

SHIELD for 10gr exposure with cooling system

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SHIELD for 10 gr exposure

- **Area in Hall B assigned by LNGS**
- **Structure defined by Valery and Nicola and technical project finalised by D. Orlandi (LNGS engineer)**
- **Optimize the use of polyethylene blocks (from Darkside), use of the OPERA lead sheets and minimize the costs for the structure**
- **Steel structure defined**, tomorrow meeting with Orlandi to define the final optimization and schedule for construction
- Network connection with temperature log system accessible by network (System ready)
- Optimize the thermal insulation path of the connection tubes (refrigeration liquid and Nitrogen)

HALL B

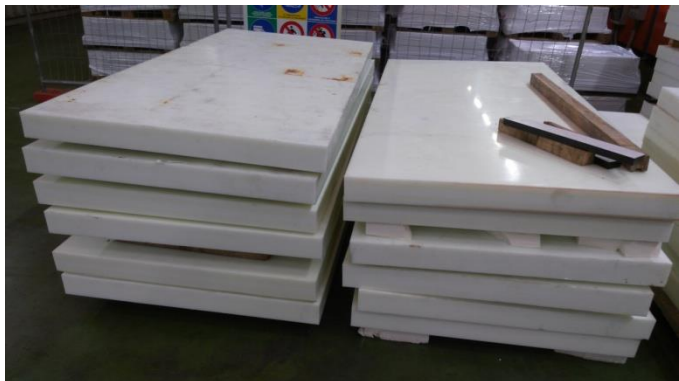
Polyetilene blocks

In this area assigned 5 x 5 m² to NEWS

←
LUNA

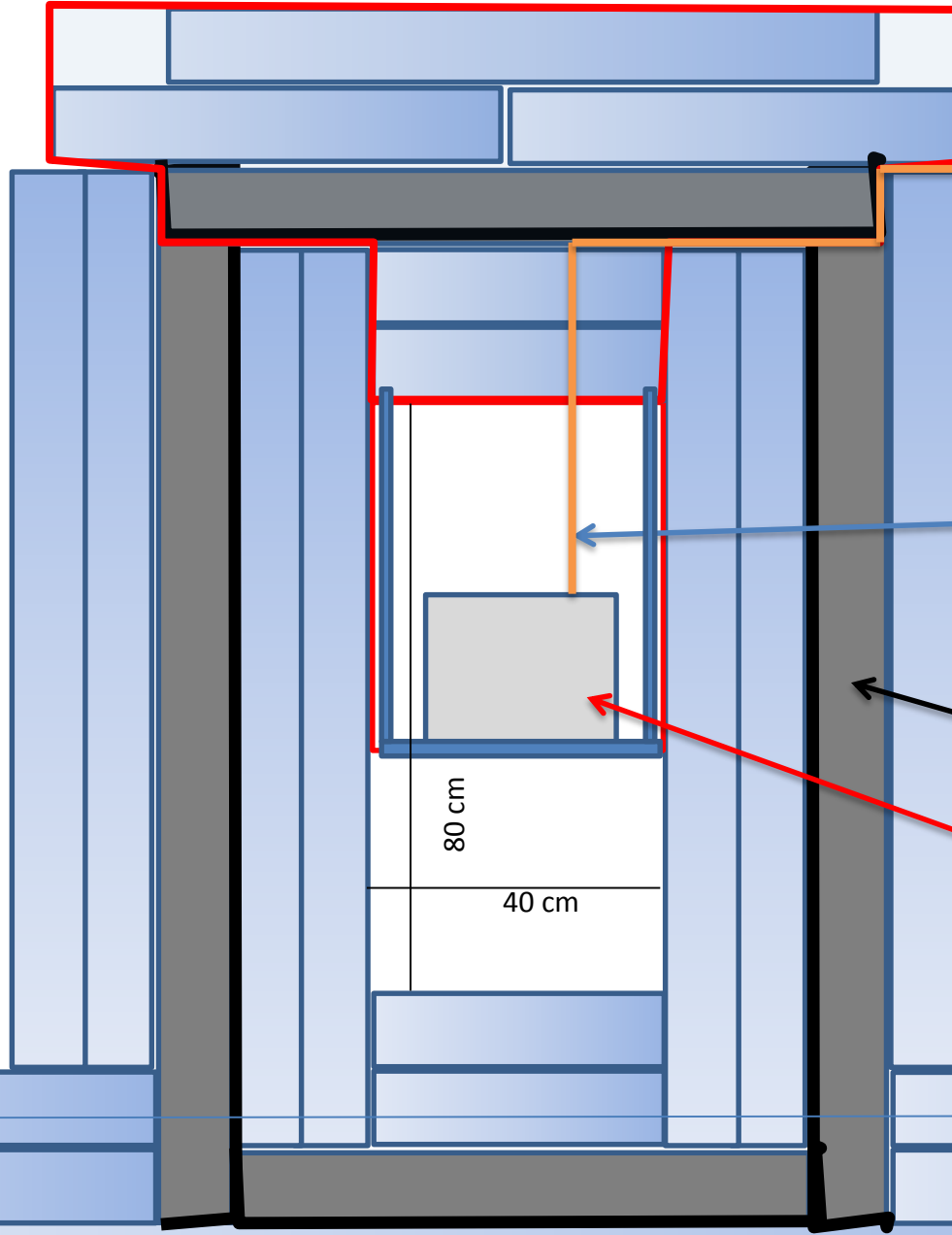
→
XENON

↙
Ex BAM Tunnel
NEWS LAB



SHIELD SCHEMATIC view

About 135 cm



Connection tubes
and temperature sensors cables
(cooling liquid and nitrogen
circulation)
About 6 connections
...around 4 cm²

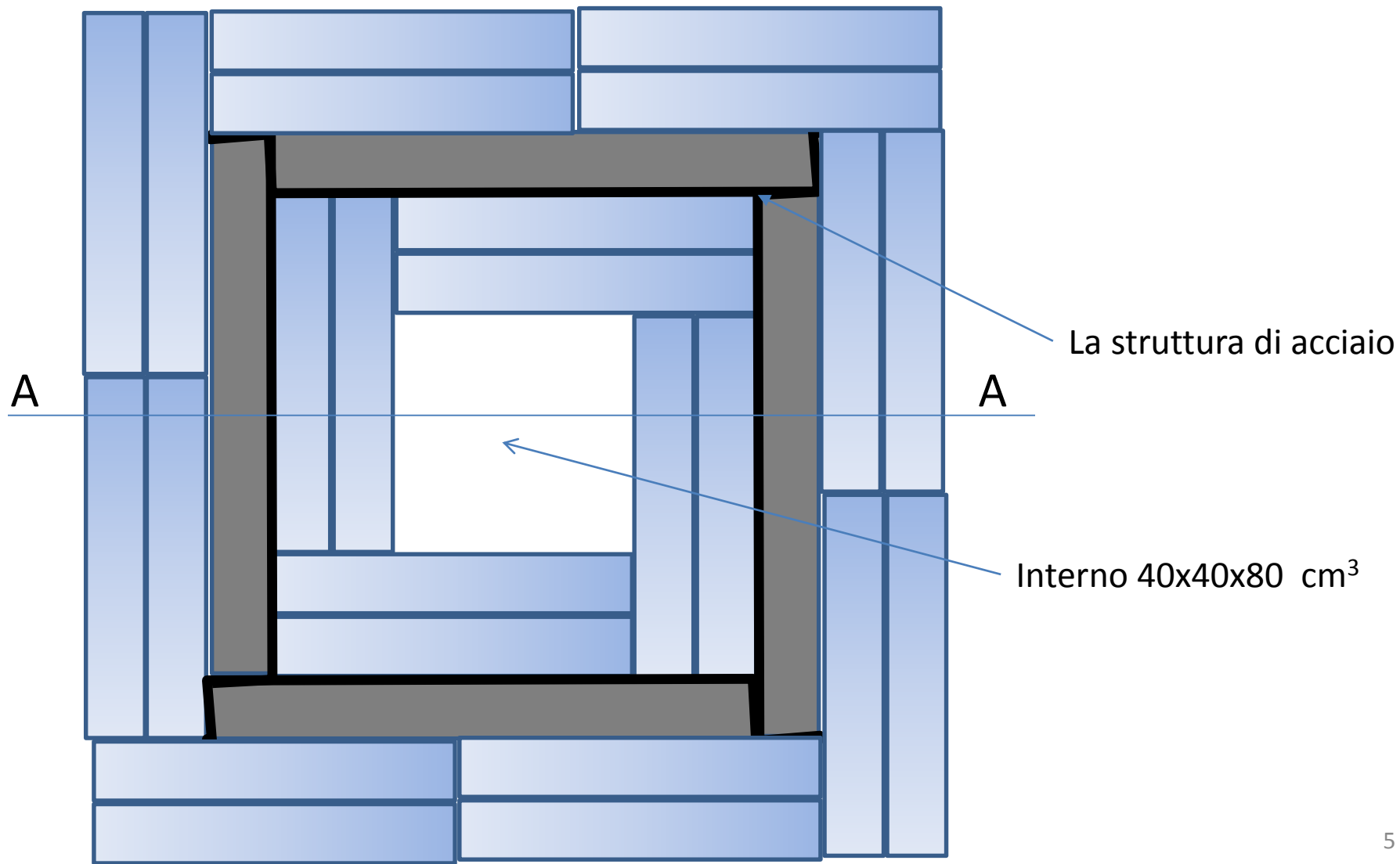
Nitrogen box
(avoid umidity and Radon)
About 35x35x 40 cm³

Steel structure
with lead sheets

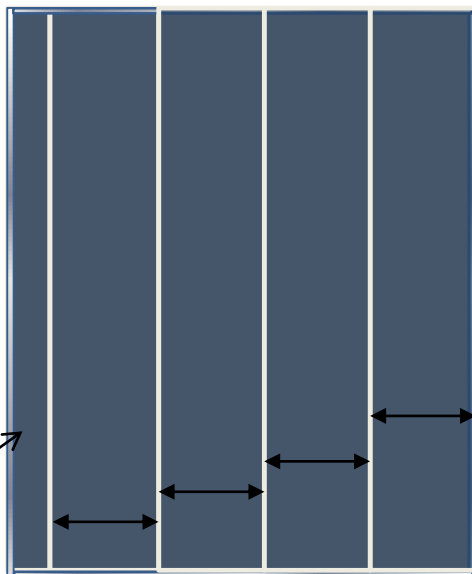
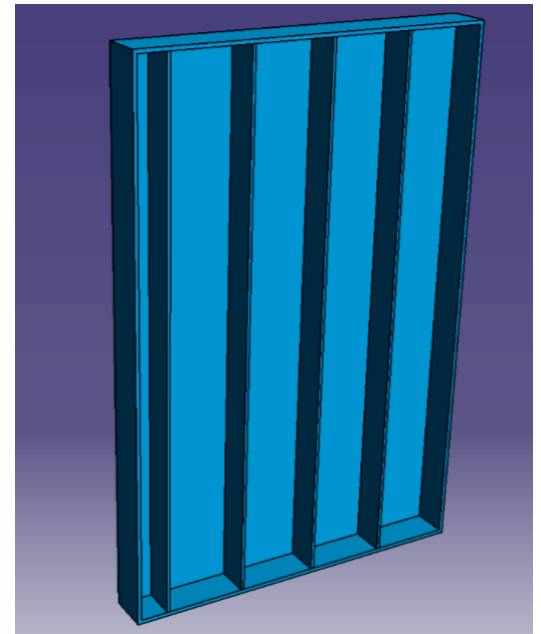
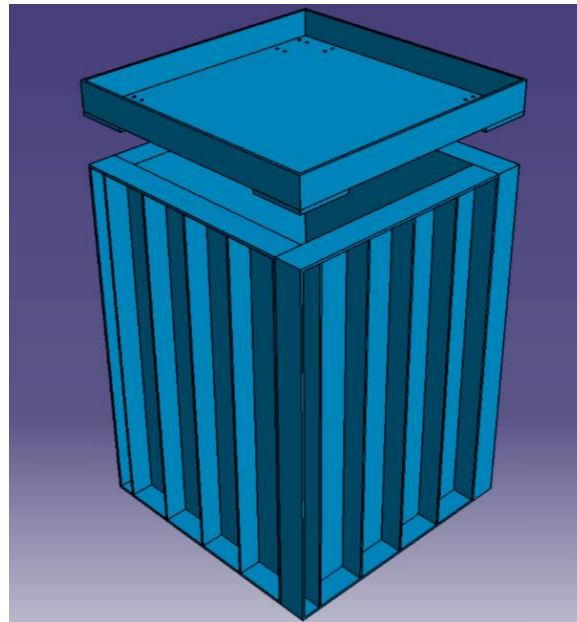
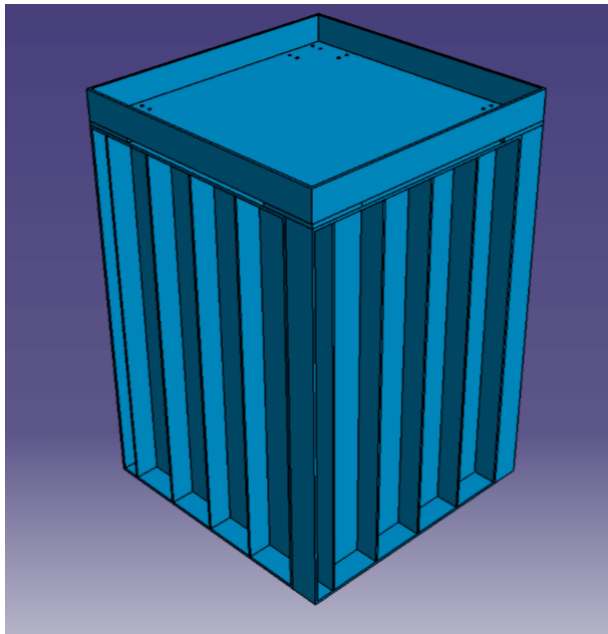
Cooling system

244 cm

Vista da sopra, sezione C-C

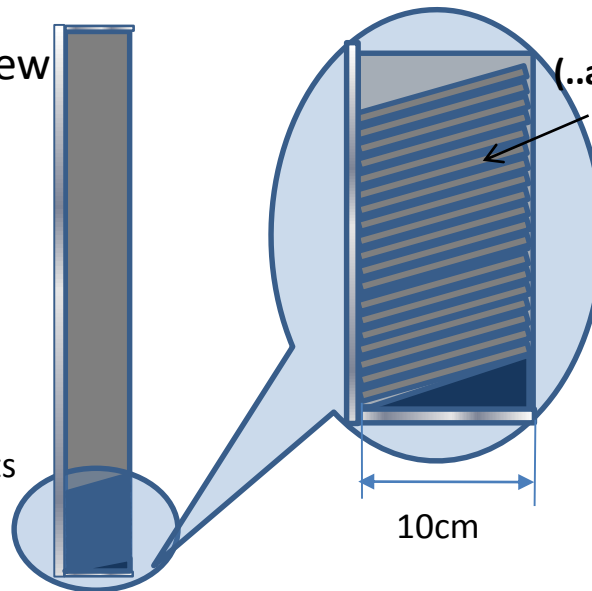


SHIELD : Steel structure



Side view

20 cm
2 lead sheets



10cm

Apprximate material budget

Polyethylene

- Total polyethylene weight – about 3000-4000 kg

Lead

- 4 walls 10x92x140 cm - about 1400 kg/wall
- bottom 10x80x80 cm
- top 10x80x80 cm - about 700 kg of lead, about 1000 – 1100 kg with polyethylene
- Totale lead weight: 7000 kg

