



HFM
High Field Magnets

HFM infrastructure needs at CIEMAT

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Contents

- CIEMAT HFM laboratory
 - Building
 - Layout
 - Equipment



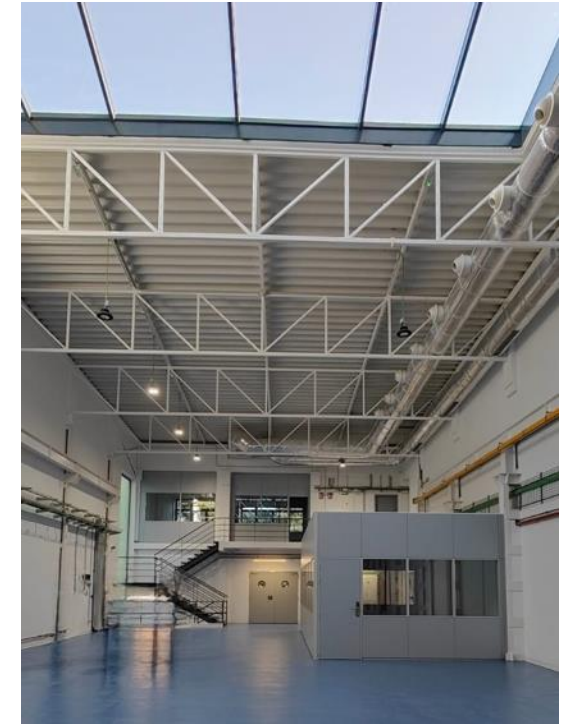
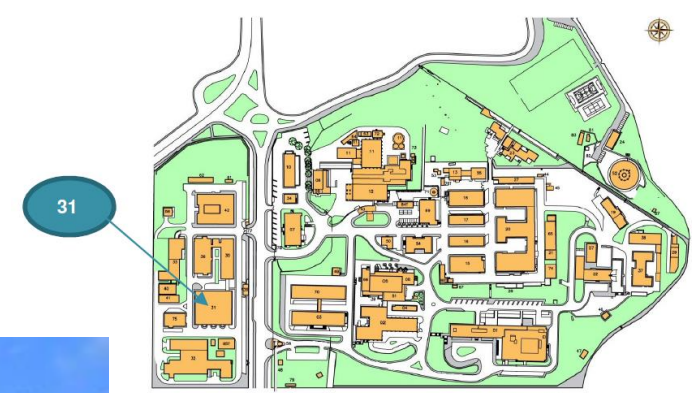
Introduction

- The aim of this laboratory is the prototyping of magnets up to 2.5m long and 10t.
- Within the framework of CERN/CIEMAT collaboration agreement KE3920.
- The new laboratory is inspired on the 927 lab at CERN. Special thanks to Juan Carlos for his very helpful support from the facilities concept to the specifications of the equipment needed, and also the purchase and contract follow-up for large equipment.

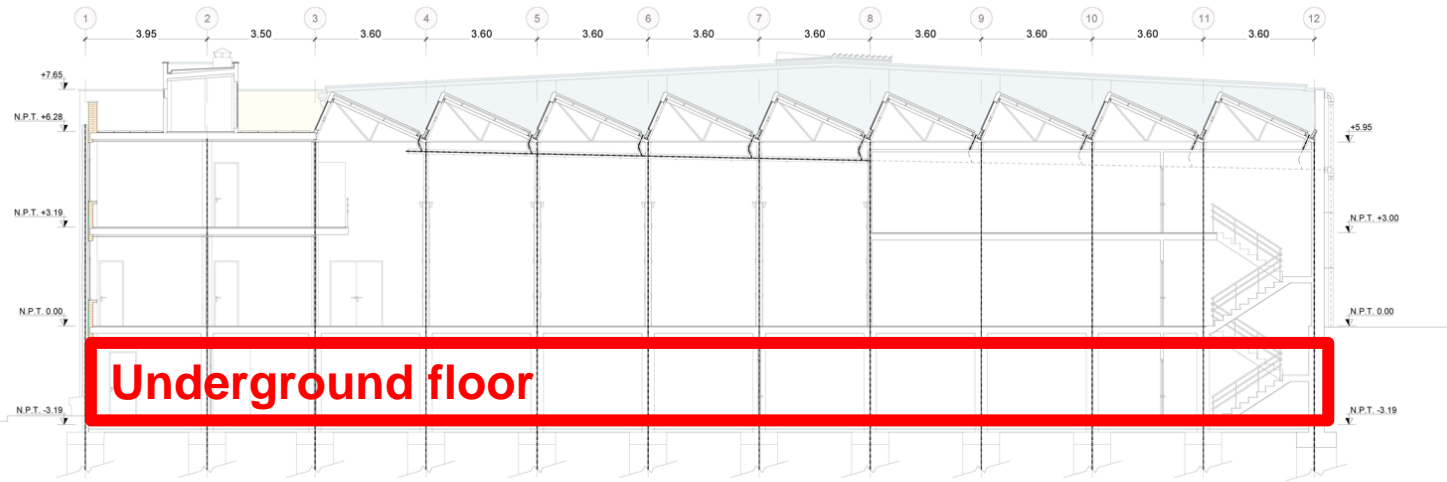


Magnet lab: CIEMAT Building 31

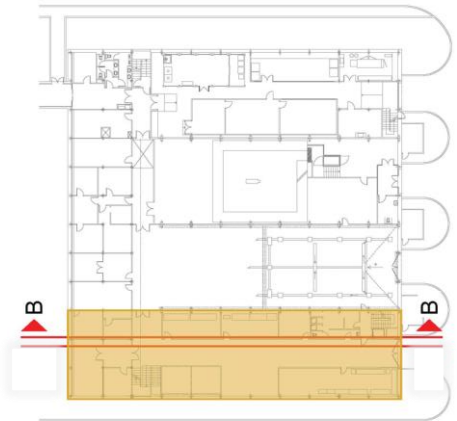
- Building refurbishment finished



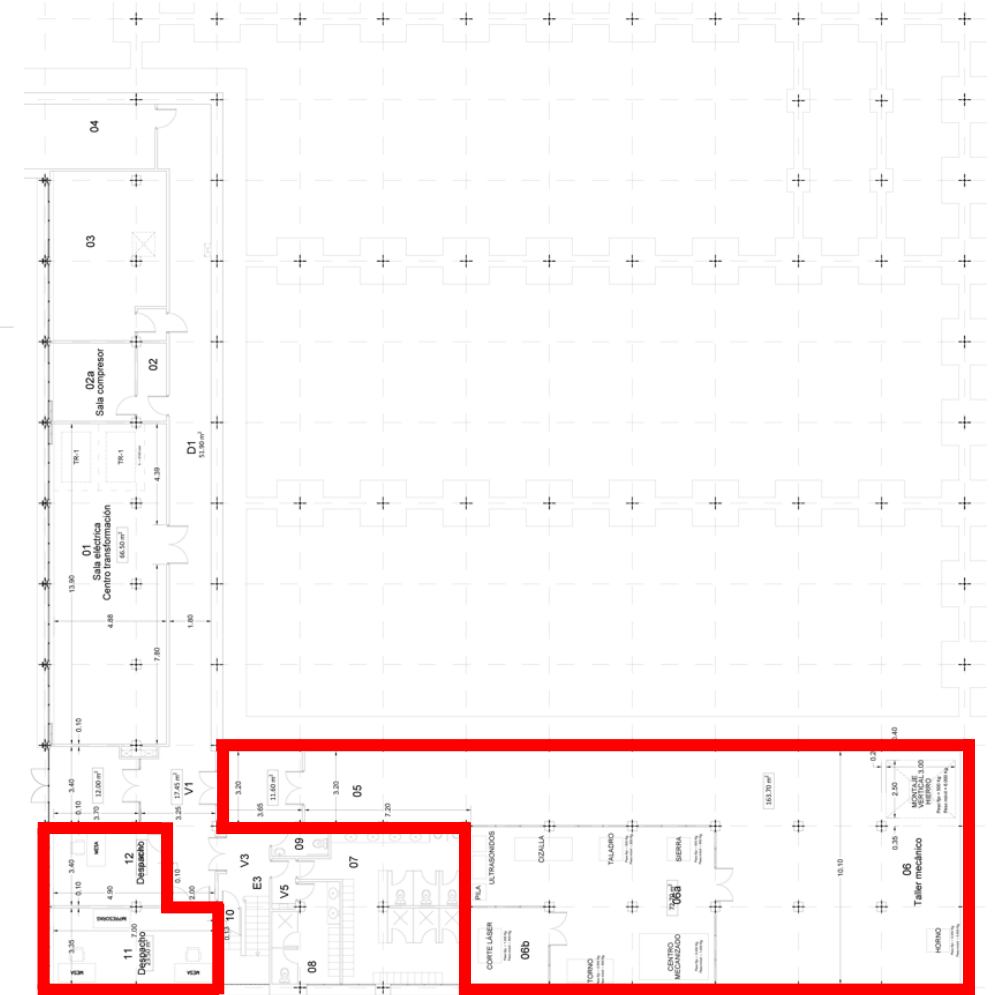
Magnet lab Building: Underground floor



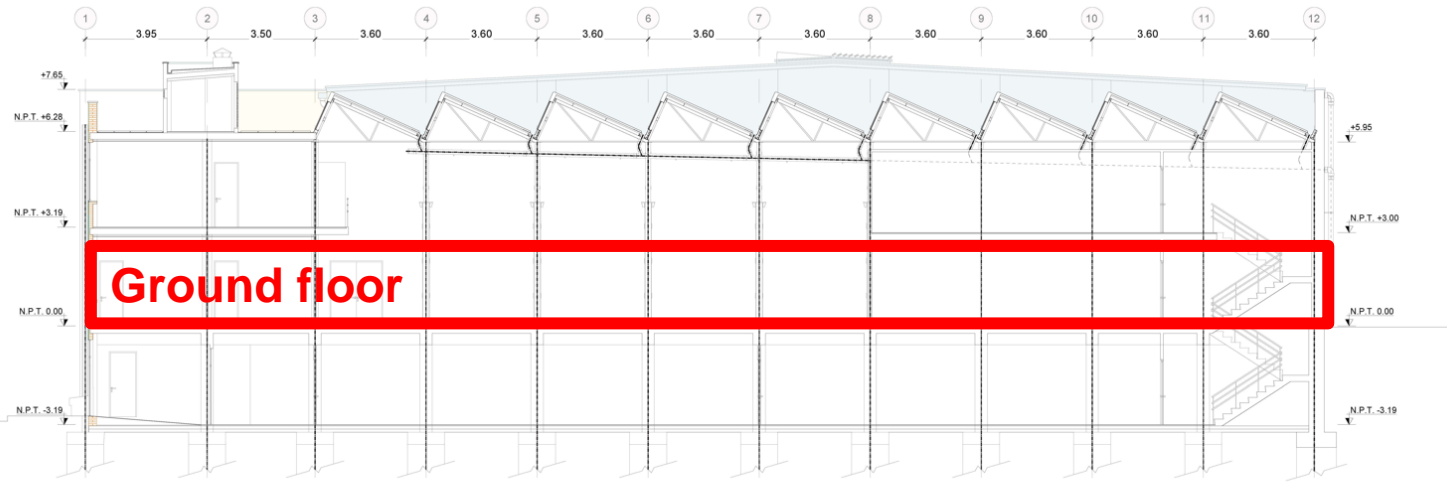
NAVE 4. SECCIÓN B-B



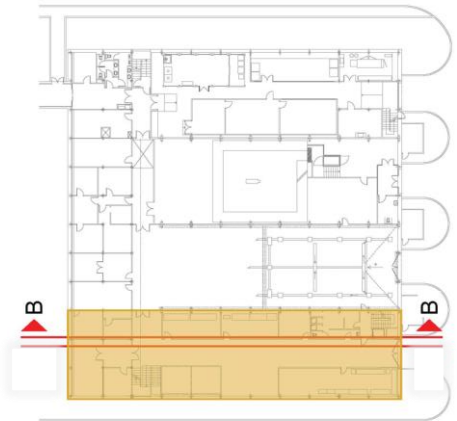
300m²



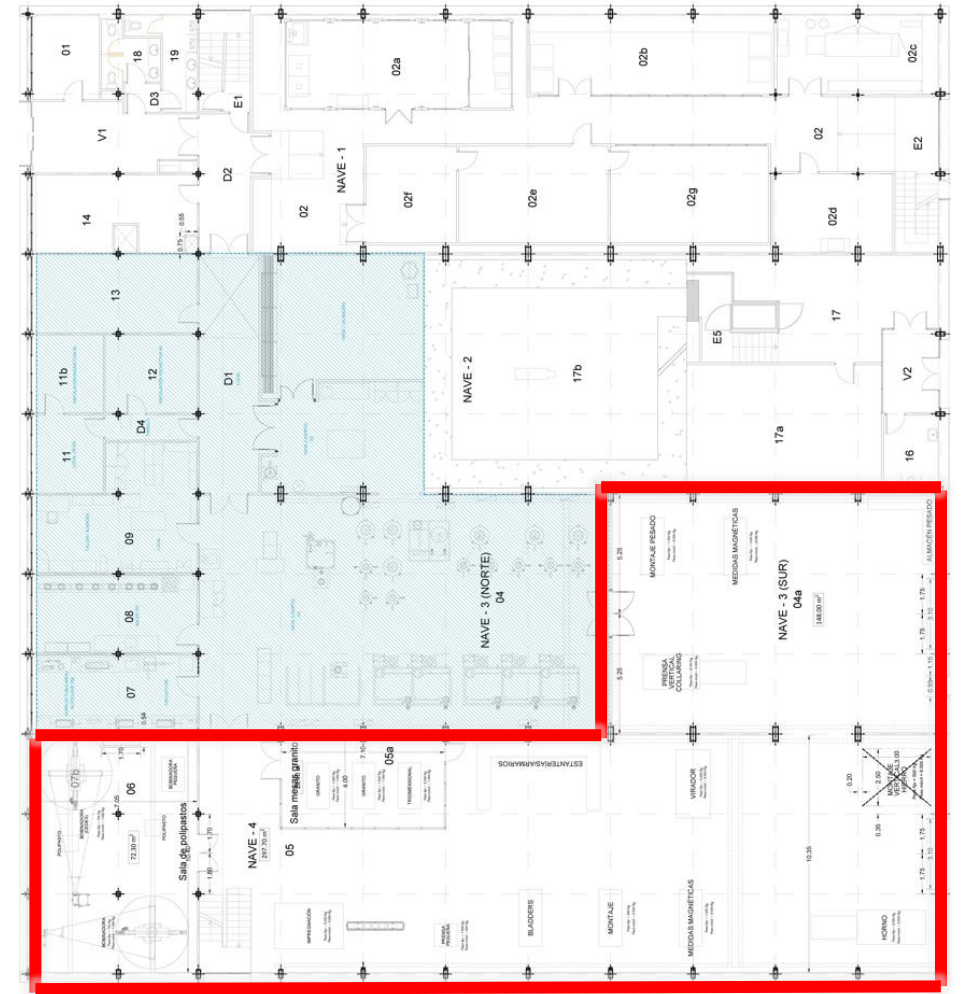
Magnet lab Building: Ground floor



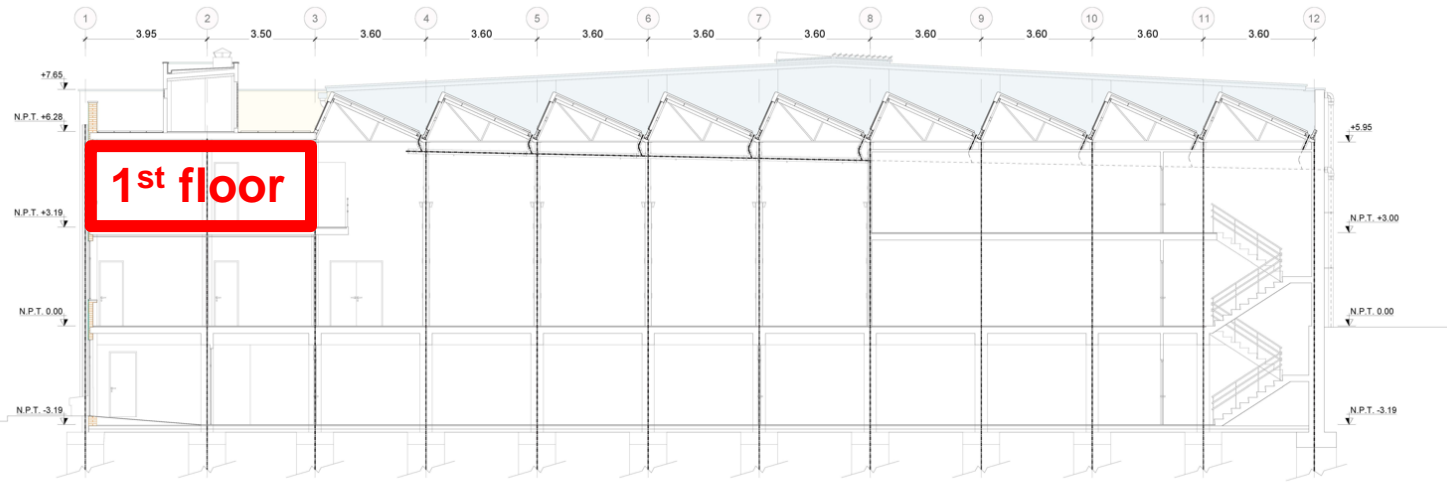
NAVE 4. SECCIÓN B-B



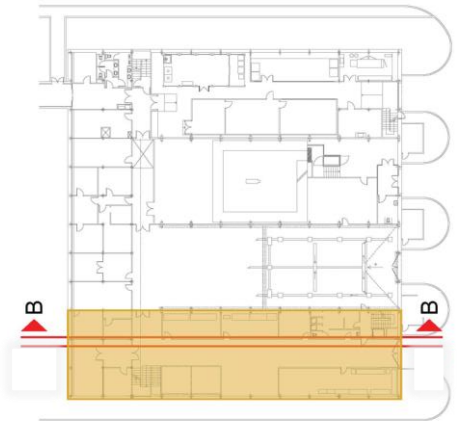
400m² + 150m²



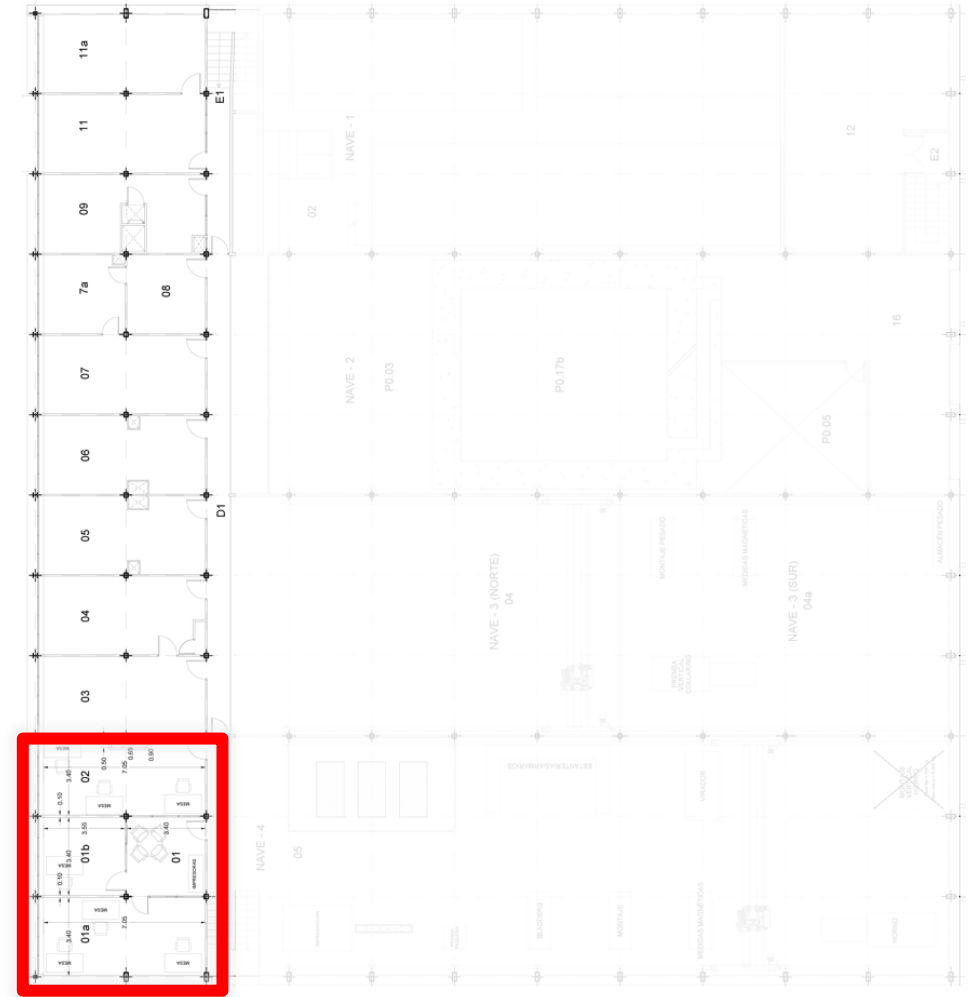
Magnet lab Building: First floor



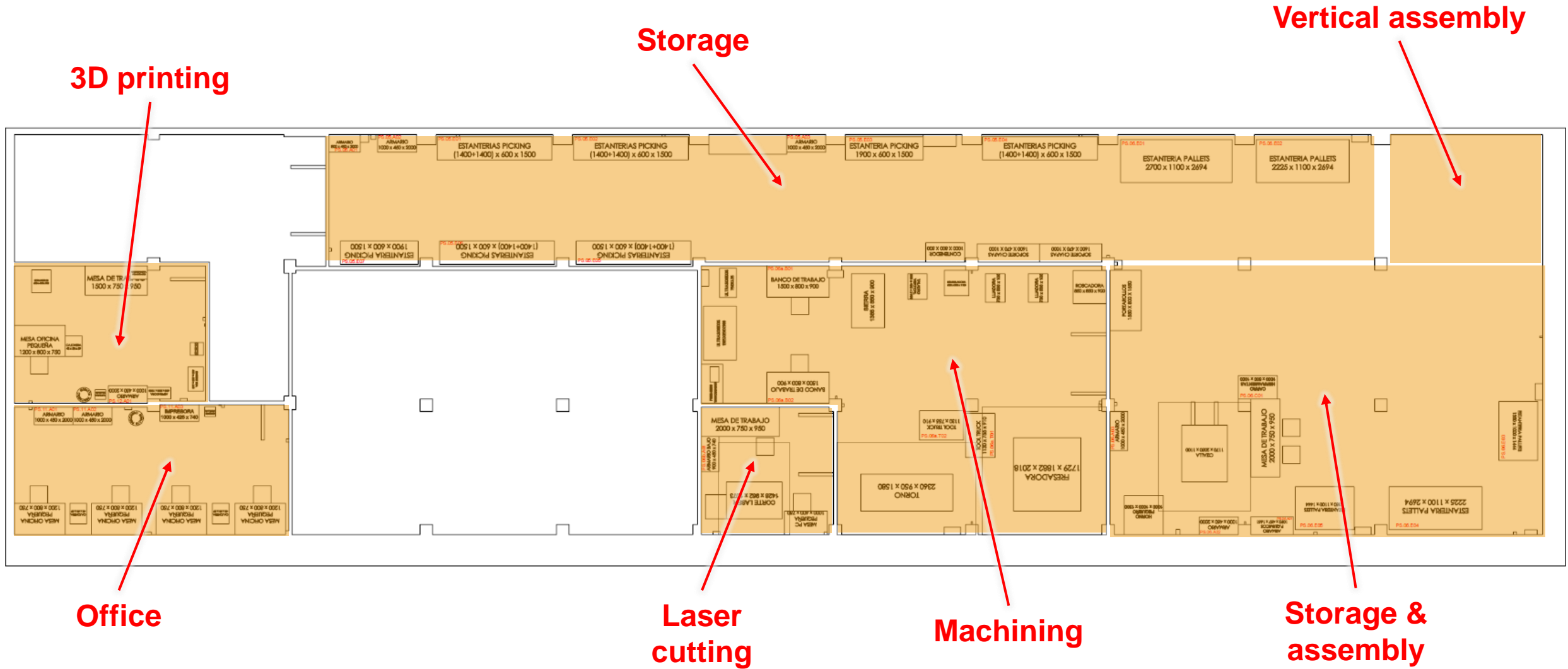
NAVE 4. SECCIÓN B-B



70m²



Underground floor: Layout

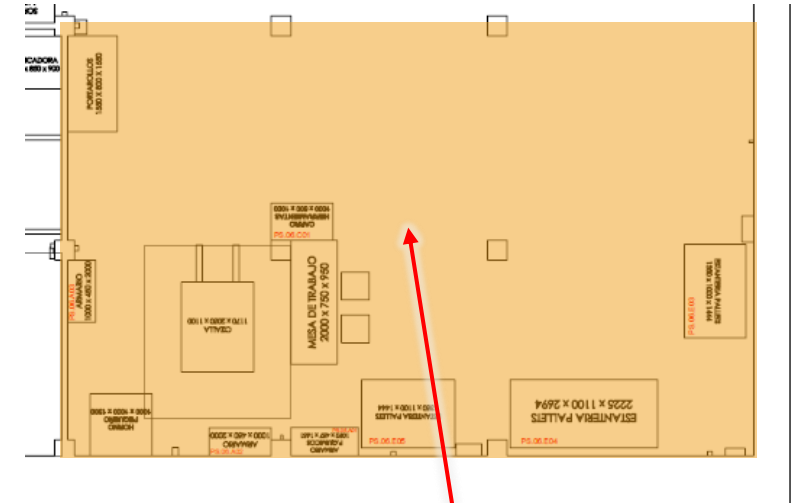


Underground floor: Storage & Assy area Equipment



**Chemical
storage cabinet**

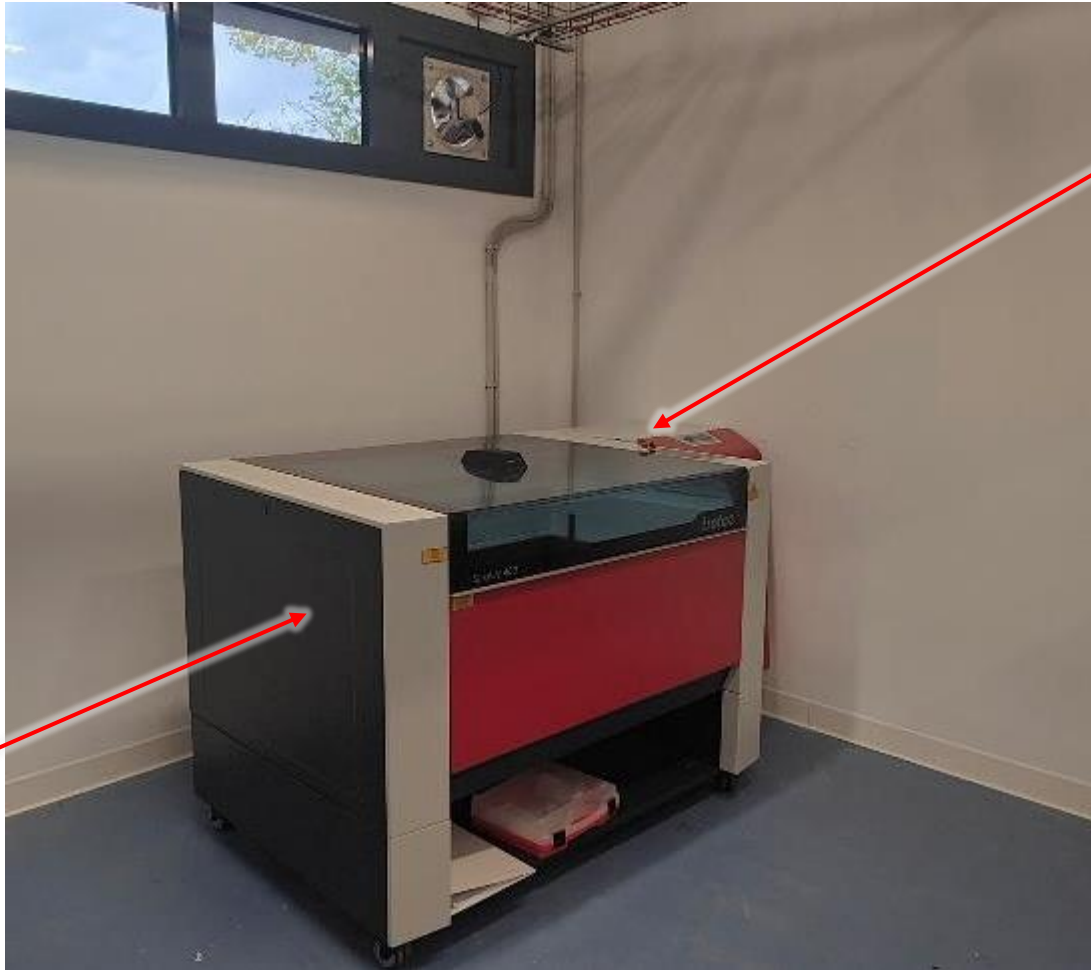
**Shearing
machine**



**Storage &
assembly**

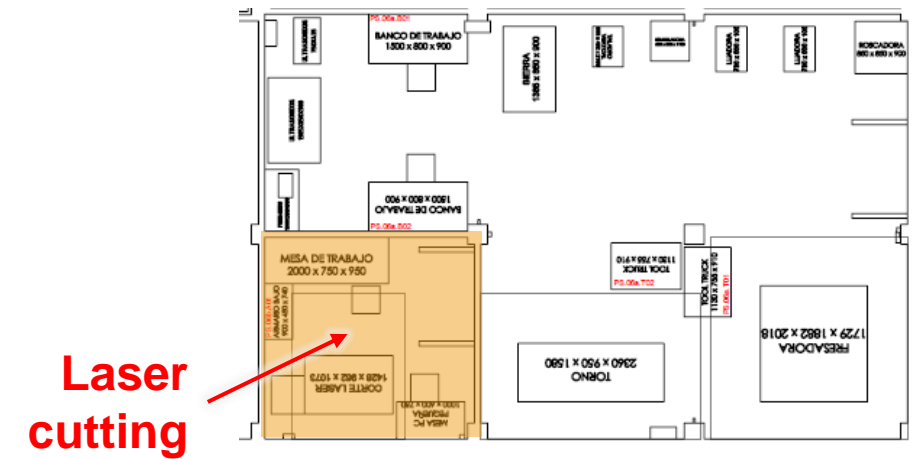


Underground floor: Laser cutting area equipment



Laser cutting machine

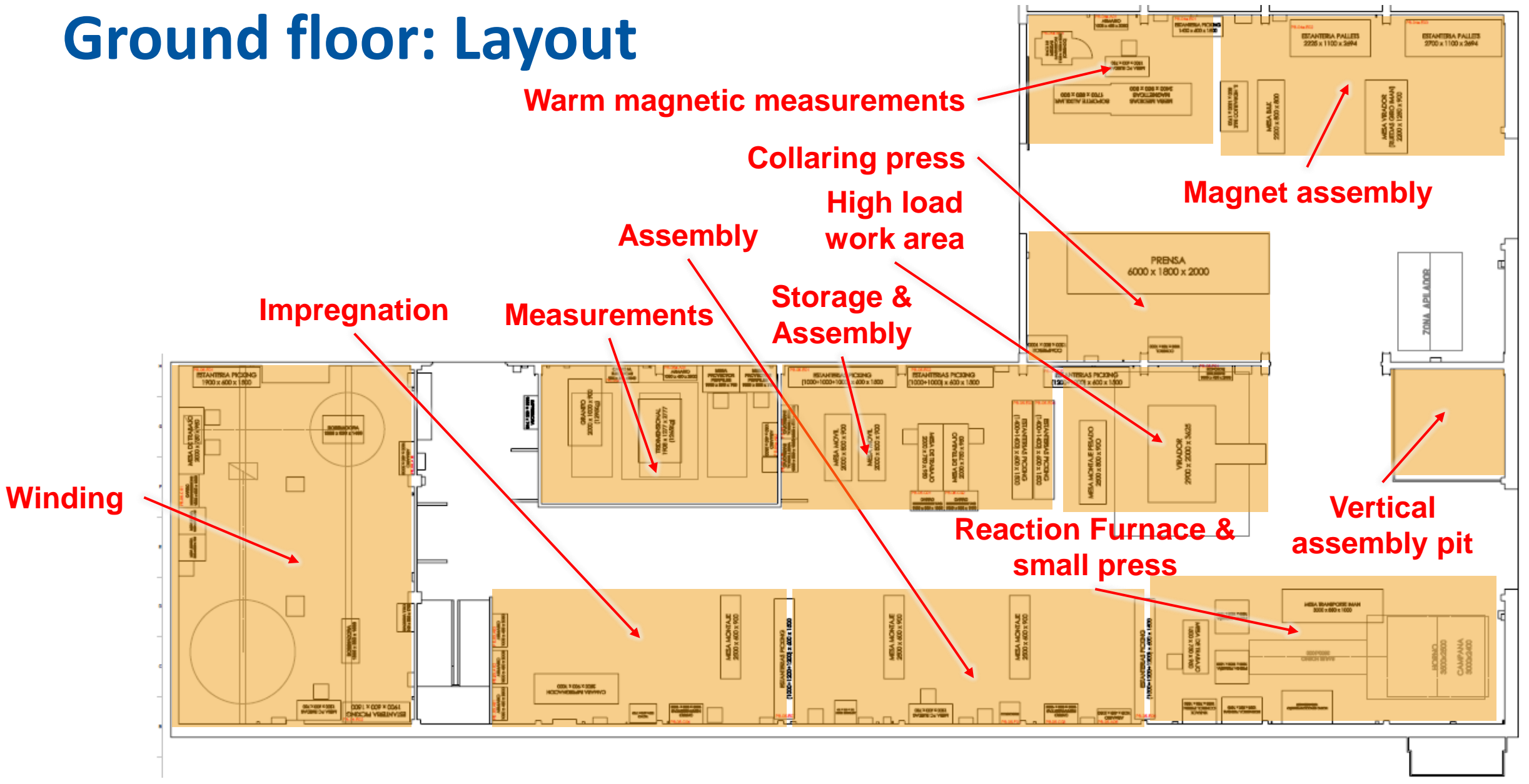
Laser exhaust system



Laser cutting



Ground floor: Layout



Winding

Impregnation

Measurements

Assembly

Storage & Assembly

Warm magnetic measurements

Collaring press

High load work area

Magnet assembly

Reaction Furnace & small press

Vertical assembly pit

Ground floor: Crane

- A new 10t crane in the magnet assembly hall has been installed



Ground floor: Winding area equipment

Electric chain hoist

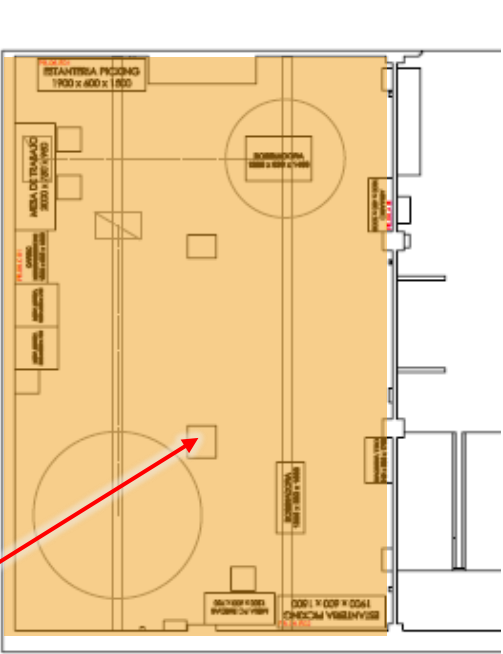


Winding machine



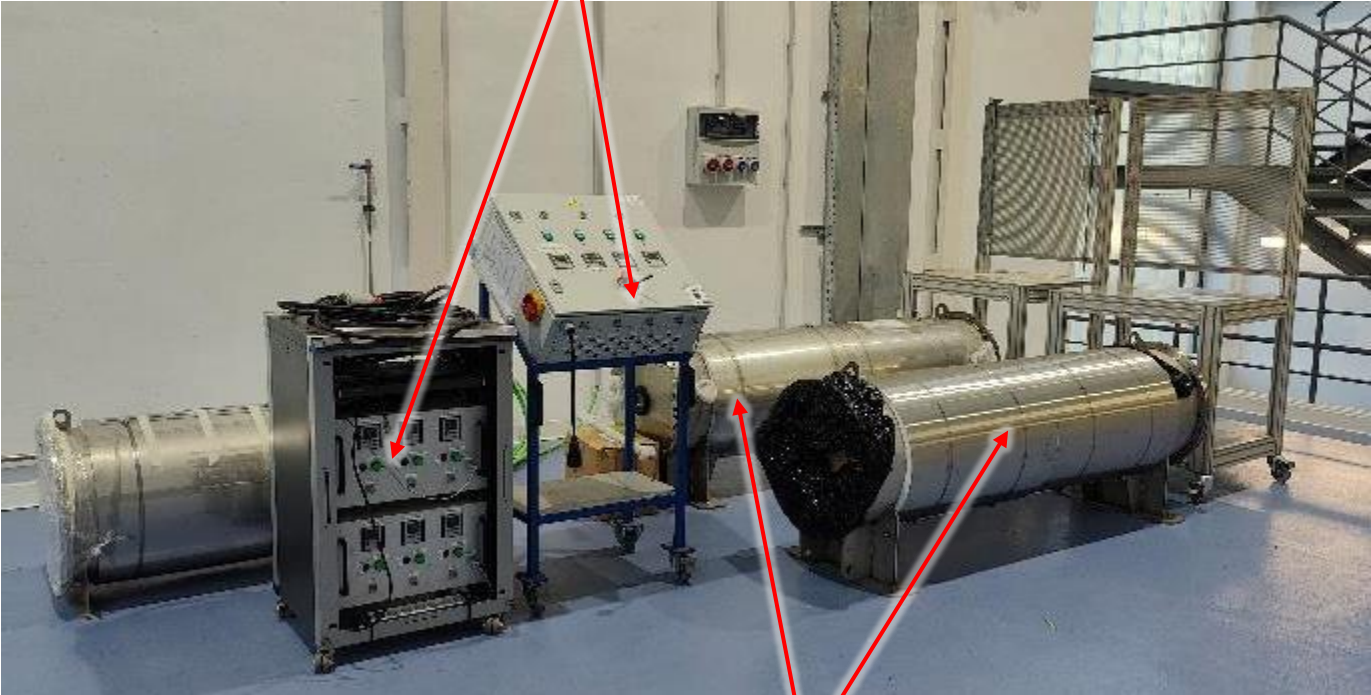
Pay-off machine

Winding



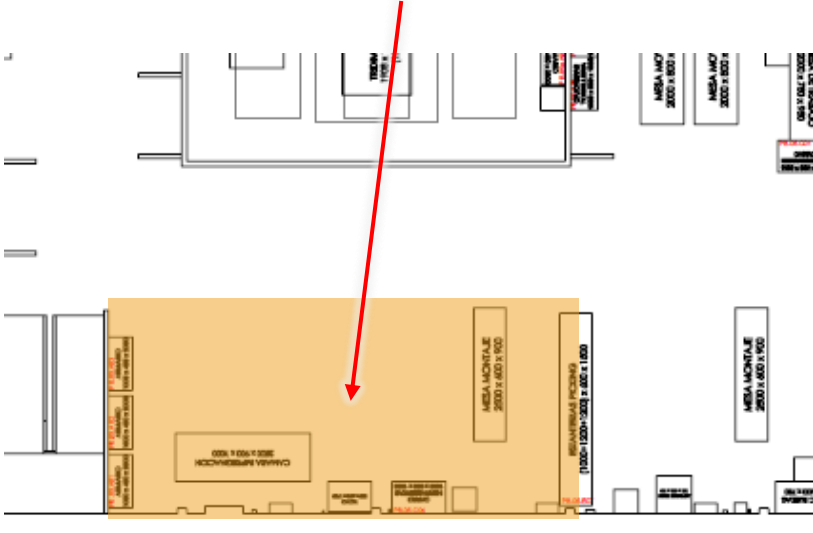
Ground floor: Impregnation area equipment

Thermal cycle control systems



Vacuum chambers

Impregnation

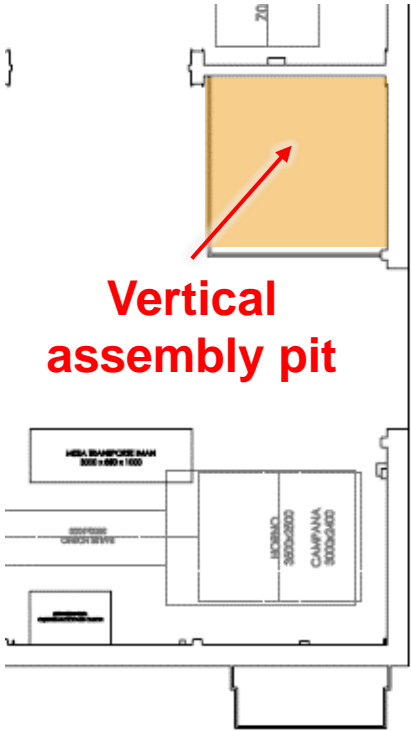


Ground floor: Vertical assembly

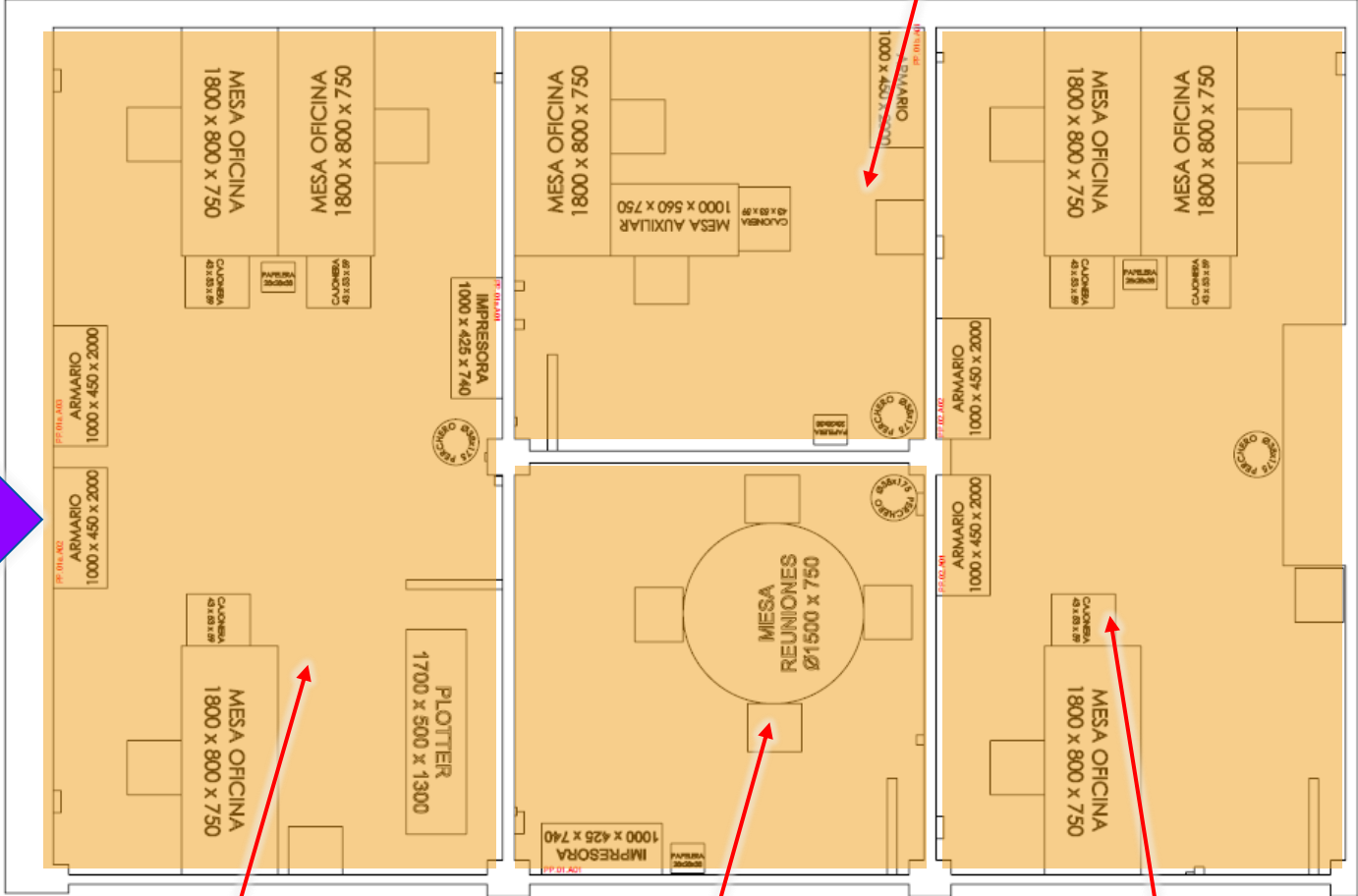


Vertical assembly (pit)

Smoke extraction hood (Reaction furnace)



First floor: Layout



Shared office

Meeting room

Shared office



Summary

- The new laboratory building refurbishment is finished.
- Procurement of equipment is well-advanced:
 - Large equipment specifications done. Quotation and orders ongoing
 - Medium equipment purchasing done. Reception ongoing
 - Small equipment purchasing ongoing
- MCBXFA coil production activities will start in December 2023
- We expect to be fully operational in Summer 2024



Thanks for your attention

Acknowledgements to:

Lyudmyla Andriychyk, Cristóbal Alcázar, Manuel Domínguez, Óscar Durán, Luis Escribano, Javier García Hernández, Jesús Angel García Matos, Luis Garcia-Tabarés, Luis González, Jesús Jiménez, Teresa Martínez, José Antonio Pardo, José Manuel Pérez, Pablo Sobrino, Fernando Toral & Procurement Department from **CIEMAT**

Juan Carlos Pérez from **CERN**

