best option for each project.

- Included design disciplines
- Level of Detail for each discipline, including tolerance
- Modeling platform for each discipline

Engage Trimble VDC Services

The process for getting a proposal for 3D point cloud modeling is simple:

1. Contact your local BuildingPoint partner or Trimble regional manager
2. Fill in a simple RFP form with a 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 quote 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, a Trimble Project Manager will schedule a kick-off meeting and the work will proceed

Time and Materials vs. Fixed Fee

The way we work together is flexible, depending on your needs and the criteria of your project. Our team is happy to work with you to define the right solution.

Choose fixed price when:

- The scope can be clearly defined
- There is a tight budget and limited ability to take risk
- Changes in direction are unlikely

Choose Time and Materials when:

- The scope is uncertain and will require refinement, or needs to be adjusted to match budget
- You 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

Trimble