Real-World Revit: Piping A Mechanical Room

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Introduction

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Learning Objectives

- Discuss the differences between coordination, fabrication, and the Levels Of Development (LOD)
- Apply best practices that will allow you to quickly get “pipe into the model”
- Understand how to create a model that will facilitate successful coordination
- Learn how to adjust and refine the model to be fabrication and installation ready

Why??

Minimized Field Issues + More Efficient Install =

Greater Profits for the Company

Coordination Ready vs. Fabrication Ready

Coordination

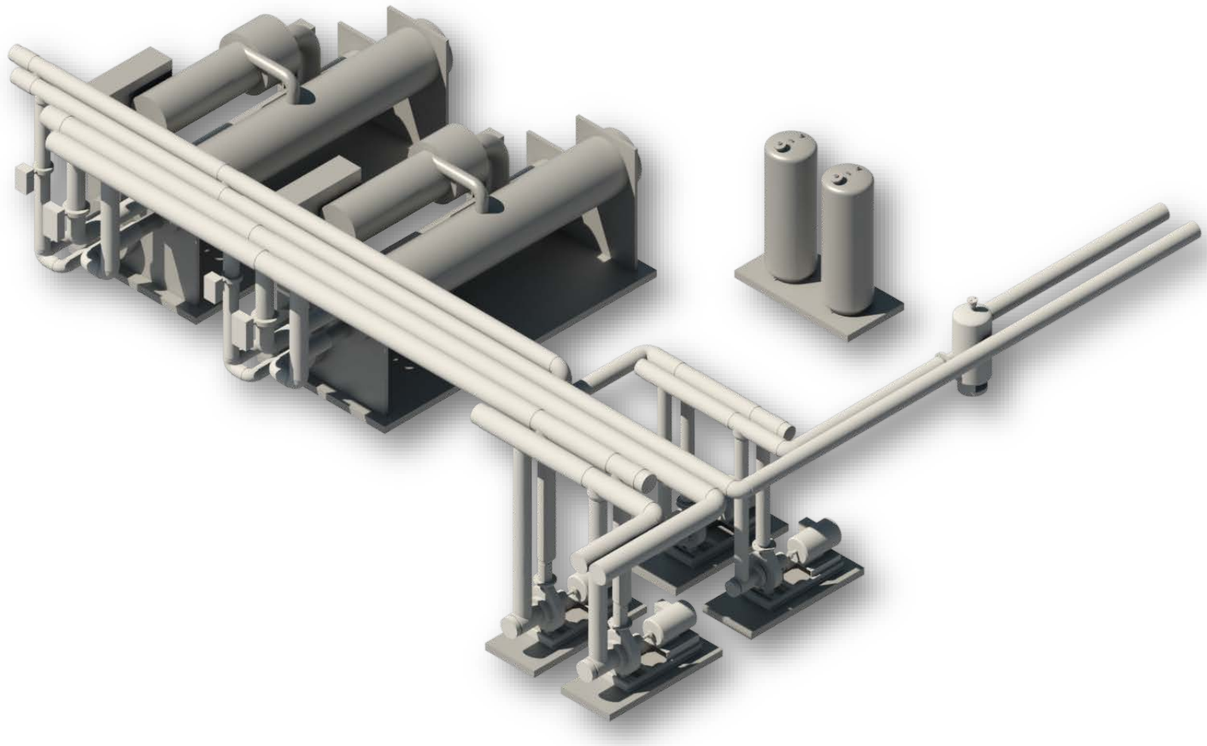
- Elements are placed in the model, using approximate sizes, shapes and locations.
- All trades adjust their models to accommodate for other trade’s space requirements.
- Requires min. LOD 200 to get started, min. LOD 350 to complete

Fabrication

- Model contains elements that are fully coordinated and detailed.
- Complete & coordinated model is broken down into manageable parts (assemblies/spools) and put through the fabrication process
- Requires min. LOD 400 to complete

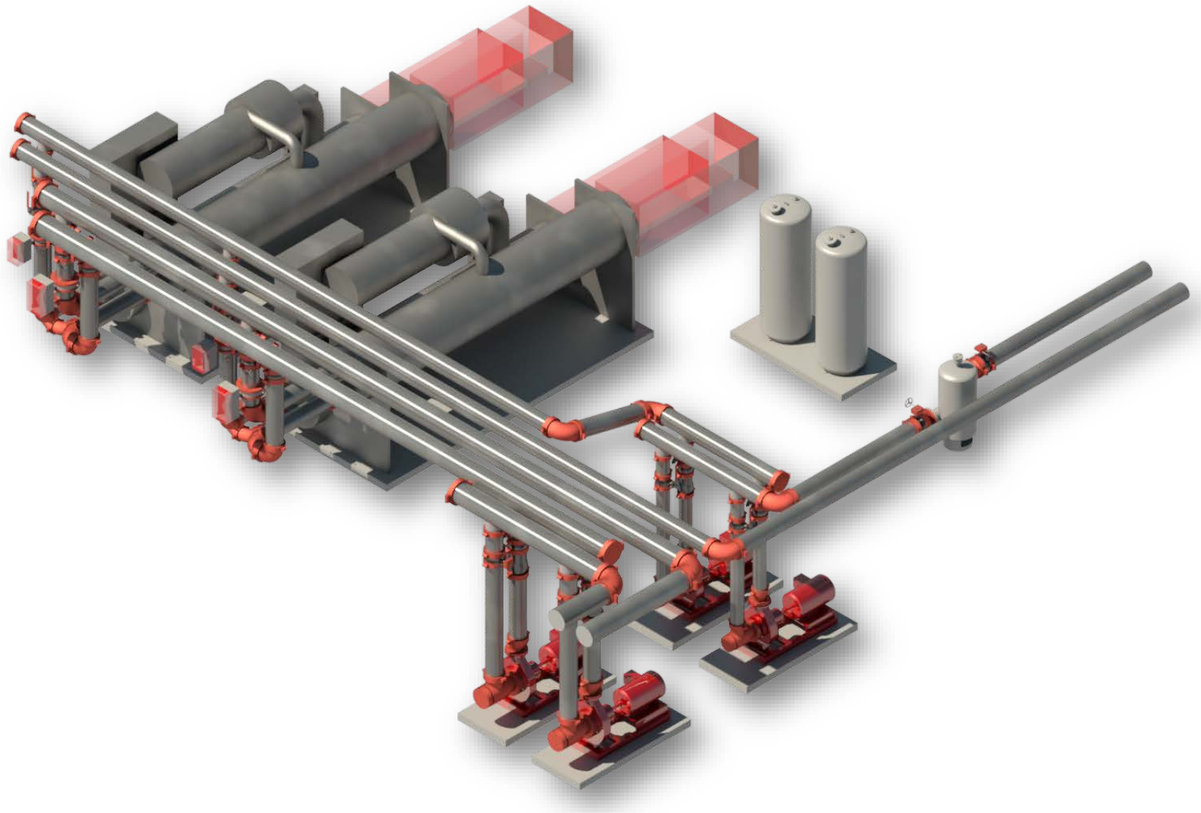
LOD 200

- The model is basically a generic system
- The size, shape and orientation of objects are for reference only
- All information contained in the model should be considered approximate



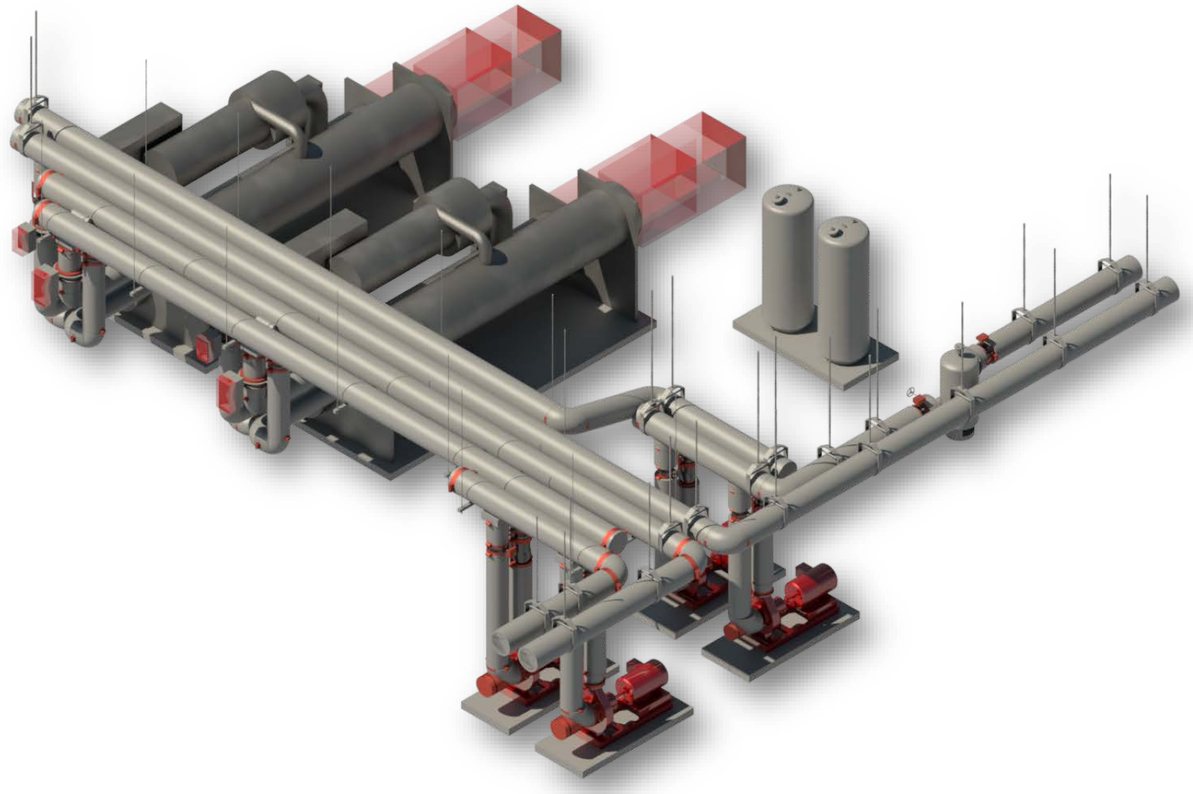
LOD 300

- The modeled piping is now designated with a specific system
- The size, shape and orientation of objects can now be set dimensionally
- All elements should now be located accurately based on the project origin



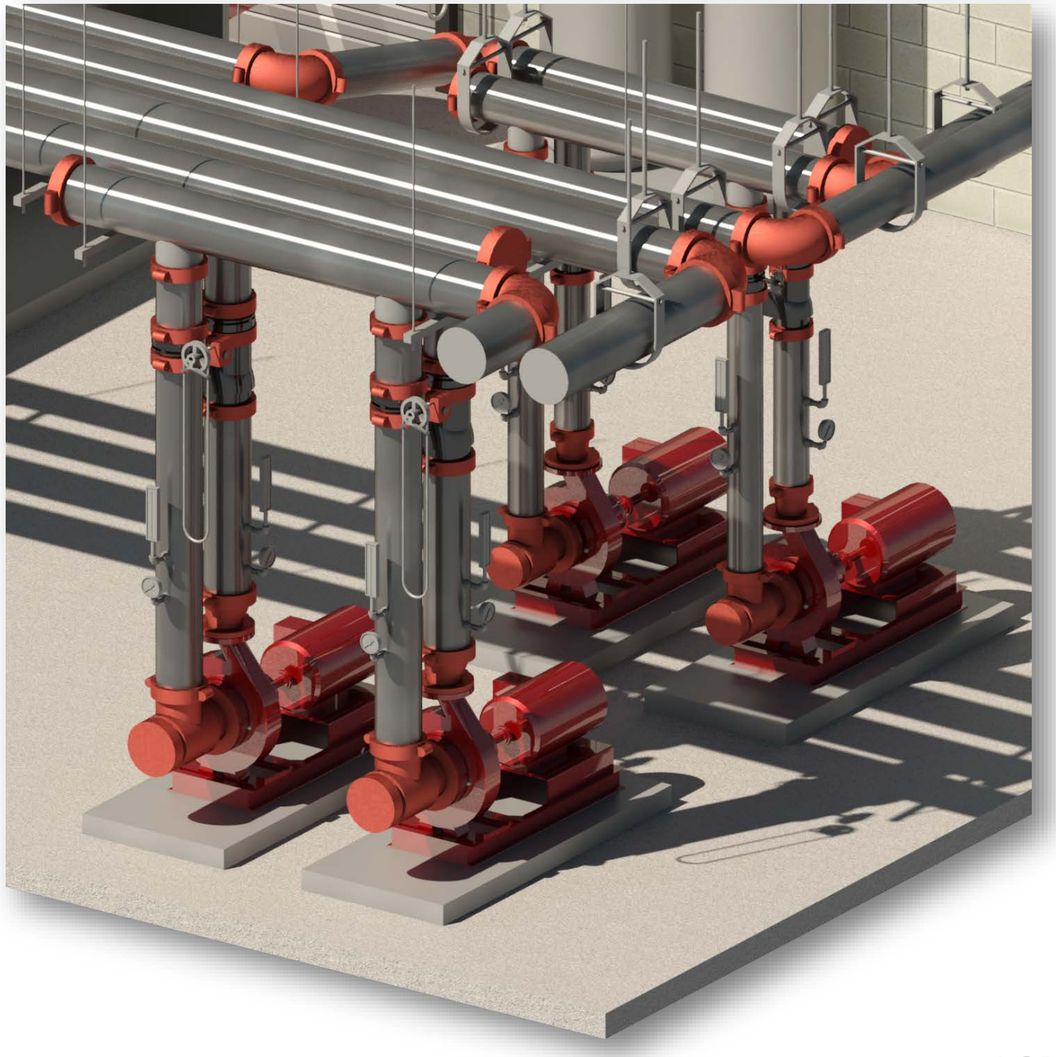
LOD 350

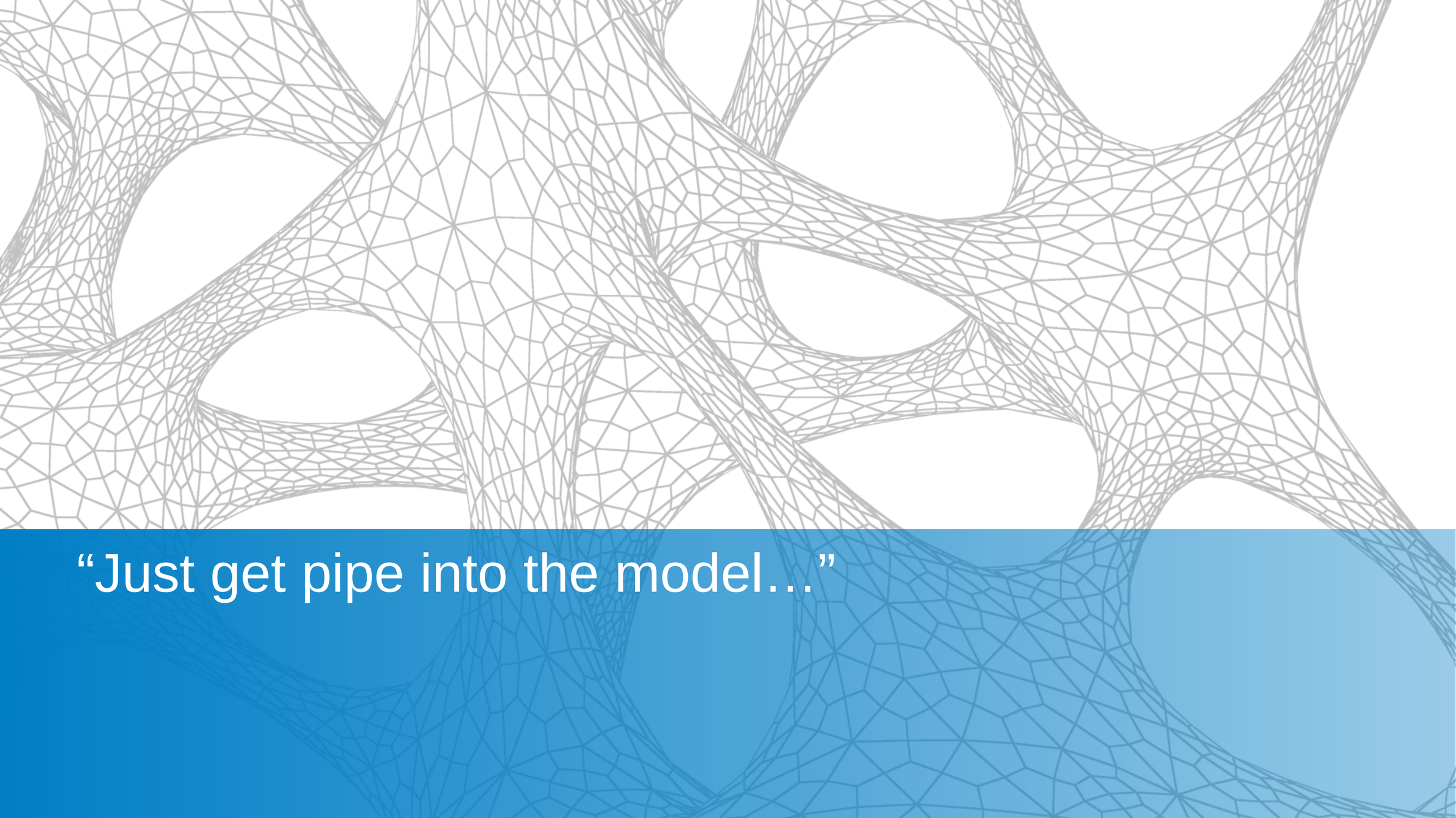
- The modeled piping is now sized and located accurately per coordination
- The size, shape and orientation of elements are now dimensionally accurate
- All secondary elements, such as pull spaces and hangers, are now modeled and accurately located



LOD 400

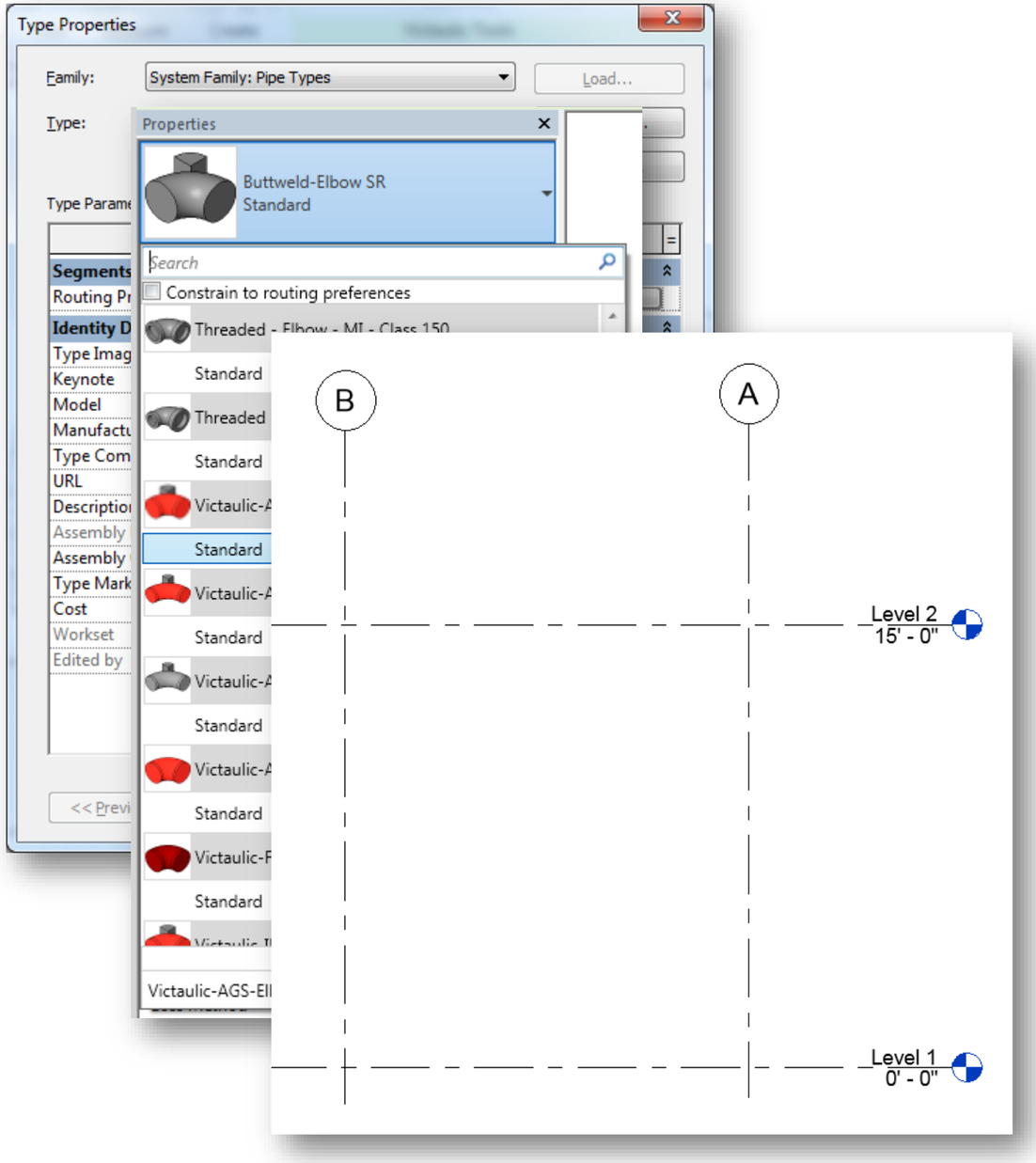
- All elements required for fabrication are now in the model
- All trade models have been coordinated and conflicts have been resolved
- The model should now represent exactly what will be built on site




“Just get pipe into the model…”

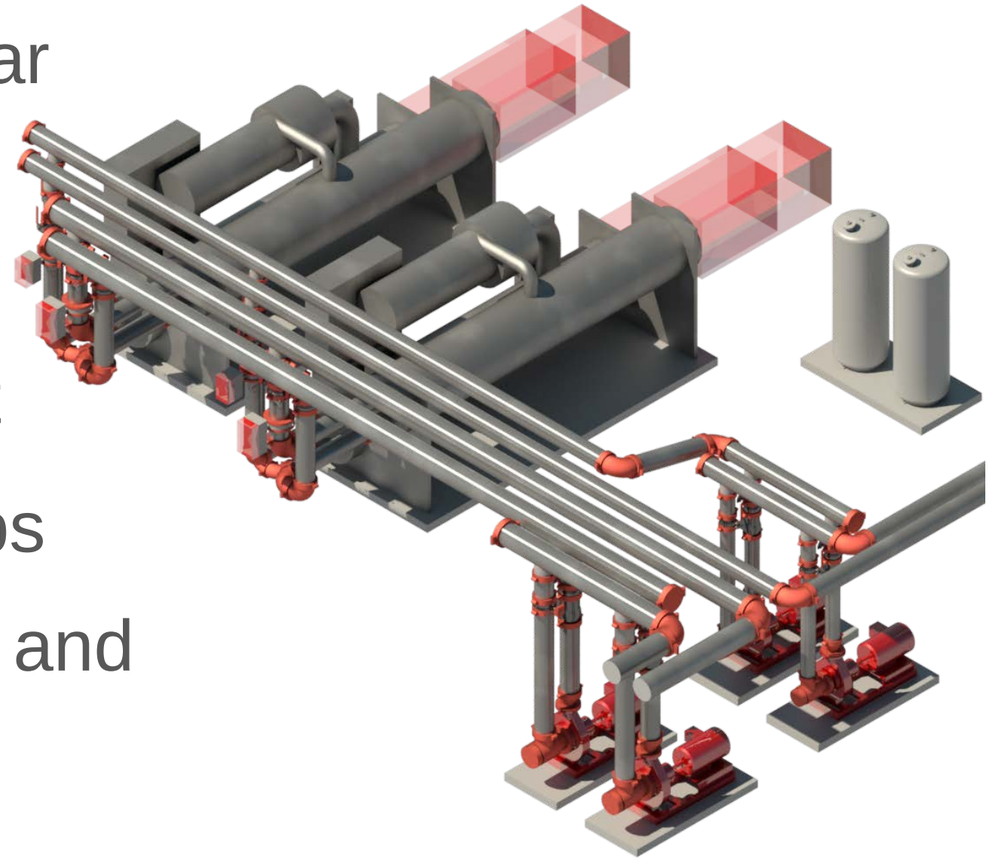
Before we start modeling

- Having a standard project template allows us to get started sooner
  - Basic pipe types with typical routing preferences allow for quick duplication and project set-up
  - Typical families pre-loaded for common systems allows for a greater LOD without extra work
- Link all background files
- Set-up all levels and grids



“Get Pipe in the Model” LOD 300

- Roughly route main piping
  - Locate penetrations in approximate locations
  - Route at approximate elevations and near equipment
- Make connections to equipment
  - Don’t connect the drops to the mains yet
  - Detail one drop and copy for similar drops
- Use dimensions to move and space piping and equipment

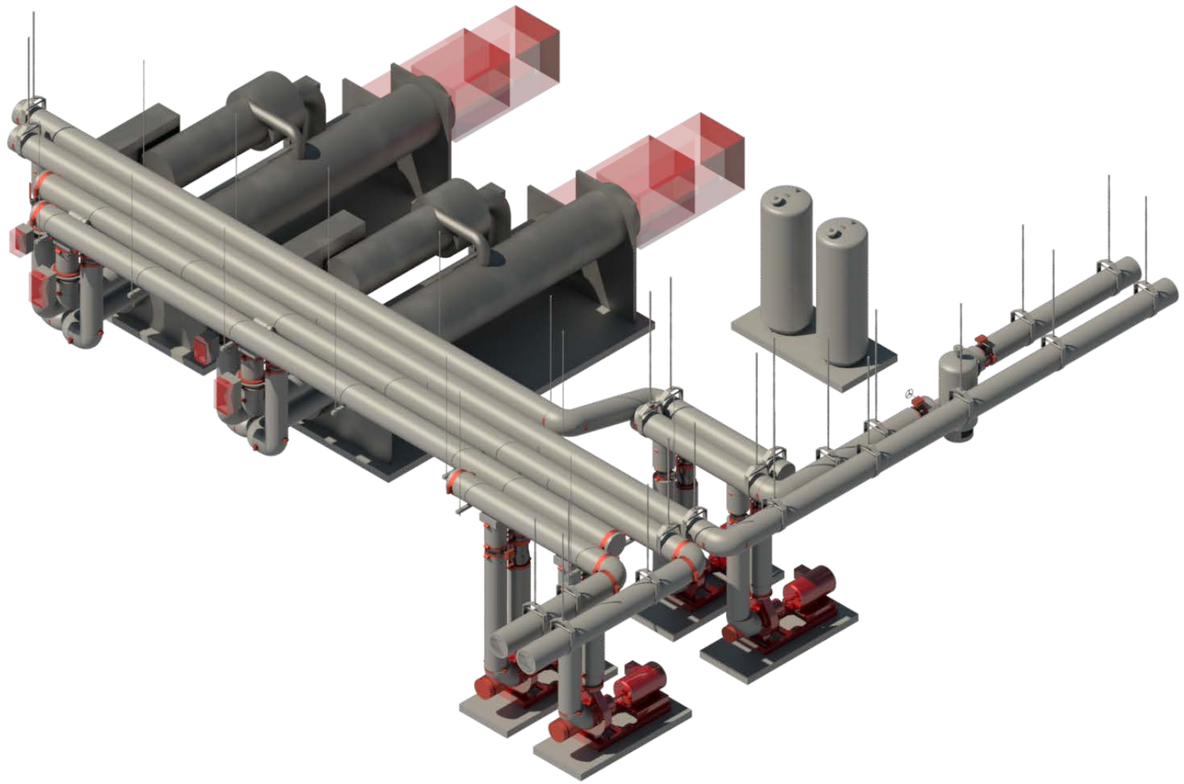


DEMO

Revise the model for coordination

Revise the Model for Coordination LOD 350

- Shift pipes, drops and equipment to coordinate with other trades
- Add accessories and smaller equipment
- Ensure the model has full connectivity



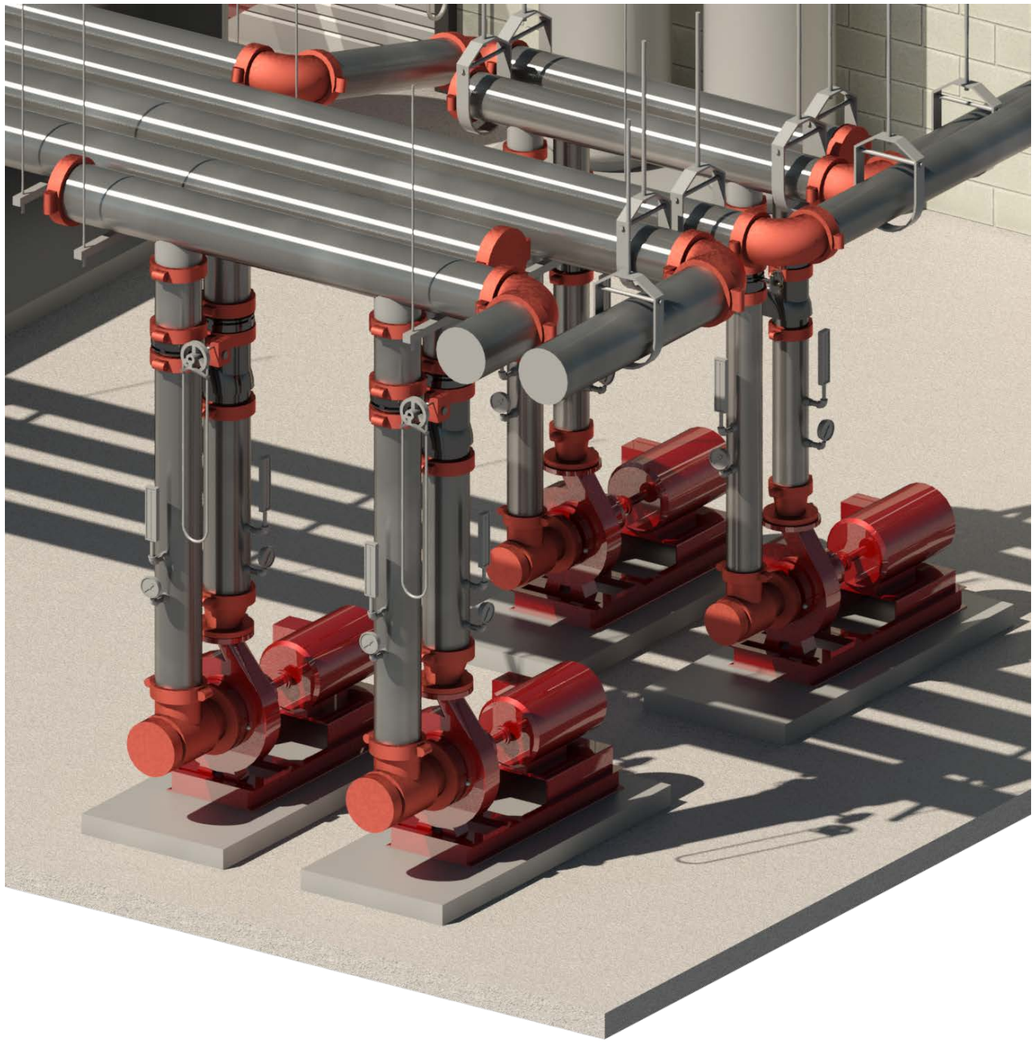
LOD 350

DEMO

Refine the model for fabrication

Refine the Model for Fabrication
LOD 400

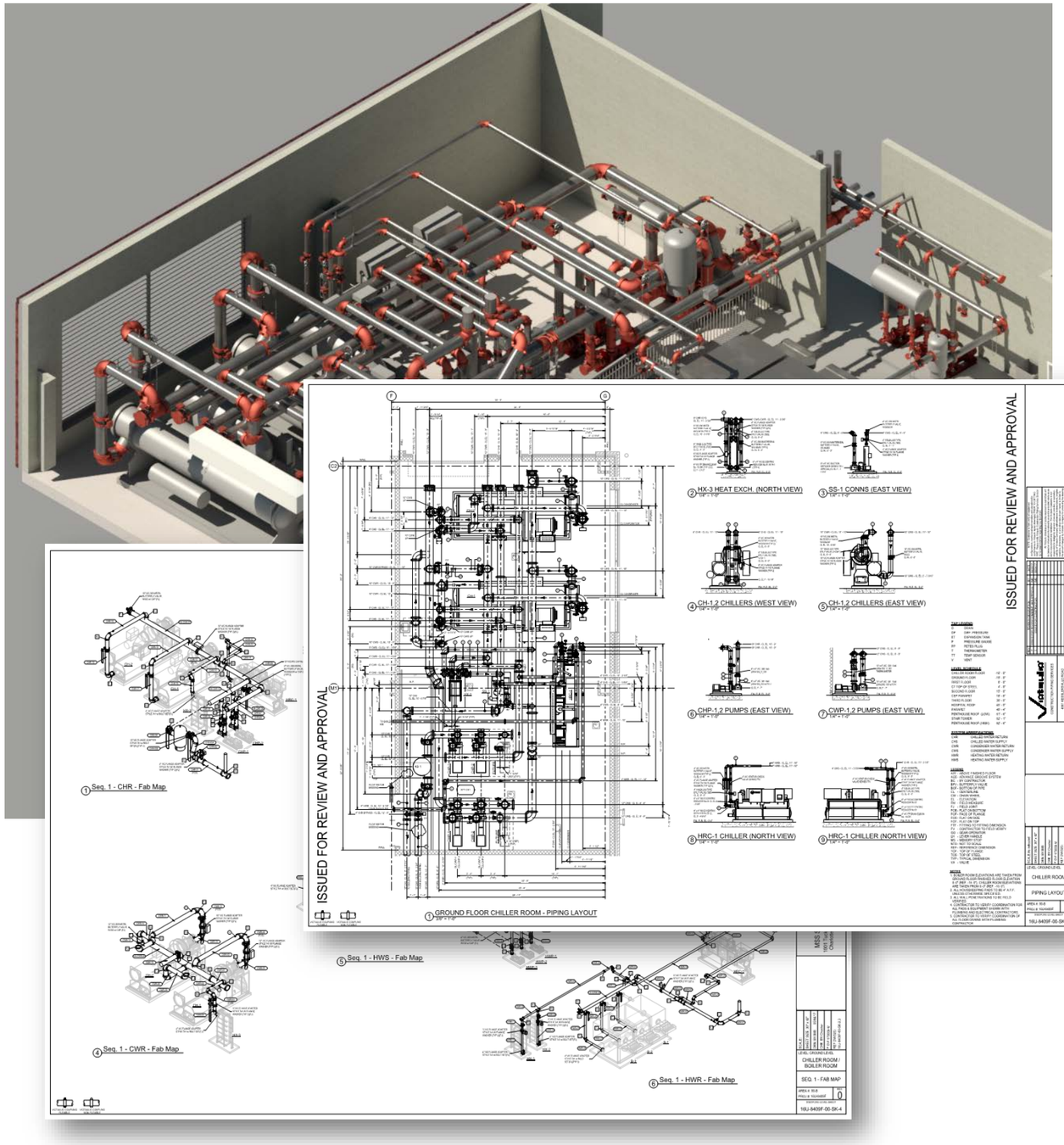
- Fine tune piping and equipment locations/spacing to prepare for installation
- Add small details such as instrument taps, mounting hardware & installation information
- Ensure the model has maintained full connectivity



LOD 400

Conclusion

- Preparation is key
- Good content allows for greater LOD without extra effort
- Start routing pipe to establish basic locations
- Leave small details until later; big stuff needs to go in first
- Use the tools and tricks to make it easier to “get pipe into the model”



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