

Digitalizácia výrobných procesov

Súčasný stav pred prípravou projektov

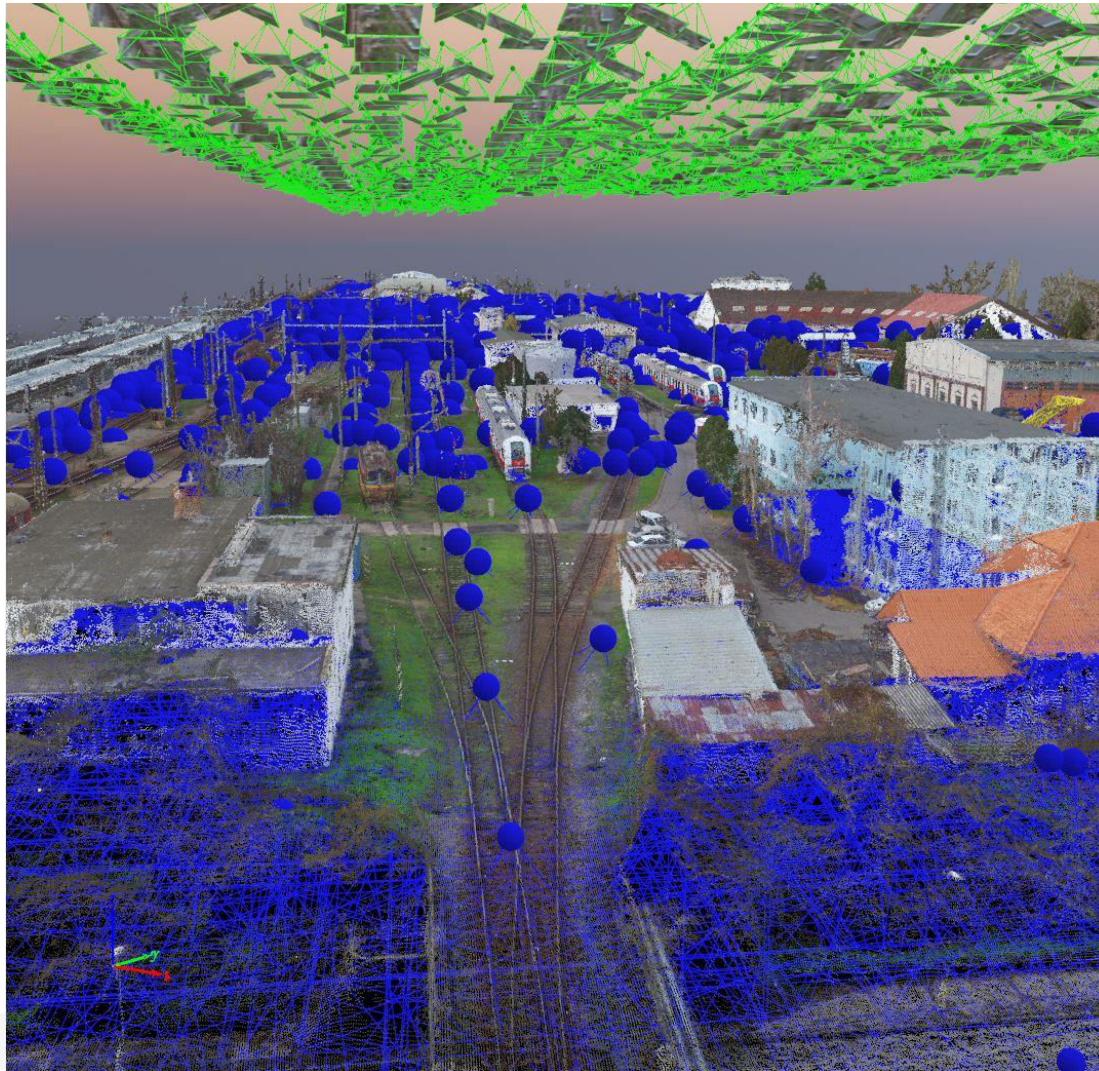
- Nekompletná dokumentácia
- Chýbajúce výkresy, pohľady a rezy
- Nepresné/neaktualizované technologické schémy

Príprava projektov

- Nevyhnutná aktualizácia dokumentácie
- Zameranie skutočného stavu
- Doplnenie chýbajúcich častí výrobného procesu pred začatím projektovania

- Unikátna metóda spájania skenov z leteckého a pozemného skenovania
- BIM (Building information modeling)

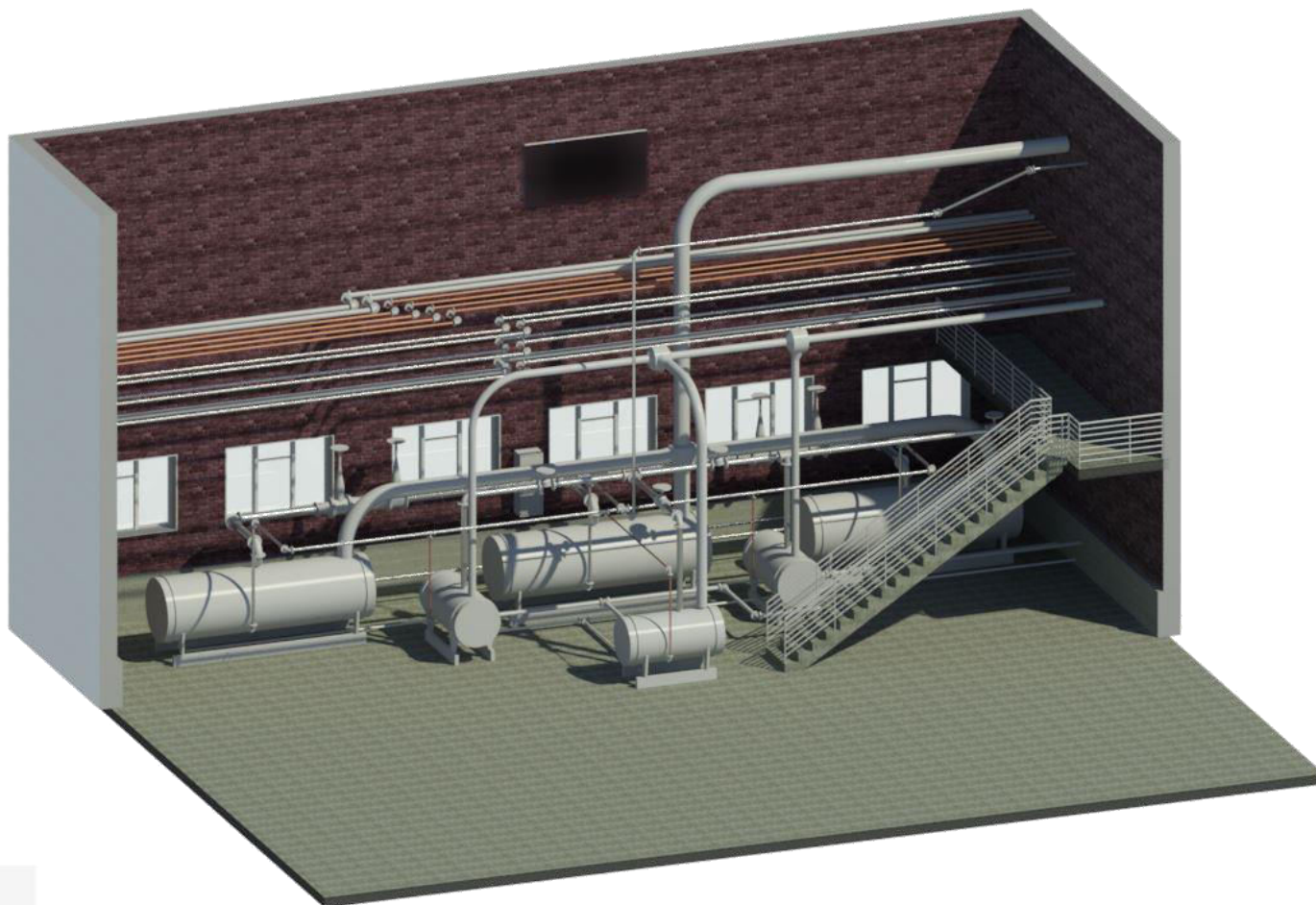
Spojenie leteckých a pozemných skenov



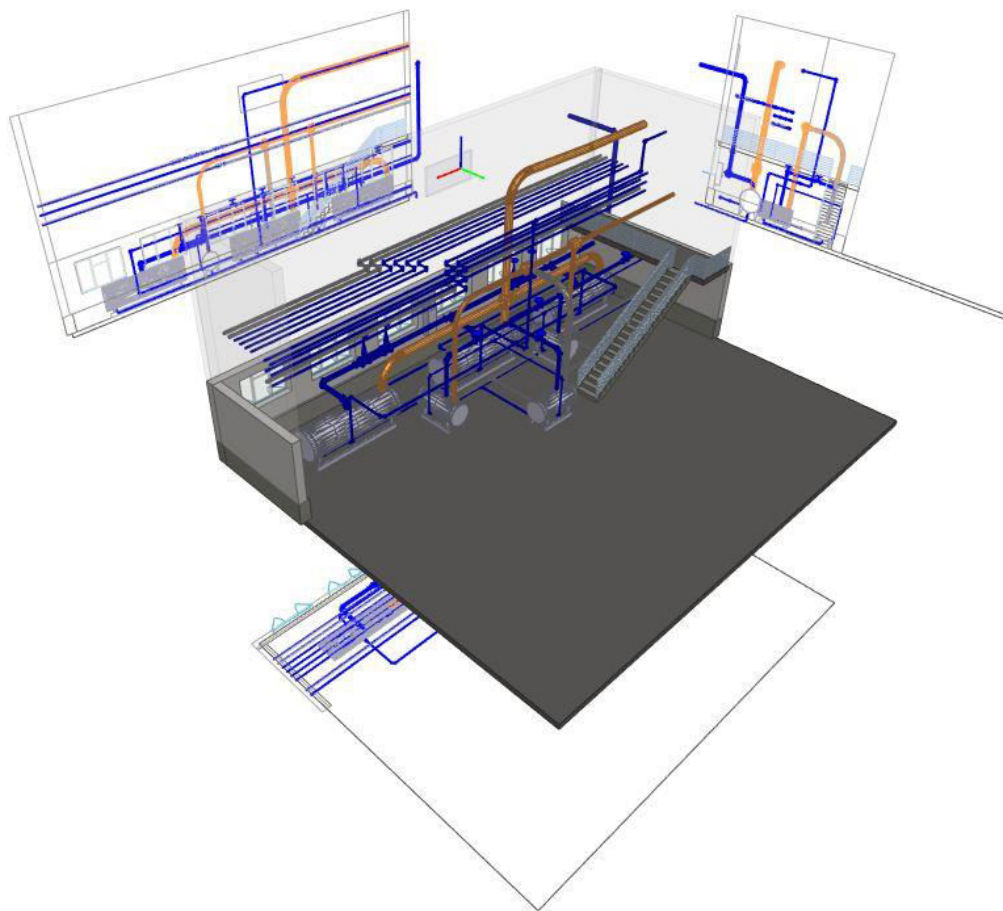
Point Cloud



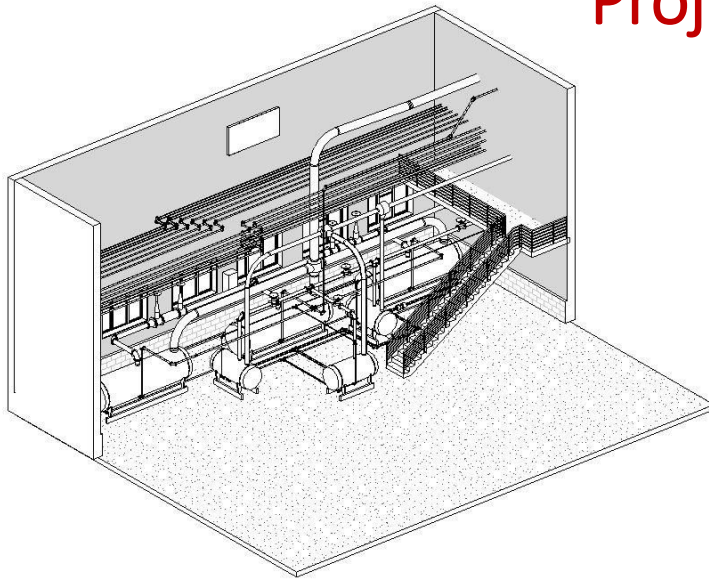
3D model



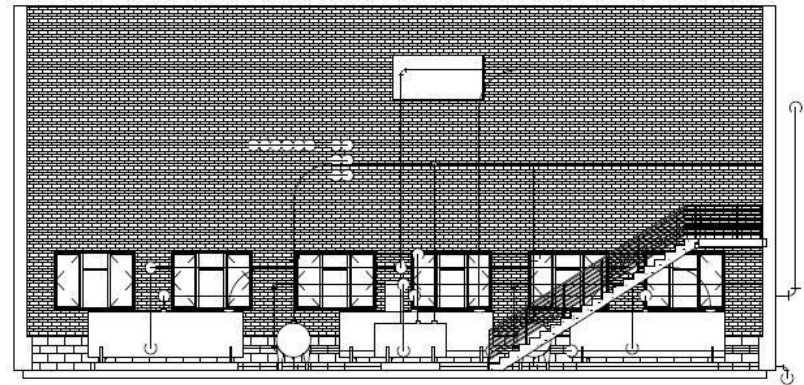
Projektová dokumentácia



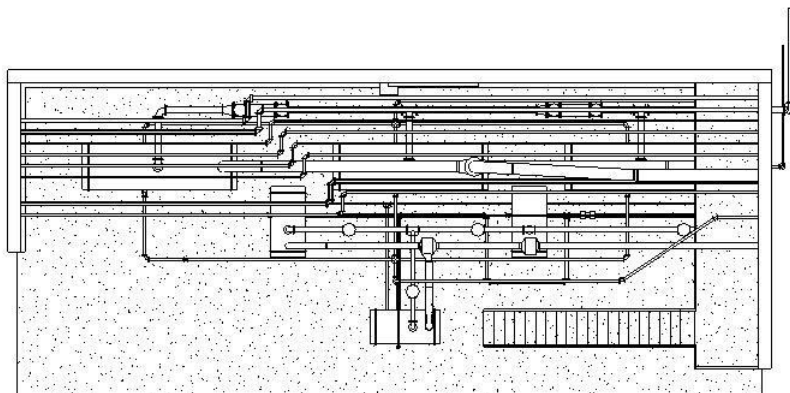
Projektová dokumentácia



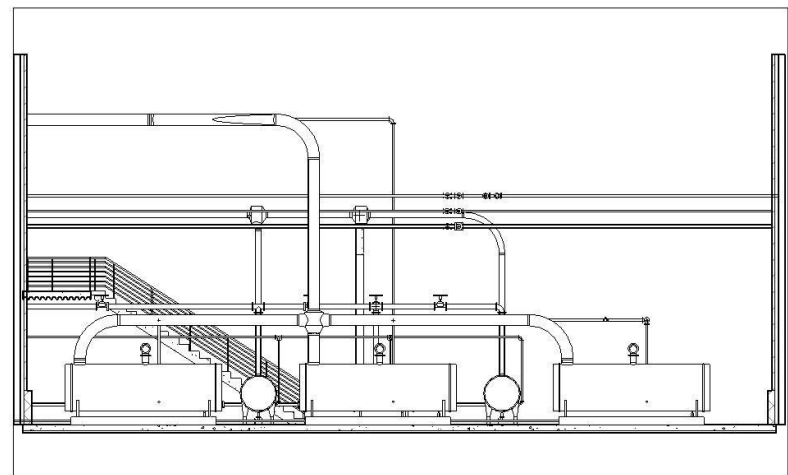
Axonometrický pohľad



Južný rezopohľad



Pohľad zhora



Severný rezopohľad

Dodávame podklady do BIM

BIM štandard: **Level 0, Level 1, Level 2** Level 3

BIM dimenzie: 2D, 3D, 4D (časový aspekt)

Level of Details (LOD):

- LOD 200 - mračno bodov existujúcich objektov, DTM, DSM
- LOD 350 - piping, zábradlie, drenáže
- LOD 500 - in situ

BIM export

- štandardizovaný formát *.ifc



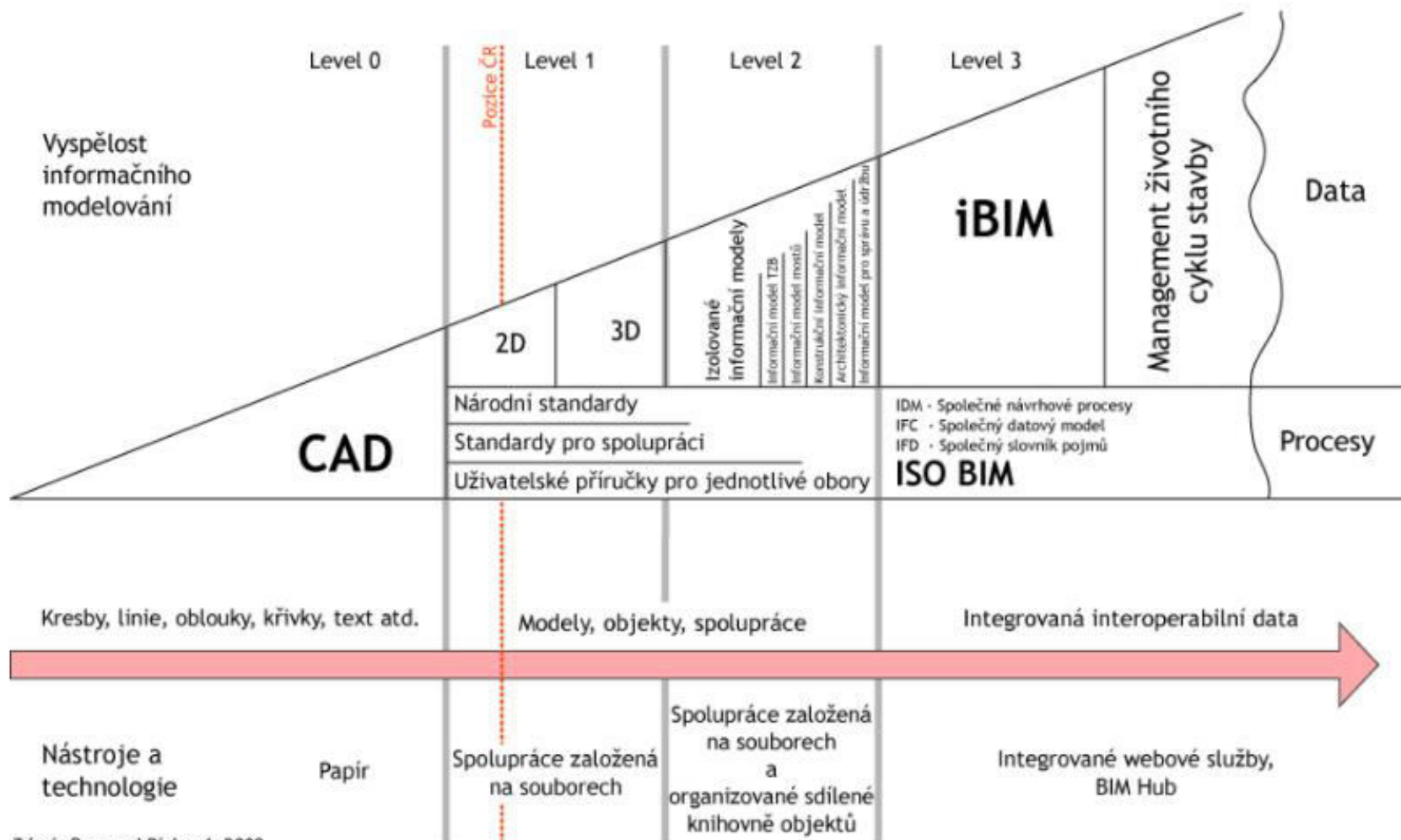
KONARSKY  PALOVIC

BIM

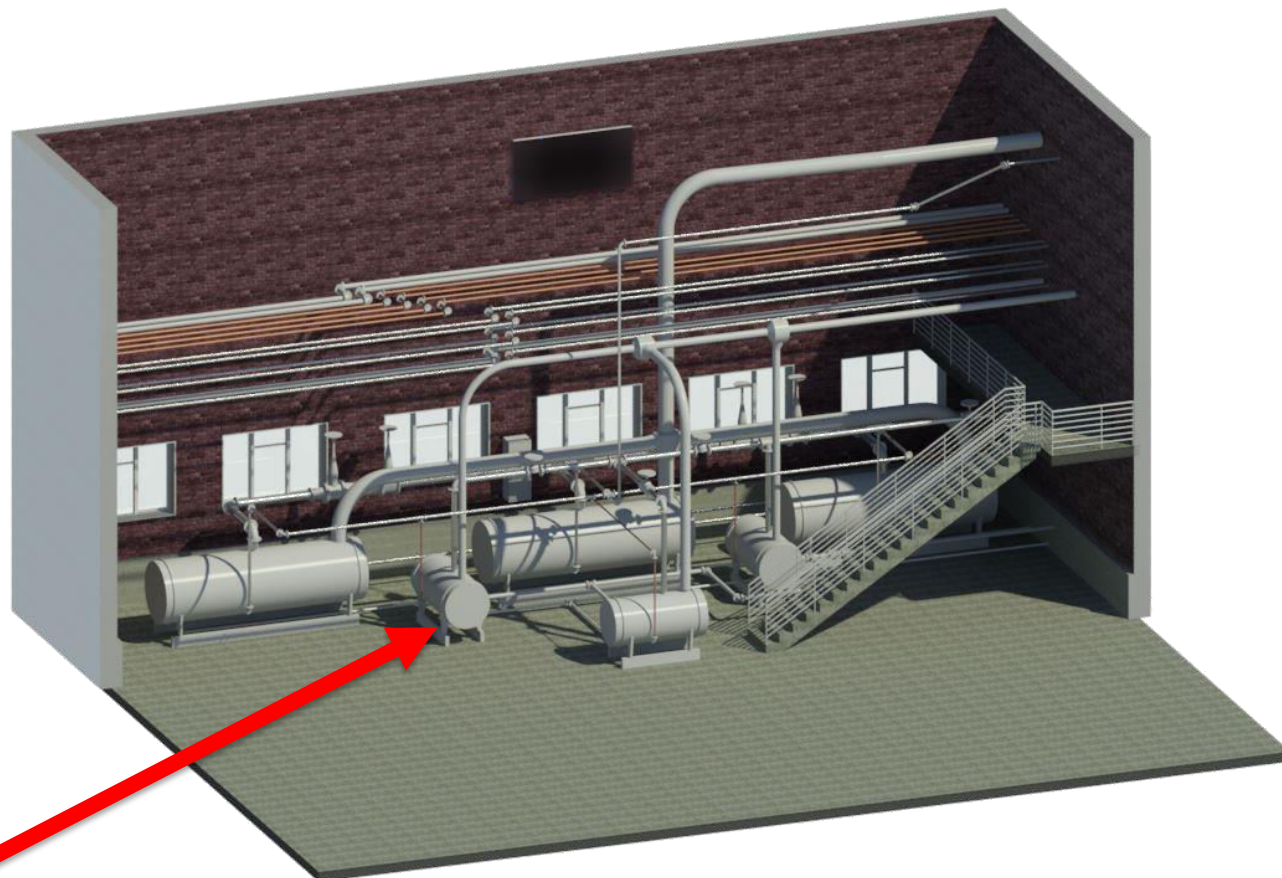
Revízia a pasportizácia objektov

BIM Level 2
LOD 500

Dodávame podklady do BIM



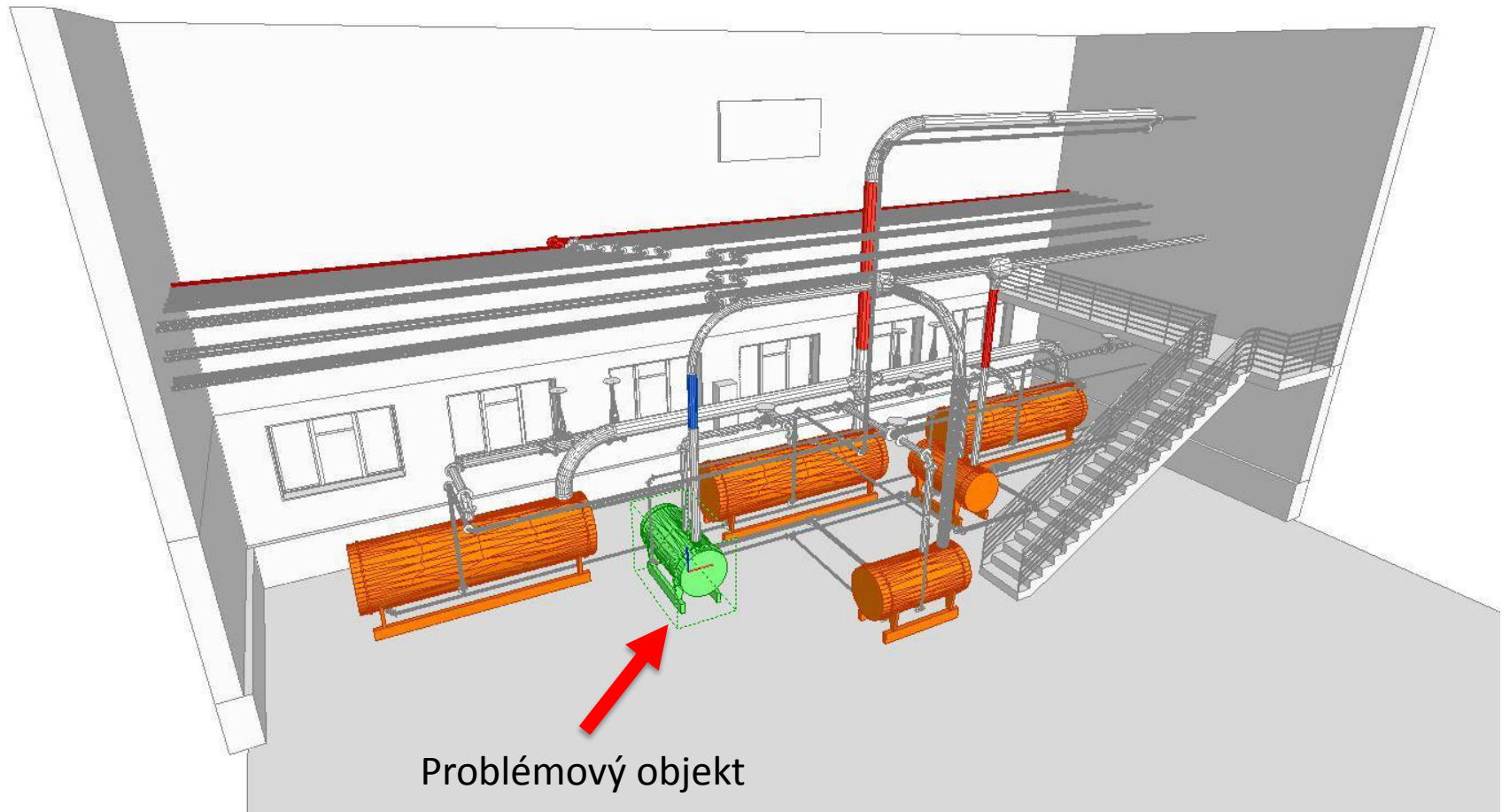
Vytvorenie BIM modelu



Problémový objekt

Revízia objektu zaznamenaná v BIM

Zobrazenie problémového objektu v BIM modeli



Revízia objektu zaznamenaná v BIM

Zistená chyba / výjazd technika



Záznam o zistenom poškodení

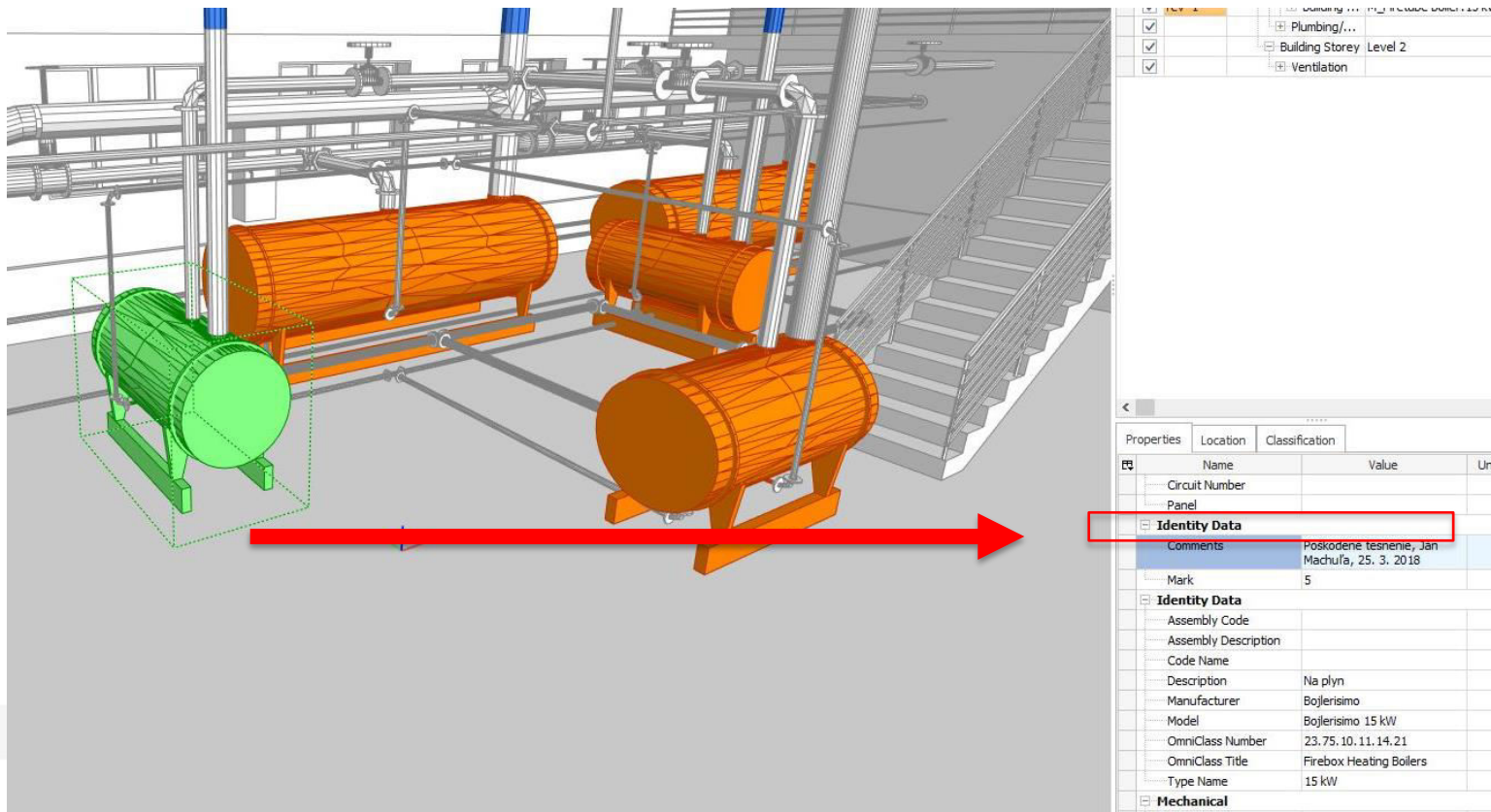


Metadáta v BIM

Name	Value	Unit
Circuit Number		
Panel		
Identity Data		
Comments	Poškodené tesnenie, Ján Machuľa, 25. 3. 2018	
Mark	5	
Identity Data		
Assembly Code		
Assembly Description		
Code Name		
Description	Na plyn	
Manufacturer	Bojlerisimo	
Model	Bojlerisimo 15 kW	
OmniClass Number	23.75.10.11.14.21	
OmniClass Title	Firebox Heating Boilers	
Type Name	15 kW	
Mechanical		

Revízia objektu zaznamenaná v BIM

Detail



Zapísaný problém do metaúdajov modelu objektu

Oprava objektu zaznamenaná v BIM

Výjazd odborníka a oprava objektu

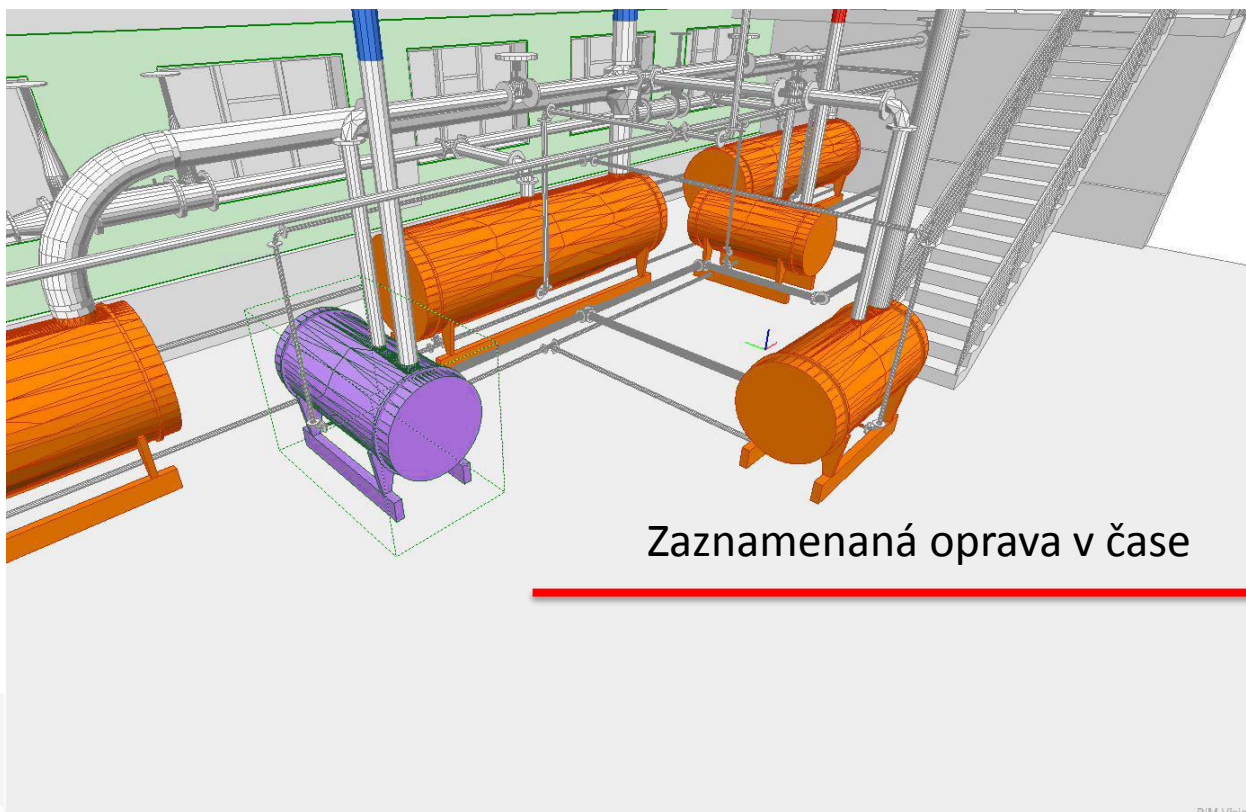


Protokol o oprave



Name	Value	Unit
Identity Data		
Comments	Oprava tesnenia, Štefan Šedivý, 25. 5. 2018	
Mark	6	
Identity Data		
Assembly Code		
Assembly Description		
Code Name		
Description	Na plyn	
Manufacturer	Bojlerisimo	
Model	Bojlerisimo 15 kW	
OmniClass Number	23.75.10.11.14.21	
OmniClass Title	Firebox Heating Boilers	
Type Name	15 kW	
Mechanical		
Exhaust Air Flow	0	
Gas Flow	0	

Oprava objektu zaznamenaná v BIM



Name	Value	Unit
Identity Data		
Comments	Oprava tesnenia, Štefan Sedivý, 25. 5. 2018	
Mark	6	
Identity Data		
Assembly Code		
Assembly Description		
Code Name		
Description	Na plyn	
Manufacturer	Bojlerisimo	
Model	Bojlerisimo 15 kW	
OmniClass Number	23.75.10.11.14.21	
OmniClass Title	Firebox Heating Boilers	
Type Name	15 kW	
Mechanical		
Exhaust Air Flow	0	
Gas Flow	0	

- Not Modified
- Removed
- Materials
- Modified (old)
- Added
- Properties
- Modified (new)

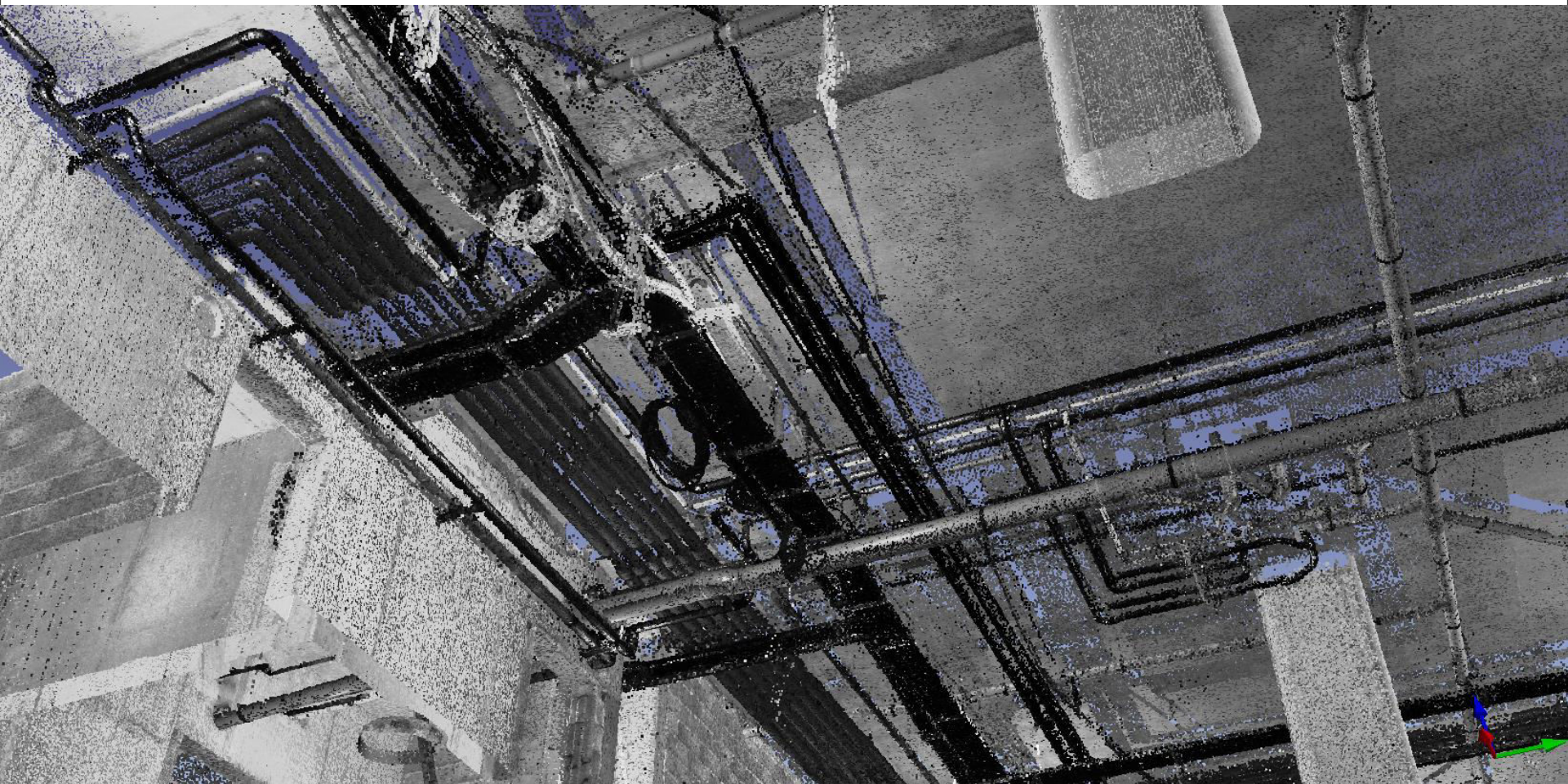
Online přístup do systému BIM pre všetky profesie



Rafinéria

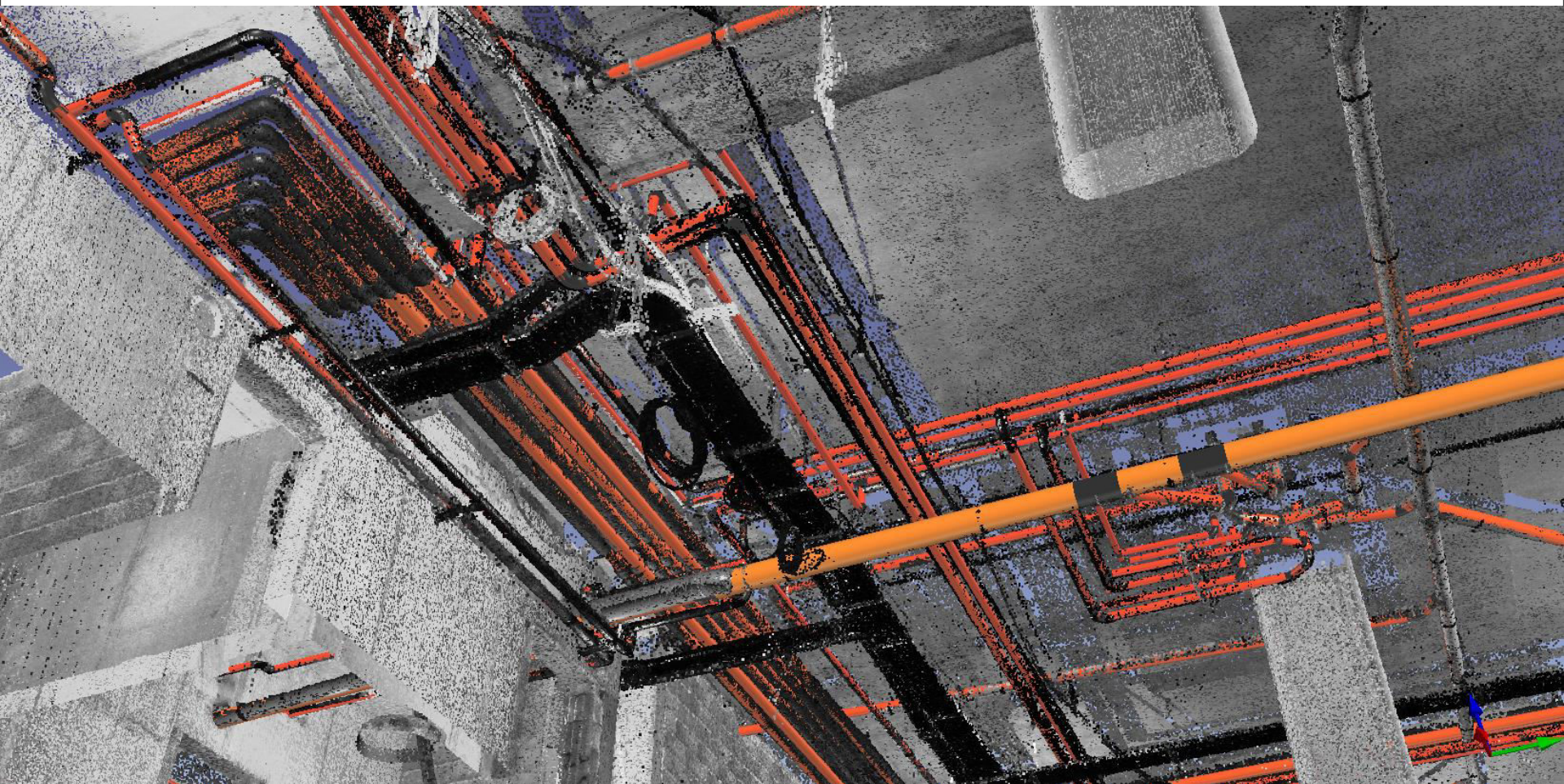
Skenovanie priestorov

Príklad projektu - pointcloud

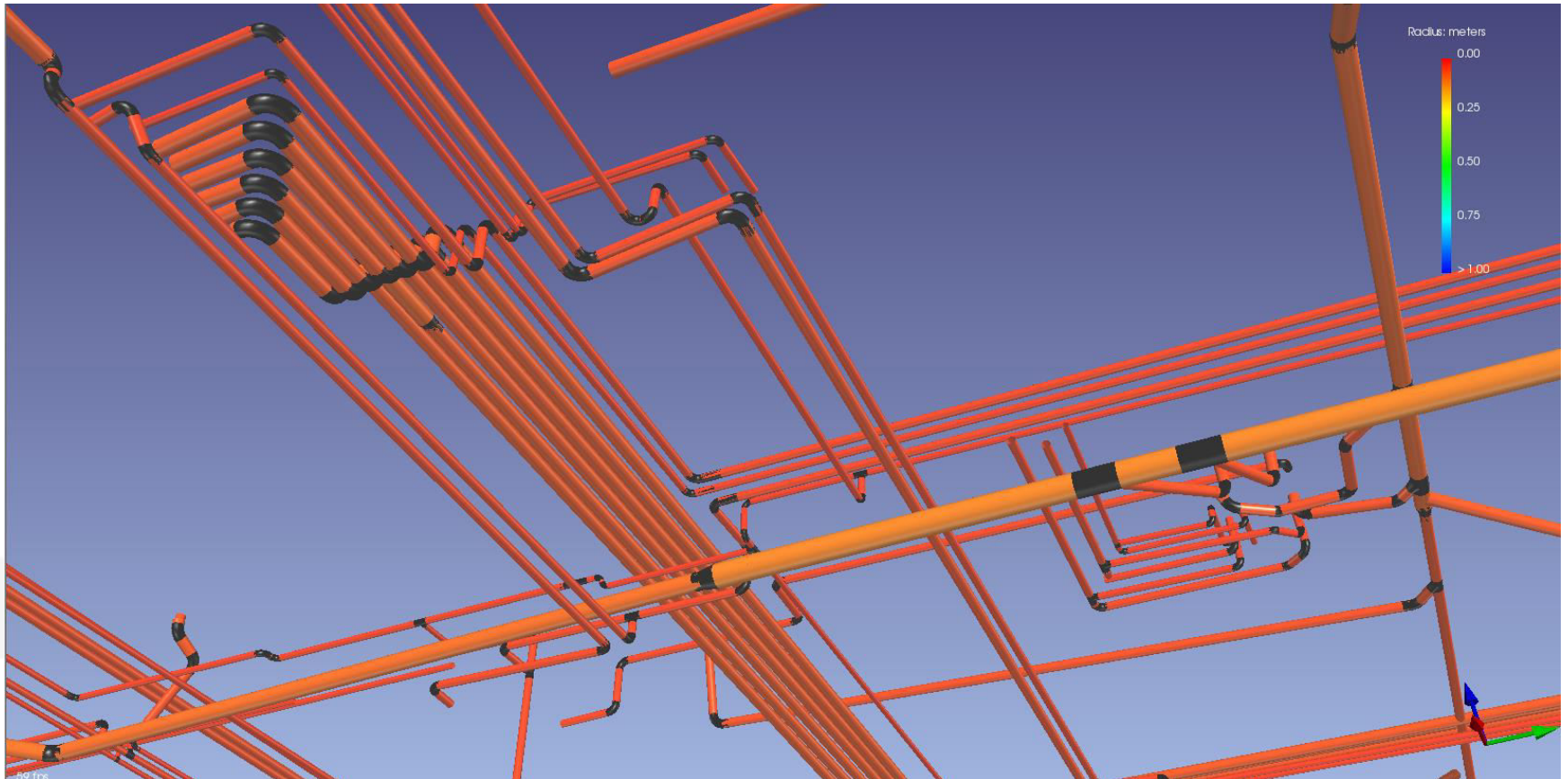


Skenovanie priestorov

Príklad projektu – vysokotlakové rúry



ISO štandardy – 3D model





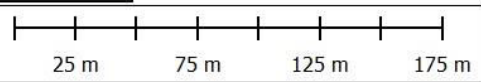
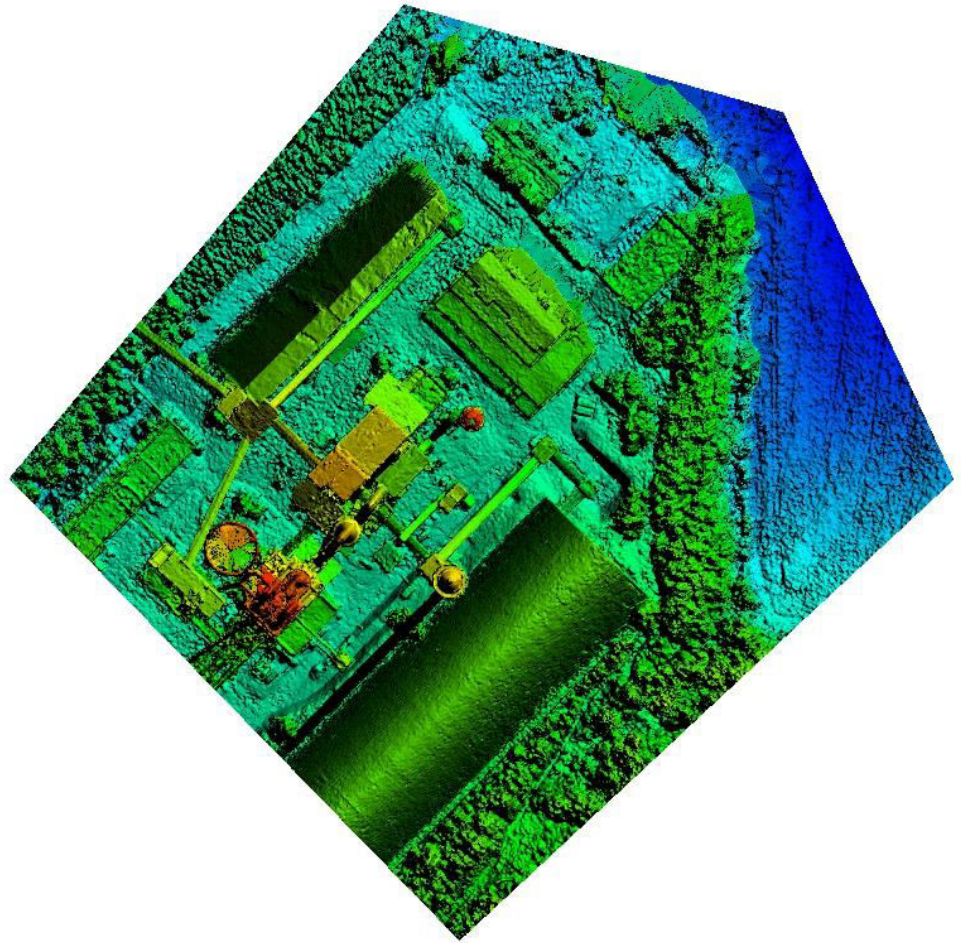
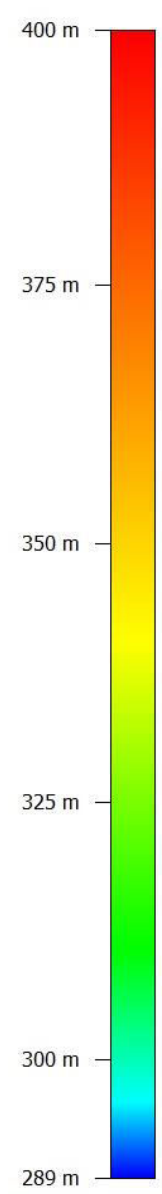
Cementáreň

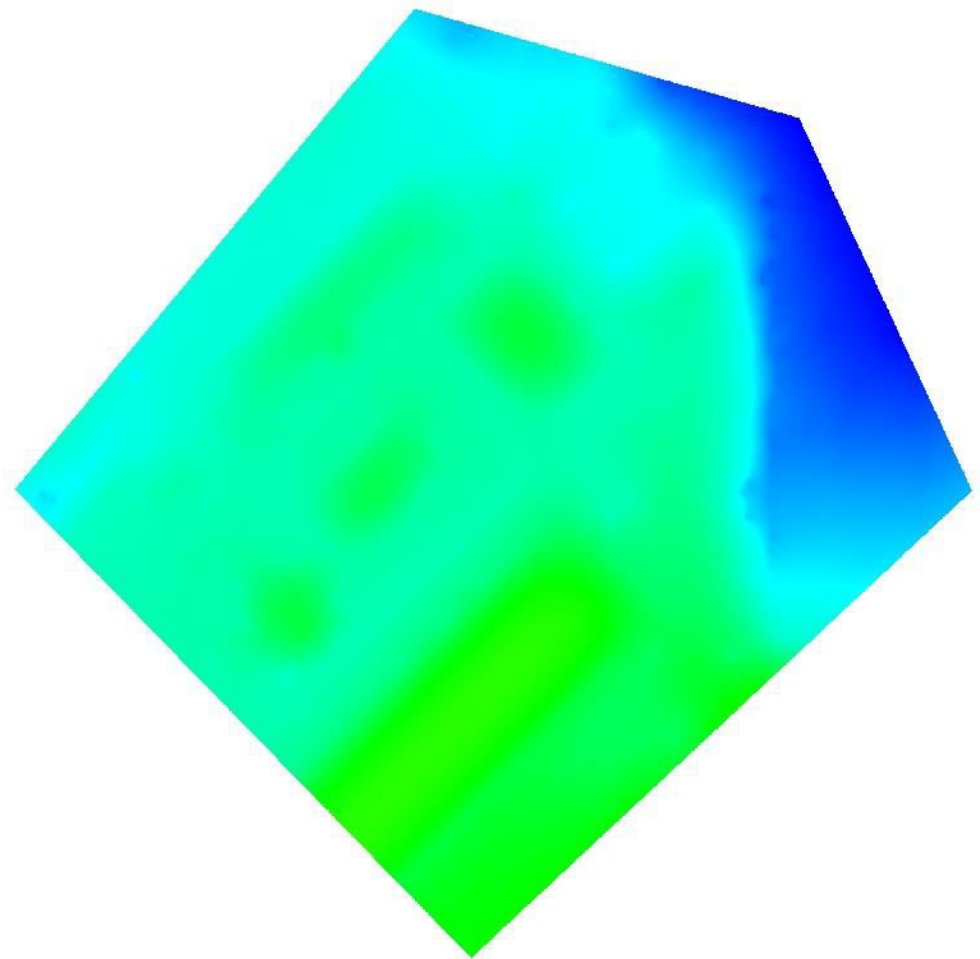
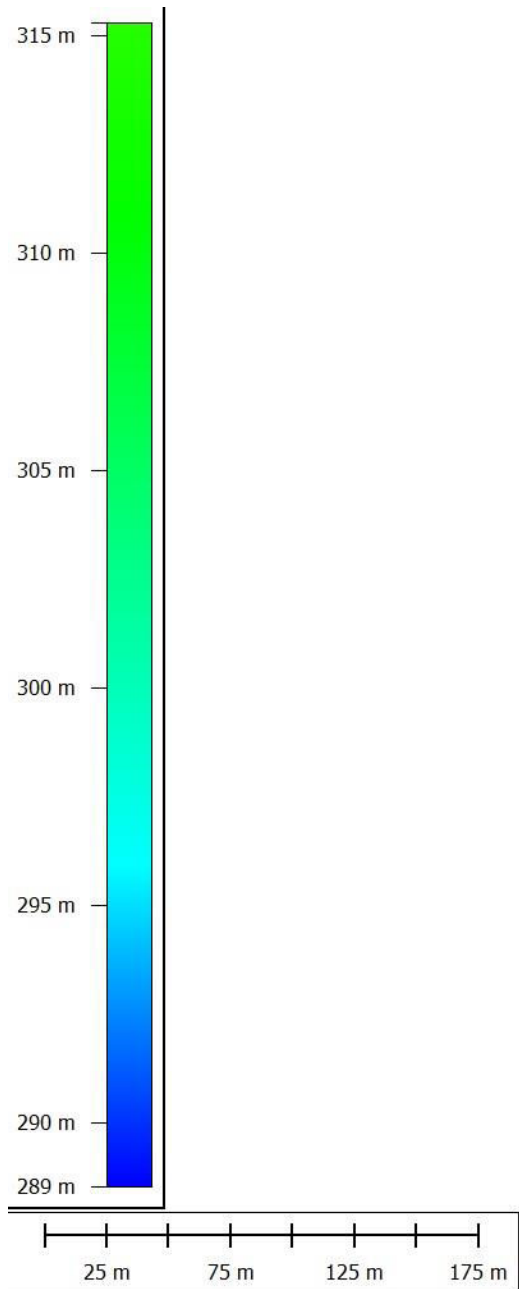


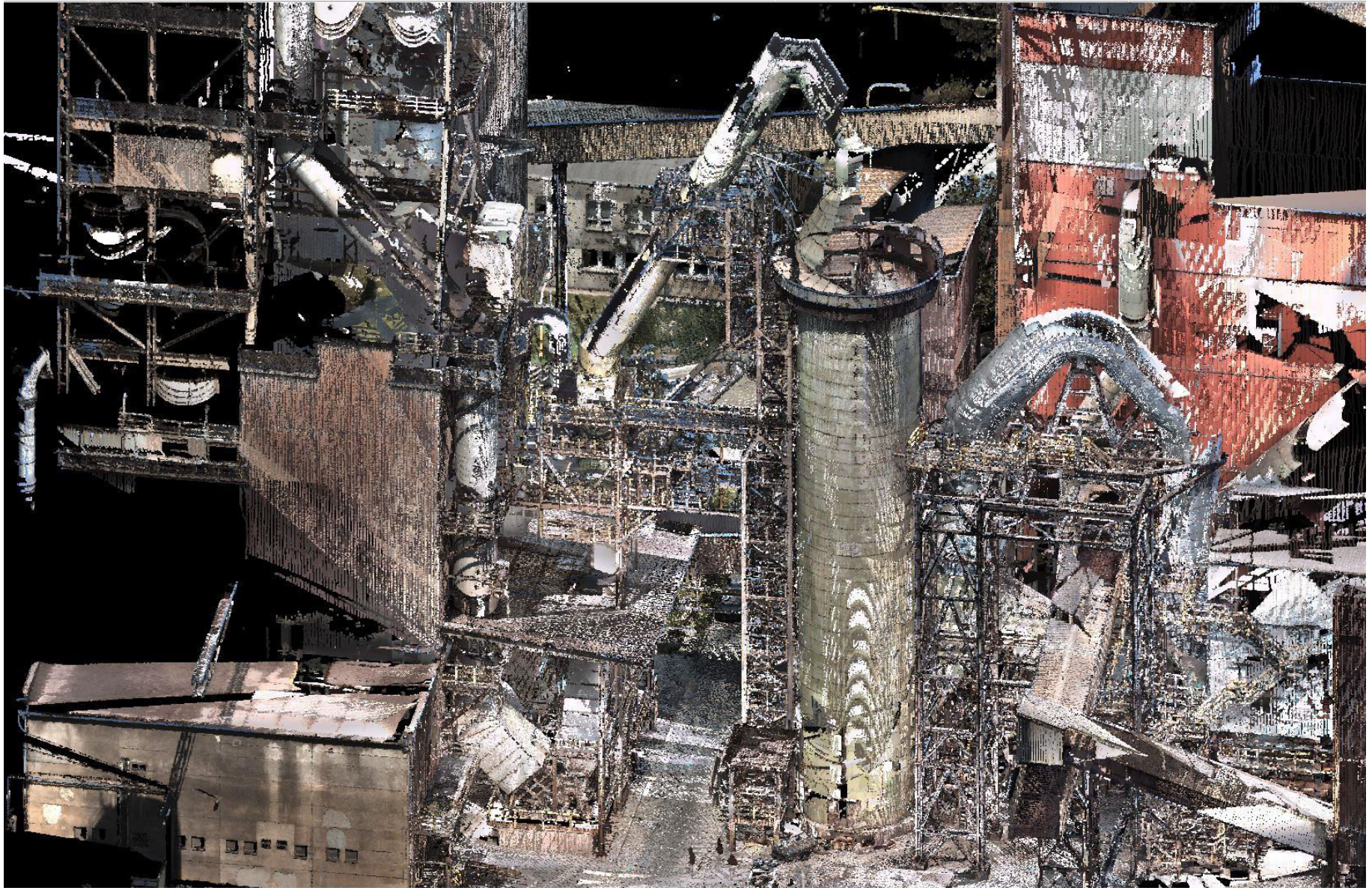
Ortomozaika - Hranice cementáreň

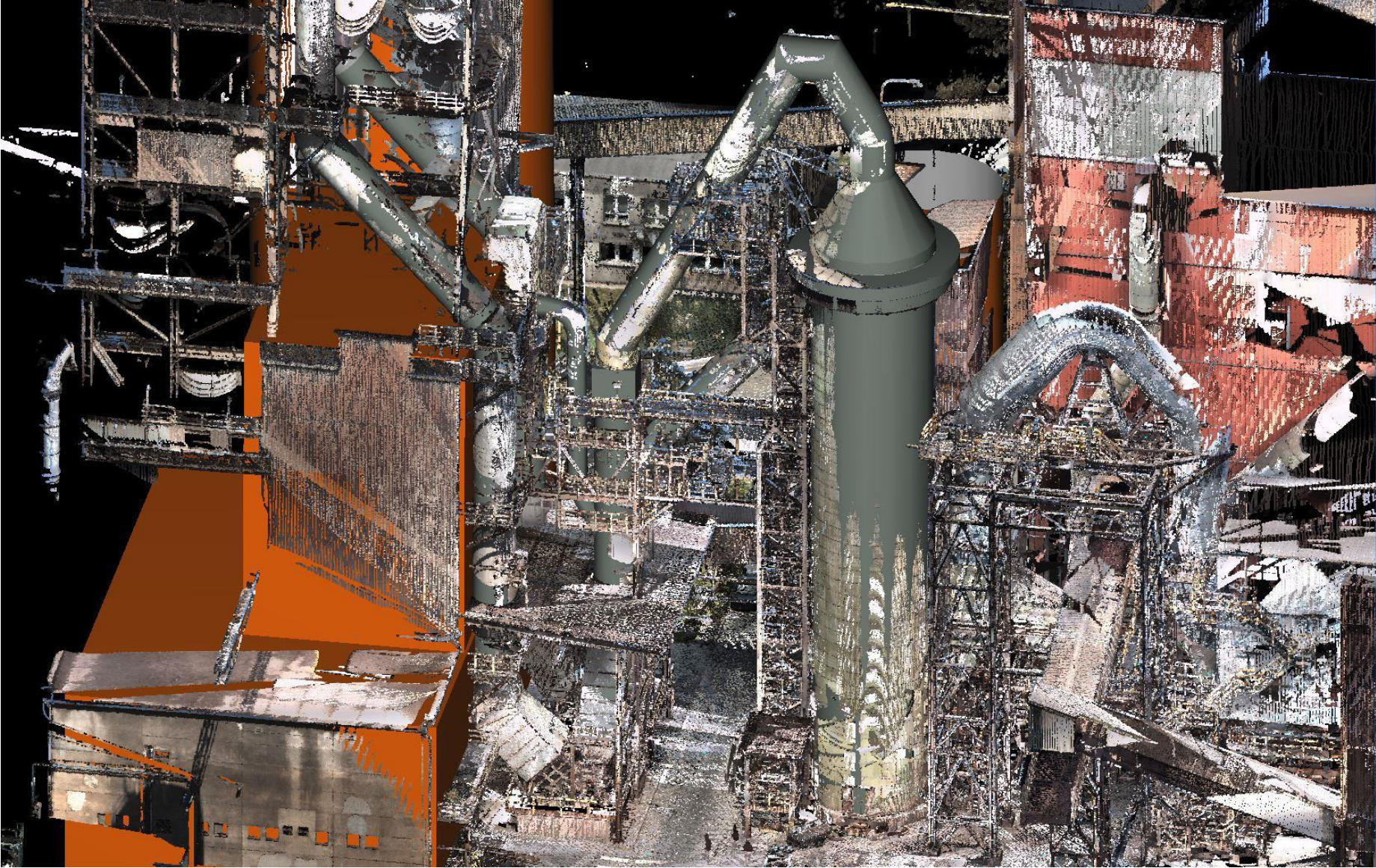


Mierka 1:1500

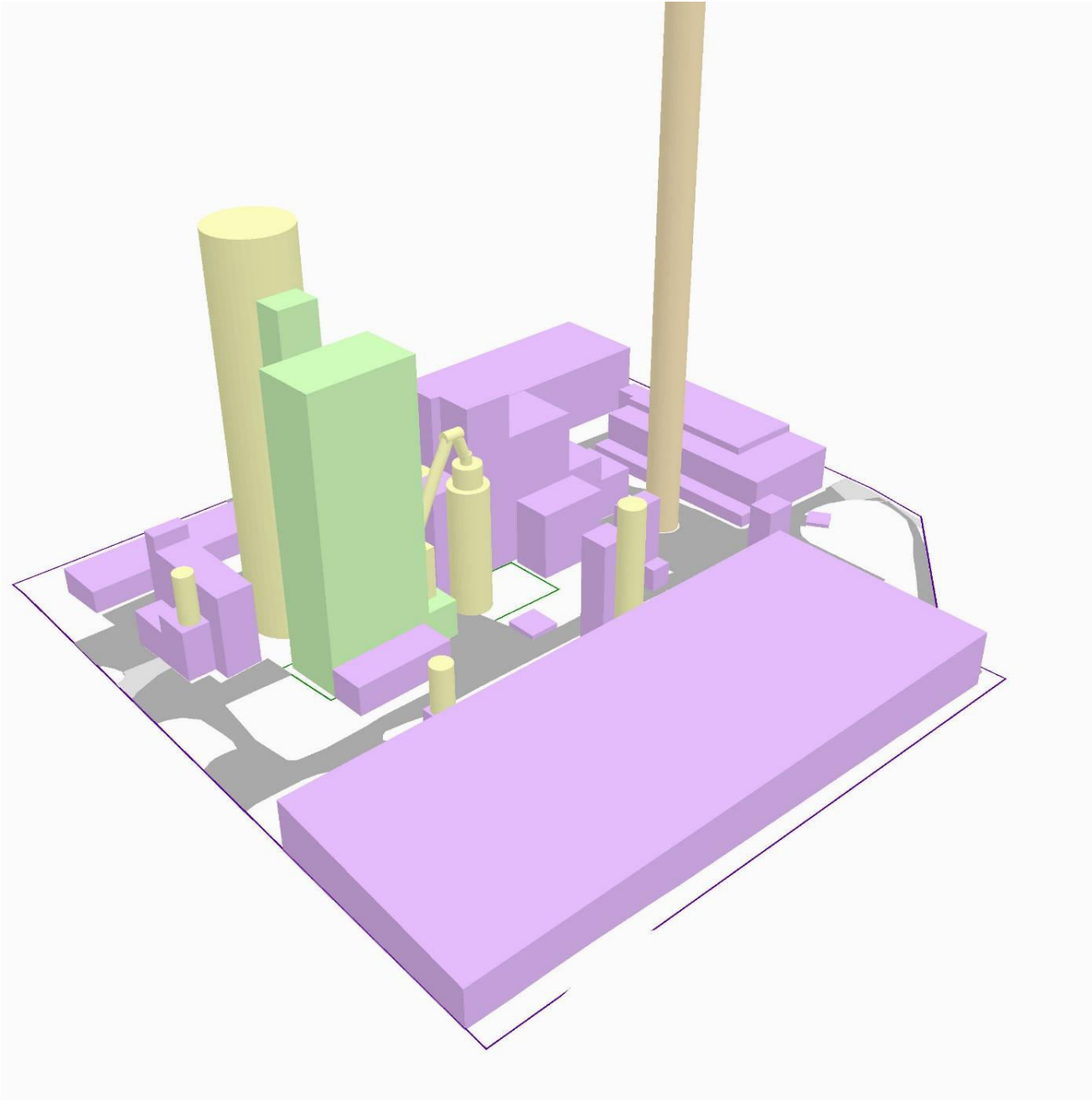


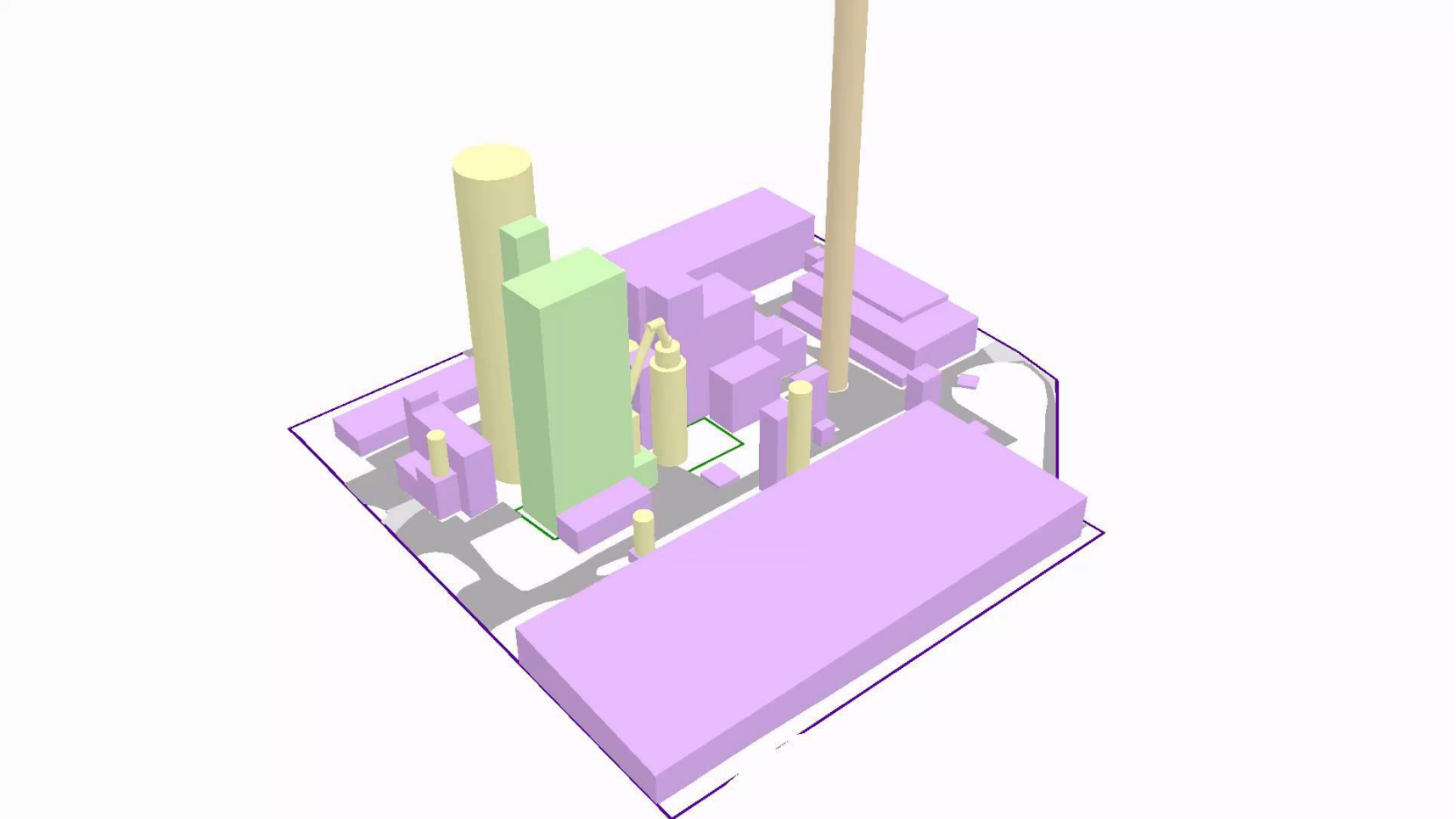




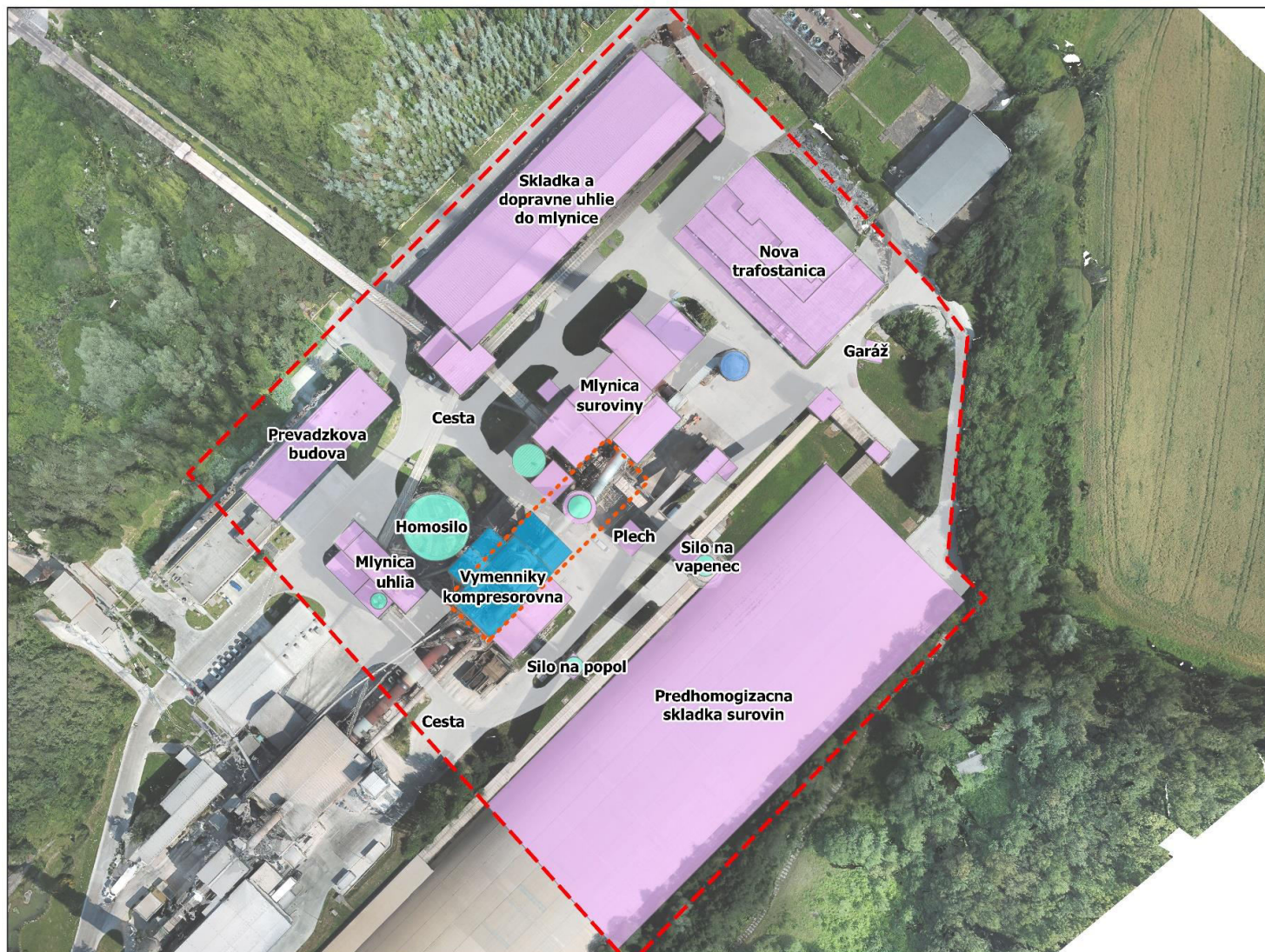






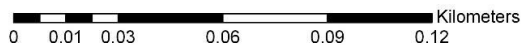


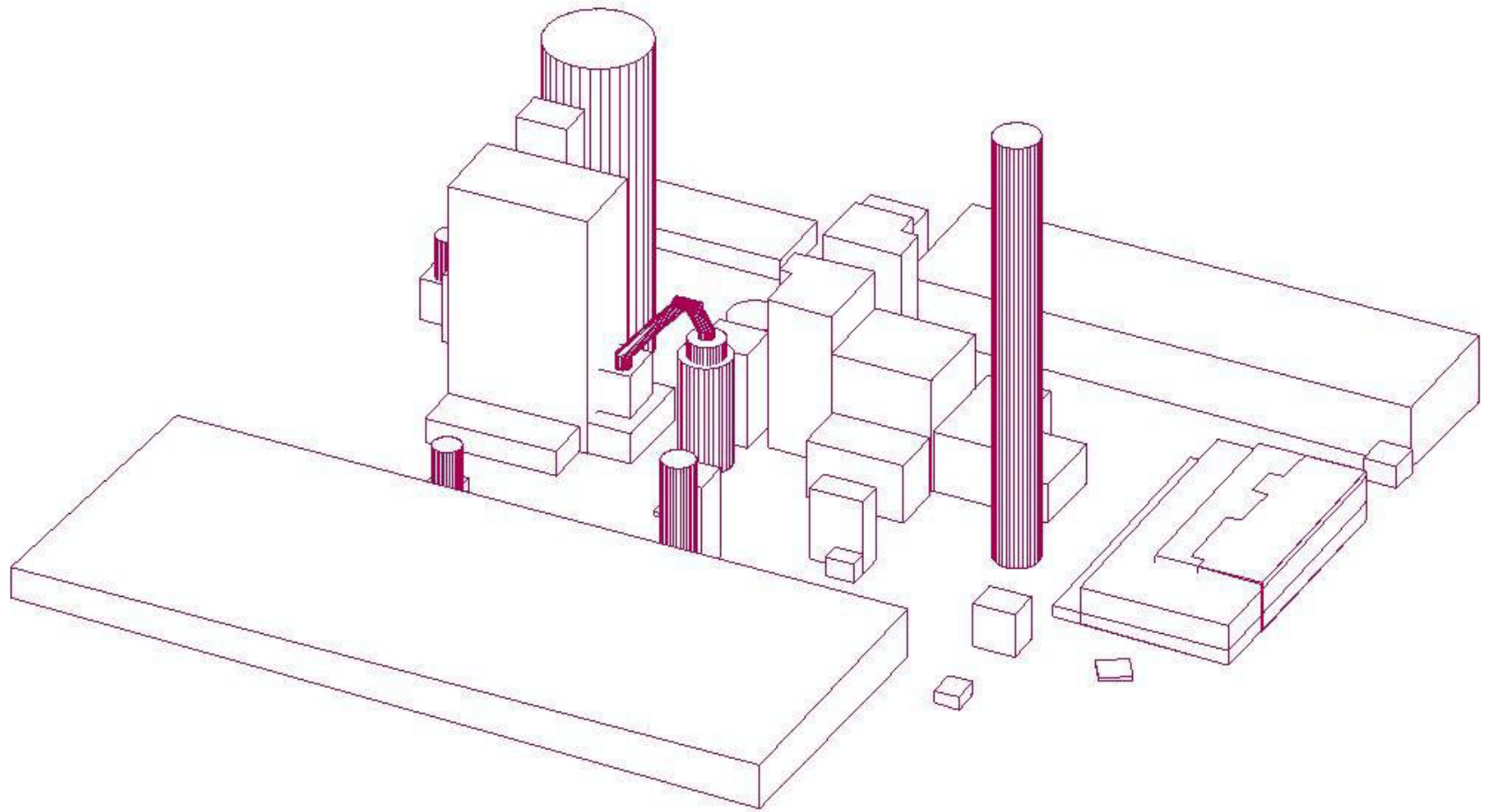
Širšie vzťahy - Hranice cementáreň

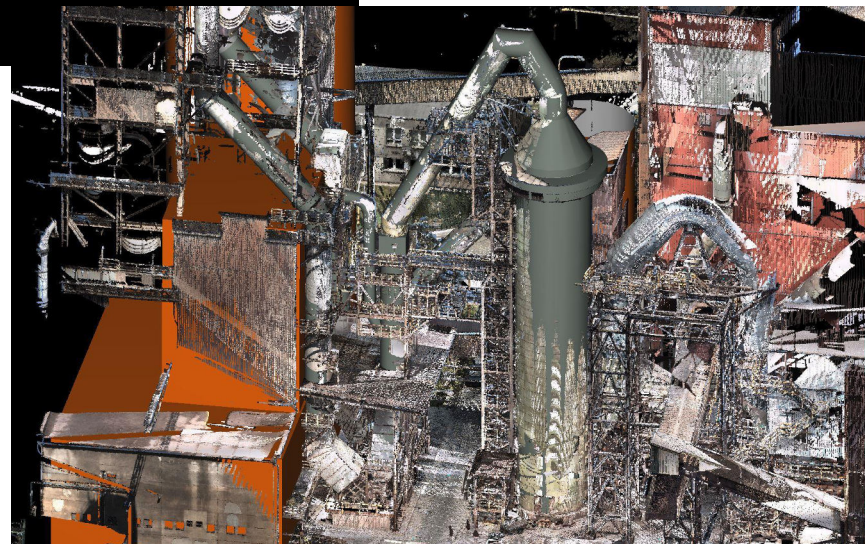
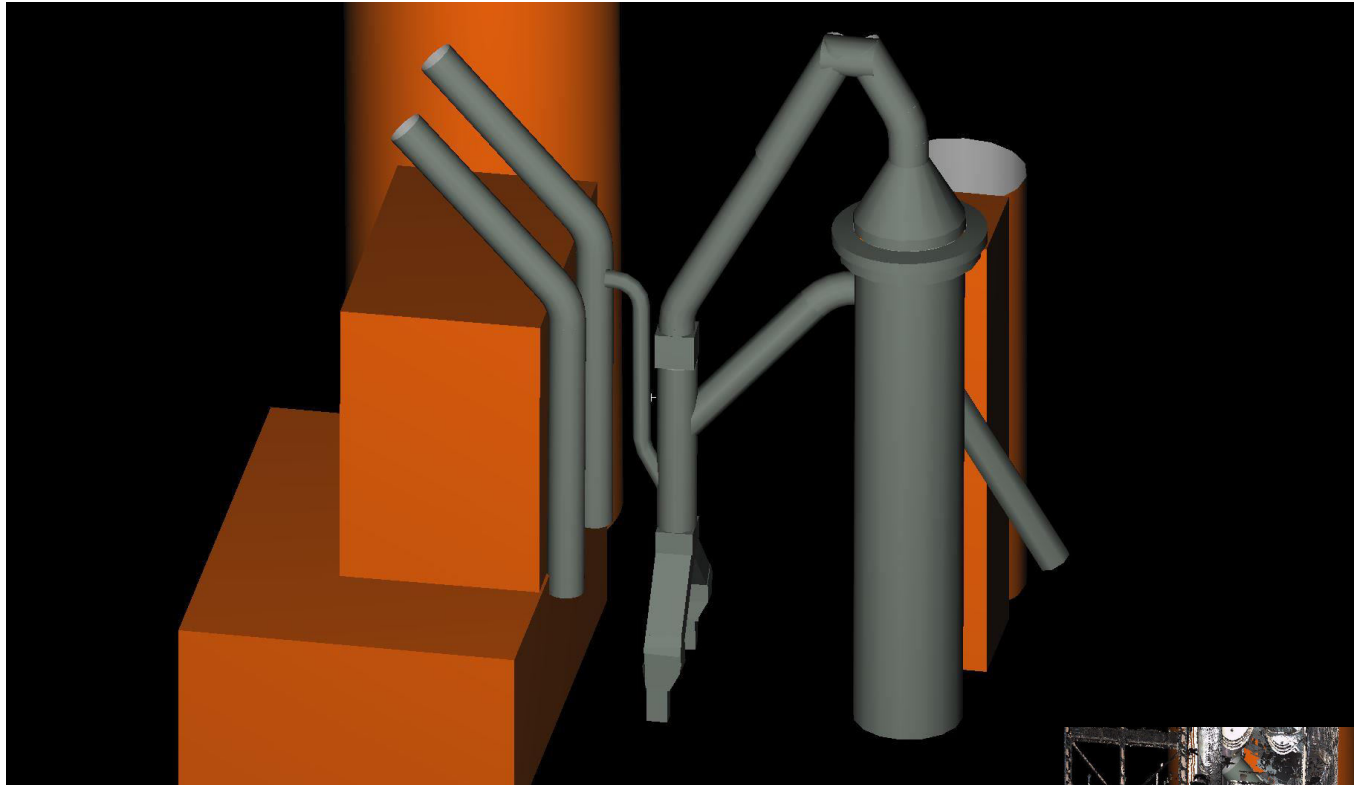


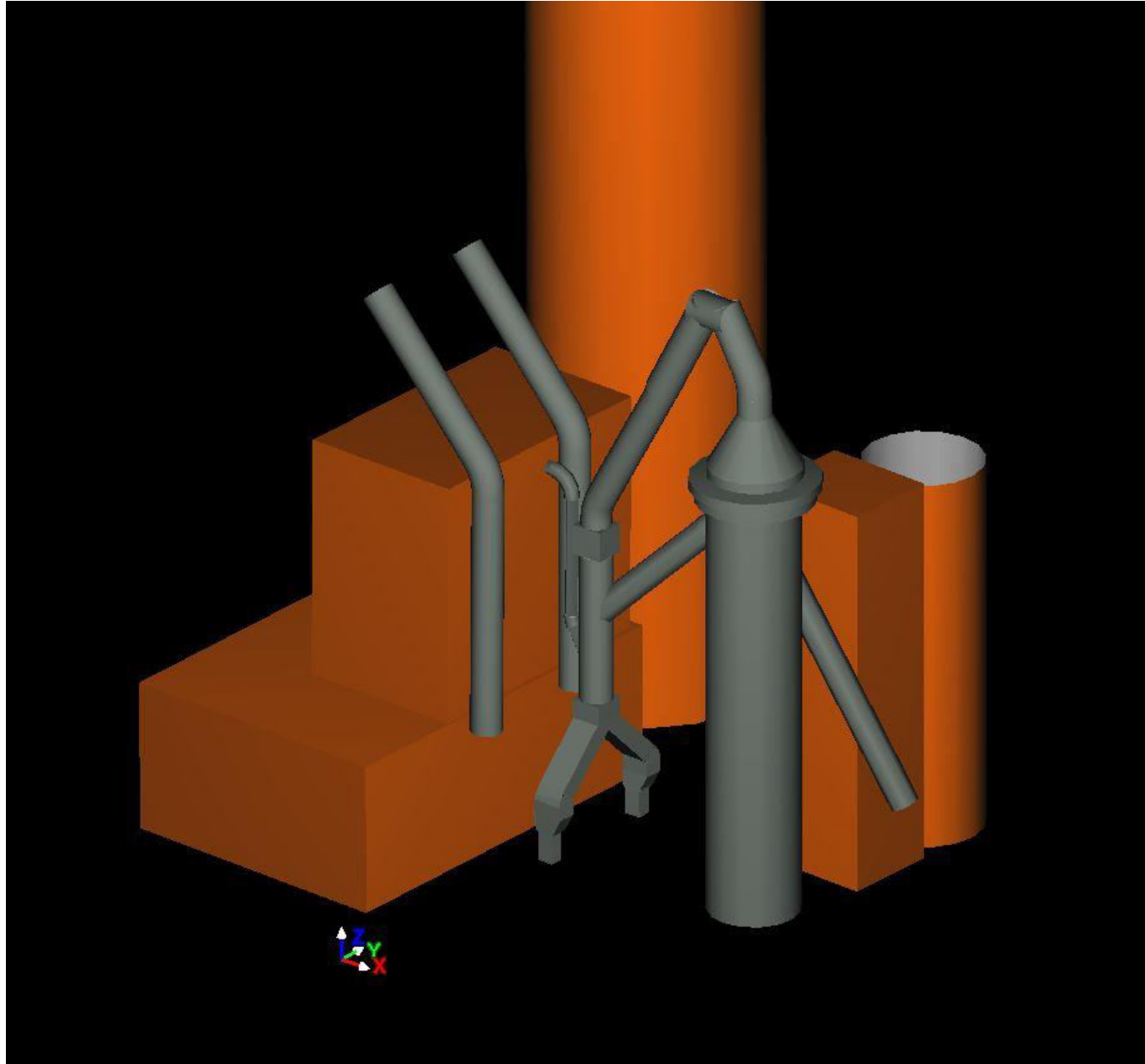
- Legend**
-  Area of interest
 -  Area
- Objekty**
- type
-  building
 -  construction
 -  tank
 -  tower
 -  road

Mierka 1:1200









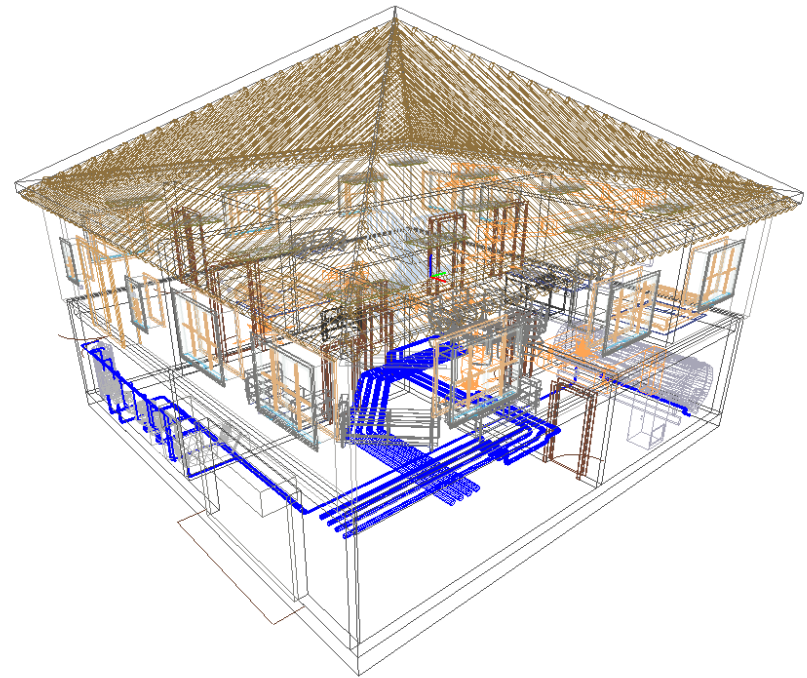


Ďalšie využitie BIM

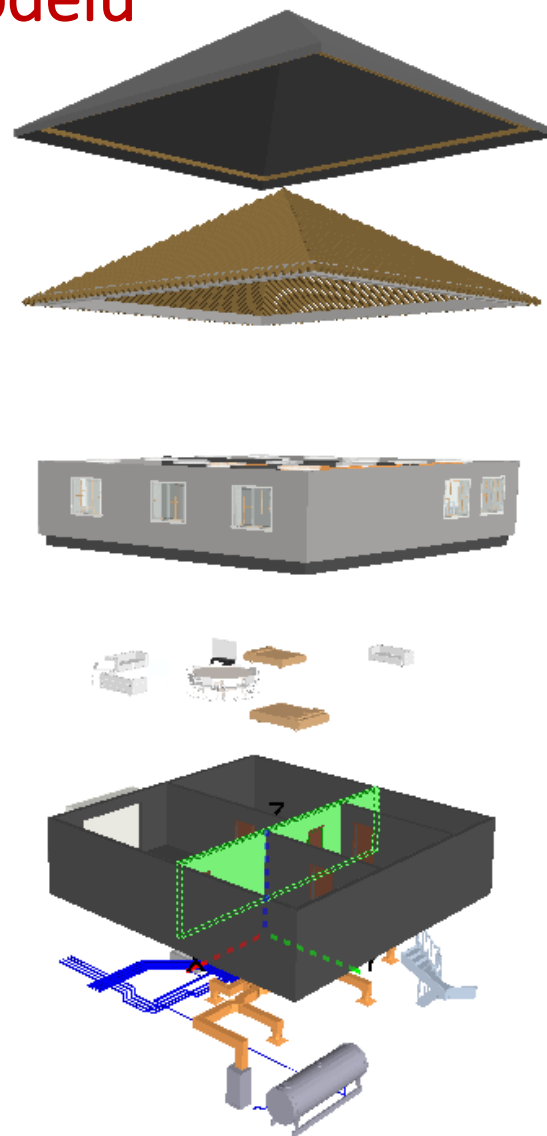
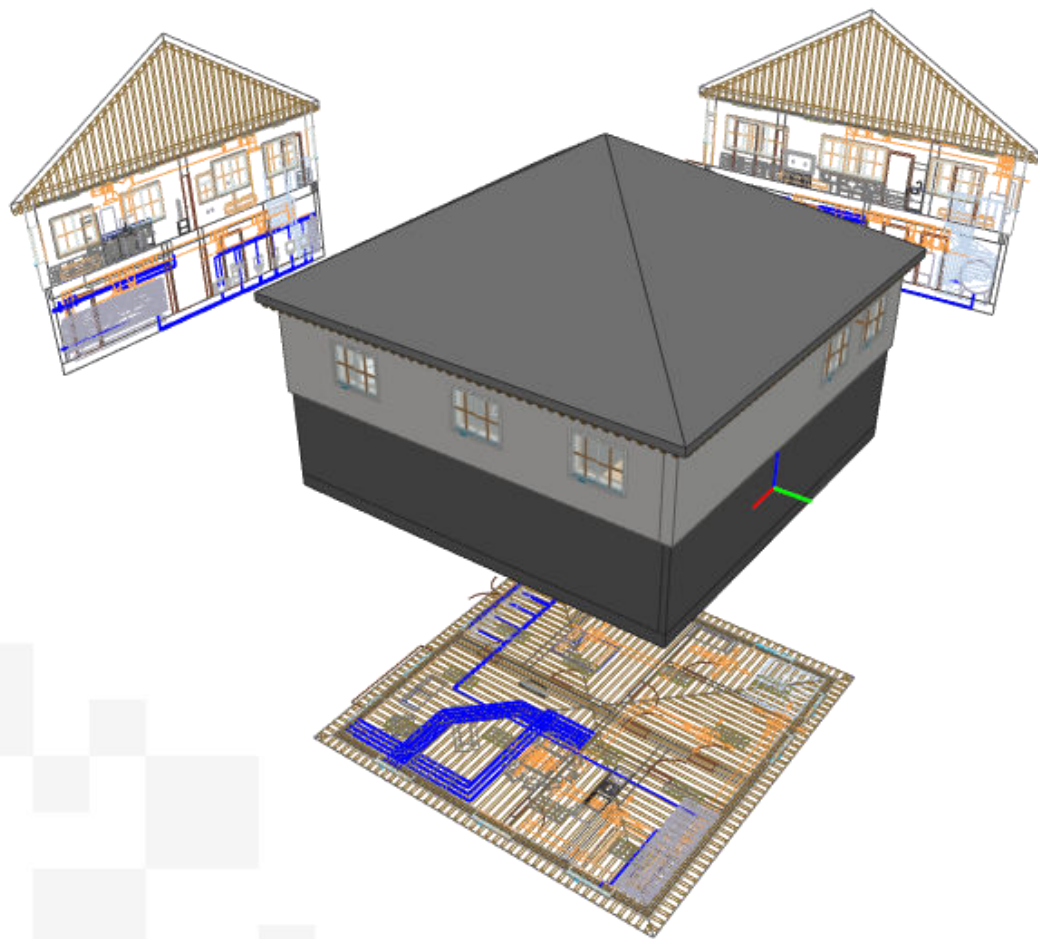
Ďalšie možnosti využitia BIM

- Pasportizácia objektov
- Správa bezpečnostných jednotiek
- Navigácia v budovách
- Informácie o dimenziách objektov
- ...

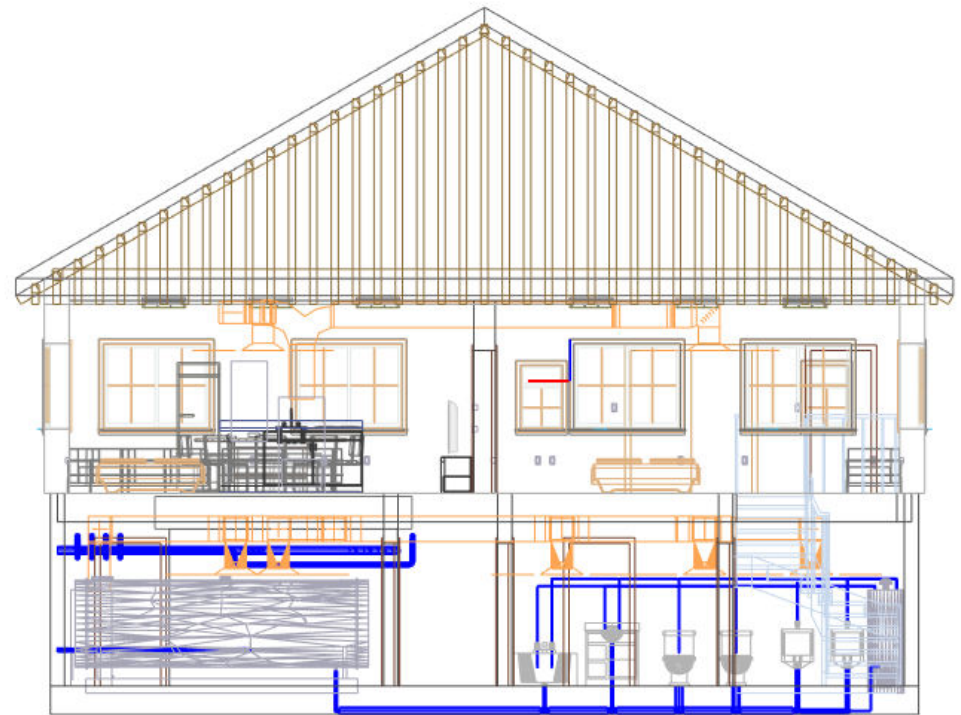
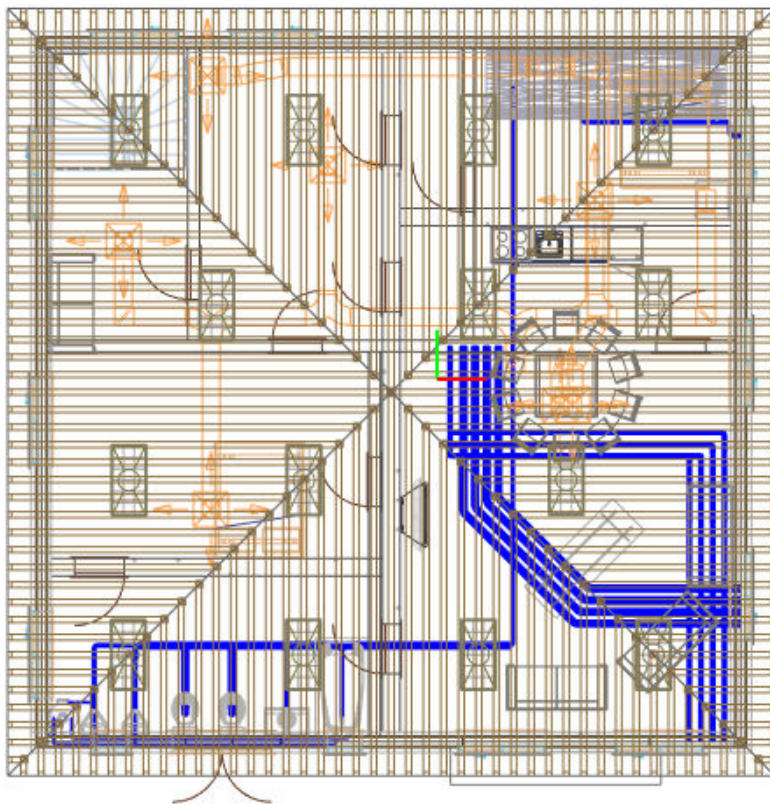
BIM Model



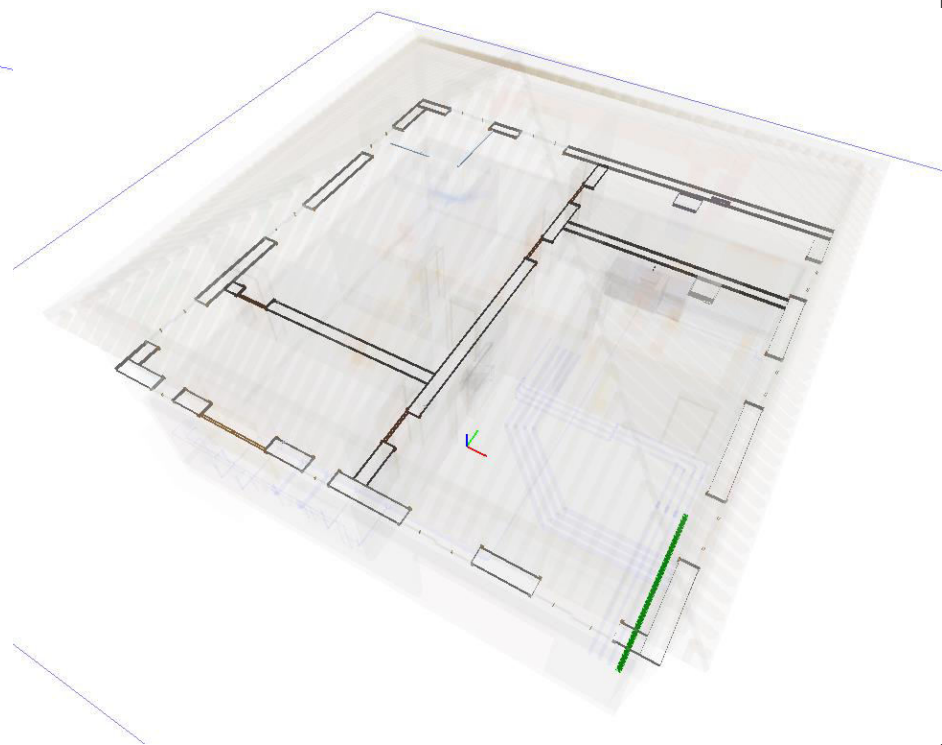
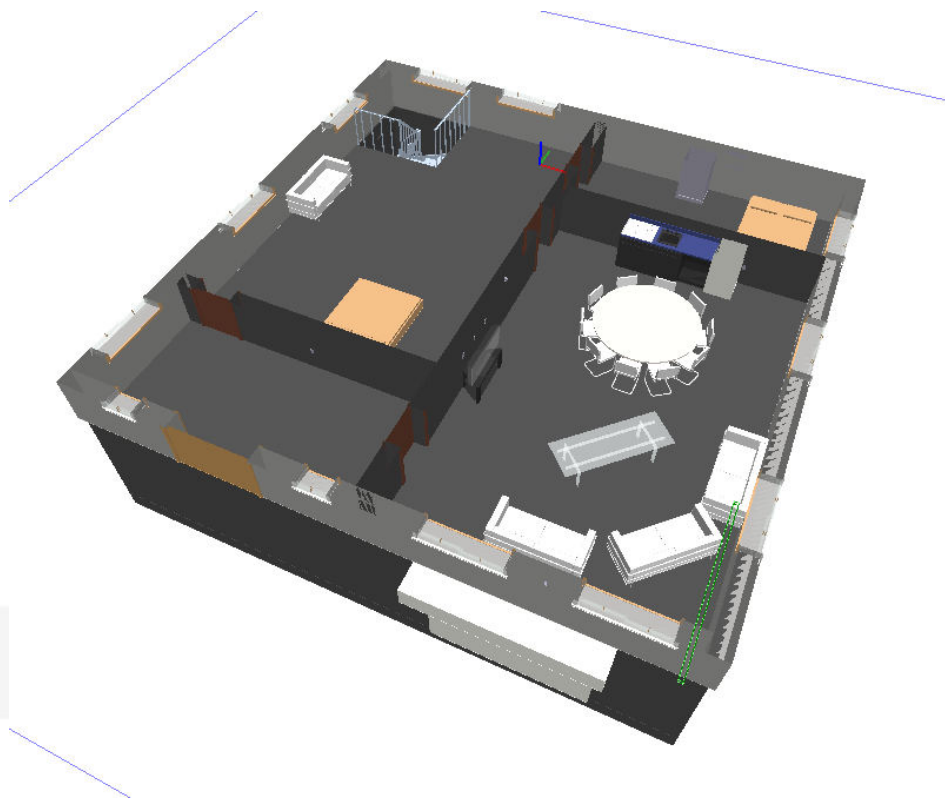
Pohľady a vrstvy modelu



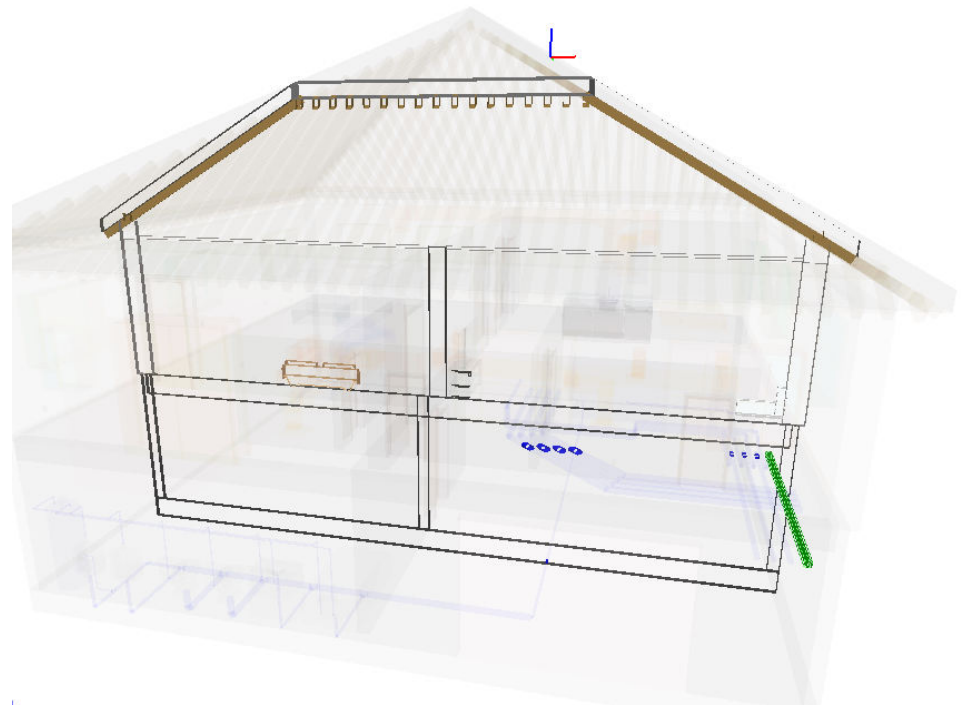
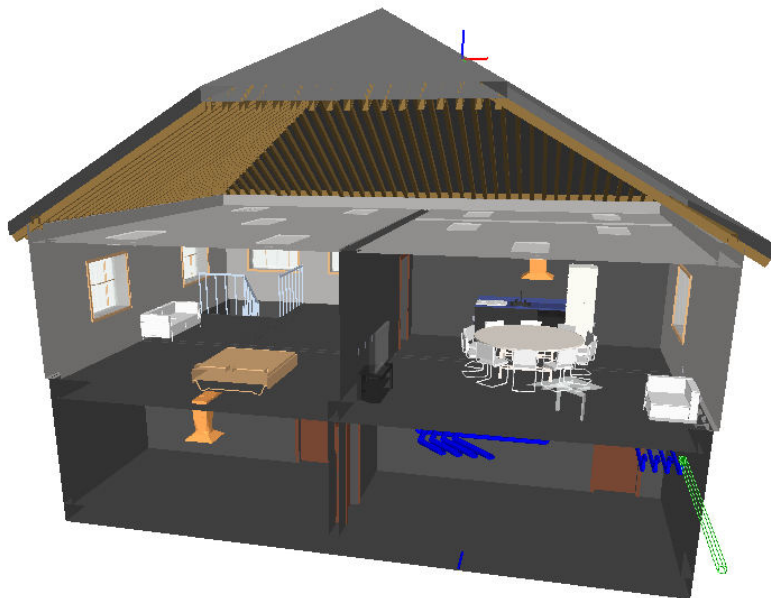
Pohľady a vrstvy modelu



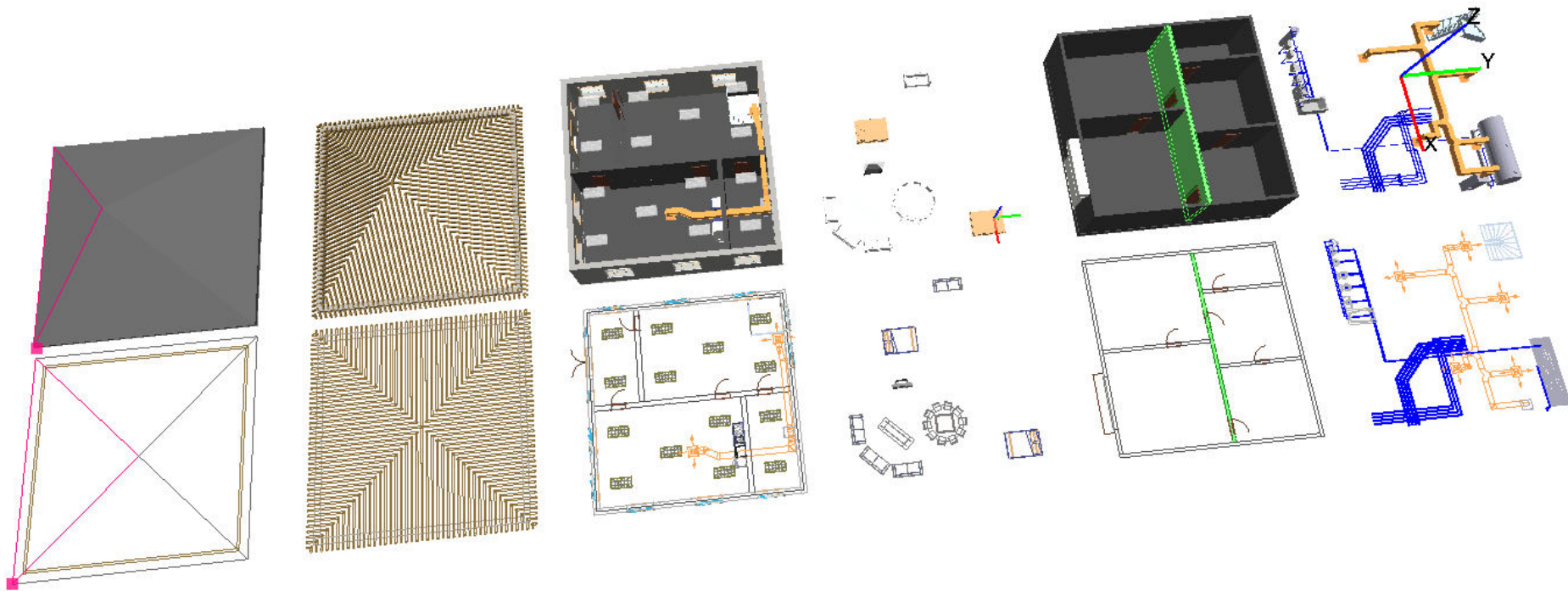
Rezy modelom - infraštruktúra



Rezy modelom - infraštruktúra



Rezy modelom – segmentácia profesií



Metadáta – správca objektov

Príklad projektu - pointcloud

Name	Value	Unit
..... Circuit Number		
..... Panel		
Identity Data		
..... Comments	Poškodené tesnenie, Ján Machuľa, 25. 3. 2018	
..... Mark	5	
Identity Data		
..... Assembly Code		
..... Assembly Description		
..... Code Name		
..... Description	Na plyn	
..... Manufacturer	Bojlerisimo	
..... Model	Bojlerisimo 15 kW	
..... OmniClass Number	23.75.10.11.14.21	
..... OmniClass Title	Firebox Heating Boilers	
..... Type Name	15 kW	
Mechanical		

Name	Value	Unit
Identity Data		
..... Comments	Oprava tesnenia, Štefan Šedivý, 25. 5. 2018	
..... Mark	6	
Identity Data		
..... Assembly Code		
..... Assembly Description		
..... Code Name		
..... Description	Na plyn	
..... Manufacturer	Bojlerisimo	
..... Model	Bojlerisimo 15 kW	
..... OmniClass Number	23.75.10.11.14.21	
..... OmniClass Title	Firebox Heating Boilers	
..... Type Name	15 kW	
Mechanical		
..... Exhaust Air Flow	0	
..... Gas Flow	0	



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Ďakujem
za pozornosť