



# Point Cloud to BIM Conversion for a Religious Facility

(Architectural, Structural & MEPF Clash Detection, BIM & VDC Coordination Services)

CASE STUDY



TECHTURE



## Project Overview

Techture executed Scan-to-BIM services for an 11,000 sq. ft. religious facility using Autodesk Revit, Navisworks, and ReCap Pro. The project involved converting client-provided point cloud data into a coordinated LOD 200 3D model for Architecture, visible Structure, and MEP systems. Architectural modeling captured walls, doors, windows, floors, and ceilings, while structural and visible MEP elements were accurately represented based on the scan data. The one-time modeling effort provided a digital twin of the facility, enabling clash-free coordination and serving as a base for any additional detailing or renovations.

## Scope & Deliverables

- ❏ Convert point cloud data into LOD 200 3D Revit models for Architecture, Structure, and visible MEP elements
- ❏ Architectural modeling of walls, doors, windows, floors, ceilings, partitions, and decorative elements (generic families)
- ❏ Structural modeling of columns, beams, staircases, and other visible load-bearing elements
- ❏ MEP modeling of visible ducts, pipes, fixtures, and equipment from scan data
- ❏ One-time modeling effort with additional architectural detailing (e.g., skylights, casework, ceiling fixtures) handled on T&M basis

---

## Challenges

- ❏ Working with incomplete or low-quality point cloud scans for accurate modeling
- ❏ Identifying and modeling only visible MEP and structural elements
- ❏ Maintaining LOD 200 accuracy while excluding fabrication-level detailing
- ❏ Ensuring alignment between architectural, structural, and MEP systems without original CAD drawings
- ❏ Integrating decorative or non-standard items like skylights and wood/glass screens

## Techture Approach

- Established a scan-to-BIM workflow using ReCap Pro to process point cloud data into Revit
- Created simplified parametric families to represent visible elements while maintaining model accuracy
- Coordinated models across disciplines using Navisworks for clash detection and verification
- Maintained continuous client communication for missing data and clarifications
- Delivered a digital twin suitable for future renovations, coordination, or facility management

---

## Benefits

- Accurate LOD 200 digital twin for architectural, structural, and MEP systems
- Reduced risk of conflicts in future design or renovation work
- Faster coordination between disciplines without relying on original drawings
- Provides a reliable base for additional detailing on T&M basis
- Streamlined visualization for stakeholders and decision-making