





Quality Assets, Quality Data ... It Starts With You.

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Managing Director, Solibri UK Ltd

Creating a digital future of better builds

## Solibri – Industry Leader

- 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 defacto standard of quality in the construction industry.

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







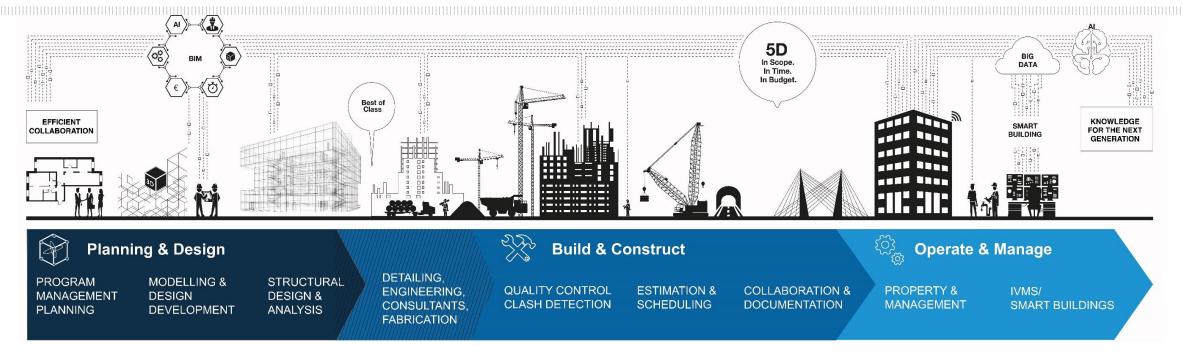






### Nemetschek at a Glance

#### NEMETSCHEK **GROUP**



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

#### **4 CUSTOMER SEGMENTS**

15 STRONG BRANDS

**681.5 MILLION** 

**EURO IN REVENUE** (Financial Year 2021)

**GLOBALLY MORE THAN** 

6.5 MILLION

**USERS** 

>3,400 **EMPLOYEES** 

WORLDWIDE

**ALLPLAN SOLIBRI** 

**C** GRAPHISOFT.





























## Why Now?







- The Building Safety Bill and the requirement for the "golden thread of information" means that there is transparency as well as responsibility and accountability all the way through the design, construction and operations process
- Who designed it?
- Who manufactured it and with what materials?
- Who installed it?
- Who maintained it?





# Why is BIM quality assurance important?

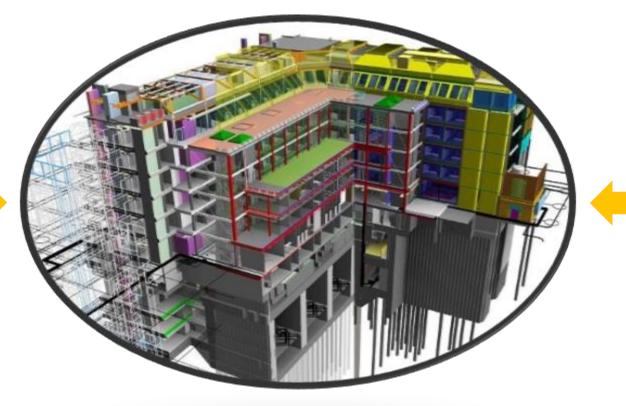




# What's in a Digital Model?

#### A collection of data

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



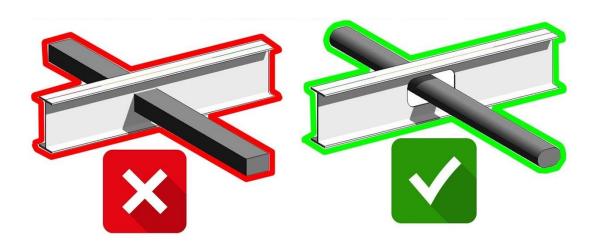
That must conform to

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

Just how do you check all of this?



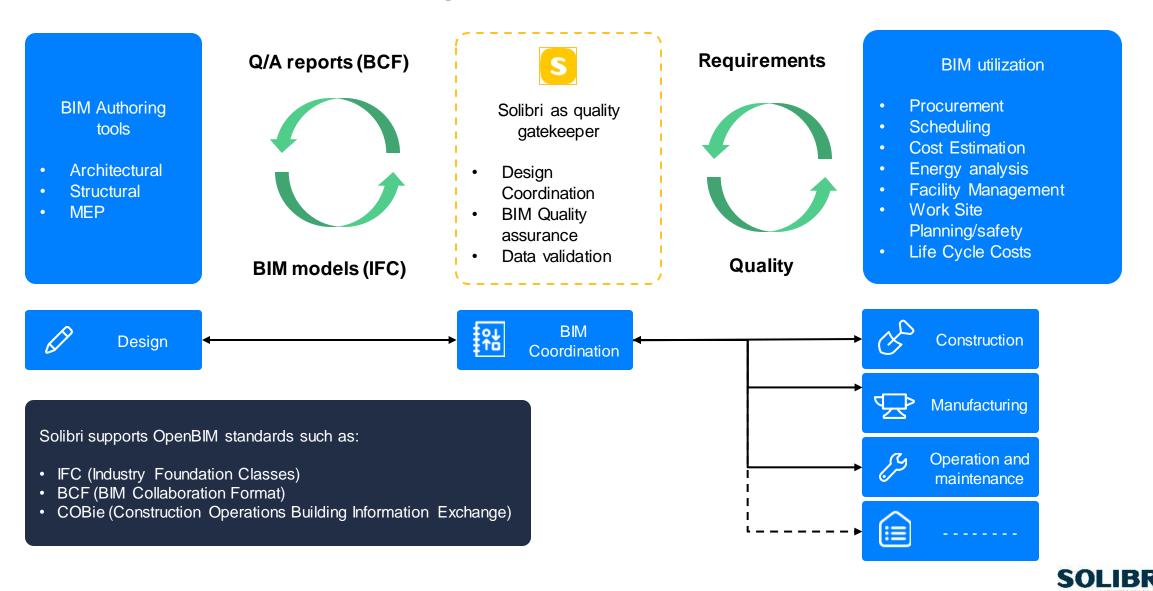
# What do we mean by BIM Quality Assurance?



- BIM QA or "model checking" does NOT equal clash detection!
- Much, much more than that.
- Data validation has become hugely important
- How do you check items that don't physically clash?
- How do you check deficiencies in the model?
- How do you check compliance with building codes?
- What about fire safety?
- What about carbon?
- Is my design/construction compliant?



# From data to making decisions





### Intersections

Rule: SOL#1 General

Intersection rule

**Building:** Logistic center/

warehouse

One Of

(S) PARAMETERS

☑ Duplicate

☑ Inside

Components to Be Checked
Component 1

**Disciplines:** Structural

[Prefab Concrete, Steel Structure, Structural]



### Intersections

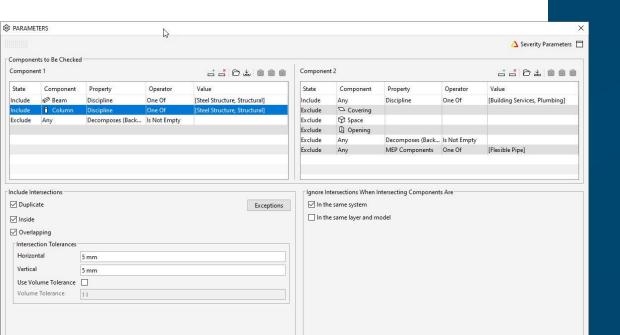
Rule: SOL#1 General

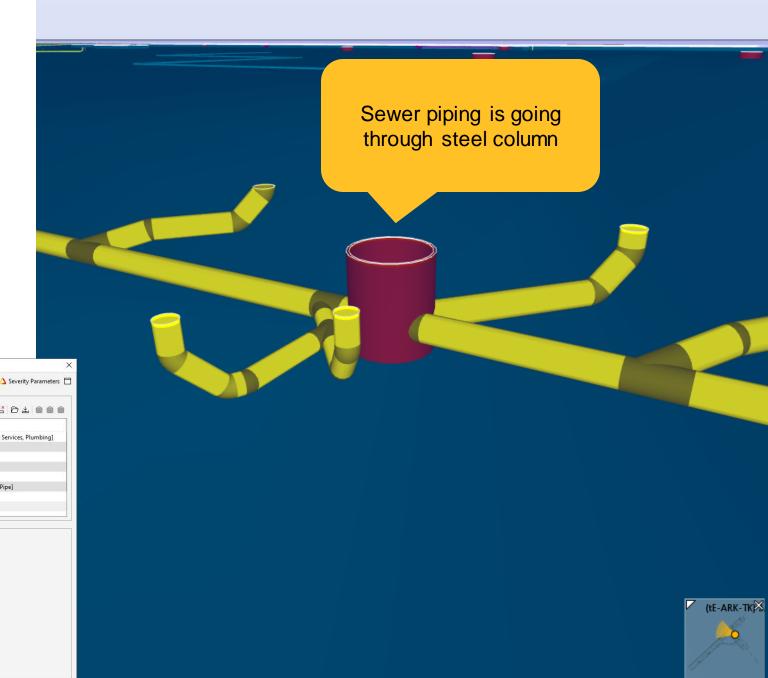
Intersection rule

**Building:** Residential building

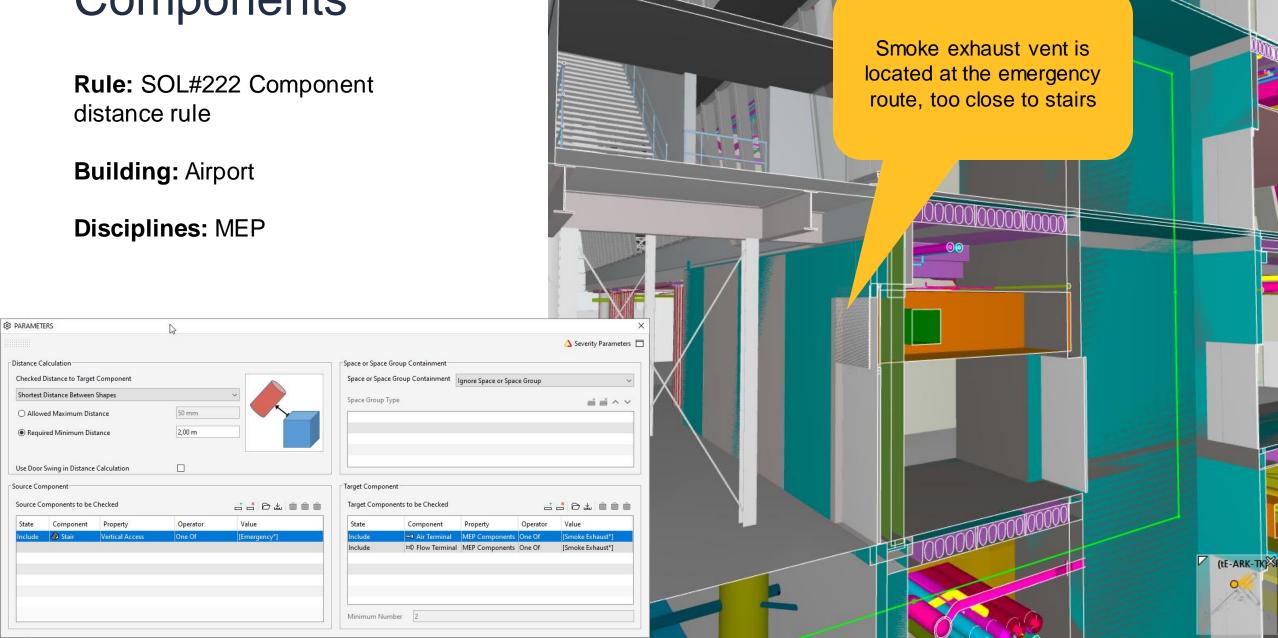
basement

**Disciplines:** MEP, Structural





# Components



## Components

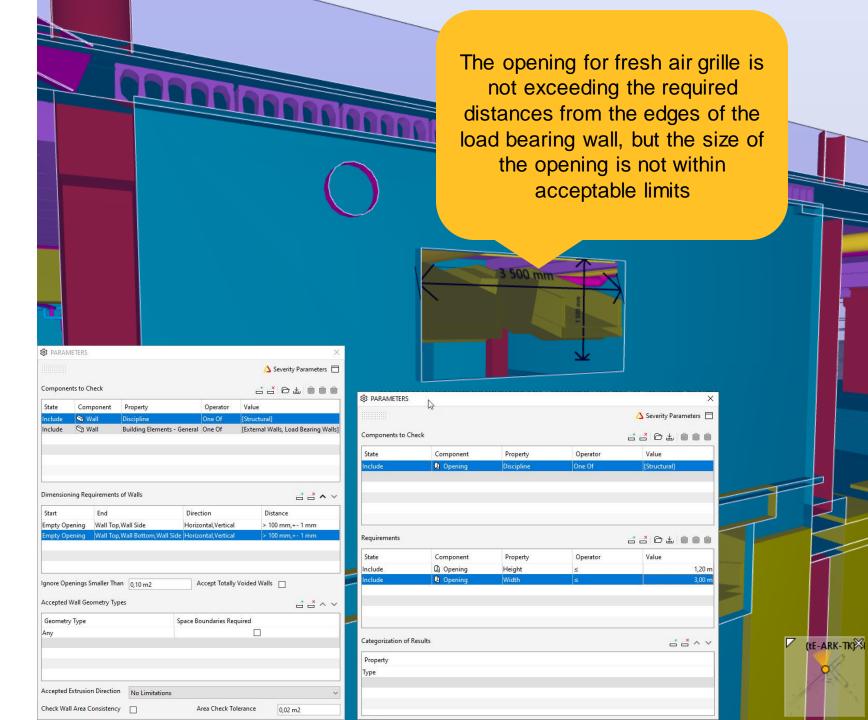
Rule: SOL#216 Component

dimensions

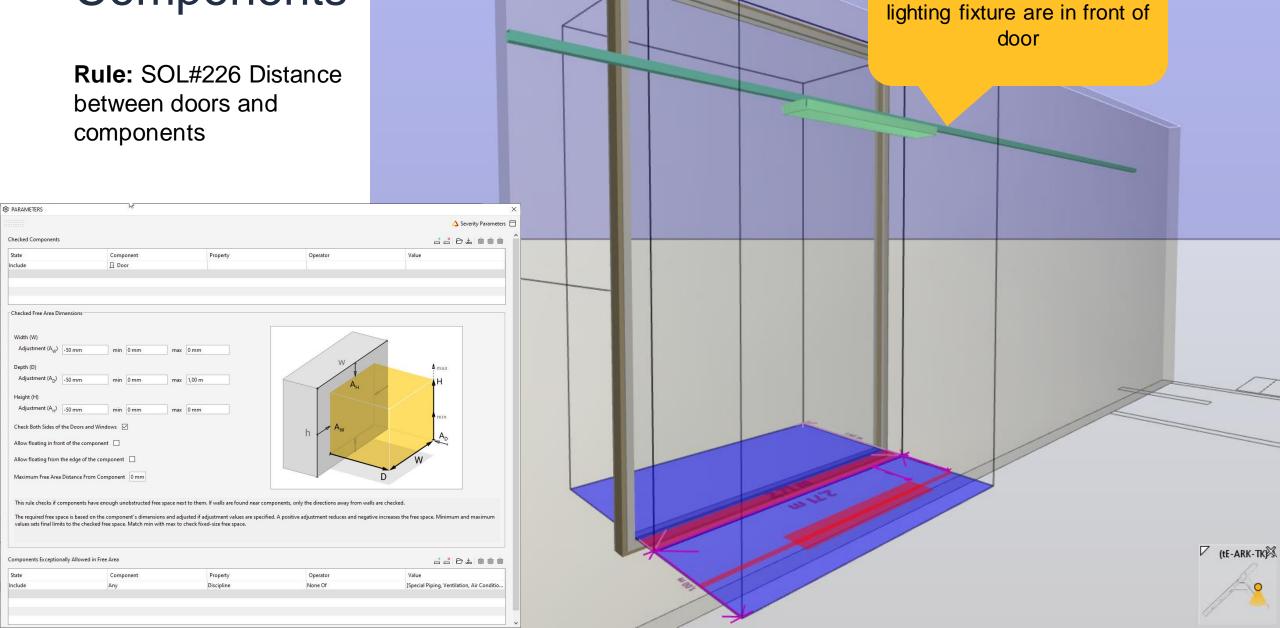
Sub-rule: SOL#230 Property

Rule Template with Component Filters

**Disciplines:** Structural

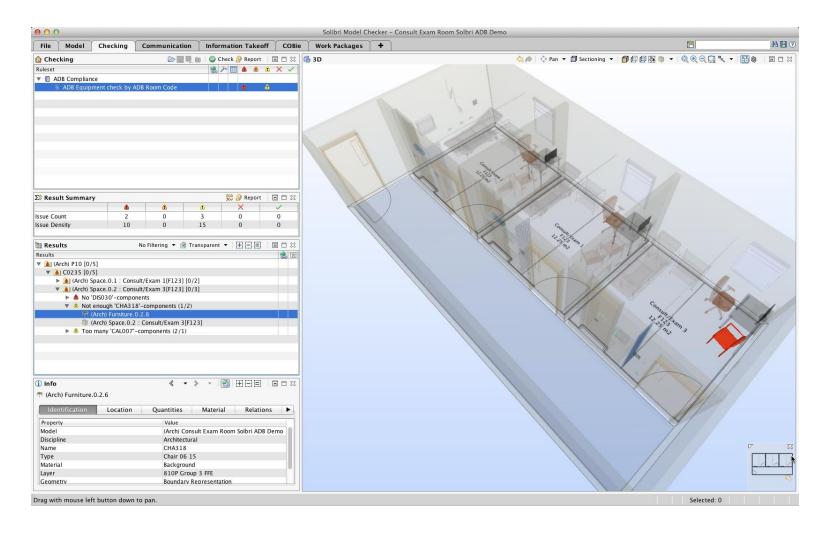


# Components



The electrical conduit and

# Missing Components

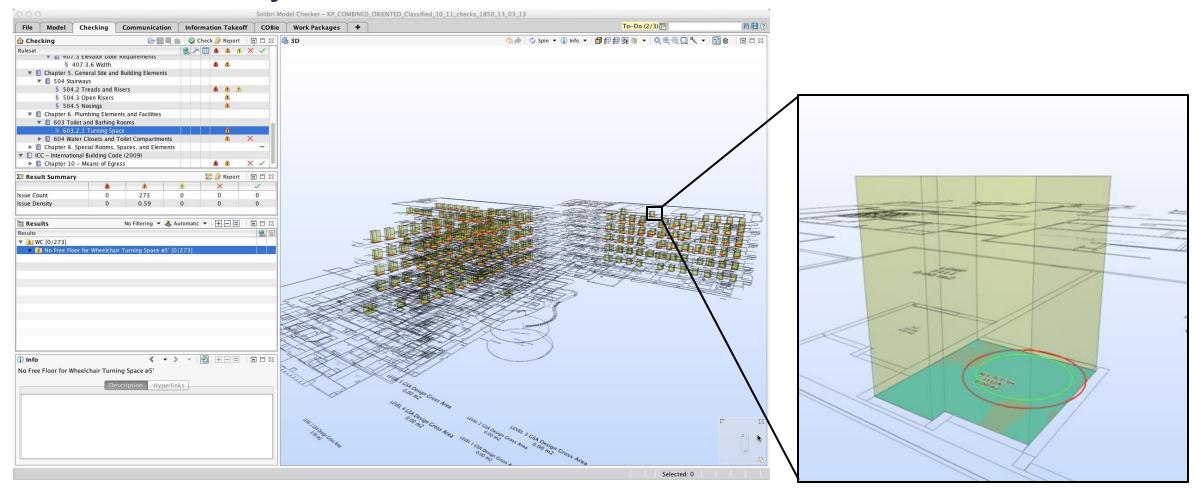


In this example, 3 consulting rooms in a hospital should all have the same standard equipment according to the room data sheets from the NHS.

Because we know the type of space we can check all specified equipment is present against an external table. Solibri has checked two of the consulting rooms and found they conform to the required specification but the third room has a patient chair missing.

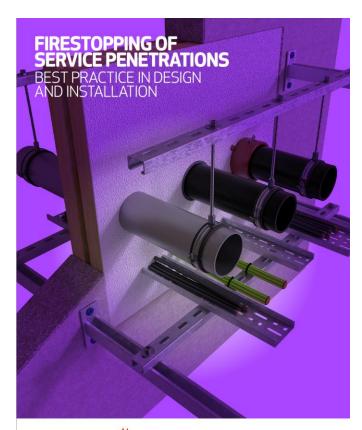


# Accessibility





# Fire Safety & Fire Stopping



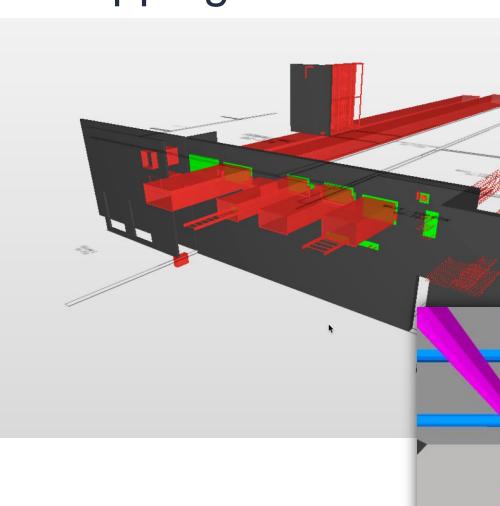








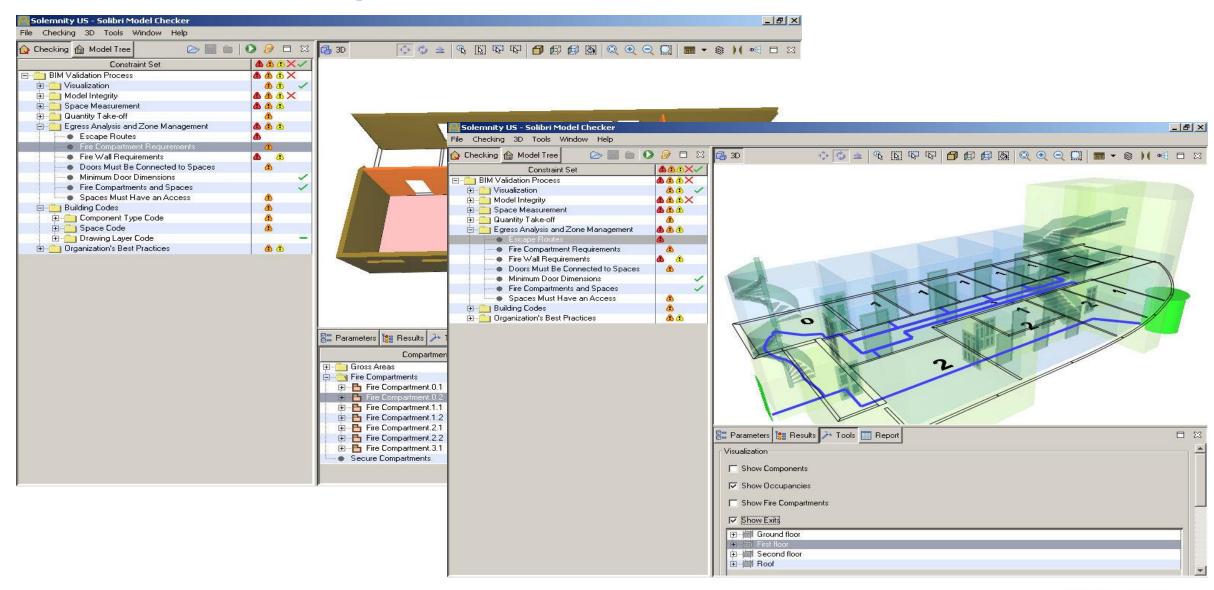








### Fire Zones & Egress

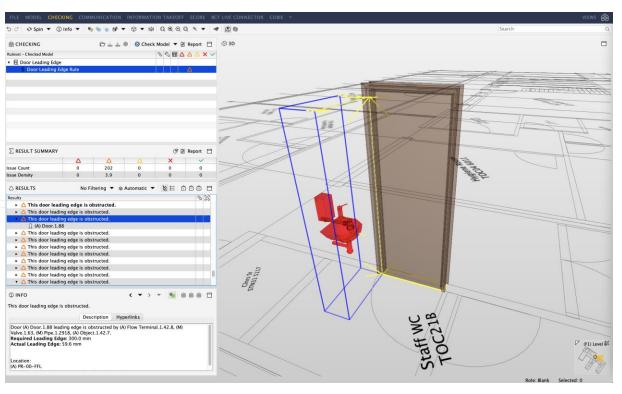




New Rules



Stud Opening Rule Checks for clearances for services above doors against items that are not typically modelled Door Leading Edge Rule
Checks for clearances and interferences for door openings. Developed as part of the DCOM project we are a part of.





**D-COM Network** 



## In Manufacturing



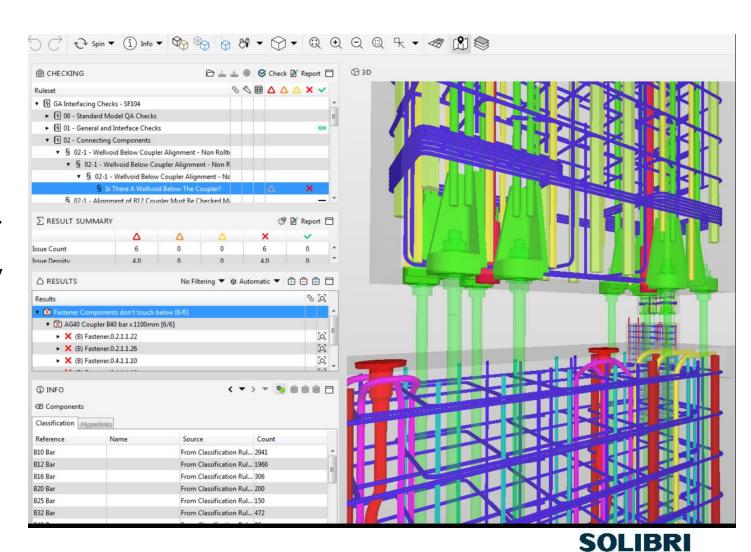
Automation of difficult and labour intensive manual checks.

Eg Is there a well void below a coupler?

Laing O Rourke have customized Solibri's model checking tools to provide a quality assured product into their manufacturing facility. Reducing time and cost as well as improving the quality and reducing rejections considerably

"Model checking just gives us that complete reassurance that when the project is actually put together on site, everything works exactly as it should."

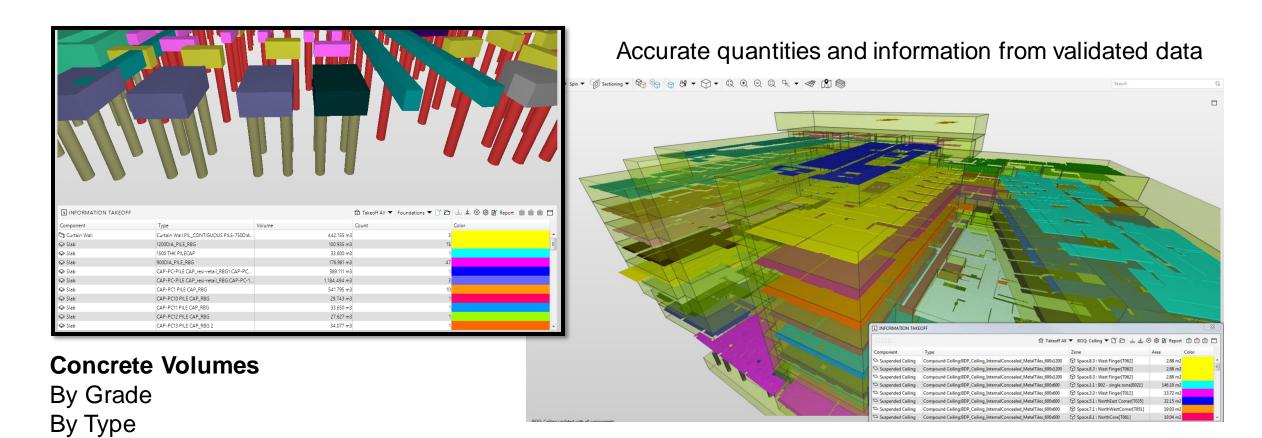
Antony Aucote





### On Site

Etc



"People think of geometry as being important on the site, of course it is, but so is the data."



# Does the As Built Match The Design?





# Does the As Built Match The Design?

#### 1. Sync BIM



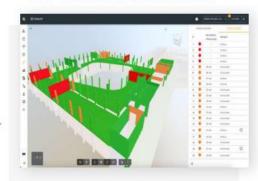
BIM models as the performance targets.

#### 2. Easy Scanning



True-to-Life 3D replica of the As-built status.

#### 3. Check Results



Deviations from BIM highlighted and reported.



**Deviation Unacceptable**Push BCF for onsite Rework



**Deviation Acceptable**Update BIM with As-Built status.

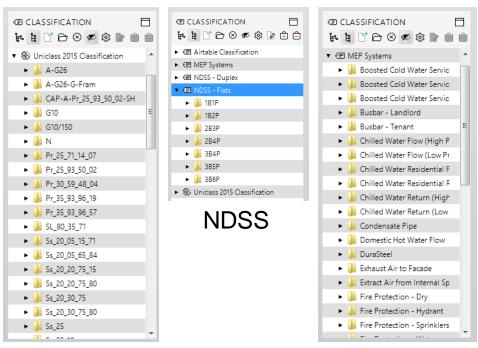
NEW Imerso can now do this automatically!







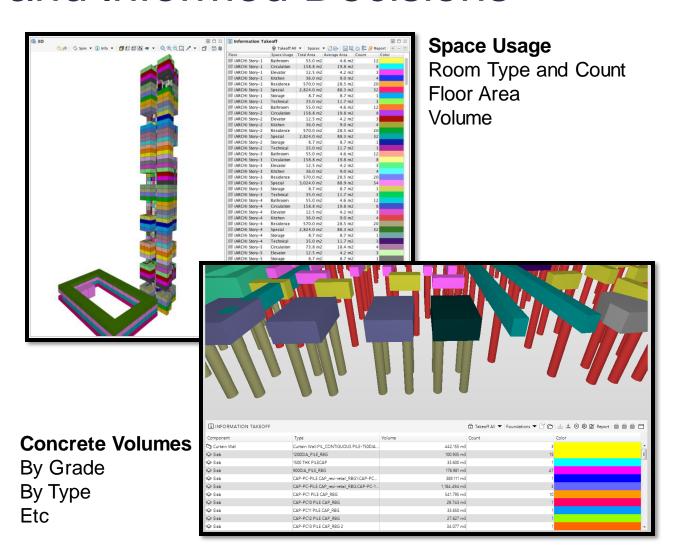
### Validated Data = Better and Informed Decisions



Uniclass 2015

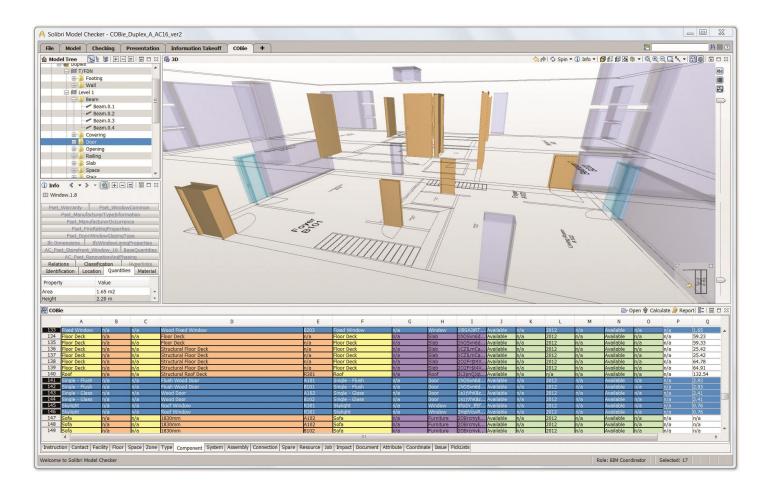
**MEP Systems** 

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





### Handover



Is it enough to generate COBie or other digital deliverables without first of all validating the content?

Visual COBie data allows bidirectional querying and interrogation

Using data you cannot trust is a recipe for disaster

"You can't use information until you've checked that information."







# Qualty Data, Quality Assets .....

- "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!



# .... It Starts (and Ends) With You



























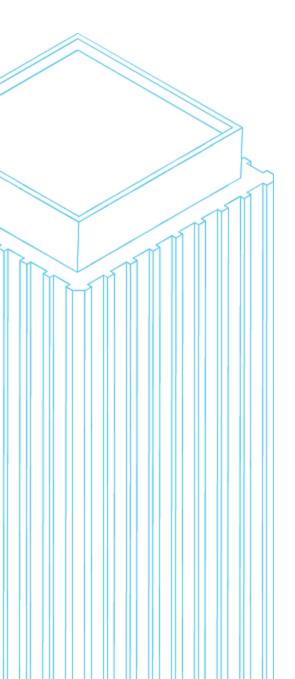




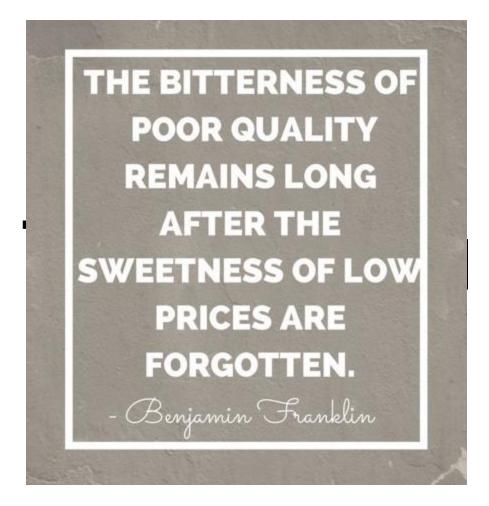


SAFET

**FIRST** 







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