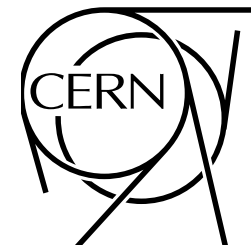
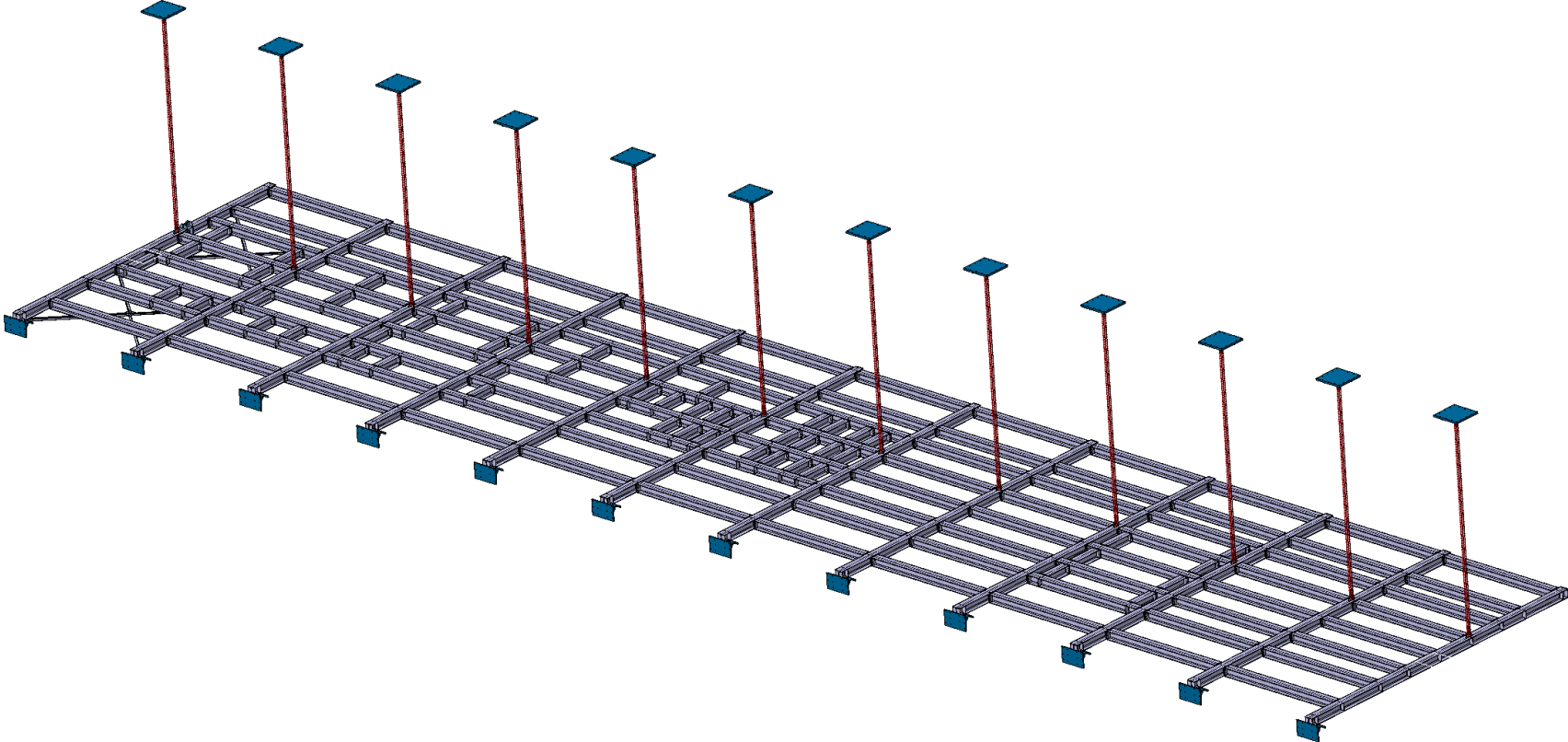


## LBNF – Update on Cable trays, DUNE mezzanine and Other cryostat interfaces

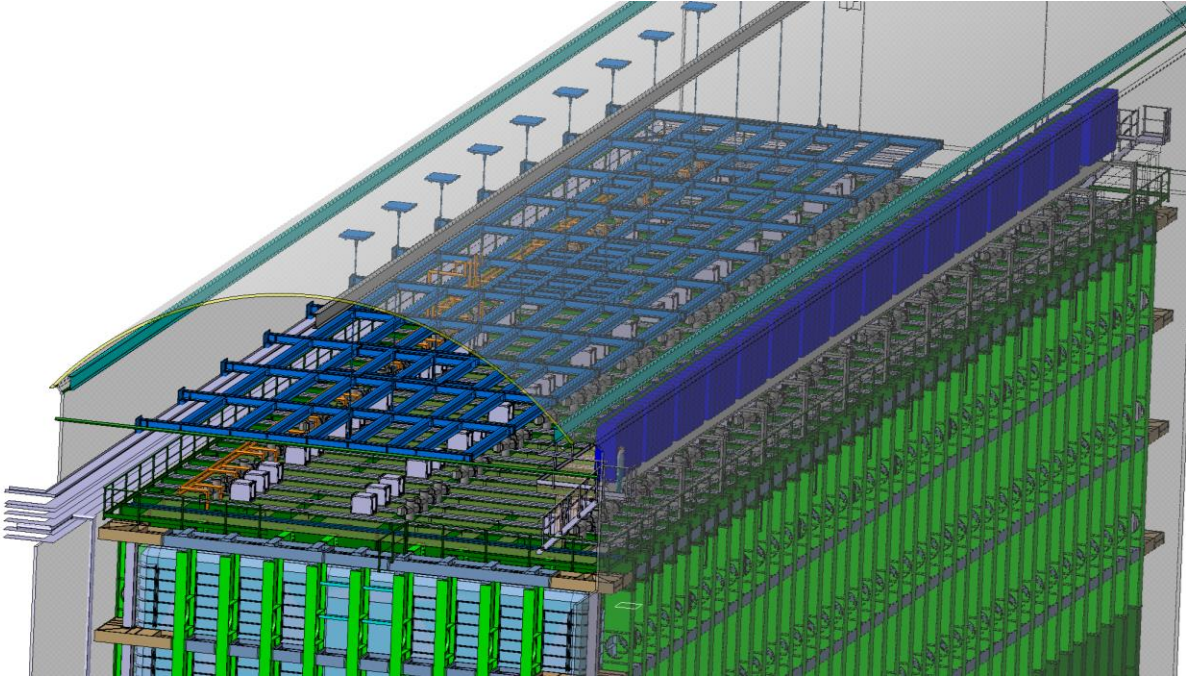
Dimitar MLADENOV & The entire CERN Team  
LBNF/DUNE Installation Coordination Meeting  
CERN, 25 January 2019



*LBNF – Latest Mezzanine Design (55m & 12 supports)*

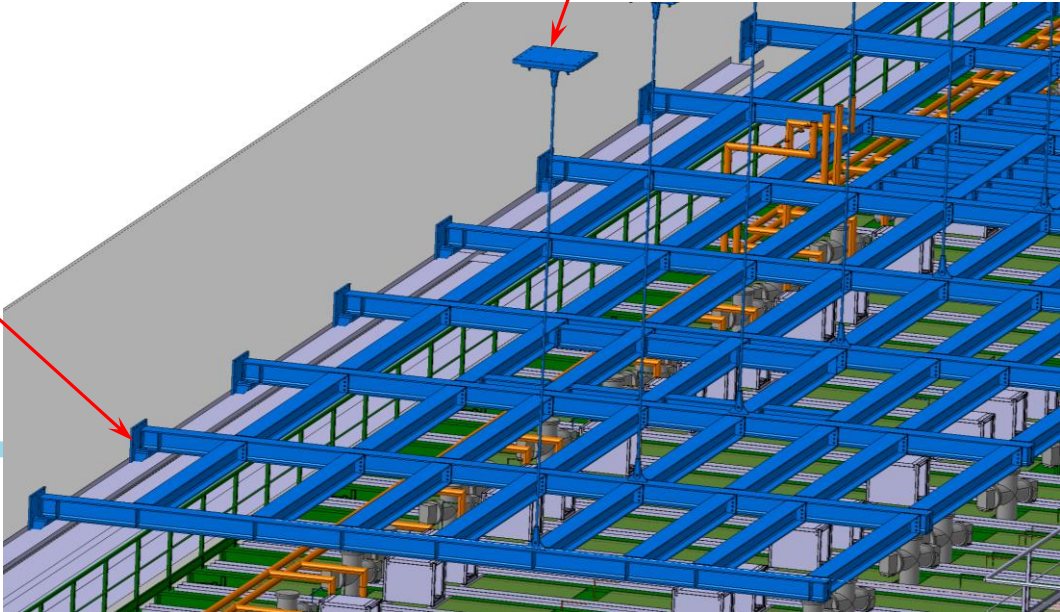


# LBNF – Mezzanine Interfaces

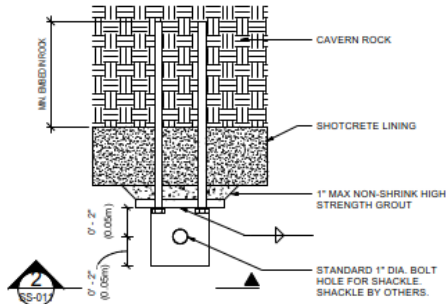


Roof/ceiling Interface

Side Wall Interface



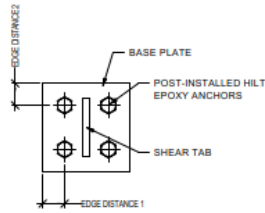
# ARUP – Original Proposition



**STAND-ALONE LIFTING EYE CROSS SECTION**

SCALE: 3" = 1'-0"

1



**LIFTING EYE BASE PLATE**

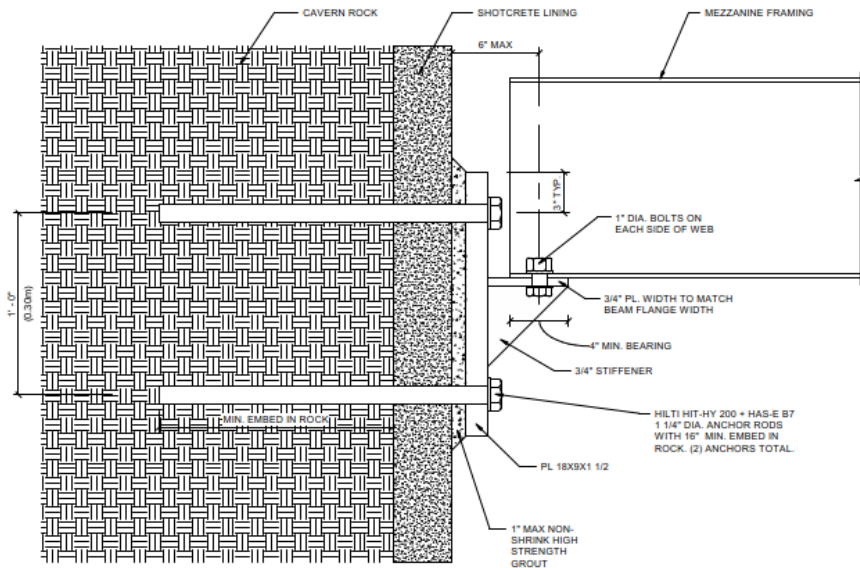
SCALE: 3" = 1'-0"

2

NOTES:

1. SEE DRAWINGS UG-FD-C-200 TO 203 FOR LOCATIONS OF HANGERS, LIFTING EYES AND MEZZANINE SUPPORT.
2. SEE DRAWING UG-FD-C-500 FOR ROCK ANCHOR DETAILS

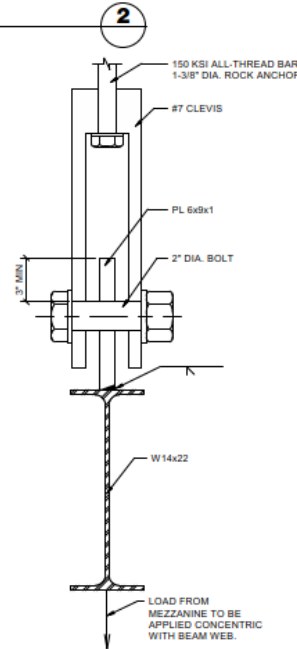
LIFTING EYE SCHEDULE						
LIFTING EYE LOCATION	BASE PLATE	SHEAR TAB	EDGE DISTANCE 1	EDGE DISTANCE 2	ANCHOR	ANCHOR EMBED
OVER MEZZANINE	15x15x3/4	4x4x3/4	2"	2"	HILTI HIT-HY 200 + HAS-E 1 1/4" ANCHOR ROD	10"
OVER LAir PUMPS	6x6x1/2	4x4x1/2	1 1/2"	1 1/2"	HILTI HIT-HY 200 + HAS-E 1/2" ANCHOR ROD	10"



**MEZZANINE SUPPORT CROSS SECTION**

SCALE: 3" = 1'-0"

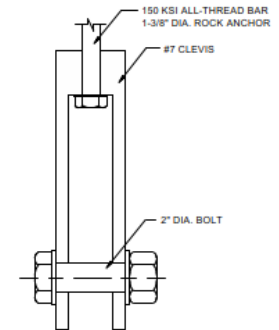
3



**MEZZANINE HANGAR CROSS SECTION**

SCALE: 3" = 1'-0"

4

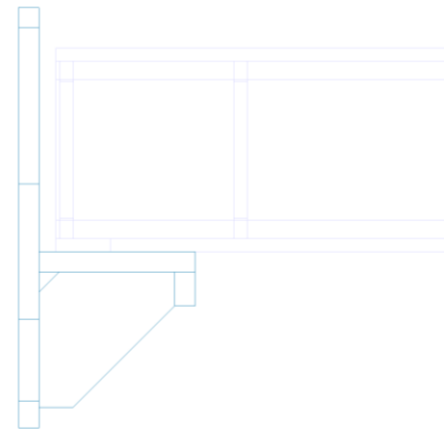
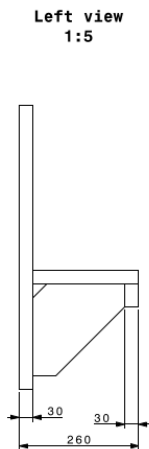
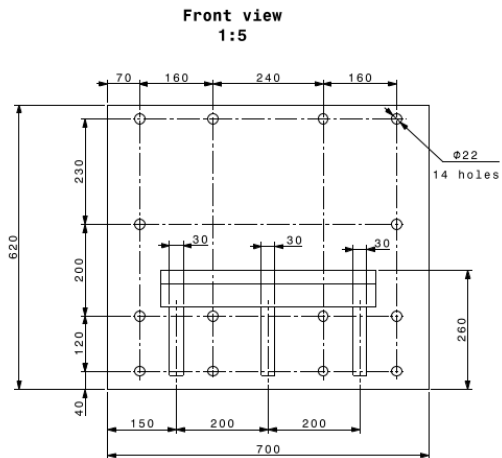


**LIFTING EYE INTEGRATED WITH ROCK ANCHOR**

SCALE: 3" = 1'-0"

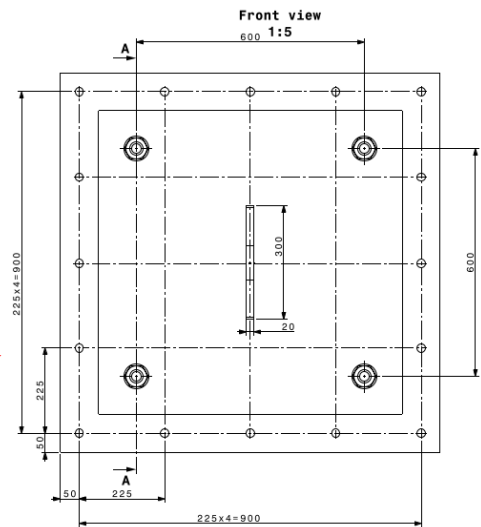
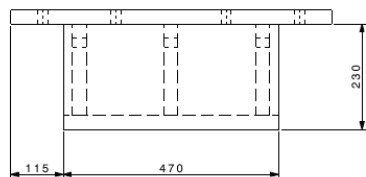
5

# CERN - Proposition



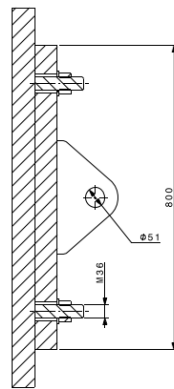
Side Wall Interface

**Top view 1:5**

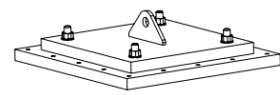
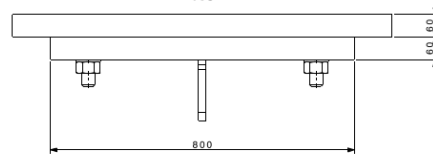


Roof/ceiling Interface

**A-A 1:5**

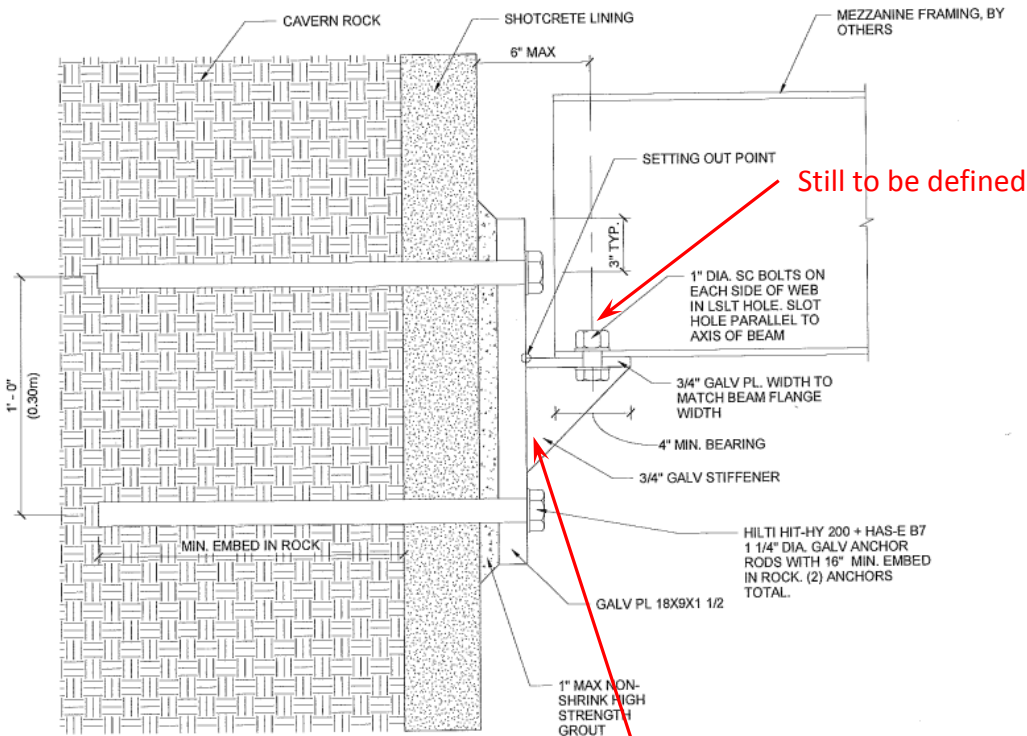


**Top view 1:5**



PARTITION		DESIGNED	E. GULETZKAYA	MINI	A2
Top support 01 pour Mezzanine		CHECKED		Scale	1:5
APPROVED		DATE		2016-10-04	
PROJECT CODE		LAB.	Doc no: ST04062-01	DATE	
REFERENCES		NOT VALID FOR ERECTION		1/11	

# LBNF – Latest Mezzanine Interfaces



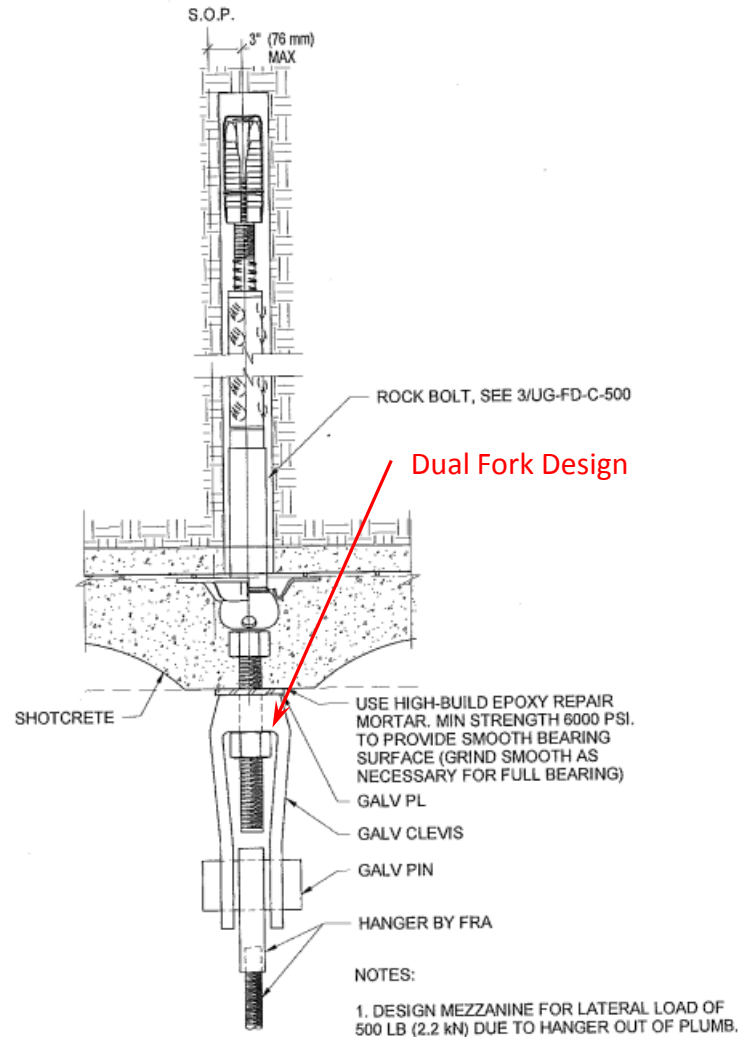
## MEZZANINE SUPPORT CROSS SECTION

SCALE: 3" = 1'-0"

3

Still to be defined

On-site welding



## MEZZANINE HANGAR CROSS SECTION

SCALE: 1 1/2" = 1'-0"

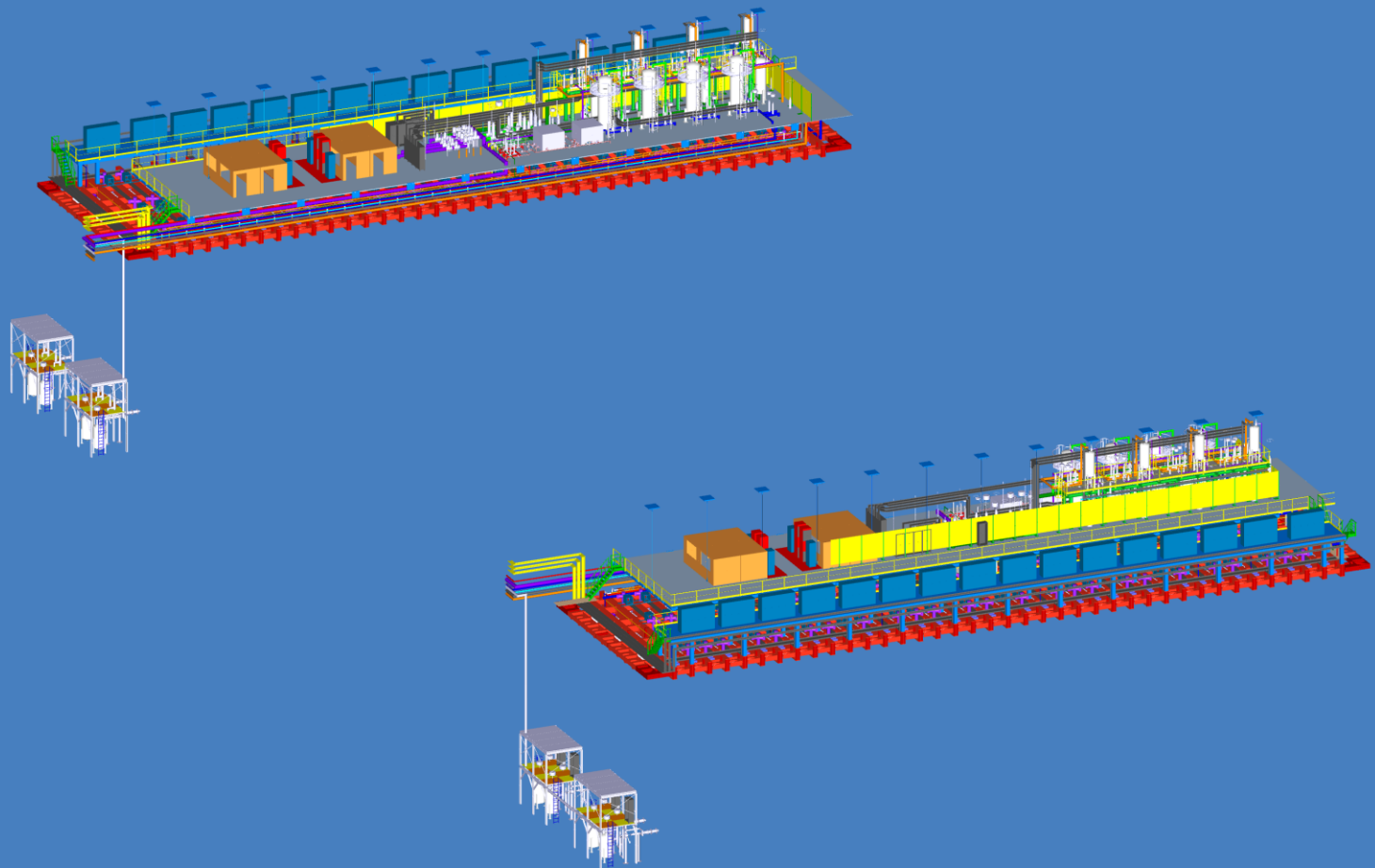
4

Dual Fork Design

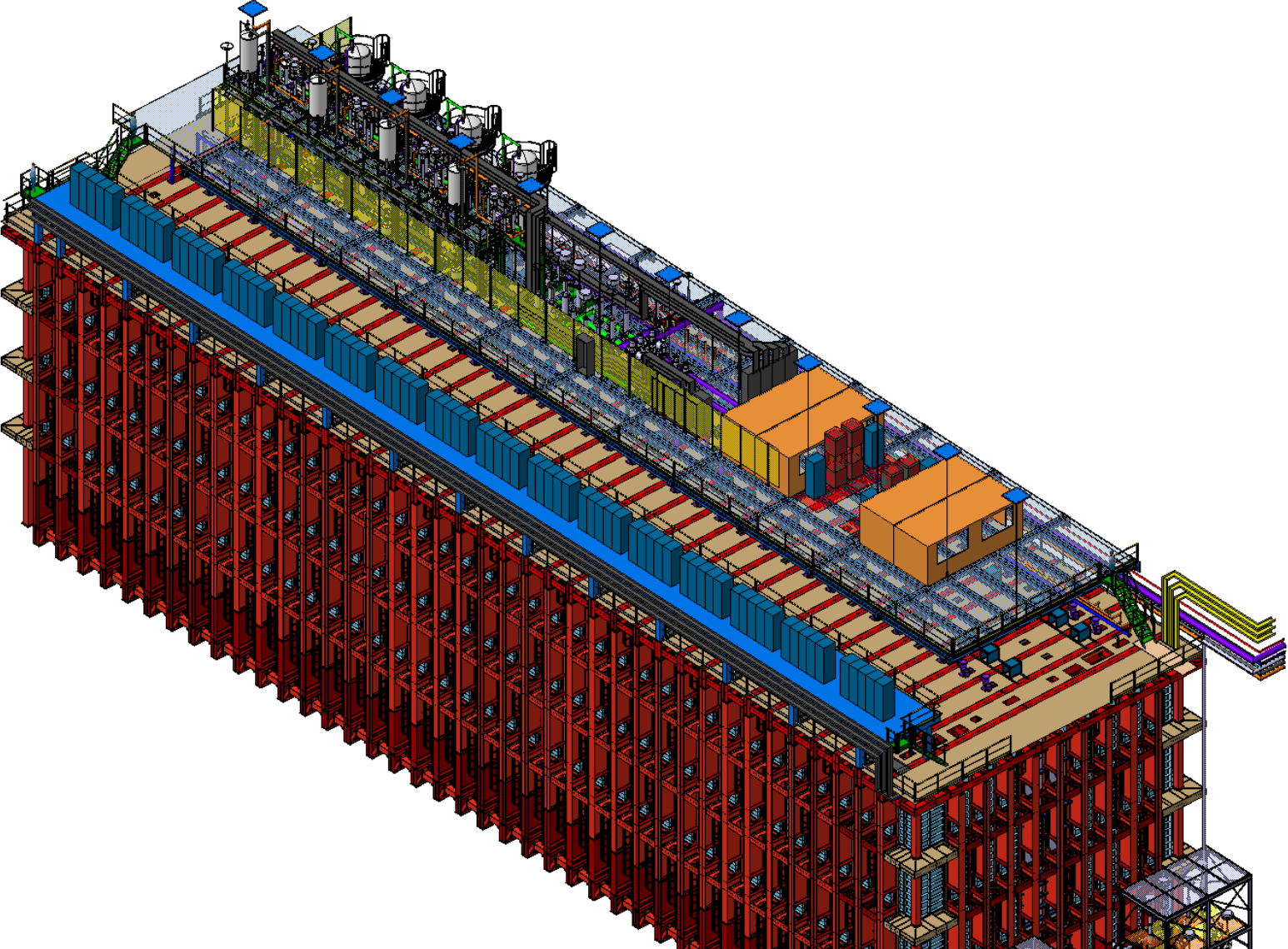
## ARUP Qualification Process

100% to be tested to 80% of the Interface Capacity

# LBNF – Services on the Roof

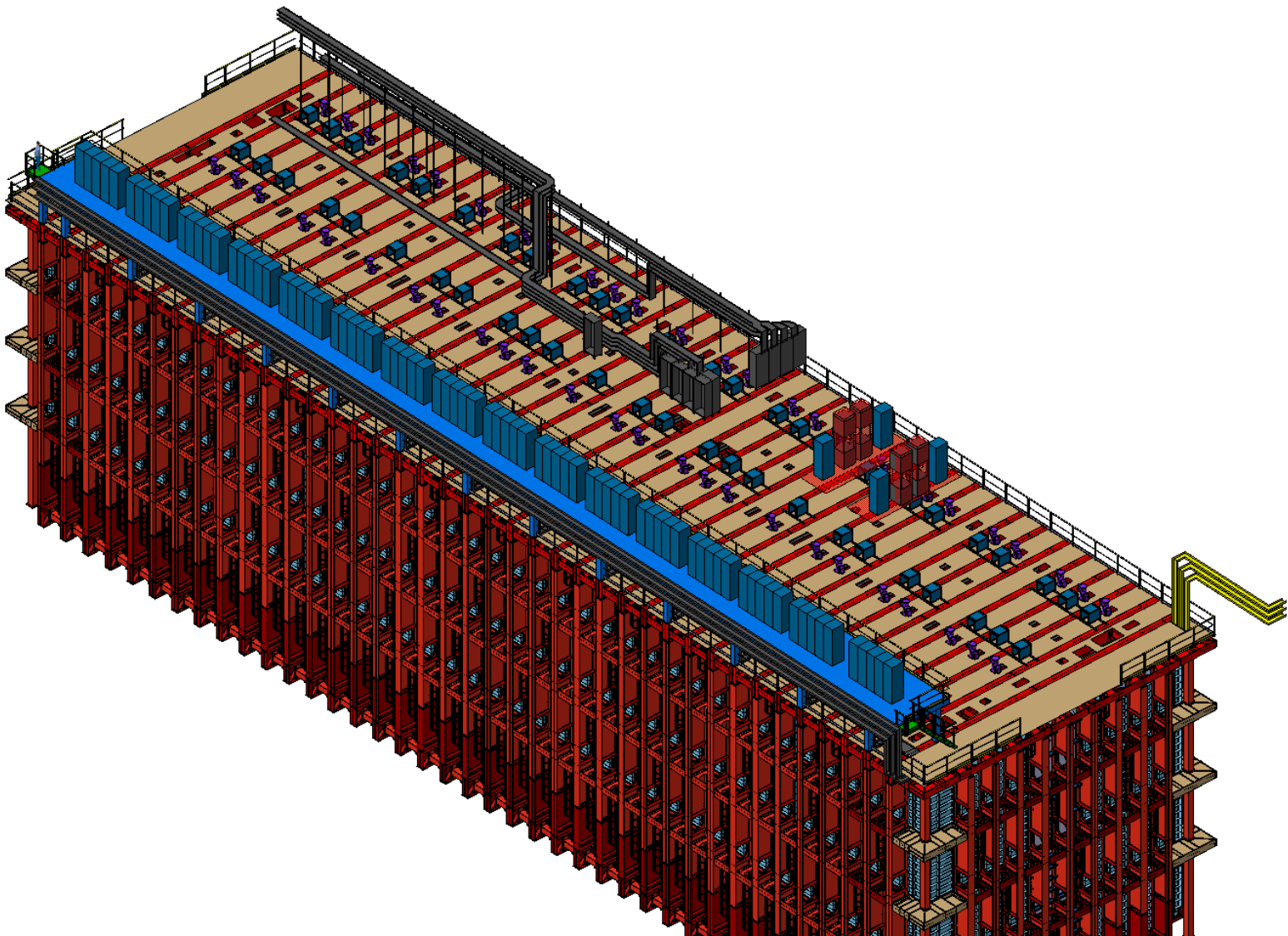


# LBNF – Services on the Roof

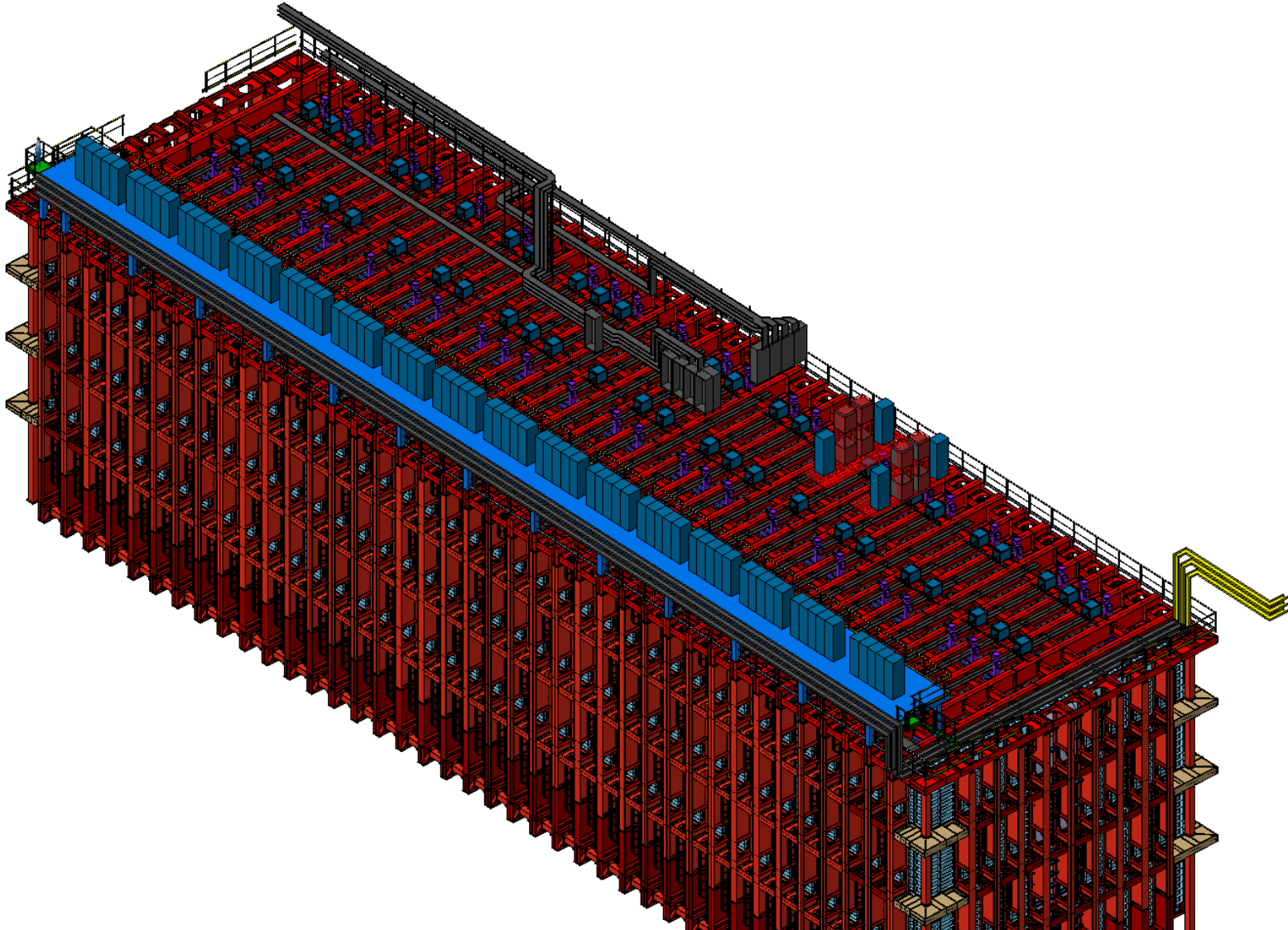




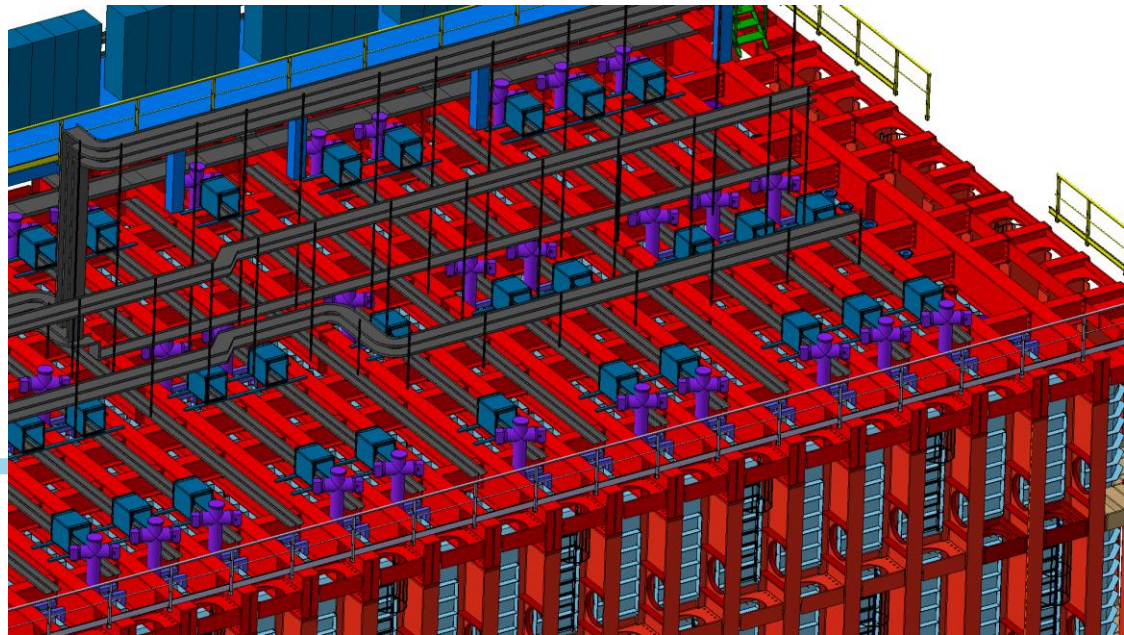
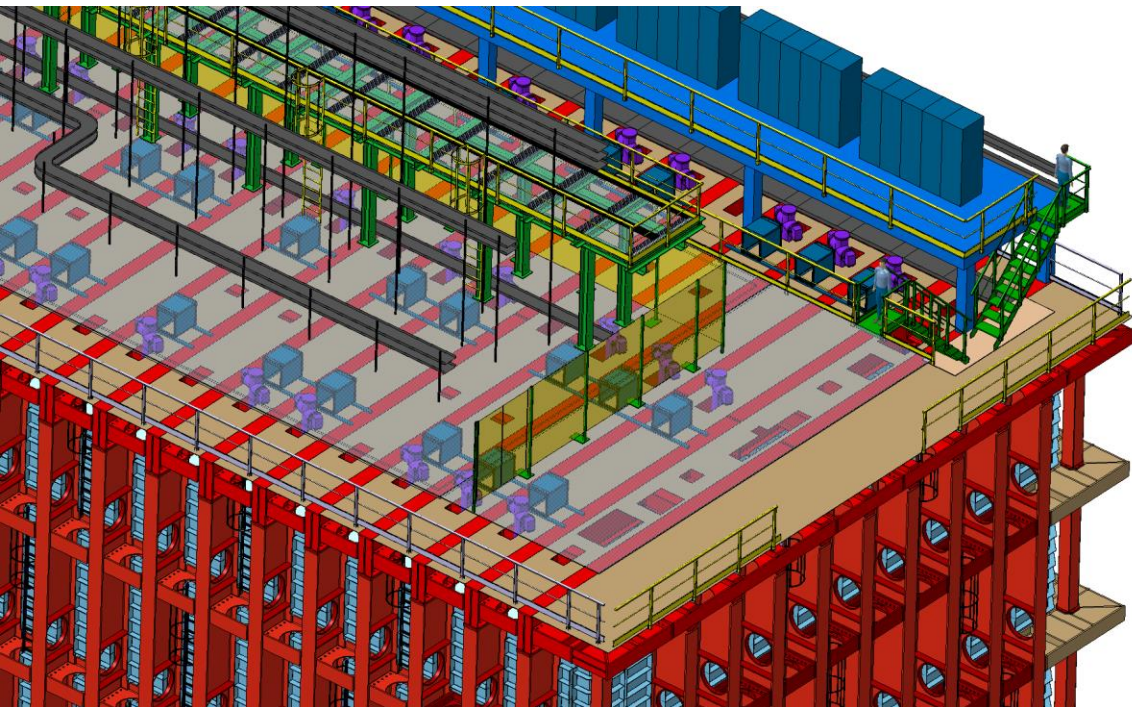
# LBNF – Services on the Roof



# LBNF – Services on the Roof

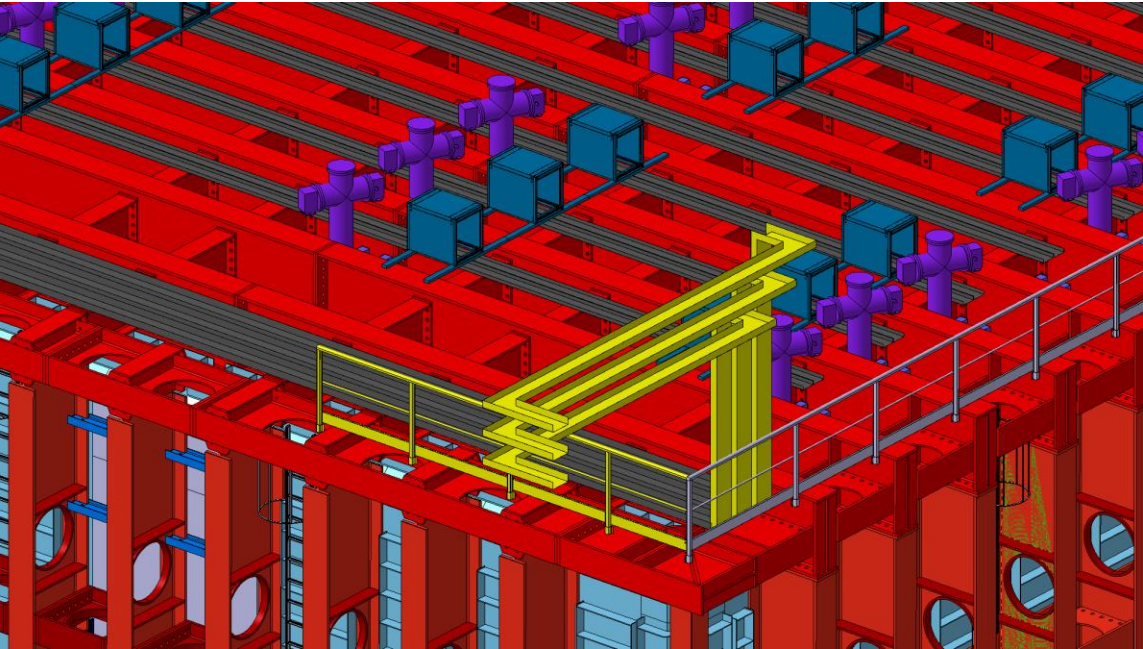
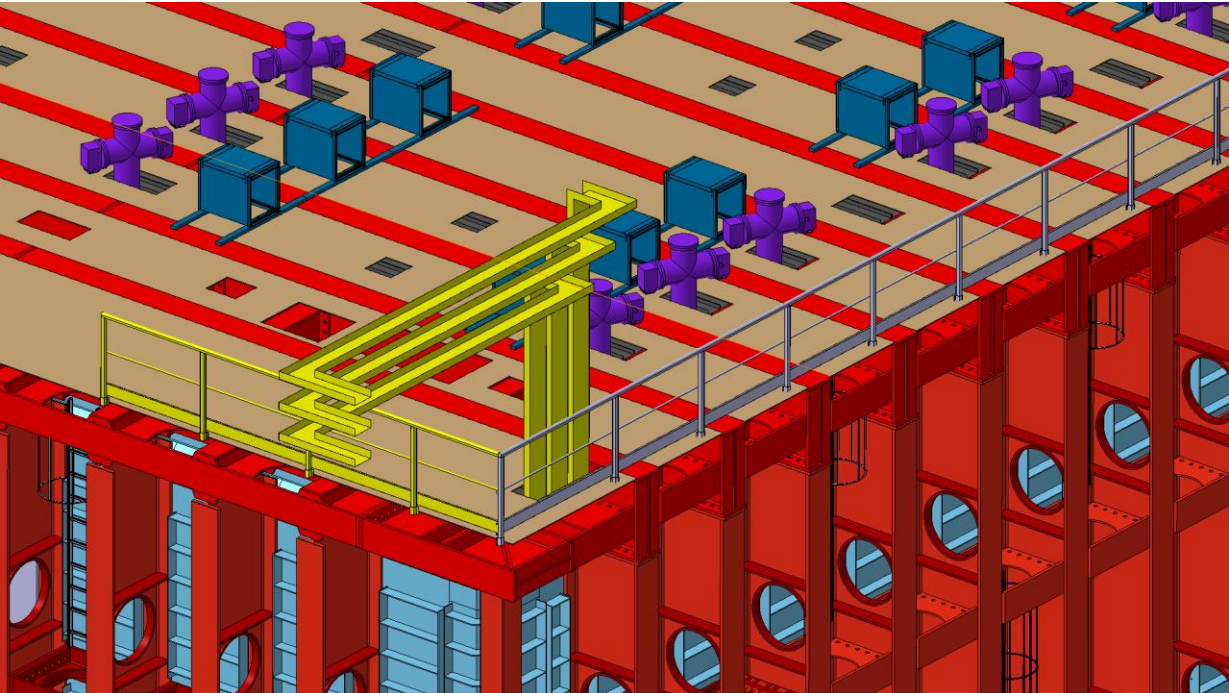


# LBNF – Services on the Roof



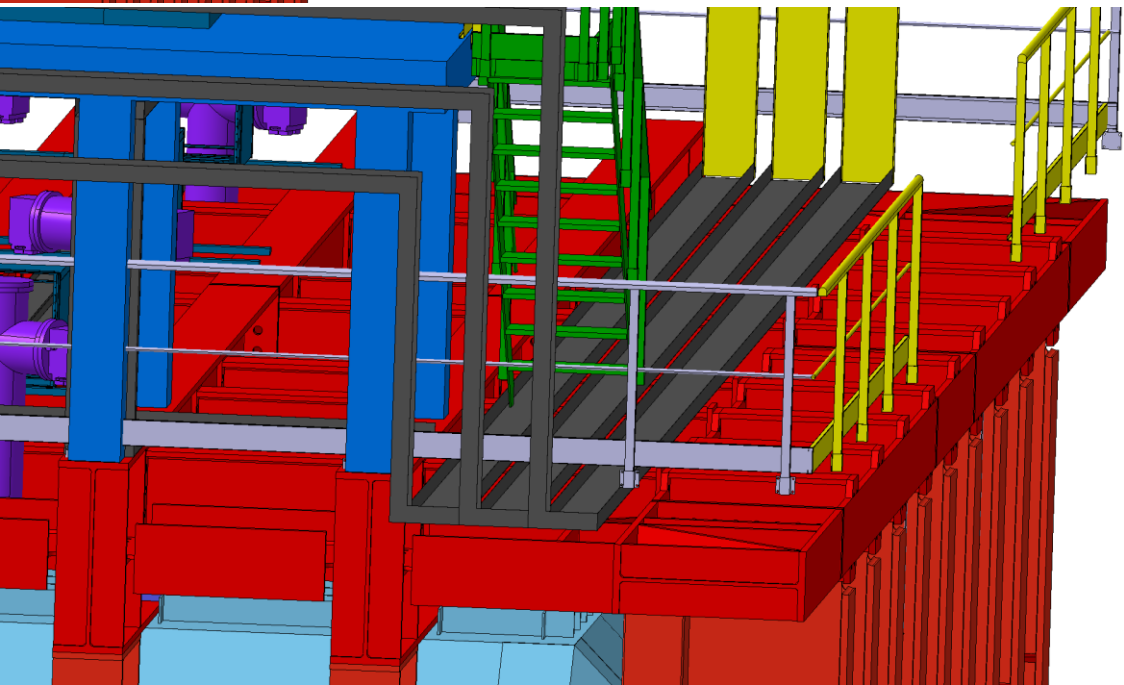
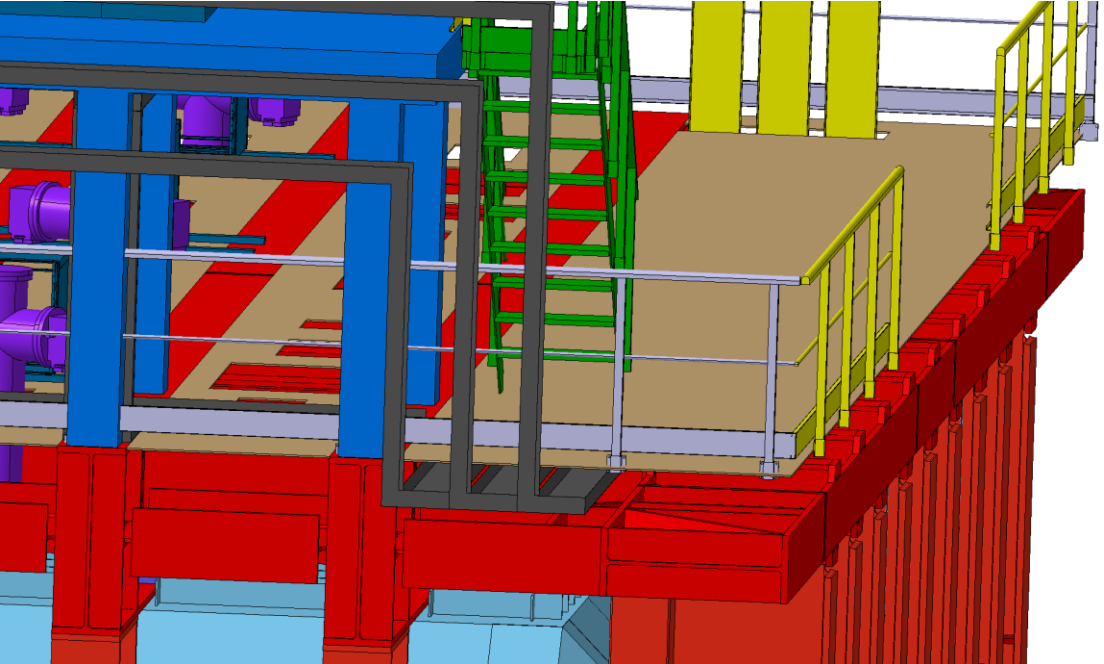
LBNF

*LBNF – Services on the Roof*



LBNF

*LBNF – Services on the Roof*



LBNF

Thank you!