Residential LOD 300 Model & Clash Detection

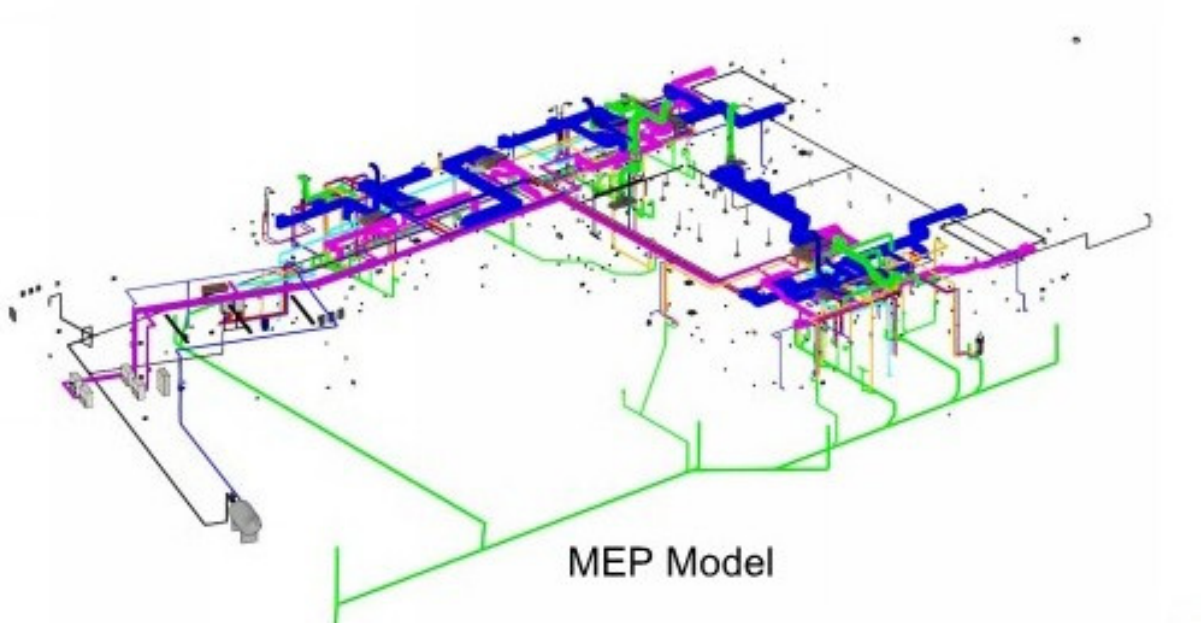
(Architectural, Structural & MEPF Modeling & Walkthrough,BIM & VDC Coordination Services)

CASE STUDY

TECHTURE

Structural Model

Client	: Owner	**Team Size**	: 2 Nos. (BIM Architect & BIM Coordinator)
Disciplines	: Architecture, Structure & MEPF	**Duration**	: 2 weeks
Scale	: 15,000 Sq. Ft.	**Software**	: Autodesk Revit & Naviswork
Type	: Residential	**Location**	: Arizona, USA



MEP Model

Project Overview

This 15,000 sq. ft. residential development required discipline-specific LOD 300 BIM modeling across architecture, structure, MEPF, and landscape using Autodesk Revit. Techture federated each trade model into a coordinated Navisworks environment to perform constructability analysis and systems interface validation. The workflow focused on identifying spatial conflicts, design inconsistencies, and installation risks early in the design stage. Issue tracking, visual viewpoints, and reporting enabled stakeholders to resolve clashes prior to construction and improve design coordination outcomes.

Scope & Deliverables

- LOD 300 model development for architectural, structural, mechanical, electrical, plumbing, firefighting, and landscape systems
- Trade model federation and coordination within Navisworks
- Systematic clash detection and spatial validation
- Structured constructability reporting with screenshots, numbered issues, locations, and descriptions
- Compilation of model viewpoints aligned to issue logs for stakeholder coordination

Challenges

- Aligning multiple trades with varying drawing clarity and development maturity
- Coordinating dense MEPF routing with architectural and structural constraints
- Conveying complex spatial conflicts clearly through model-based communication
- Maintaining model uniformity and standards across all disciplines

Landscape Model

Techture Approach

- Developed discipline-specific BIM models aligned to client documentation and modeling standards
- Federated models and executed iterative clash detection and resolution cycles
- Logged all conflicts using structured issue taxonomy, numbered viewpoints, and annotated screenshots
- Facilitated cross-disciplinary coordination through visual walkthroughs and trackable issue closure workflows

Benefits

- Higher design fidelity and stakeholder alignment prior to site mobilization
- Risk reduction through preconstruction identification of conflicts and sequencing concerns
- Improved construction readiness with model-based communication and traceable issue logs
- Lower rework probability through early coordination and data-driven decision support