



E&PM Bergen Op Zoom

Front End Engineering Design (FEED) Civil/Structural

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SABIC Process Engineer						
SABIC PM (E&PM)		■■■■ ■■■■■■				
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	Site Projects Europe Region	Rev. No.:	B	Date:	11 Oct 2023
	Front End Engineering Design (FEED)	Affiliate:			
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1 PROJECT SUMMARY

1.1 Objectives & Justification

Tightened European and Dutch legislation on permissible limits for dust exposure require additional technical measures for certain raw materials. All raw and intermediate materials have been assessed by EHS department, and maximum thresholds have been specified.

There are several locations where potentially dust exposure can occur, such as during the weighing process in the formulation room, manual addition of raw materials to the blenders, big bag emptying to bins and during operation of the loss in weight feeders.

The issues concerning the formulation room have been addressed in a separate project which has been executed and the down flow booth is operational.

The scope of this project is to mitigate the dust exposure in the Lexan finishing plant in following areas: the blenders, loss in weight feeders and all hoppers and bins where powders are processed. Including the FIBC unloading stations of L18 and L19, where glass fibers are handled.

Implementing dust extraction on existing equipment pose additional challenges amongst dust tightness and machinery directive requirements. All required changes related to this equipment to achieve a dust tight system are part of this project scope.

Currently the feeders are washed out with water, which in some cases generate dust clouds. To eliminate the requirement of using a lot of water, a (central) vacuum cleaning system located at the LWF mezzanine is foreseen as well.

SABIC received a Notice of Violation (NOV) in 2019 with an associated penalty (inspectie SZW, dated 22-10-2020). This NOV was related to (proven) carcinogenic, mutagenic, reprotoxic chemicals (not the case for this project) and did not include explicit notes on the dust exposure as a result of these activities. Nevertheless, legally the principles of the hierarchy of controls (in Dutch: STOP principle) have to be applied, and as a result of the focus of the authorities on this matter there would be a "high potential to non-compliance" as well as higher penalties (High Business Impact) if the project would not be executed.

Project timeline (execution in 2024) has been communicated with the authorities.

Objective is to implement a technical solution that avoids the requirement of wearing respiratory protection and to minimize release of dust outside the process equipment.

2 PROJECT SCOPE

2.1 Overview of scope

- Piled foundation for new filters and blower
- Stelcon plates for access to big bags and valves
- Supporting steel for piping
- Access platform to measurements in exhausts
- Wall, floor and roof penetrations
- Connection to process sewer water

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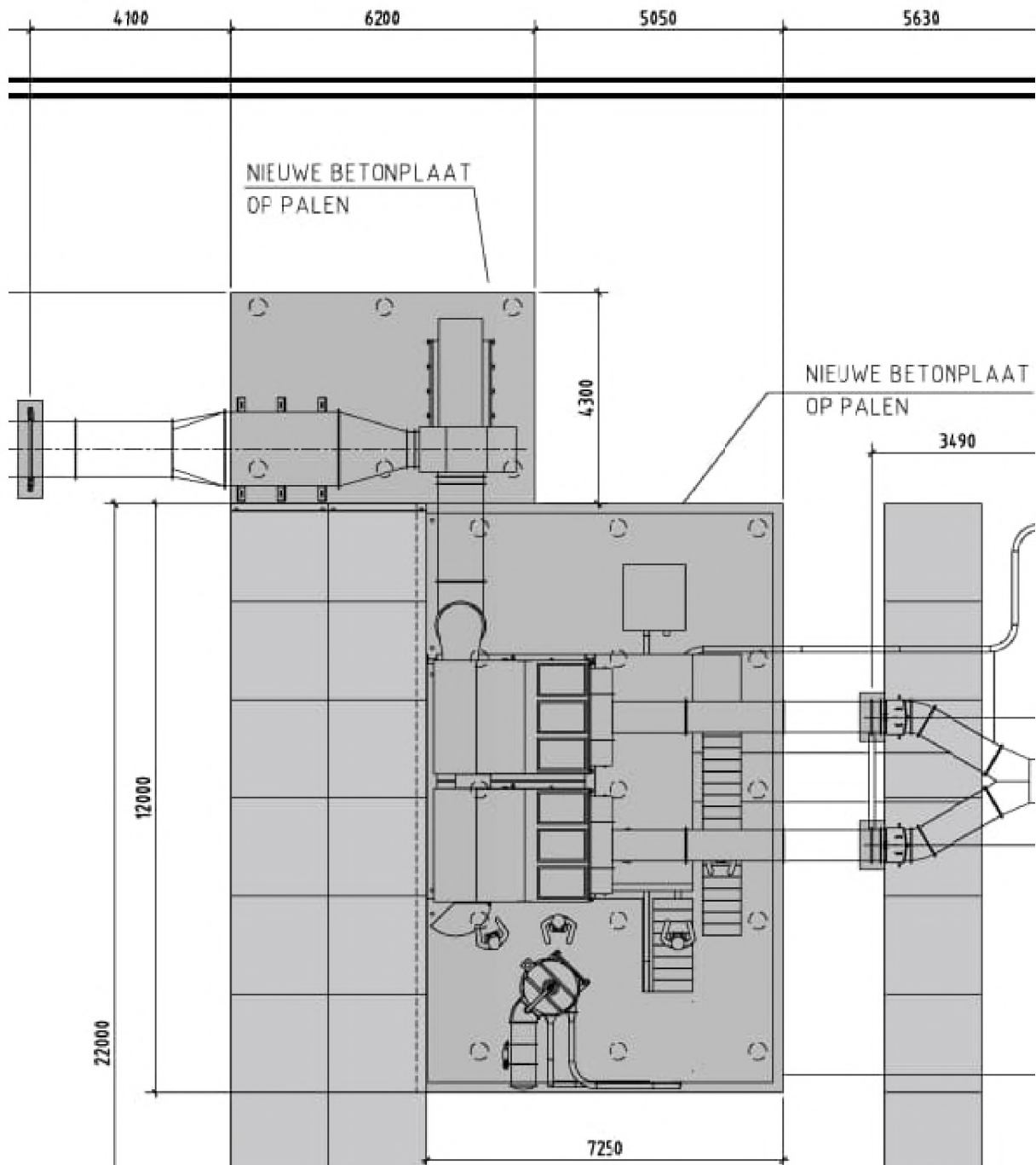
2.2 Mechanical/Piping

Not applicable in this document (document created by Discipline).

2.3 Civil

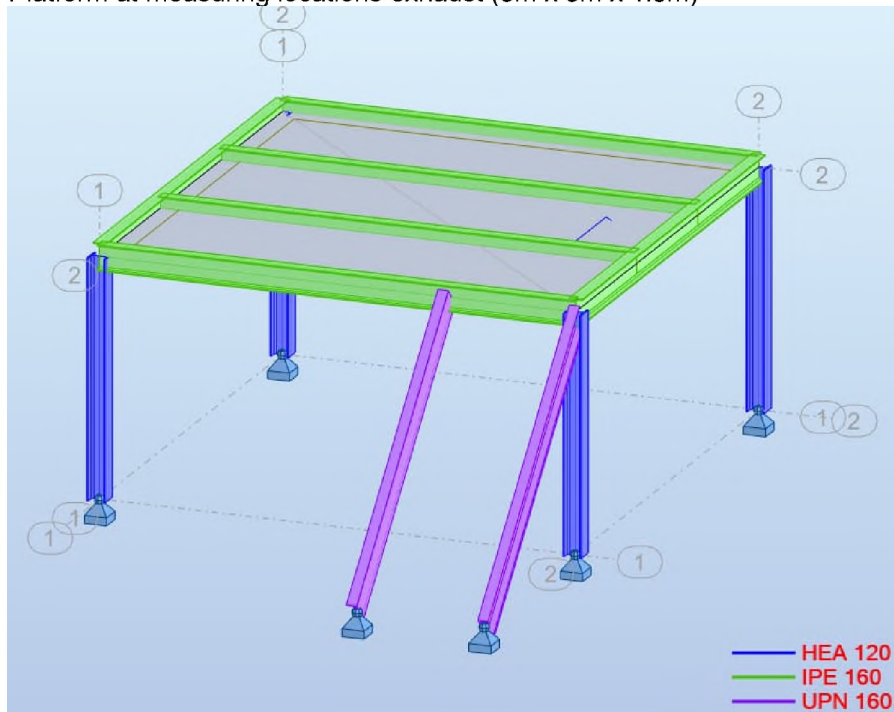
Scope includes:

- Excavation works and backfill (no soil contamination assumed, to be verified by SABIC)
- Piled liquid tight foundation (thickness 500mm) for filter skid and piled foundation for blower. Exact location is determined by Lybover (Contractor). Soil investigation for piling to be made available by SABIC.

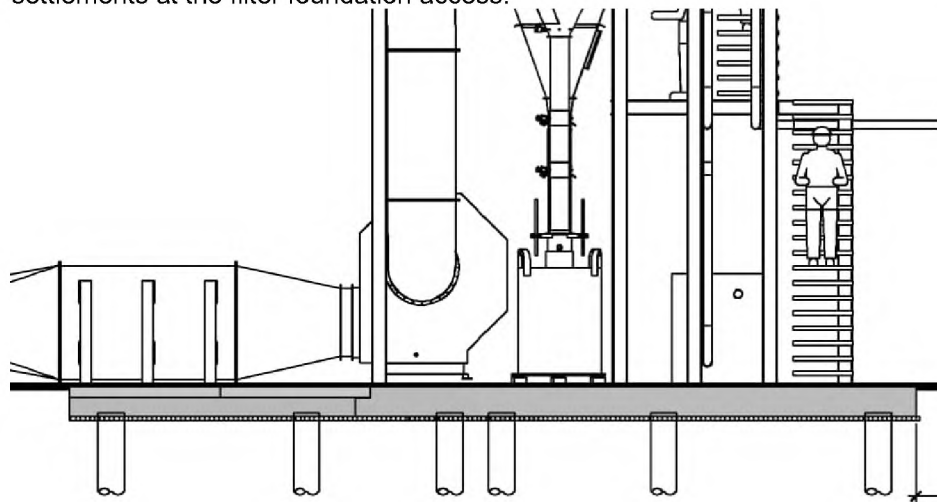


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- Platform at measuring locations exhaust (3m x 3m x 1.8m)



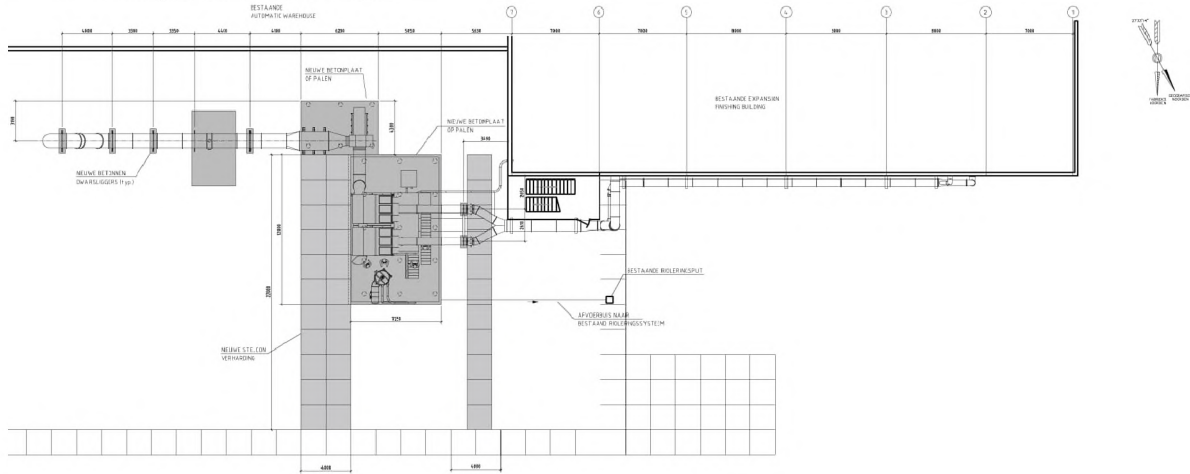
- Access road in stelcon for forklift (west side). Stelcon plates will rest on a 30cm stabilized sand foundation. At the filter foundation there will be a rest foreseen to avoid differential settlements at the filter foundation access.



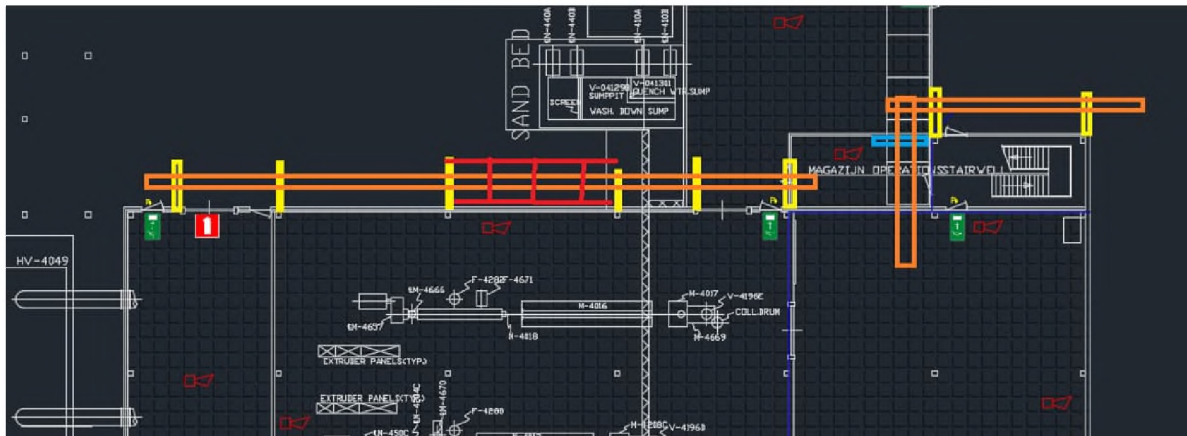
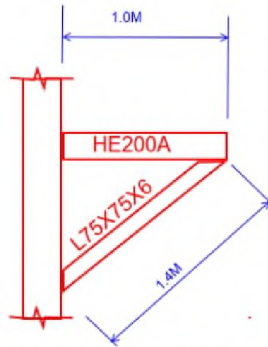
- Access road for inspection of checkvalves (east side). Stelcon plates will rest on a 30cm stabilized sand foundation.
- Connection to process sewer system
- Crash protection at columns on east side

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- Sleepers for exhaust line

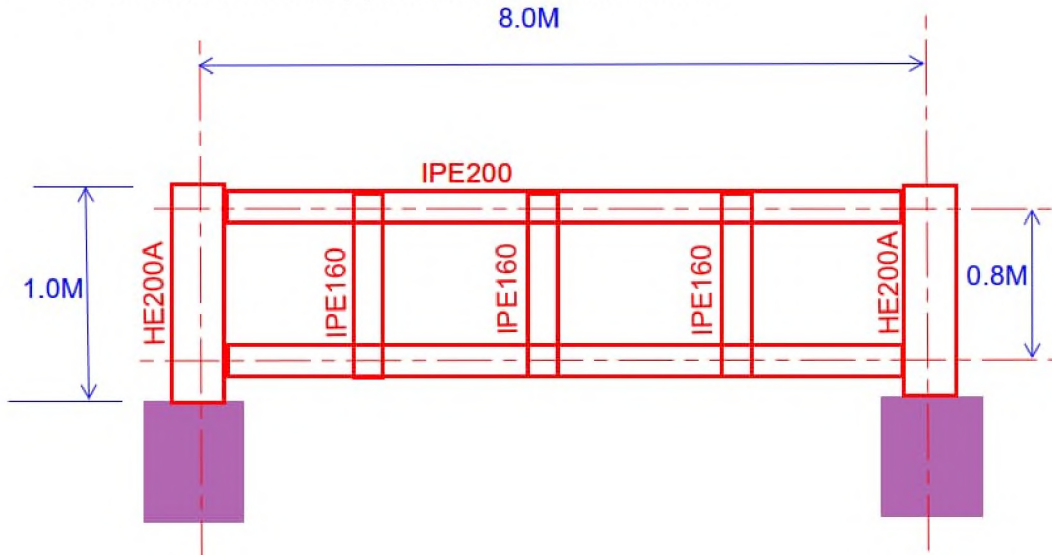


- Supporting of pipes along the building, including local demolition of cladding and restoration afterwards. Exact location of piping is determined by Lybover (Contractor)

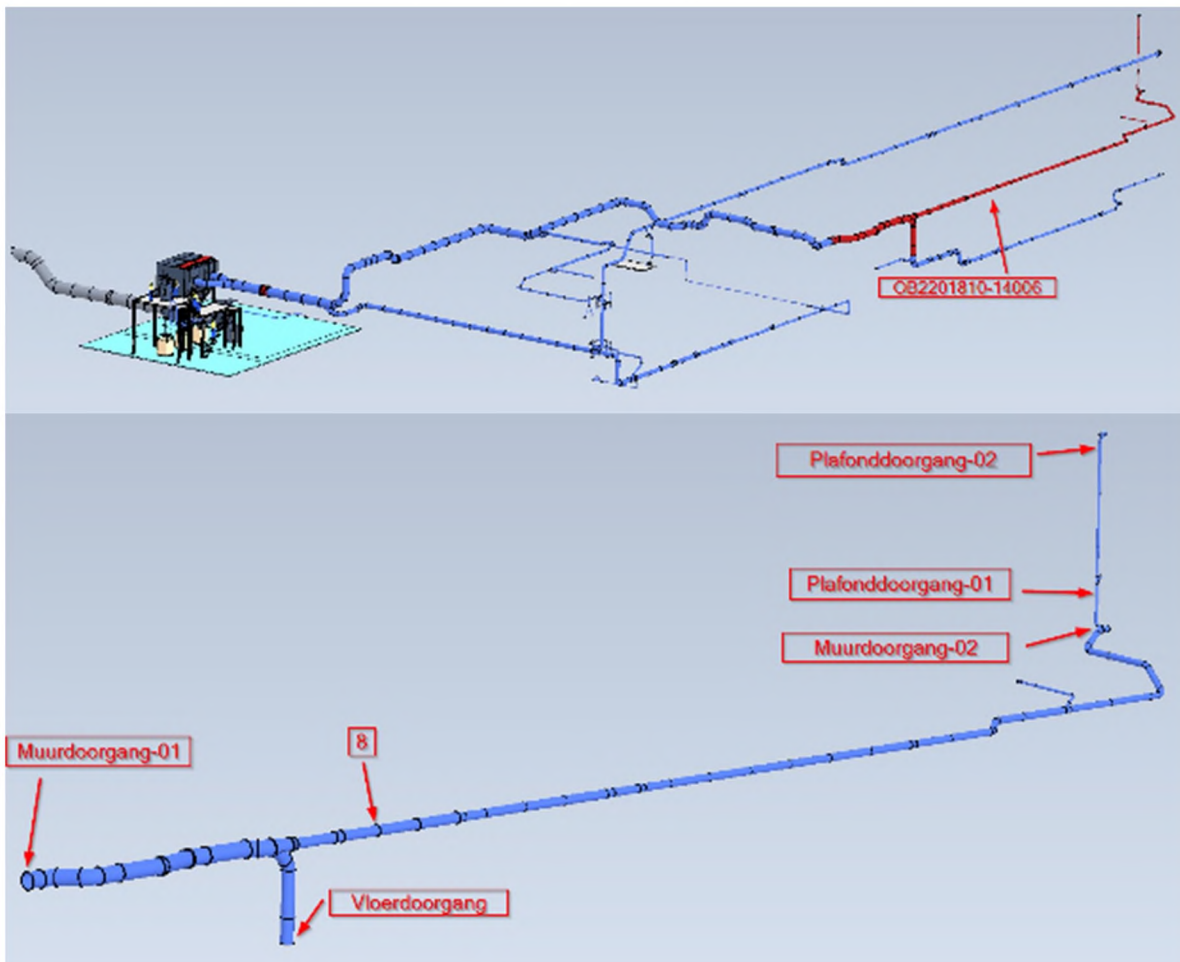


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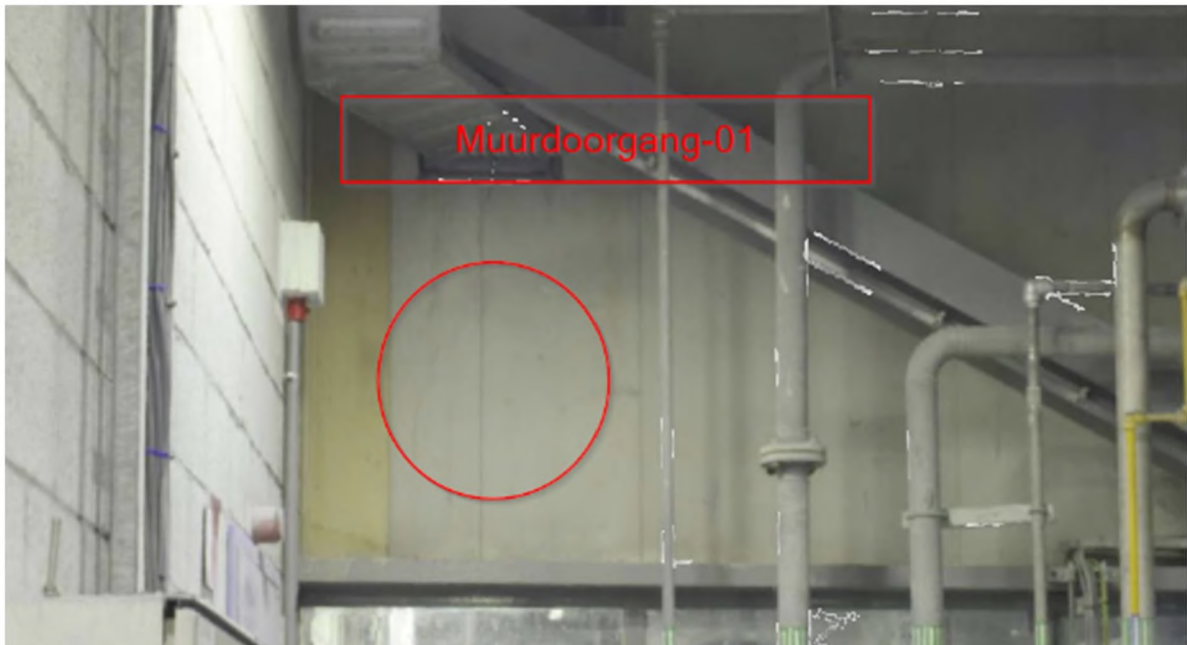
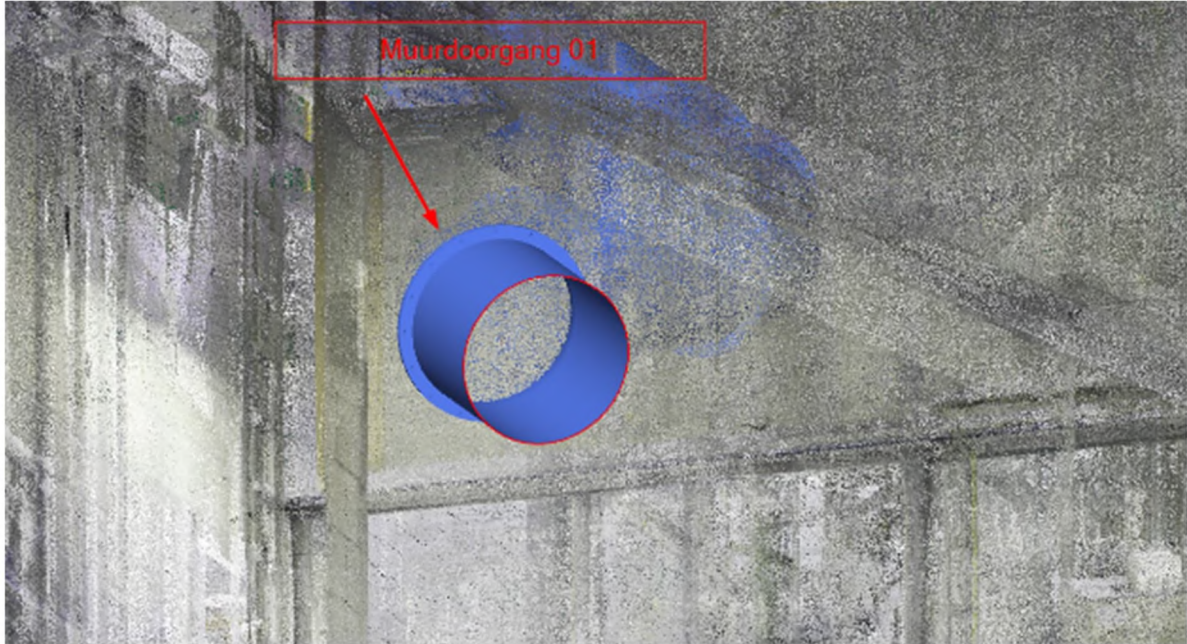
- Protective frame above pipe underneath elevated doors



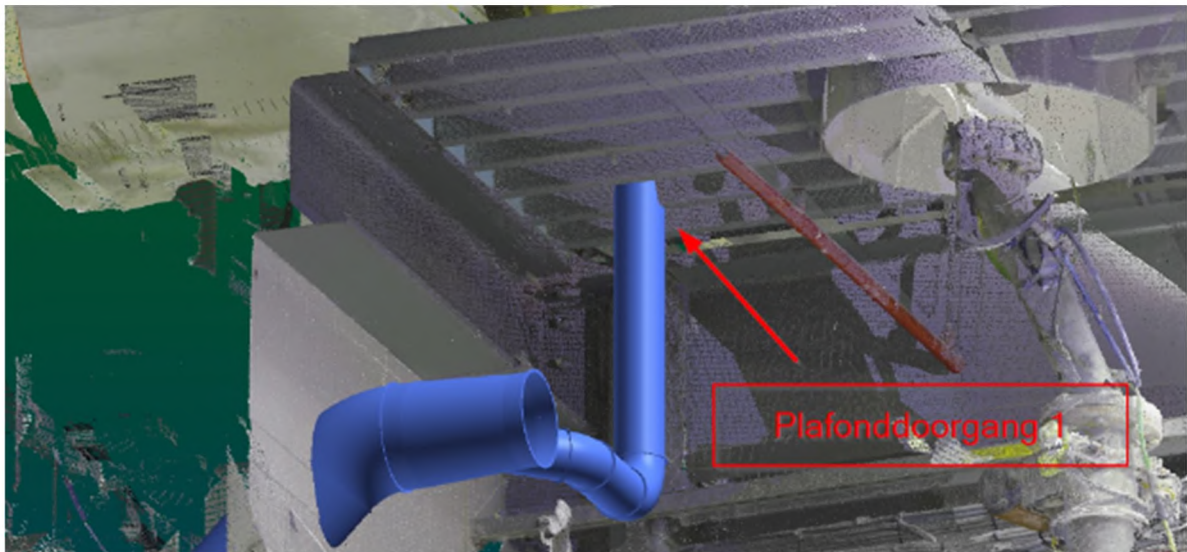
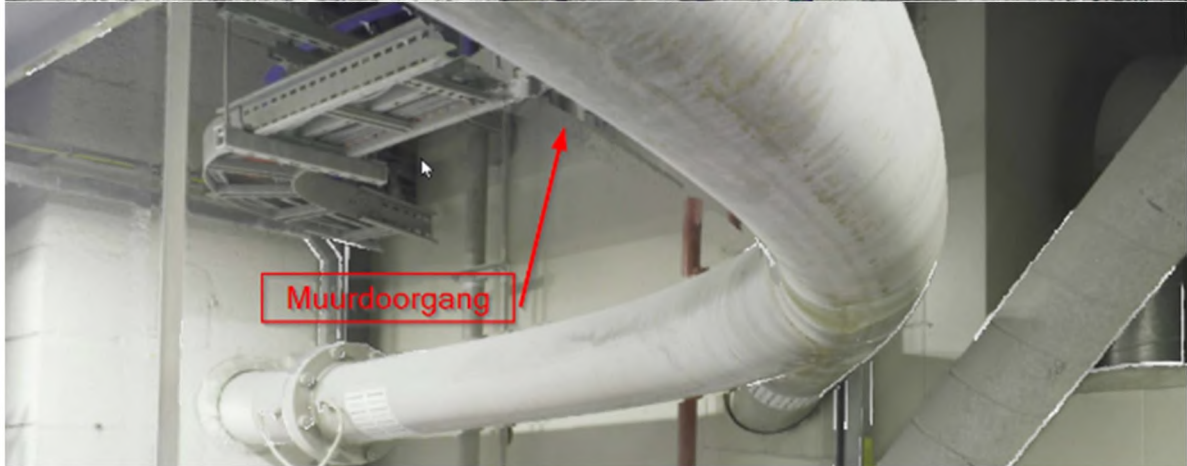
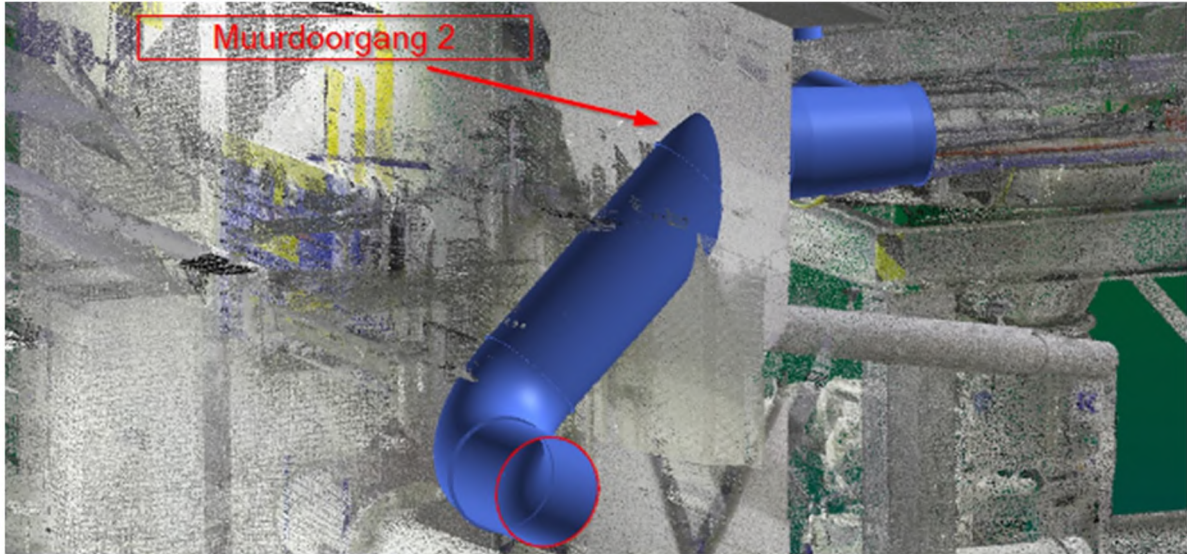
- Wall, floor and roof penetrations as indicated in Lybover clash document. This will include the utilities entry on the east side. Wall and floor penetrations to be finished with fireproof finish. Roof penetration to be finished with watertight fireproof finish.



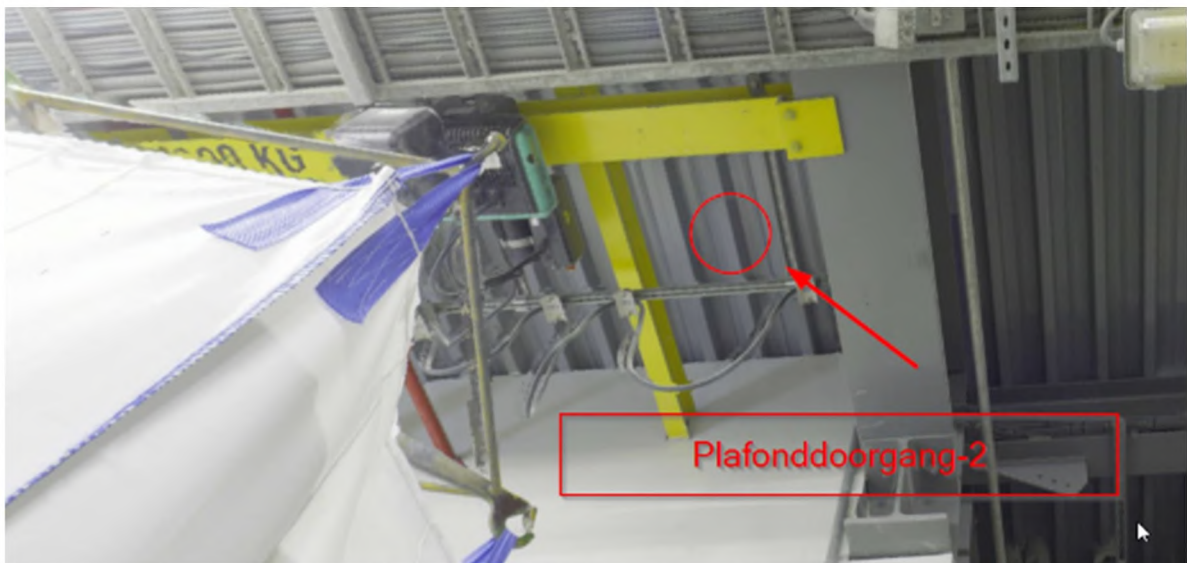
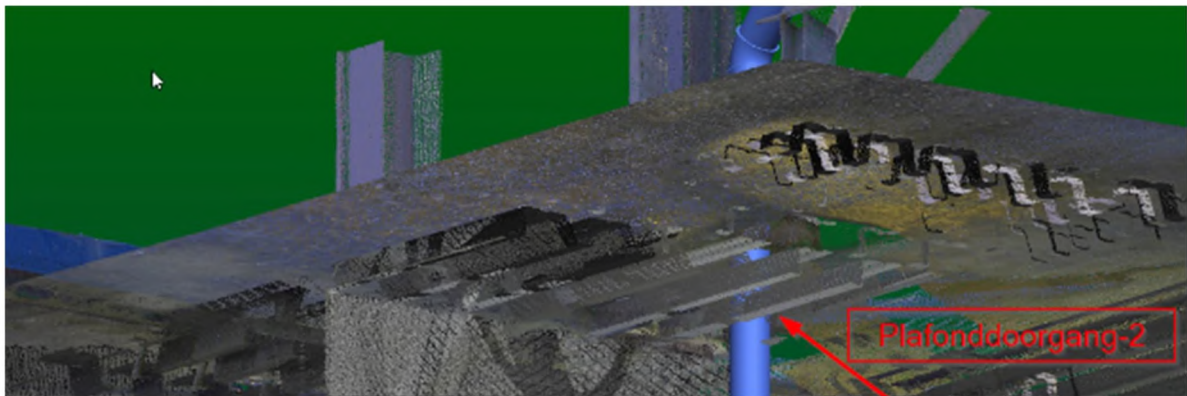
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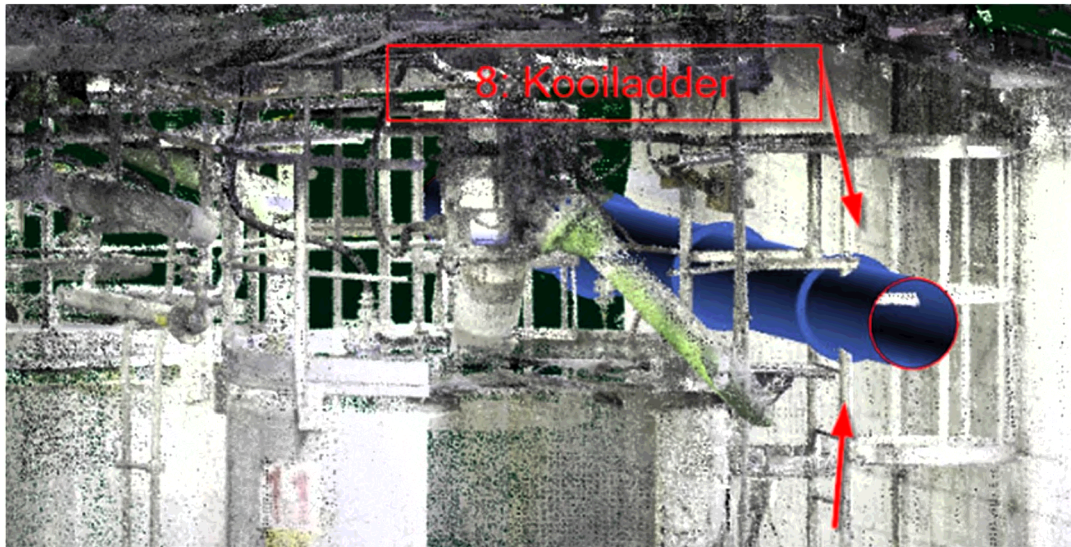


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- Repositioning of caged ladder

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2.4 Electrical

Not applicable in this document (document created by Discipline).

2.5 Instrument

Not applicable in this document (document created by Discipline).

2.6 Others

Not applicable in this document (document created by Discipline).

3 CODES AND STANDARDS

SABIC standards and specifications will be complied with.

4 RESPONSIBILITIES

4.1 Engineering and Project Management (E&PM)

Engineering

Detailed engineering will be executed by alliance partner (Worley)

Project manager (PM)

4.2 Affiliate Department

Not applicable

4.3 Information Technology (IT)

Not applicable

4.4 Safety and QA/QC

Not applicable

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4.5 Vendor

Lybover will determine the exact locations, layouts and weights of the installation.

4.6 Construction Contractor (proposed/preferred)

Bergh Bouwgroep, civil works

HVB Constructie, structural works

Spie, insulation works

5 SAFETY REQUIREMENT

5.1 PSM (Process Safety Management)

Project scope should meet requirements of SABIC, Local and international regulations regarding e.g., SHEMS, CE, ATEX.

According to SHEM 09: management of change, Emoc 32195 was created.

6 MATERIAL

No specific requirements, other than specified by mechanical scope.

7 PROJECT STRATEGY

It will be determined during next phase.

8 COST ESTIMATION

Check Material Take Off document with number 05-216041-48735/C.03e/0001.

9 PROJECT PLANNING & SCHEDULING

Project execution is planned for 2024 in a sequential way.

10 ATTACHMENT

OB2201810.15_14410 Leidingwerk buiten

OB2201810 Voorstel filteropstelling