

Current Main LAr Pumps Configuration

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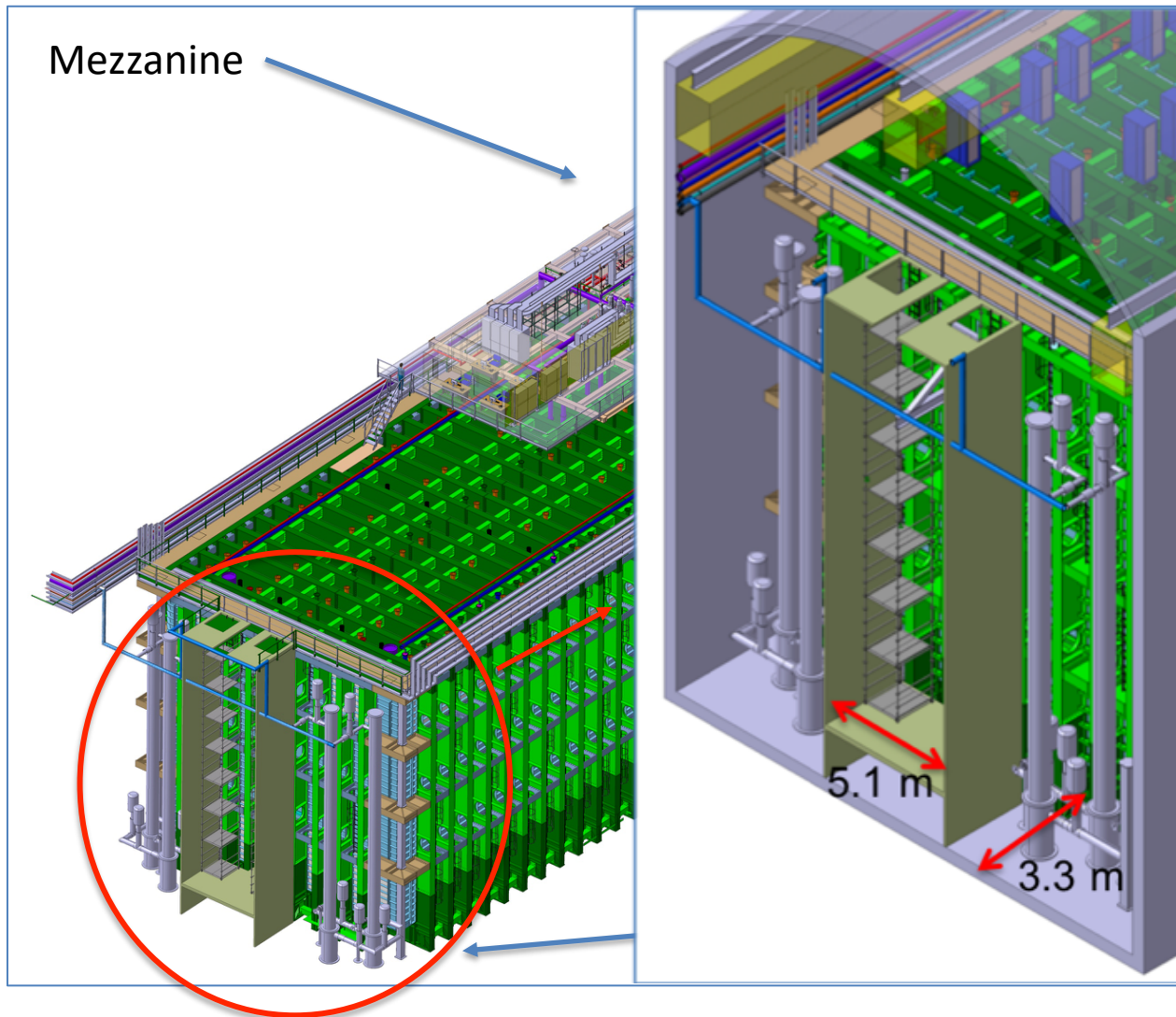
LBNF-DUNE FS Integration Meeting

2 February 2018

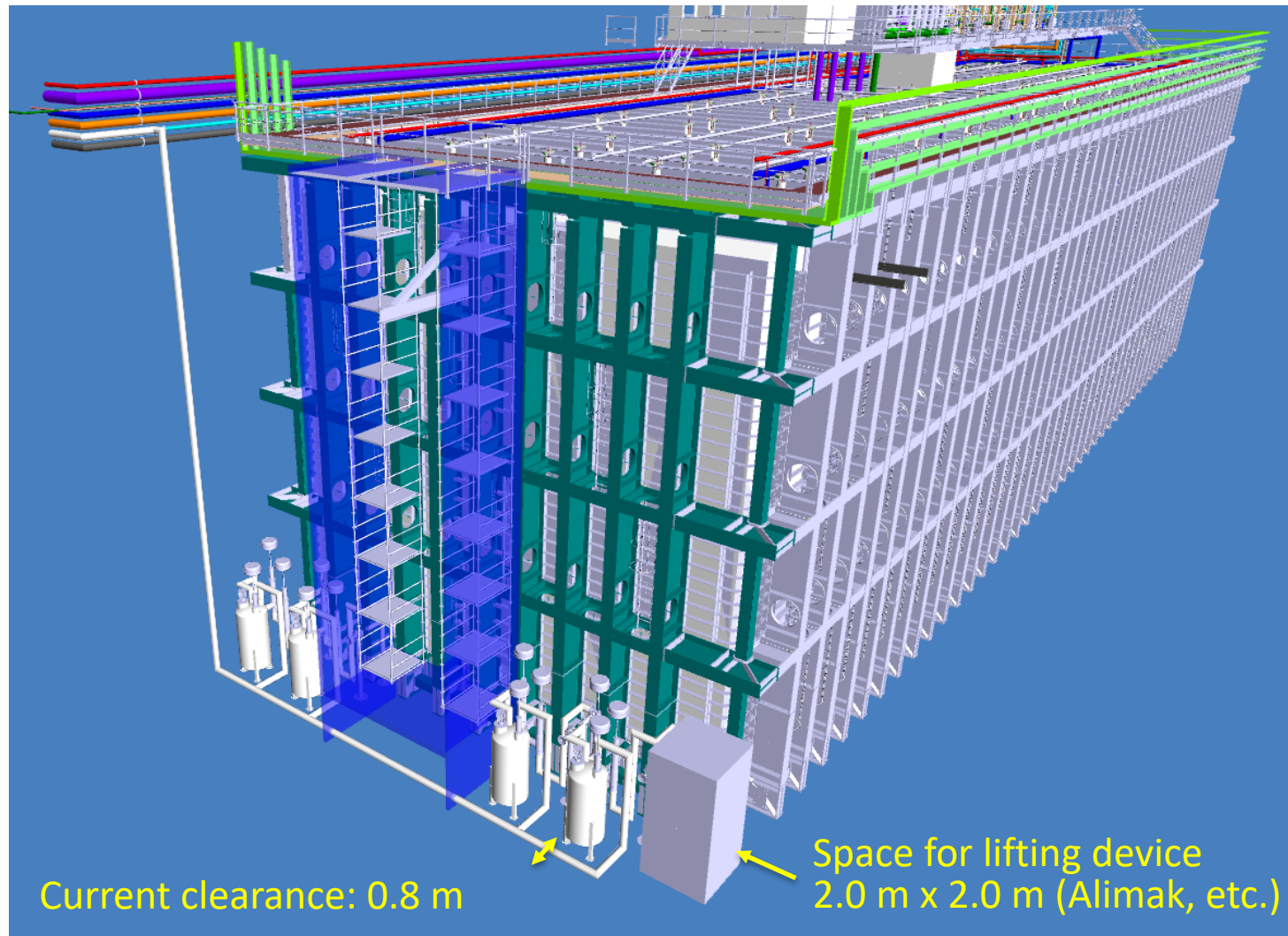
Intro

- Trying to reduce the occupancy of the main LAr circulation pumps in the 3.3 m space.
- Removed the pump towers and replaced them with inline pumps and valve boxes (and individual valves).
- Size limited by transport via Ross Shaft.
- **Still work in progress:**
 - Need to look at maintenance needs (may need to increase the height and/or spacing).
 - Need to add protection over/around the equipment (see ProtoDUNE).
 - Need to move up the LAr pipe to CUC (currently on the floor).
 - Need to verify layout and add components as needed.
 - May need to increase clearance to the wall (currently 0.8 m).

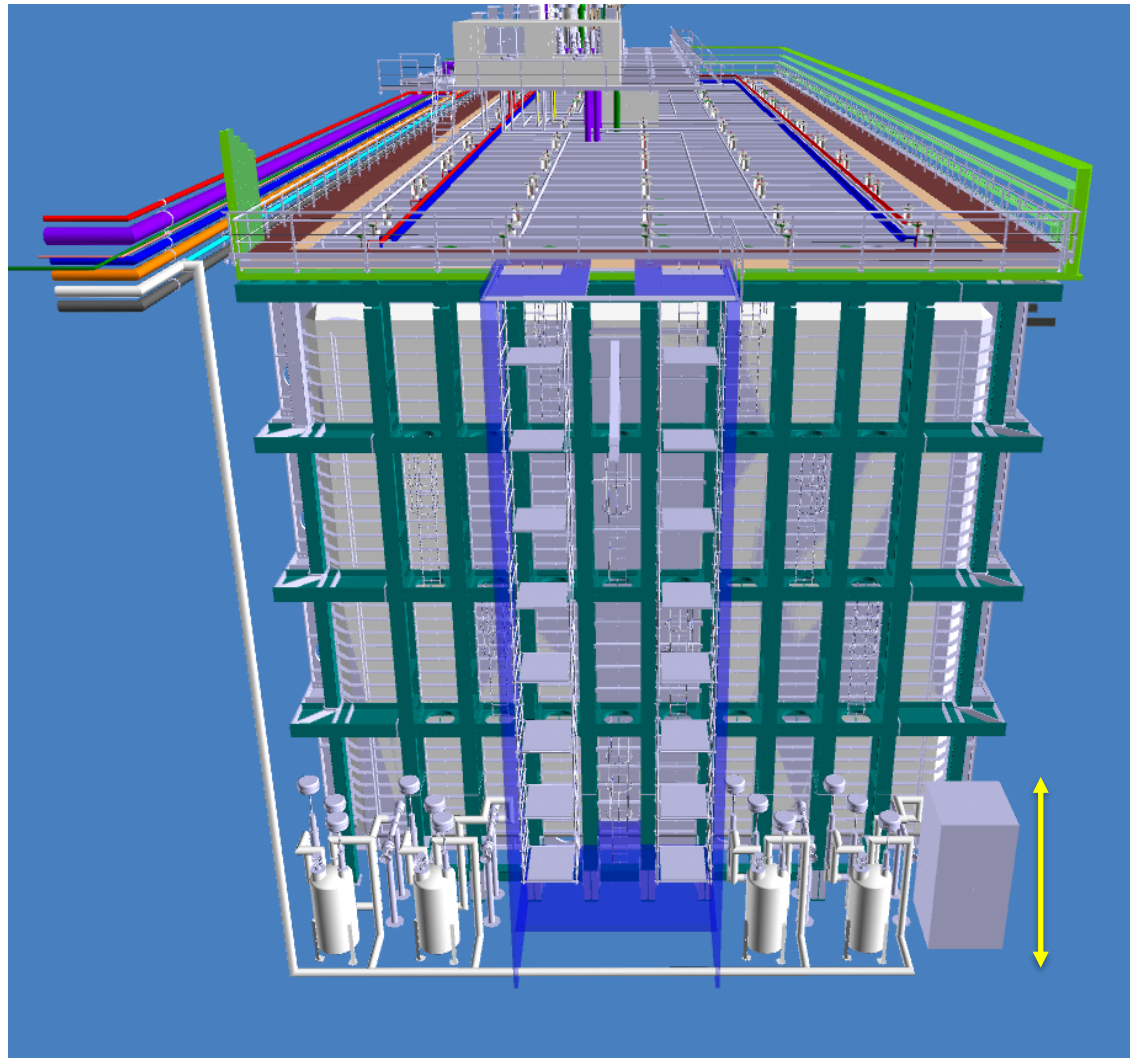
Before



After 1/2 – DRAFT

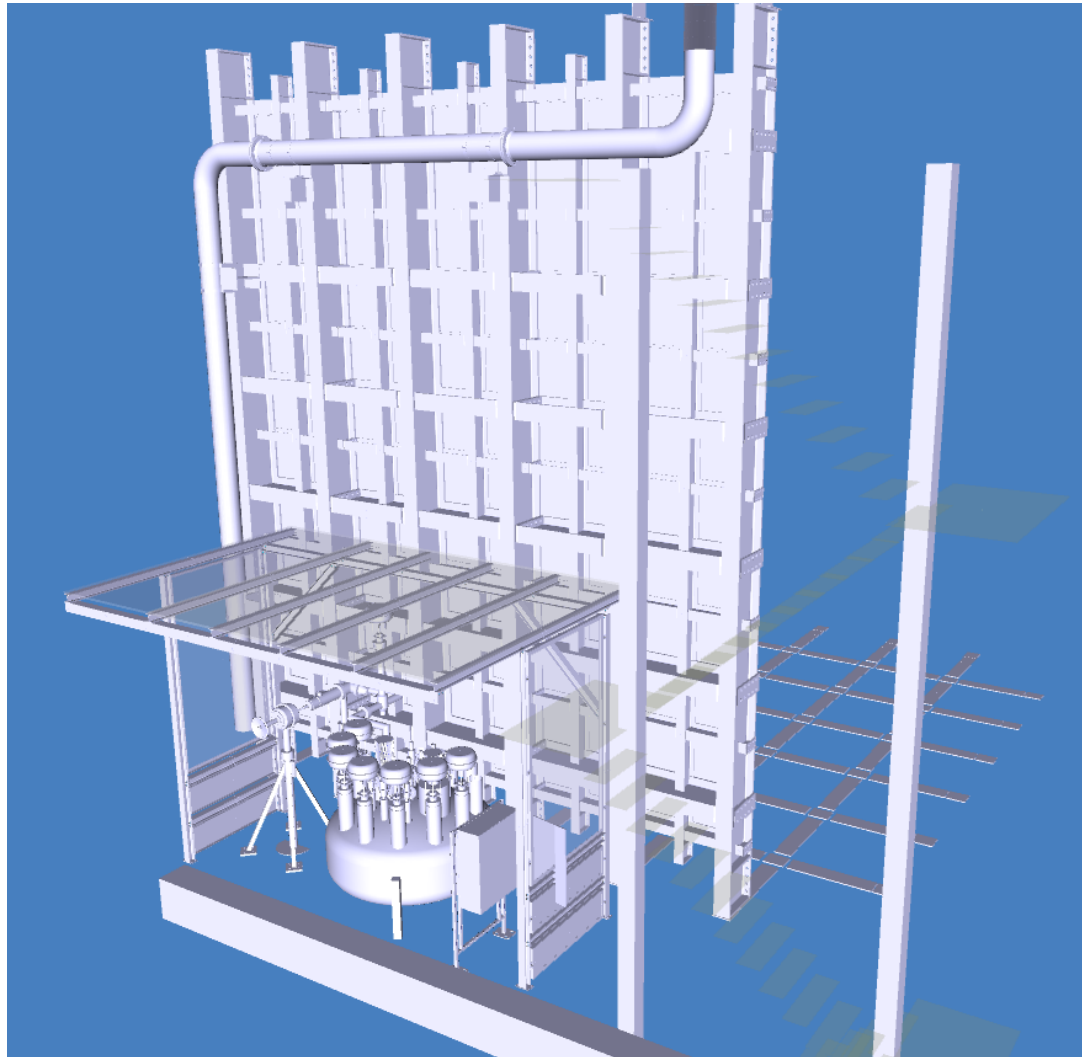


After 2/2 – DRAFT



Current equipment
height: 4.7m

NP-04 – Protection for Protego + Valve Box



Timeline

- LAr Pumps equipment installation is currently Aug-Oct 2023, after mezzanine installation.
- Would prefer not to wait for the completion of the detector installation and closing of TCO to install this equipment.
- How does it fit with the detector installation and TCO closing?
- Protective structure might be 5.0-5.5 m high (currently), but it may increase.
- Can detector installation take place over the protective structure (with equipment installed underneath), at least partially?