

## OFFICE AND LABORATORY BUILDING THOR CHEMIE Speyer (Germany)

### NEW BUILDING

**Client:** Thor GmbH, Speyer

**Architects:** Mögel & Schwarzbach Freie Architekten, Stuttgart

**Our services:**

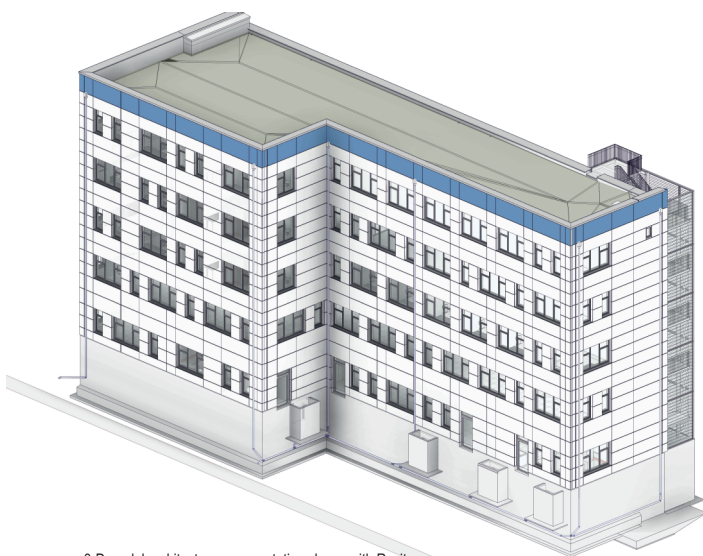
Full structural design  
Establishing the basis  
Preliminary design  
Final design  
Approval documentation  
Execution drawings  
Preparation of contract award  
Construction supervision  
Structural fire protection  
Earthquake engineering  
Deconstruction and demolition planning

BIM planning (Big-BIM):  
Import and adaptation of the architect data model  
into the structural engineering program Dlubal-RFEM  
3D visualization of structural variants  
Importing the IFC (Building Smart Industry Foundation Classes)  
file as the basis for the creation of acoustic and  
reinforcement drawings  
On-going verification of the generated BIM data models

**Brief description:**

Construction of a new plant with offices and laboratories for the  
production and distribution of specialty chemicals  
- building in solid construction, reinforced concrete structure  
- six-storey building with basement  
- I-shaped floor plan, 41.5 m x 9 m and 15 m  
- shallow foundations with flexibly bedded base plate  
- reinforcement via reinforced concrete slabs and walls  
- flat slabs with a thickness of 30 cm  
- slabs spanning up to 8.8 m  
- clamping of the slabs into the outer walls to minimize sag  
- load transfer in the 1st and ground floor through highly  
loaded wall-like beams due to irregular floor plans  
- flexibility in interior design through the use of non-load-bearing  
walls  
- above average number of wall and slab openings due to  
highly technical laboratories  
- flat roof with ventilation system on the roof  
- external fire escape constructed in steel  
- barrier-free building development

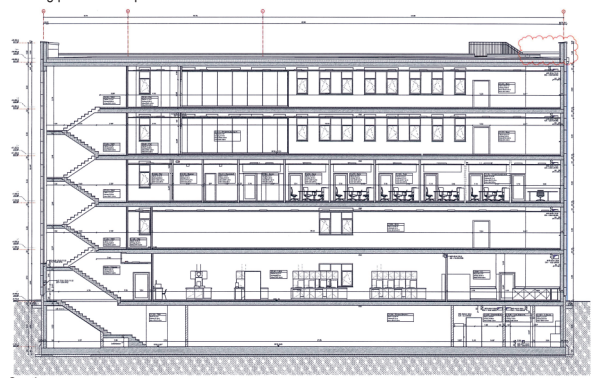
**Completion:** 2021



3-D model architecture representation shown with Revit



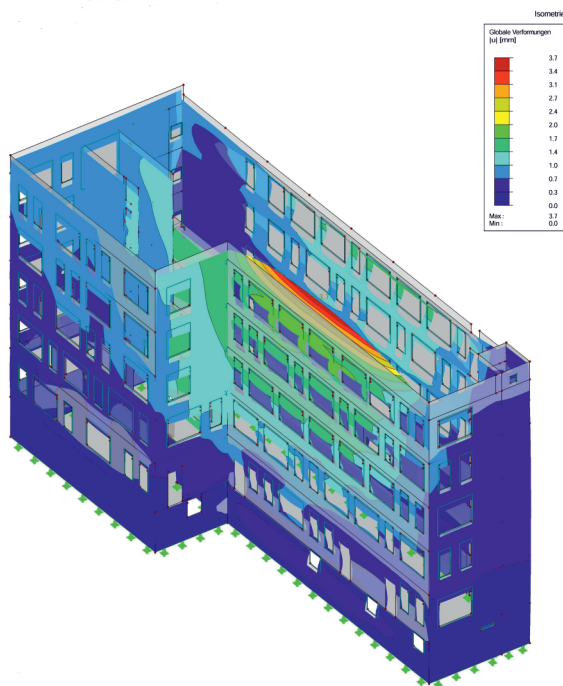
Building pit with base plate



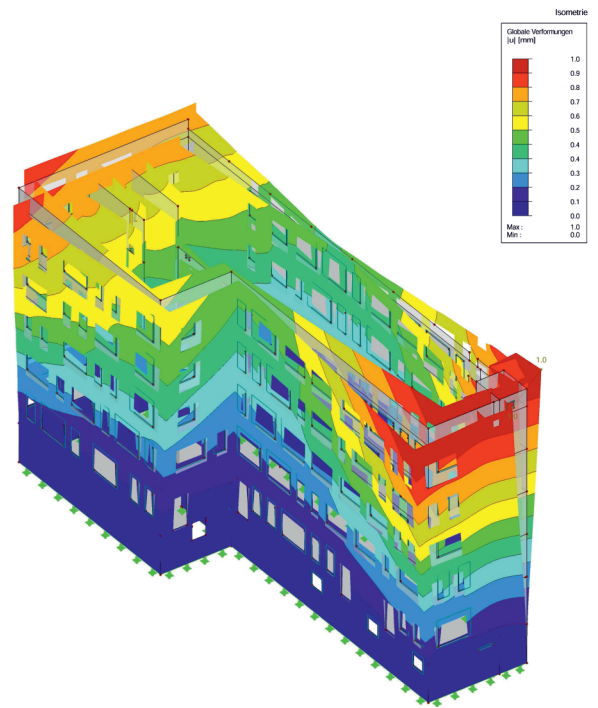
Section



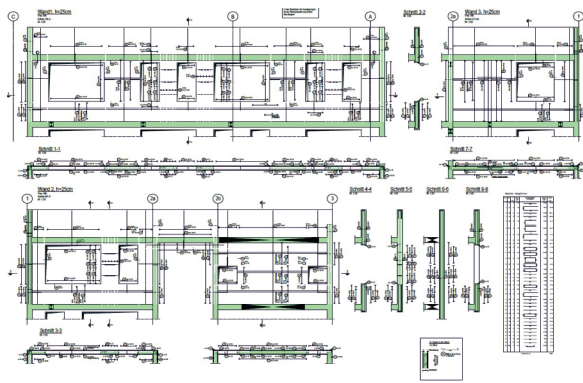
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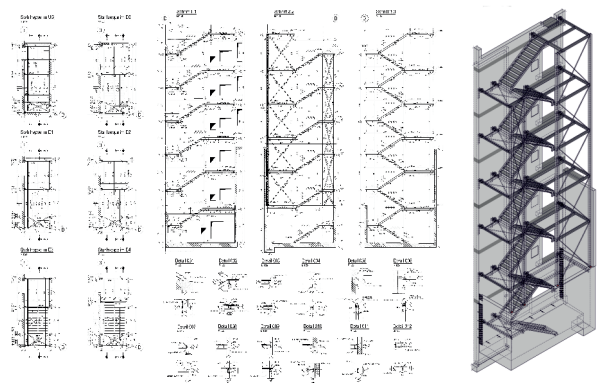
3D model structural design deformation model  
dead weight, representation with Dlubal-RFEM



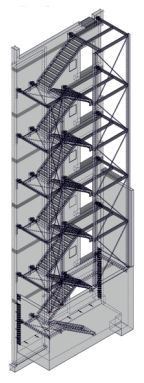
3D model structural design deformation model earthquake,  
display with Dlubal-RFEM



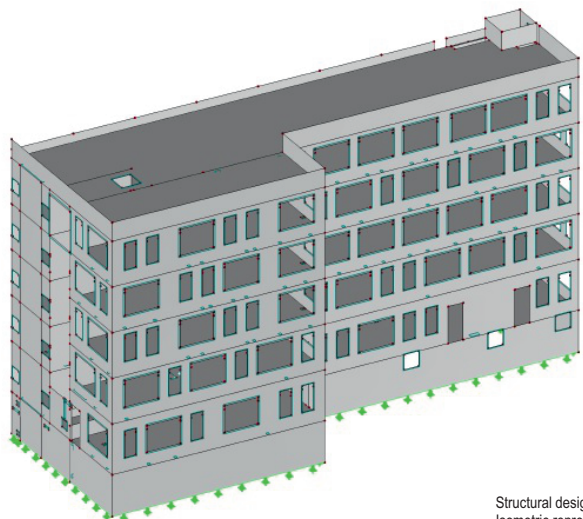
Structural design  
Reinforcement plan generated from BIM data



Structural design  
Reinforcement plan generated from BIM data



3D model staircase  
generated from BIM data



Structural design  
Isometric representations of the building structure,  
display with Dlubal-RFEM

