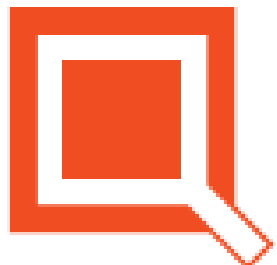




TEQUM Sp. z o.o. offers wide range of services in the field of civil engineering and consulting. We perform the full scope of structural design for different types of buildings.

Tequm office: Cracow, Poland, 30 structural engineers

Biskupia Street 1
31-144 Kraków
phone: +48 12 376 36 00
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www.tequm.pl



WHAT WE DO

Complex structural design for buildings
(from concept to execution design)

MEP design

From concept to execution
phase using Autodesk Revit

Structural analysis

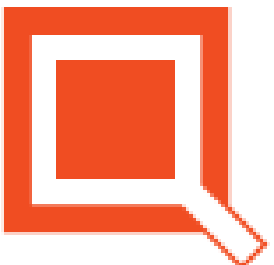
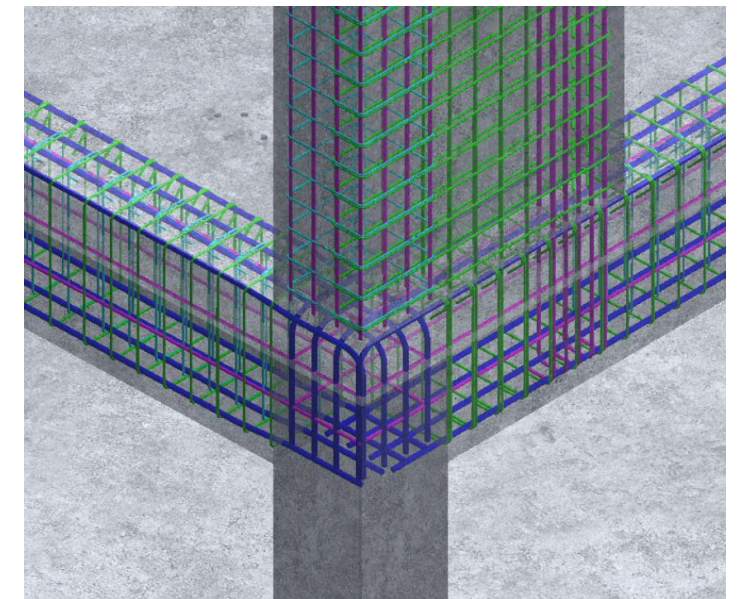
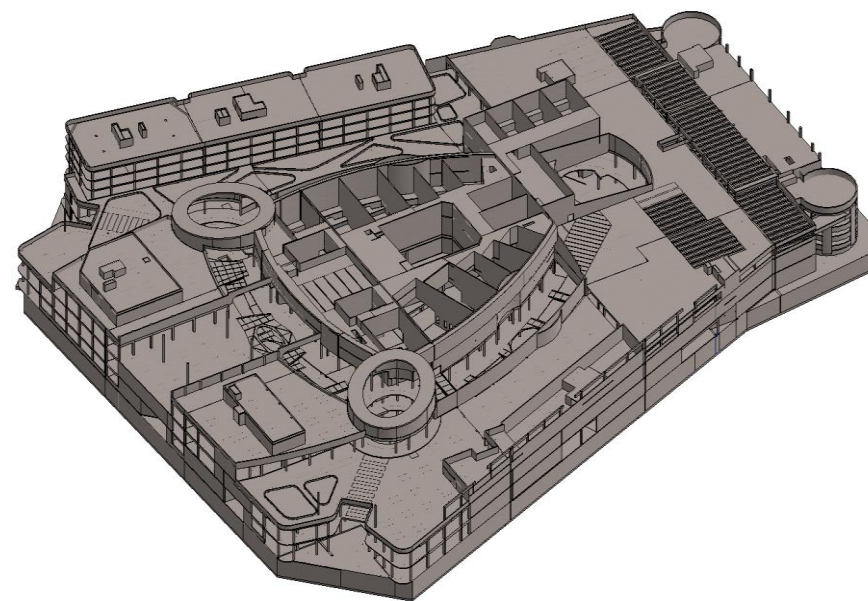
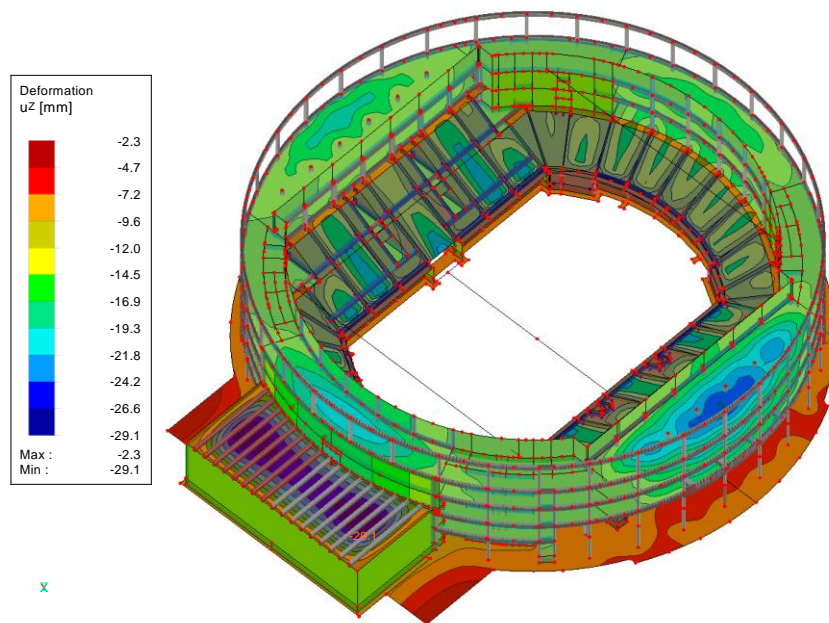
According to Eurocodes
Dlubal RFEM, Autodesk Robot

BIM service

Autodesk Revit, Dynamo

Execution design

Formwork DWG – Revit
Reinforcement DWG - Allplan



Structural analysis - examples

Galeria Warmińska

Location:

Size:

Engineering service:

Scope:

Architects:

Client:

Status:

2011- 2014

Olsztyn, Poland

116 500 m²

complete engineering design

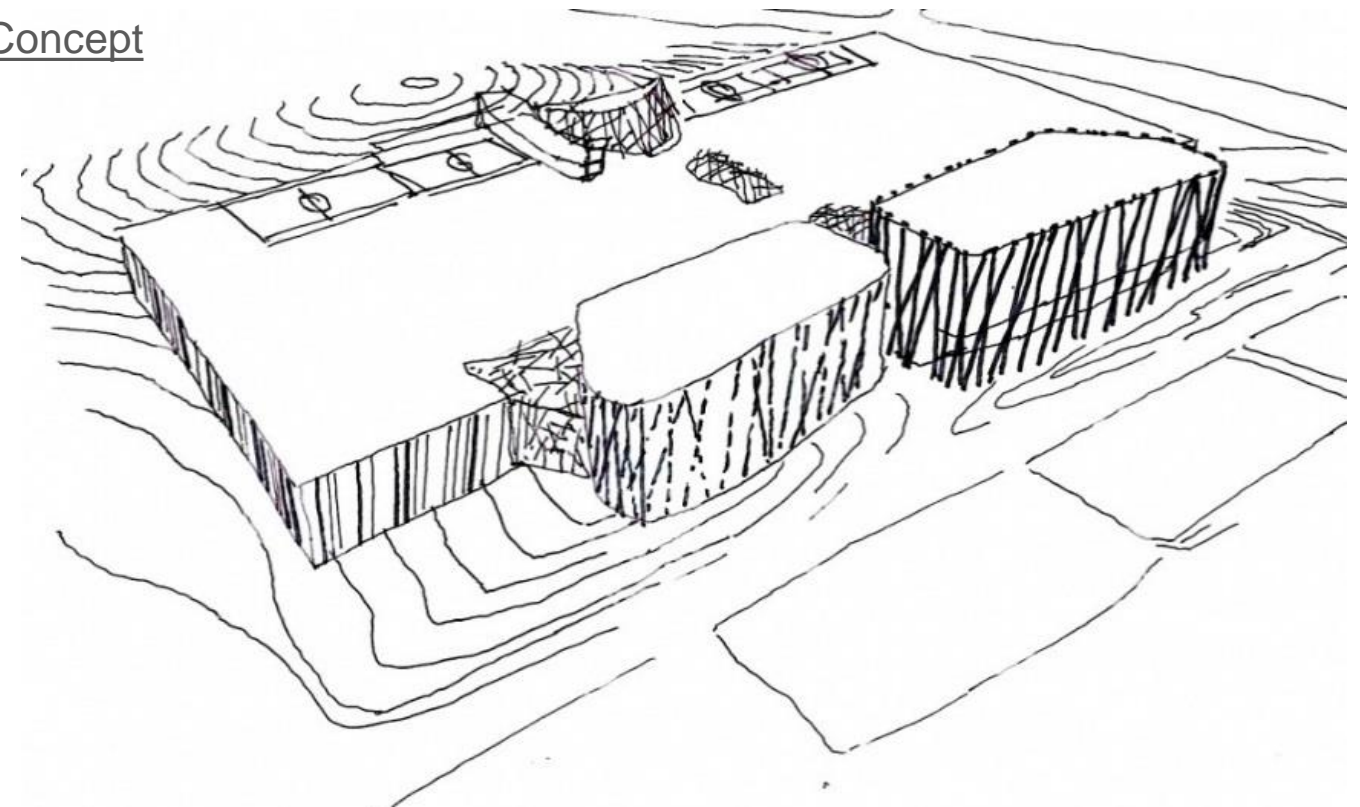
concept, structural analysis, tender, execution design,
author's supervision

Kuryłowicz & Associates Architecture Studio

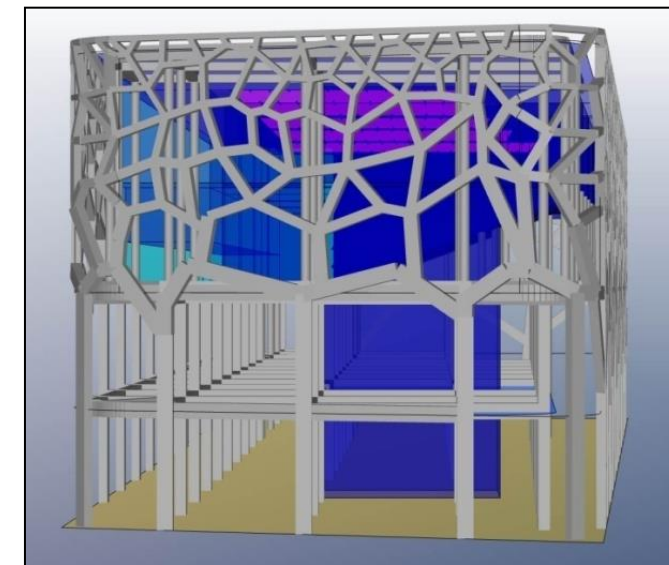
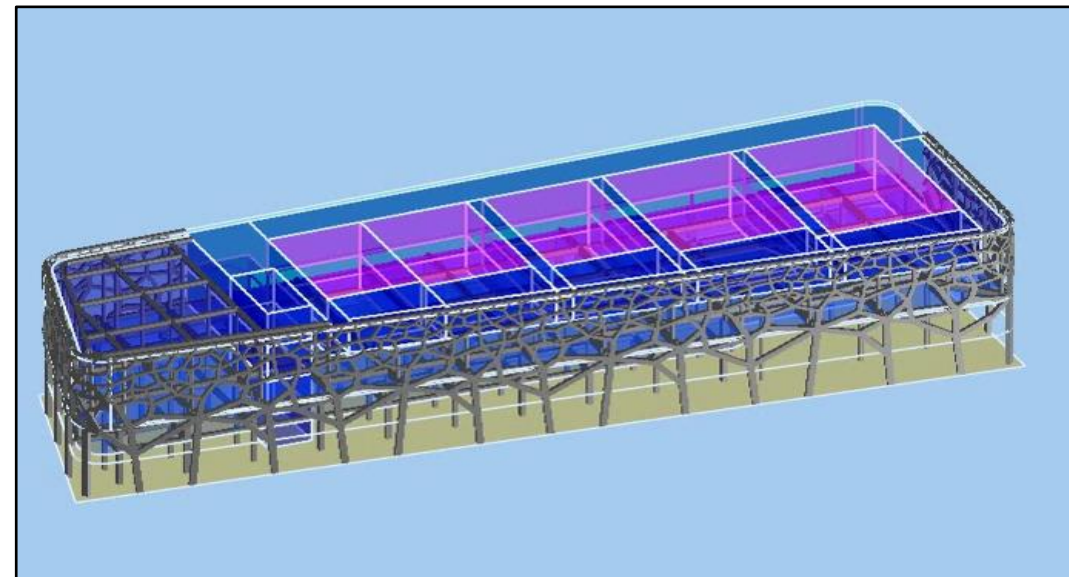
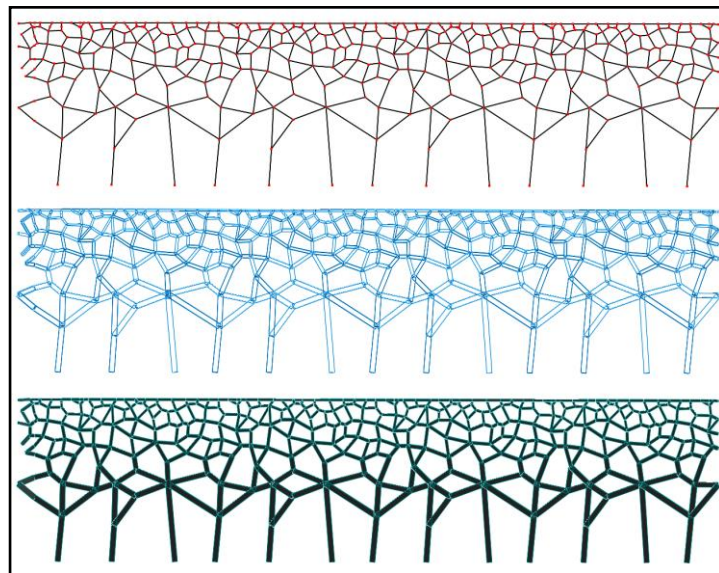
Libra Project

built

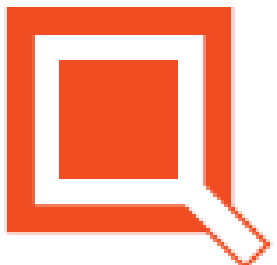
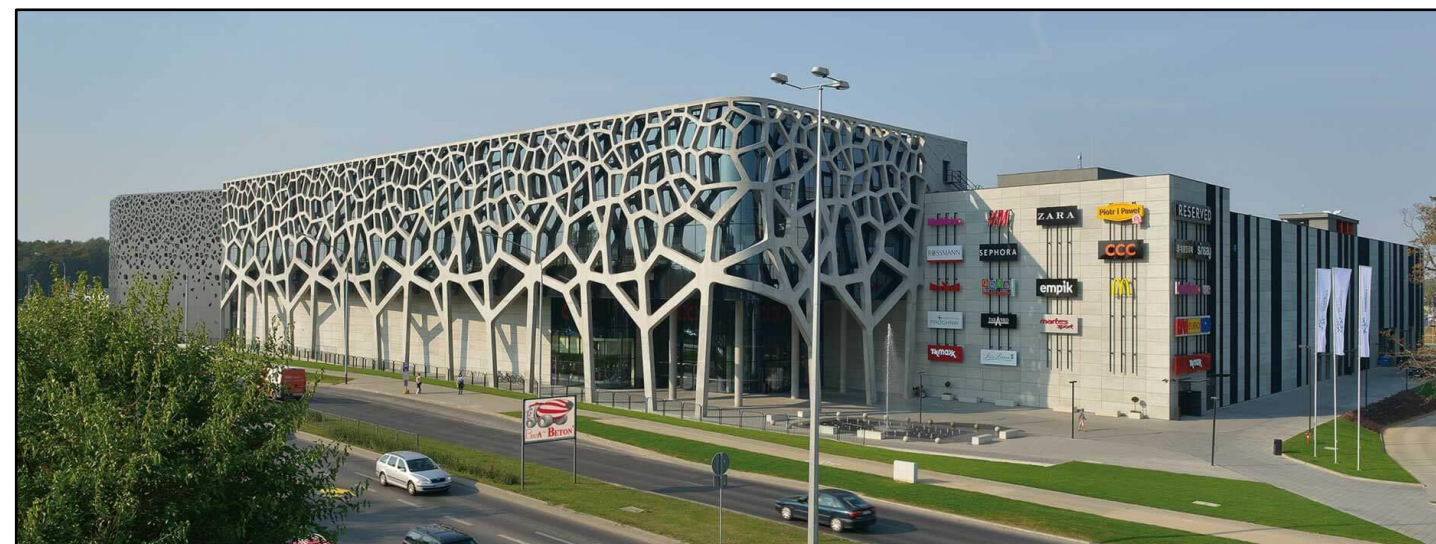
Concept



Structural analysis (RFEM)



Execution stage



Structural analysis - examples

Galeria Wroclavia

Location:

Size:

Engineering service:

Scope:

Architects:

Client:

Status:

2014 - 2017

Wroclaw, Poland

198 000 m²

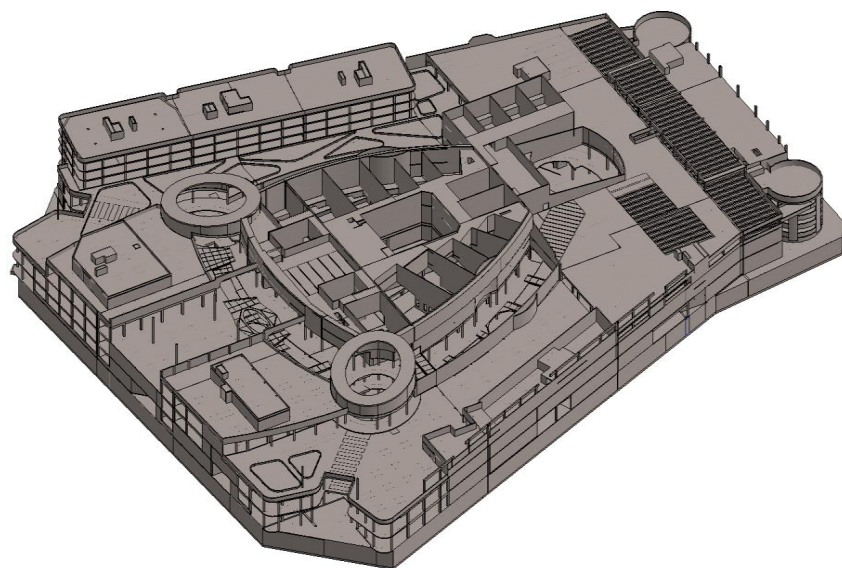
complete engineering design,
concept, building permit, tender and execution design,
author's supervision,
A360 for General Contractor Services

IMB Asymetria Architects

Unibail-Rodamco-Westfield

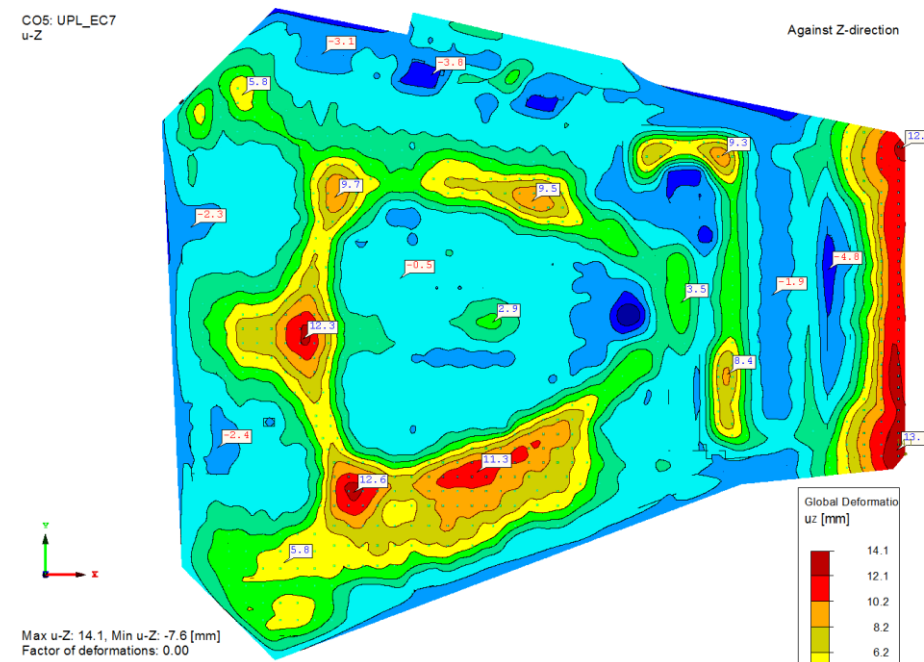
built

Revit model



Structural analysis (RFEM, uplift analysis)

CO5: UPL_EC7
u-Z



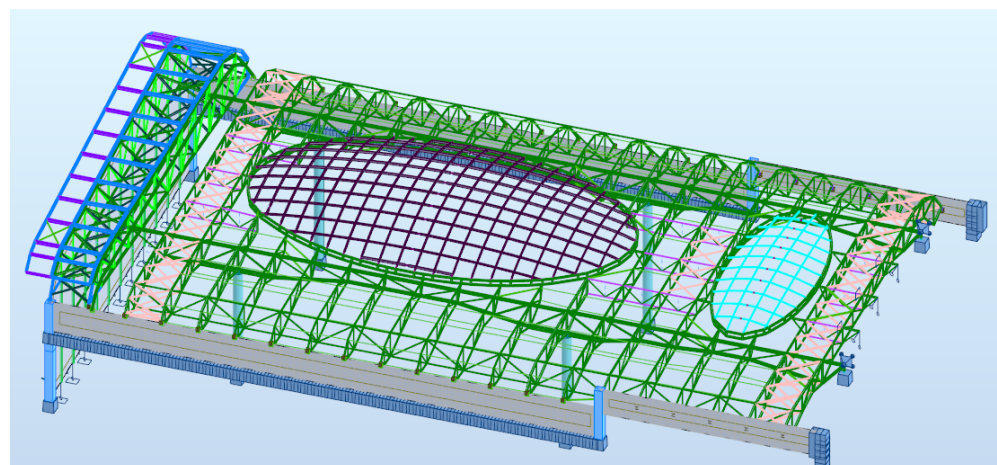
Concept



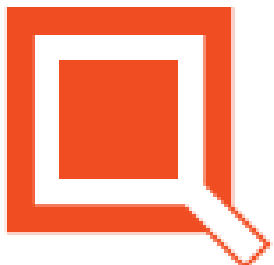
Execution stage



Structural analysis (Autodesk Robot, steel structure)

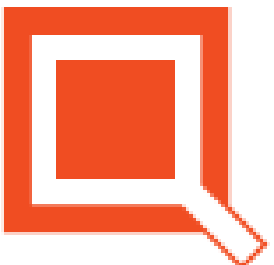
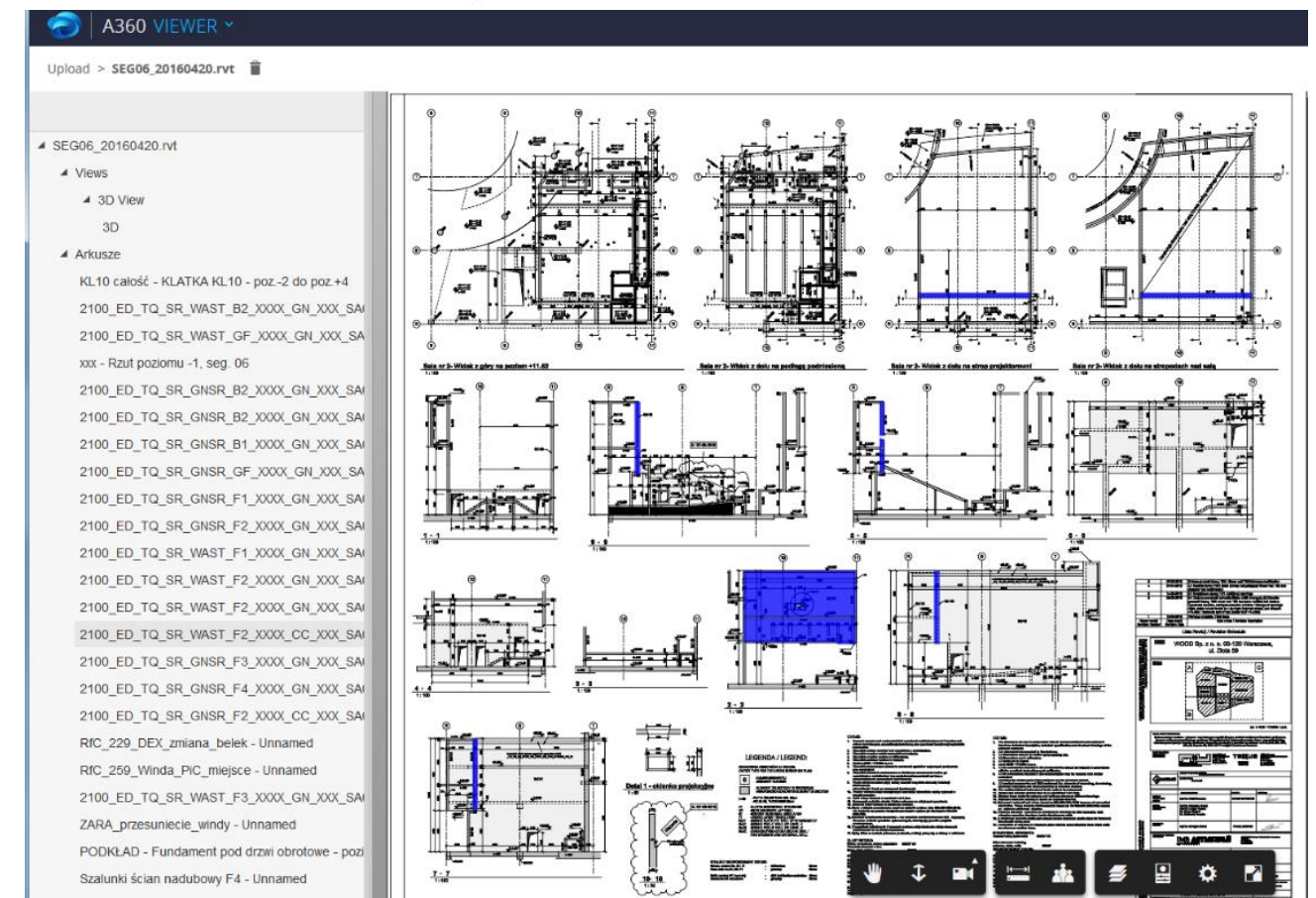
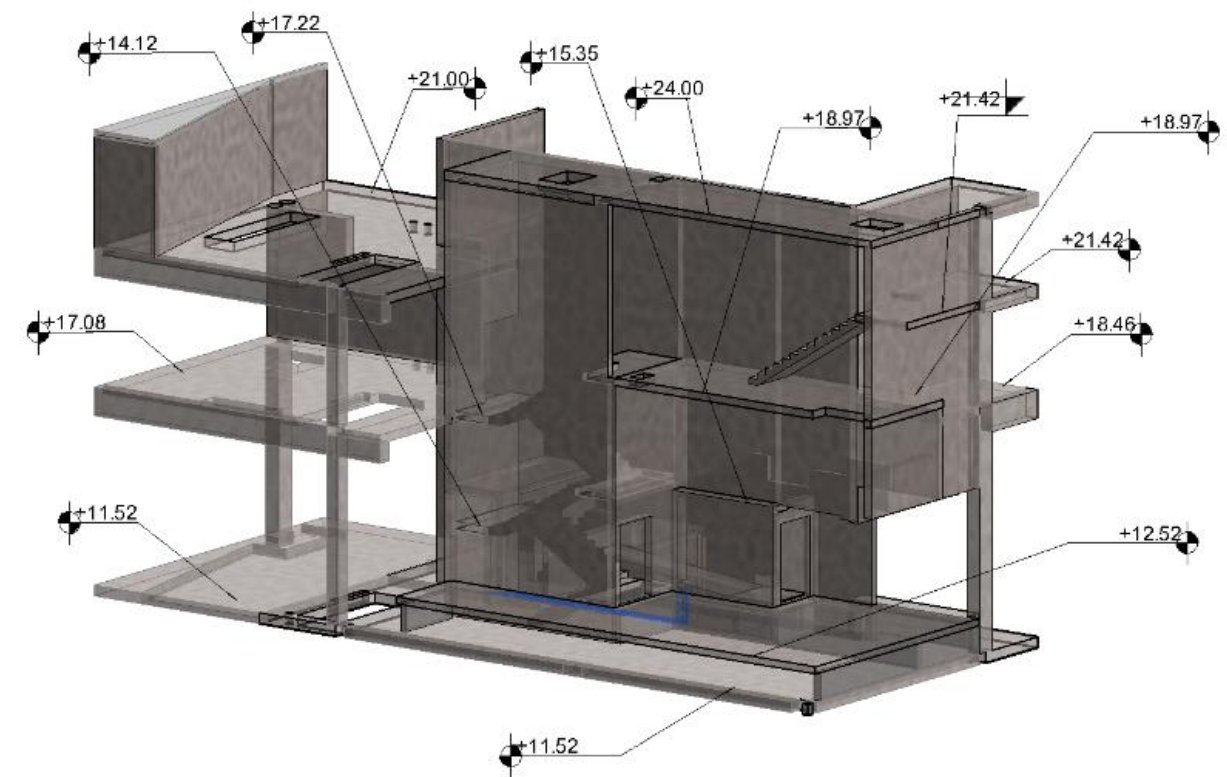
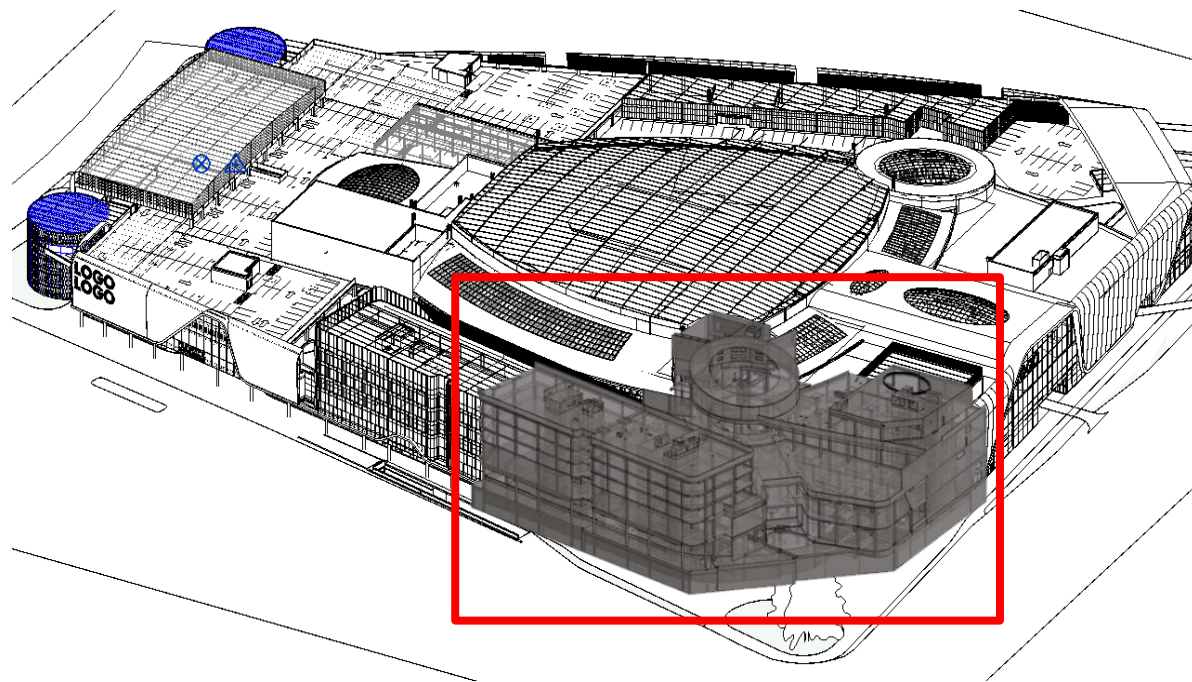


Execution stage



BIM service

- 3D modeling – Structure, MEP
- Model elements classification
- Material Takeoffs
- Analytical model export
- Multi-discipline Coordination
- RevitServer – cooperation and coordination in real-time
- Clash Detection
- CDE Platforms
- Dynamo for Revit



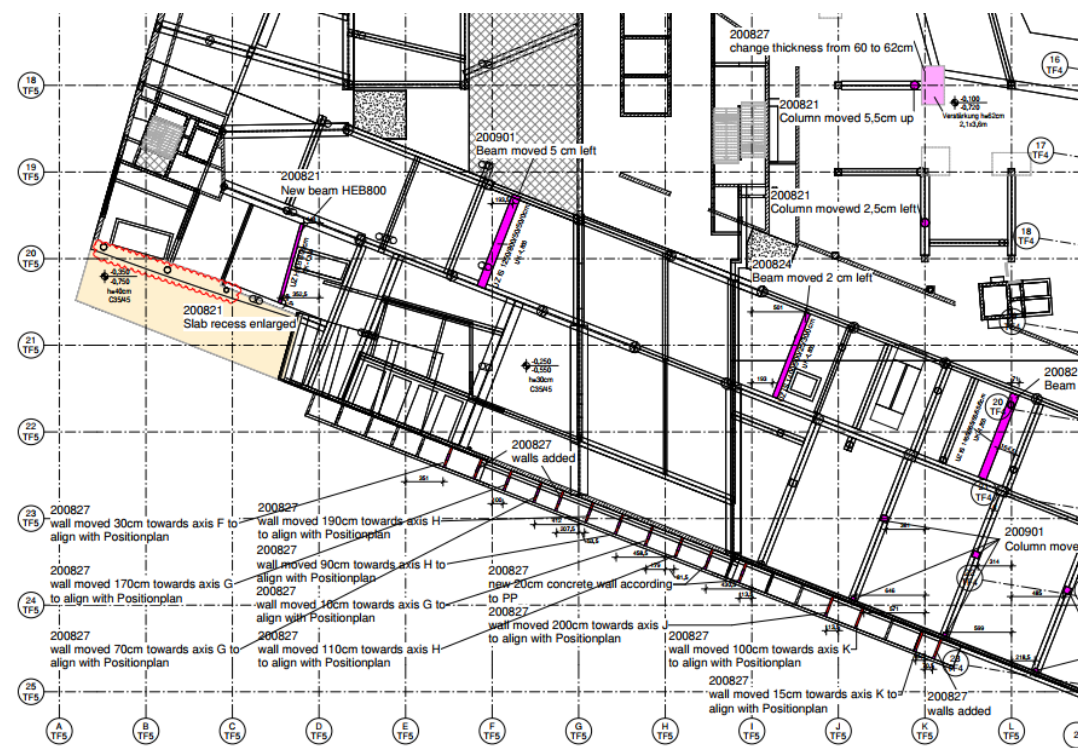
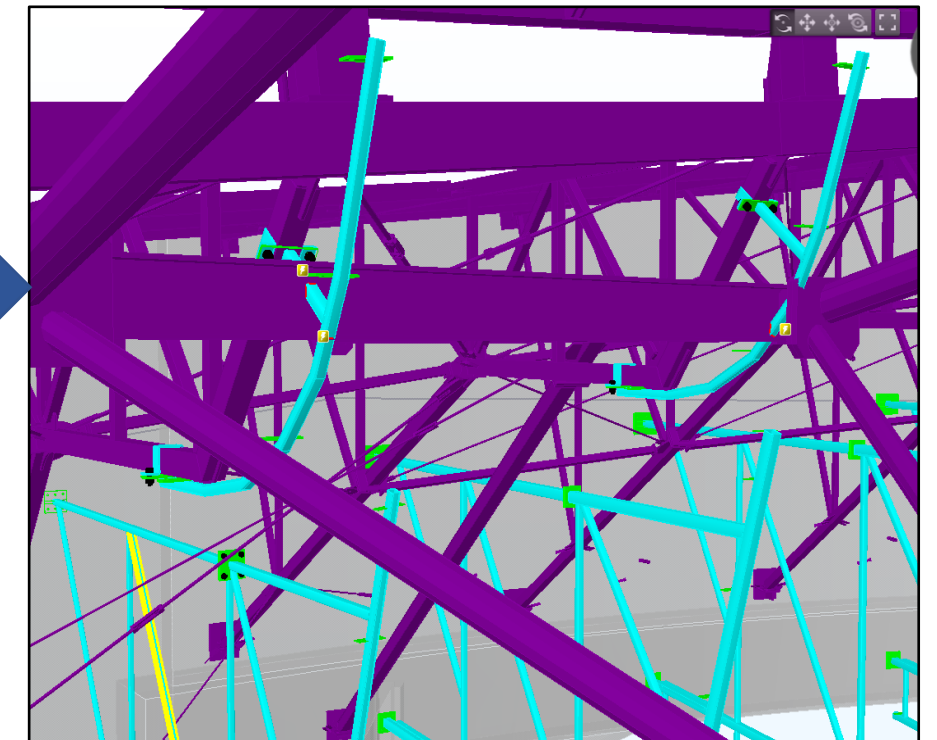
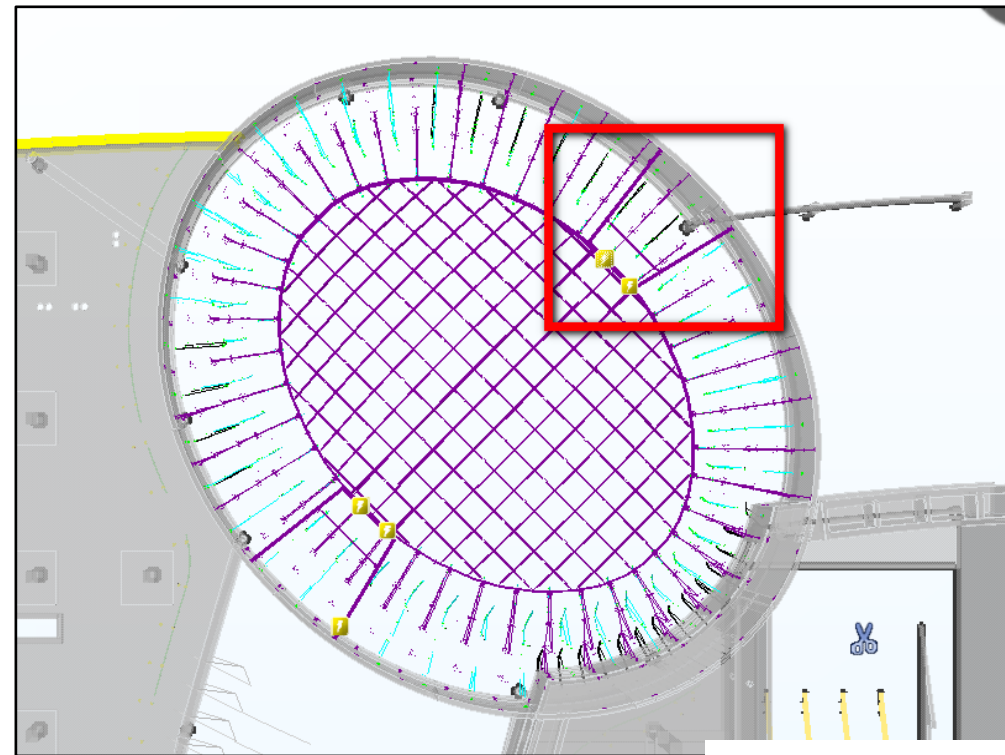
BIM service

Coordination

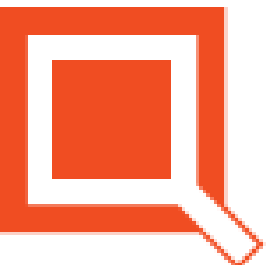
- Arch-Structure shared Revit models
- Always up-to-date MEP models
- Clashes detection
- IFC format for data exchange with other software

Communication

- Exchanging info about changes and problems
- Additional parameters for better changes tracking
- BCF-based issue management (Bim Collab)
- CDE platforms for models, documents and issues (Bim360)



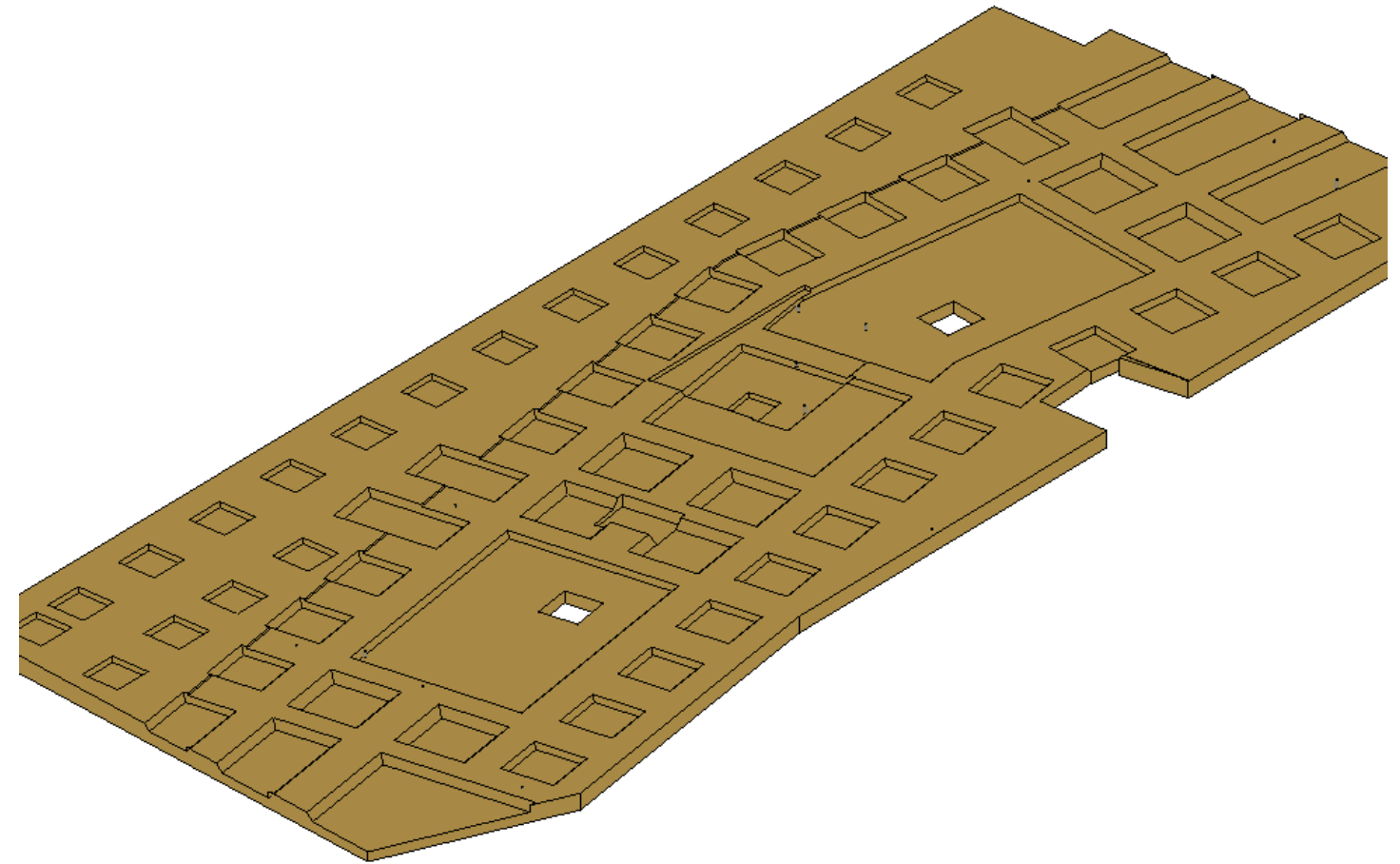
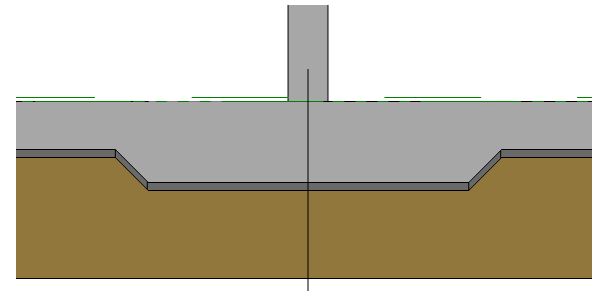
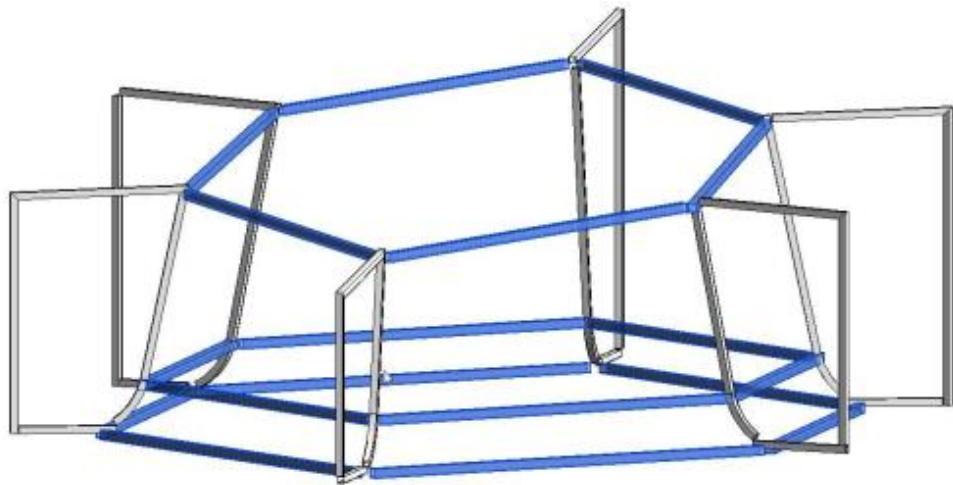
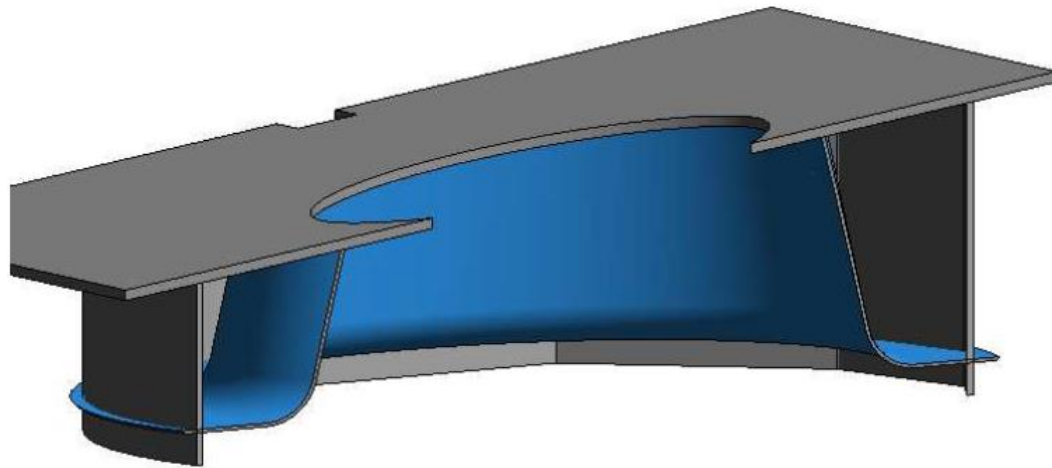
Properties	
Basic Wall W_STB 25.0	
Walls (1)	
Redline Status	
TQM_Change_date	210216
IMB_Change date	210215
IMB_Change description	LBC_Z2_EG_Anfrage74_Stb.-Überzüge
_Filter Comments 01	
_Filter Comments 02	
ALG_ChangeTicks	
IMB_AFC-WTM	
Wandtyp	
IMB_ID	6231997
TQM_Change_description	Wall change from not structural to structural.
TQM_temp_el_filter	
Structural	
Structural	<input checked="" type="checkbox"/>
Enable Analytical Model	<input type="checkbox"/>
Structural Usage	Bearing
Rebar Cover - Exterior Edge	Reinforcementbedeckung 1 x 25 mm



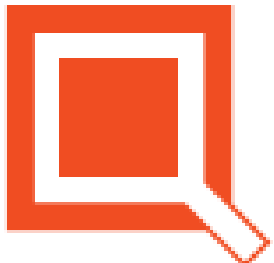
BIM service

Advanced BIM tasks examples

- Multiple conceptions with Dynamo programming
- Complex-shape elements modeling
- Analysis of elements geometry to maintain the unification of the precast elements



Staircase NR	Flight NR	TQM_Shape	TQM_Shape2	TQM_Shape3	TQM_Volume	Weight [T]	Is Flight Splitted?	Mark
TQM_Stairs: Standard								
F3_TR02	TH2/7	20/196/140/8/44/44	219/33/71		2,21 m³	5,53	No	
F3_TR03	TH3/8	20/196/140/8/44/44	219/33/71	0/1/27/35	2,25 m³	5,62	No	TH2/7, TH2/8
F3_TR02	TH2/8	20/196/140/8/44/44	219/33/71	0/1/27/35	2,25 m³	5,62	No	
F3_TR02	TH2/9	20/196/140/8/44/44	219/33/71	0/1/27/35	2,25 m³	5,62	No	
F3_TR03	TH3/5	20/224/157.5/9/44/44	219/33/71	0/1/27/35	2,45 m³	6,12	Yes	TH3/5, TH3/6
F3_TR03	TH3/6	20/224/157.5/9/44/44	219/33/71	0/1/27/35	2,45 m³	6,12	Yes	
F3_TR02	TH2/6	20/224/157.5/9/44/44	219/33/71	0/1/27/35	2,45 m³	6,12	Yes	



BIM service - example

Varso Tower

Location:

Size:

Engineering service:

Structure:

Architects:

MEP:

Client:

2017 - 2018

Warsaw, Poland

63 500 m2;

height 230m to roof, 310m height with steel tower

structural Revit Model for execution design,

Formwork drawings for RC structure,

MiW-Tequm

Epstein

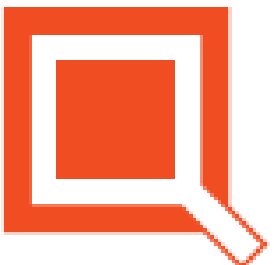
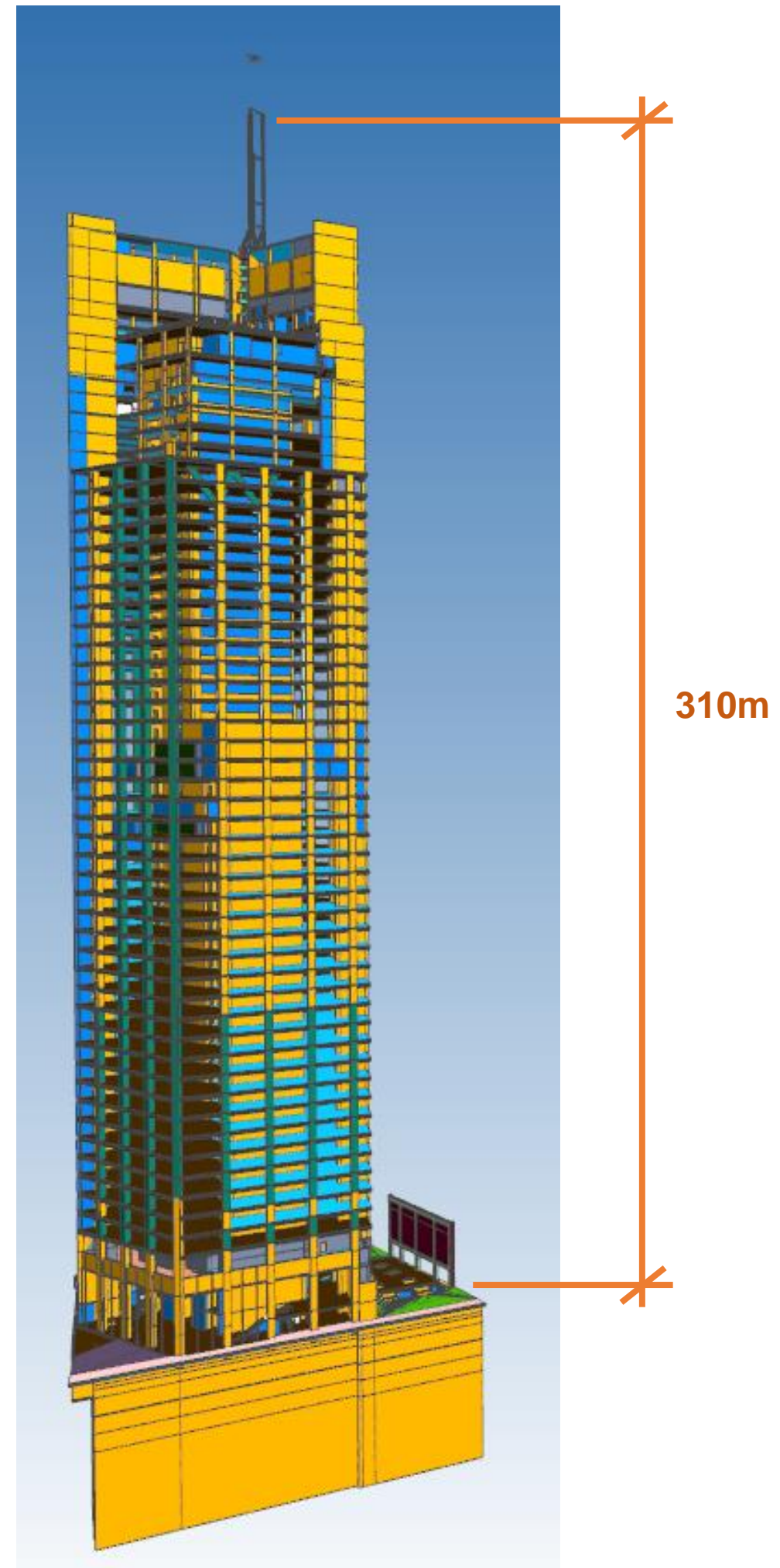
Buro Happold

HB Reavis

Execution stage



Revit model

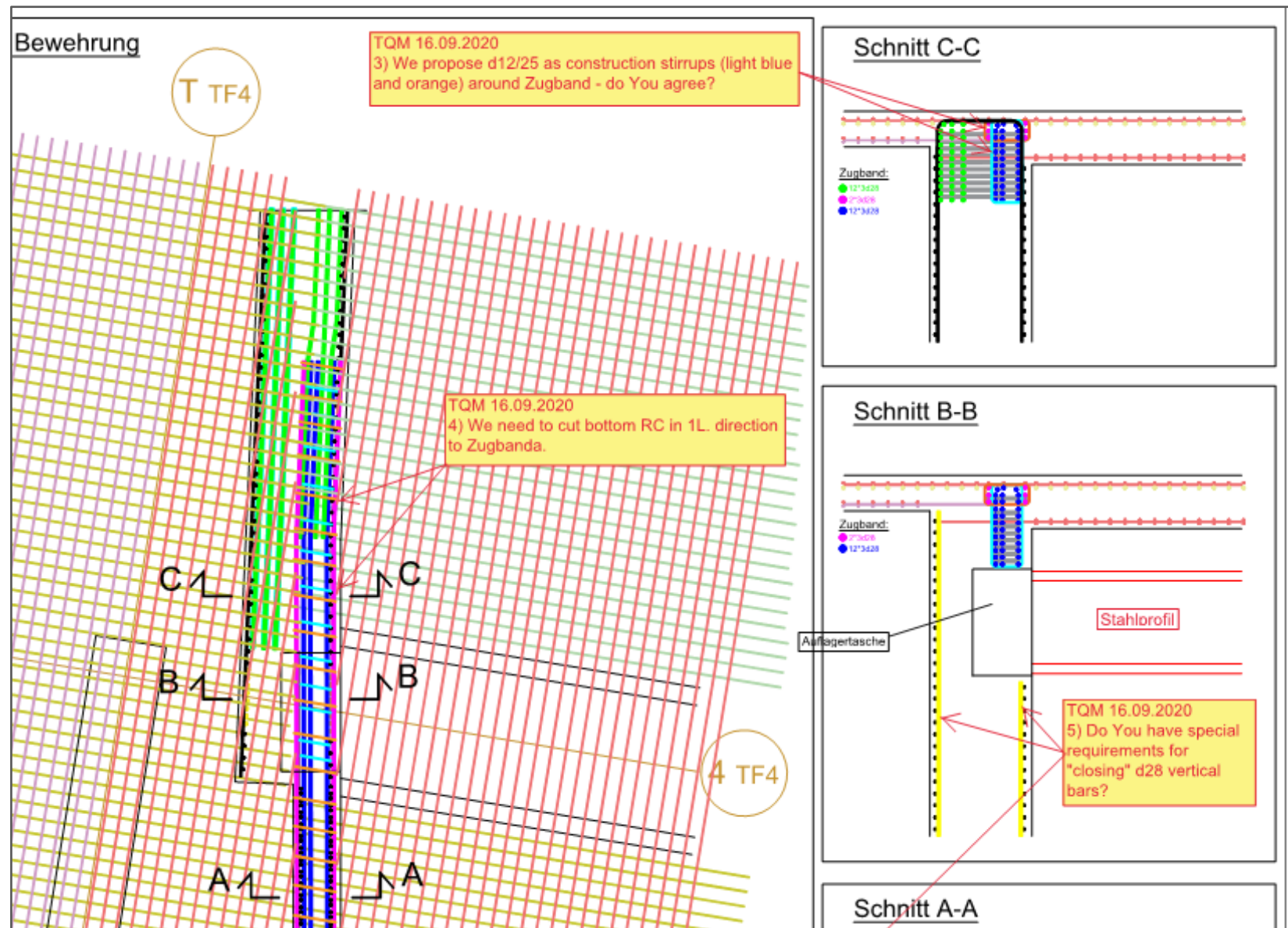


Execution design – RC drawings in Allplan (German standard)

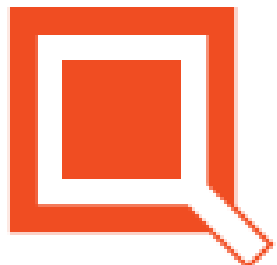
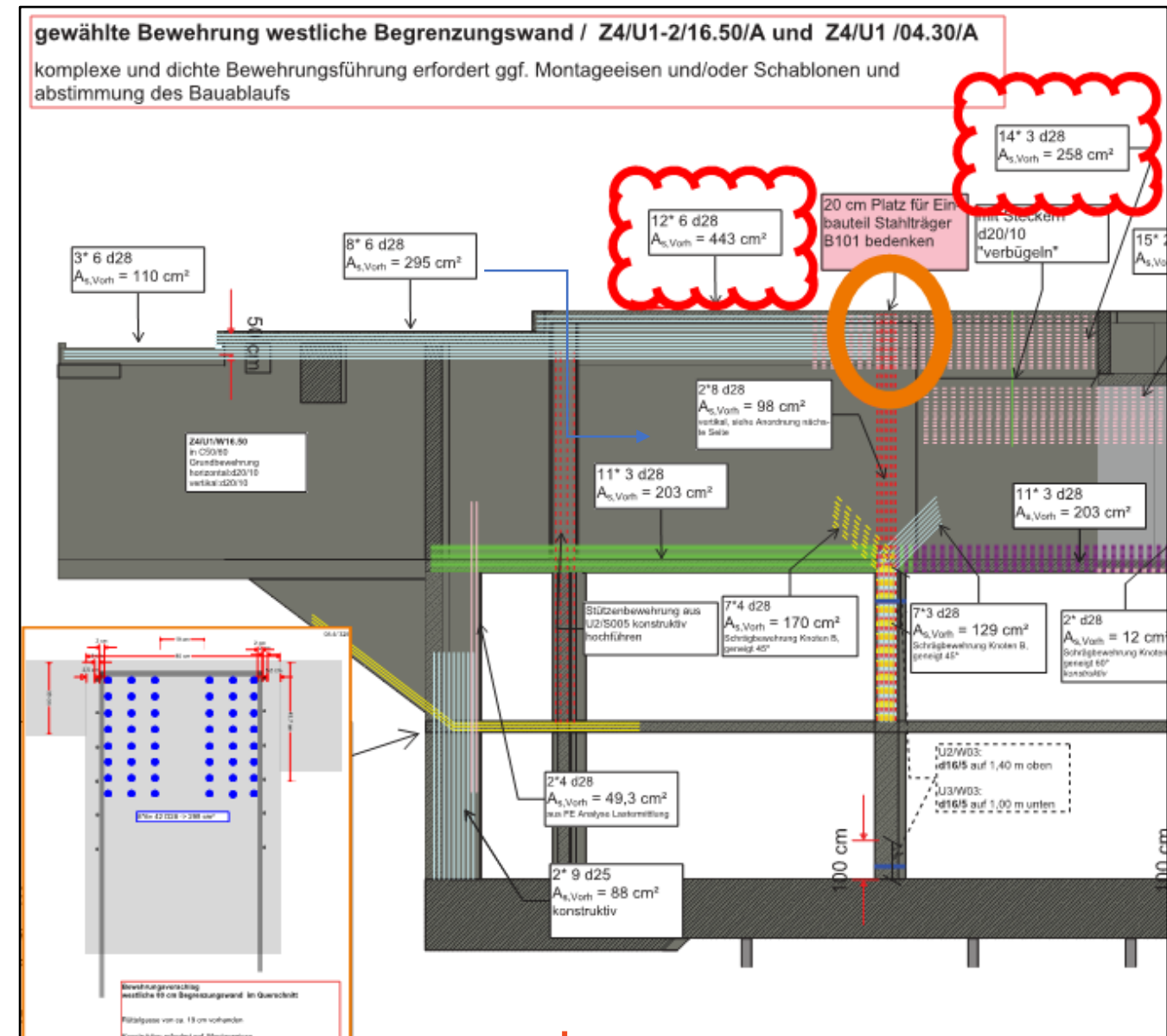
- 3 years experience on German market
- ALLPLAN software
- three steps of our standard preparation for RC drawings:

1. **detailed analysis of calculation report (LPH4)**
2. 3D reinforcement modeling (2D for simple elements)
3. preparing final RC drawings

Reinforcement solution to agree with LPH4 designer



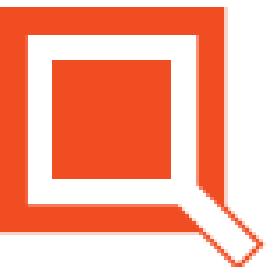
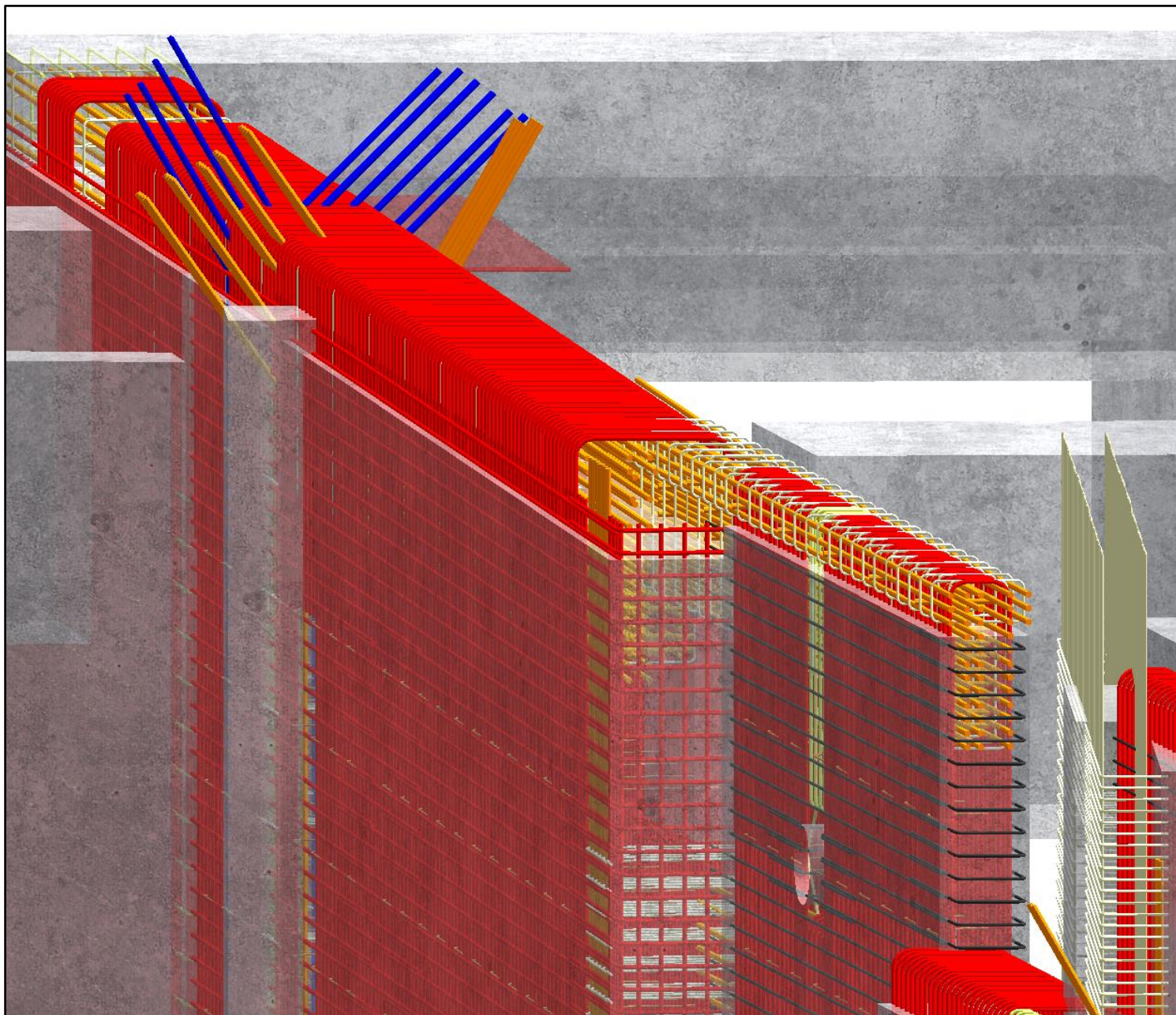
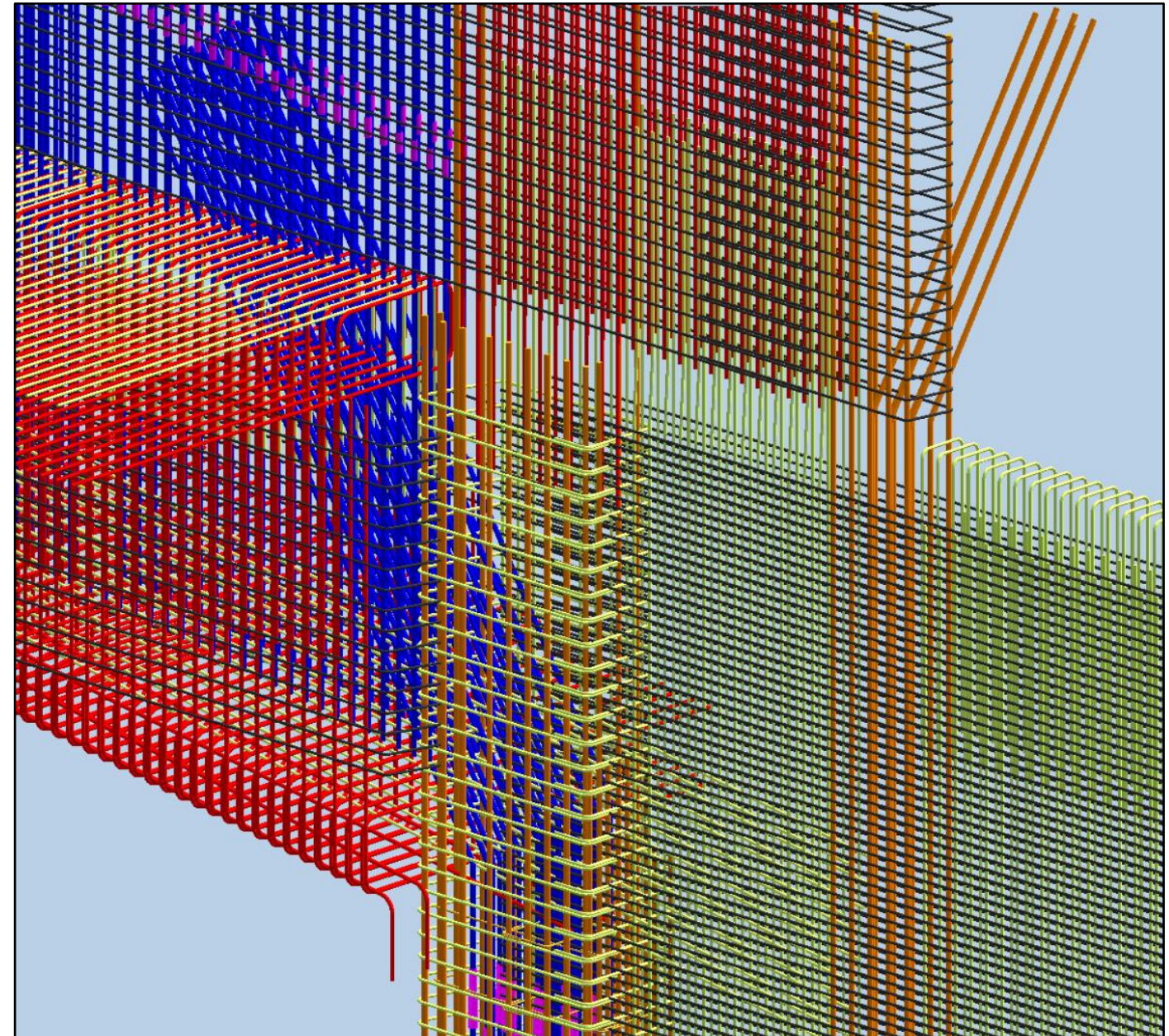
LPH4 report (received from German LPH4 designer)



Execution design – RC drawings in Allplan (German standard)

- 3 years experience on German market
- ALLPLAN software
- three steps of our standard preparation for RC drawings:
 1. detailed analysis of calculation report (LPH4)
 2. **3D reinforcement modeling (2D for simple elements)**
 3. preparing final RC drawings

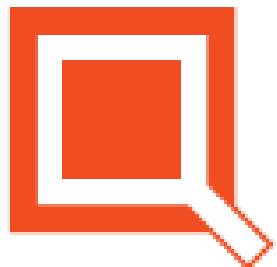
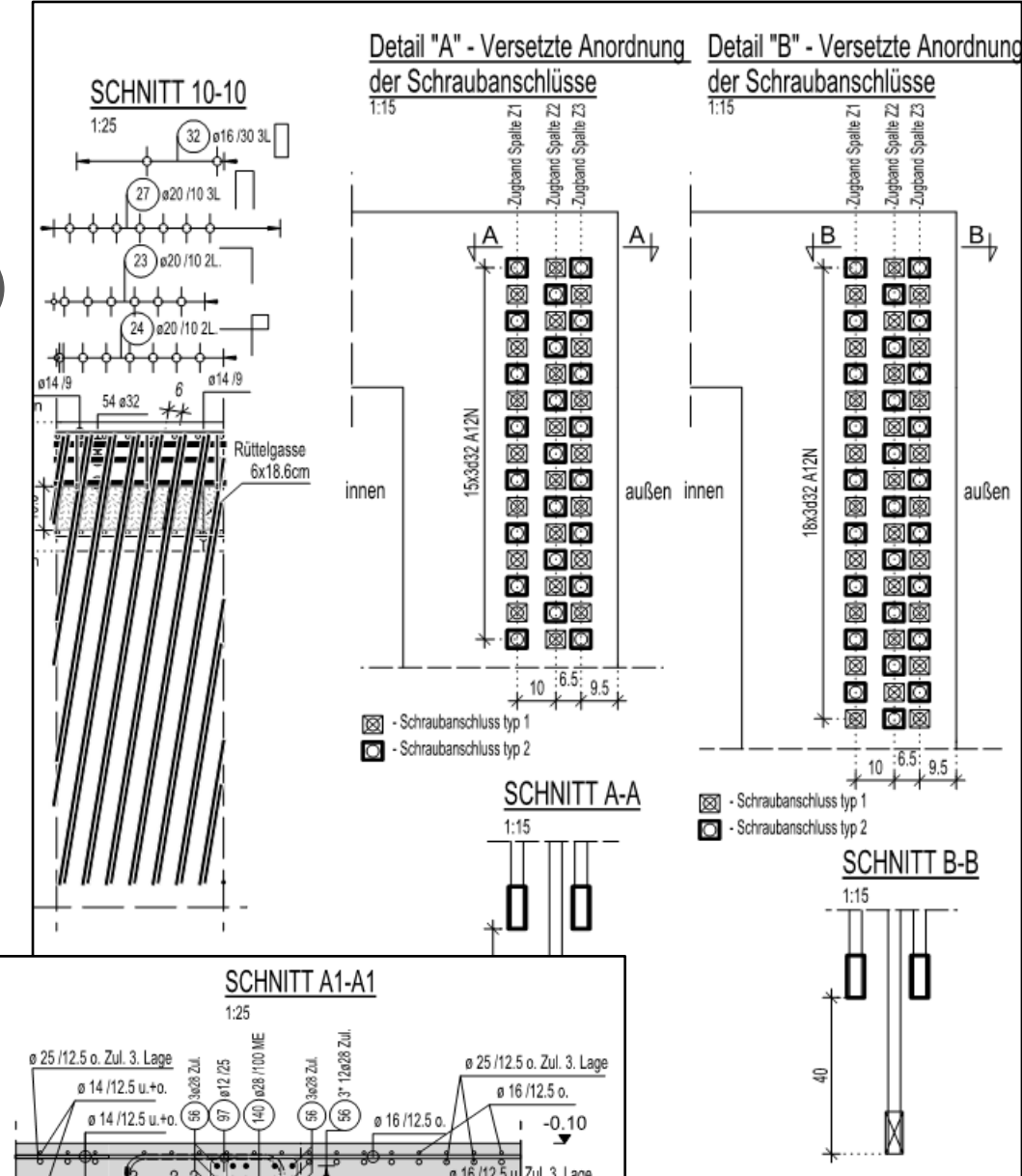
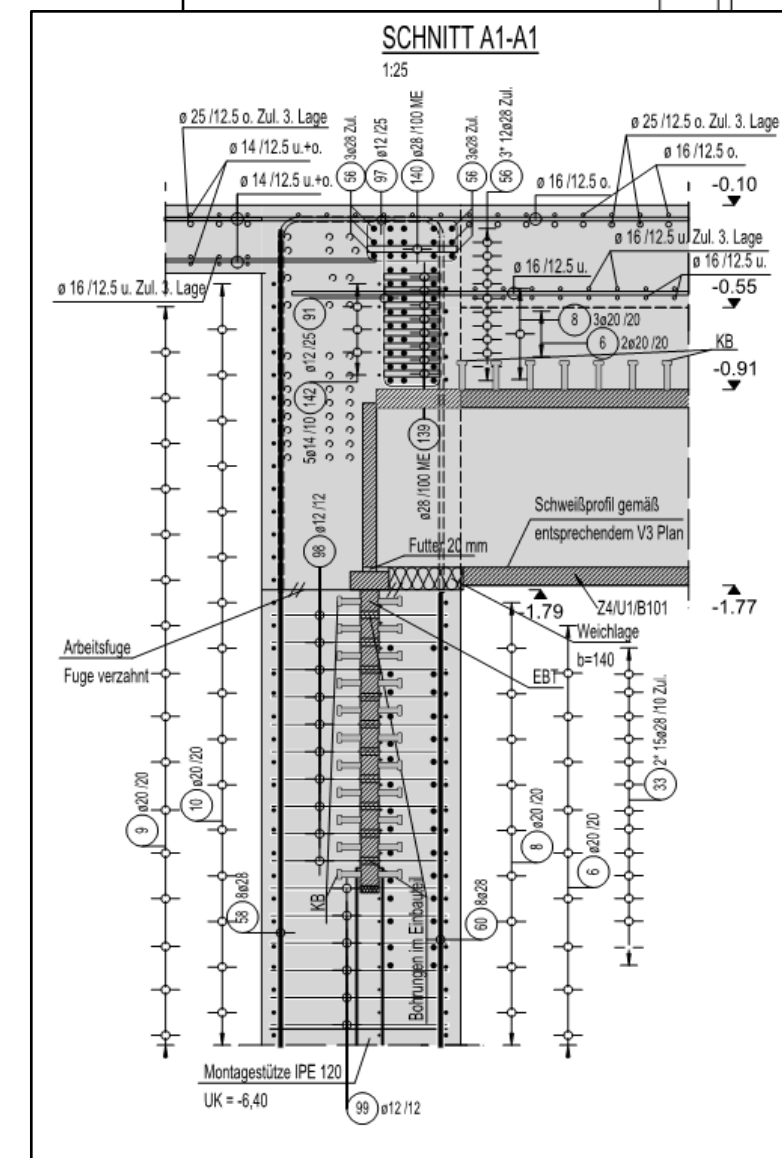
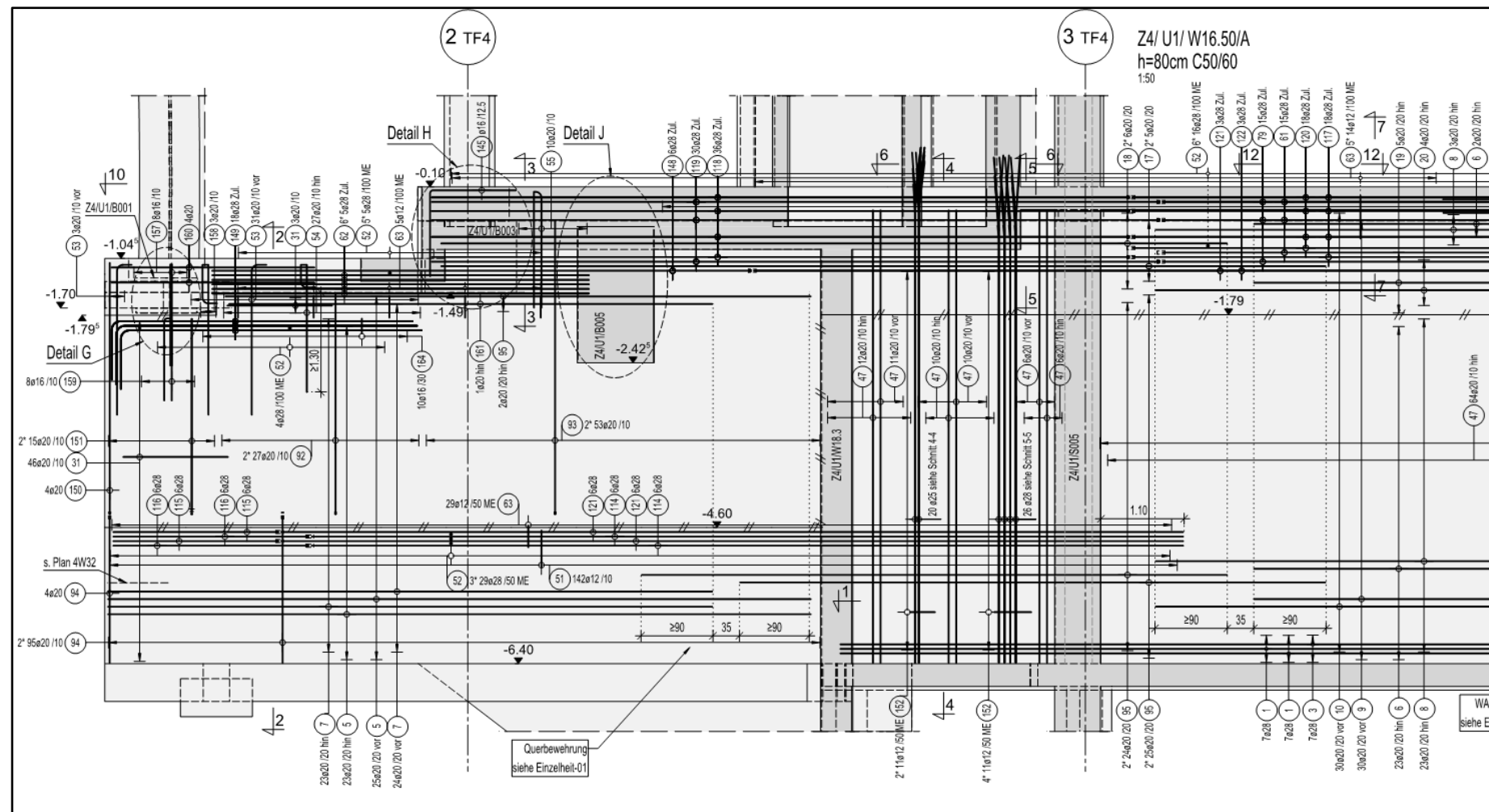
Complete 3D model of reinforcement (ALLPLAN)



Execution design – RC drawings in Allplan (German standard)

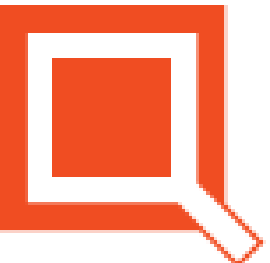
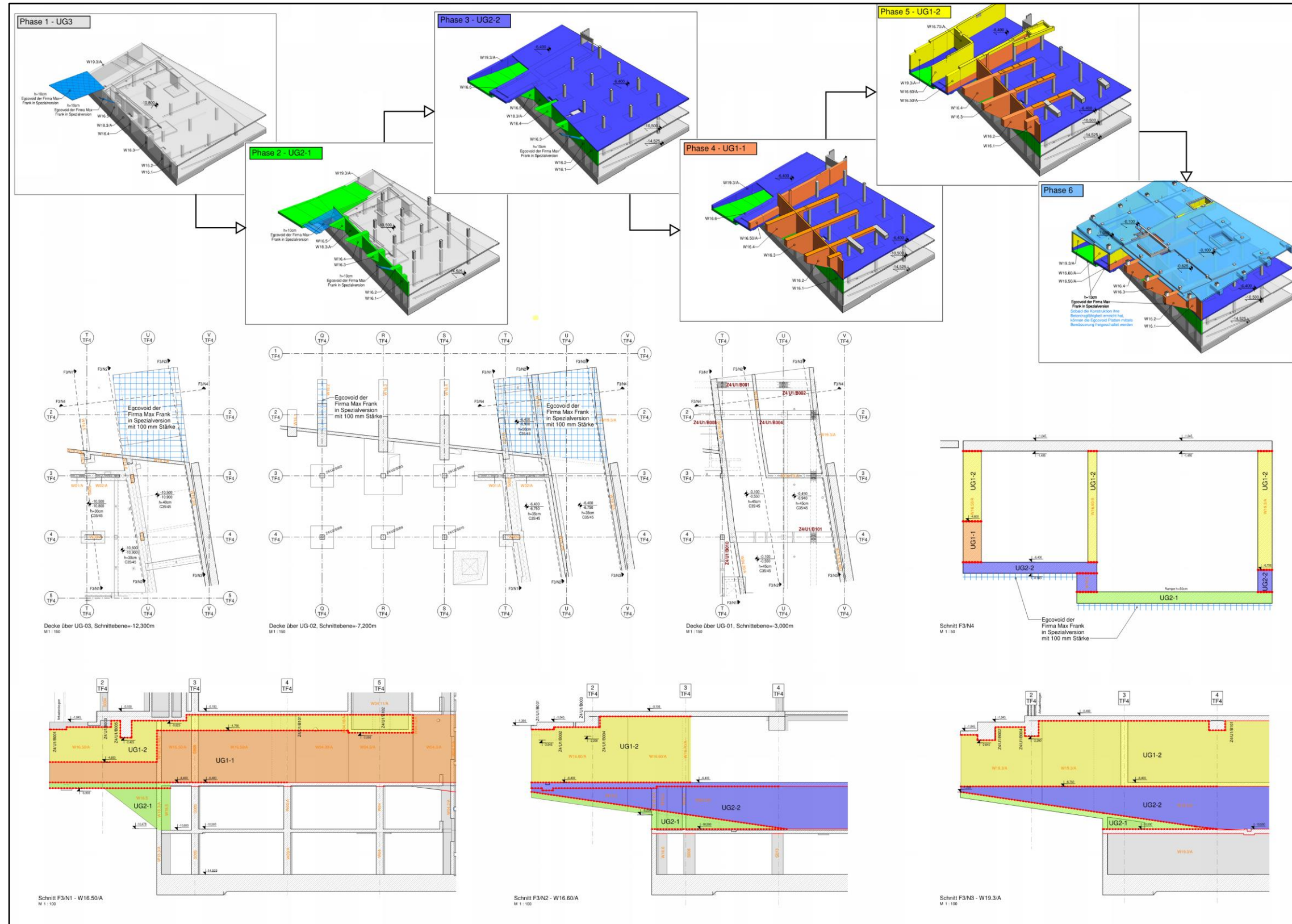
- 3 years experience on German market
- ALLPLAN software
- three steps of our standard preparation for RC drawings:
 1. detailed analysis of calculation report (LPH4)
 2. 3D reinforcement modeling (2D for simple elements)
 3. preparing final RC drawings

RC workshop drawing (main scale 1:50, details up to 1:10)



Execution design - construction phasing of the complex structure

- detailed analysis of calculation requirements
- preparing schematic drawings of construction phasing



Execution design – reference project (German market)

USQ

Location:

Size:

Engineering service:

Scope:

Architects:

Client:

2018 - 2021

Überseequartier Hamburg, Germany

417 000 m²

Core South

Raft – workshop drawings LPH5, WTM subcontractor

UG3-UG1 – LPH5 Designer

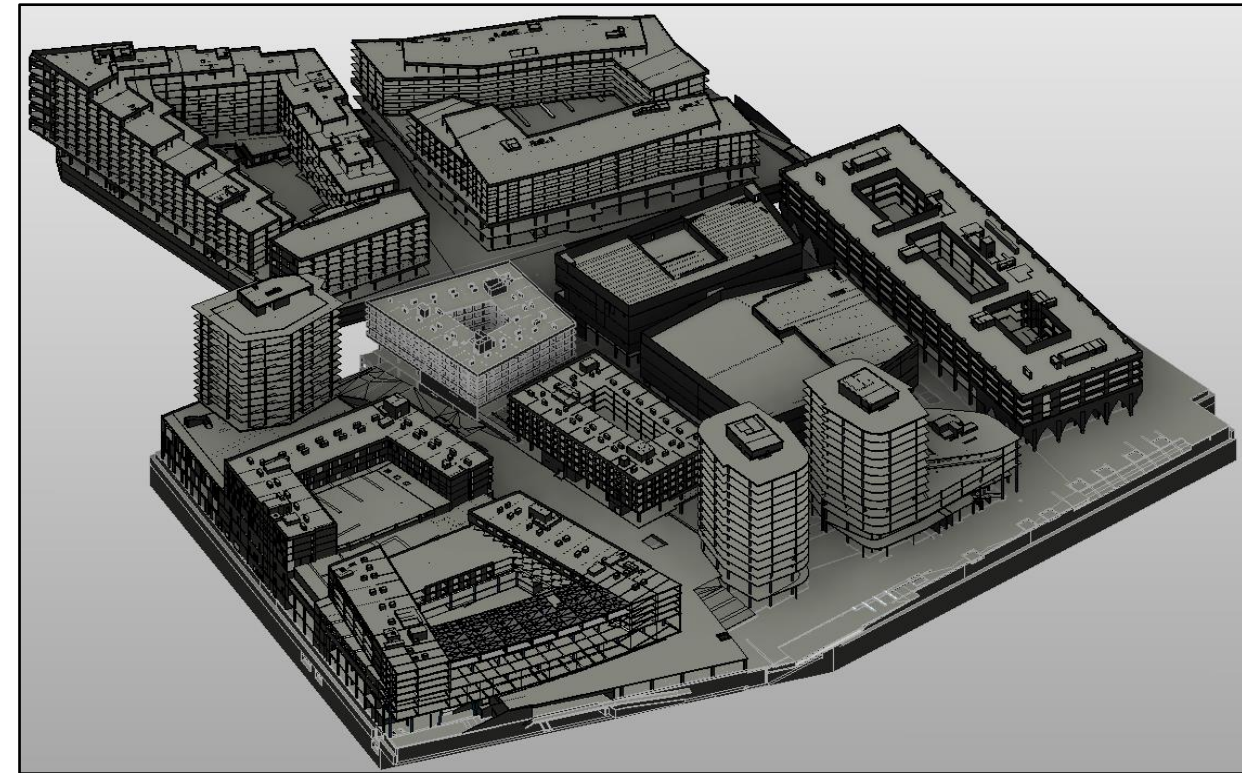
structure model and formworks in Revit

reinforcement drawings in ALLPLAN

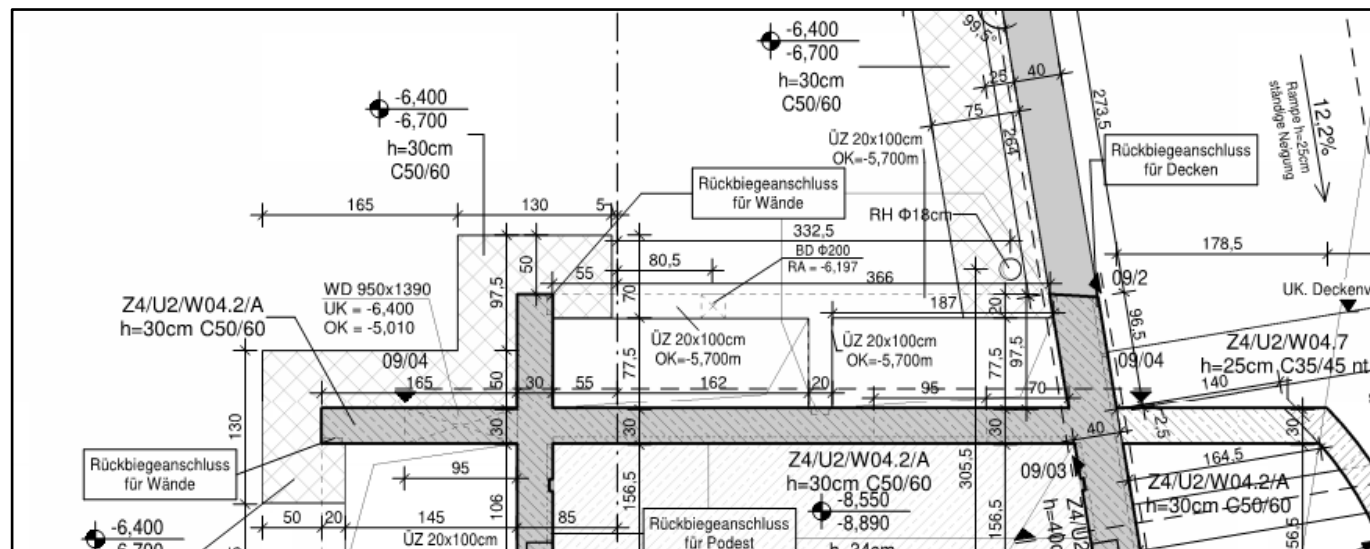
IMB Asymetria Architects

Unibail-Rodamco-Westfield

Revit model



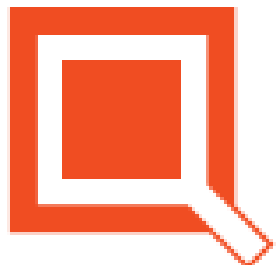
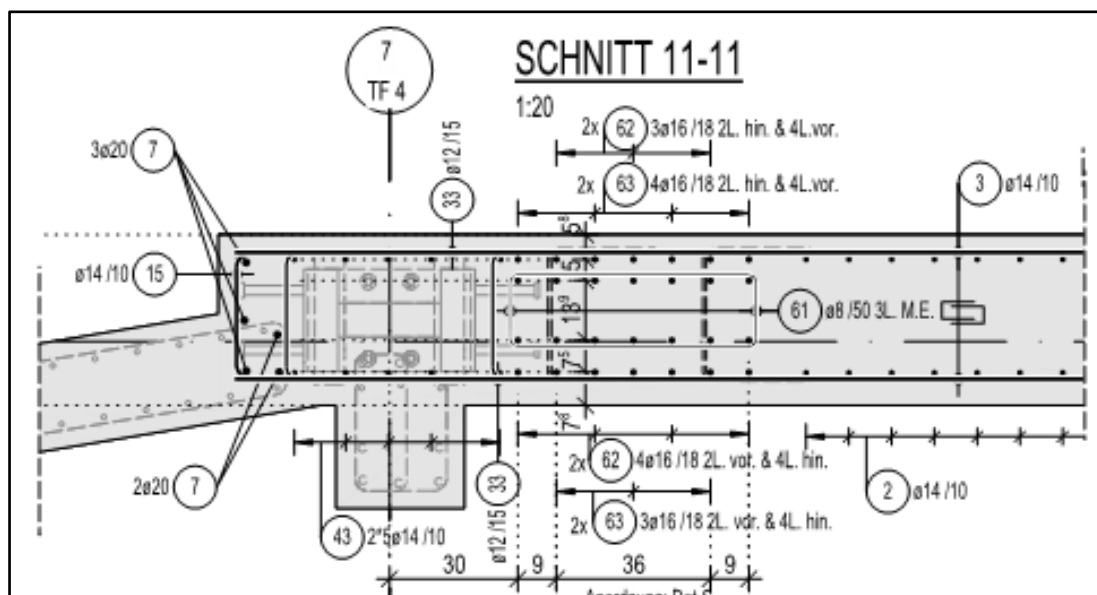
Formwork drawings (Revit)



Execution stage / author's supervision



Reinforcement drawings (Allplan)





For more information please visit:

<https://tequm.pl/en/>



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www.tequm.pl

