

BIM Aarhus Netværksmøde | Highlights Let's Rethink How We Do MEP Routings in Revit

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How do you plan your MEP routings in Revit

- Use “Heating and Cooling Loads” function in Revit?
- Excel Sheet for calculating airflow?
- Where does the data in the Excel Sheet come from?
- How do you choose the size of a duct?
- In the design process, how do you reserve space for shafts and routings?
- How do you explain to other project members how the routings are planned?

The traditional way to plan MEP routings



Architect Model

- Print sheets from Revit
- Manual measure

[illegible]

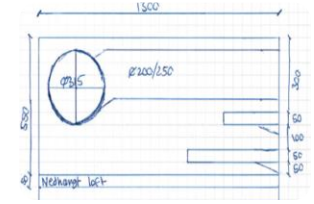
Excel Sheet

- Airflow calculation



Airflow to sheet

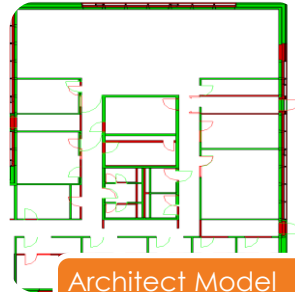
- Good overview
- Duct sizing



Sketches

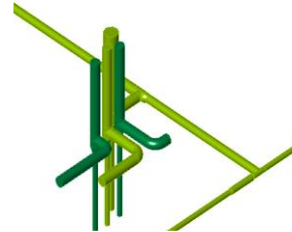


Scan and send



Architect Model

- Adjust the geometry
- Send updated model



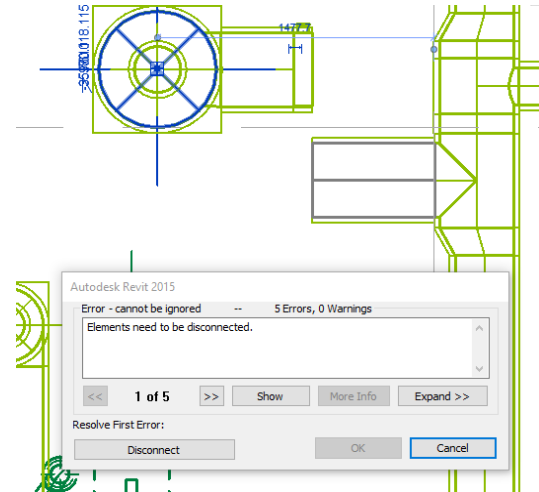
Ducts are drawn



Adjusting, Adjusting and Adjusting

This is not a BIM process

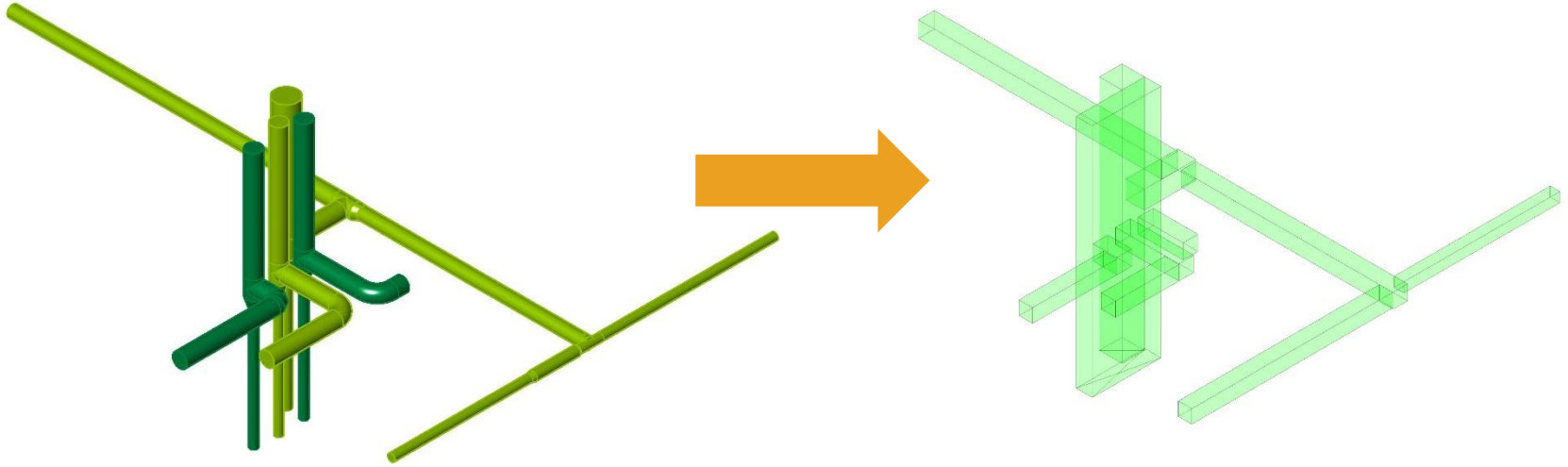
- Data in the model is not used
- Air flow not in Revit
- The sketches are not visible in the model
- Disconnection problems



Generic Routing






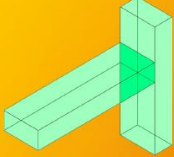
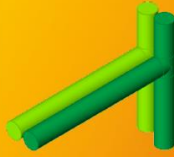
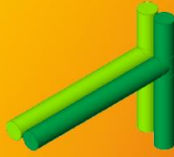
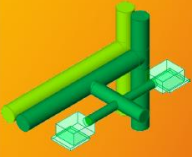
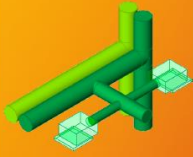
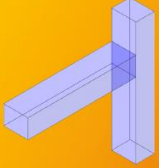




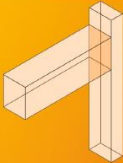
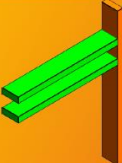
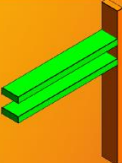
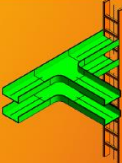
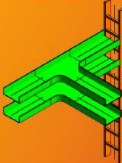
Ducts

Generic Routings

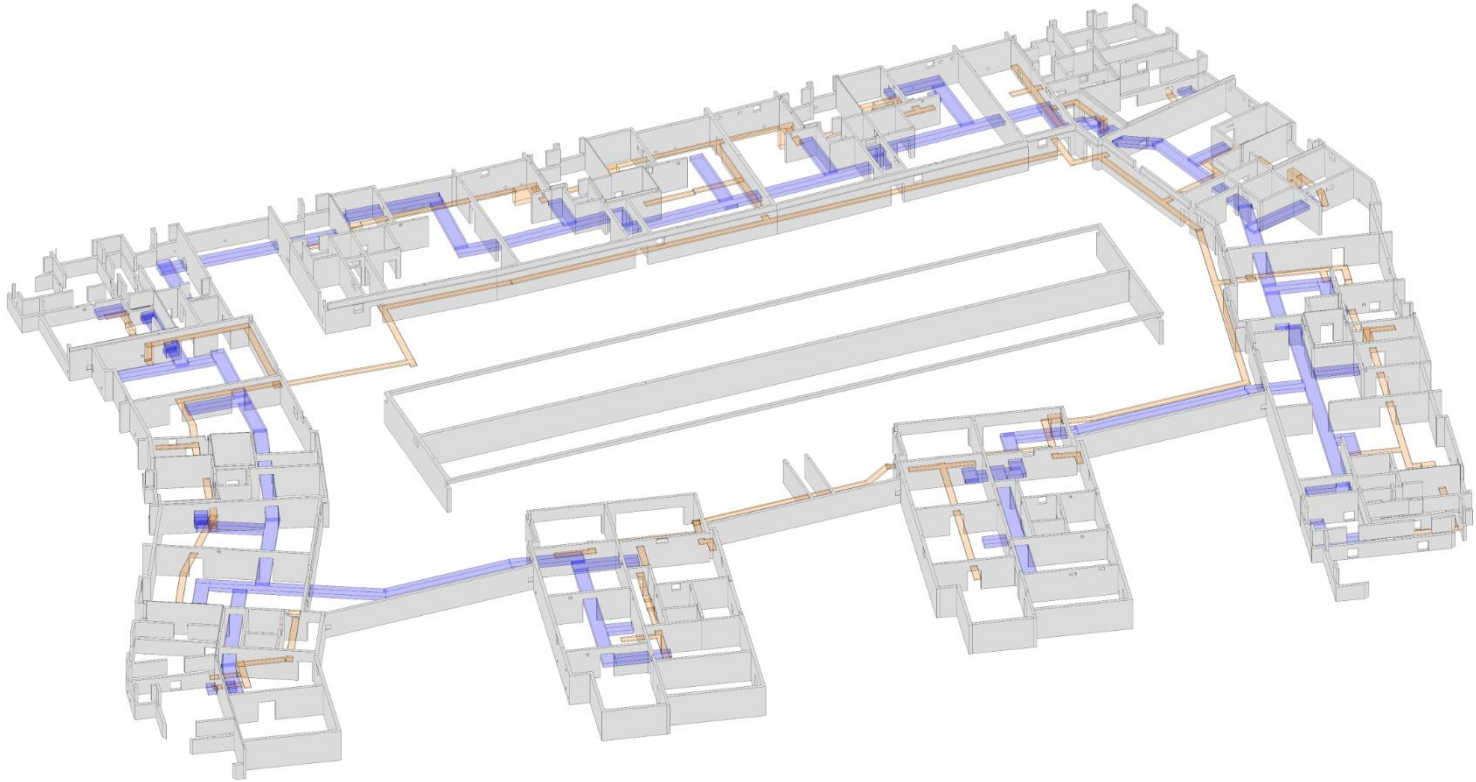


Generic Routing

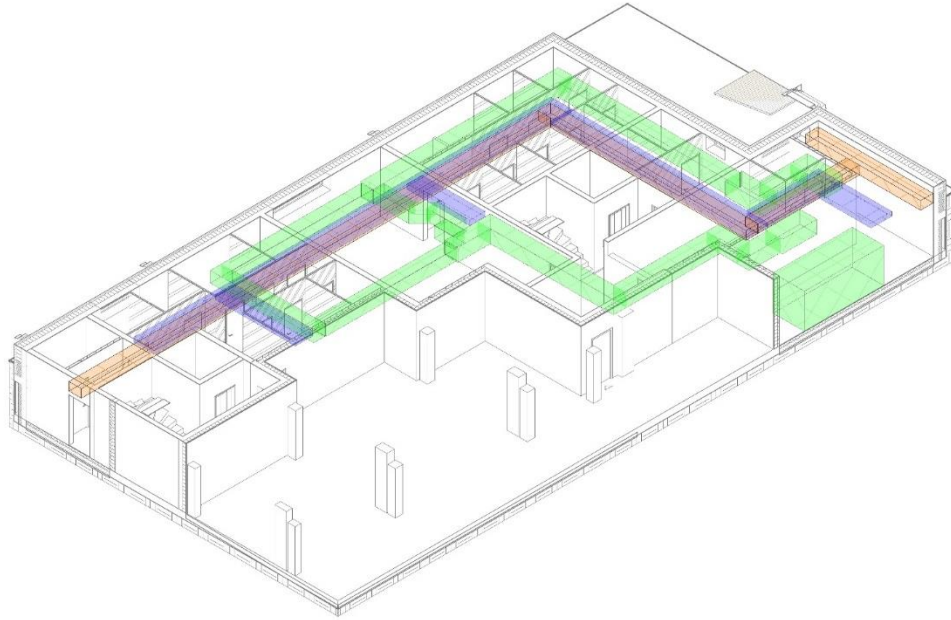
- Level of information and project phase

	Outline proposal Information level 3	Project proposal Information level 4	Preliminary project Information level 4	Main project Information level 5	Execution Information level 6
Concrete walls					
Ducts - Routings					
Pipe - Routings					
Cable trays - Routings					

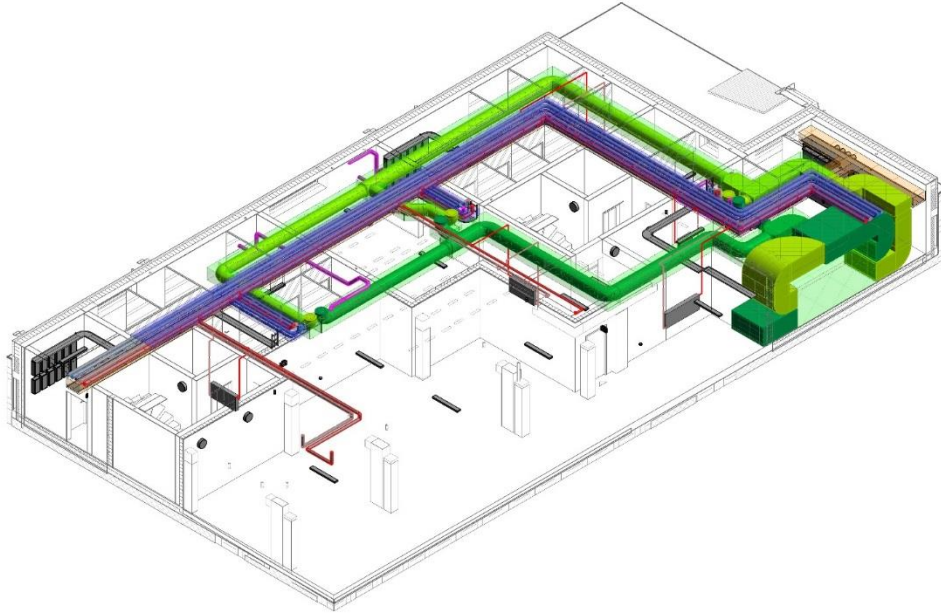
Generic Routing – Example



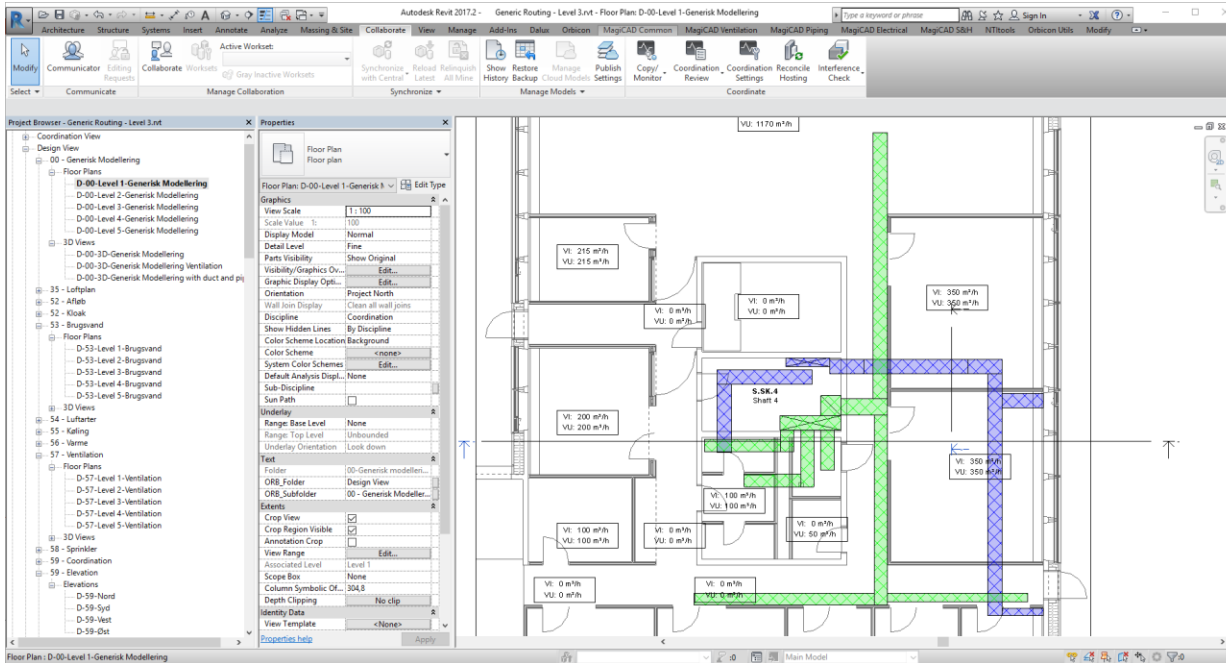
Generic Routing - Example



Generic Routing - Example



Revit – Live demo



Why I think this make sense

- Flexible in the early design phase, you want get disconnection errors.
- You can build in clearance around your duct, pipes and cable trays.
- You can do a Interference Check
- Easy for everyone to see the planned routings

Generic Routing add-in for Revit

Autodesk Revit 2017.2 - Generic Routing.rvt - Floor Plan: D-00-Level 1-Generisk Modellering

Modify | Generic Models

Project Browser - Generic Routing.rvt

- 00 - Generisk Modellering
 - Floor Plans
 - D-00-Level 1-Generisk Modellering
 - D-00-Level 2-Generisk Modellering
 - D-00-Level 3-Generisk Modellering
 - D-00-Level 4-Generisk Modellering
 - D-00-Level 5-Generisk Modellering
 - 3D Views
 - D-00-3D-Generisk Modellering
 - 35 - Loftplan
 - 52 - Afløb
 - 52 - Kloak
 - 53 - Brugsvand
 - Floor Plans
 - D-53-Level 1-Brugsvand
 - D-53-Level 2-Brugsvand
 - D-53-Level 3-Brugsvand
 - D-53-Level 4-Brugsvand
 - D-53-Level 5-Brugsvand

Properties

000 Generisk Modellering - Plan
Færingsvej Ventilation

Generic Models (1) Edit Type

Constraints

- Level: Level 1
- Host: Level: Level 1
- Offset: 2664,6
- Moves With Nearby Elements: ☐

Graphics

- ORB_Section_Symbol: ☒

Dimensions

- ORB_Bredde: 690,0
- ORB_Højde: 3818,7
- ORB_Længde: 1655,0
- Volume: 4,361 m³

Properties help

Generic Routing - HVAC

Orientation: Plan

Ducts

Udsugning (VU) Indblæsning (VI) Udsugning (VU) Indblæsning (VI)

Duct Type: 5711001 Cirkulær Kanal med Påstik

System Type: 57 - Udsugning (VU)

Sizing Method Type: ...

Size (ø): 160 mm Update size

Velocity: 7,11 m/s

Friction: 4,27 Pa/m

Clearance: ☒ Equal distance

50 mm

Insulation Type: Ingen isolering (0 mm)

Supplied Spaces:

Number	Name	Supply Airflow	Return Airflow
S.H7.2	KONTOR	215	215
S.G7.3	KONTOR 2	200	200
S.G7.1	PRINT	100	100
S.G7.0	GANG	0	0
S.H7.1	FV	0	0

Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

Value to your BIM process?

- Do you think it make sense?
- Do you think this is the right way to go in the early project phases?