BUFFER/TEMPORARY STORAGE BUILDING FOR THE CNGS DISMANTLING

udy

11 FEBRUARY 2021

PURPOSE

The building should receive the éléments from the dismanteling of the CNGS remains coming from the TTC4 target hall for :

-Temporary storage before radiactive waste treatment;

-Decontamination, cleaning and painting;

-RP measurements;

Idea type of building: industrial type, bardage cladding.

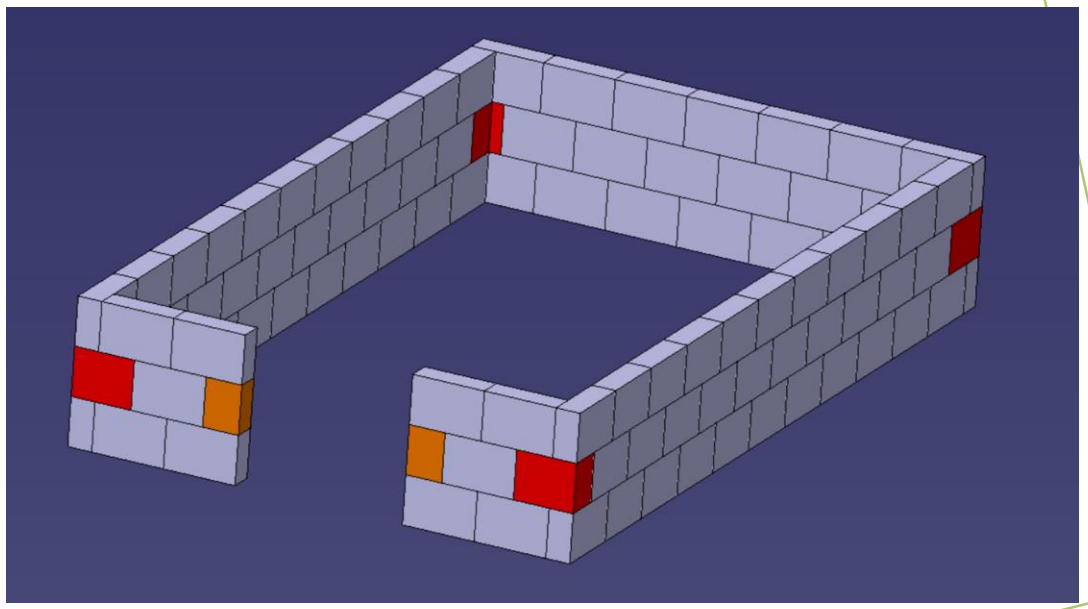
DIMENSIONS/LOCATION

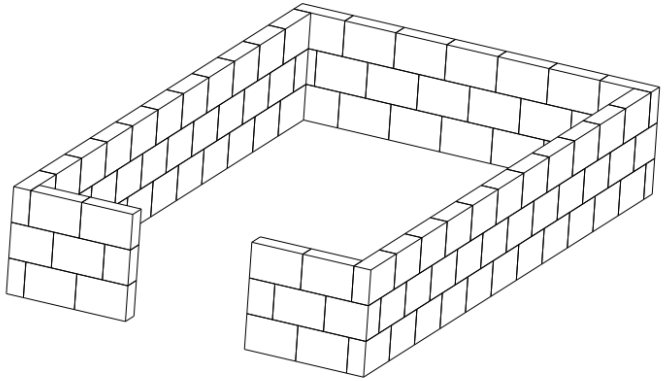
The building should have an effective ground surface of 400 m2, with a hight below the crane hook of 5 meters

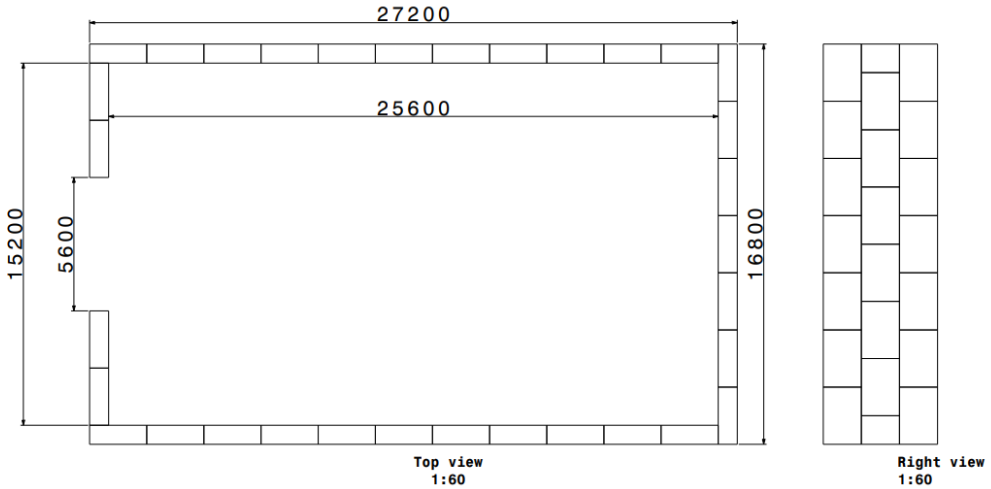
To limit the handling of radioactive components, it is important that the building is located as near as possible to BB4.

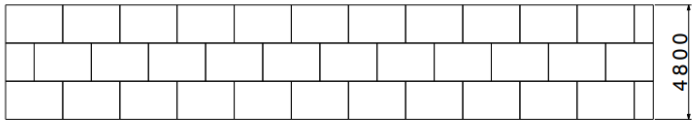
SHIELDING LINER

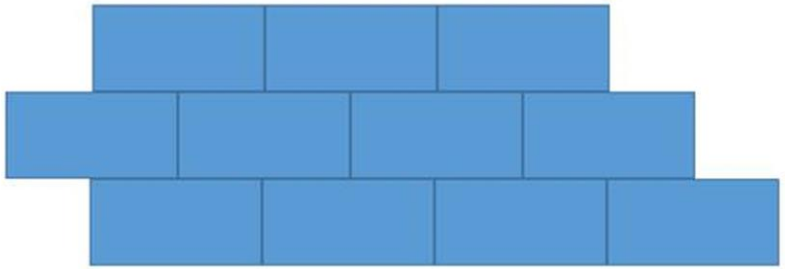
- In order to create a wall shielding with a thickness of 80 cm, we suggest an inside lining of the wall, built up by a layer of standard concrete blocks:









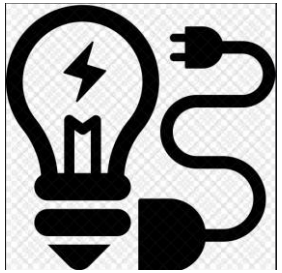


94 big blocs (2400*1600*800)
4 «corners»
2 blocs 1200*1600*800

The blocks shall be painted to avoid d

Note that the structure must be calculated an demonstrated to conform to seismic rules an mechanical forces (BE-EA can provide those calculations)

OTHER REQUIREMENTS



Traveling overhead crane

- Span: 10 meters
- Lifting height: 5 meter
- Load capacity: 10 tonnes
- Note that the building/metal structure must be design to host the crane rails

Electric installation:

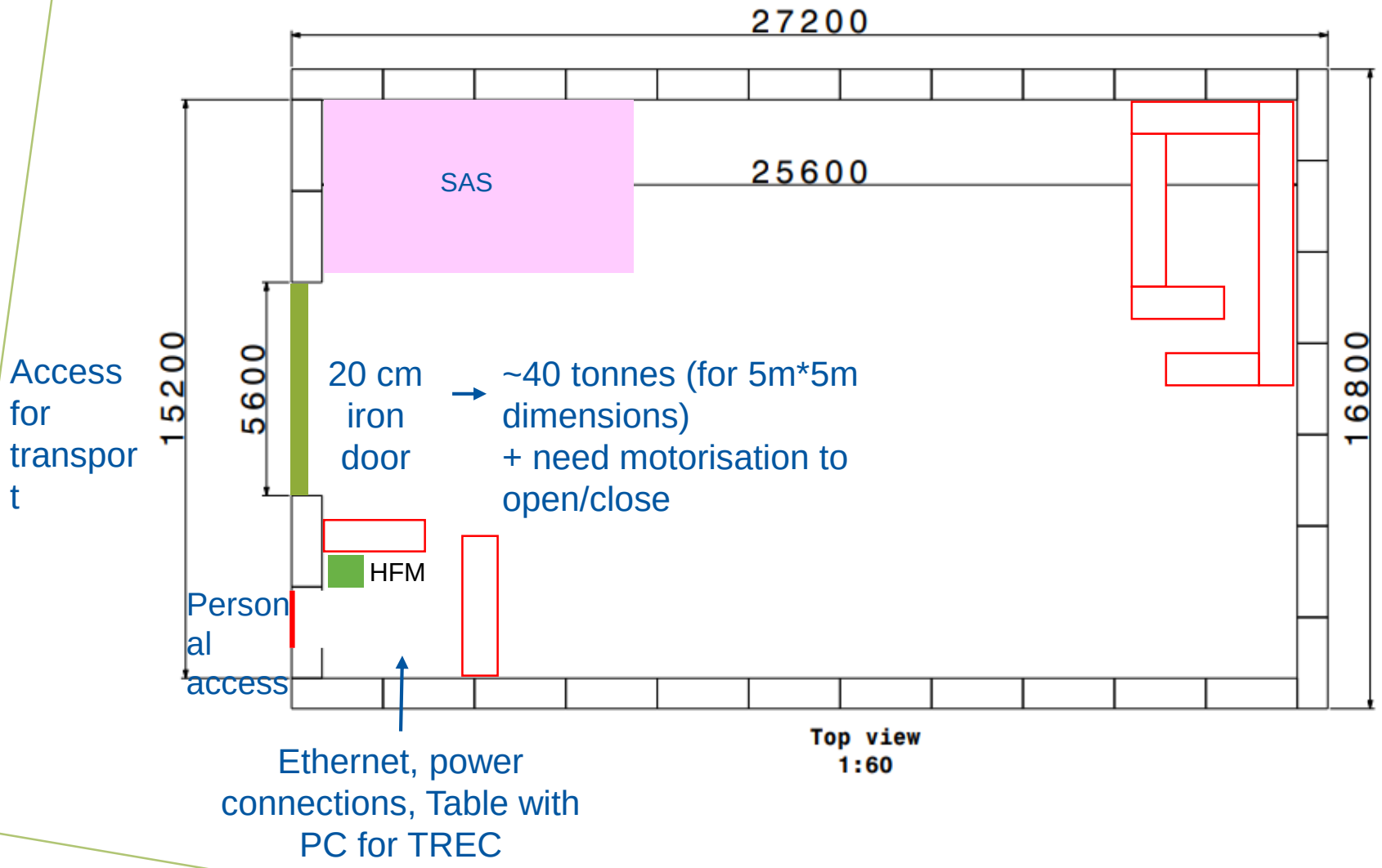
- Light
- Power supply sockets
- Power supply for the crane and for the heating if needed

Heating system:

If the activity will be operated during the winter months, e.g. painting..

Suggested location

RP REQUIREMENTS

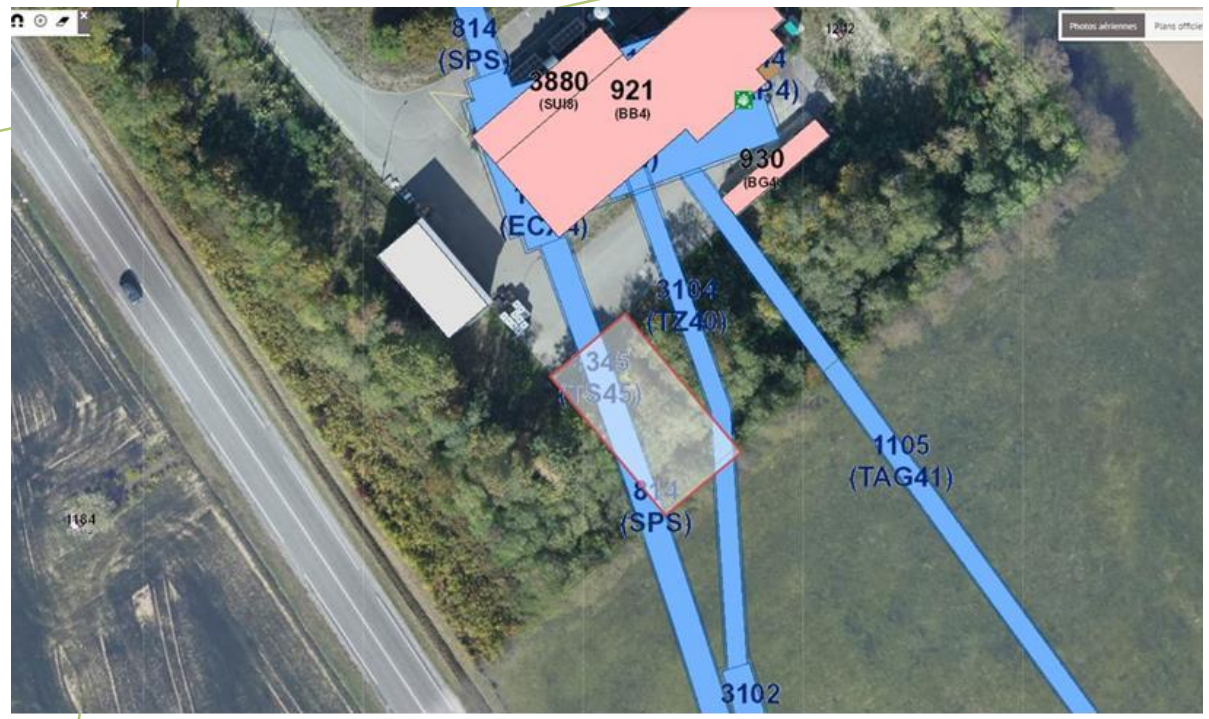


For discussion:

- Parking of transport vehicle?
- Shielding bunker for temporary storage of the most radioactive elements?
- Power connections for SAS (e.g. vacuum cleaner, APA, …)
- 2nd door for emergency needed? → Probably yes, to avoid having a dead-end

Possible location

Suggested location



HOW TO APPROVE A BUILDING ON THE CERN SITE

Information from the SCE department by Pierre Cardon:

We need to submit a IPP = Infrastructure Project Proposal, to the SIB = Site Infrastructure Board via the Space Management Forum

Note that the procedure is under revision in the SCE department with the aim to simplify and optimize the steps..

He will be back with more details

COST IDEA:				kCHF	
Building with "simple bardage insulation"					
ref: 2000 CHF/m2	400 m2			800	
Concrete blocks (cost from frame contract)					
2.4 x 1.6 x 0.8 m	94 blocks à 1500 CHF				
1.6 x 0.8 x 0.8 m	4 blocks à 1000 CHF			145	
Painting of the blocks					
188 CHF per block				18.5	
Traveling crane				150	
Folding door				~~30~~	→ 100 (rough guess)
Electricity supply (guess)				150	
Heating (guess)				75	
sub total:				~~1369~~ kCHF	→ 1439 kCHF

Cost input from:
John Osborn
Michael Lazzaroni
Roberto Rinaldesi
Juha Sakkinen