

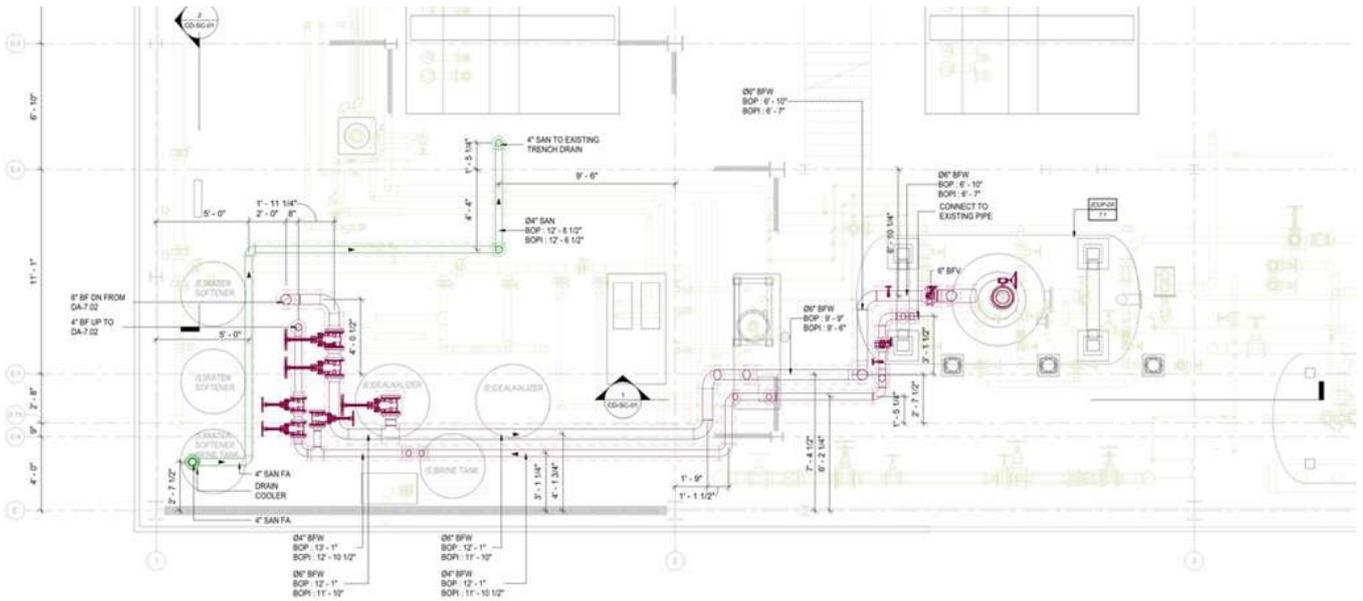
Fabrication-Ready (LOD 400) HVAC BIM Modeling for a High-Rise Commercial Facility

(Mechanical Modeling, BIM & VDC Coordination Services)

CASE STUDY



TECHTURE



Client : Mechanical Contractor

Team Size : 3 No.s (BIM Engineer & BIM Coordinator)

Disciplines : Mechanical

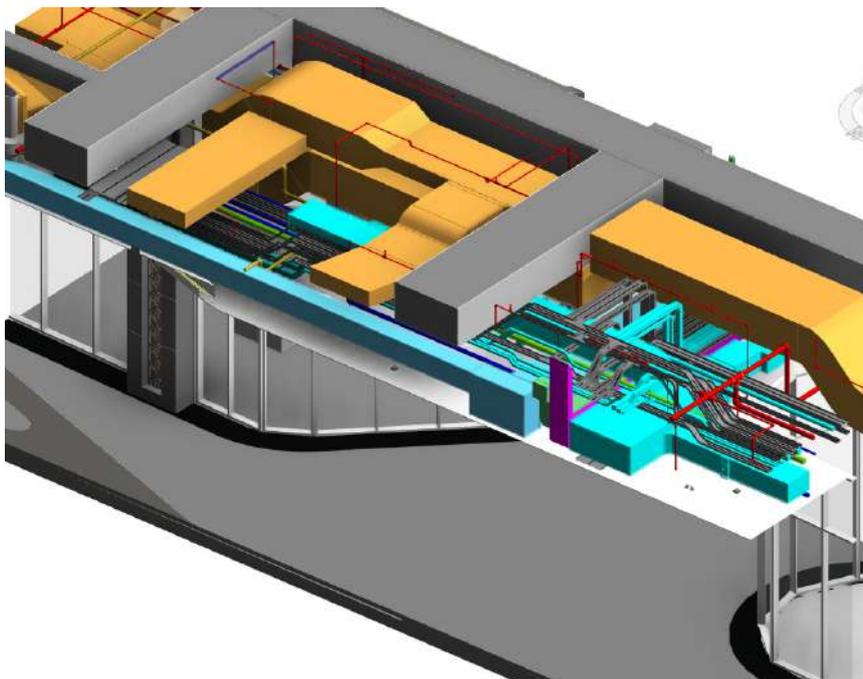
Duration : 3 Weeks

Scale : 50,000 Sq. Ft.

Software : Autodesk Revit & Naviswork

Type : Commercial

Location : Massachusetts, USA



Project Overview

Techture delivered fabrication-ready HVAC BIM modeling for a high-rise commercial facility using Autodesk Revit and Navisworks. The project involved developing a coordinated HVAC model based on client-issued design drawings and integrating it with multidisciplinary models for clash-free execution. Through structured BIM coordination, constructability reviews, and model updates, the HVAC systems were optimized for installation accuracy. The final deliverables included coordinated shop drawings supporting fabrication and on-site implementation. The BIM-driven workflow ensured improved system coordination and reduced construction risks.

Scope & Deliverables

- ❏ Develop HVAC BIM model based on approved design drawings using architectural model as reference
- ❏ Model ductwork, equipment, and associated HVAC components using standard and custom Revit families
- ❏ Perform multidisciplinary clash detection with architectural, structural, and MEP models
- ❏ Prepare constructability reports including viewpoints, screenshots, and issue descriptions
- ❏ Update model based on coordination meetings and RFIs to achieve a clash-free condition
- ❏ Extract coordinated HVAC shop drawings (approx. 6 sheets) for installation support

Challenges

- ❏ Coordinating HVAC routing within dense high-rise service zones
- ❏ Maintaining modeling accuracy while working from design-stage inputs
- ❏ Resolving clashes without impacting architectural clearances or structural constraints
- ❏ Managing coordination updates across multiple stakeholder reviews
- ❏ Ensuring fabrication readiness within limited coordination cycles

Techture Approach

- ▣ Developed disciplined HVAC models aligned with BIM coordination standards
- ▣ Conducted systematic clash detection using Navisworks with structured issue tracking
- ▣ Performed visual walkthroughs and constructability analysis to identify coordination risks
- ▣ Incorporated RFI responses and stakeholder feedback into iterative model updates
- ▣ Generated shop drawings directly from the coordinated BIM model to maintain data consistency

Benefits

- ▣ Reduced installation conflicts through early clash resolution
- ▣ Improved fabrication accuracy and HVAC system constructability
- ▣ Faster coordination approvals through model-based communication
- ▣ Reliable shop drawings aligned with coordinated BIM data
- ▣ Enhanced project efficiency and minimized on-site rework

