SOLIBRI
A NEMETSCHEK COMPANY

Model Checking!
Should it Matter to you?

Creating a digital future of better builds

Solibri – Industry Leader

- Solibri is the leader in BIM Quality Assurance and Quality Control. Providing out of the box tools for BIM validation, compliance control, design process coordination, design review, analysis and code checking.

- First to bring comprehensive Quality Control and Quality Assurance (QA/QC) to the industry
- Mission: Creating a Digital future of Better builds
- Vision: We build a better world where digitalization optimizes the use of resources for everyone.
  By doing so, Solibri is recognized as the de facto standard of quality in the construction industry.

160 000
USERS

133
COUNTRIES

50 MILLION
CHECKS

every year

Solibri is in use in all types of projects around the world, around the clock, throughout the workflow

SKANSKA RAMBOLL TAKENAKA ARUP

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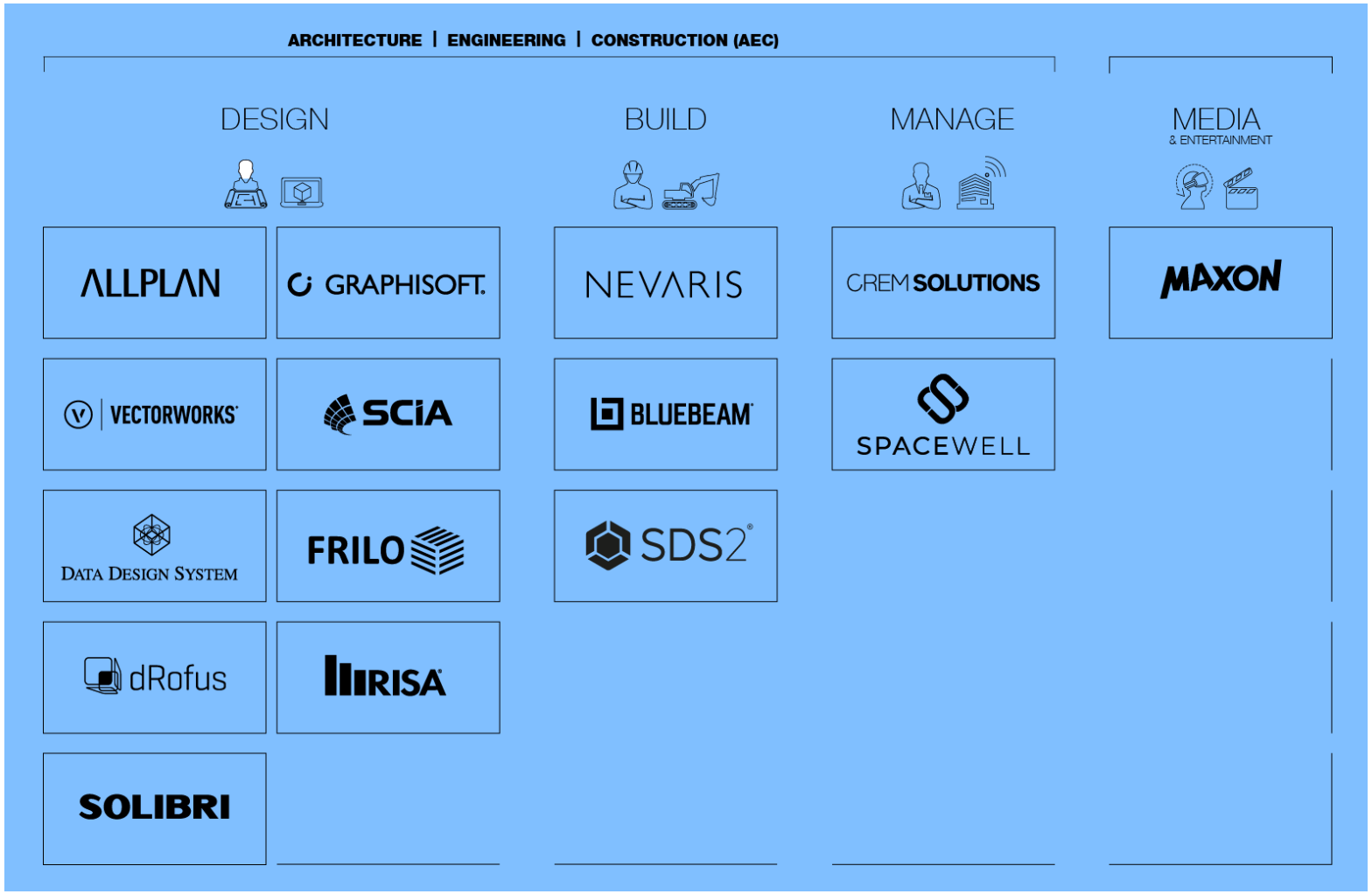
Solibri is part of the Nemetschek Group

“Shaping the entire Building Lifecycle”

The Nemetschek Group is a Germany based, globally operating software developer, focused on the AEC/O industry.

The corporate group is focused on four customer segments: Design, Build, Manage (AEC/O) & Media. Including 15 highly innovative, market-leading brands.

The brands offer digital solutions for the planning, building and operation of building and infrastructure projects, as well as for the media and entertainment industry.



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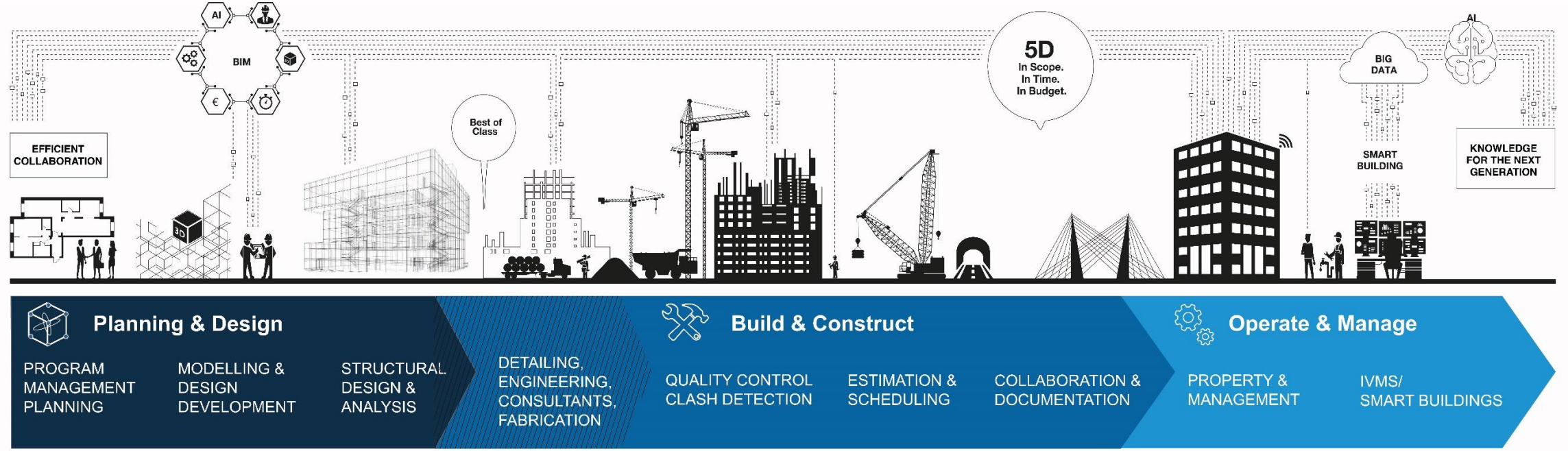
Nemetschek at a Glance

NEMETSCHEK GROUP



Global Player in more than 78 Locations with Users in 142 Countries

4 CUSTOMER SEGMENTS
15 STRONG BRANDS

596,9 MILLION
EURO IN REVENUE
(Financial Year 2020)

GLOBALLY MORE THAN
6 MILLION
USERS

>3,000 EMPLOYEES
WORLDWIDE

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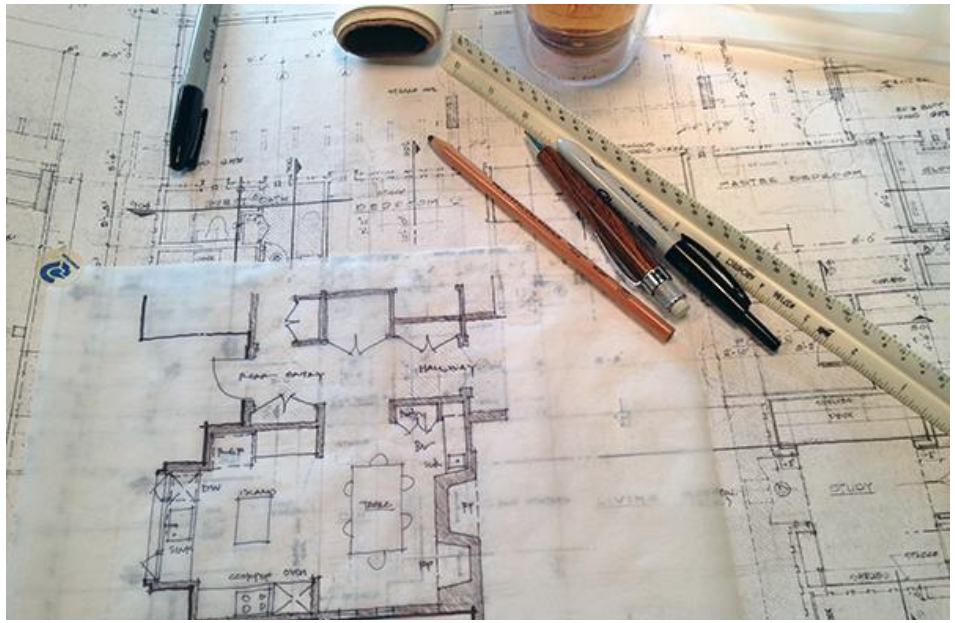
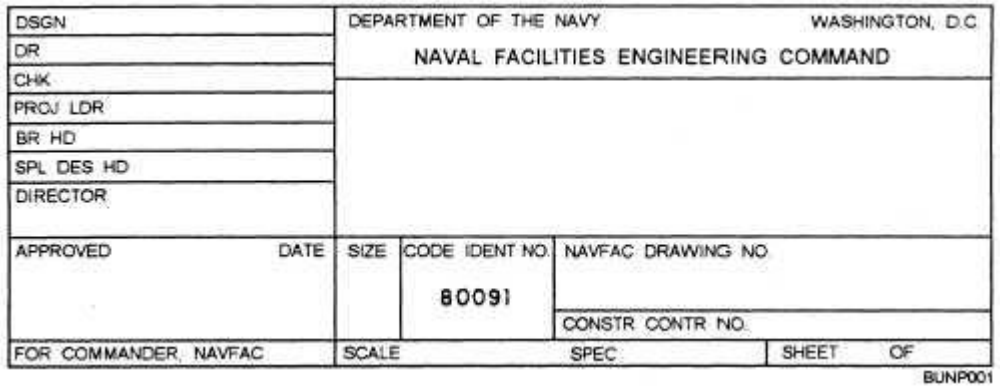
Model Checking. Should it Matter To You?

- When I was starting out, the hand drawn architectural and engineering plans were a work of art. I remember being told how the drawing was presented and the information on it reflected on the company as a whole.
- Each drawing was checked and marked up for errors or untidiness and then approved by somebody else before being issued
- 2D CAD was just an electronic drawing board so more or less the same process.
- 3D modelling and drawing automation reduced the need to check the geometrical dimensions but some model checks were done for the layout and data such as sizes, material, grades etc
- BIM or Digital Design has blurred the lines with roles and responsibilities and often checking the model is overlooked other than above.





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Model Checking. Should it Matter To You?

- “We check our models; we do design coordination”!!
- Clash detection or avoidance has been around for 20+ years and is a very small part of model checking and still hasn’t solved many problems on the site.

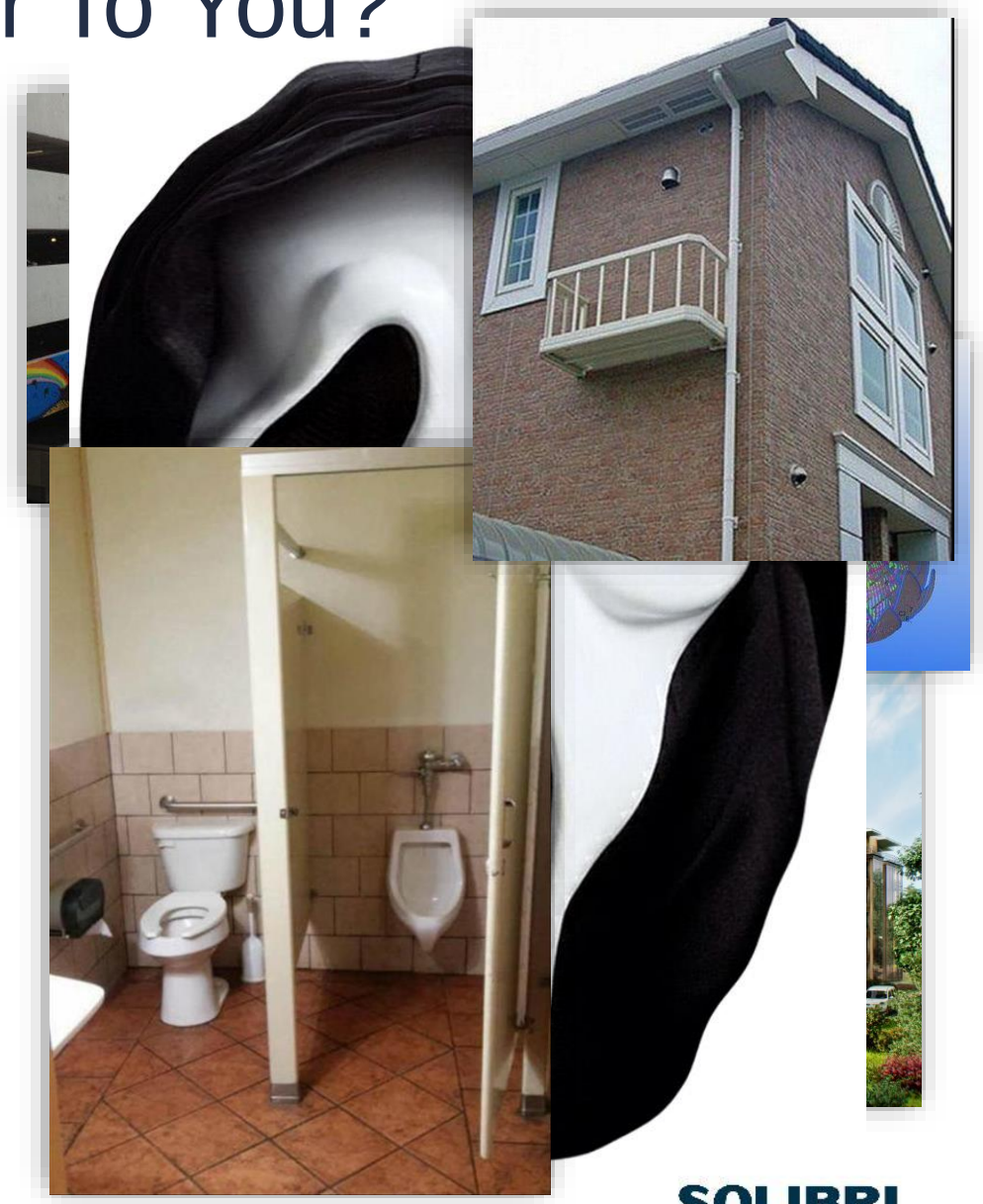
- “Its not our job” or “We’ll do it when we are told we have to do it”
- Pride in your work and your company reputation should be a prerequisite.

- Pride in the geometrical model is something we see all the time, but what about everything else the model contains?

- Unfortunately, in our experience the impressive visuals **always** masks a multitude of errors

- Every model we see has issues that we can find often with simple checks.

- One of our customers audited a COBie deliverable for the client and found more than **2000** errors!



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WHY BIM QUALITY ASSURANCE?

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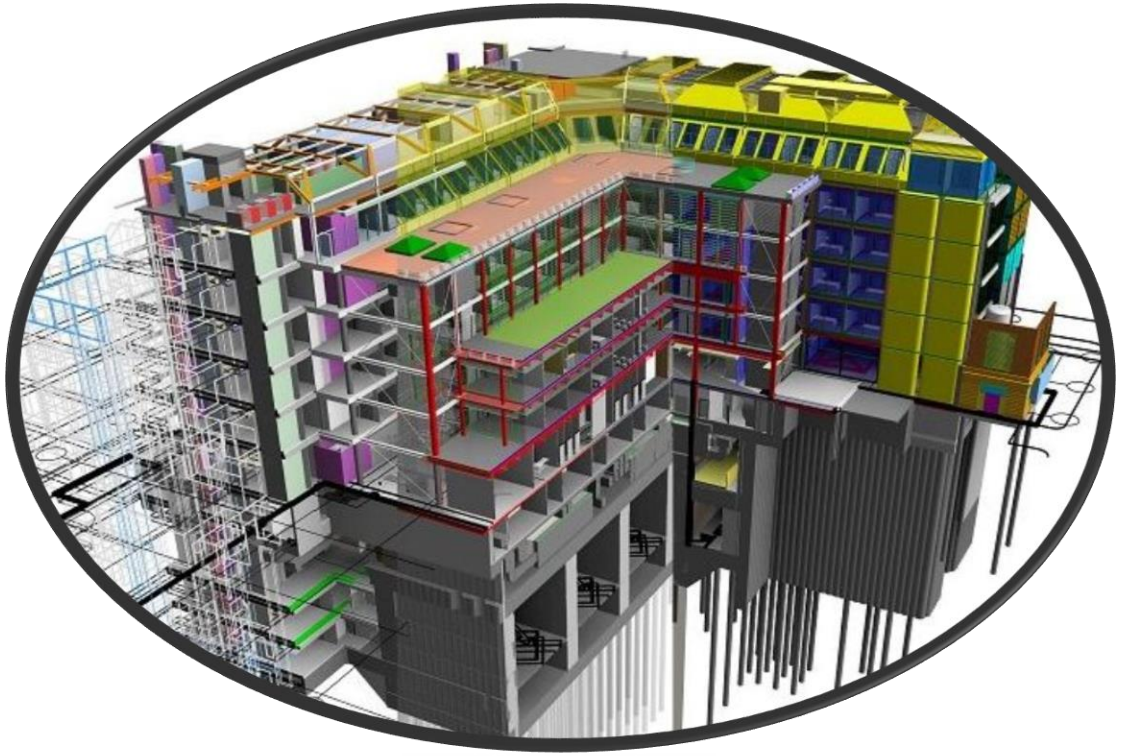
What's in a Building Information Model?

A collection of data

- Geometric Shapes
- Locations & Spaces
- Components/Systems
- Objects/Families
- Relationships
- Attributes
- Constraints
- Classifications
- Metadata
- Much more ….



That must conform to

- Standards
  - Industry
  - Country
  - Company
  - Project
- Protocols
- Regulations
- Best Practise

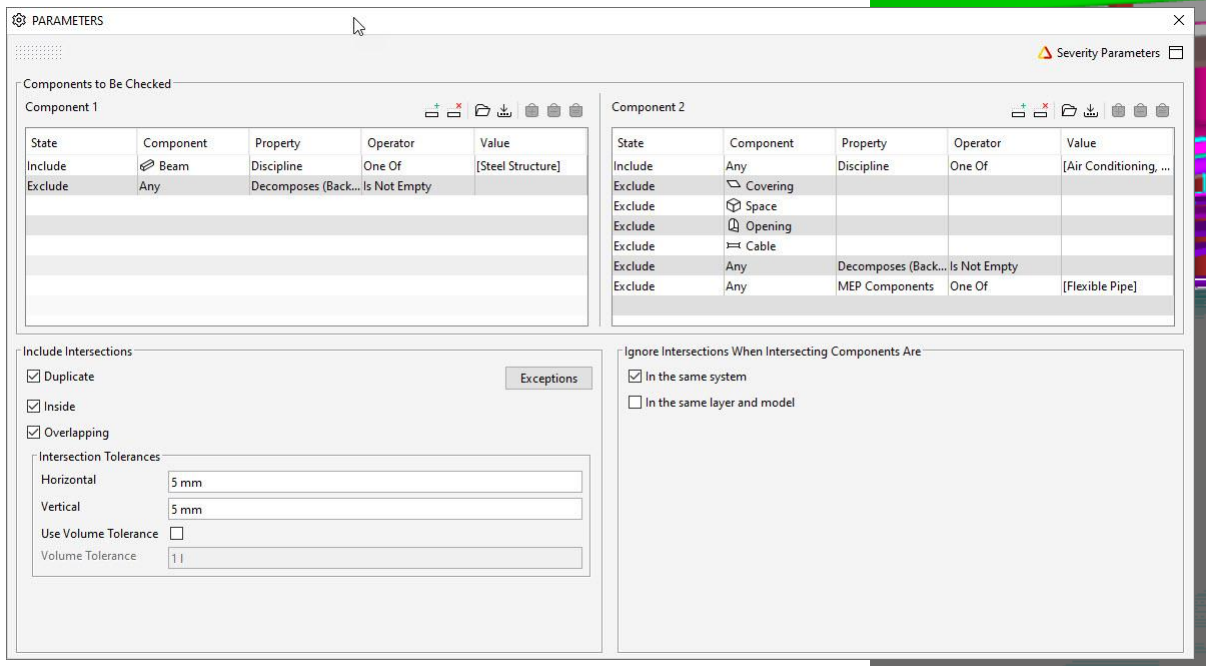
Just how do you check all of this?

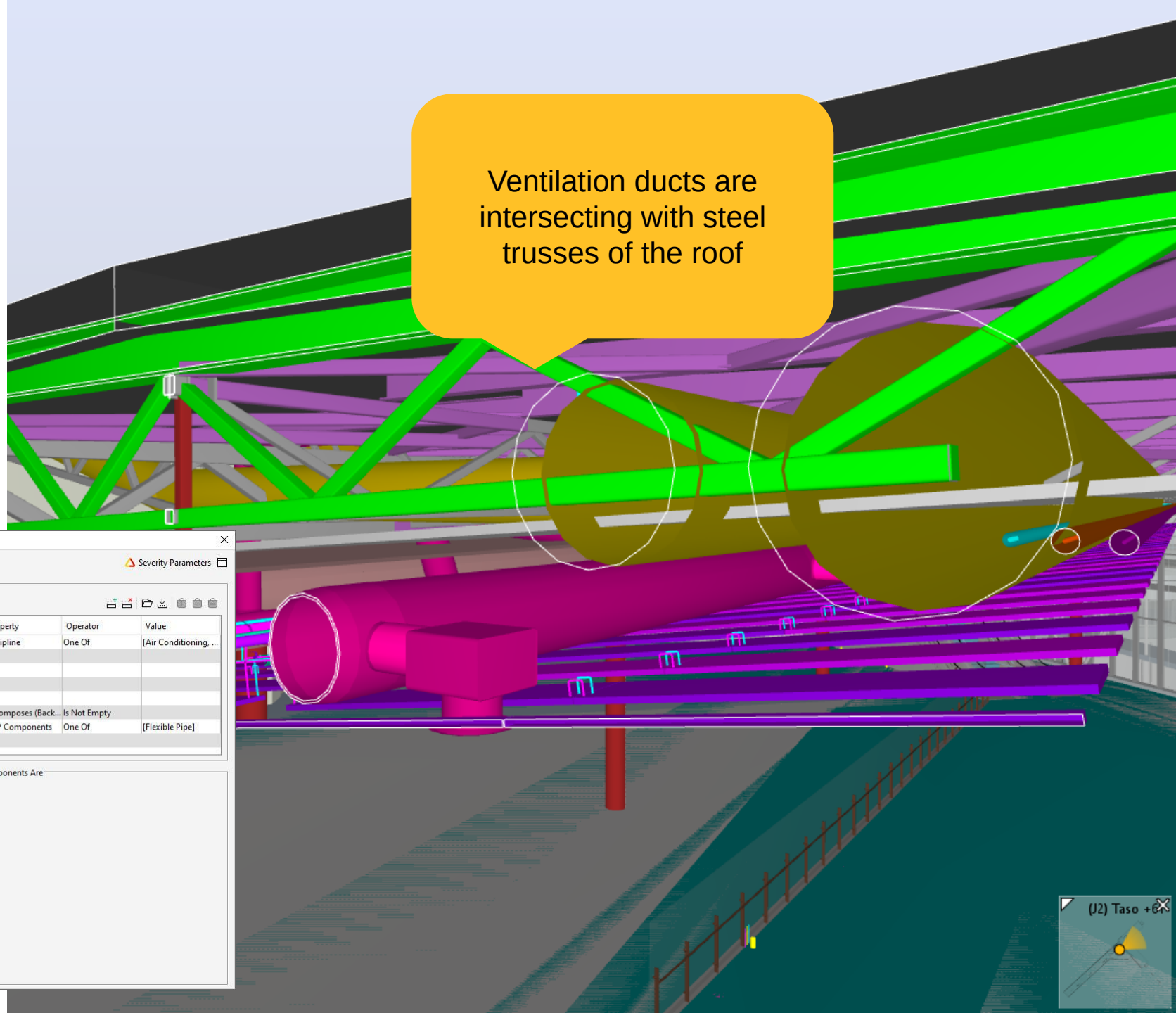
Intersections

Rule: SOL#1 General Intersection rule

Building: Logistic center/warehouse

Disciplines: MEP, Structural



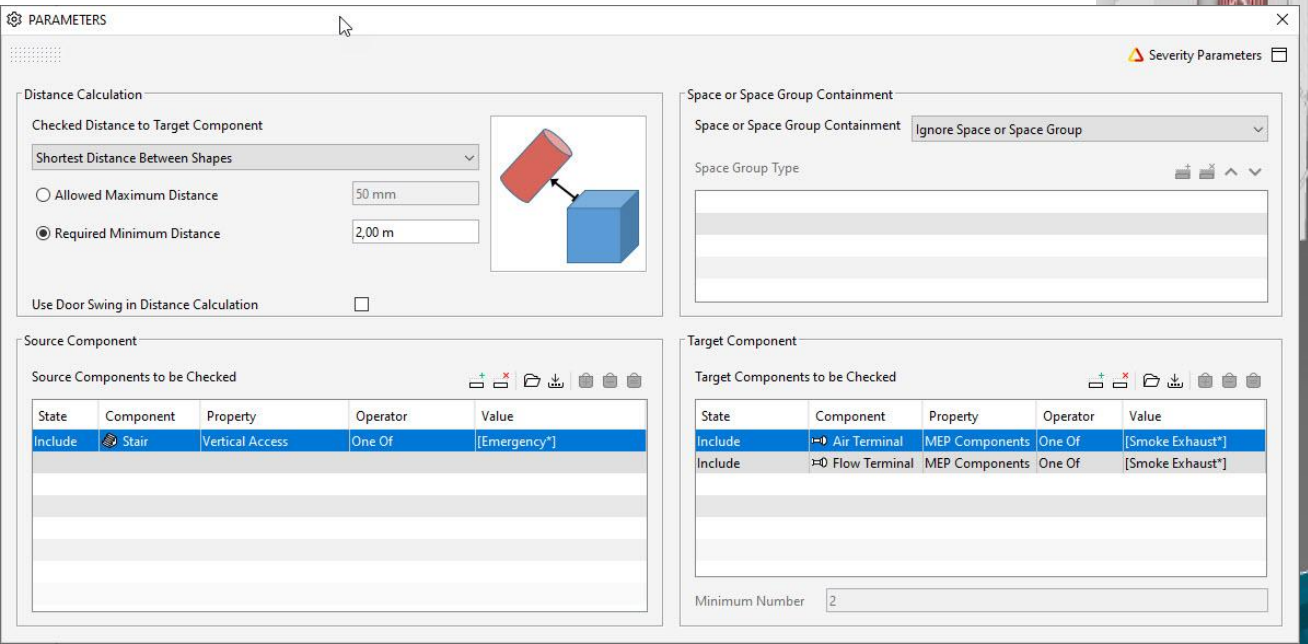


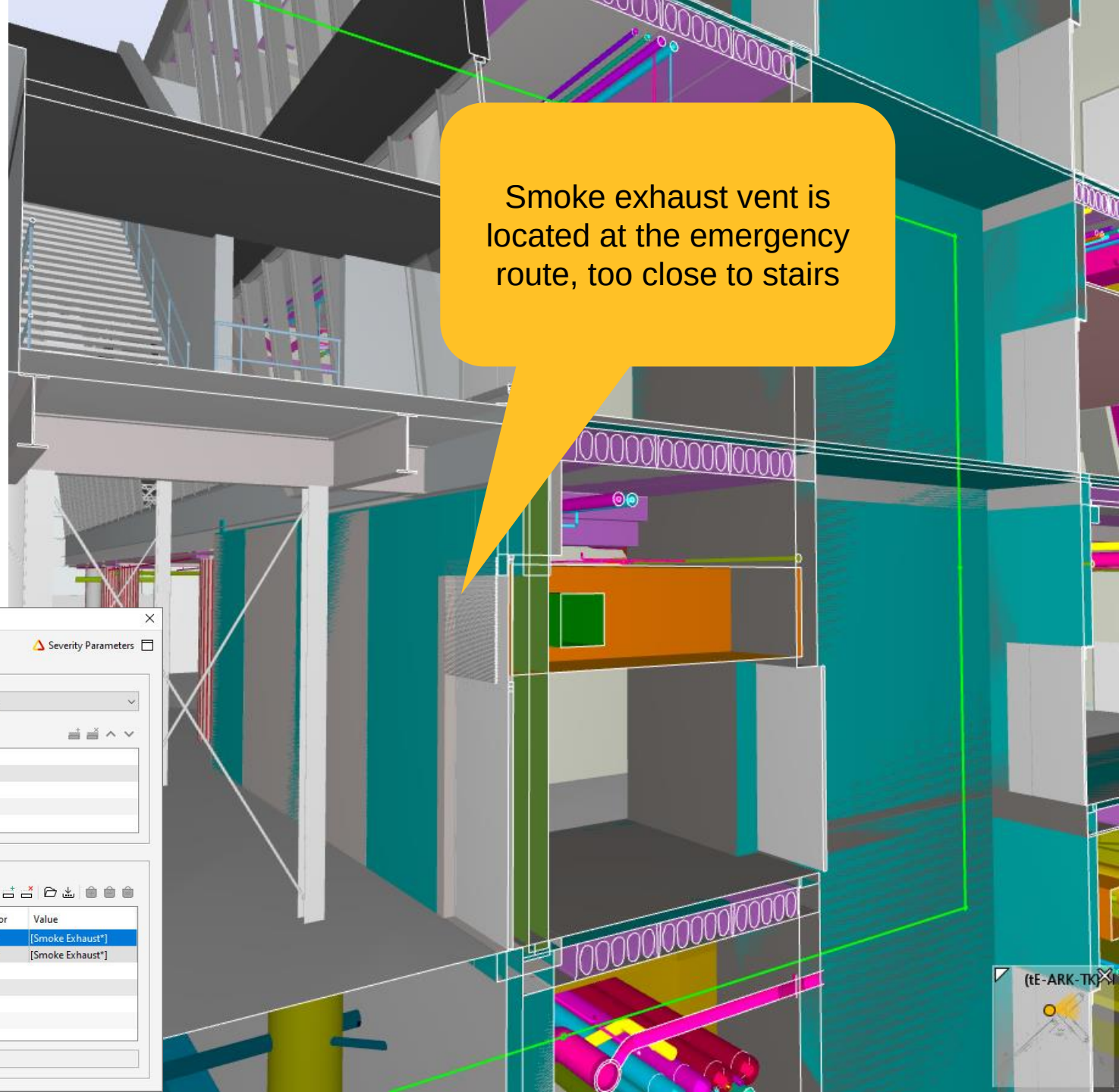
Components

Rule: SOL#222 Component distance rule

Building: Airport

Disciplines: MEP



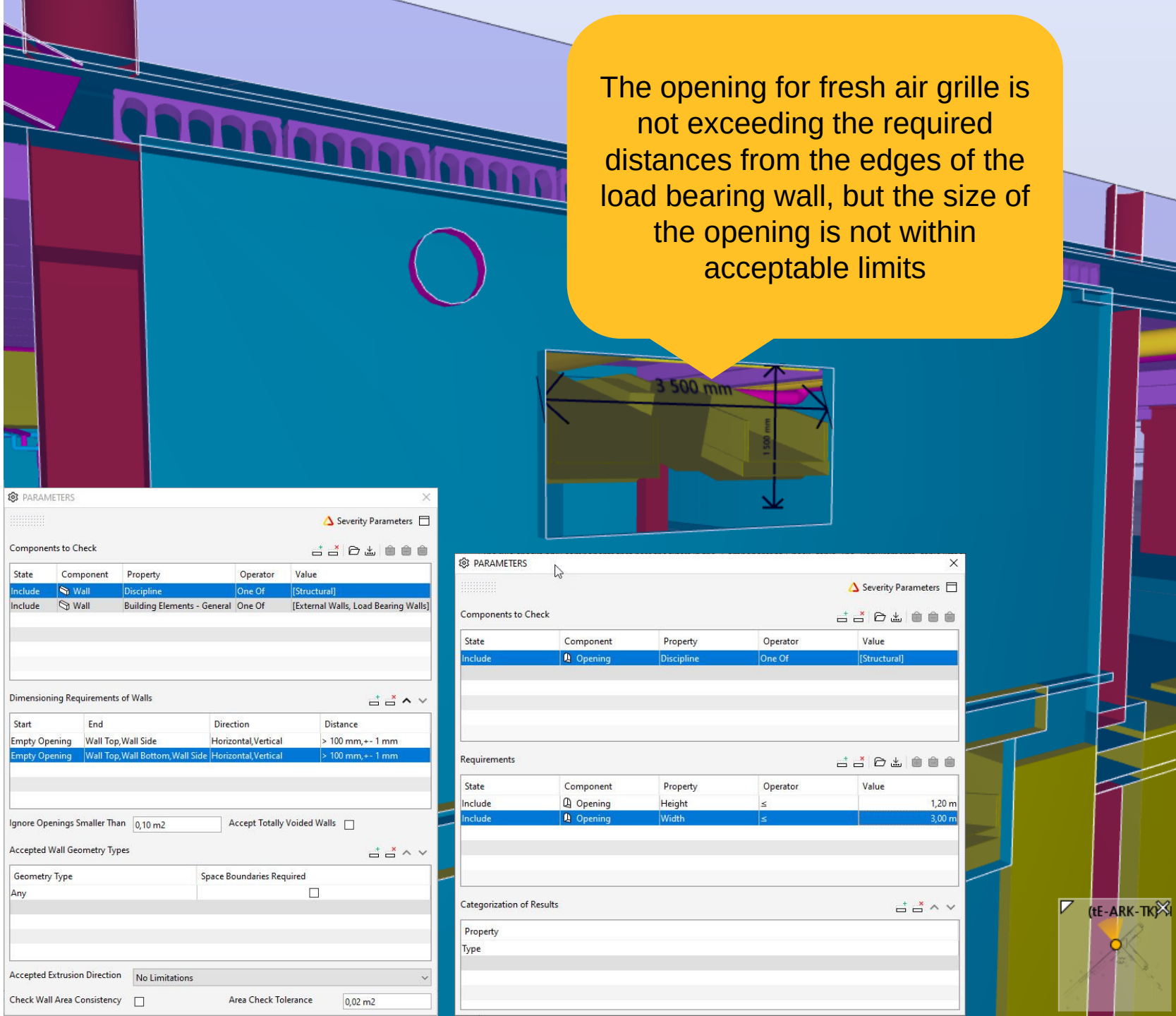


Components

Rule: SOL#216 Component dimensions

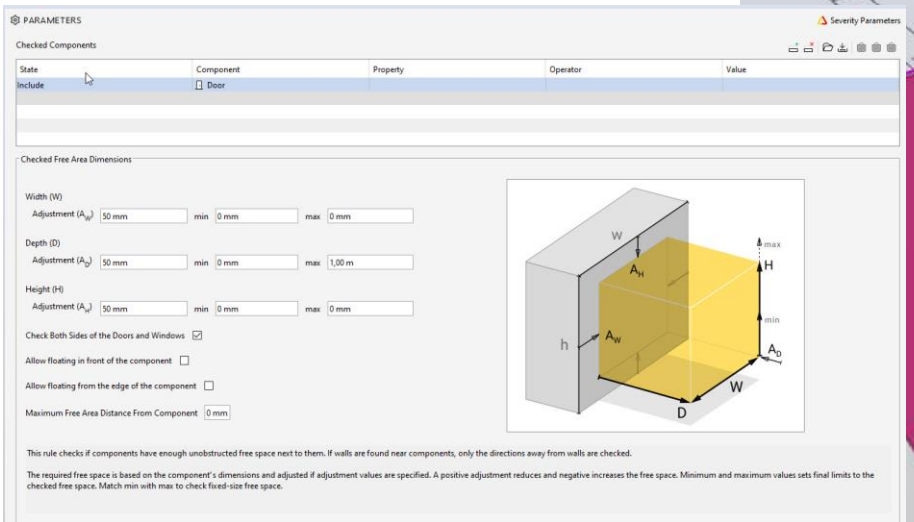
Sub-rule: SOL#230 Property Rule Template with Component Filters

Disciplines: Structural



Components

Rule: SOL#226 Free Area in Front of Components



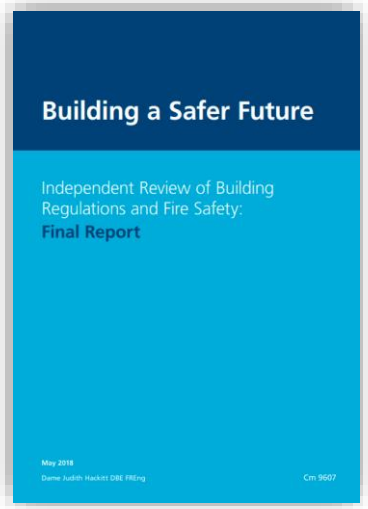
The electrical conduit and lighting fixture are are in front of door

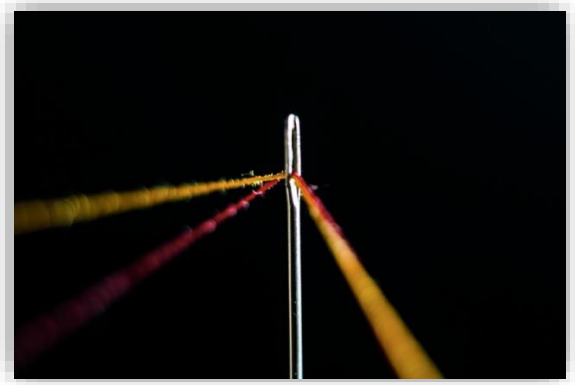
Fire stopping

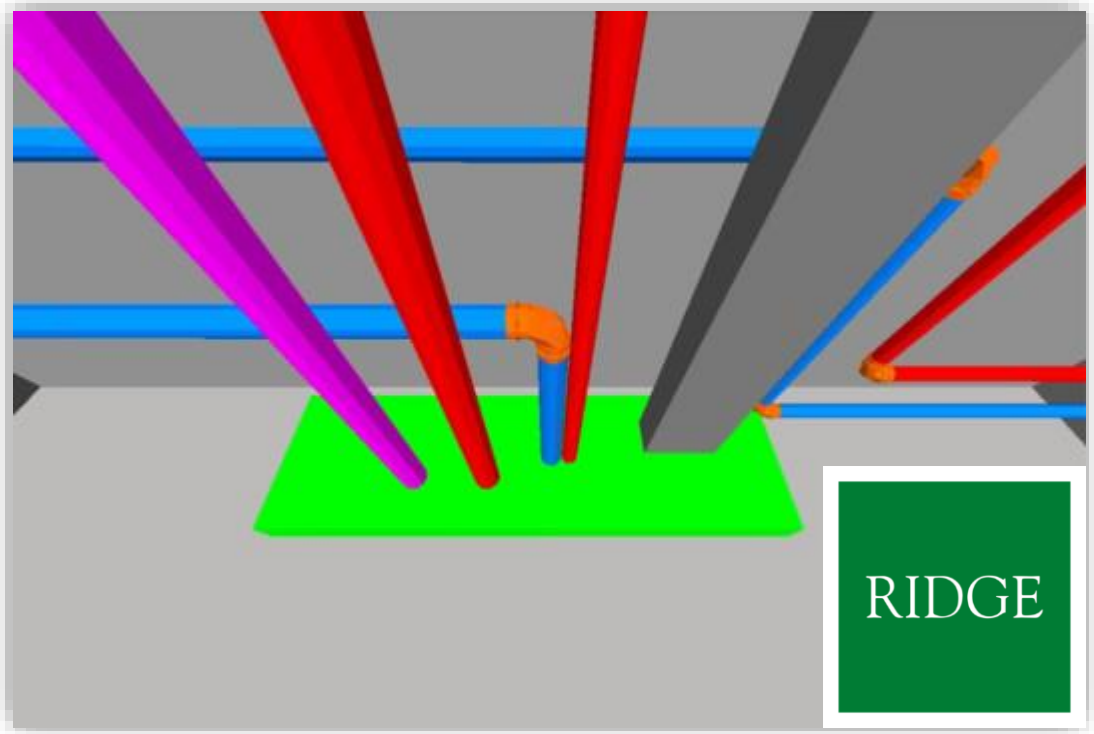
- The Hackitt Report and Grenfell has put the spotlight on the construction industry and its shortcomings and highlighted the need for better information regarding fire safety in residential buildings

- The golden thread will provide building owners and operators with the information they need digitally to identify, understand, maintain and manage building safety risks

- Fire stopping is a key part of a buildings fire strategy yet in a recent survey we ran 80% of respondents struggle with the checking and information requirements.
- Solibri provides rule templates that can help automate the checking of what is a complex but hugely important issue.
- There are also other rule templates for checking fire ratings, compartmentation and egress for example.







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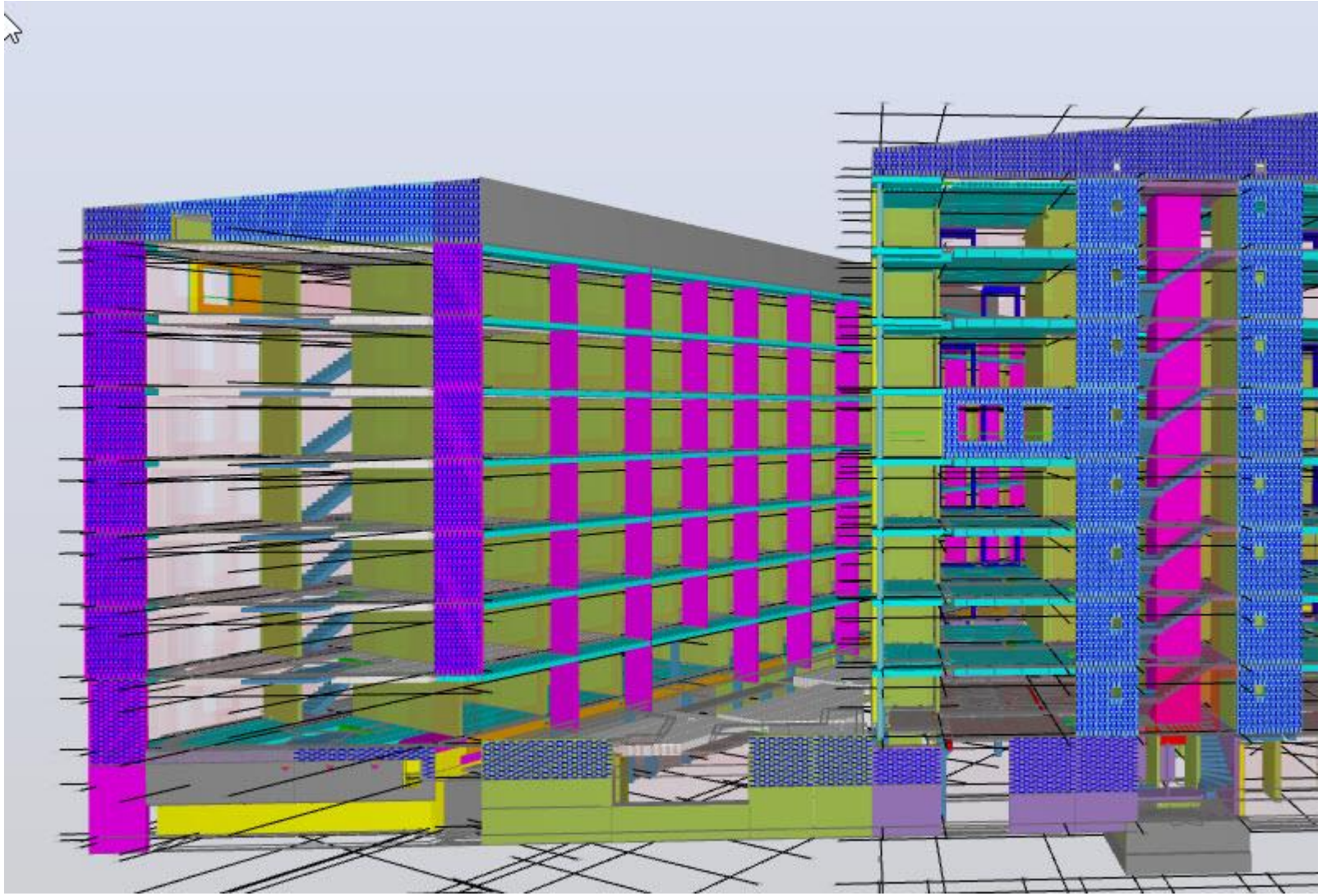
Data Validation

Rule: SOL#9 Property Values Must Be from Agreed List

Building: Multi-story building

Disciplines: Structural



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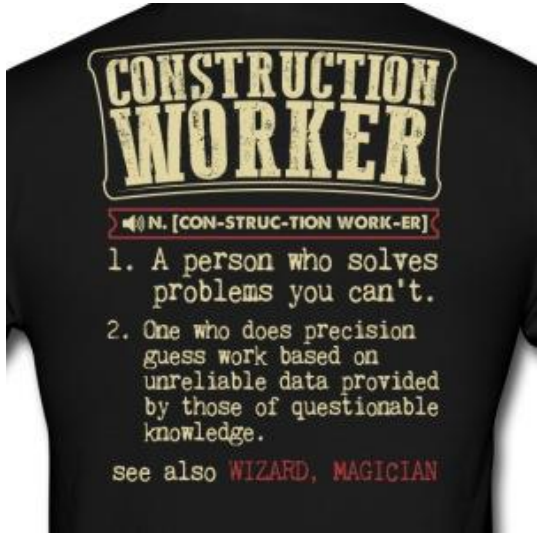
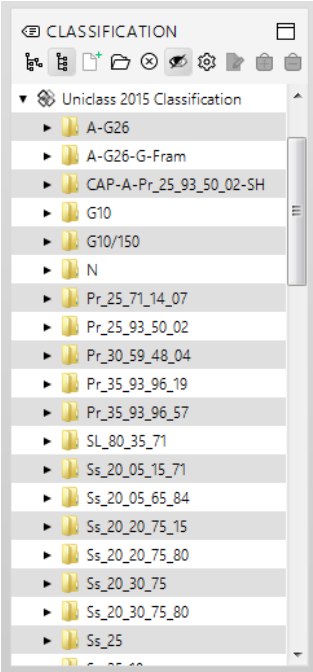
Data Quality Components

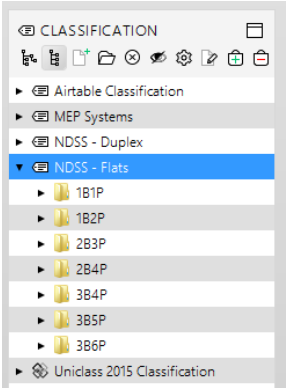


- "Bad data leads to bad decision making"
- A recent survey from Autodesk showed that a third of data on a project is bad.

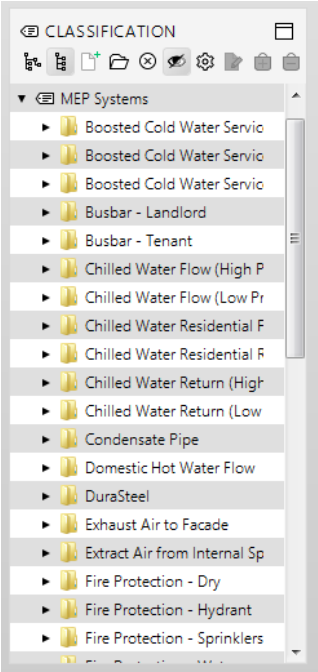
Validated Data = Better Decisions



Uniclass 2015

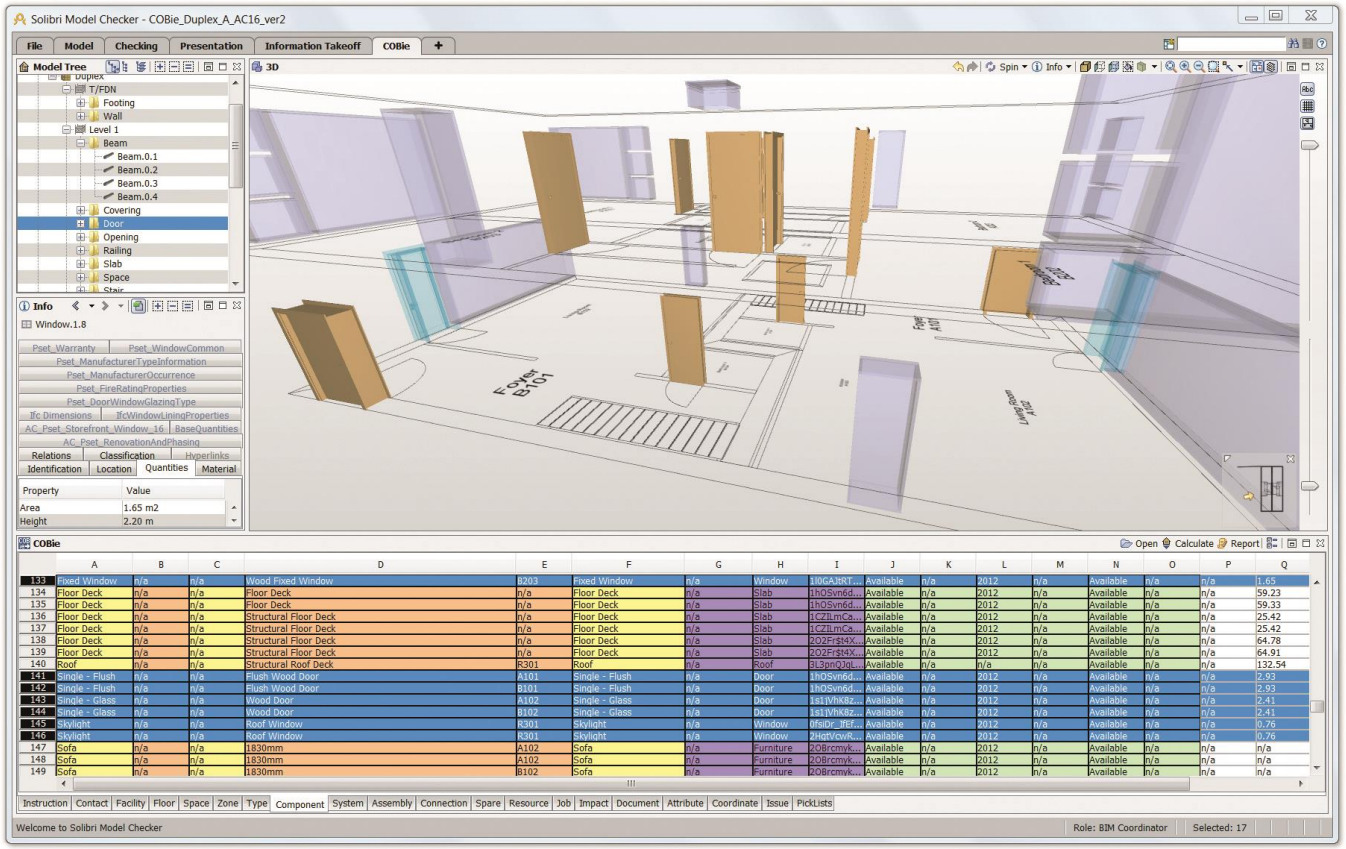


NDSS

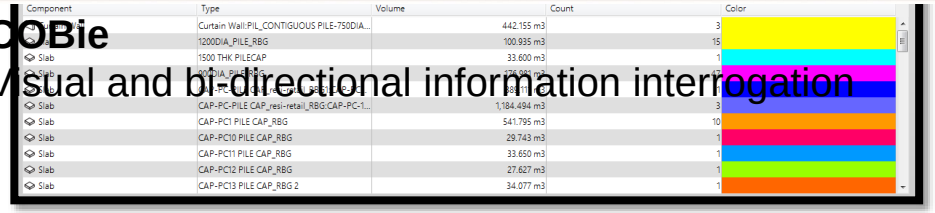


MEP Systems

Classifications in Solibri are a way of filtering the model and visualising data and when combined with our Information Take Off functionality it provides a powerful tool



Concrete Volumes
By Grade
By Type
Etc



COBie
Visual and bi-directional information interrogation

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SUCCESS STORIES

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Interview

Michael Ørsted
Head of Department Technical Knowledge at Copenhagen Airport

“We have found issues and problems our Asset Managers wouldn’t have been able to find without Solibri.”

Michael Ørsted
Head of Department Technical Knowledge at Copenhagen Airport

“We have saved more than 400.000 euros in this project, by finding issues that we wouldn’t have recognized before.”

COPENHAGEN AIRPORT

Copenhagen Airport has around 100 projects every year to accommodate the needs of increasing number of passengers. With the help of BIM and Solibri, the quality of the projects has improved – in addition to achieving generous cost savings. Copenhagen Airport’s team had been using Solibri in their projects for clash detection and consistency checks, so it was a natural choice for us to start using it more. Now they are automating quality checks in Solibri by creating the Asset Managers’ quality assurance standards into rules and use them to check all the models.

Copenhagen Airport, Denmark

CONSTRUCTION'S DIGITAL MANUFACTURING REVOLUTION

The UK's Explore Industrial Park, conceived and owned by Laing O'Rourke, is the most automated concrete products facility in Europe. For Laing O'Rourke, the Solibri software has been crucial for checking the quality of incoming data, and an essential tool for streamlining the design and ensuring everything works before it takes a physical form.

A film produced by B1M, featuring the story of Laing O'Rourke and how they use Solibri to ensure the quality of their concrete manufacturing process.

Interview

Nigel Davies
Founding Director at Evolve Consultancy

“Solibri has been one of the fundamentals that we’ve built on right at the start of the Tideway project.”

Nigel Davies
Founding Director at Evolve Consultancy

“Without a doubt, if you can logically put down the questions you’re asking, Solibri will be able to deliver it for you.”

ALBERT EMBANKMENT – ART I ST IMPRESSION. © T I D EWAY

THE THAMES TIDEWAY TUNNEL

The Thames Tideway Tunnel project is a significant undertaking that will tackle the problem of sewage overflows and expand the capacity of the London sewage network to meet European environmental standards. Evolve Consultancy works as a technology and information advisor in the project, and for them, Solibri has had a key role in assuring the quality of the project’s model data.

Rob Jackson

Associate Director at Bond Bryan Digital

- Our general approach on all our projects is to align with open standards and OpenBIM processes.
- We have a library of rules based on open standards, for example, aligned around COBie and layering standards. Then, in addition to those, we configure client or project specific rulesets when needed.
- Solibri plays a huge part in our processes, assuring that we don’t just sit still, but keep improving the quality.
- It’s not only about identifying the issues, but equally, we try to give the authors enough information about how to fix the issues.

Stig Bengtsson

BIM Manager
BAU Architects Stockholm

- I want architectural and structural models to match. Solibri will let us know if they don’t.
- I also do deficiency detection. It’s the only program that will do that for us.
- Its less about clash detection, it’s not just about quality control, it’s also about handling complicated models well in various ways.
- We can save more of our time and the client’s money as we get better and better with the tool.

Model Checking. Should it Matter To You?

ISO 19650 International Organization for Standardization

THIS SAVES LIVES™

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Thank You

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