Project Update Meeting

25 March 2025

Sanford Lab Homestake Visitor Center

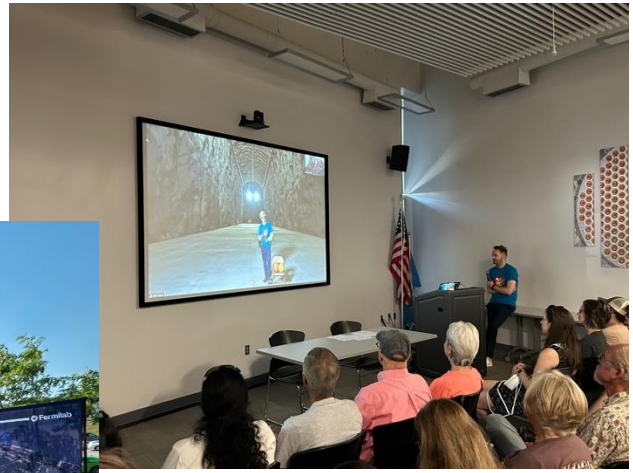
Agenda

- Welcome and Introductions – *Zach Burton, Communications and Community Relations Manager*
- Community Engagement/Talent Engagement– *Zach Burton, Communications and Community Relations Manager*
- Community Presence– *Erin Morgan, South Dakota Services*
- Project Update – *Josh Willhite, LBNF/DUNE-US BSI Project Manager*
- Q&A

Community engagement in 2024 – *Zach Burton, Communications and Community Relations Manager*

Community engagement in 2024

- Partnerships with SURF!



Community engagement in 2024

- Lead Area Chamber of Commerce
- Job Fair
- Crosswalk at Mill and Main
- Lead Beautification Committee
- Gold Camp Jubilee Community Dinner
- Neutrino Day
- Trunk or Treat
- Film at Homestake Opera House
- Visitors, Visitors, Visitors!
  - ~750 visitors in 2024

Please let me know if you have ideas for other opportunities!

zburton@fnal.gov

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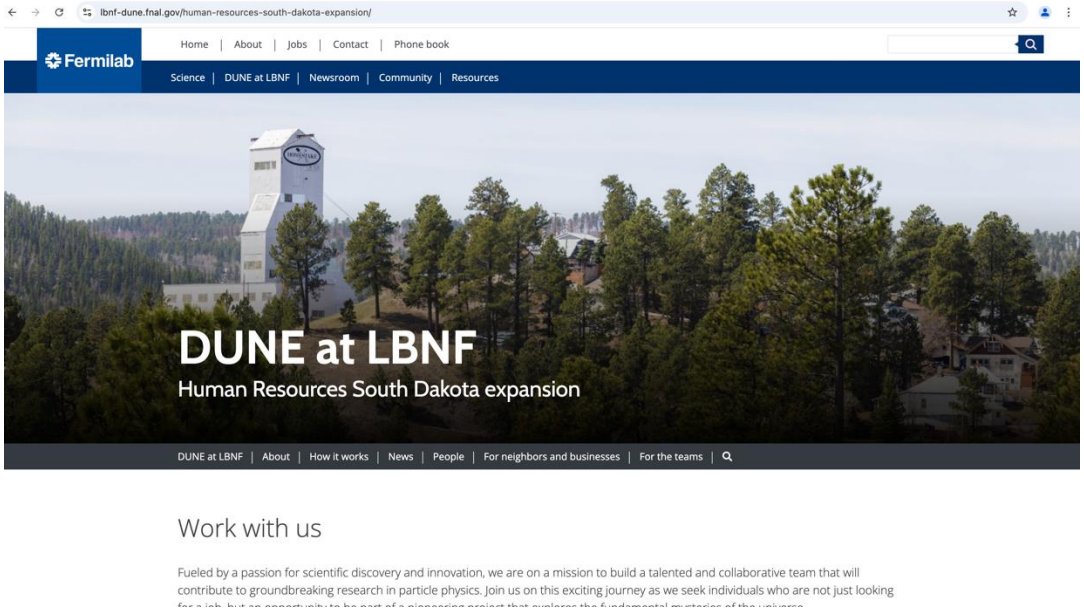
Talent engagement

To date, we have successfully hired 50 employees and anticipate filling an additional 30 to 50 positions over the next 18 months.

Our recruitment efforts are bolstered through strategic partnerships with several esteemed organizations, including:
- Western Governors University
- Mitchell Tech
- South Dakota School of Mines
- Ellsworth Transition Assistance Program
- Rapid City Workforce Center
- Local Chambers of Commerce
- Sanford Underground Research Facility
- Various local organizations

To engage the community, we are in the planning stages of creating a local employment event in the third quarter of 2025. Additionally, representatives from the LBNF-DUNE project will participate in the 605 Statewide Virtual Job Fair on March 19th.

Talent engagement



DUNE
DEEP UNDERGROUND NEUTRINO EXPERIMENT

https://lbnf-dune.fnal.gov/human-resources-south-dakota-expansion/

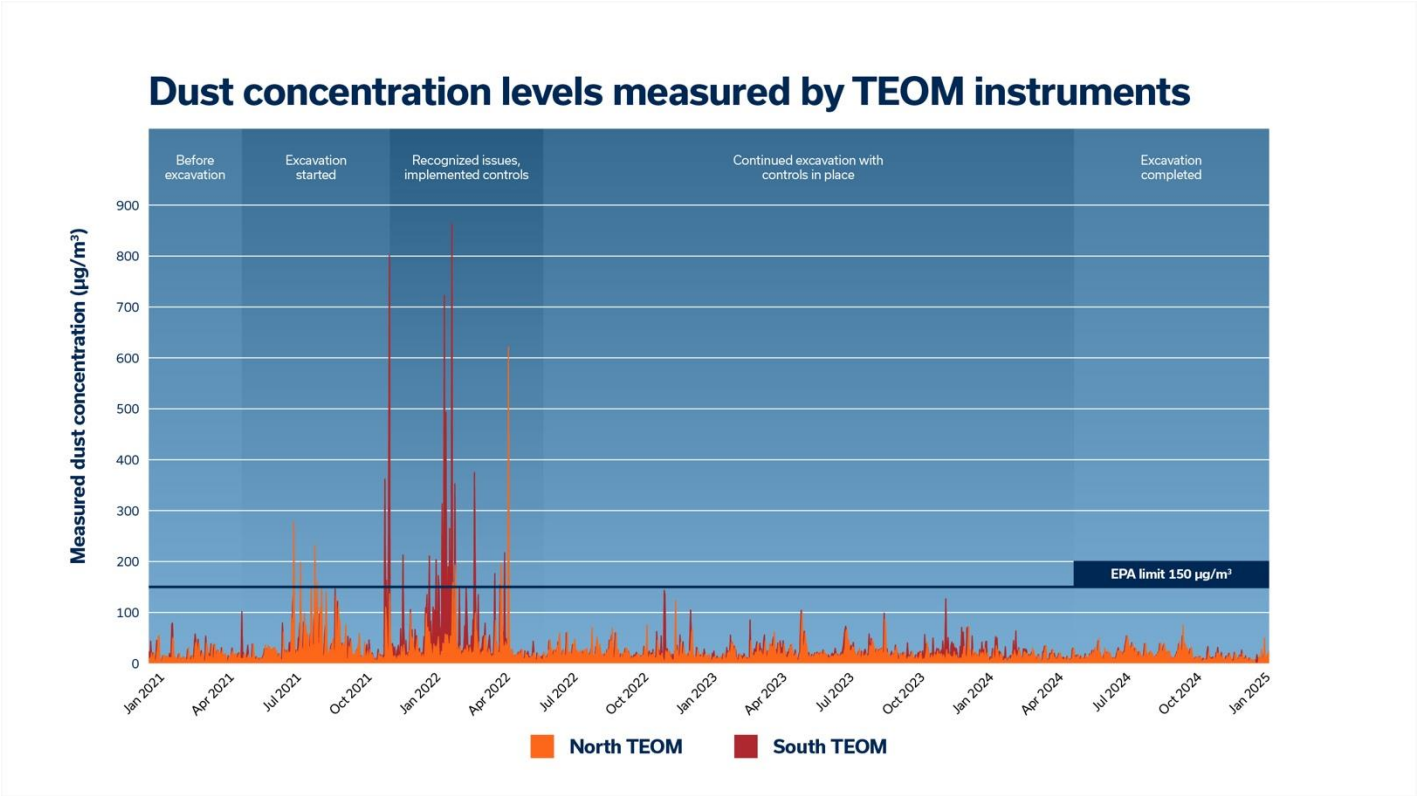
Community presence – Erin Morgan

Community presence

- Workforce is growing, we now have ~50 full time employees
- Plan to hire 30-50 more this year
- Current Office Space accommodates ~75 people
  - Office onsite at SURF
  - 206 Ellison Ct. (main site for public access)
  - 420 W. Main St
  - At peak, the project will need additional office space
- Continuing to plan for project related housing
  - Need starts beginning of 2026
  - Steady need of housing throughout span of project, with large ramp up/ramp down correlating with detector installation (2027-2029)
- Identifying supplemental parking needs and personnel transportation service

Project update – *Josh Willhite, LBNF/DUNE-US BSI Project Manager*

Project update - Dust



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Project footprint

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2024 milestone – Excavation 100% Complete!

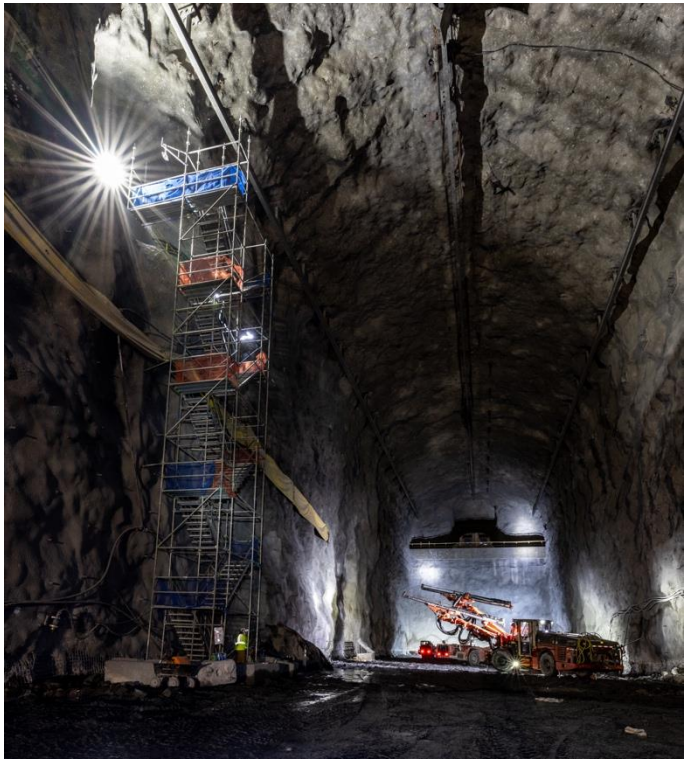


Photo: Matthew Kapust, SURF

Project update - BSI

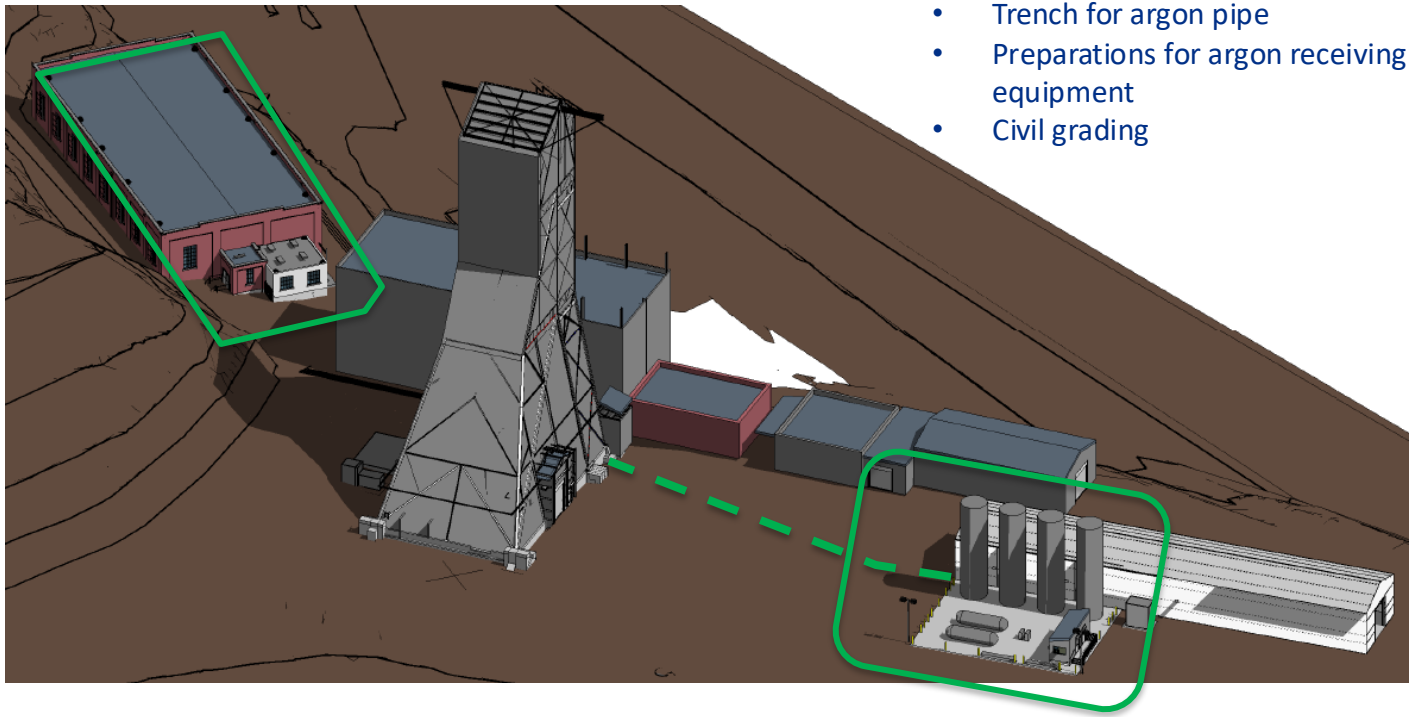
- Infrastructure installation happening now!
  - Power, lights, fire sprinklers and detection, HVAC, etc
- Detector parts have started arriving in South Dakota!
- Expect to start detector installation in late 2025/early 2026
  - Overlapped with infrastructure
- Construction will continue through the early 2030's
- First detector will begin taking data while second detector is still being built

BSI - Underground

- Most surface work already complete, focus is underground
- Mostly regional contractor pool
- Anticipate similar number of staff as during excavation (~150-200 divided between day and night shift)
- Generally working 5 days/week, 2 shifts/day. Occasional Saturday day shifts as well
- Type of work being performed:
  - Civil, architectural, and structural features
  - Mechanical and plumbing including HVAC, Chilled water and Water Supply
  - Electrical including Normal, Emergency, Standby
  - Fire Detection, Protection and Alarm
  - Cyberinfrastructure
  - Security
  - Argon gas pipe (incl shaft)

BSI - Surface

- Some remodeling in the Ross dry for offices and communications
- Trench for argon pipe
- Preparations for argon receiving equipment
- Civil grading



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BSI Progress - Surface

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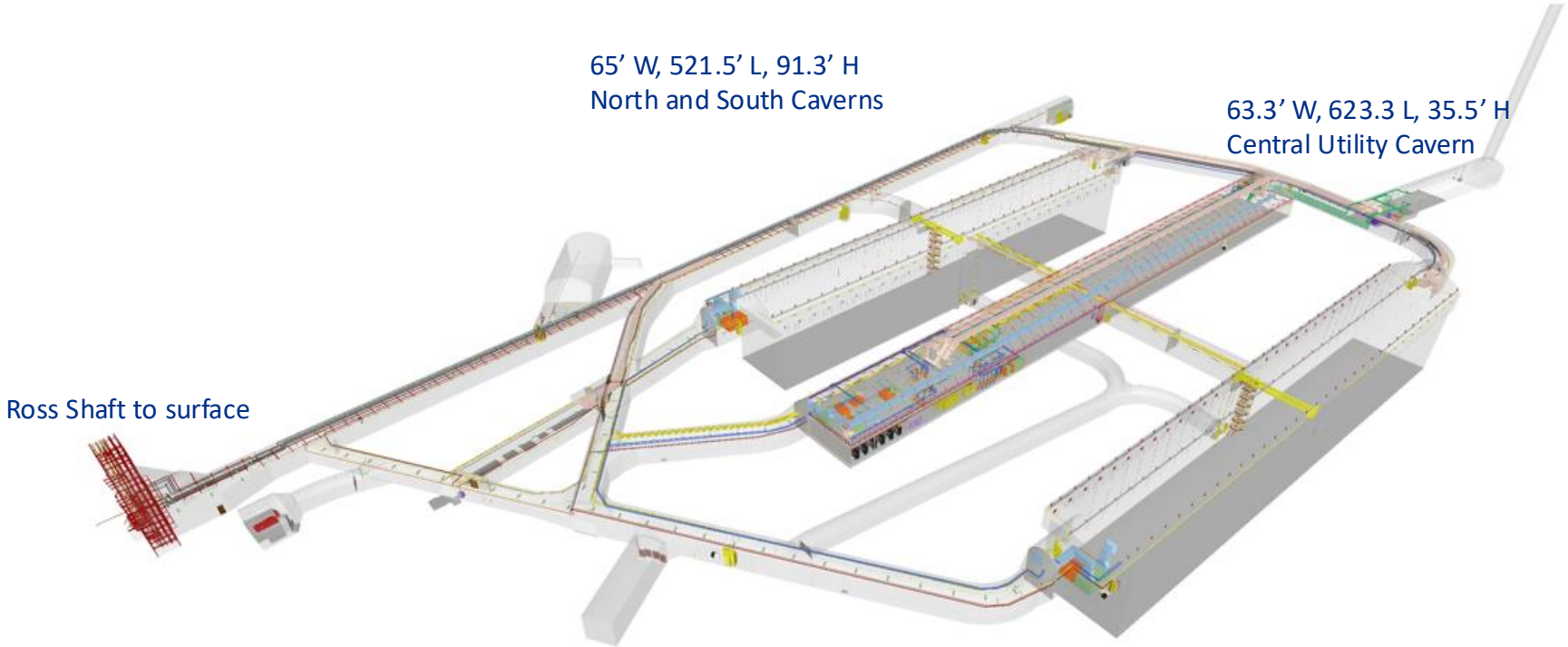
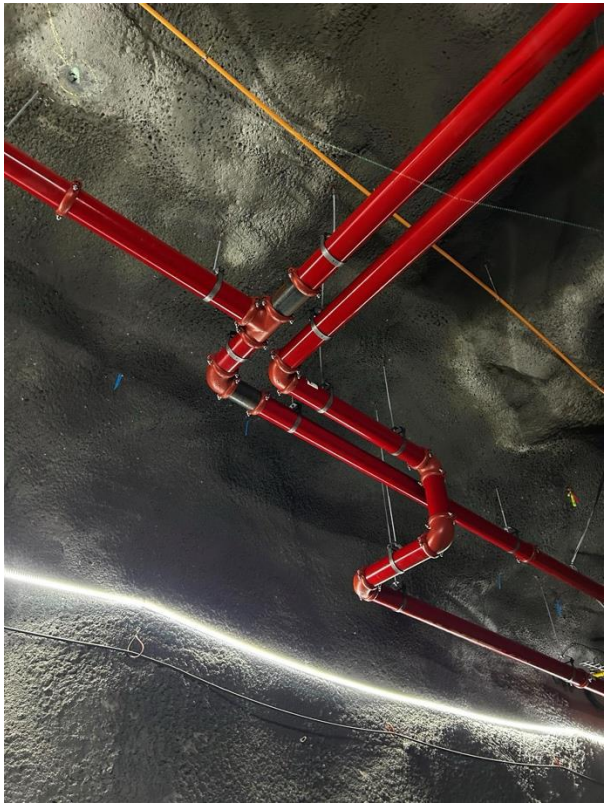
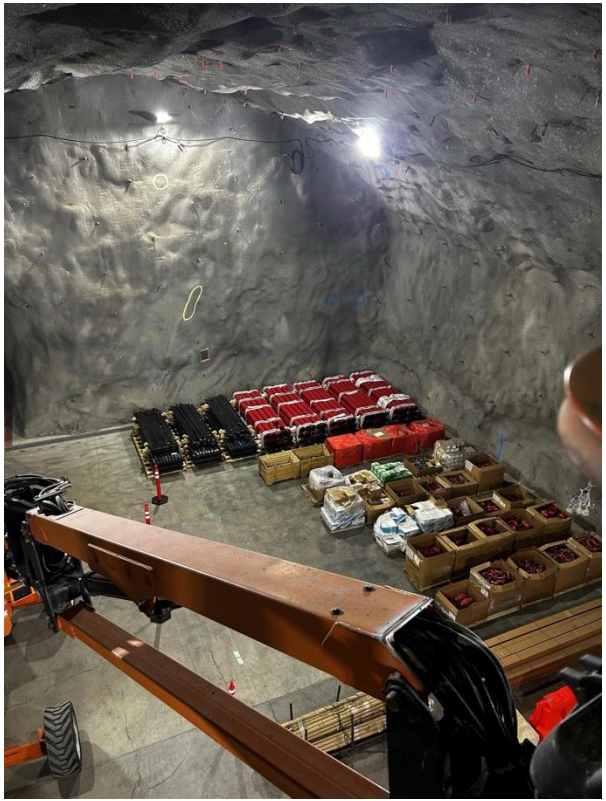
Current State:
Buildings & Site Infrastructure (BSI)

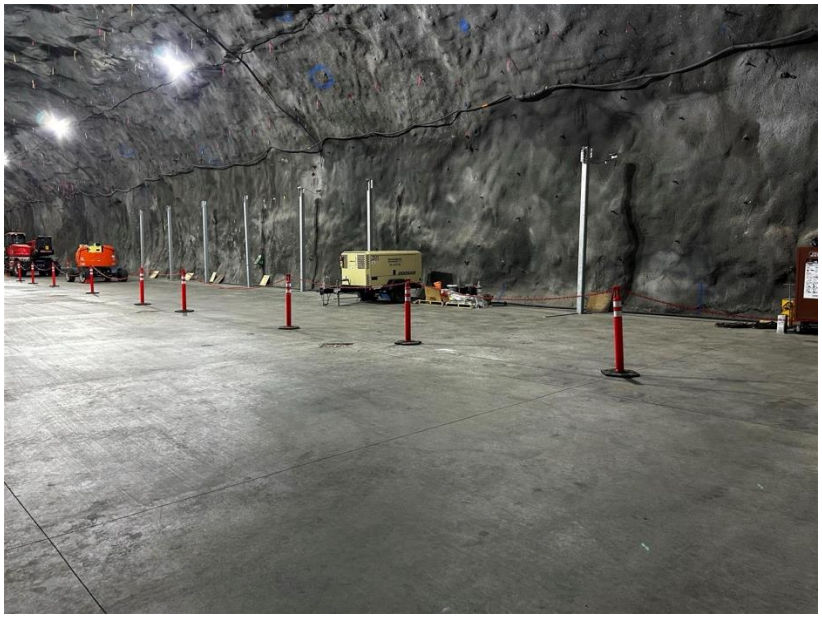


BSI Progress – Sprinklers and smoke detection



BSI Progress – Underground Storage and Building





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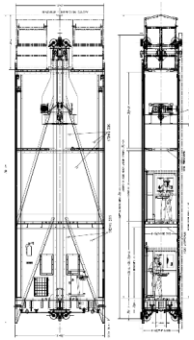
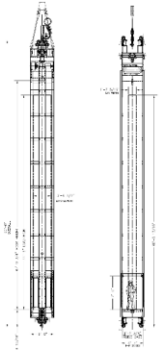
Underground transportation enhancements

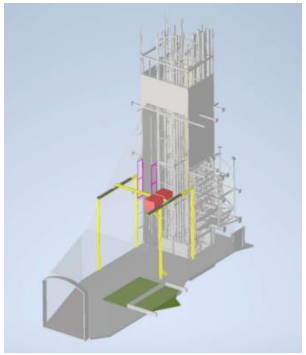
Double-Deck Cage



Skip Transport Cage



4850 Brow Crane



Transport Equipment

Double-Deck Cage: Increased personnel transport capacity allows “underslung” materials in the cage.

Skip Transport Cage: Transport of steel beams, piping, pallets etc. safely and efficiently.

4850 Brow Crane: Improved, more efficient and safer materials handling at 4850

Transport Equipment: Various equipment for flexibility to move variety of loads

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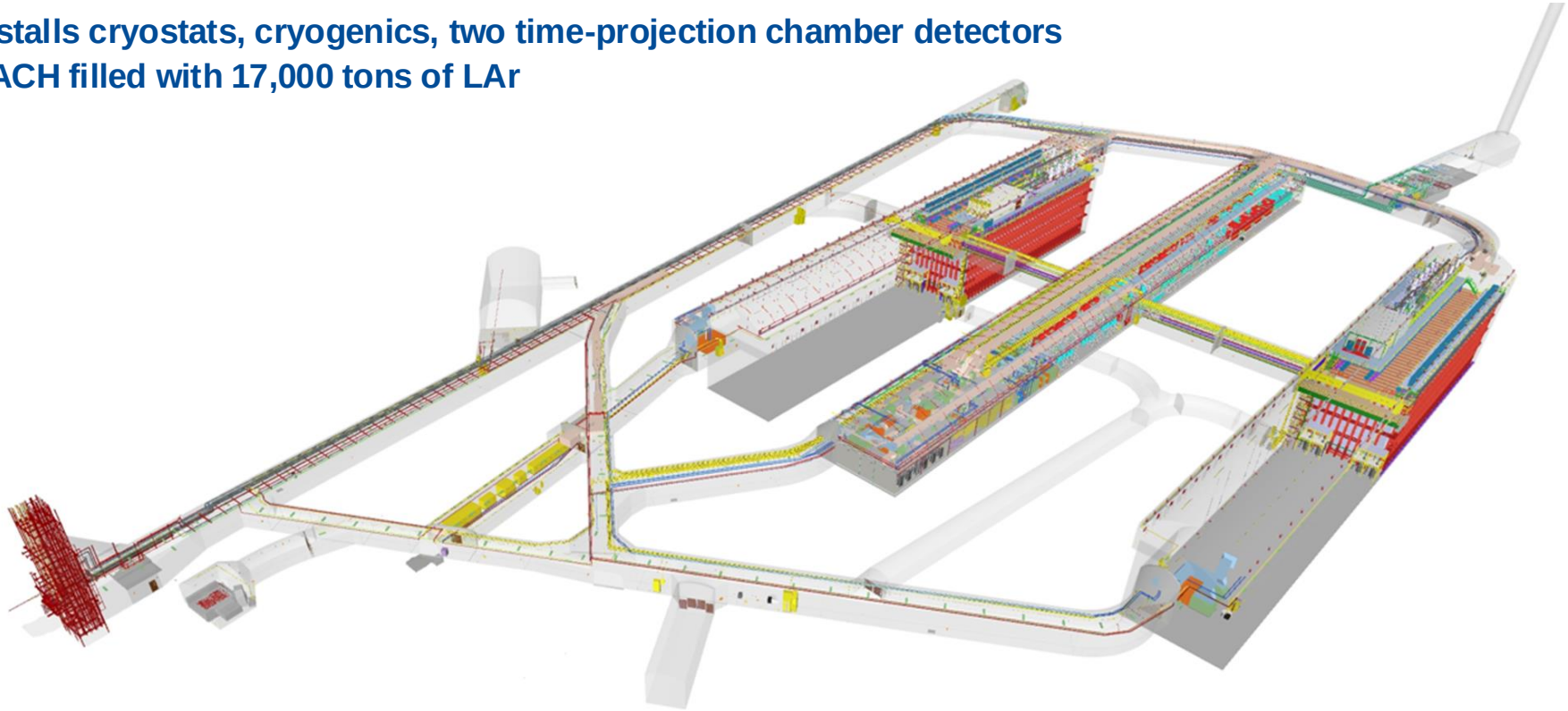
Next Phase: Far Detectors & Cryogenics (FDC)

Installs cryostats, cryogenics, two time-projection chamber detectors
EACH filled with 17,000 tons of LAr



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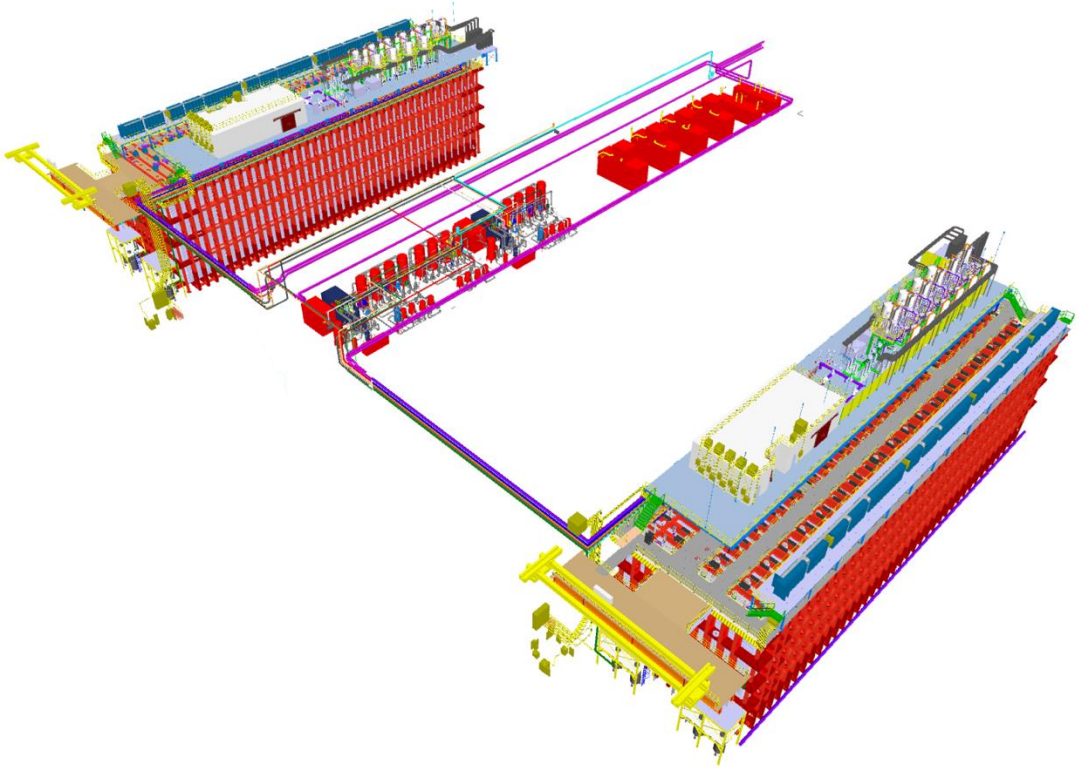

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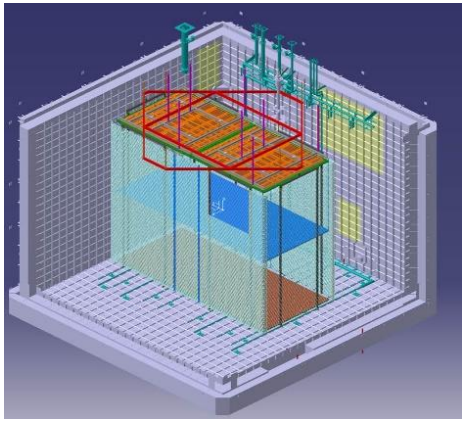
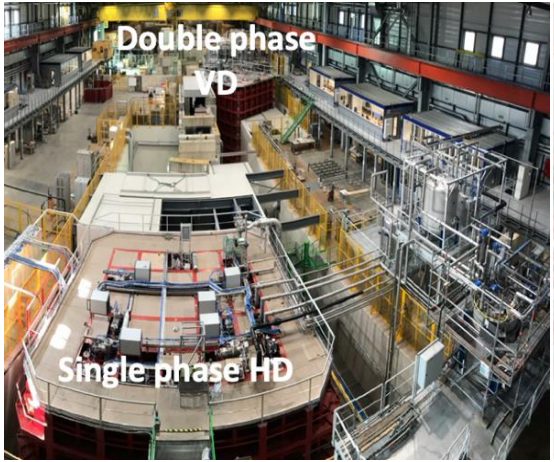
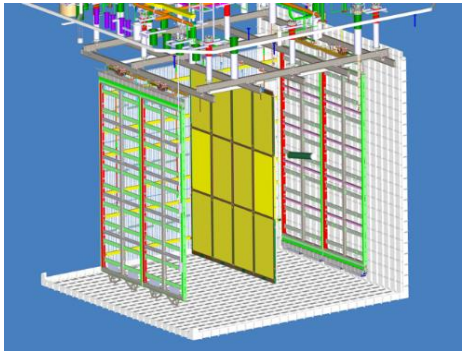
ProtoDUNE detectors constructed & operated with full-scale LBNF/DUNE components

- Demonstrated the technical feasibility and the expected performance
- Tested engineering solutions, QA protocols and installation procedures
- Mitigated technical and cost risks for the far detectors
- Established design maturity for LBNF/DUNE far detectors + cryogenics
- Helped build the community and develop expertise for DUNE

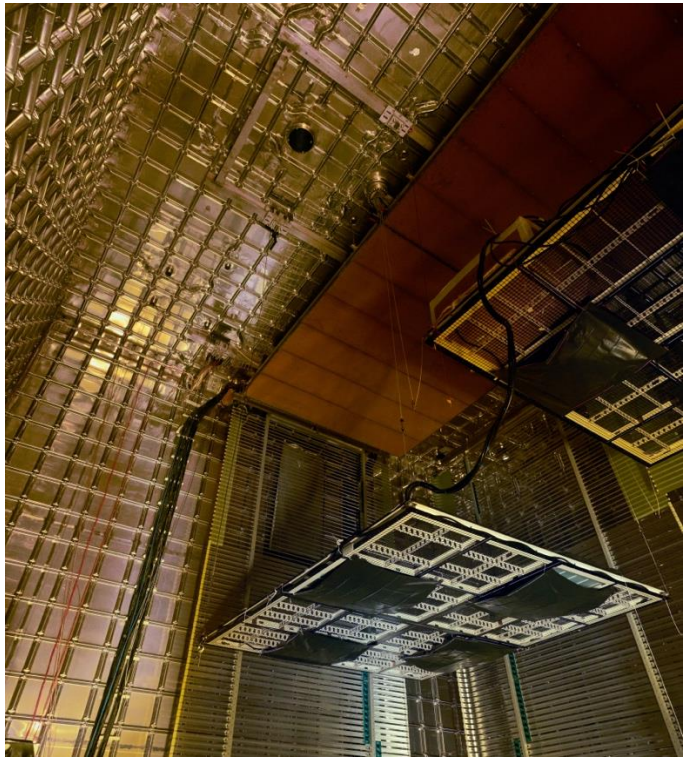


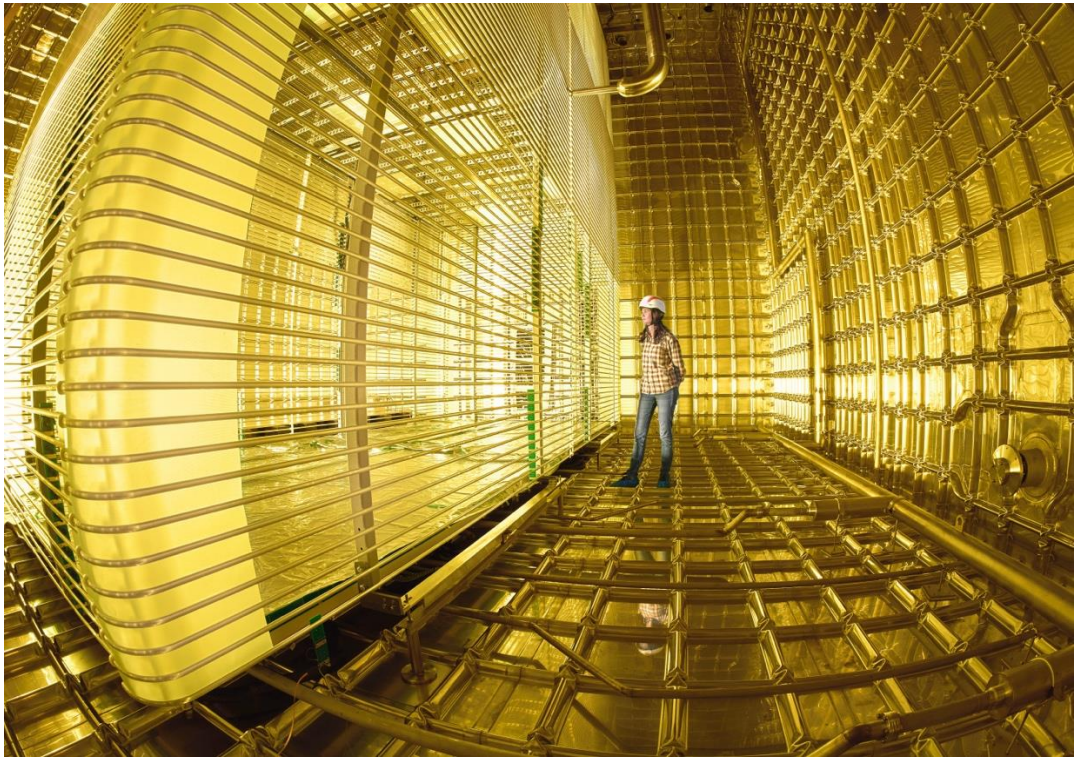




2017-2020 **2021** **2022-2024**

ProtoDUNE – A peek inside





Photos: Marina Cavazza, CERN

Steel has arrived in Rapid City!

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Thank you!
Questions?