



# Bifrost Cave Installation...So Far

PRESENTED BY LIAM WHITELEGG

2020-09-11

# Agenda



1 Prep-work and IRR

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2 Arrival

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3 Install Process

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4 To come....

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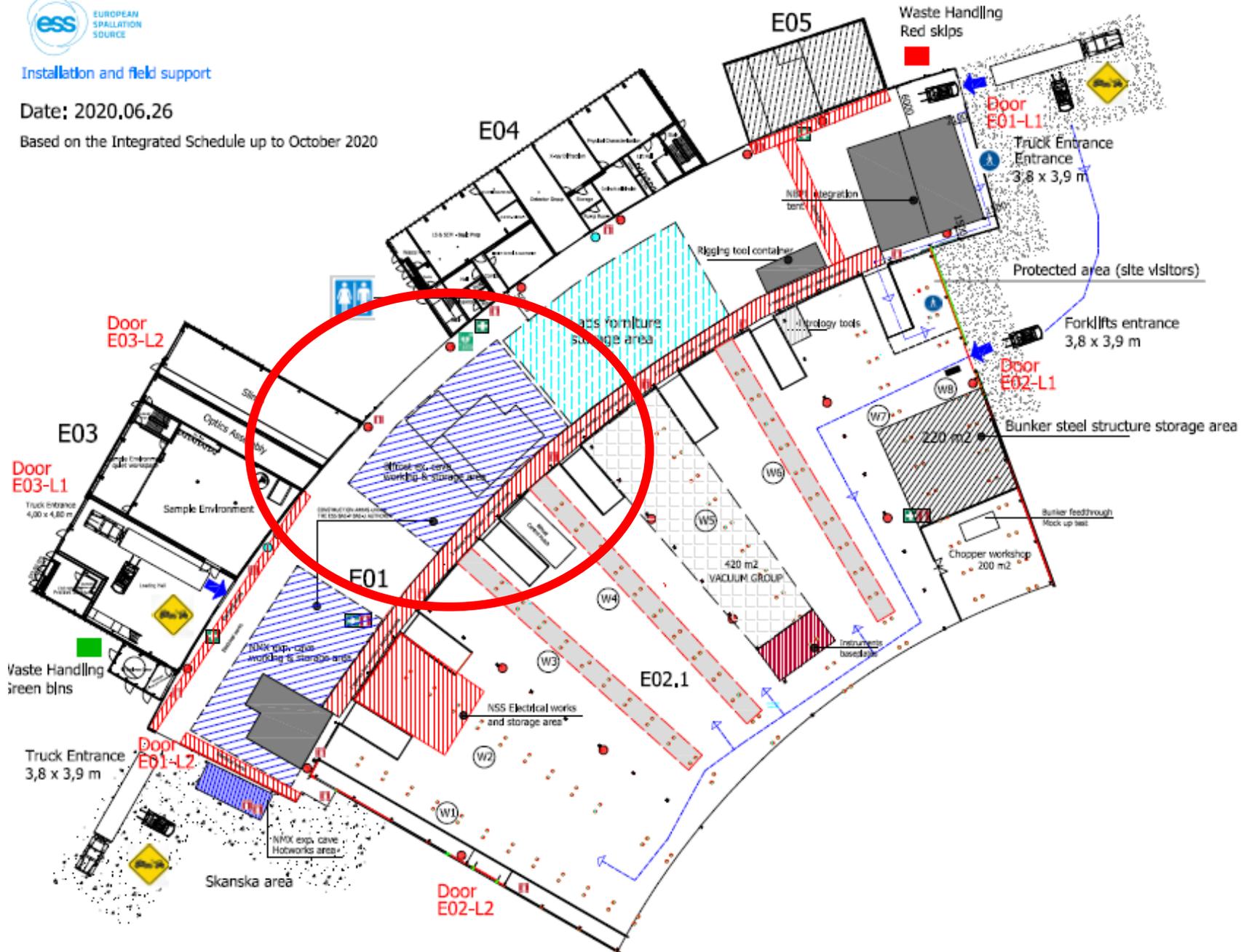
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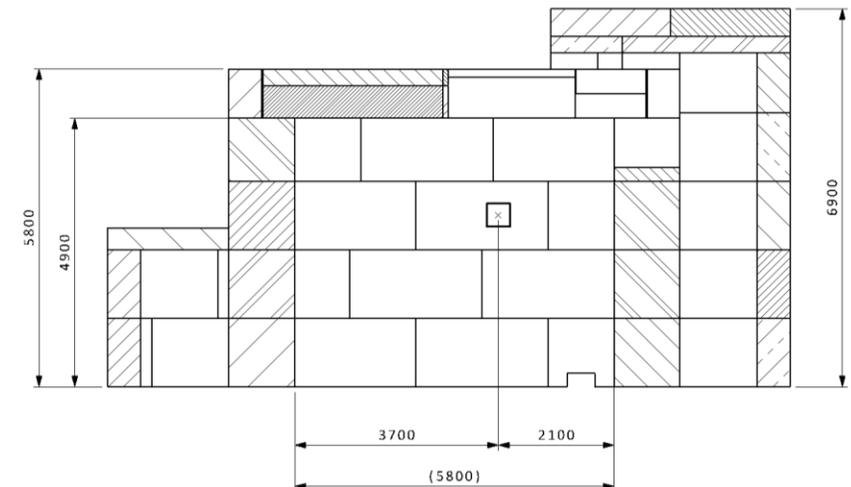
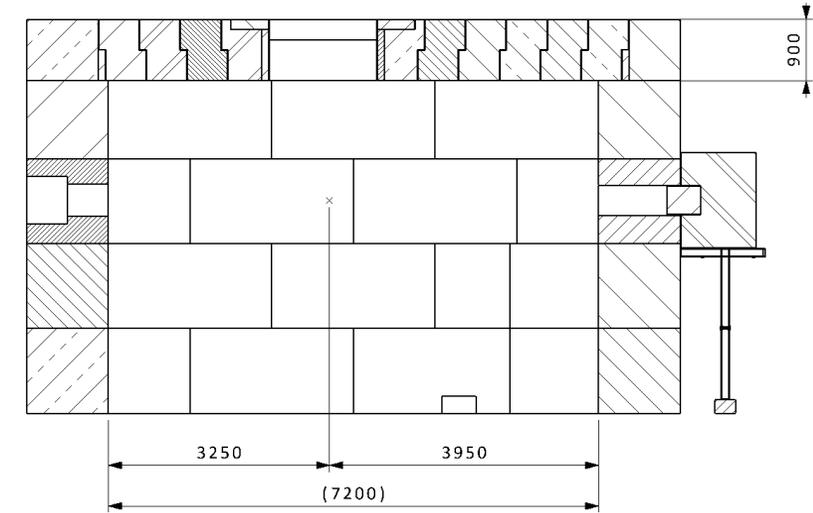


# Introduction & Concept of Operations



## General Dimensions and Basic Design

- Internal dimensions of;
  - 7.2m along beam path
  - 5.8m perpendicular to beam path
  - 4.9m internal height
- In general, wall thickness required is 1.2m
- Formed through uni-layer of blocks
- Roof thickness is 0.9m and primarily one layer Z beams



# Prep-work and IRR

- IRR occurred on the 1<sup>st</sup> July
- Smooth meeting and good alignment
- Contractor (MICO) encouraged to use scaffolding (not lifts) and RAMS transferred to template
- Chemical data sheets and Covid points added
- RAMS signed off on the morning that work began
- SAM marked out SP, Beam Axis and Internal Corners
- SAM laid fiducial nests for the future network
- We then laid tape outlining position
- Fences brought over to designate working area
- Rigging support procured through BMS
- Deliveries logged at the gate
- Pre-registrations and inductions booked
- Boards added to E04 room



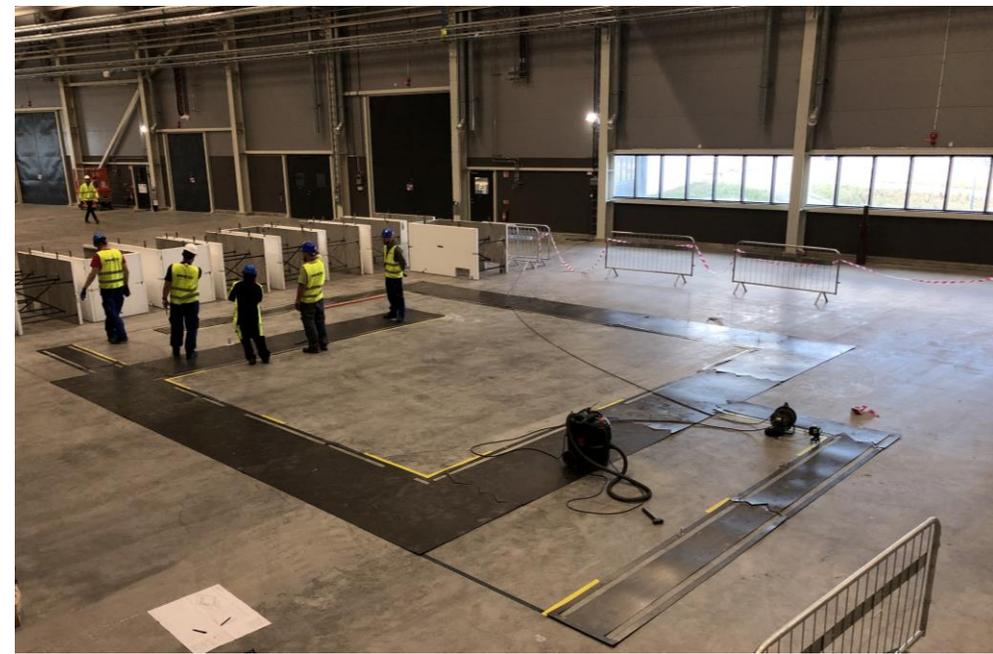
# Arrival

- Inductions in English (or translated) Tuesday 0800
- Czech team arrived on 25<sup>th</sup> August
- 2.5 hours taken to fix
  - Inductions
  - Access cards
  - PPE
  - Car registration
  - Lockers/caravan (Not ready in time)
  - E01 Key
- Contractors aimed to meet all necessary stakeholders (HEAB, Sydsten etc.)
- Rushed and intense time
- First delivery at 1100 – Partially blocked route



# Install Process

- Truck unloaded via E01 crane
- Stencils laid down on floor and floor measured
- Holes and troughs drilled through stencil
- Scans of concrete performed - rebar
- Anchors installed with brackets
- Grounding checks – amendments made
- Sealing foam added
- Blocks installed from highest point (8mm difference)
- 1<sup>st</sup> row completed, bolted and sealed off
- Decommissioning features added
- Casting process begins in two phases
- And repeat....



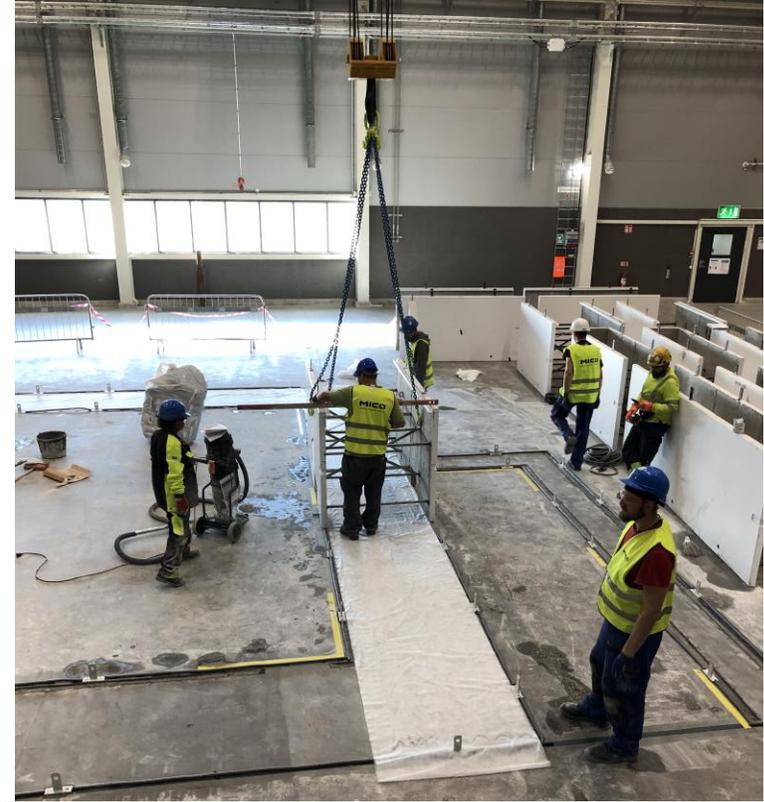
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# To Come...

- Now completed 3 of 5 wall layers
- Pre-cast elements include;
  - Beam Stop
  - Cable covers
  - Internal plinths
  - Labyrinth roof
  - Roof pieces
- Trial fits conducted
- Work commences again 28<sup>th</sup> September

