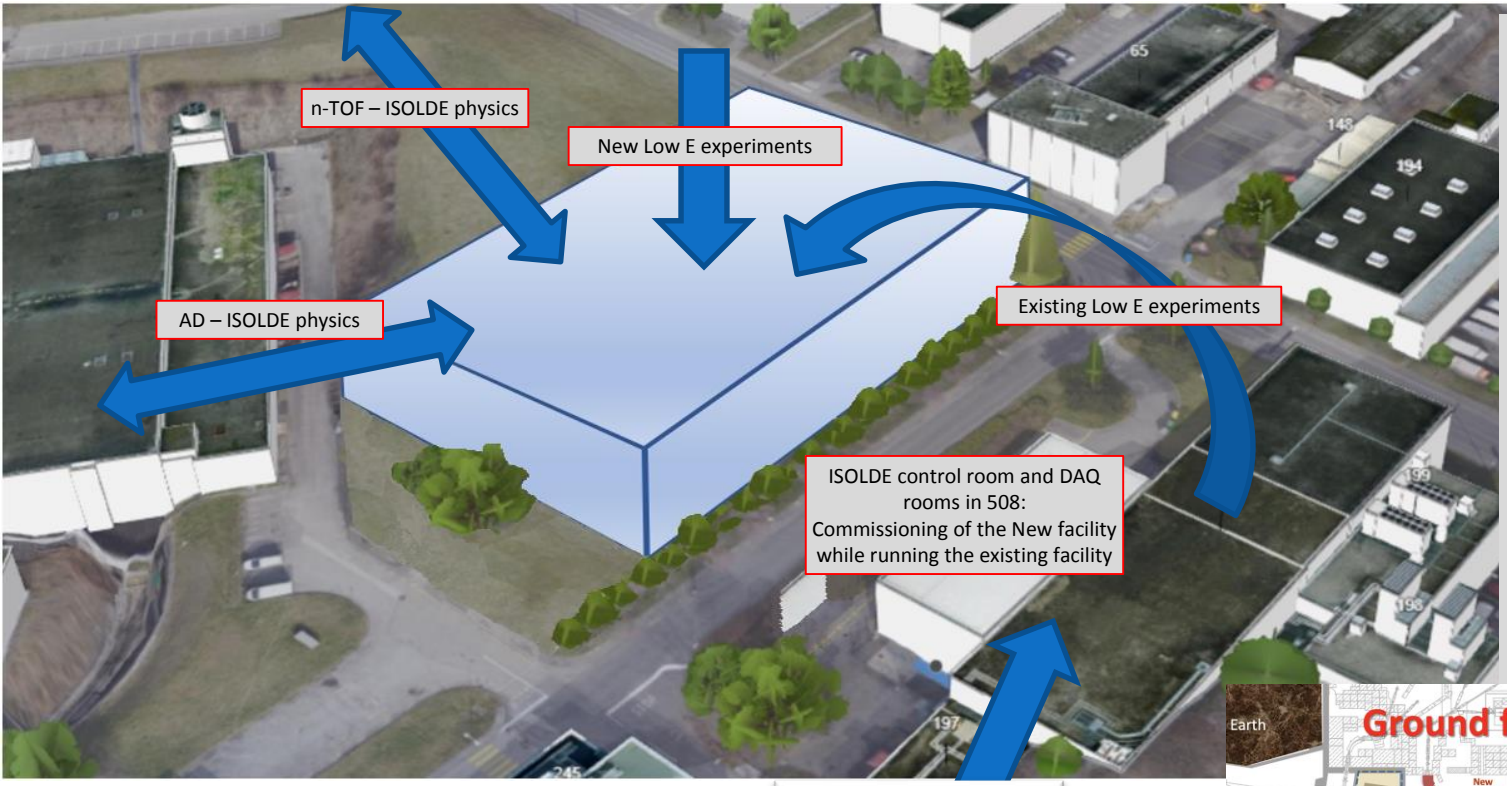
Summary from the 2nd ISOLDE-EPIC Workshop

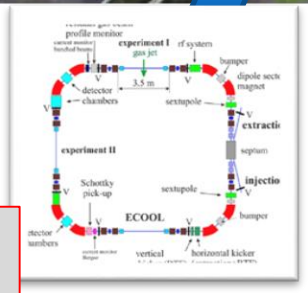
Exploiting the Potential of ISOLDE @ CERN

Kieran Flanagan

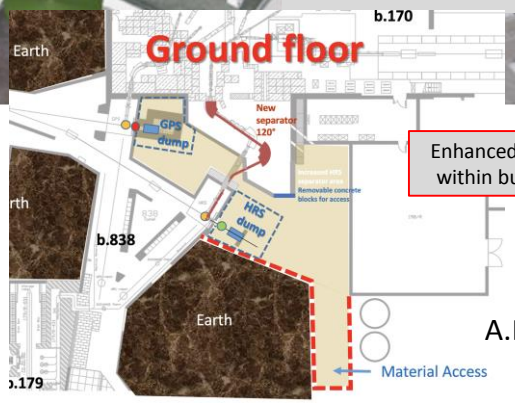
A New ISOLDE experimental hall and target stations



- A possible option to build a new ISOLDE experimental hall and target stations at the present recuperation site B133 to make use of the existing TT70 tunnel and underground structures.
- Construction and installation work of a new hall and target stations can be carried out in parallel with physics at the existing ISOLDE facility, securing nuclear physics at CERN
- Possibility to connect AD and n-TOF, enabling promising future physics.
- Existing facility dedicated to HIE physics, MEDICIS and a possible future compact storage ring



Compact storage ring



E. Siesling, J.A. Rodriguez - 2020 EPIC Workshop

A.P. Bernardes

Opportunities

- Many exciting and unique potential experiments with anti-protons and intense neutron beams.
- Provide time and required laboratory space to study the fundamental properties of quantum materials.
- New building will provide space and capability for the next generation of high precision experiments with the required clean areas.
- Creating space in 170 will enable new experiments with reaccelerated beams (recoil separation, storage ring)
- Intense Muon production at CERN should be closely monitored and any synergy explored.

Components of EPIC

- Construction and commissioning of the new low energy building would not interrupt measurements at ISOLDE.
- Target areas designed for higher proton beam currents.
- New building has space to expand in the future.
- **Consolidation of building 170 is just as important and first priority !** The beam dump replacement will open the ability to make future changes to the HRS magnet area – options need to be considered with the Collaboration (better beam purification)
- Opportunity to strengthen collaboration with TRIUMF and exchange experience, designs and procedures.

Lesson learned this year

- Remote operation and participation to experiments is possible – explore this further, and consider it when designing new experiments and facility
  - pros/cons

Next Steps

- Preliminary feasibility of a new building from the point of view of civil engineering look promising – more detailed study is in progress.
- Current designs present in this workshop are meant to be a starting point and to trigger discussions that could help refining the concept – send us your comments !
- The goal is to converge to a feasible concept that could serve better the current and future community of users (considering 10-30 years time scale)
- We need to define what we want in a conceptual design report of the project, covering:
  - The key physics cases and new scientific opportunities.
  - The technical conceptual details of the project with input from the CERN and ISOLDE collaboration communities.

Proceedings to the EPIC workshop

- The “proceedings” to these workshops has to be seen as a first quick step towards preparing the CDR document.
- Editorial board will be setup in the coming weeks
- Present the physics and technical opportunities of EPIC.
- The aim is to create a document like the TDR for the Storage Ring at ISOLDE.
- Opportunity for the community to provide input into the document (not limited to participants of the workshops).