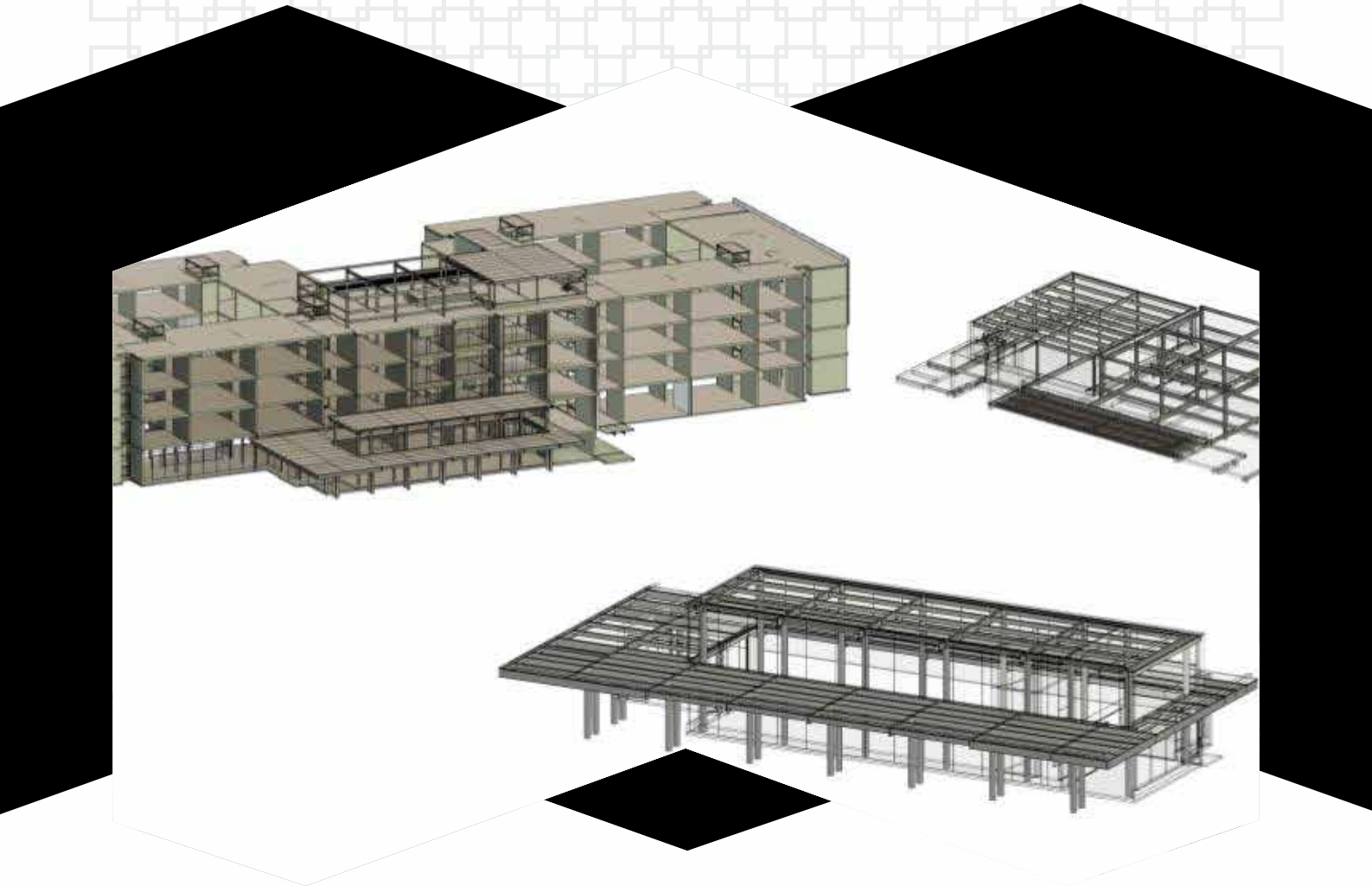


Long-Term Care Facility

(Healthcare Construction, BIM Coordination, LOD 350 Models, MEP Integration)

CASE STUDY

TECHTURE

Client	: Mechanical Contractor	**Team Size**	: 6 Nos. (BIM Engineers & MEP BIM Coordinator)
Disciplines	: Mep	**Duration**	: 6 months
Scale	: 1,76,000 Sq ft	**Software**	: Autodesk Revit, Navisworks, Bluebeam
Type	: Hospital	**Location**	: Ontario, Canada

Project Overview

This project involved the development of 3D Architectural, Structural, and MEP BIM models to LOD 350 for a long-term care hospital facility. Working from client-provided design drawings, the team collaborated actively with the client throughout model development to ensure all elements aligned with site execution standards.
The scope included multi-trade clash detection and coordination, with detailed clash reports submitted for review and resolution. Drawing production followed the provided sheet list, and all client-approved changes were incorporated promptly to keep the BIM model accurate and fully coordinated across disciplines.

Scope & Deliverables

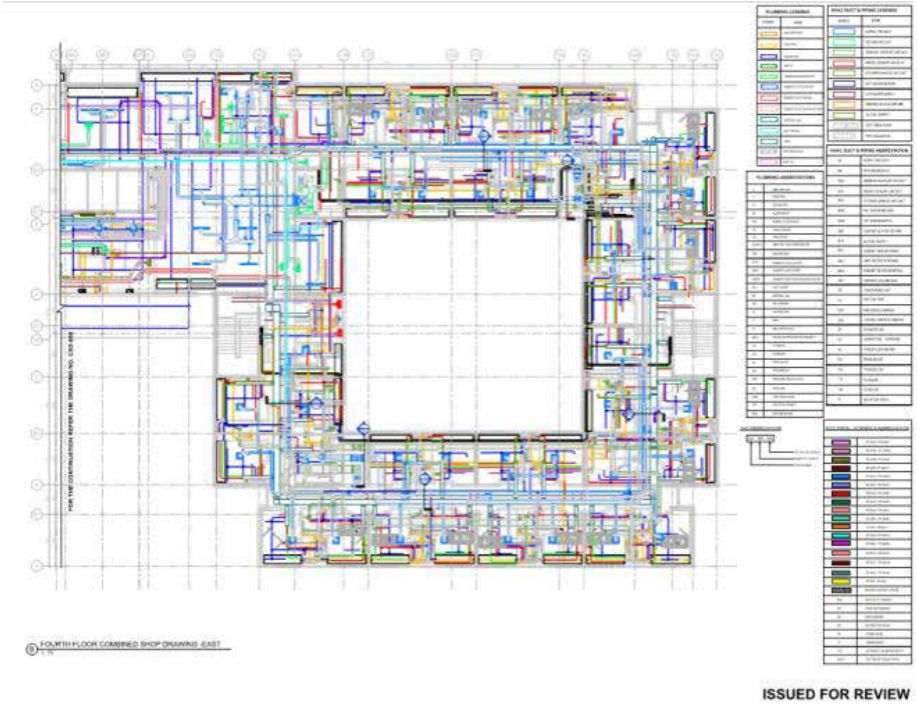
- Developed LOD 350 BIM models for architecture, structure, and MEP systems based on design drawings.
- Conducted clash detection and coordination between all trades, submitting detailed clash reports for client review.
- Integrated client resolutions and design updates into the model to maintain alignment with on-site conditions.
- Collaborated closely with the client during model progression to ensure compliance with site execution standards.
- Produced construction drawings in line with the provided sheet list.
- Incorporated all client resolutions and late-stage design updates into the BIM model to maintain accuracy.
- Ensured model coordination across architectural, structural, and MEP disciplines.

Challenges

- Precision-critical elements: Roof penetrations and pipe sleeves required extremely accurate field layouts to prevent costly rework or delays.
- Frequent design changes: Multiple last-minute design updates from the client required quick turnaround and re-coordination within compressed timelines.
- Space constraints: Very limited available space for service coordination increased the complexity of routing and placement.
- Specialized service integration: Coordinating specialized systems, including escalators within patient areas, required detailed spatial planning.
- Communication gaps: Delays and ambiguities in consultant communication slowed resolution cycles.

Techture Approach

- Proactive coordination strategy: Scheduled regular model review sessions with the client and consultants to pre-empt issues before they reached the site.
- High-accuracy modeling: Applied stringent dimension control for roof penetrations, sleeves, and other precision-critical elements to match on-site conditions.
- Adaptive workflows: Implemented rapid update protocols to integrate late-stage design changes without disrupting overall progress.
- Optimized service routing: Leveraged Navisworks for clash detection in tight spaces, ensuring efficient layouts while preserving maintainability.
- Clear communication loops: Established focused coordination calls and issue-tracking systems to close information gaps with consultants.



Benefits

- Delivered fully coordinated LOD 350 BIM models across all trades, reducing site-based conflicts and change orders.
- Improved installation accuracy for critical elements, avoiding costly rework in precision-dependent areas.
- Ensured efficient space utilization for MEP routing in highly constrained areas.
- Reduced project delays by integrating last-minute design changes quickly and accurately.
- Strengthened collaboration between trades, enabling the mechanical contractor to proceed with confidence during installation.