


Site Technical Query - Form

SN1809-0000/XE.FRM/0001 Rev 4 03/02/2021

TQ Number:		Project:	
CW2144960	-A010- 0052	Oyu Tolgoi Underground Project	
A. To be completed by or on behalf of the Contractor			
Contractor/Sub-Contractor Name:	MCS International	Date Response	21/01/2022
Contract Title:	Booster Fan installations	Plant Area &	1833
Contract No.	CW2144960	Contractor TQ Number:	BF-0415-TQ-0052
Discipline Codes (Mandatory) D1 (CSA) - <input type="checkbox"/> D2 (MP) - <input checked="" type="checkbox"/> D3 (E&I) - <input type="checkbox"/> D4 (Other) - <input type="checkbox"/>			

Description of Technical Query (List affected drawings and specifications):
SP2, SP3 Secondary Ventilation Duct location change issue

Checked Secondary Ventilation fan duct on 3D models of SP2 and SP3 E-room area. When placing the secondary ventilation fan duct to dimension as per drawing 1833-59-L5-8001, 1833-59-L5-8002, the duct is clashed with shotcrete surface. Therefore, install the duct and cable ladder by moving it to the right. Move the cable ladder to the side of the wall where the pipe can be installed in accordance with TQ-39 (attachment 1).

 Routine

 Urgent

Refer Technical Query instructions

Proposed Action (List all attachments)

The contractor is proposed the following action.

In SP2 and SP3 e-room area, the secondary ventilation fan duct shall be suited to the field conditions and moved to the center side above the e-room module at a distance of 500-1000 mm.

All changes will be noted on the redline.

Effect on cost (USD):	NO		
Effect on schedule (Days):	NO		
Effect on quality:	NO		
Requested by (Name):	Delgersuren.N	Position:	SMP Engineer
Signature:		Date: (dd/mm/yyyy)	21/01/2022

B. To be completed by Jacobs Field Engineer

Comments/recommendations by Engineering

Proposed action is accepted.

1. The contractor shall consider installation sequence during construction stage due tight space in between ducts and electrical rooms.

Disclaimer:

Acceptance or rejection of this TQ is only related with technical aspects.

If Cost or Schedule Impact are associated with this TQ, it must be discussed separately with Jacobs Contract team.

C. Engineering Decision		D. Information		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accept with comments	Reject	Design Change Distribute to: Design Author DA	Cost Impact Distribute to: Contracts, Proj. Controls & Construction Manager	Schedule Impact Distribute to: Proj. Controls & Construction Manager

REVIEWER		APPROVER		CONSTRUCTION MANAGER	
Field Engineer OR Lead Engineer		Lead Engineer OR Chief of Engineering		(If Cost and/or Schedule Impact)	
Date: (dd/mm/yyyy)		Date: (dd/mm/yyyy)		Date: (dd/mm/yyyy)	



Site Technical Query - Form

SN1809-0000/XE.FRM/0001

Rev 4 03/02/2021

TQ Number:		Project:																					
CW2144960	-A010-	0039	Oyu Tolgoi Underground Project																				
A. To be completed by or on behalf of the Contractor																							
Contractor/Sub-Contractor Name:	MCS International	Date Response	03/01/2022																				
Contract Title:	Booster Fan installations	Plant Area & No:	1833																				
Contract No.	CW2144960	Contractor TQ Number:	BF-0415-TQ-0039																				
Discipline Codes (Mandatory) D1 (CSA) - <input type="checkbox"/> D2 (MP) - <input type="checkbox"/> D3 (E&I) - <input checked="" type="checkbox"/> D4 (Other) - <input type="checkbox"/>																							
<i>Description of Technical Query (List affected drawings and specifications):</i>																							
1833 area SP2 & SP3 - Cable ladder location change request																							
The Contractor is responsible for the installation of Cable ladder at SP2 & SP3 area as per design drawings:																							
<ul style="list-style-type: none"> • 1833-65-K2-1203_1 • 1833-65-K2-1204_1 • 1833-65-K2-1206_1 • 1833-65-K2-1207_1 																							
Upon checking on scanned 3D data of rock surface and 3D models of SP2 & SP3 E-Room, rock surface looks too close to the duct part, leaving insufficient space for duct between shotcrete surface and cable ladder over E-Room as shown Appendix 1. Moving cable ladder over E-Room to the wall side for possible distance can make enough space for ventilation duct without an issue.																							
<input type="checkbox"/> Routine		<input checked="" type="checkbox"/> Urgent	Refer Technical Query instructions																				
<i>Proposed Action (List all attachments)</i>																							
Therefore, the Contractor is proposing the following solution:																							
<ul style="list-style-type: none"> • According to detail 50 in drawing 0000-65-K2-1401_15, to move cable ladder over E-Room to the wall side, at least 600mm from the sidewall and 300mm from the shotcrete ceiling, which is enough distance for personnel to work between, as shown in Appendix 2. Distance between cable ladder and ventilation duct shall be at least 300mm. 																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Effect on cost (USD):</td> <td style="width: 25%;">NO</td> <td style="width: 25%;">Position:</td> <td style="width: 25%;">E&I Field Engineer</td> </tr> <tr> <td>Effect on schedule (Days):</td> <td>NO</td> <td colspan="2"></td> </tr> <tr> <td>Effect on quality:</td> <td>NO</td> <td colspan="2"></td> </tr> <tr> <td>Requested by (Name):</td> <td>Altanbagana.T</td> <td colspan="2"></td> </tr> <tr> <td>Signature:</td> <td style="text-align: center; vertical-align: middle;">  Altanbagana.T </td> <td style="text-align: center; vertical-align: middle;"> Digitally signed by Altanbagana.T Date: 2022.01.03 10:40:01 +08'00' </td> <td style="text-align: center; vertical-align: middle;"> Date: $(dd/mm/yyyy)$ 01/01/2022 </td> </tr> </table>				Effect on cost (USD):	NO	Position:	E&I Field Engineer	Effect on schedule (Days):	NO			Effect on quality:	NO			Requested by (Name):	Altanbagana.T			Signature:	 Altanbagana.T	Digitally signed by Altanbagana.T Date: 2022.01.03 10:40:01 +08'00'	Date: $(dd/mm/yyyy)$ 01/01/2022
Effect on cost (USD):	NO	Position:	E&I Field Engineer																				
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Signature:	 Altanbagana.T	Digitally signed by Altanbagana.T Date: 2022.01.03 10:40:01 +08'00'	Date: $(dd/mm/yyyy)$ 01/01/2022																				

B. To be completed by Jacobs Field Engineer

Comments/recommendations by Engineering

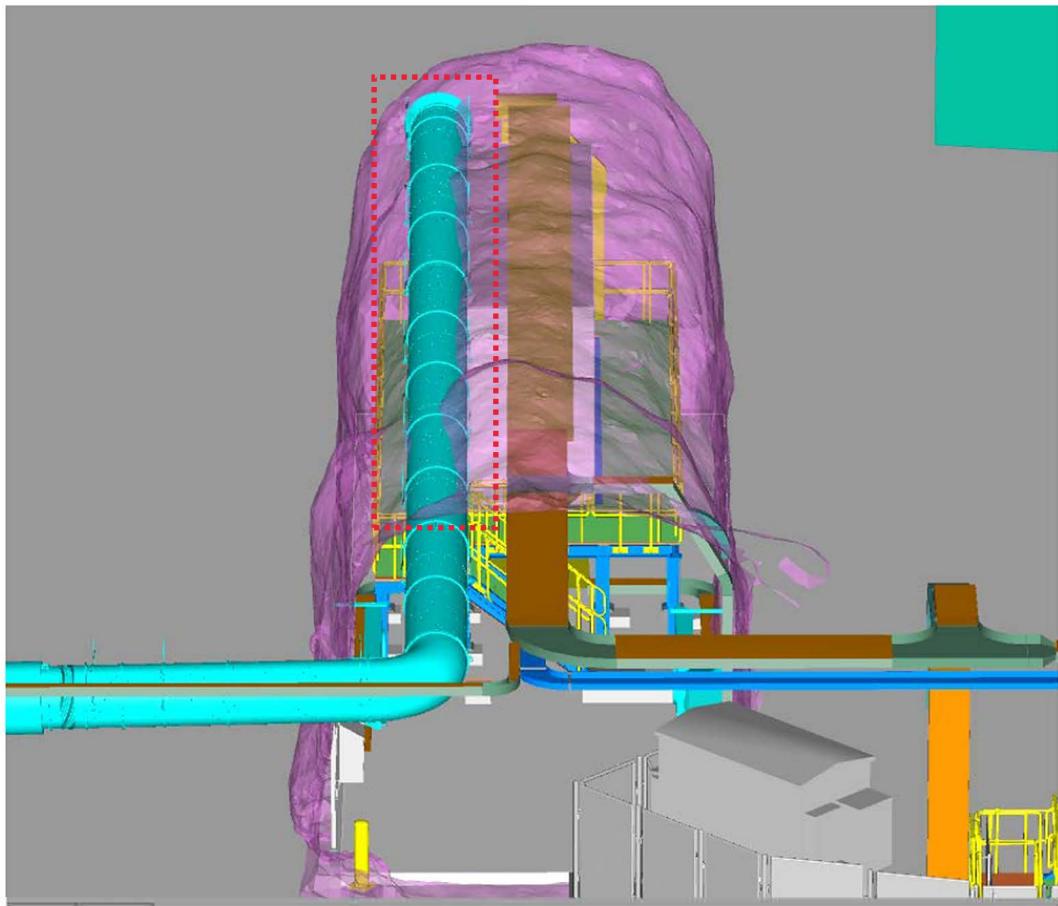
Proposed action is acceptable with following comments:

- All relevant location drawings need to be redlined.

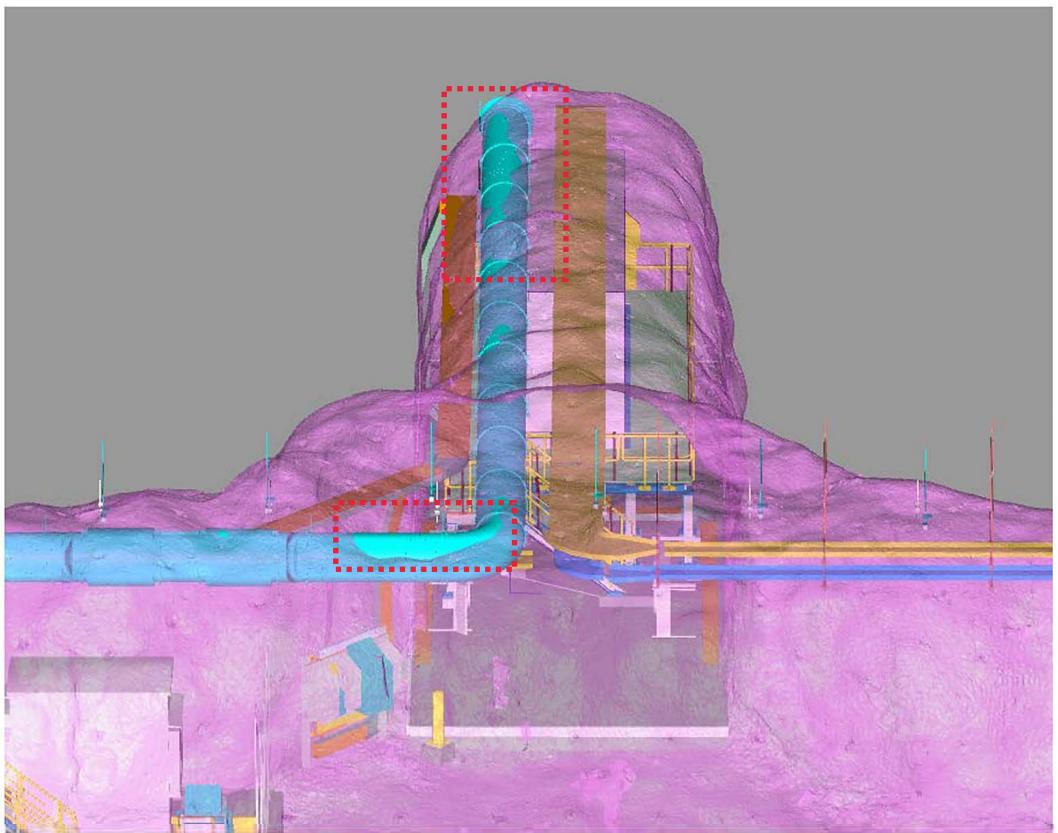
Disclaimer:*Acceptance or rejection of this TQ is only related with technical aspects.**If Cost or Schedule Impact are associated with this TQ, it must be discussed separately with Jacobs Contract team.*

C. Engineering Decision		D. Information		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accept with comments	Reject	Design Change Distribute to: Design Author DA	Cost Impact Distribute to: Contracts, Proj. Controls & Construction Manager	Schedule Impact Distribute to: Proj. Controls & Construction Manager

REVIEWER	APPROVER	CONSTRUCTION MANAGER (If Cost and/or Schedule Impact)
Field Engineer OR Lead Engineer Click or tap here to enter text. Davaaa-Otgon Date: <input type="text" value="Davaaa-Otgon"/> (dd/mm/yyyy)	Lead Engineer OR Chief of Engineering Click or tap here to enter text. Terry Kershaw Date: <input type="text" value="Terry Kershaw"/> (dd/mm/yyyy)	
	Digitally signed by Davaaa-Otgon DN: cn=Davaaa-Otgon , o= MN , o=Worley , ou=Worley_email=Davaaa-Otgon.Sanjay@worley.com Date: 2022.01.07 16:50:30 +08'00'	Digitally signed by Terry Kershaw DN: cn=Terry.Kershaw , o=MN , o=Worley , ou=Engineering , ou=Email,Terry.Kershaw@worley.com Date: 2022.01.07 17:02:24 +08'00'



SP2 area-Clash between the Ventilation duct and shotcrete surface



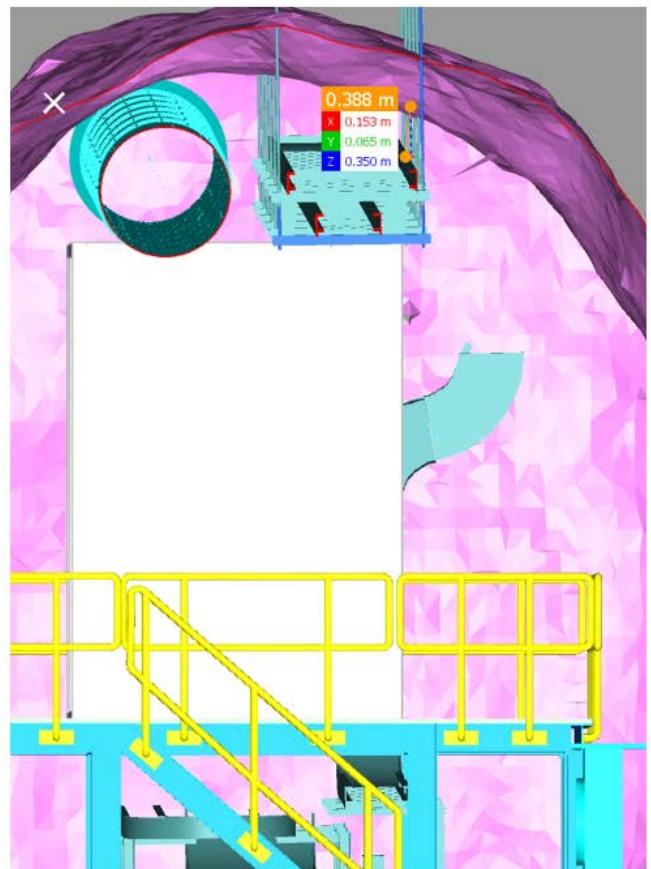
SP3 area-Clash between the Ventilation duct and shotcrete surface

Appendix #2

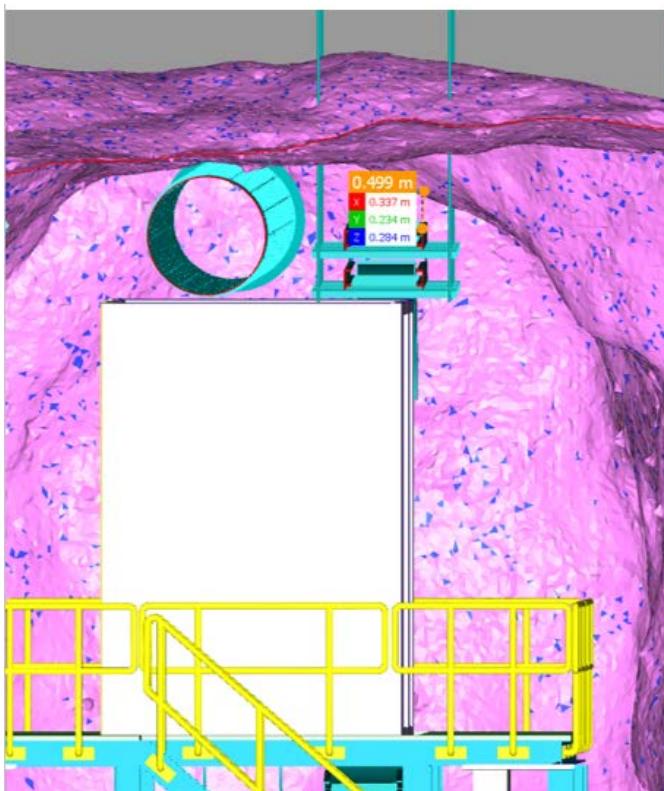
Attachment 1 TQ-0039



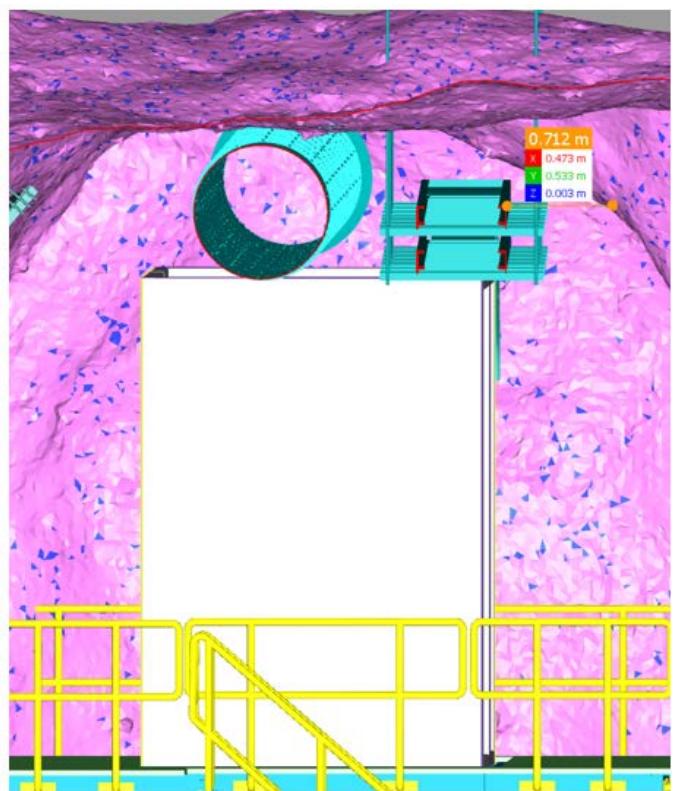
SP-2 - Proposing solution: When the cable ladder will be moved 750 mm to wall side, the distance between cable ladder and side wall.



SP-2 - Proposing solution: When the cable ladder will be moved 750 mm to wall side, the distance between cable ladder and shotcrete ceiling.

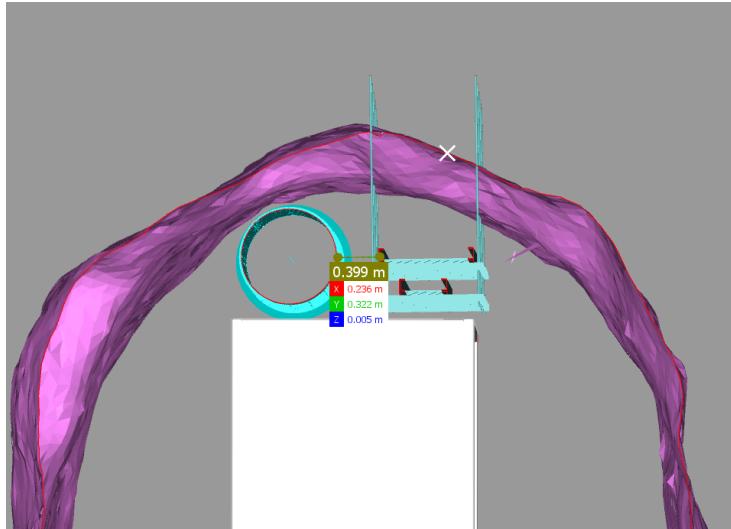


SP-3 - Proposing solution: When the cable ladder will be moved 1000 mm to wall side, the distance between cable ladder and shotcrete ceiling.

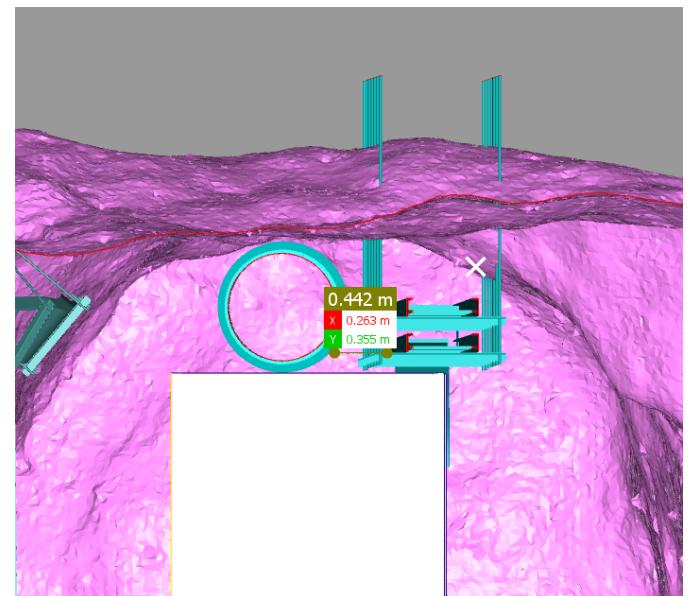


SP-3 - Proposing solution: When the cable ladder will be moved 1000 mm to wall side, the distance between cable ladder and side wall.

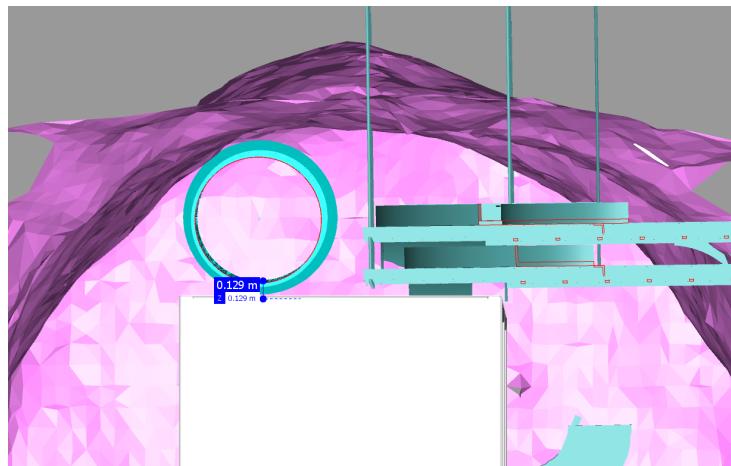
Attachment 2 Distance check



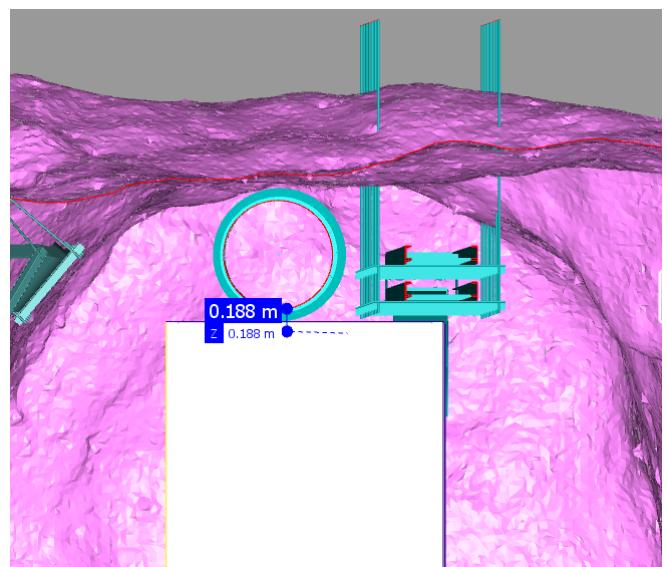
SP-2 : When the Duct will be moved 700 mm to the right, the distance between cable ladder and duct.



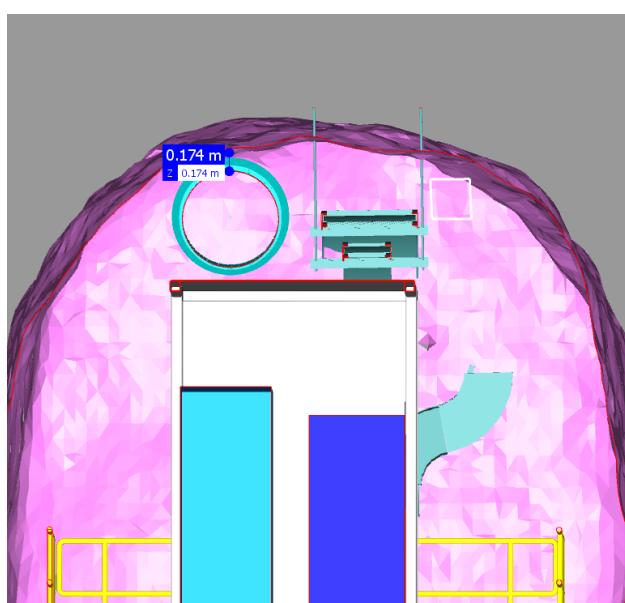
SP-3 : When the Duct will be moved 1000 mm to the right, the distance between cable ladder and duct.



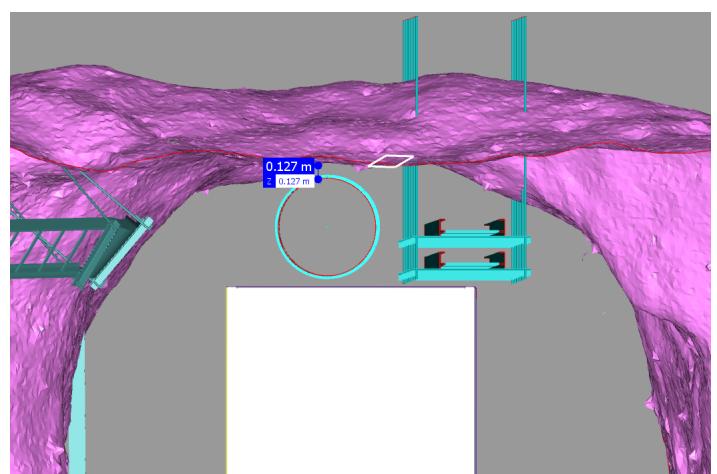
SP-2 : When the Duct will be moved 700 mm to the right, the distance between e-room module and duct.



SP-3 : When the Duct will be moved 1000 mm to the right, the distance between e-room module and duct.



SP-2 : When the Duct will be moved 700 mm to the right, the distance between shotcrete surface and duct.



SP-3 : When the Duct will be moved 1000 mm to the right, the distance between shotcrete surface and duct.