

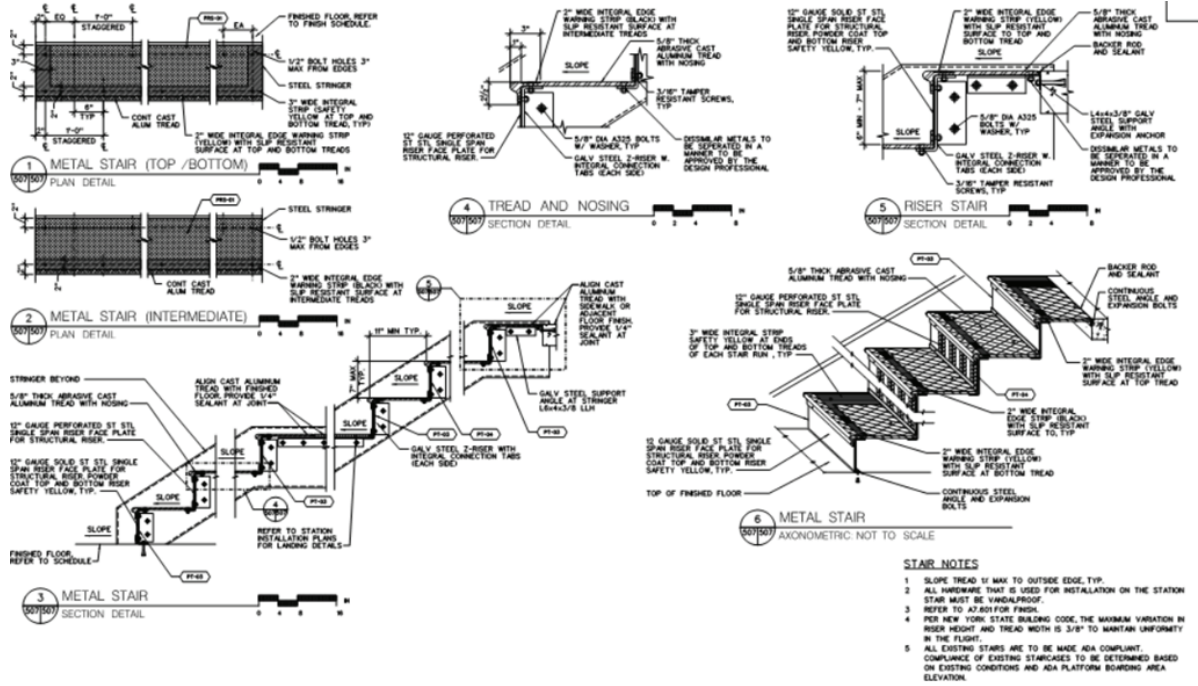
LOD 400 & As-Built BIM Implementation for Metro Stations

(Architecture, Structure, MEPF & Utility Modeling, BIM & VDC Coordination Services)

CASE STUDY



TECHTURE



Client : General Contractor

Team Size : 4 Nos. (BIM engineers & BIM Coordinators)

Disciplines : Architecture, Structure, MEPF & Utility

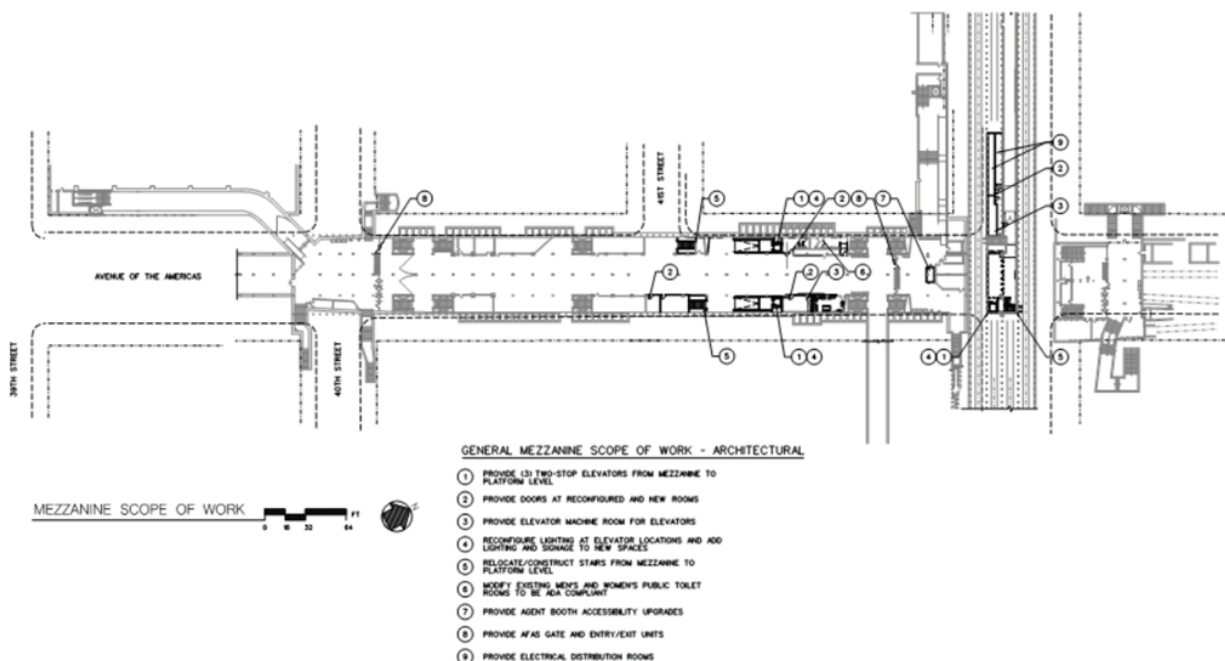
Duration : 8 Months

Scale : 108,300 SF

Software : OpenBuildings Designer (OBD), ProjectWise, OpenSite

Type : Infrastructural

Location : New York, USA



Project Overview

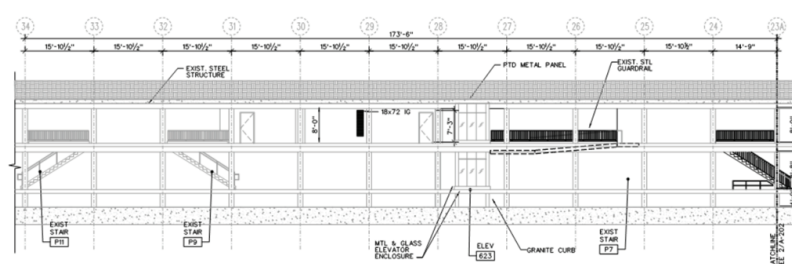
This project involves developing LOD 400 BIM models and as-built documentation for multiple transit facilities across all major disciplines. Using client-provided LOD 300 models, shop drawings, point cloud data, and redline markups, detailed modeling is executed in OpenBuildings Designer with workflow management through ProjectWise. The work follows defined input windows and structured timelines to ensure accurate, high-detail digital outputs that support construction, verification, and future asset management.

Scope & Deliverables

- ❏ Develop LOD 400 BIM models for all major disciplines based on approved design models, shop drawings, and submittals.
- ❏ Validate LOD 300 inputs to ensure accuracy before progressing to detailed modeling.
- ❏ Produce as-built models and drawings using point cloud data and final redline markups.
- ❏ Manage workflows and project data through ProjectWise for consistent and traceable delivery.
- ❏ Handle any additional updates or scope changes on a Time & Material basis.

Challenges

- ❏ Managing different input-receipt durations across multiple facilities, requiring precise sequencing of modeling activities.
- ❏ Ensuring LOD 400 accuracy while relying solely on client-provided LOD 300 models, shop drawings, and submittals with no allowance for design changes later.
- ❏ Integrating large volumes of multi-discipline ASMEPF and utility data into detailed models without iterative revisions.
- ❏ Executing as-built modeling strictly from a single set of redlines and point clouds, with no site verification to resolve discrepancies.
- ❏ Maintaining consistency in modeling standards and deliverables across multiple facilities with varying sizes and complexities.



Techture Approach

- ❏ Implemented a structured validation process to align all LOD 300 inputs before advancing to LOD 400 modeling.
- ❏ Utilized OpenBuildings Designer and OpenSite to develop discipline-rich, detail-accurate models based strictly on approved inputs.
- ❏ Managed all files, revisions, and workflows through ProjectWise to maintain traceability and version control across multiple facilities.
- ❏ Adopted a controlled, input-based delivery methodology with defined modeling windows to avoid rework and ensure predictable timelines.
- ❏ Executed as-built modeling directly from point clouds and final redlines to maintain field-level accuracy without iterative site checks.

Benefits

- ❏ High-detail LOD 400 models that support fabrication, installation, and construction sequencing.
- ❏ Standardized outputs across all facilities, ensuring uniformity in modeling structure, accuracy, and documentation.
- ❏ Reduced design ambiguity and rework due to strict validation and controlled input management.
- ❏ Reliable as-built models aligned with actual field conditions, enhancing handover quality and downstream facility management.
- ❏ Improved project efficiency through a CDE-driven workflow enabling clear coordination and consistent data control.

