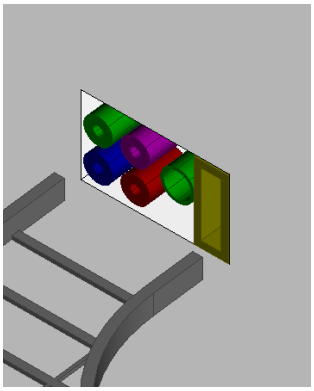
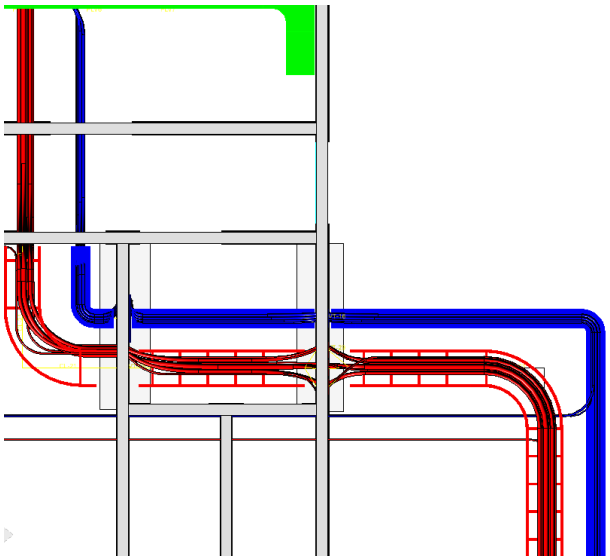
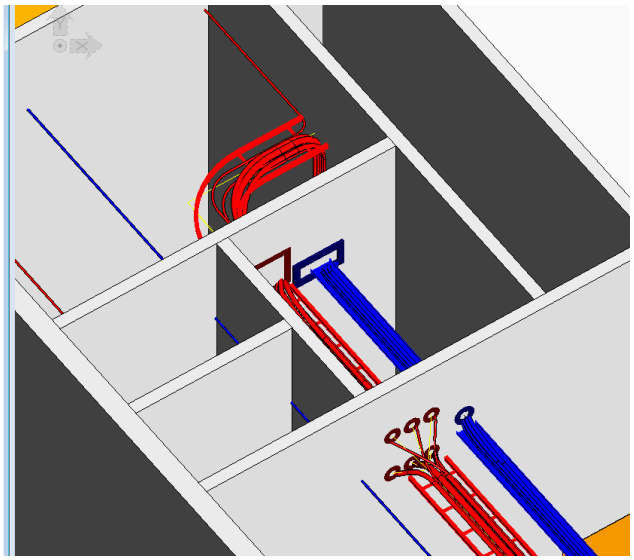
Bentley Raceway and Cable Management

Content usage guidelines for ROXTEC Transits

Bentley
Advancing Infrastructure







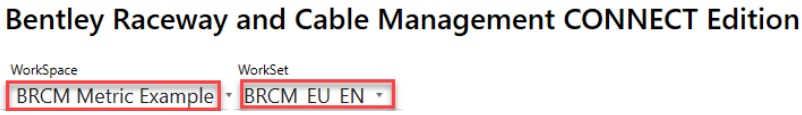
Introduction

The Transits content was made available to generate a better 3D model and produce better outputs and calculate required material in a better way.

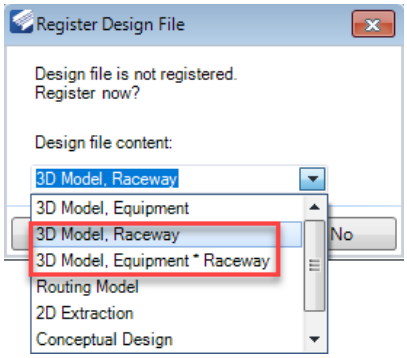
The benefits of new Transit content:

- Possible 3D object placement to visualize Transit
- Possible fill/spare calculation in Transit after cable routing
- Possible output in Bill of Quantity including manufacturer product code

Content usage guidelines for Transits

- The Transits content was made available beginning with the **Bentley Raceway and Cable Management Update 10** version.
- The Transits content is only available in **metric dataset**, e.g. BRCM_EU_EN.
- The Transits content is only available in new worksets using the default BRCM_EU_EN as a template:
  - 

- The implementation of Transits in existing projects is possible. Instruction guidelines on how to enable can be found at Bentley Communities.
- The Transits content can be used in a file registered as
  - 3D Model, Raceway or 3D Model, Equipment*Raceway:



Possible workflow in using Transits:

It´s possible to start with Transit design in BENTLEY RACEWAY AND CABLE MANAGEMENT raceway model, e.g. in a wall or ceiling in a raceway file with attached reference.

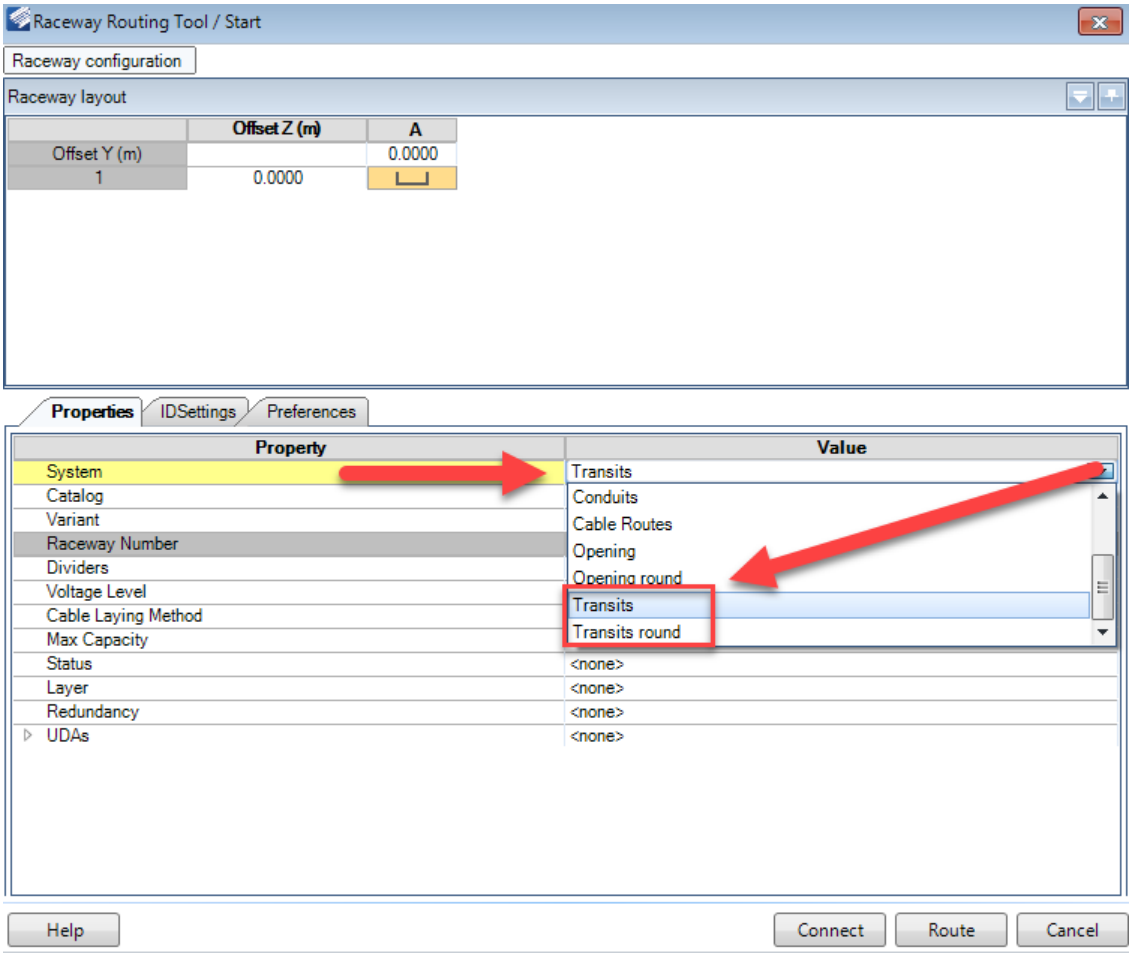
It does not require an existing opening in a wall because BENTLEY RACEWAY AND CABLE MANAGEMENT Transits will be placed on top of the attached reference.

In later steps it will be possible to forward the created 3D Transit objects e.g. to the architect and the architect can use the Transit 3D objects to create required openings in the architectural file.

The created Transits may have additional information related to Voltage Level and Cable Laying Method and additional User Defined Attributes (UDA).

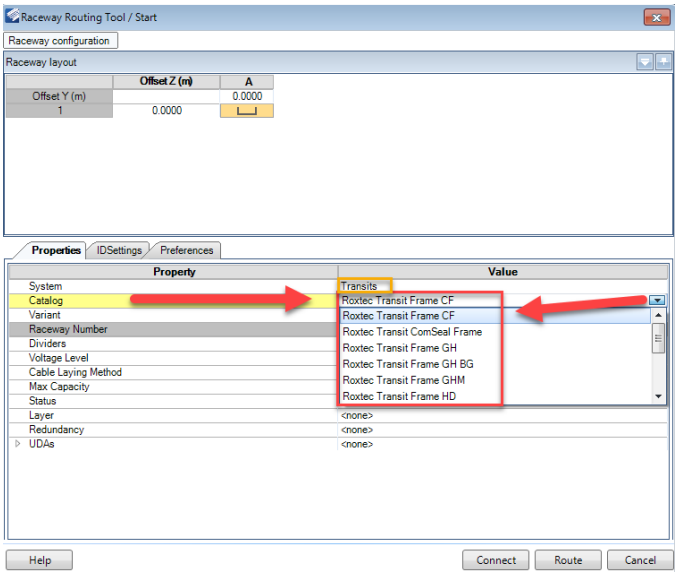
Workflow-Transit selection

1. The Transits content can be selected in the Raceway Router in the System's selection:



2. In the Raceway Routing Tool are two different Transit Systems, each with multiple Transit Catalogs available.

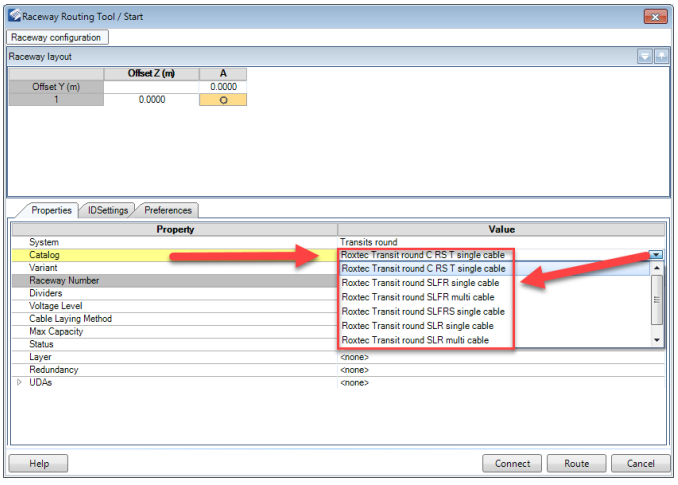
Rectangular Transits with different Catalogs:



Transits

Roxtec Transit Frame CF
Roxtec Transit ComSeal Frame
Roxtec Transit Frame GH
Roxtec Transit Frame GHM
Roxtec Transit Frame HD
Roxtec Transit Frame S
Roxtec Transit Frame SBTB
Roxtec Transit Frame SF
Roxtec Transit Frame SFHM
Roxtec Transit Frame SRC R20
Roxtec Transit Frame SRC R40

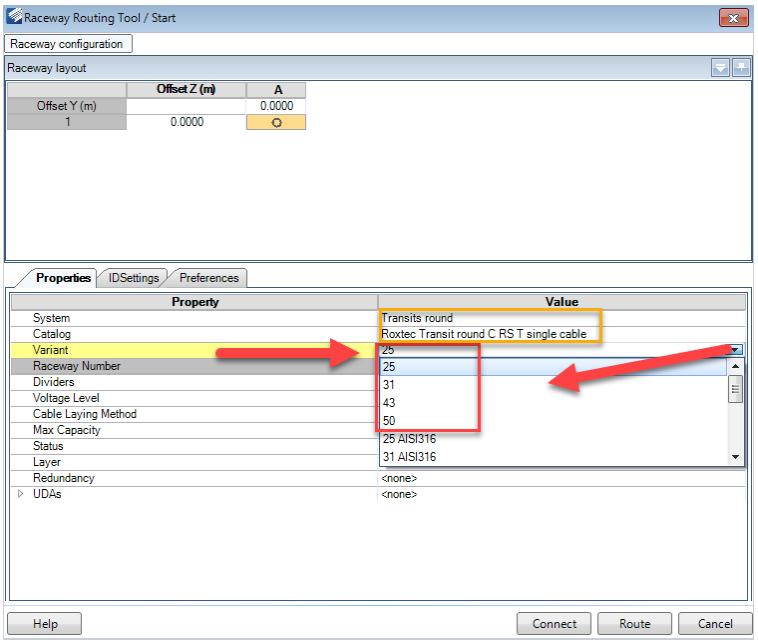
Round Transits with different Catalogs:



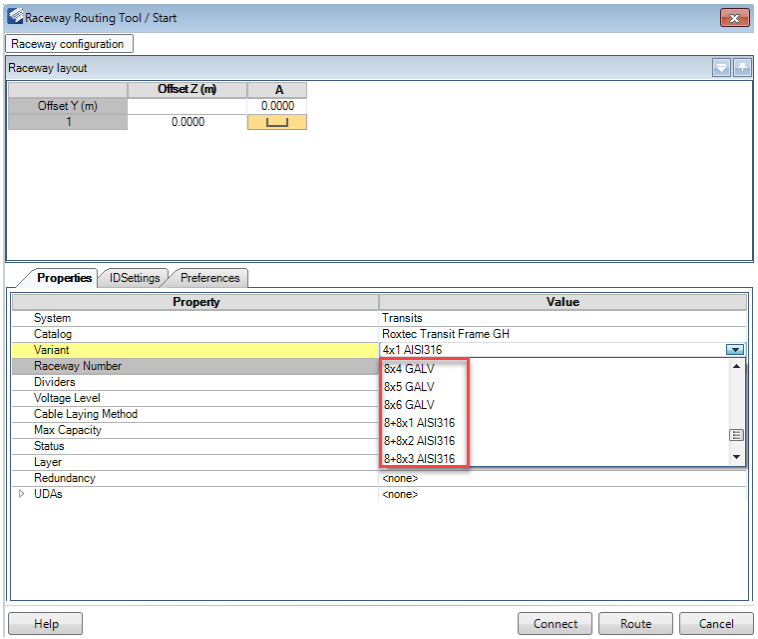
Transits round

Roxtec Transit round C RS T single cable
Roxtec Transit round SLFR single cable
Roxtec Transit round SLFR multi cable
Roxtec Transit round SLFRS single cable
Roxtec Transit round SLR single cable
Roxtec Transit round SLR multi cable
Roxtec Transit round SLRS single cable

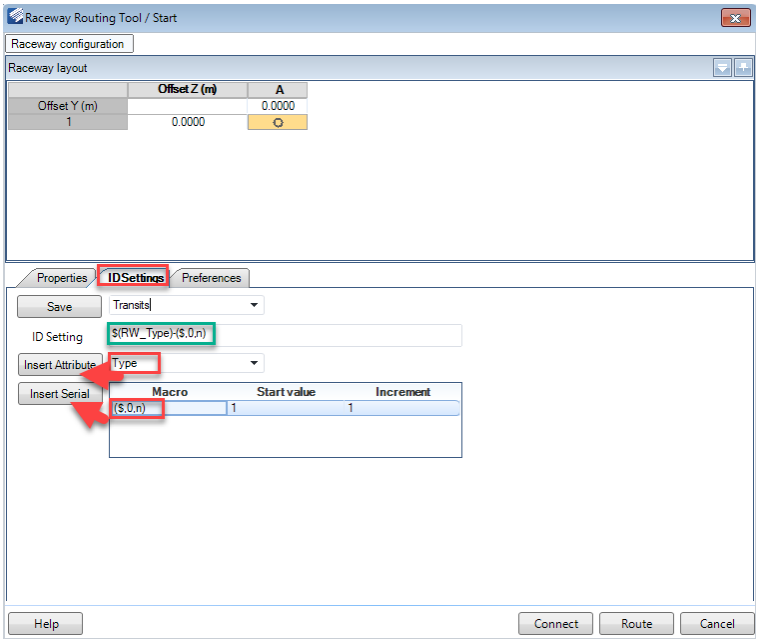
3. In each selected System and Catalog, it is possible to select the Variant, which is the size setting for later creation as a 3D object:



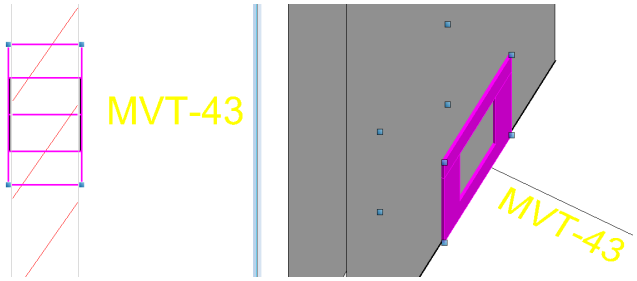
4. Different materials are listed below in the list, in case there are multiple materials for the same sizes:



5. The Transit ID can be defined in the ID Settings tab using the Type Attribute and running number, e.g.:



Result after Transit placement:

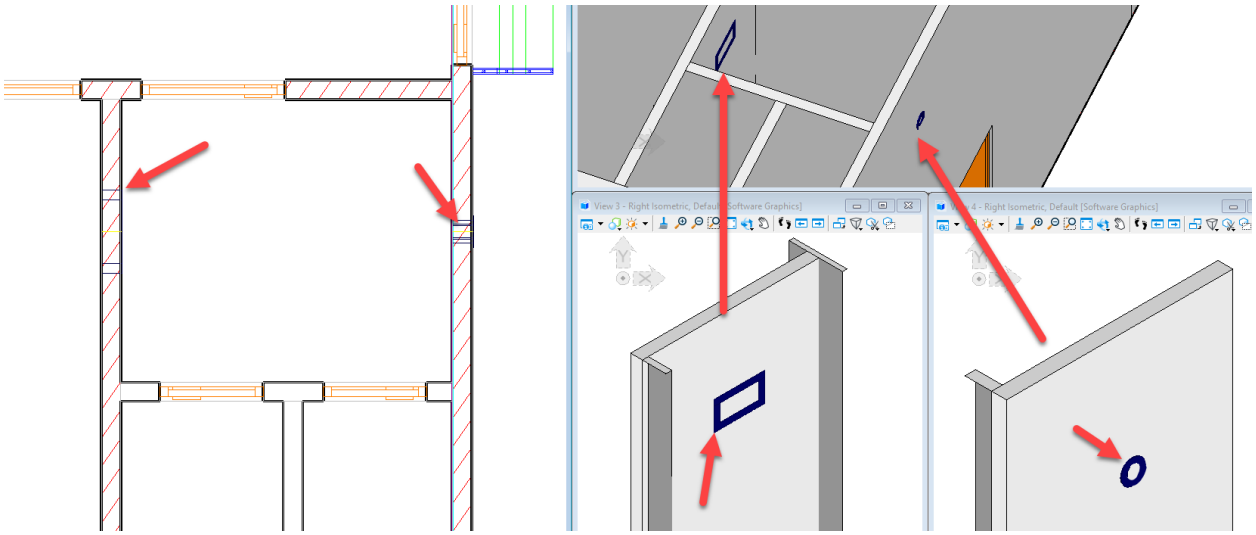


Workflow-Transit placement

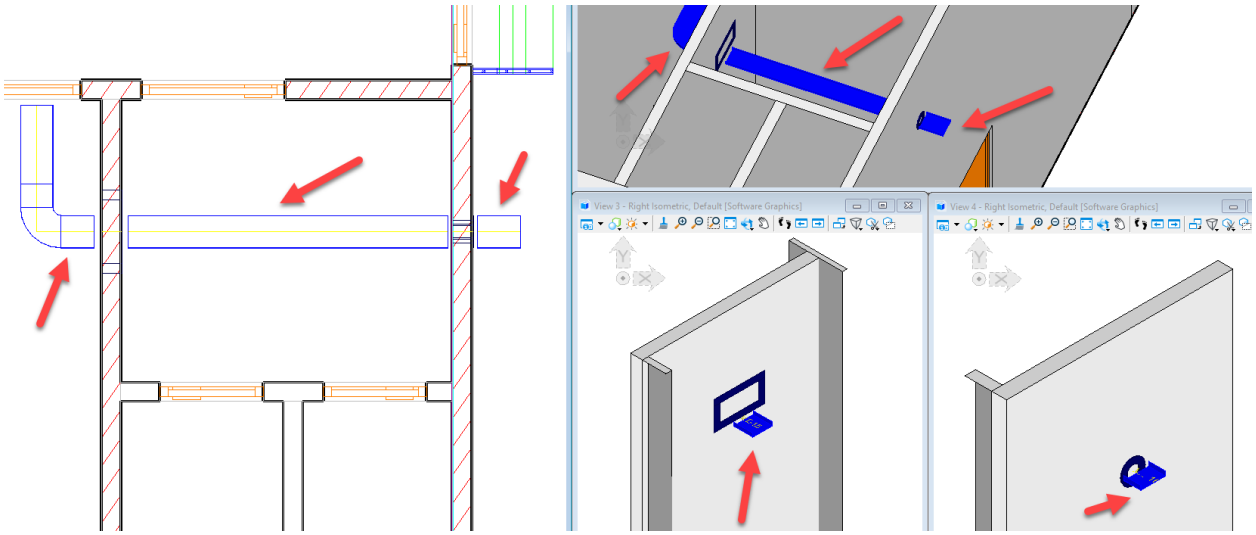
Selecting the start and endpoint in the design file will create the 3D objects.

I. **Workflow- Transit 1st, Raceway 2nd :**

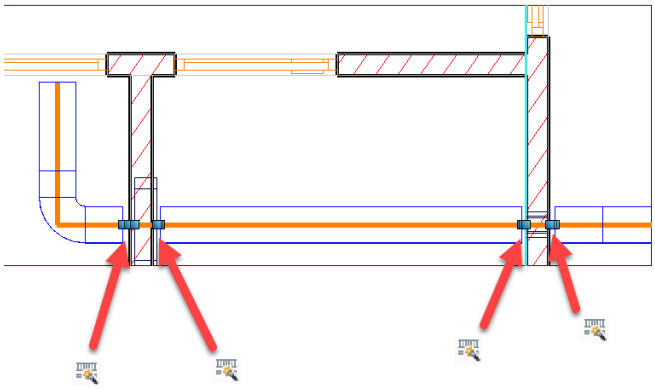
a. The user creates the Transits as required. If openings exist, in the referenced architectural drawing, the Transits may use the location of this opening.

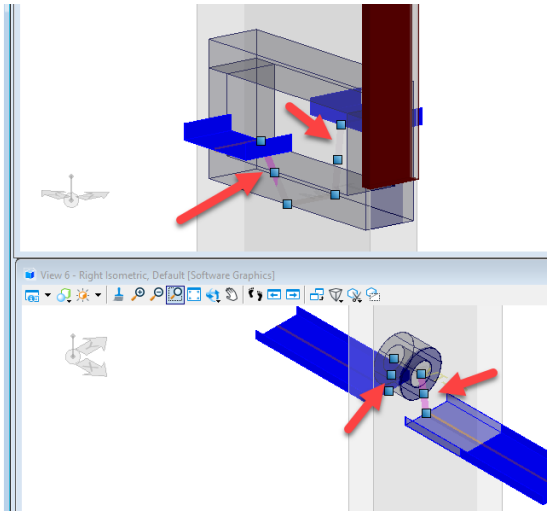


b. In the next step, the user can create required raceway systems starting or ending next to the created Transits.

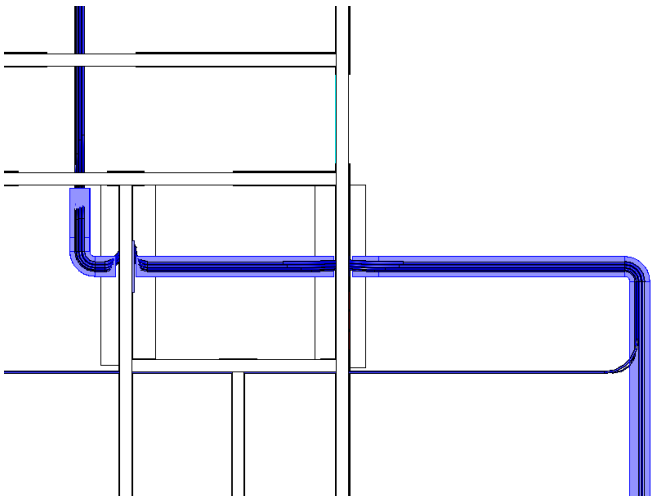


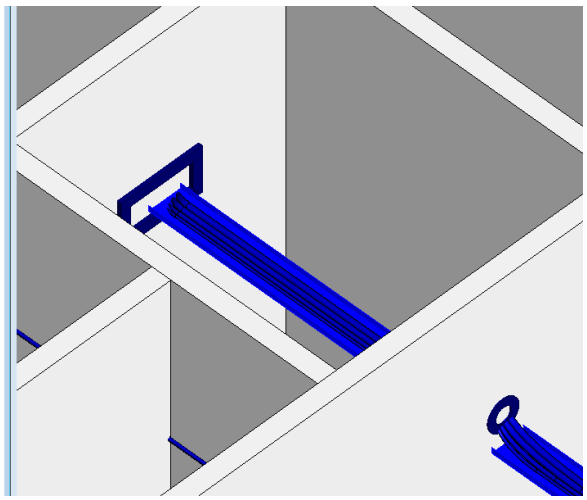
c. To enable later cable routing the raceways and Transits need to be connected. Possible usage of the BENTLEY RACEWAY AND CABLE MANAGEMENT “Generate Routing Lines” command.





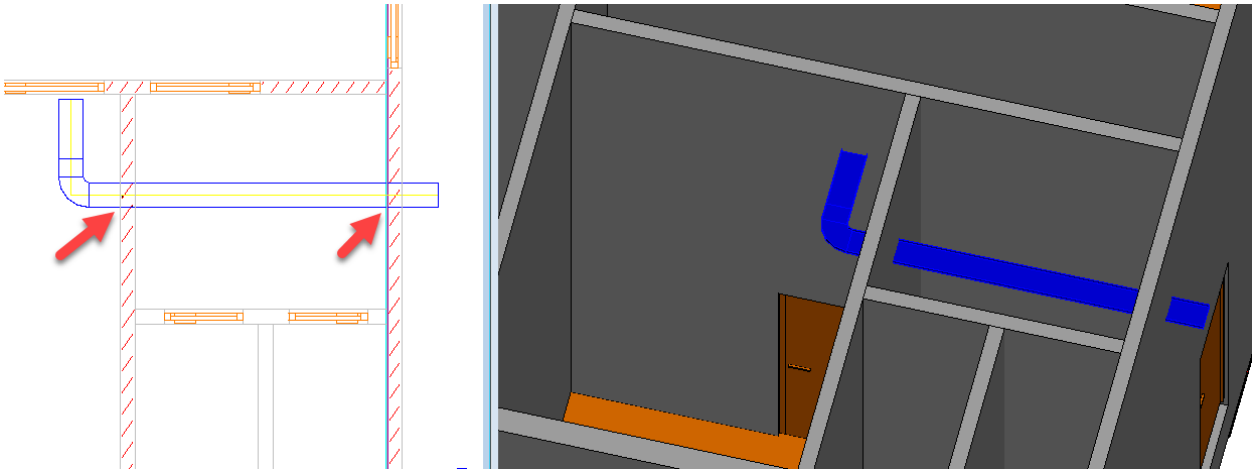
d. In BENTLEY RACEWAY AND CABLE MANAGEMENT routing file now it will be possible to manually or automatically route the cable to the related raceways and Transits.



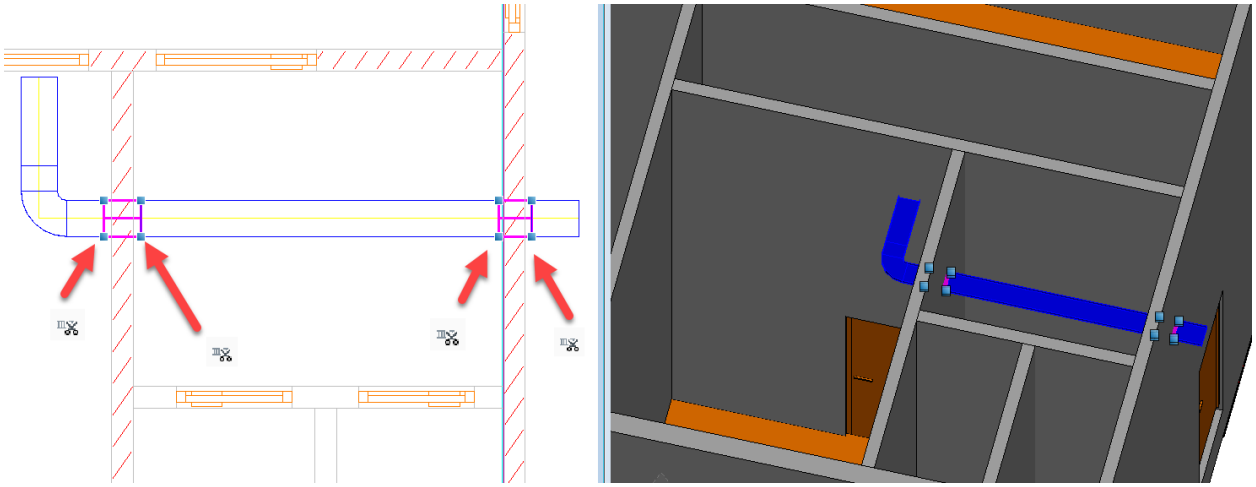


II. Alternative workflow: Raceway 1st, Transit 2nd

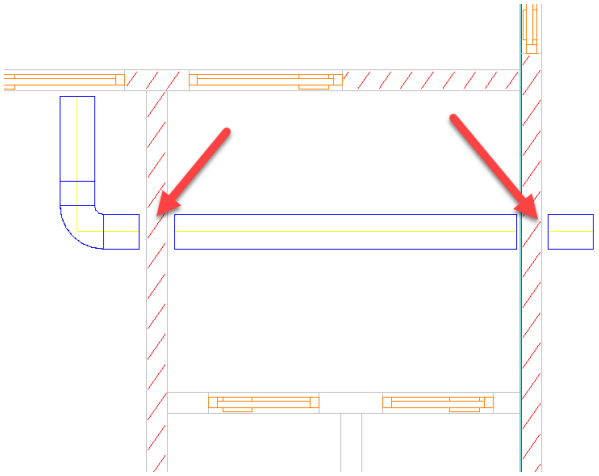
a. The user creates the raceway systems as required and does not care about wall passes. If openings exist, in the referenced architectural drawing, the raceways may pass this opening.

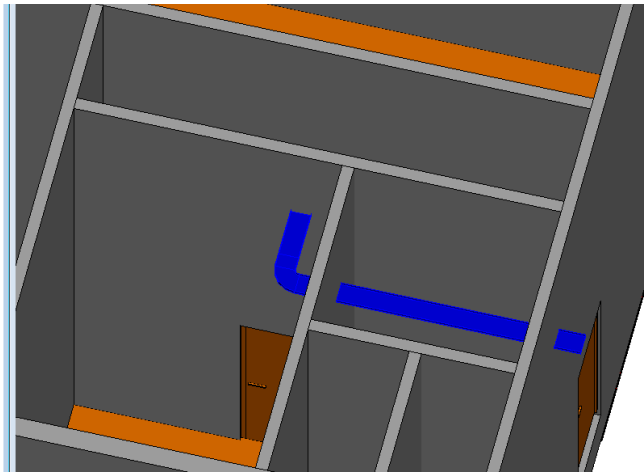


b. After the creation of the raceway systems, the user splits the created raceways using the BENTLEY RACEWAY AND CABLE MANAGEMENT "Cut Raceway" tool and cuts the raceways e.g. in front and after a wall passing.

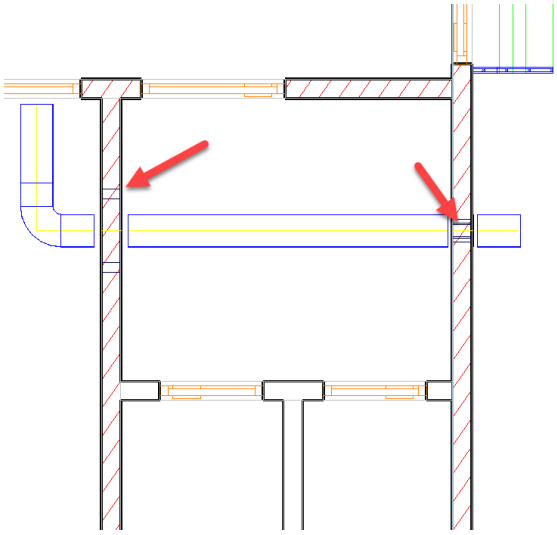


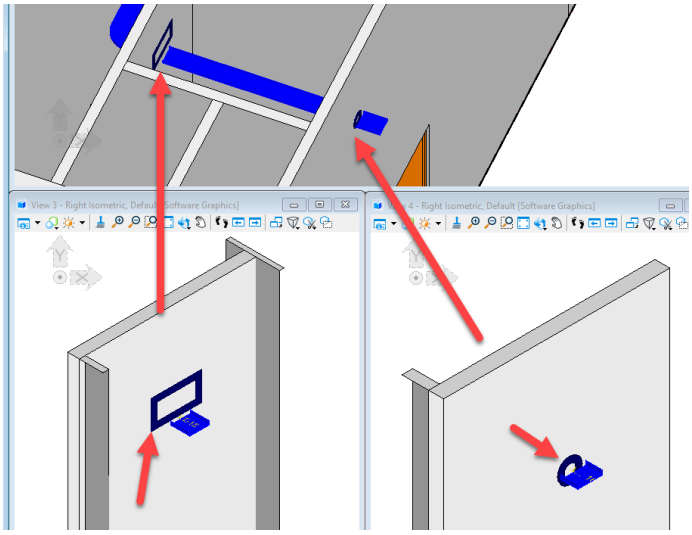
c. Next is to remove the raceway parts no longer necessary. That will create a gap between the raceways.



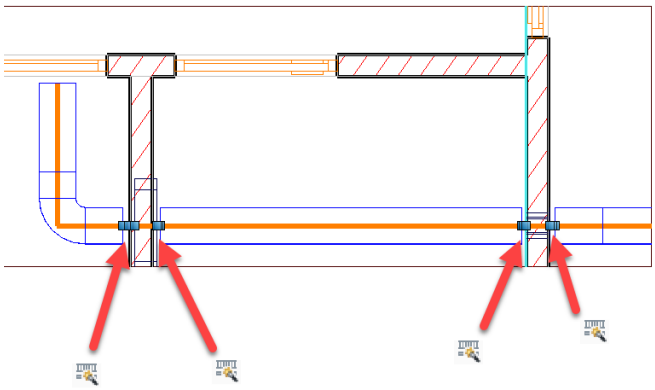


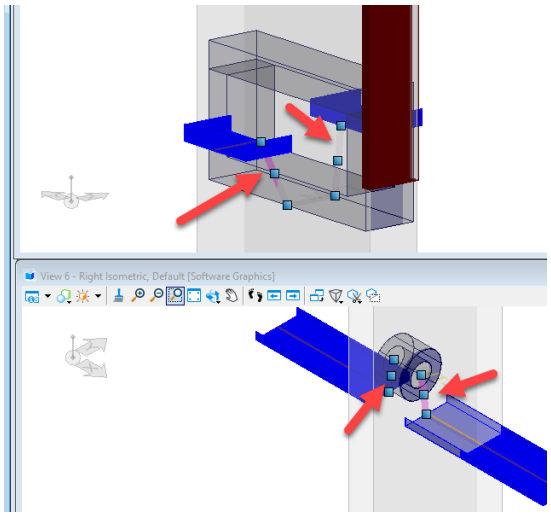
d. The user adds the Transit inside an opening (if it exists in the architectural drawing) or in the wall/area it will need to be.





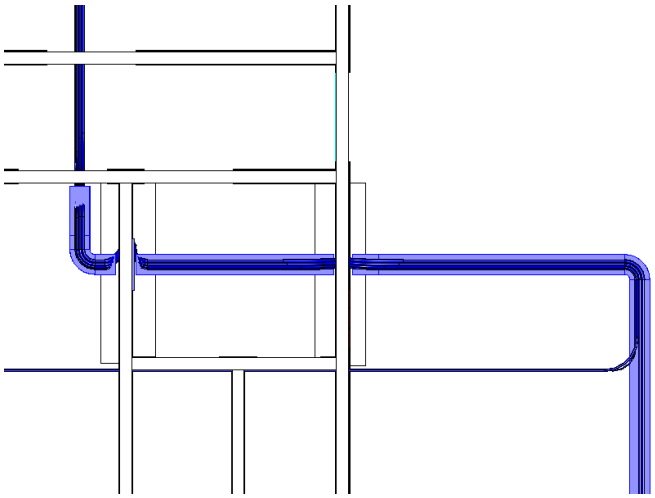
e. To enable later cable routing, using raceways and Transits, it will be necessary to connect them together using e.g. the BENTLEY RACEWAY AND CABLE MANAGEMENT “Generate Routing Lines” command.

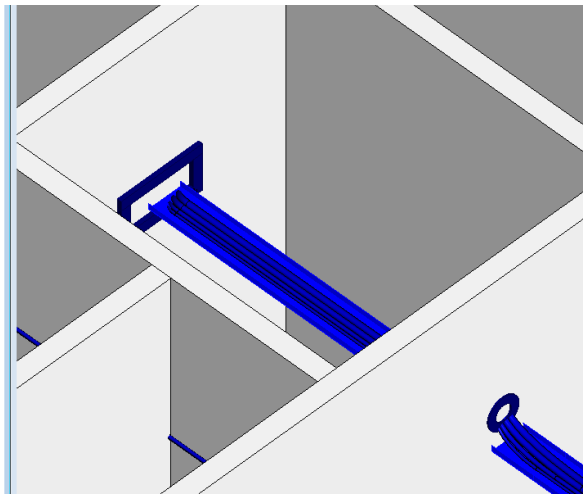




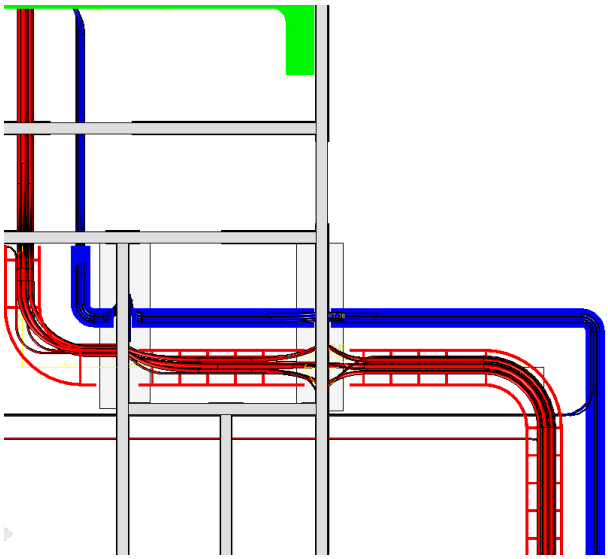
f. In BENTLEY RACEWAY AND CABLE MANAGEMENT routing file now it will be possible to manually or automatically route the cable to the related raceways and Transits.

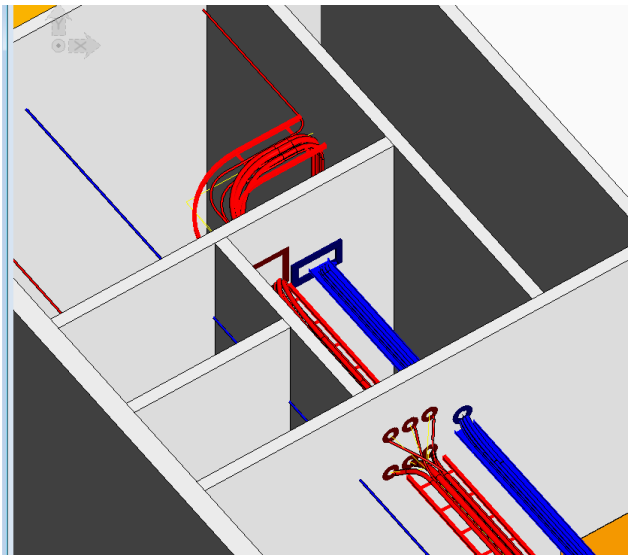
g. After successful cable routing, it´s possible to visualize the cable in 3D visualization.





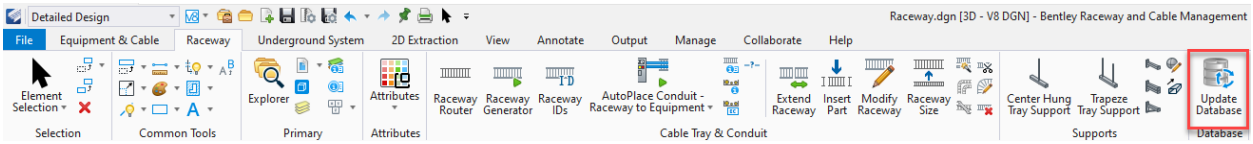
h. In case Transits are used to handle only a single cable, the 3D cable visualization will use these single Transits. In the screenshot, you can see an example in Mid-Voltage cable in red passing Mid-Voltage Transits also in red.



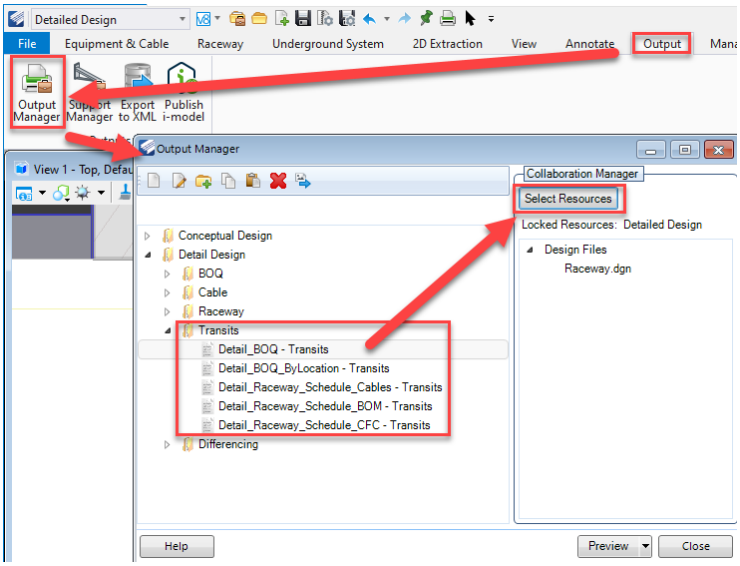


Workflow-Transit Output

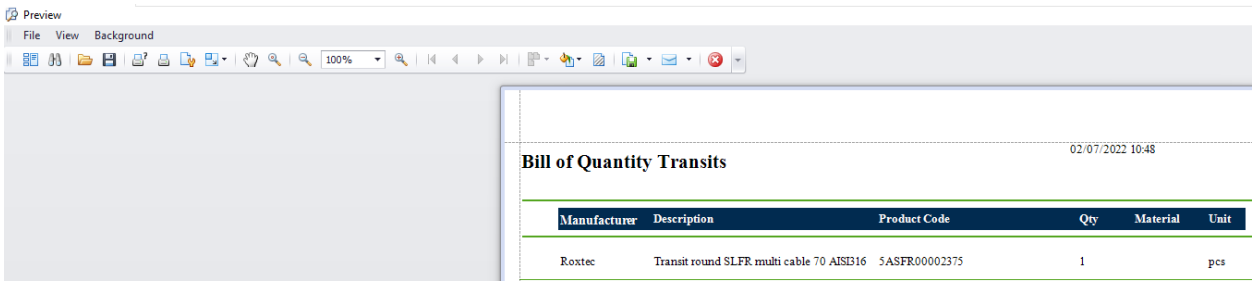
1. Please note, before a Report can be created it will be necessary to press “Update Database”.



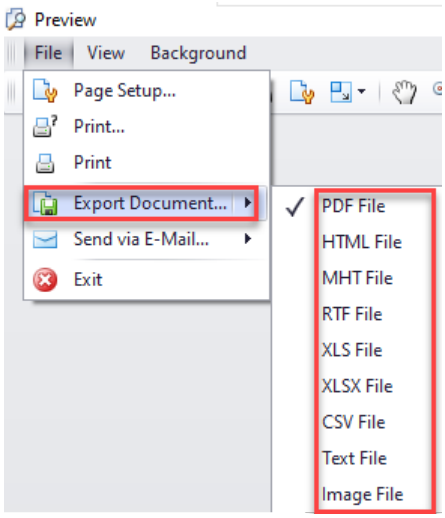
2. Reports can be created in the Output Manager after selecting a Transits Report and selecting a resource, e.g. the raceway.dgn file:



3. Example of created Report “Detail_BOQ-Transits” after pressing Preview:



4. From Preview it´s possible to export the document in different file formats using the “Export Document” option:



5. Example Outputs:

Cable list Transits 2/11/22 10:35

Transit ID	Cable ID	Cable Type	Diameter [mm]	Category
MVT-10				
	CTRL.PCTRL6.003	Control Cable 6x2x0,8	10.7	CTRL
	CTRL.PCTRL6.026	Control Cable 20x2x0,8	17.1	CTRL
	CTRL.PCTRL6.027	Control Cable 20x2x0,8	17.1	CTRL
MVT-14				
	MV.PMV1.001	LV Cable 0,6/1kV 4x10 PVC/PVC	20.0	MV
	MV.PMV1.002	LV Cable 0,6/1kV 4x10 PVC/PVC	20.0	MV
	MV.PMV1.003	LV Cable 0,6/1kV 4x10 PVC/PVC	20.0	MV
MVT-17				
	CTRL.PCTRL4.013	Control Cable 1x2x0,8	5.7	CTRL
	CTRL.PCTRL6.001	Control Cable 6x2x0,8	10.7	CTRL
	CTRL.PCTRL6.002	Control Cable 6x2x0,8	10.7	CTRL
	CTRL.PCTRL6.007	Control Cable 20x2x0,8	17.1	CTRL

Bill of Material Transits

2/11/2022 10:08

Transit ID	Manufacturer	Description	Location	Product Code
MVT-1	Roxtec	Transit round C RS T single cable 50		CRST010050046
MVT-10	Roxtec	Transit round C RS T single cable 50		CRST010050046
MVT-11	Roxtec	Transit round C RS T single cable 50		CRST010050046
MVT-12	Roxtec	Transit round C RS T single cable 50		CRST010050046
MVT-13	Roxtec	Transit round C RS T single cable 50		CRST010050046
MVT-14	Roxtec	Transit Frame CF 16		CSF0000160010
MVT-16	Roxtec	Transit Frame CF 16		CSF0000160010
MVT-3	Roxtec	Transit round SLRS single cable 68 AISI316		ASL1000680021
MVT-4	Roxtec	Transit round SLRS single cable 68 AISI316		ASL1000680021

Cable Fill Transits

02/11/2022 10:37

RW ID	Length	Result	Category	Method	*Spare* Min	*Spare* Max
MVT-1	0.13					
					100.00	100.00
			<all>		100.00	100.00
MVT-10	0.12					
					99.08	99.08
			CTRL		1.07	1.07