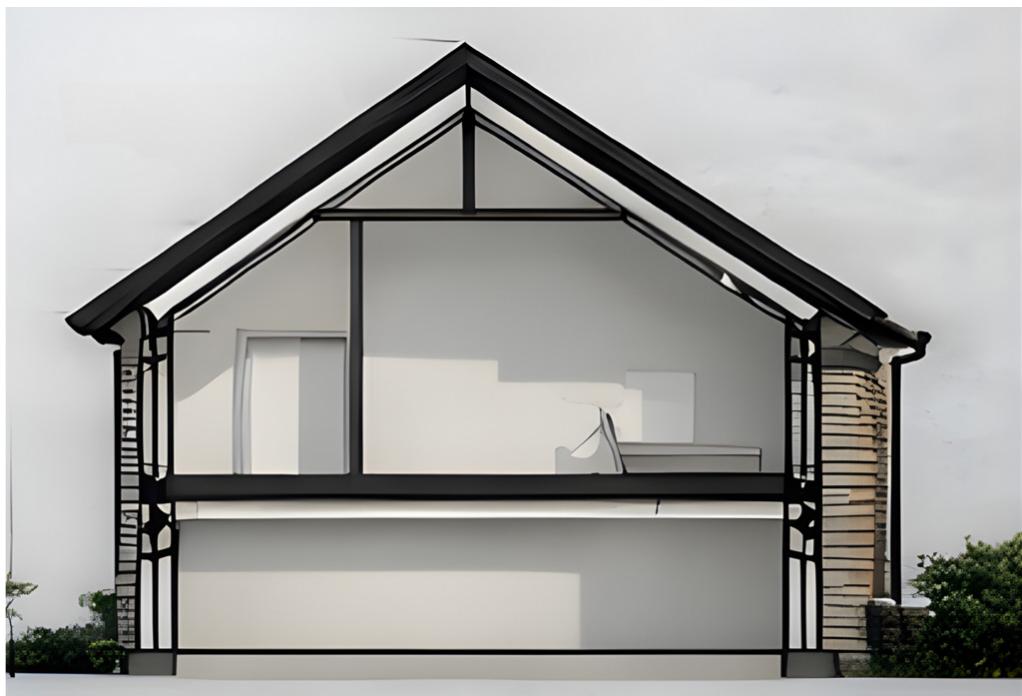




# Residential - Scan to BIM

(Scan to BIM Modelling, BIM & VDC Coordination Services)

**CASE STUDY**



**Client** : Architect

**Team Size** : 2 No.s (BIM Engineer & BIM Coordinator)

**Disciplines** : Architectural & Structural

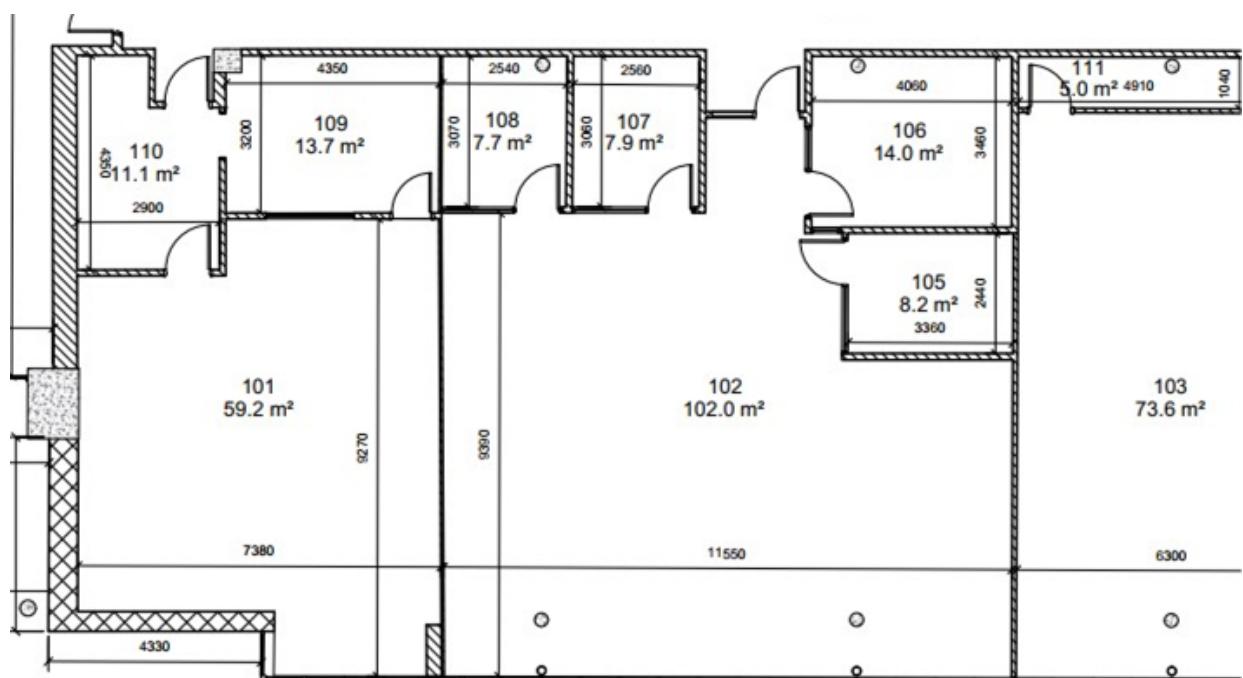
**Duration** : 2 weeks

**Scale** : 20,000 Sq. Ft.

**Software** : Autodesk Revit, & Autodesk Recap Pro

**Type** : Residential

**Location** : Chicago, USA



# Project Overview

Techture delivered a Scan-to-BIM solution for a 20,000 sq. ft. residential building using Autodesk Revit and Autodesk ReCap Pro. The project involved converting registered point cloud data into an accurate LOD 300 Architectural and Structural BIM model. Existing building geometry was interpreted directly from laser scan data to create a reliable as-built representation. The validated model served as the basis for coordinated 2D drawing extraction to support design reference and future MEPF integration.

## Scope & Deliverables

- Conversion of point cloud data to coordinated LOD 300 Revit models for Architecture and Structure
- Architectural modeling of walls, floors, doors, and windows based on scan alignment and geometry
- Structural modeling of concrete columns, beams, staircases, and railings where clearly visible in the scan
- Use of standard Revit families aligned with LOD 300 and coordination requirements
- Extraction of 10 coordinated 2D drawings, including plans, sections, and elevations

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## Challenges

- Variations in point cloud density affecting element visibility and accuracy
- Interpretation of partially occluded structural elements from scan data
- Aligning architectural and structural elements where scan noise was present
- Maintaining LOD 300 consistency across disciplines with limited as-built information

## Techture Approach

- 📦 Processed and validated point cloud data in Autodesk ReCap Pro prior to modeling
- 📦 Established accurate project coordinates and levels directly from the scan
- 📦 Modeled architectural and structural elements using scan-driven snapping and sectioning techniques
- 📦 Flagged low-confidence areas and communicated assumptions proactively to the client
- 📦 Generated clean, coordinated Revit views for reliable 2D drawing extraction

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## Benefits

- 📦 Accurate digital representation of existing conditions at LOD 300
- 📦 Reduced site rework through scan-based modeling
- 📦 Reliable architectural and structural coordination from a single BIM source
- 📦 Faster documentation via model-driven 2D drawings
- 📦 BIM-ready asset supporting future renovations or design development