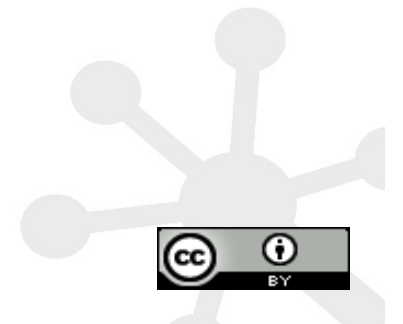
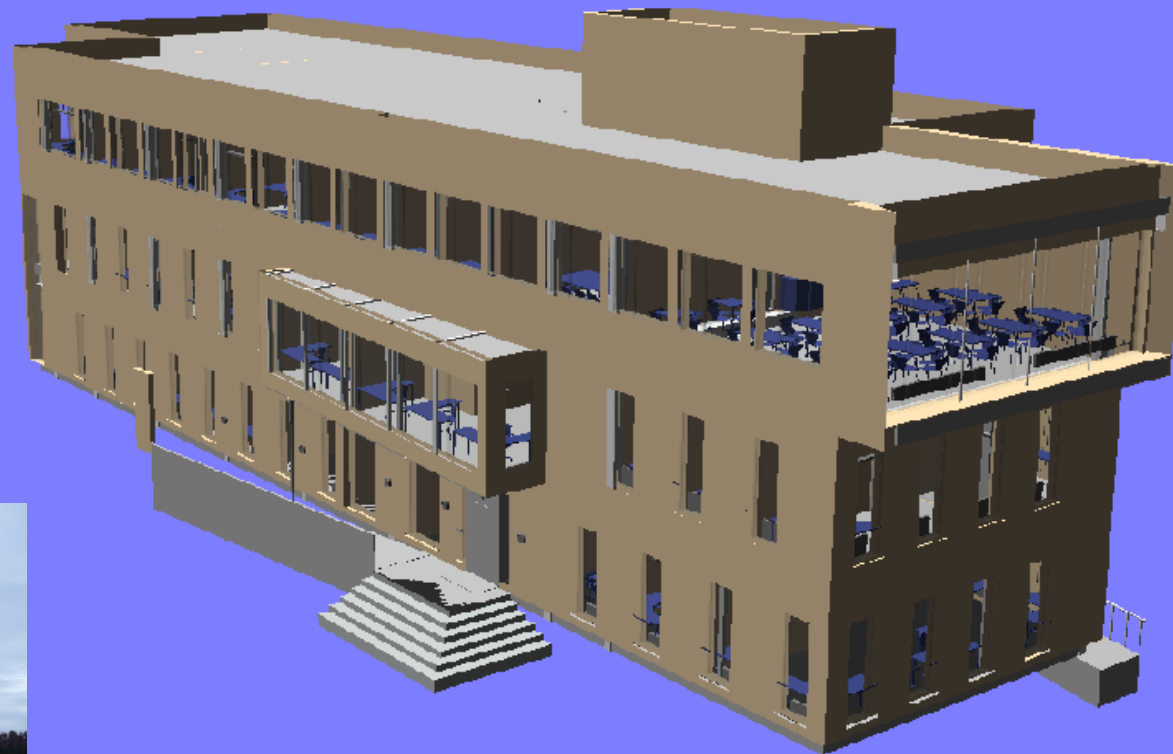


Some projects that uses **open BIM**, and **how** they use it...



SJEKE – defense office building



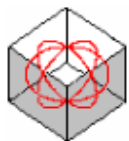
Source: Knud Fredrik
Mohn & Nils Ivar Nilsen

Early phase planning



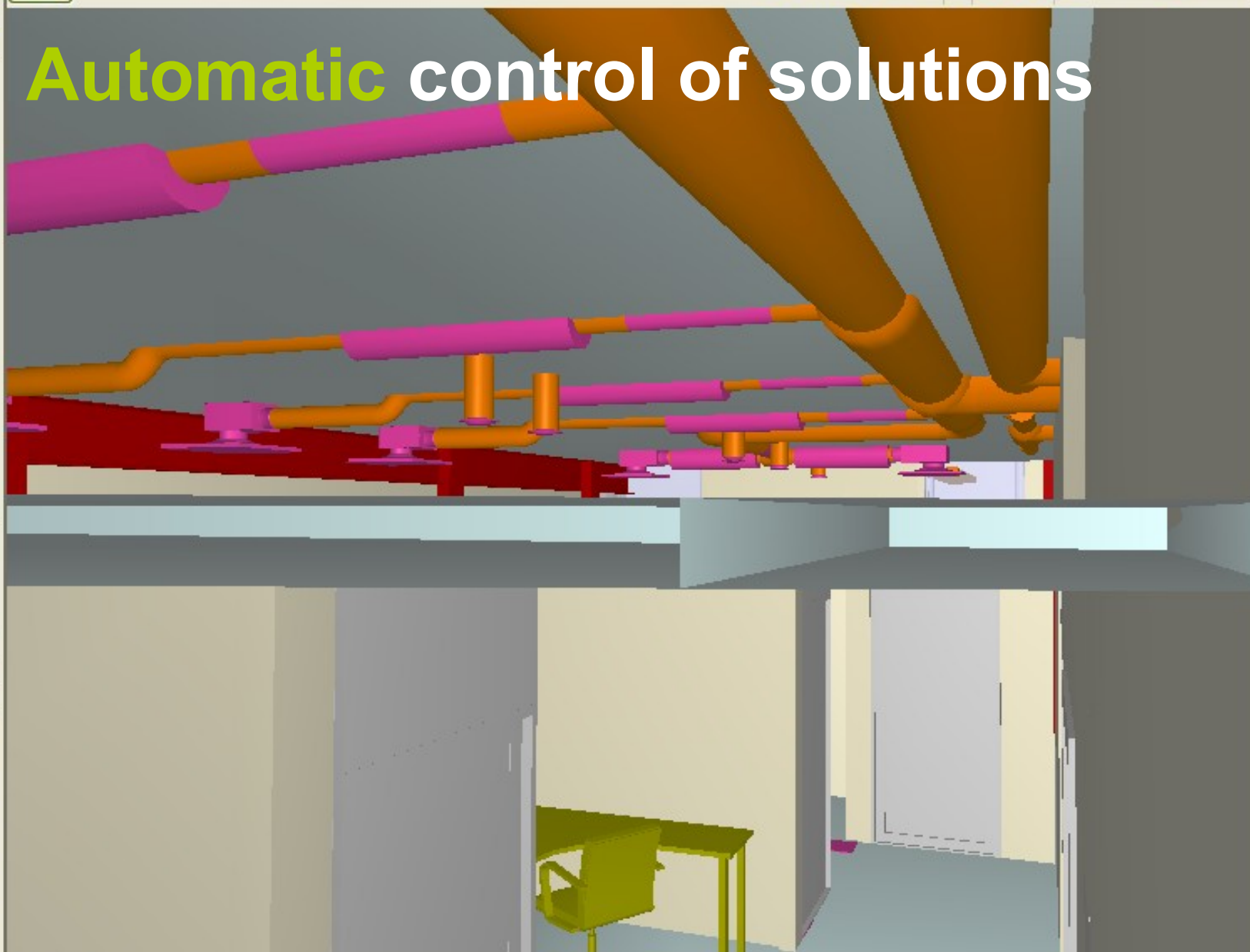
Visual control of collisions

Source: Knud Fredrik
Mohn & Nils Ivar
Nilsen - Forsvarsbygg

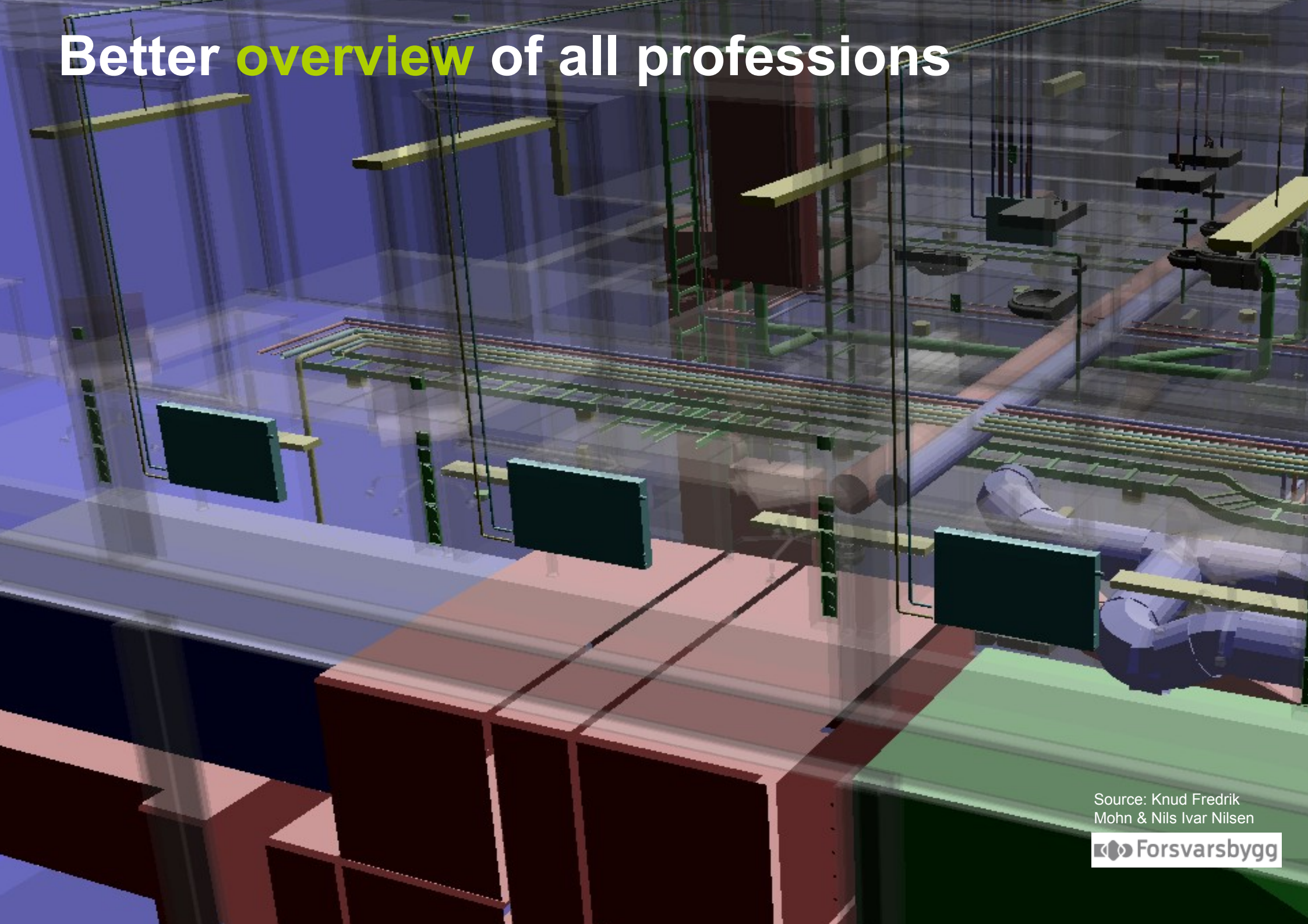


DDS-CAD MEP

Property	Value
Model	Prosjekt
Name	\$
Type	Sirk. kanal, Forsinket stål
GUID	179TWMMITESAsRkOR...
Layer	V361--3601-T-
Geometry	Boundary Representation

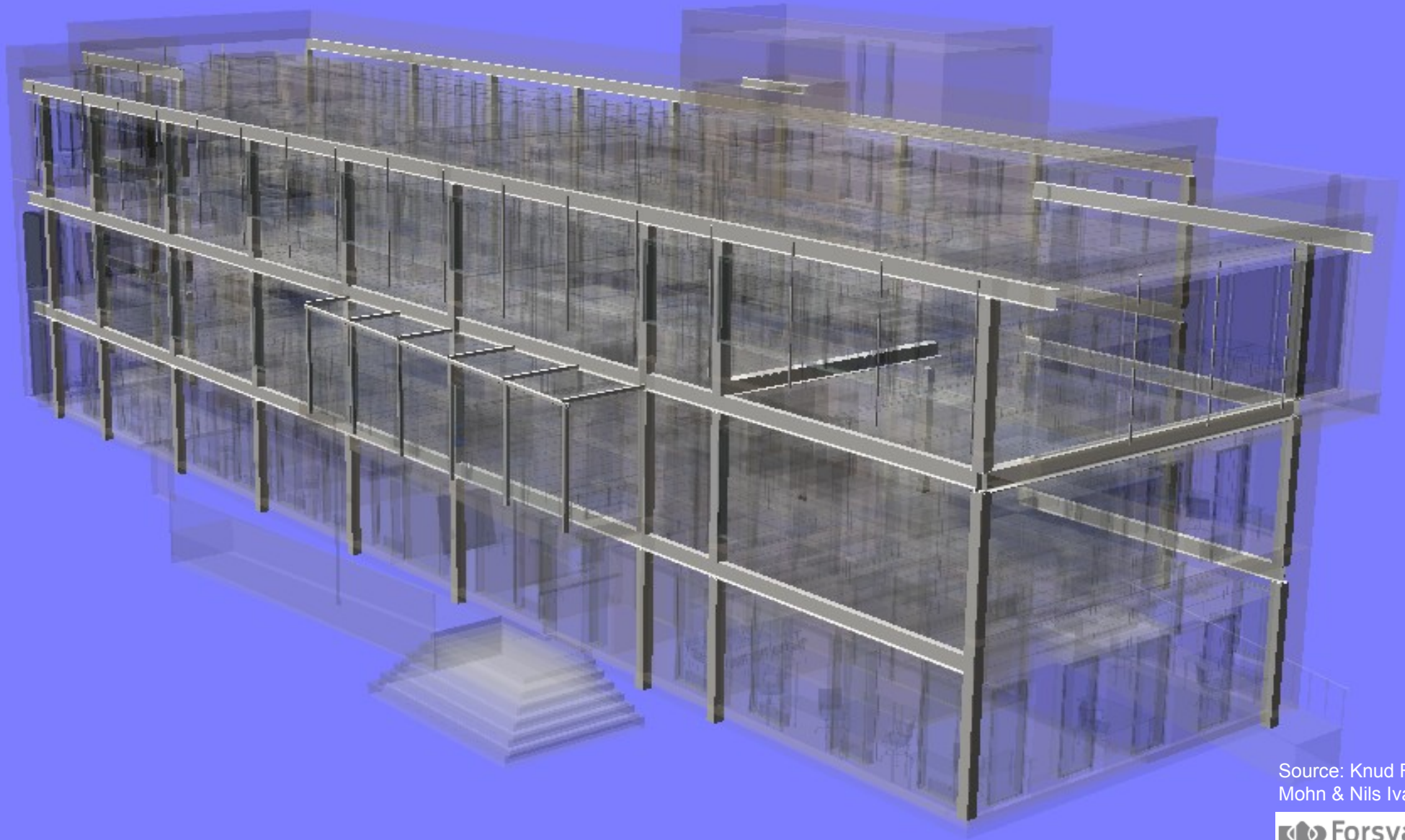


Better **overview** of all professions

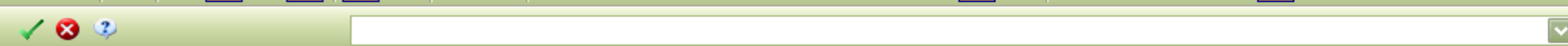


Source: Knud Fredrik
Mohn & Nils Ivar Nilsen

Better **overview** of individual professions



Source: Knud Fredrik
Mohn & Nils Ivar Nilsen



Ifc Properties

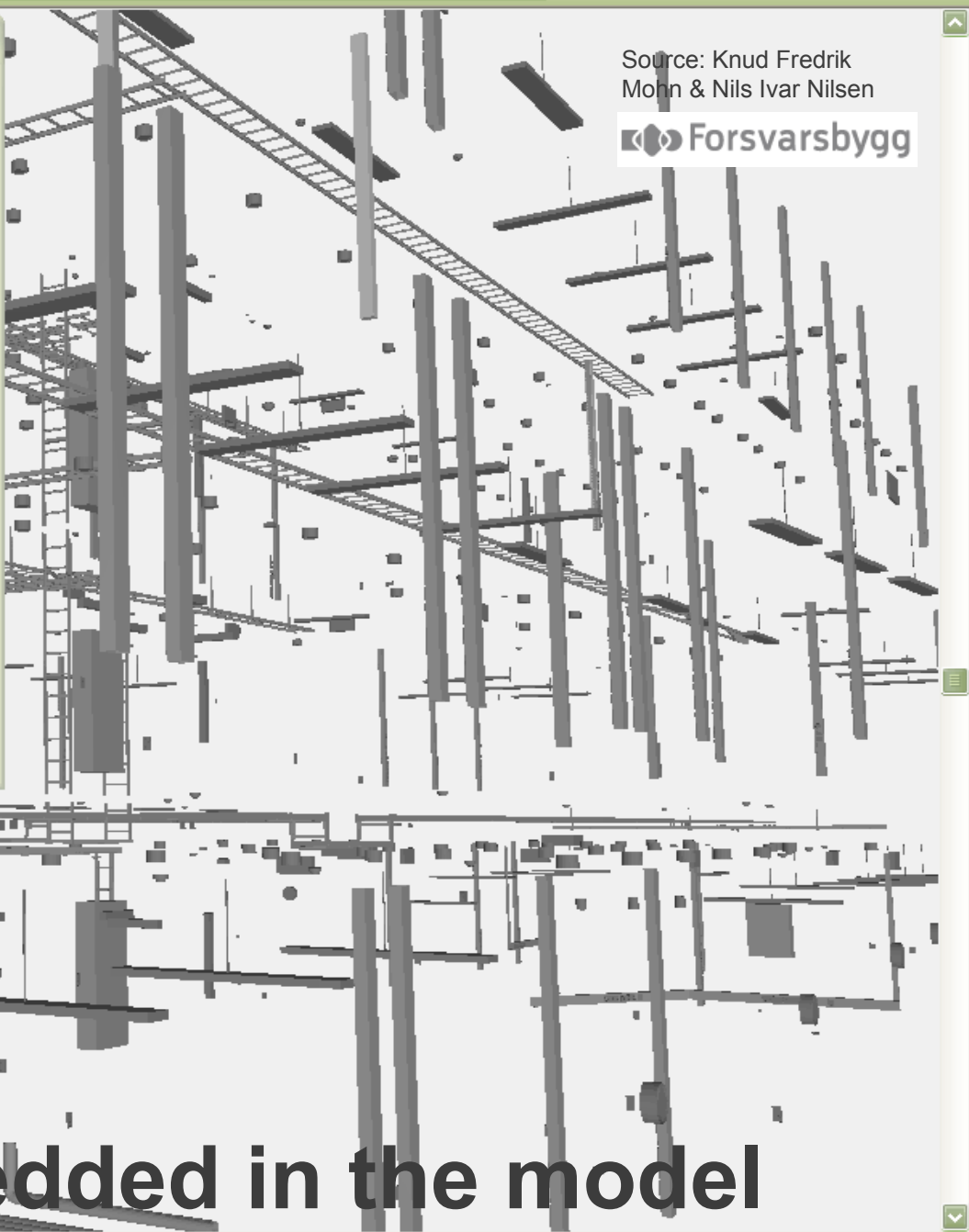
LF1400 (IfcLightFixtureType)

Name	Value	Description
GlobalId	1nR89zm0r2tfudtQVmc_rN	
Name	LF1400	
Description	C20P1 Nedh. kontorarmatur 2x35W dagslysstyring + binærutgang	
ApplicableOccurrence	Lysrørmaturer m/oppheng	
ElementType	LF190101_400_FP8_1047	
PredefinedType	DIRECTIONSOURCE	

Pset_ManufacturerTypeInformation (IfcPropertySet)

Name	Value	Description
ArticleNumber	FP8	Article number or reference that may be applied to a product according to a standard scheme for article number

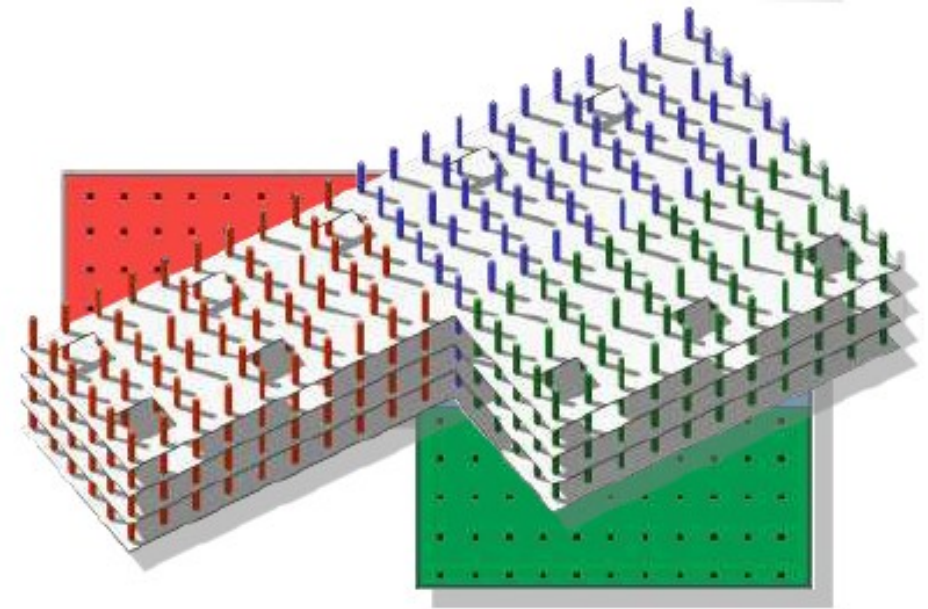
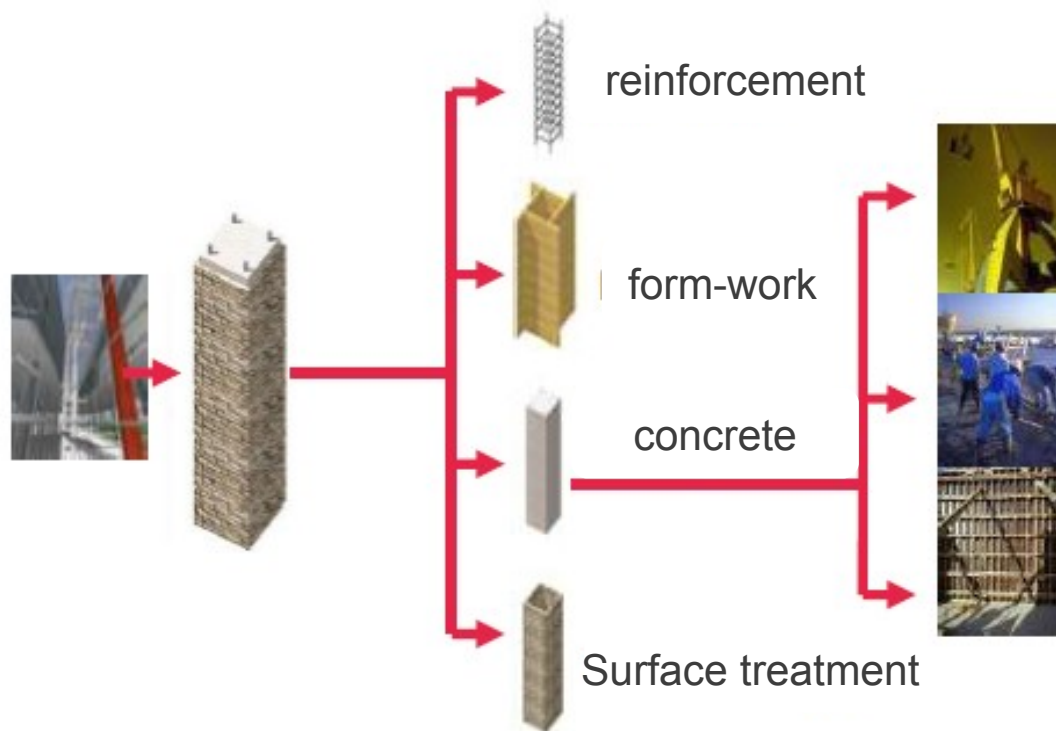
☒ General properties
 ☐ Materials
 Run external program
 Add IFD...
 Add/Edit property sets...
 ☒ Property sets
 ☒ Owner info
 OK Cancel Help

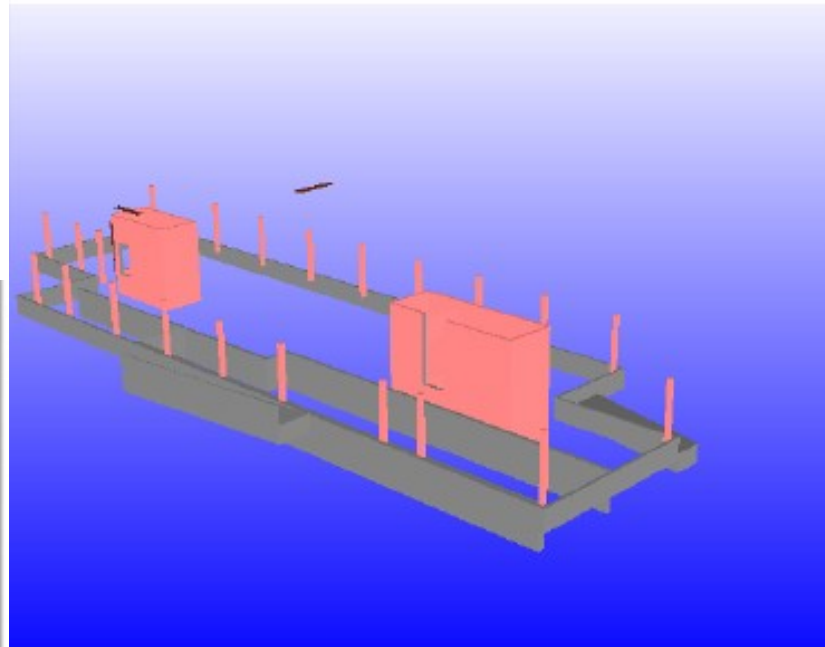


Source: Knud Fredrik Mohn & Nils Ivar Nilsen
 Forsvarsbygg

More **information** embedded in the model

Extending objects with “recipes”

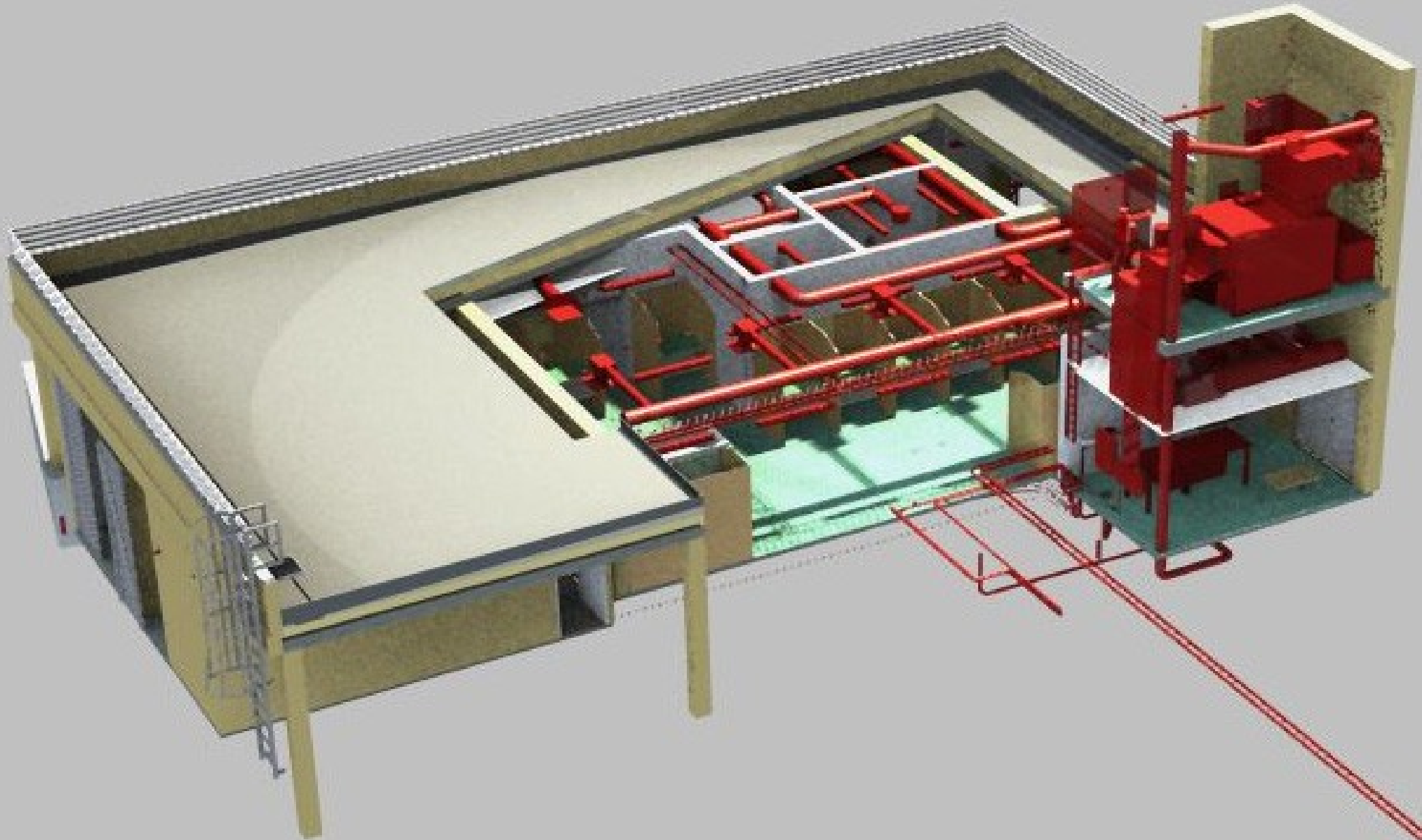




4D planning

Flowline view - Vico

Gas-mixing facility - Forsvarsbygg



Model **checking** in Solibri

Model Checking Presentation Information Takeoff

Model Tree

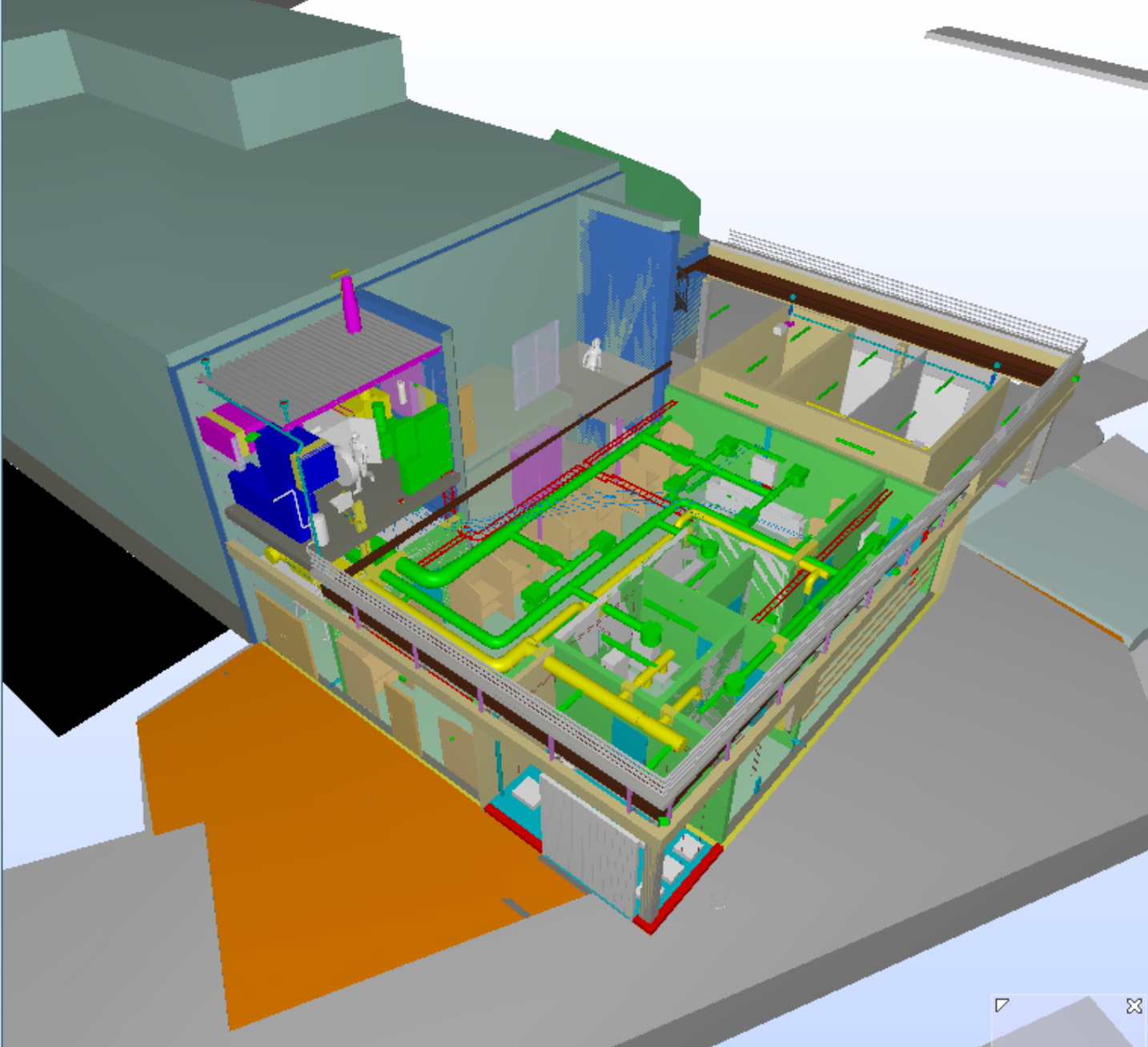
- ▶ (A) 612252_RIE_Alt4
- ▶ (B) 612252_RIV_Alt4
- ▶ (C) 612252_RIB_Alt4
- ▶ (D) 612252_RIB_Alt4_båtverksted
- ▶ (E) 612252_RIB_Alt4_grunnarbeid
- ▶ (F) 2440_ARK_Alt4
- ▶ (G) 2440_ARK_Alt4 Båtverksted
- ▶ (H) 2440_ARK_Alt4 Sitebim

Info

▲ (F) Roof.3.2

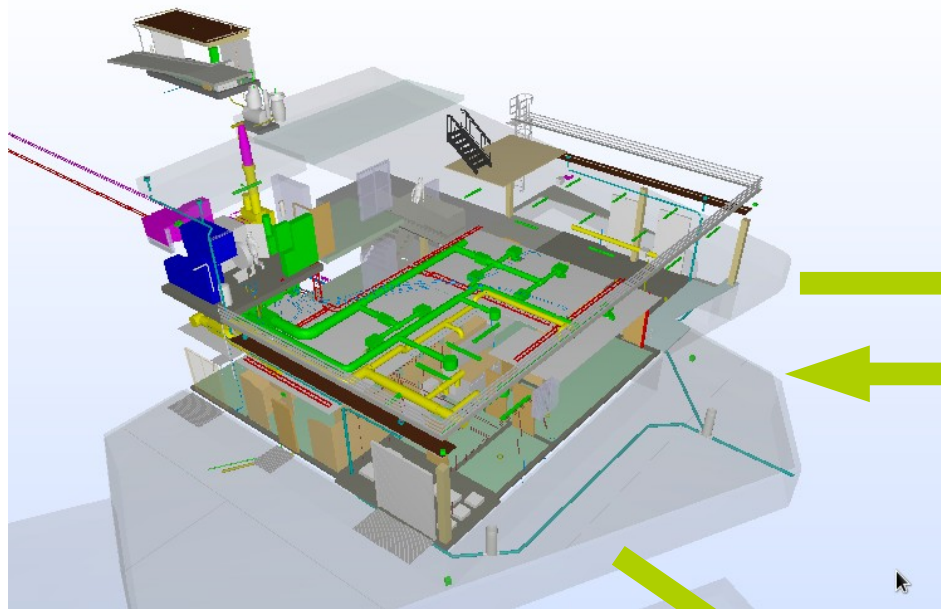
Classification		Hyperlinks		BaseQuantities	
Identification	Location	Quantities	Material	Relations	
Property	Value				
Model	(F) 2440_ARK_Alt4				
Name	Tekking takflat				
Type	svertet vegg 20				
Material	svertet vegg 20.00 mm				
Layer	262 Taktekning/membraner				
Geometry	Extrusion				
GUID	35mMtqHxz21xuxAG1z47iH				
BATID	C5C16DF4-47BF-4207-BE-3...				

3D



The 3D view displays a complex building model. A section of the roof is highlighted in orange, corresponding to the selected element in the Model Tree. The model shows various internal components, including pipes, ducts, and structural elements, color-coded for identification. The interface includes standard 3D navigation tools like 'Spin' and 'Hide'.

Using BIM for tendering



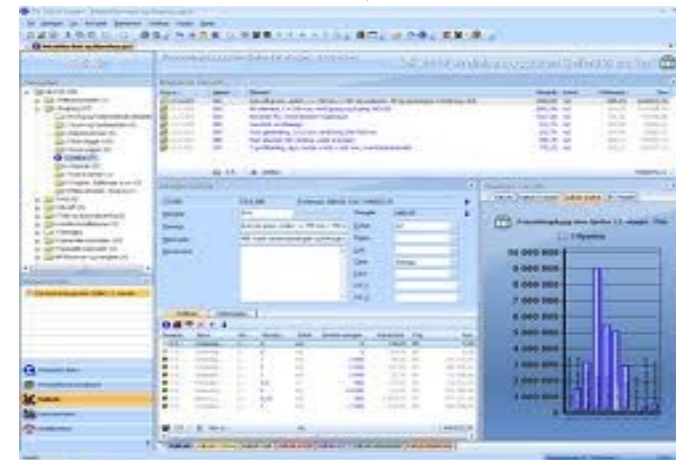
Del III F2 - BOD Renslegg.xls - LibreOffice Calc

File Edit View Insert Format Tools Data Window Help

Calibre

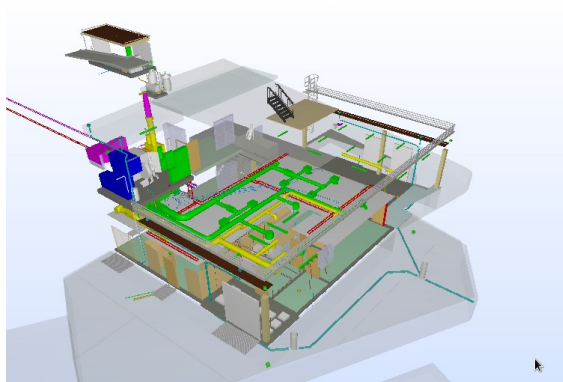
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B	C	D	E	F	G	H	I	J	K	L
482	3123	481	1.45g B08	5	8.002	Kalkrom, B02	Pipecold water	3140	Forbruksvann	
483	3123	482	1.45g B08	5	8.002	Kalkrom, B02	Pipecold water	3140	Forbruksvann	
484	3123	483	1.45g B08	5	8.002	Kalkrom, B02	Pipecold water	3140	Forbruksvann	
485	3123	484	1.45g B08	5	8.002	Kalkrom, B02	Pipecold water	3140	Forbruksvann	
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procurement of construction materials

BIM

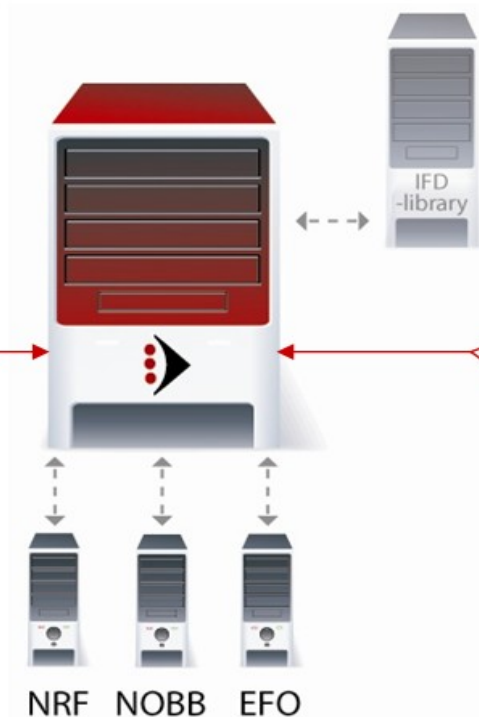


ERP - systems

Wall.0.3	
Identification	Location
Property	
Model	class6001
Name	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
Type	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
GUID	34e0fbgyf58u653vsybEju
Layer	wall
Is External	True
Geometry	Extrusion
Wall quantities	
Property	
ExtendToStructure	True
IsExternal	True
Reference	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
ThermalResistance	0.5

Procurement system

Wall.0.3	
Identification	Location
Property	
Model	class6001
Name	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
Type	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
GUID	34e0fbgyf58u653vsybEju
Layer	wall
Is External	True
Geometry	Extrusion
Wall quantities	
Property	
ExtendToStructure	True
IsExternal	True
Reference	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
ThermalResistance	0.5

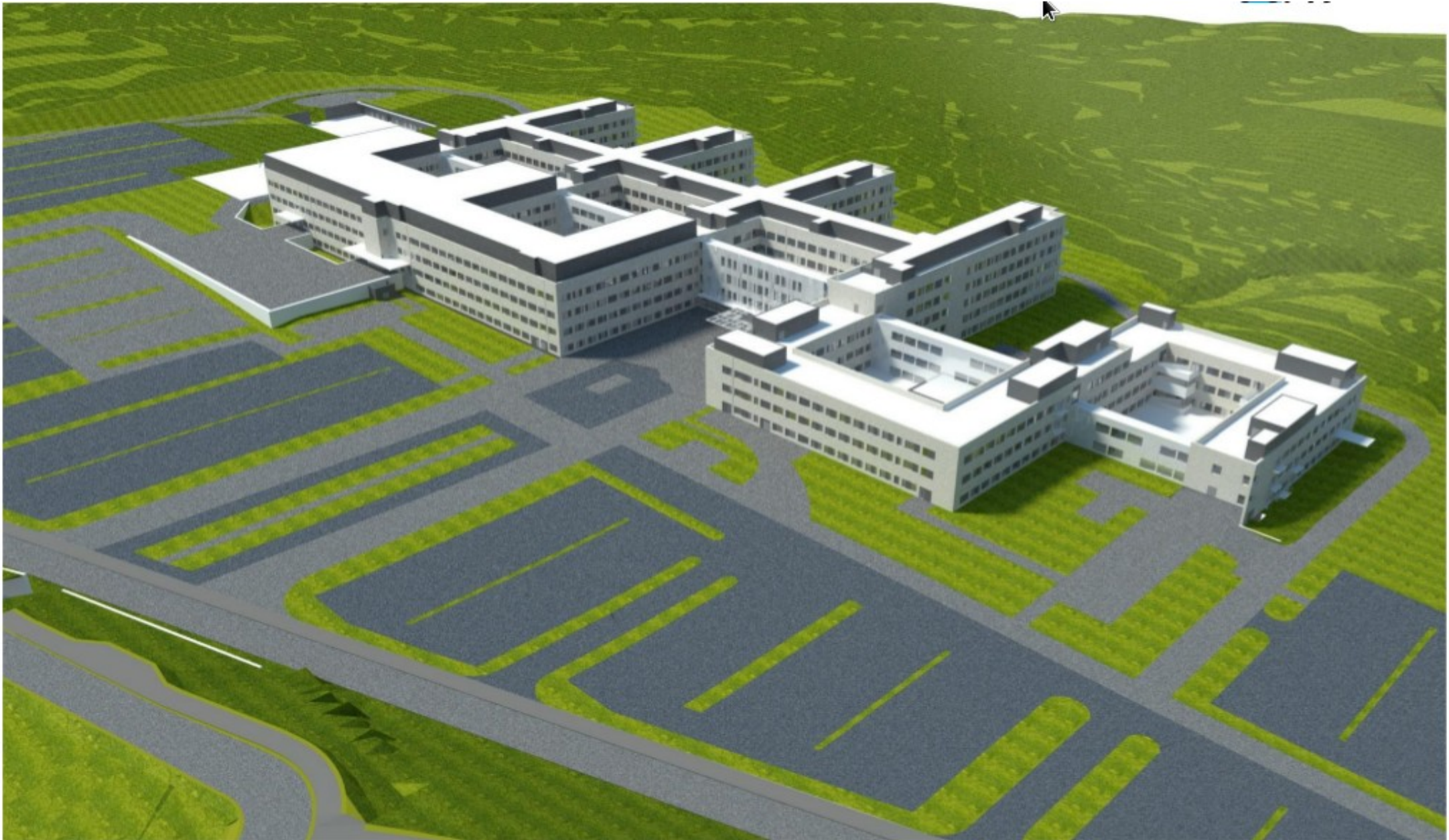


QA - statistics

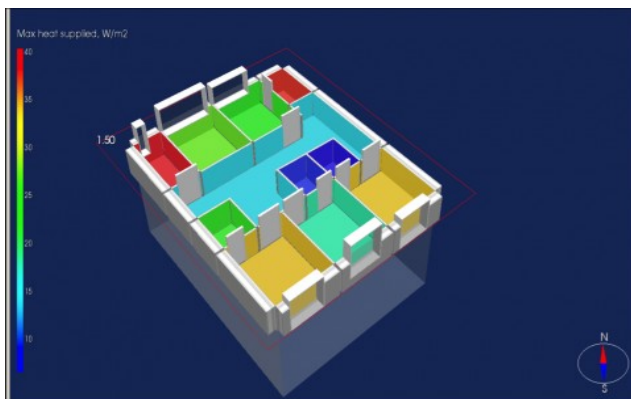
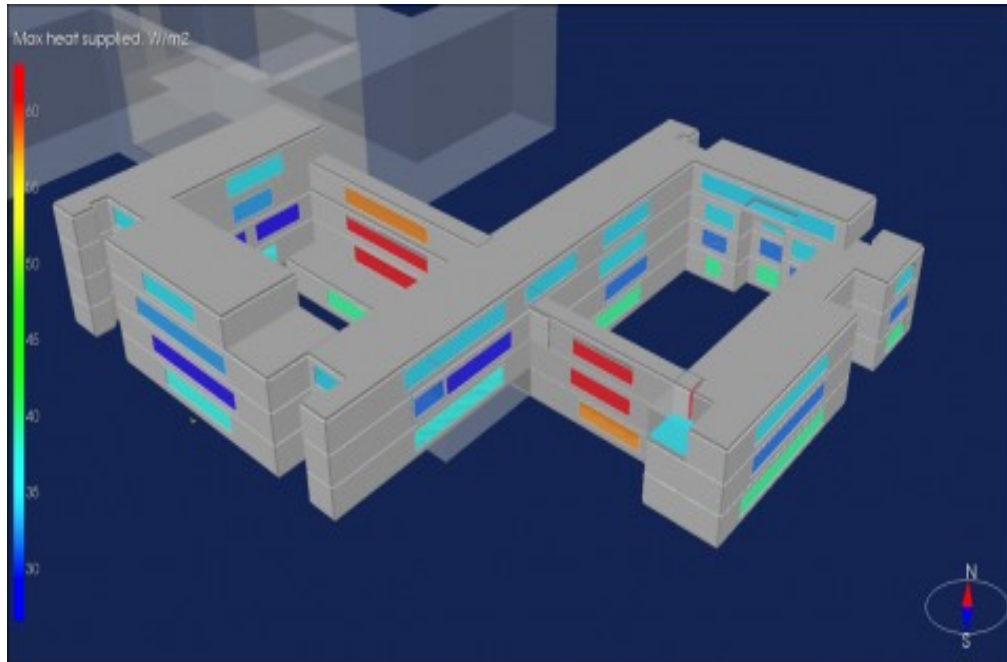
Wall.0.3	
Identification	Location
Property	
Model	class6001
Name	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
Type	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
GUID	34e0fbgyf58u653vsybEju
Layer	wall
Is External	True
Geometry	Extrusion
Wall quantities	
Property	
ExtendToStructure	True
IsExternal	True
Reference	Yttervegg 25.0cm U-verdi= 0.20 W/m2K
ThermalResistance	0.5

 IFD signOn

Hospital in Sarpsborg – 80.000m²



Energy & indoor-climate simulations



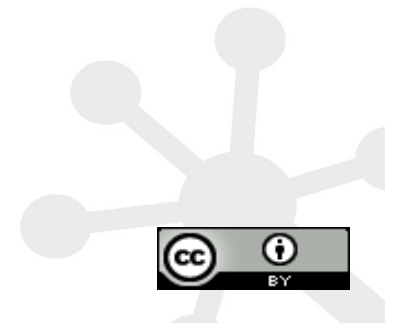
Revit MEP – limited use
Magiacad Room – limited use

IDA ICE (Indoor Climate and Energy) – **OK** after adoption to
Norwegian regulations – **hard** to adapt each tool

Source: Erichsen &
Horgen AS

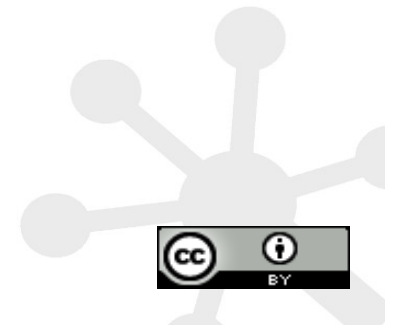
Benefits (according to project owner)

- Simplifies production of **drawings** and **details**
- Model can be used for **prefabrication** – precut
- **Lean** construction
- Better **control** of the construction process
- Possible to use for **electronic commerce**
- Better control of **resources**
- Better control of **budget**
- Allows for **alternative solutions** on early stage



Challenges (according to project owner)

- Hard to define what the **model** shall contain
- Variable **support for IFC** in different software
- Hard to know **what information** that is required by different tools, and where to put it.
- Variable **knowledge** about how to produce and use a BIM



Contact information



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