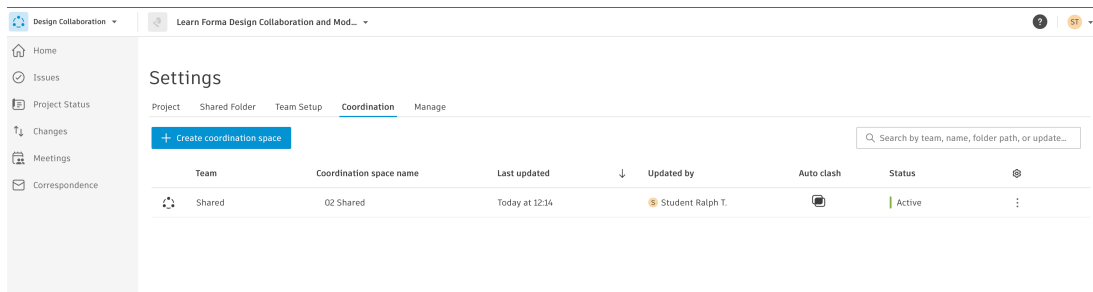


Practice exercise – Answer Key

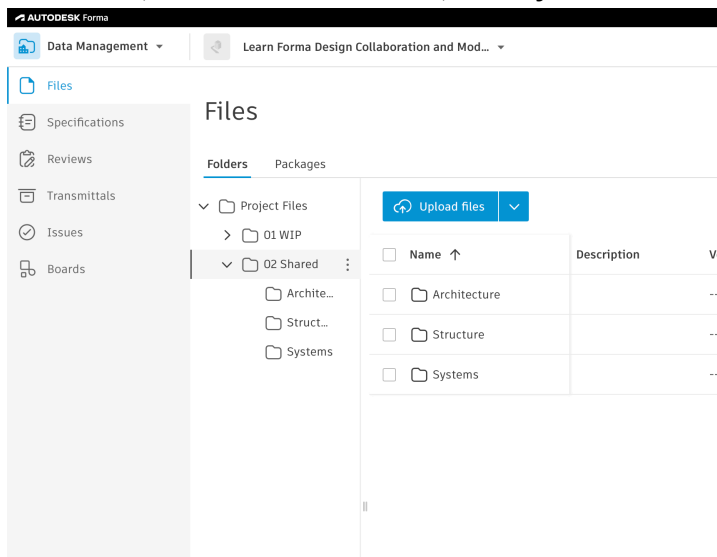
Coordinate models in Model Coordination

The following steps were completed on the videos of Module 2: Collaborate on project design. If you followed along the videos, you are ready to start the exercise. If you have not already performed these steps when following the videos for this module, make sure these steps are completed:

1. You created a coordination spaced based on the 02 Shared folder.



2. You made sure the 02 Shared folder contains three models, Architectural Model V2, Structural Model, and Systems Model. The models can be shared through Design collaboration, or directly uploaded from the dataset folder, **Architectural Model.rvt**, **Structural Model.rvt**, and **Systems Model.rvt**.



Once these steps are completed, you will be ready to start the exercise. You will apply the skills learned in this module to create a coordination space, review federated models, and identify coordination issues. You will use model navigation, search sets, clash detection, and object exclusions to analyze coordinated models while answering the questions provided.

Learning objectives:

By the end of this exercise, you should be able to:

- Create a coordination space for project models.
- Navigate and organize federated models using the model browser and search sets.
- Run clash detection and evaluate coordination results.
- Apply object exclusions to refine clash detection results.

Success criteria:

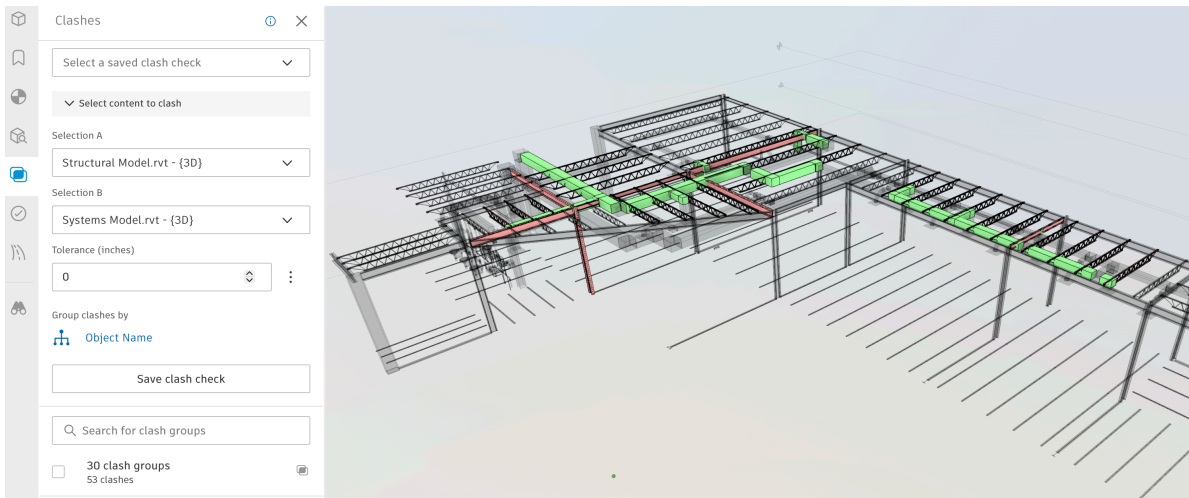
- A coordination space is successfully created for model review.
- Federated models are navigated using the model browser and search sets.
- Clash detection is performed and coordination issues are identified.
- Object exclusions are applied to refine clash detection results.
- Exercise questions are completed and answers are submitted for review.

Answer the following questions while working in Model Coordination.

1. Open the structural model and the mechanical model at the same time in the viewer. In the Clashes window, choose the structural model in Selection A, and the Systems model in Section B. With a tolerance of 0 inches, how many clashes and clash groups are found on the 03 Third Floor TO Steel level?

Answer Key

There are 53 clashes organized in 30 clash groups.



- Open the structural model and the systems model at the same time in the viewer. In the model browser, create filters to keep structural elements whose Family Name contains “W-Wide” and systems elements whose System Classification contains “Return”.

In the Clashes window, choose the structural model in Selection A, and the systems model in Section B. With a tolerance of 0 inches, how many clashes and clash groups are found?

Answer Key

The student should create the following filters in the model browser.

Advanced rules 

▼ Internal/Family Name contains W-Wide

Internal/Family Name

Contains W-Wide

☐ AND ☒ OR

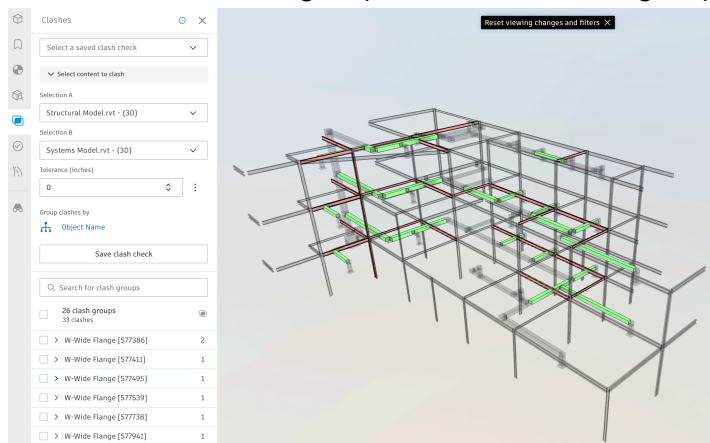
▼ OR Mechanical/System Classification contain...

Mechanical/System Classification

Contains Return

Add rule

There are 33 clashes grouped within 26 clash groups.



- Open the structural model and the systems model at the same time in the viewer. In the model browser, create filters to keep structural elements whose Family Name contains “Joists” and systems elements whose System Classification contains “Supply”.

In the Clashes window, choose the structural model in Selection A, and the systems model in Section B. With a tolerance of 0 inches, how many clashes and clash groups are found?

Answer Key

The student should create the following filters in the model browser.

Advanced rules 

▼ Internal/Family Name contains Joist

Internal/Family Name

Contains

+ 

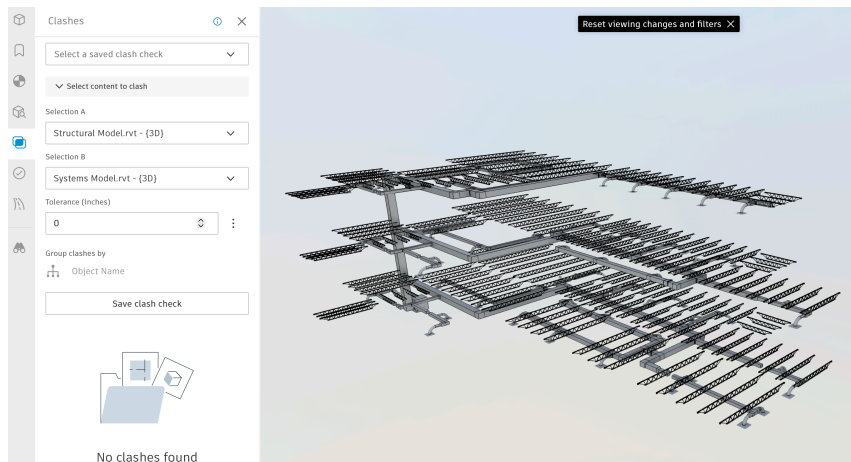
☐ AND ☒ OR

▼ OR Mechanical/System Classification contain ...

Mechanical/System Classification

Contains

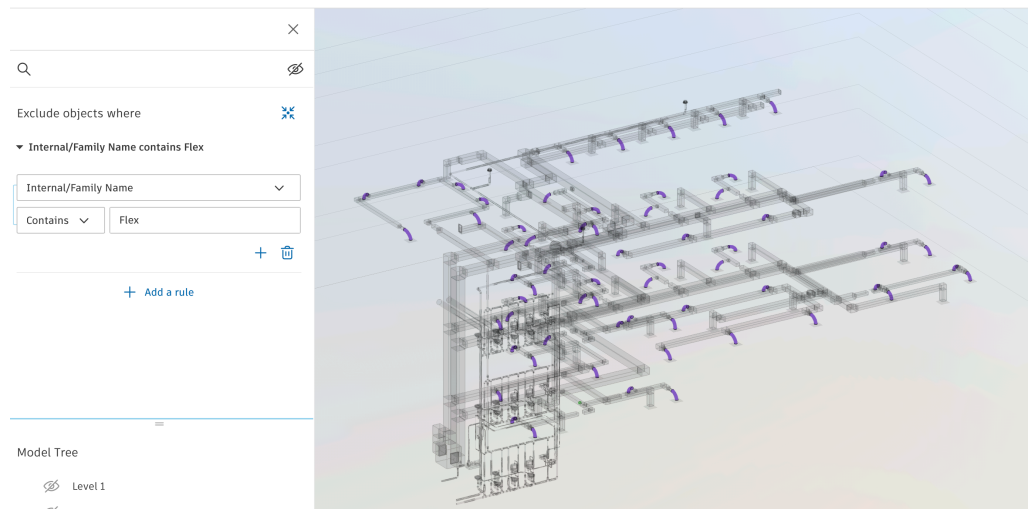
There are no clashes found.



4. Flex ducts are very flexible and clashes involving flex ducts should be ignored. In the clashes window, create an object exclusion for flex ducts. Before running the clash checks, save a screenshot of the clashes table. Then run the clash check and take a new screenshot of the clashes table. What is the difference in the number of clashes between the architectural model and the systems model?

Answer Key

The student should create the object exclusion based on the following filters.



This is the clashes table before applying the object exclusion.

	Archite...vt - (3D)	Structu...vt - (3D)	Systems...t - (3D)
Architectural Model.rvt - (3D) 110 clash groups		91	34
Structural Model.rvt - (3D) 300 clash groups	293		110
Systems Model.rvt - (3D) 234 clash groups	149	89	

This is the clashes table after applying the object exclusion.

	Archite...vt - (3D)	Structu...vt - (3D)	Systems ...t - (3D)
Architectural Model.rvt - (3D) 110 clash groups		91	34
Structural Model.rvt - (3D) 300 clash groups	293		110
Systems Model.rvt - (3D) 177 clash groups	92	89	

The difference in clash groups is $149 - 92 = 50$ clash groups.

- Open the architectural model and the systems model at the same time in the viewer. In the model browser, create filters to any element whose category contains “Wall” or “Duct”. In the Clashes window, you now have all clashes where ducts run through walls and you need to raise this as an issue to create the required penetration in the walls. Select all the clashes, create a coordination issue, and assign it to your instructor.

Answer Key

The student should create these filters.

Advanced rules 

▼ Internal/Category contains Wall

Internal/Category

Contains

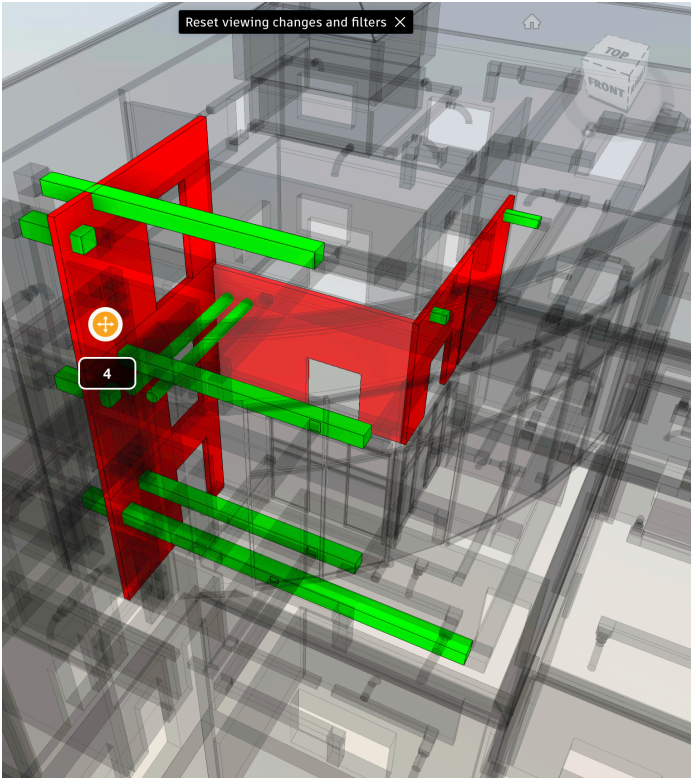
☐ AND ☒ OR

▼ OR Internal/Category contains Duct

Internal/Category

Contains

The student should assign you to an issue.



Issue #4

Details

Activity log

Clashes

Unpublish

Delete

Description

10 total clashes:

2 clashes between Basic Wall [380814] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

2 clashes between Basic Wall [380940] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

2 clashes between Basic Wall [380944] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

1 clash between Basic Wall [384508] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

1 clash between Basic Wall [385164] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

2 clashes between Basic Wall [385265] in Architectural Model.rvt - {3D} and Systems Model.rvt - {3D}

Assigned to

Instructor Sam T. (ABC)

Watchers

Instructor Sam T.