EUROPEAN
PLASMA RESEARCH
ACCELERATOR
WITH
EXCELLENCE IN
APPLICATIONS

EuPRAXIA

Chapter 21: Civil Infrastructure

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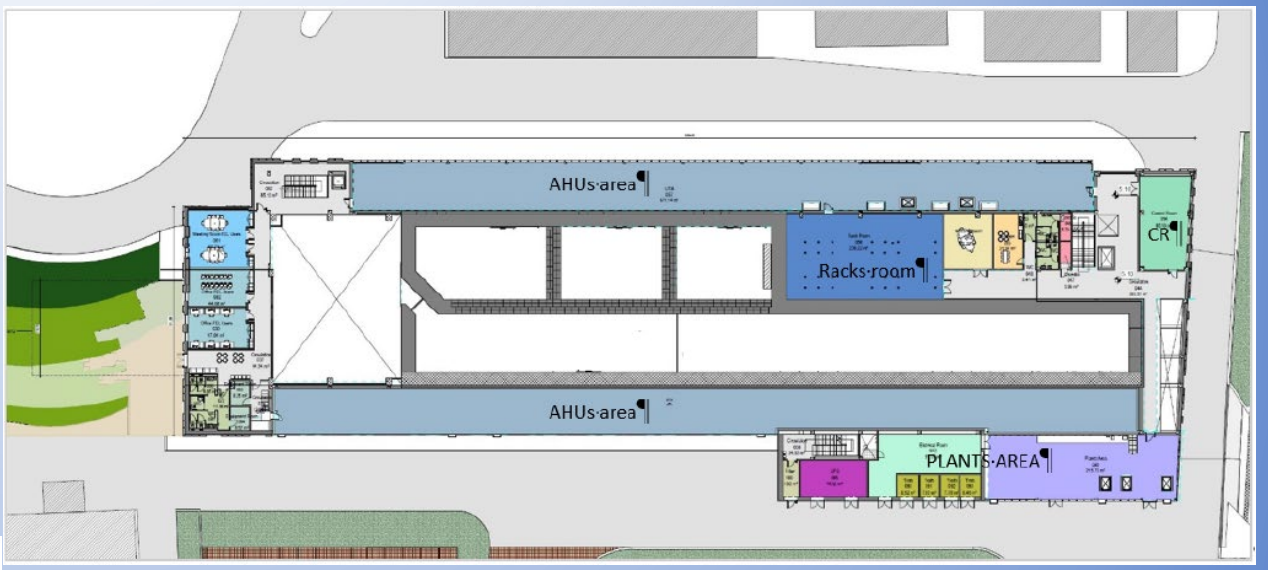
The Building

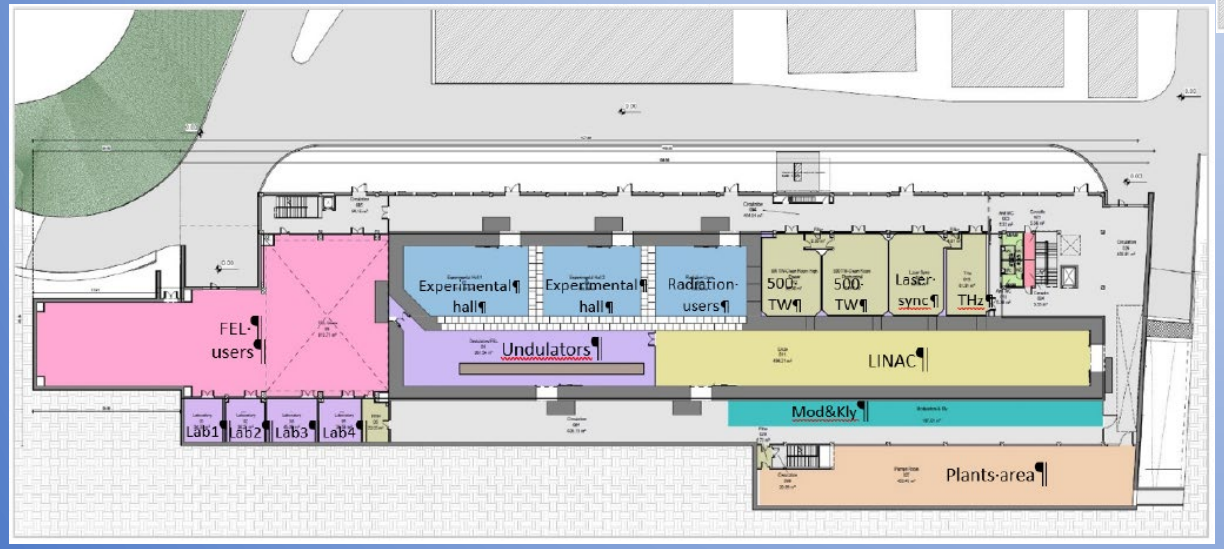
The Building and its Plants

Global Goals:
Housing the Accelerator and the Experimental Halls

Funded by the European Union

The Detailed Engineering Design (Progetto Esecutivo) was developed in close collaboration with the Machine experts, in order to maintain the requested flexibility for the space management and to fulfil the needs of the accelerator sub-systems and components





The HVAC system and the Electrical installations are part of the Detailed Engineering Design

Achievements:
Technological Readiness Level

The Detailed Engineering Design has been delivered by Mythos and on January the 20th 2025

The Verification process (formal step to the final approval of the Design) started

The process is ongoing and it's expected to be completed by the end of June

Pending Items:
Fluid Plants for Accelerator components Design

Funded by the European Union

- The list of requirements (Utility Matrix) for the accelerator components is not finalized so that the Detailed Design for the high precision and high stability cooling plant is not started yet
- The conceptual design is consolidated and well established based on the experience on the other accelerators in the Lab
- As some accelerator component (X band Modulator) has been delivered and tested (SAT) at the LNF we are taking advantage of the technical data to steer the Detailed Design

Planned Actions: What's Next

- After the formal approval of the Detailed Design (Validazione del Progetto Esecutivo) the tender process for the construction can start
- Documentation preparation for the tender has already started in order to gain time on the tender issue, as formal approval from INFN GE will arrive
- Schedule is almost in line with what presented by A. Falone

Dependencies / Risks: Administrative time

- The tender for the construction represents a possible risk as it is above the threshold for the EU bidding process and it’s quite complicated
- This can take much time to be executed, more than expected
- In order to mitigate this risk on last May the 27th a meeting has been held with AC (INFN Central Administration) management to present the plan for the tendering process and to request support along the whole development to try to keep the schedule on track

Conclusions

- The process for the construction of the Building is well established
- Even if tender regulation undergoes frequent modifications in Italy, we are up-to-date with the preparation of the set of documents needed for the issuing of the procedure
- Design for the cooling plants of accelerator components should start soon, as the Utility Matrix is finalised. Also the tender procedure for the construction of these plants is quite complicated and requires time

Building tender ancillary procedures

There are also ancillary tender procedures for the cooling systems:

1. Award the service for **detailed design**, **construction management**, and **health and safety coordination** during execution. (DL e CSE (≈ 900 k€) → within June 2026
2. Procurement of verification services (≈ 150 k€) → within September 2026
3. Award of the works (≈ 6 M€) → within September 2028

Courtesy S. Cantarella\S. Incremona