NP02 Internal cable trays and sensors

Aug 11 th 2017 - FINAL VERSION

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Updates

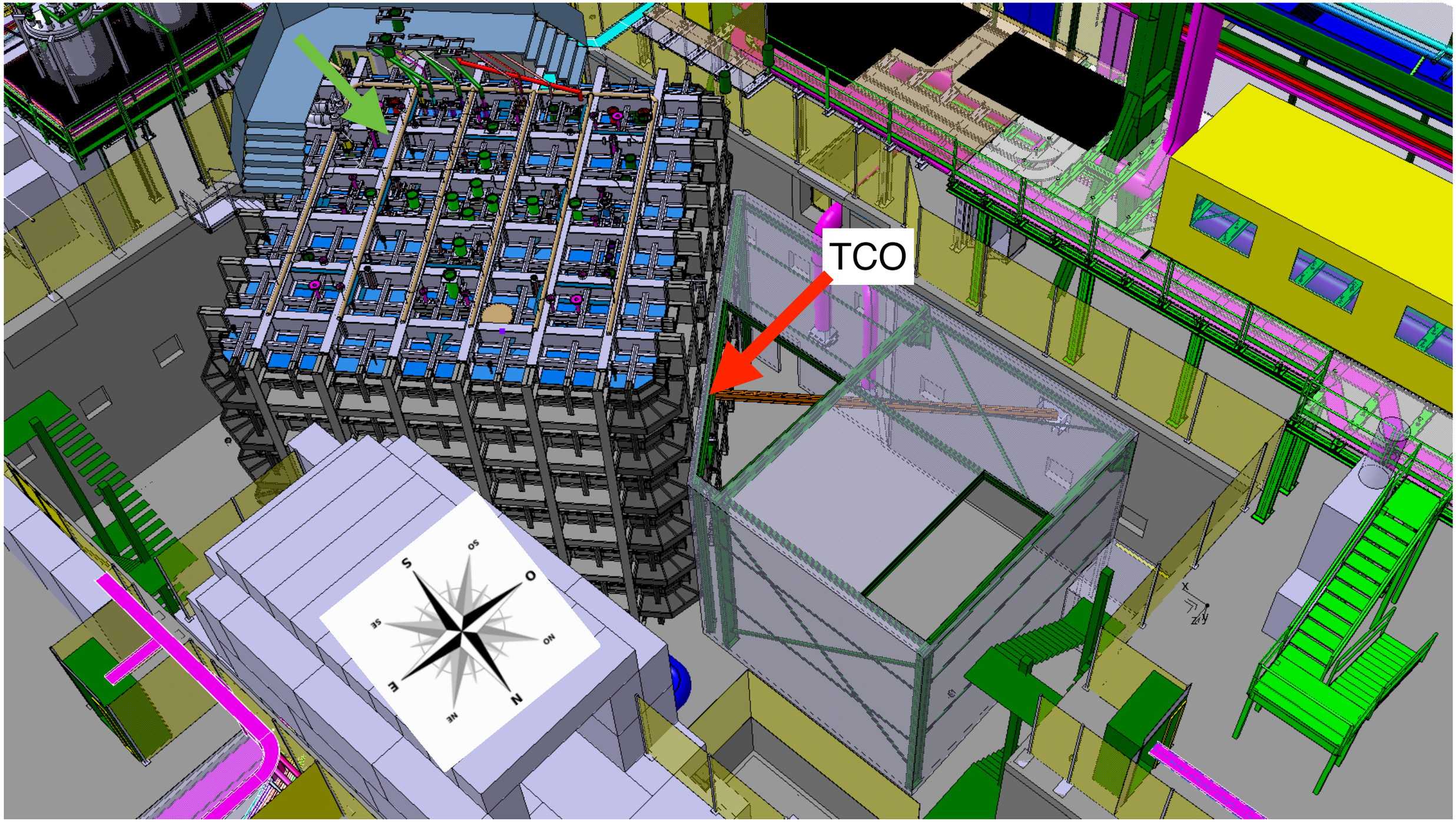
Updates since email circulated 2 weeks ago:

- Update on TANK_INS flange see Roger drawings
- small modification on PMT cables (there was a mistake in initial version)
- remove cryostat heaters

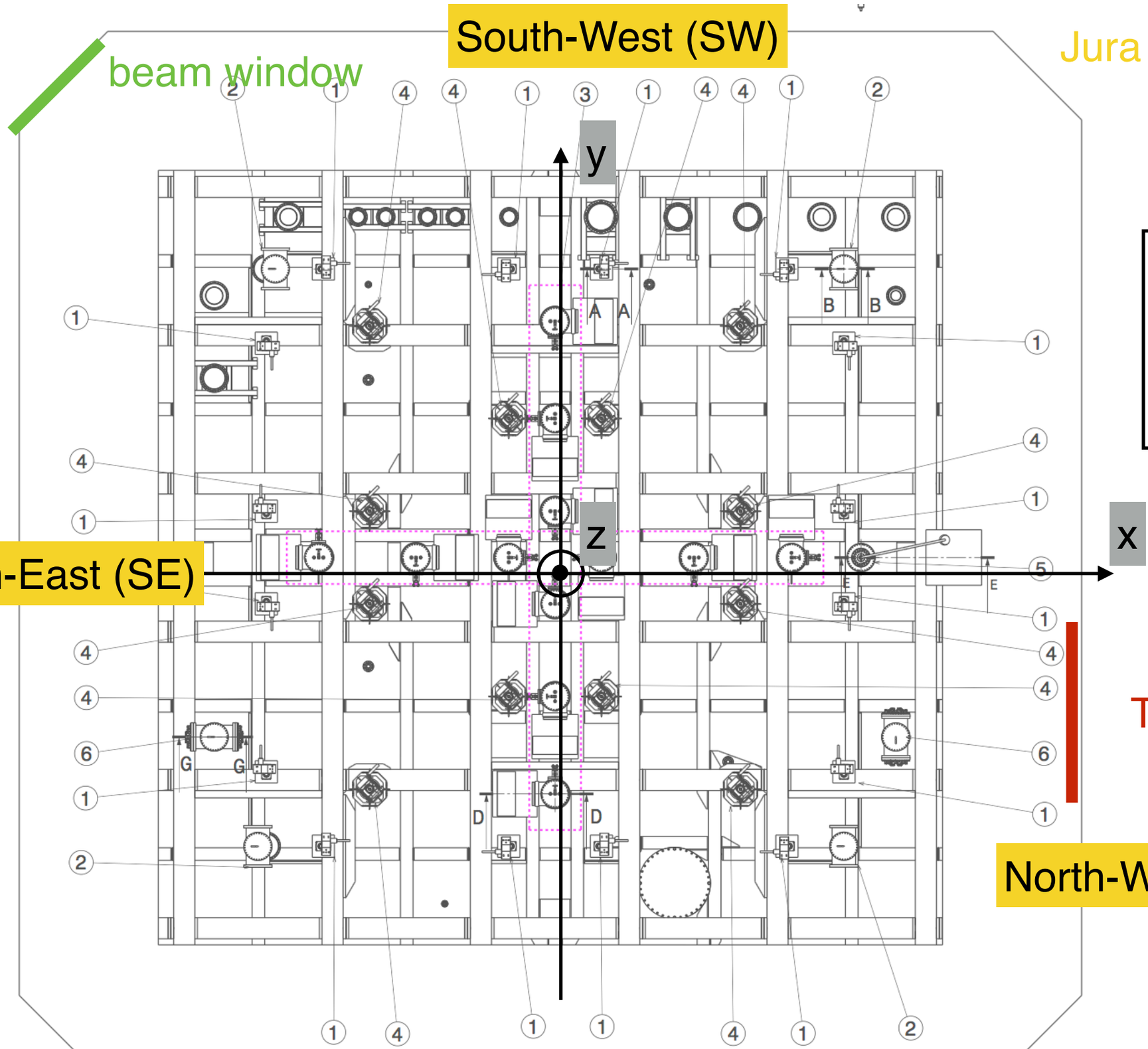
<u>Please take a look as this layout is now final</u>

3D EHN1

BEAM

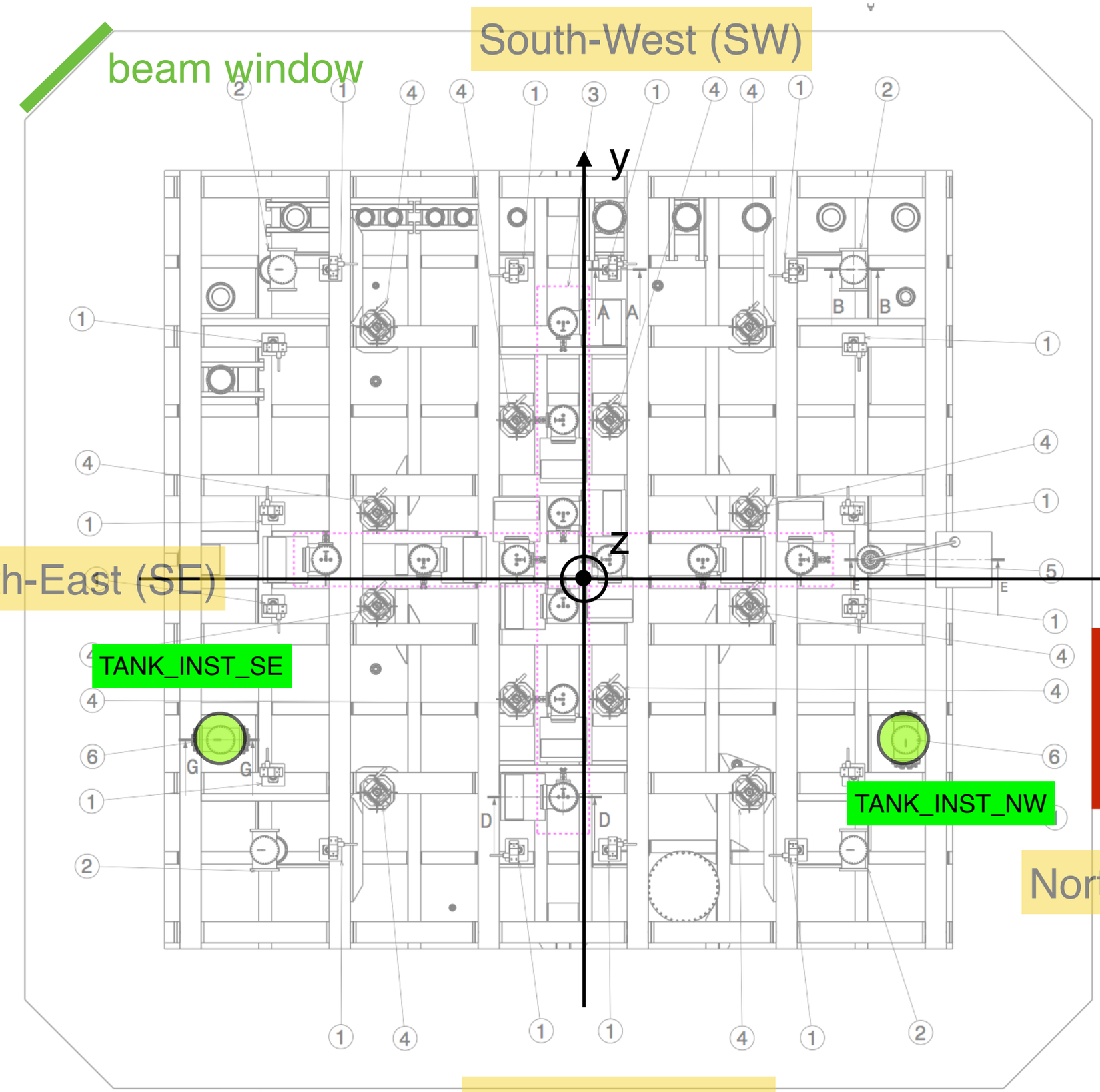


coordinate system



proposal of coordinate system for integration/installation purposes.

TANK_INST feedthroughs

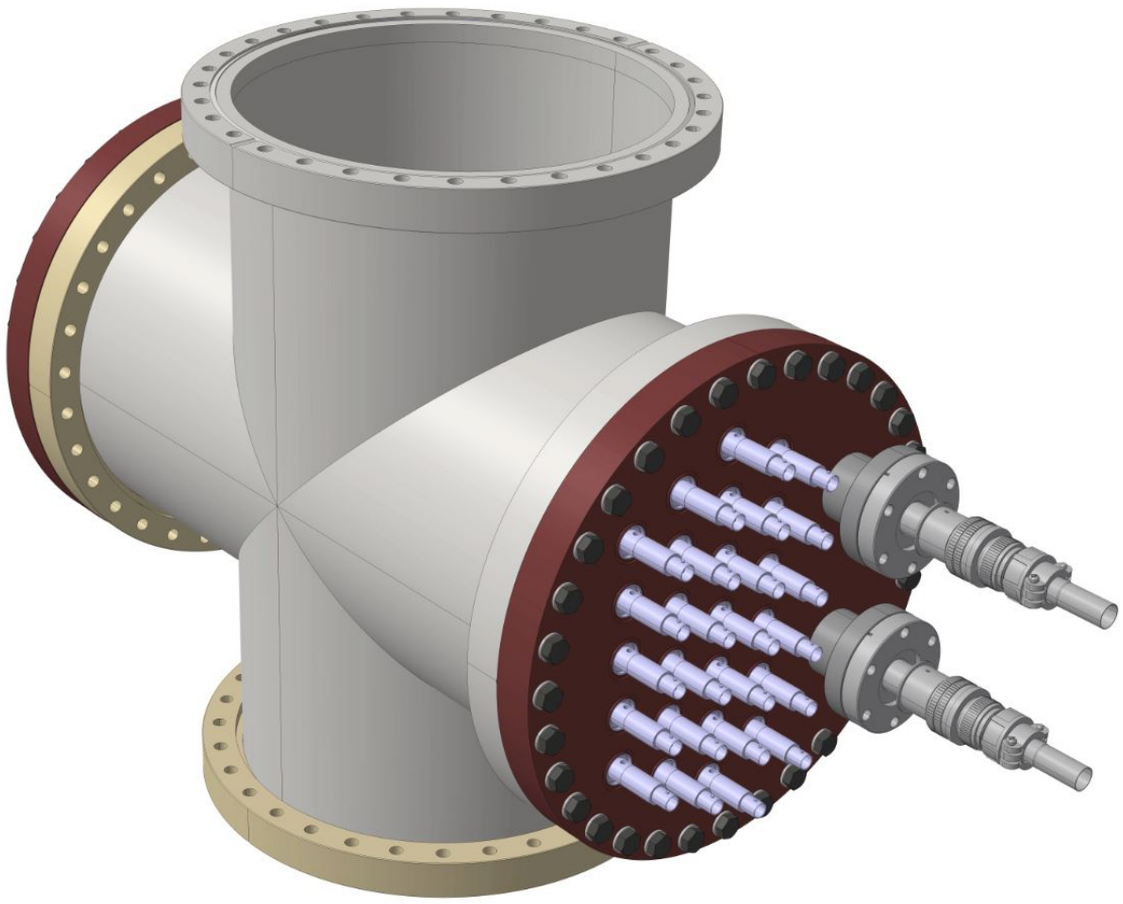


TANK_INST_*SE,NW*

for PMT HV cables, temperature probes, cameras, etc..

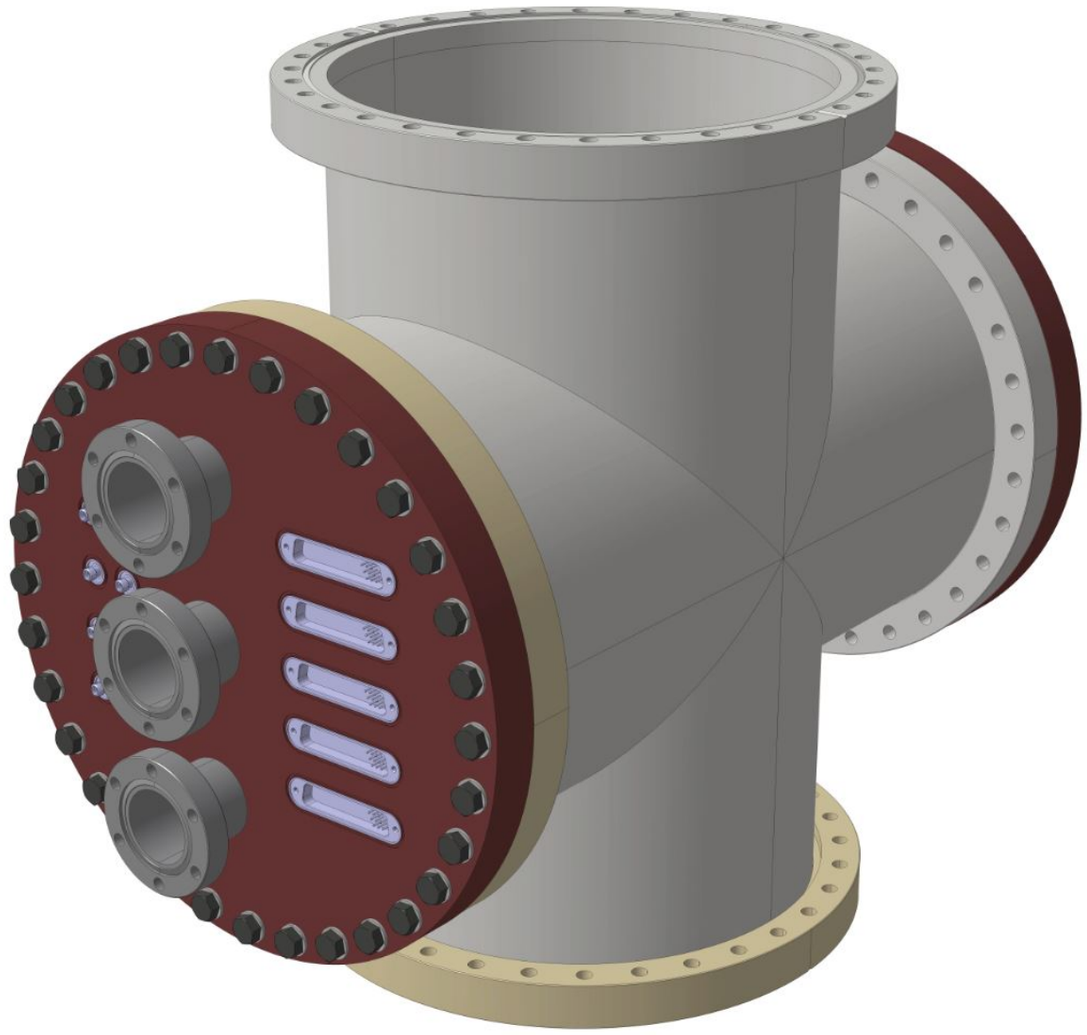
TANK_INST feedthroughs

TANK_INST_SE



flange A (HV+ power)

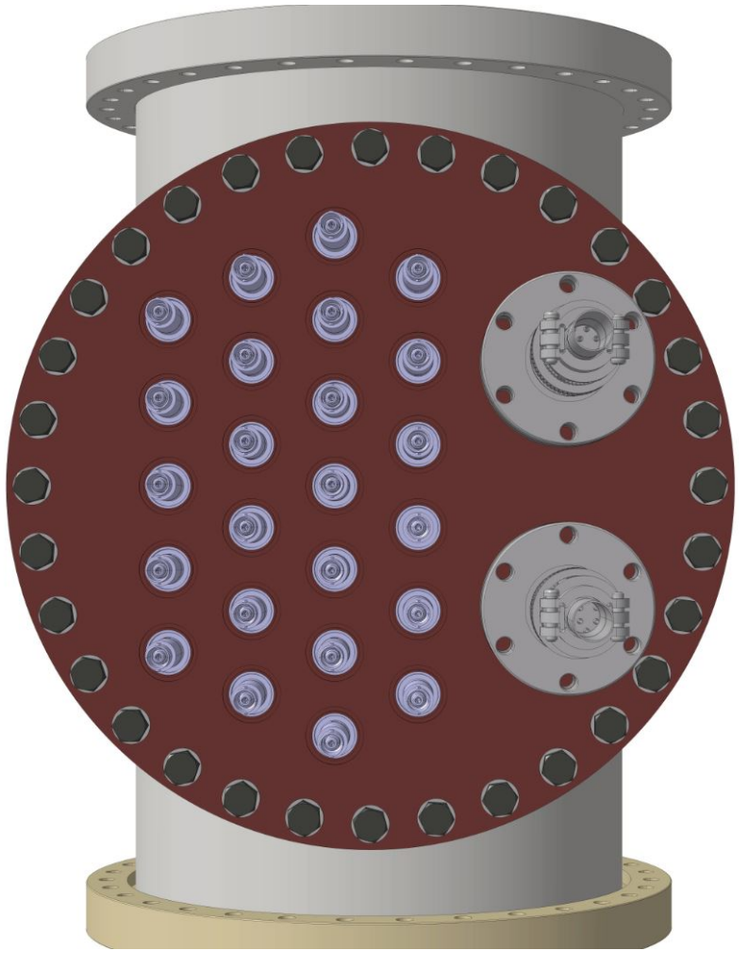
TANK_INST_NW



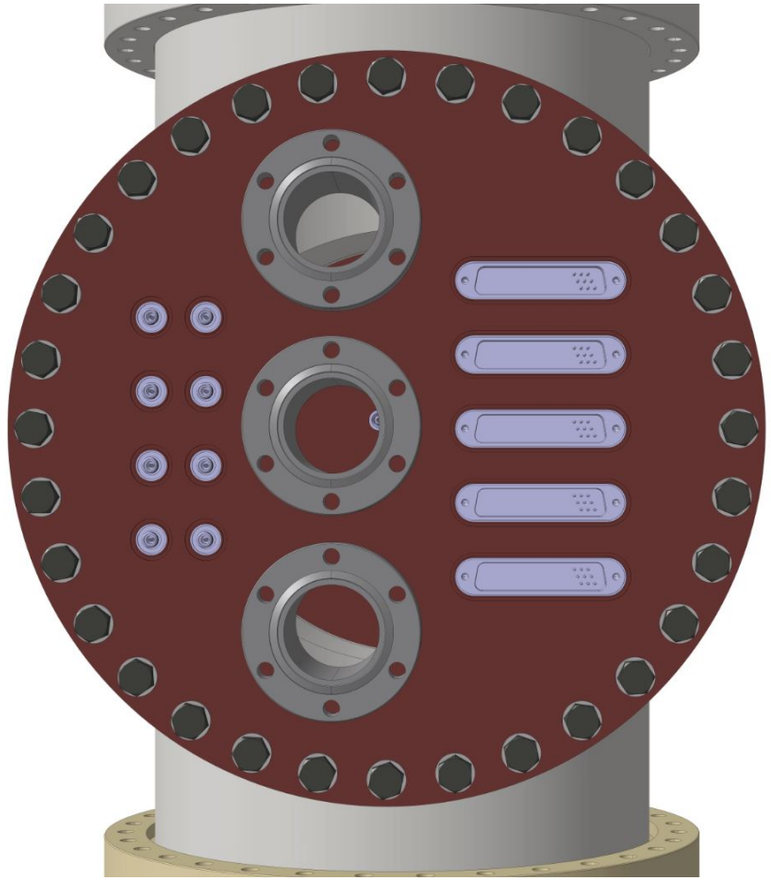
flange B (SUB-D, optical, SMA,…)

2 identical FT with 2 flanges each.

TANK_INST feedthroughs



flange A (HV+ power)

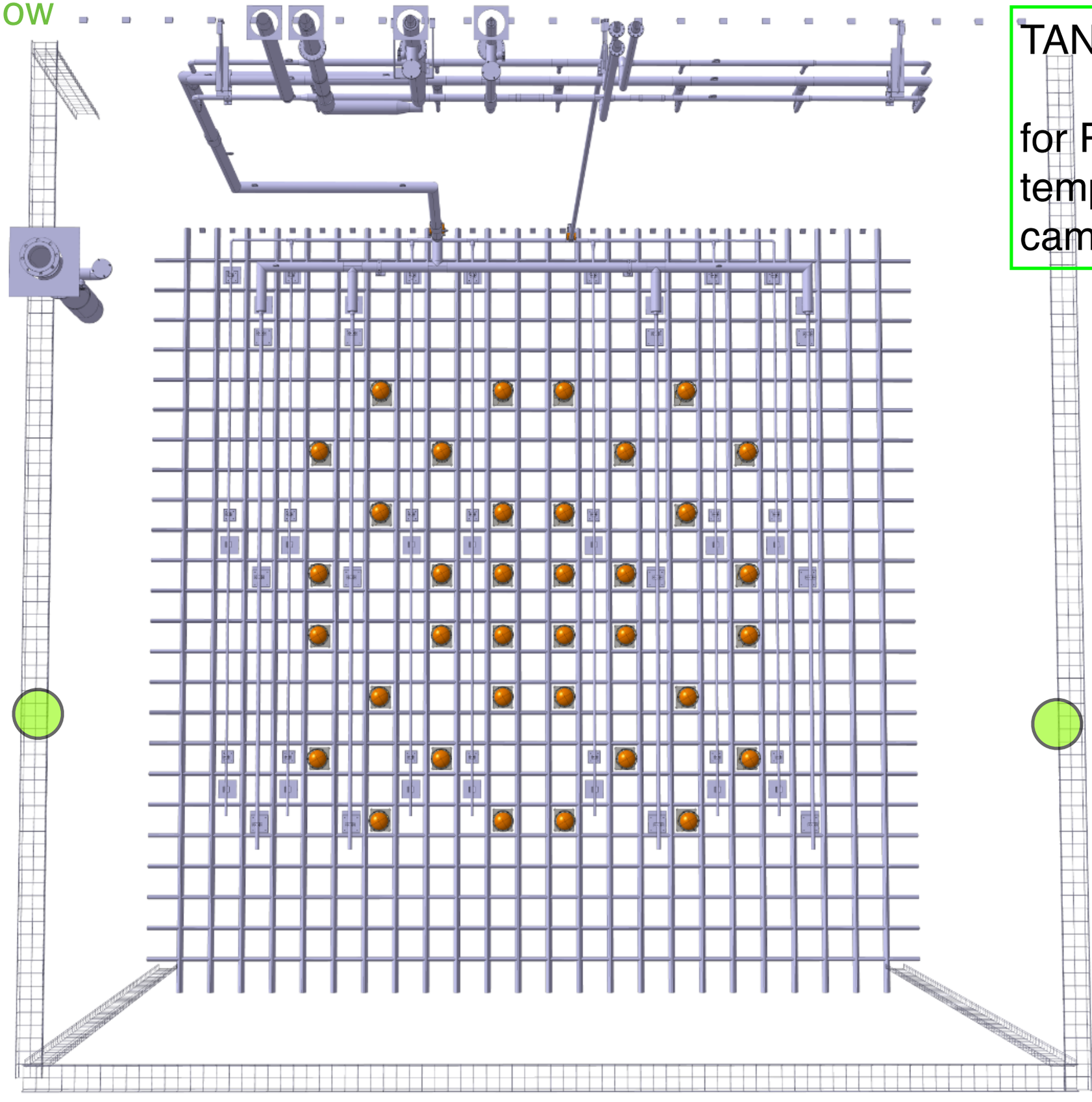


flange B (SUB-D, optical, SMA,…)

PLEASE CHECK CONNECTORS!!

Layout of cable trays

beam window

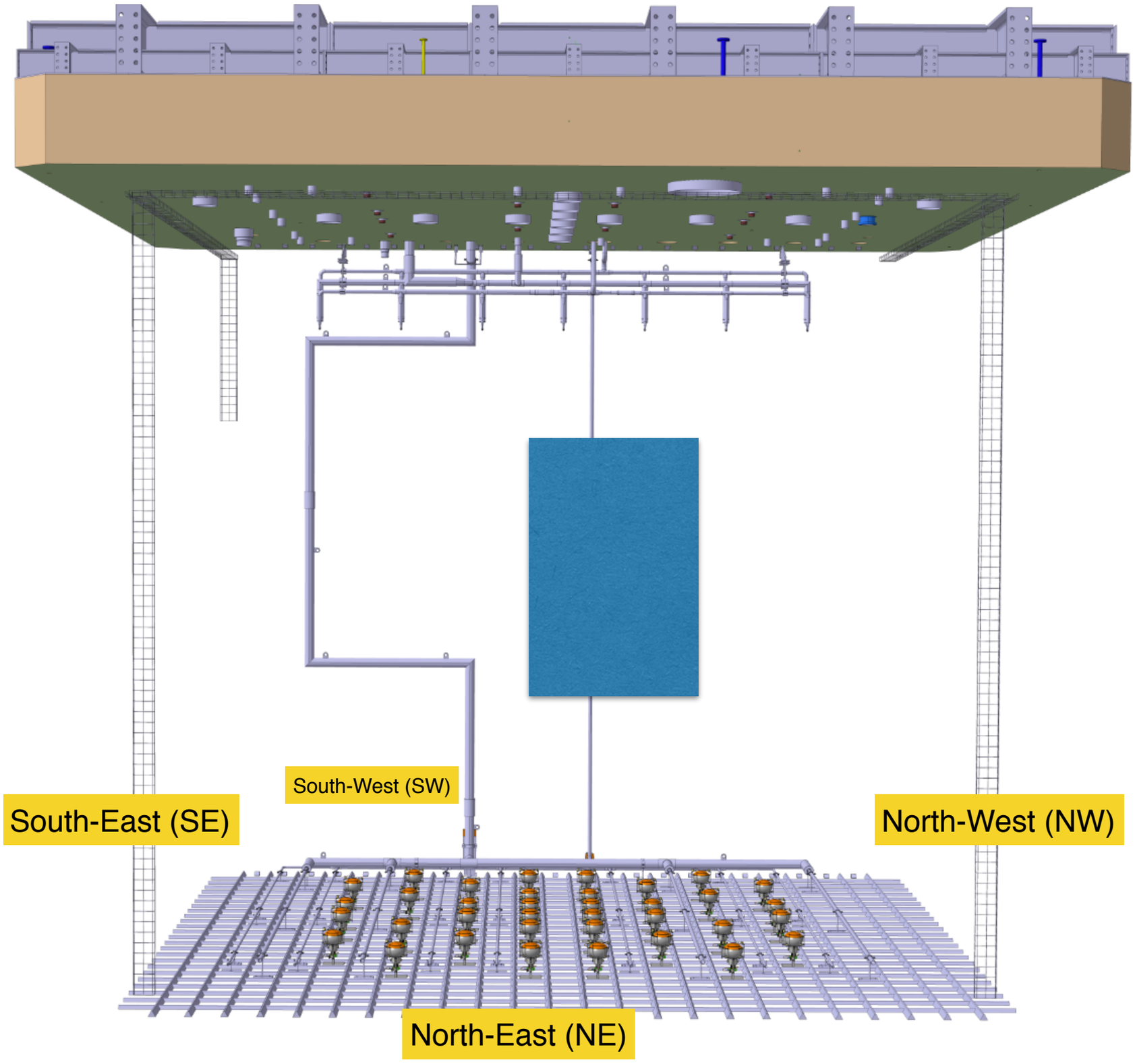


TANK_INST_*SE,NW*

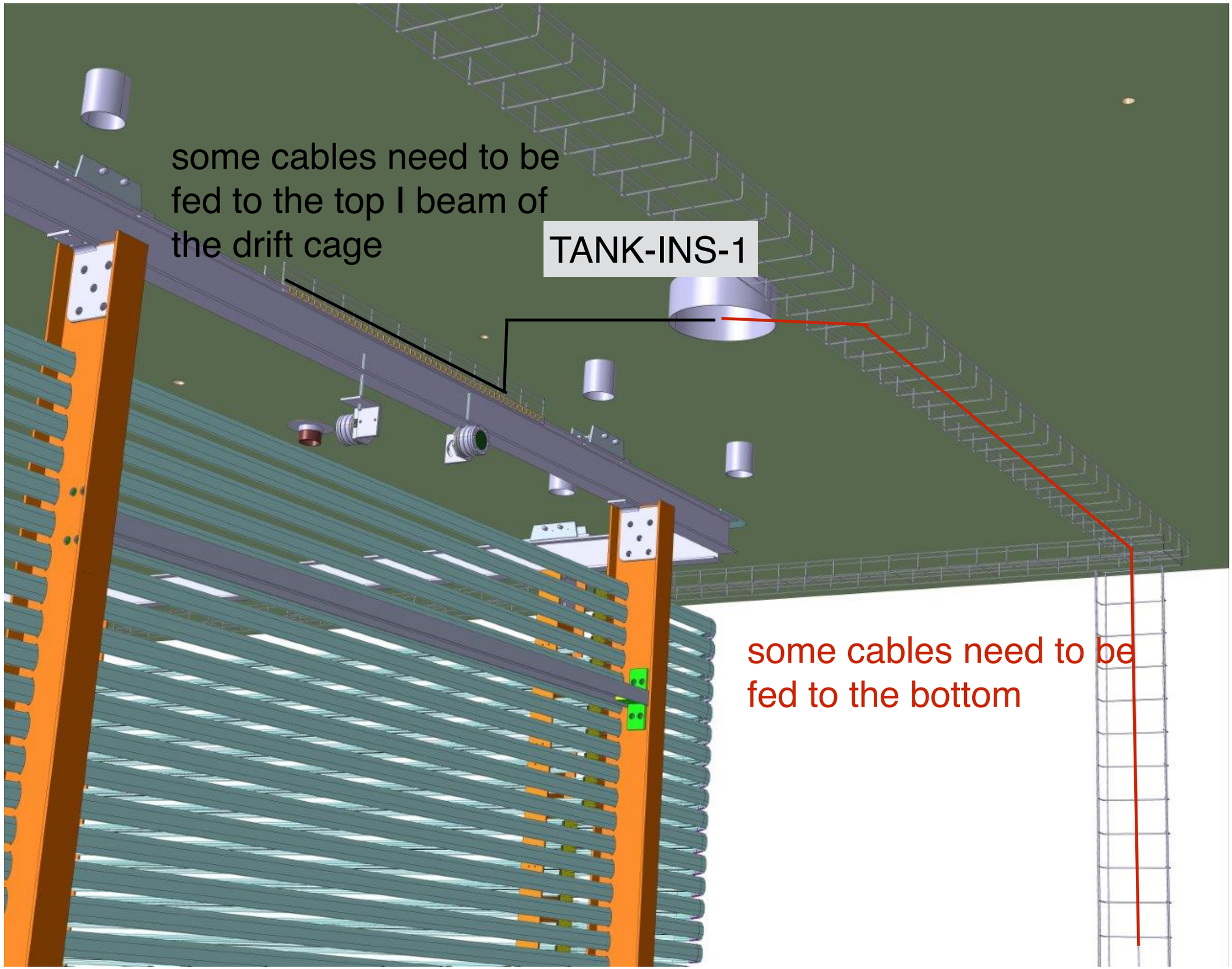
for PMT HV cables, temperature probes, cameras, etc..

TCO

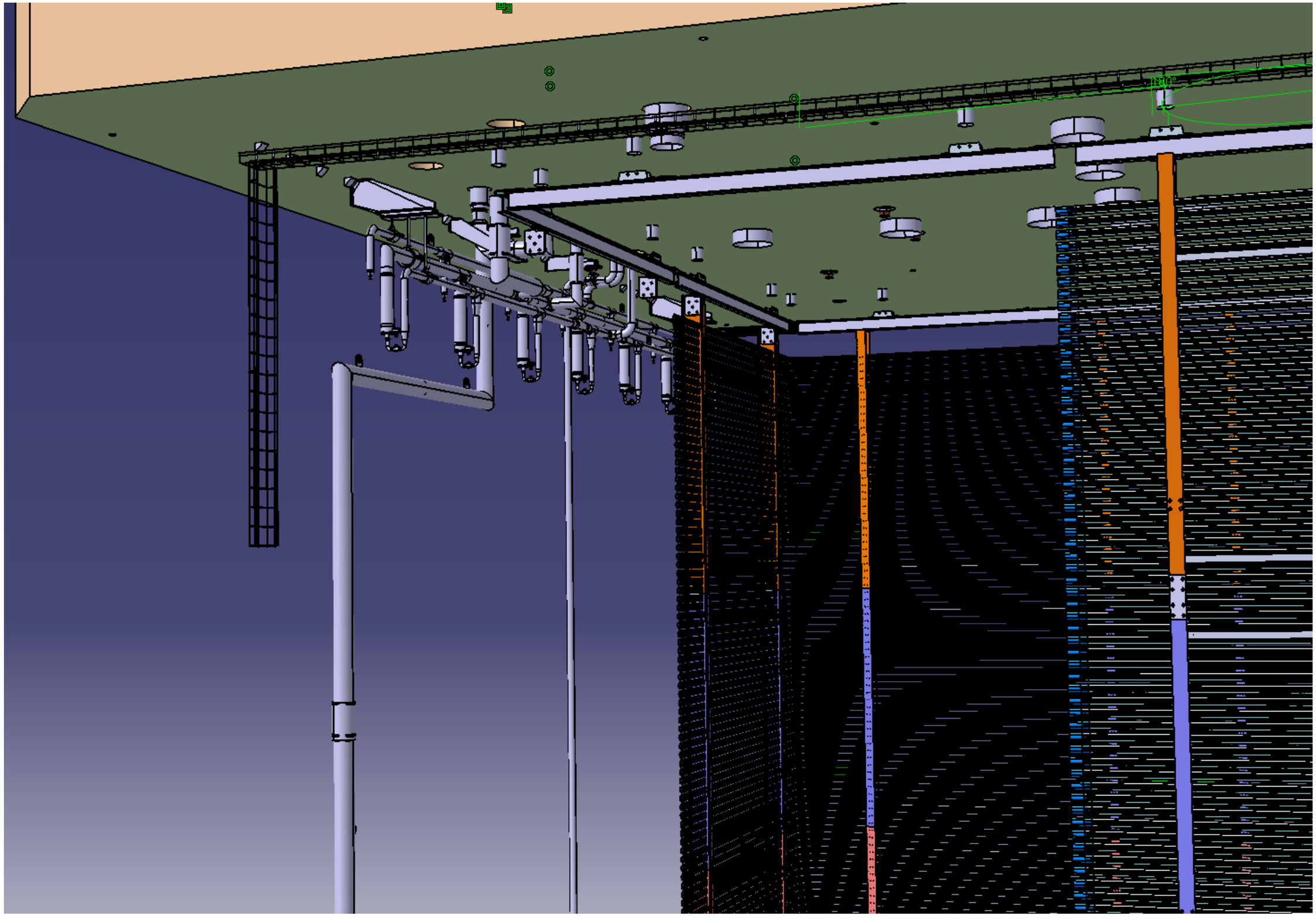
Layout of cable trays



Layout of cable trays

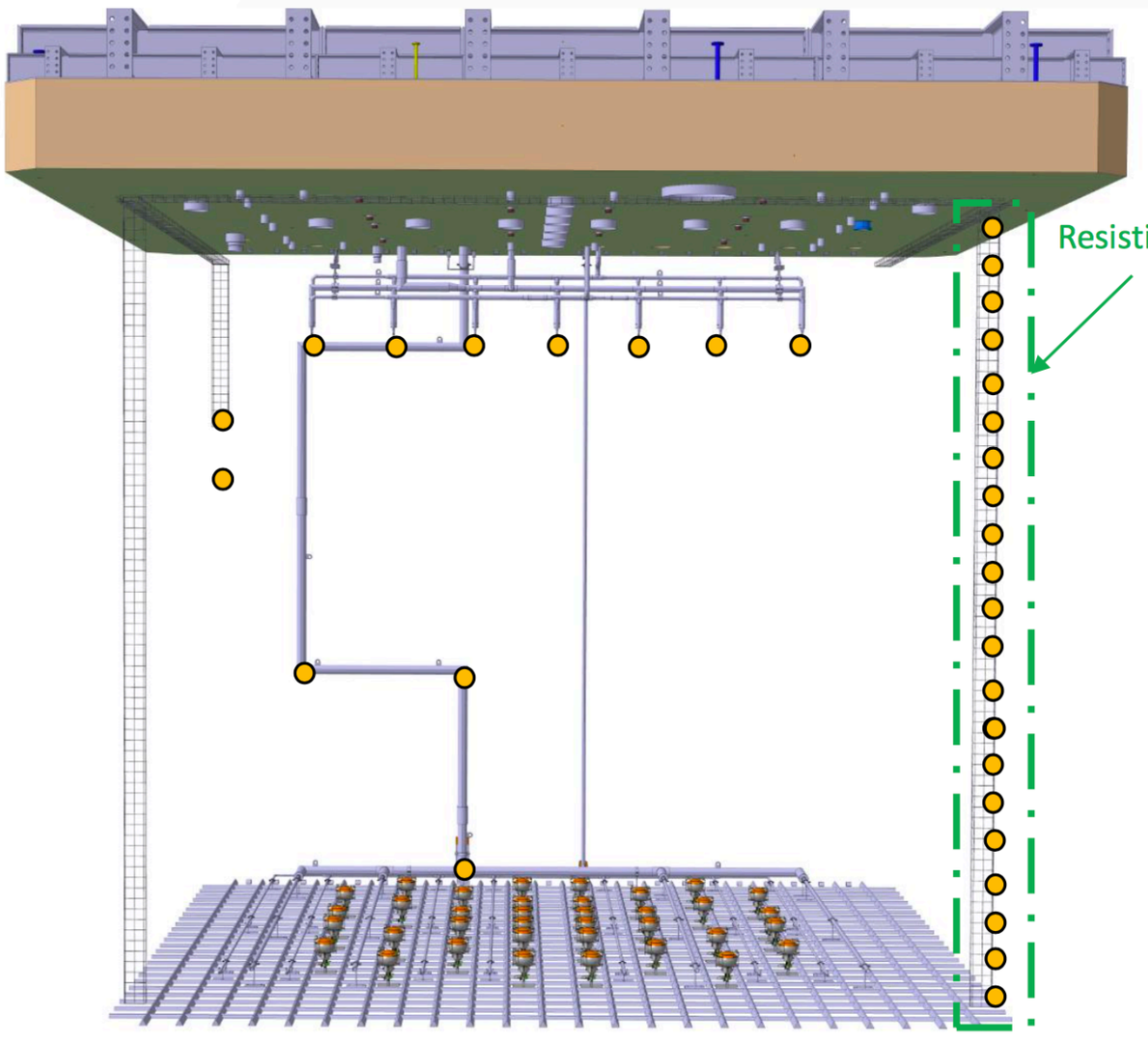


Layout of cable trays

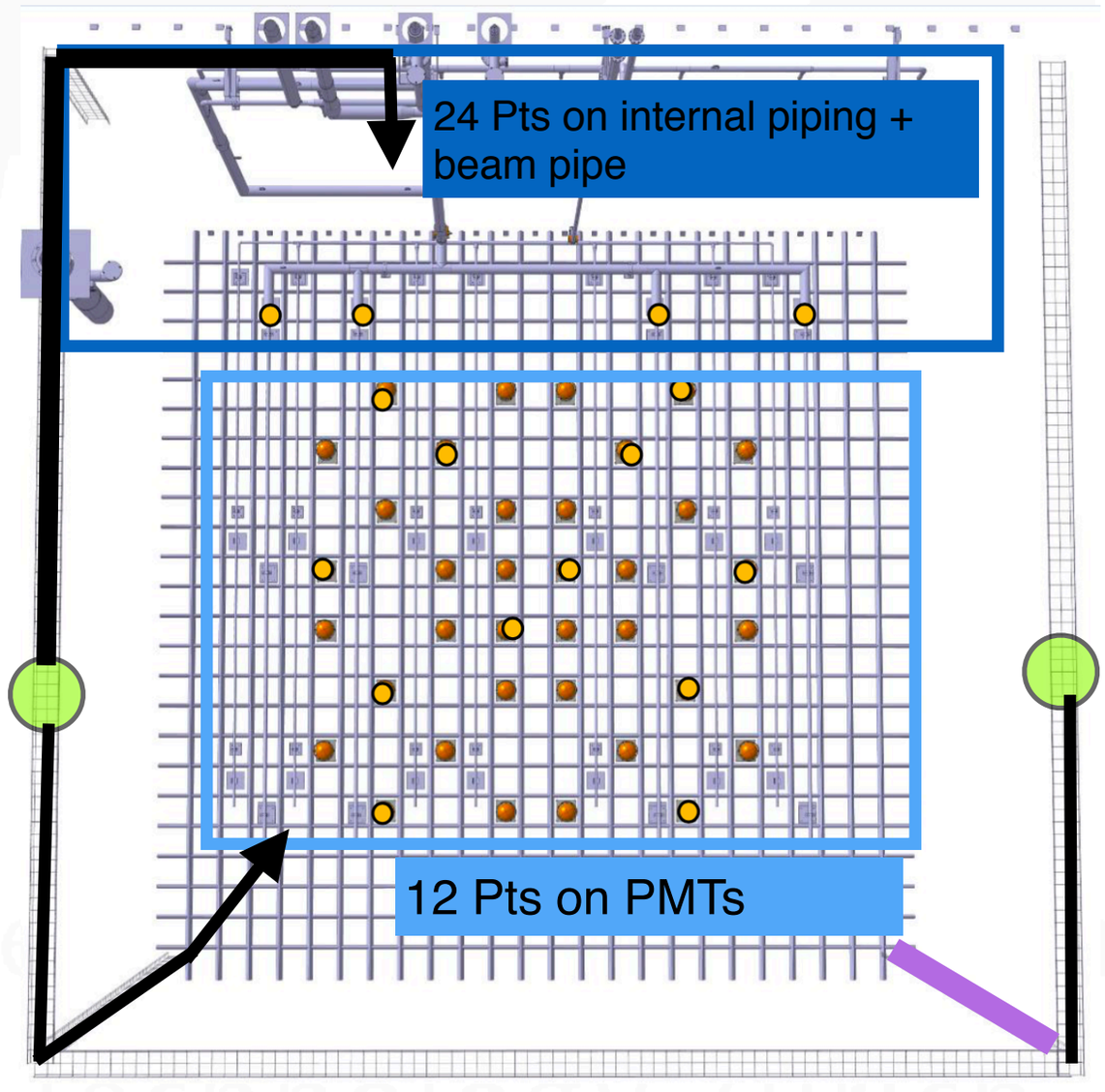


Layout of sensors: temperature

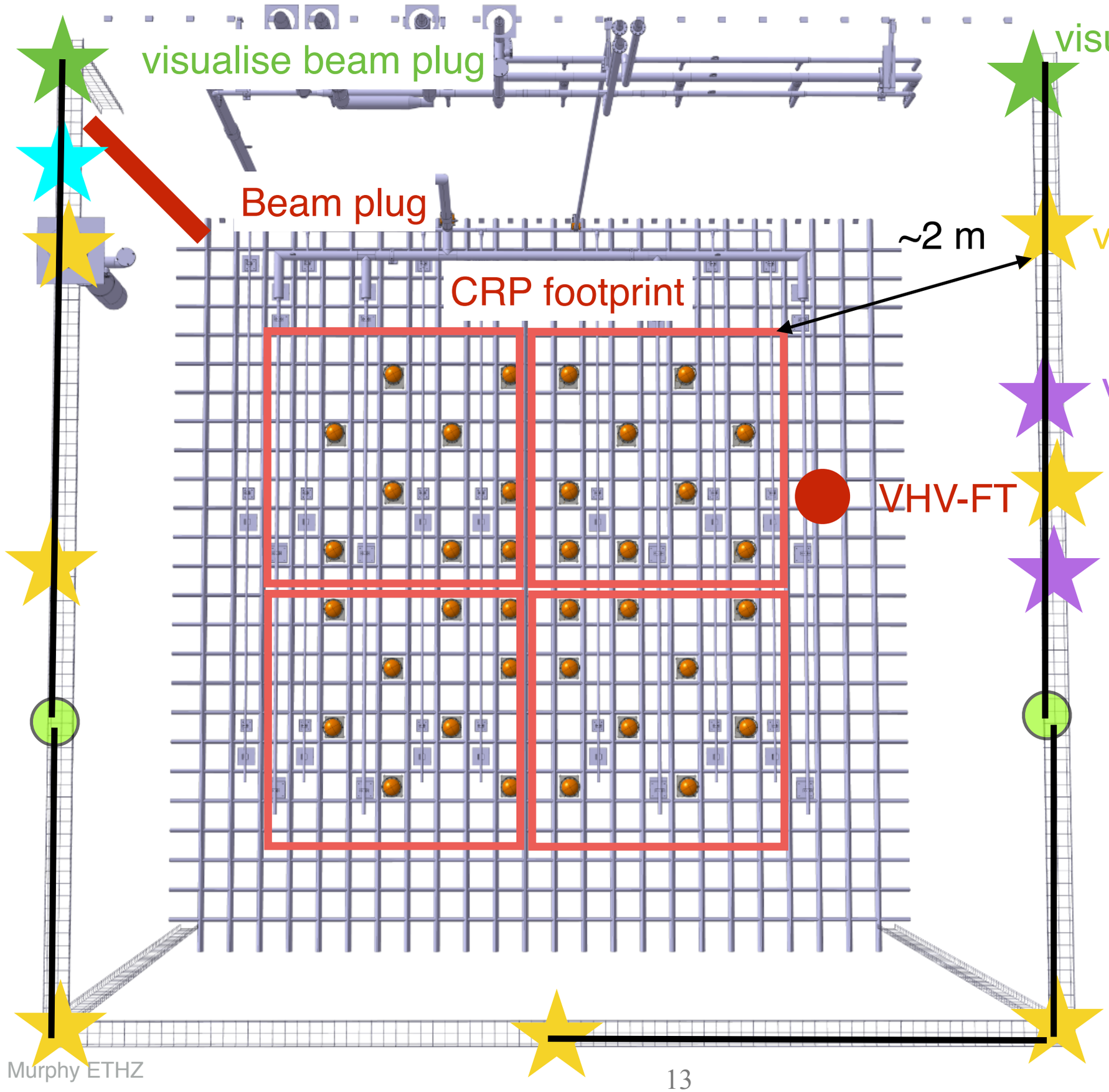
chain of temperature probes



temperature probes glued on tank bottom



Layout of sensors: 12 cameras



visualise internal piping

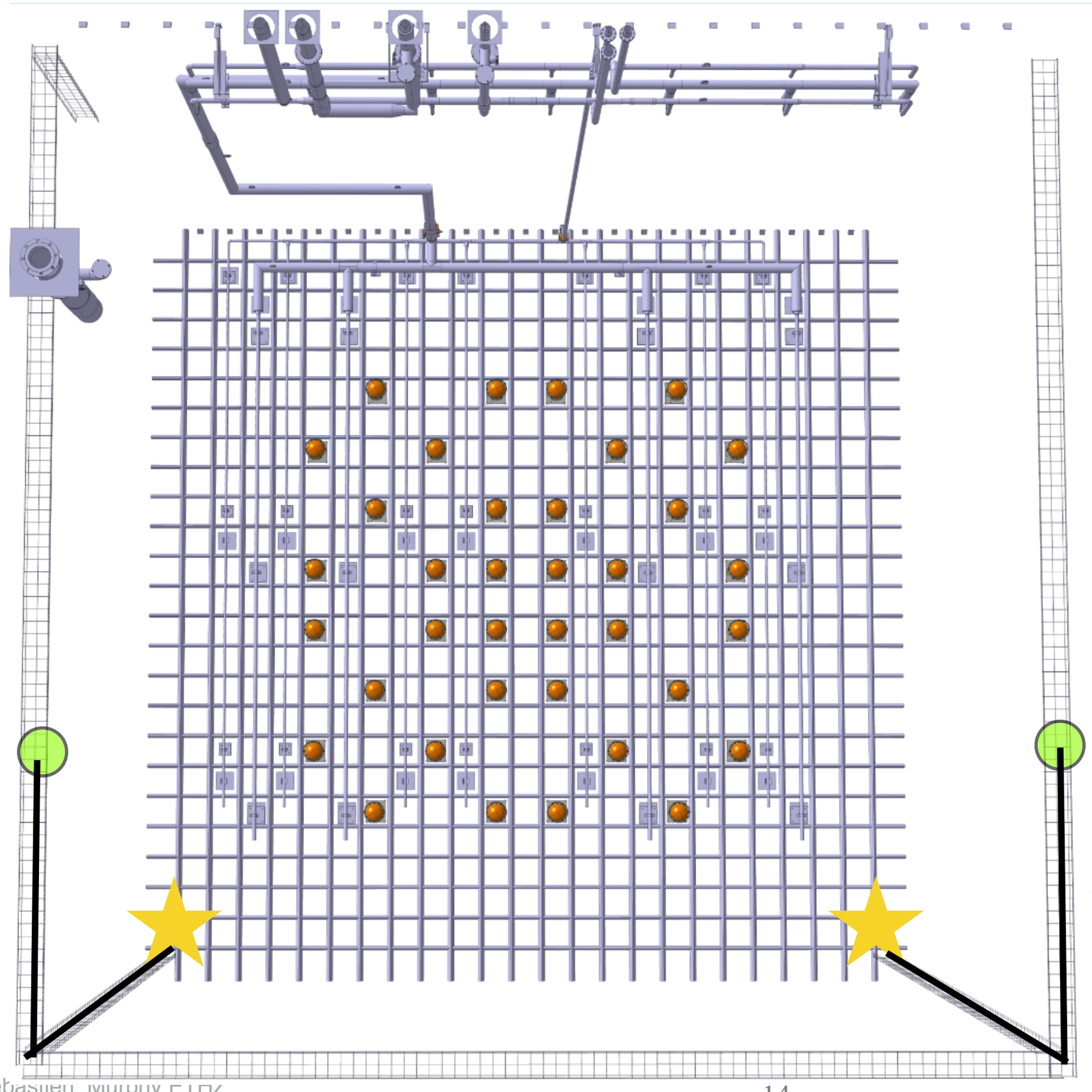
cameras fixed on the top cable trays

visualise CRP + level

visualise VHV-FT

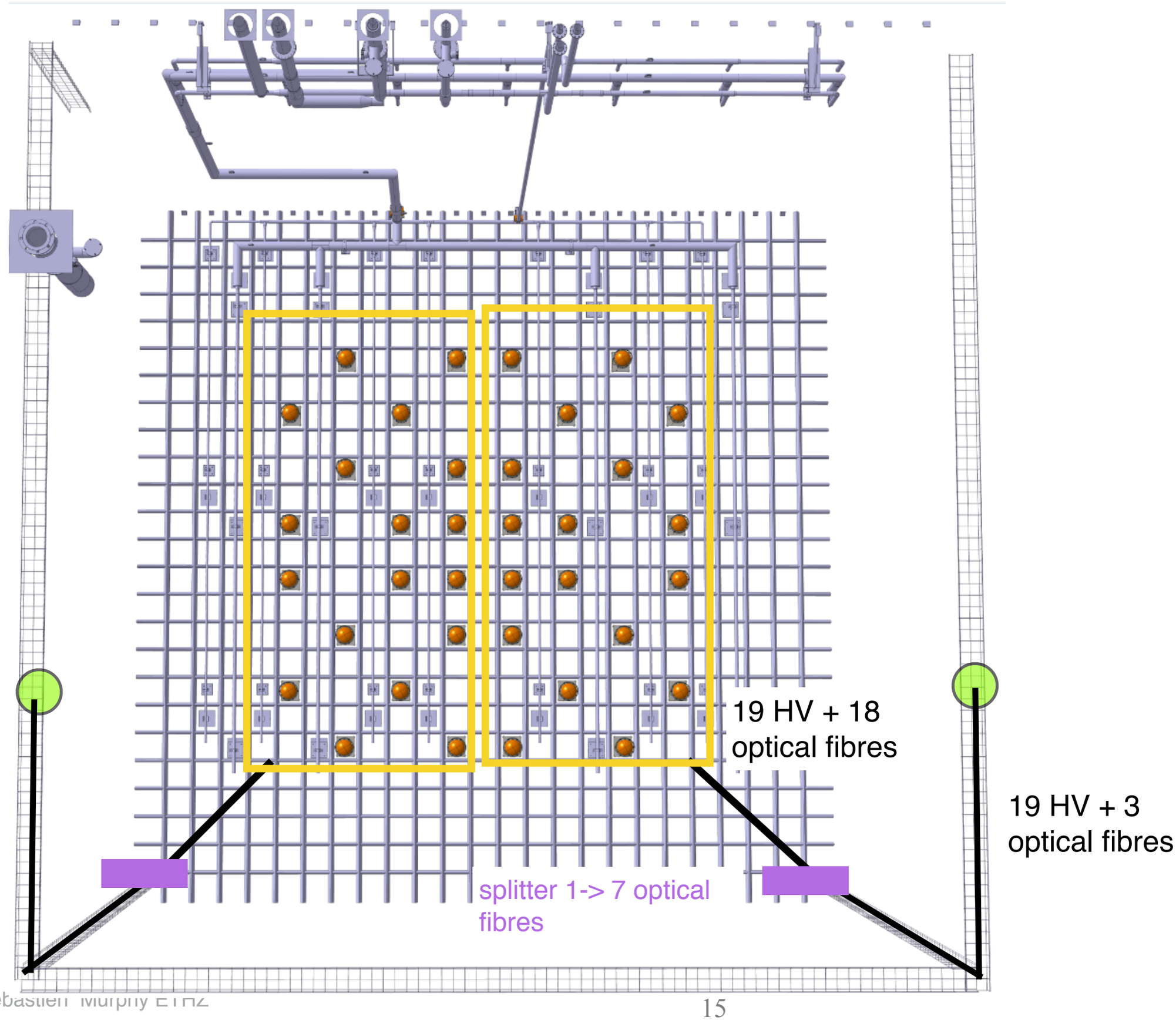
more details on camera: https://indico.fnal.gov/getFile.py/access?contribId=5&resId=0&materialId=slides&confId=14791

Layout of sensors: purity monitors

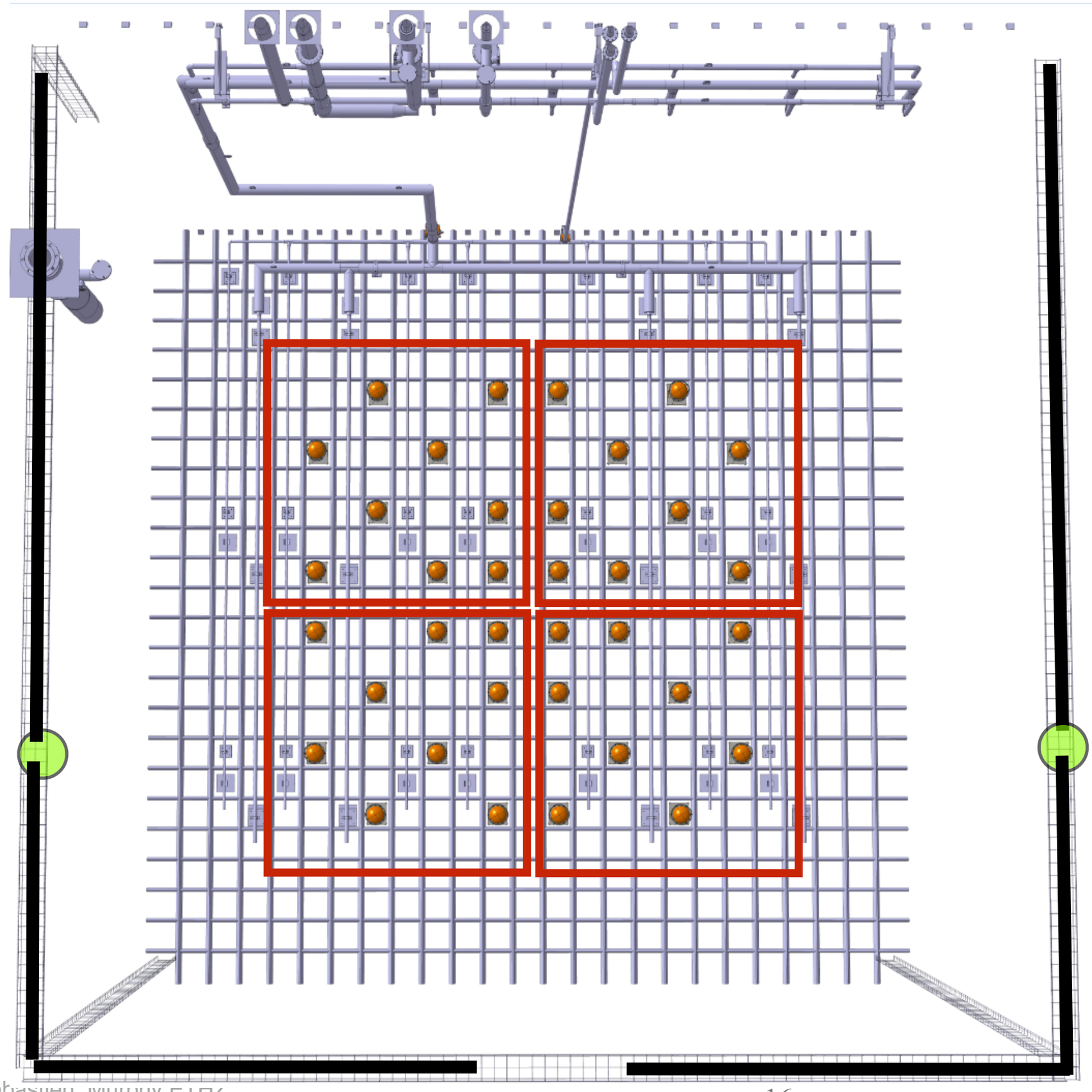


3 HV + 3 optical fibres

Layout of sensors: PMTs

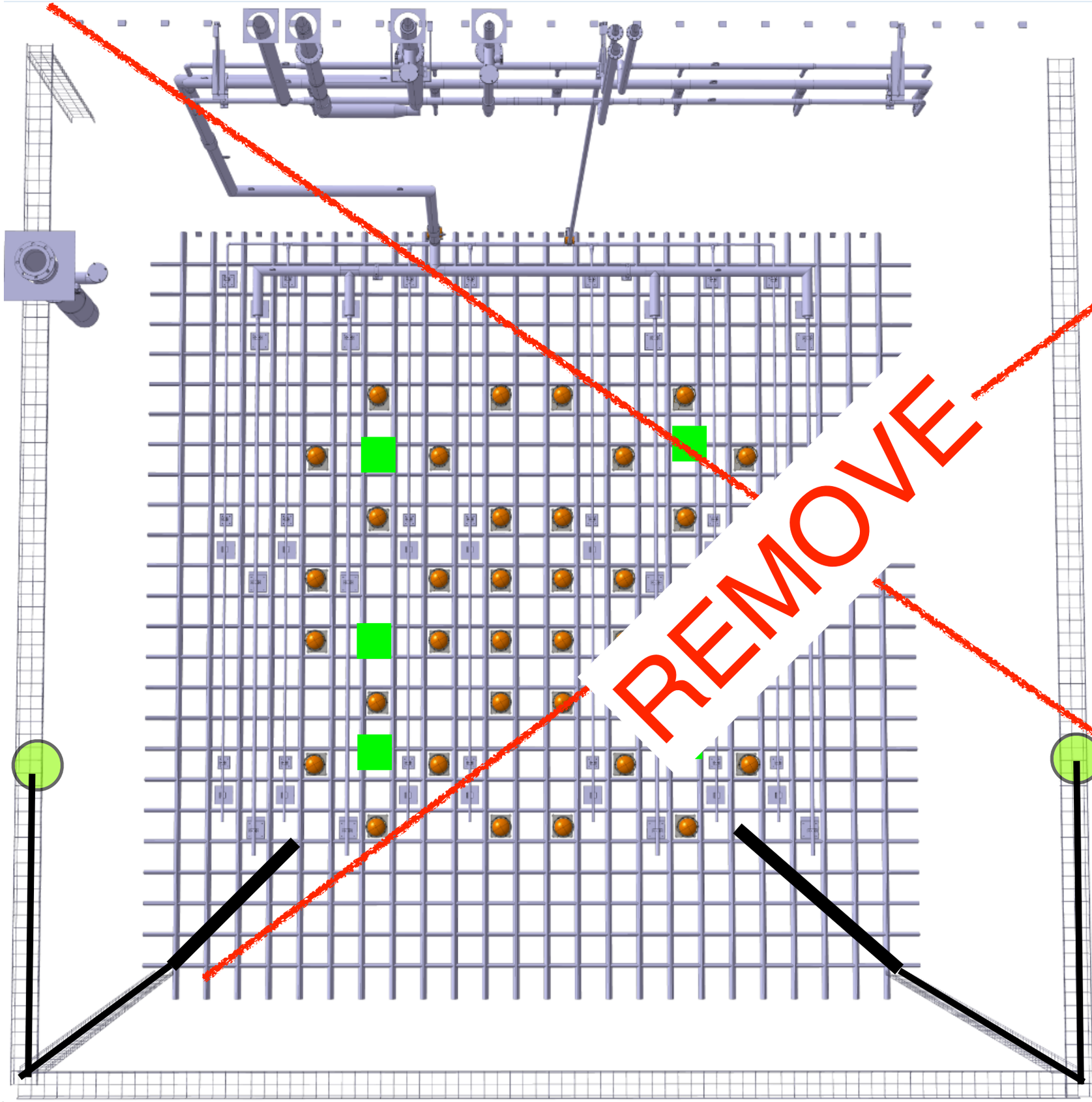


Layout of sensors: LED ribbon



2 ribbons per FT

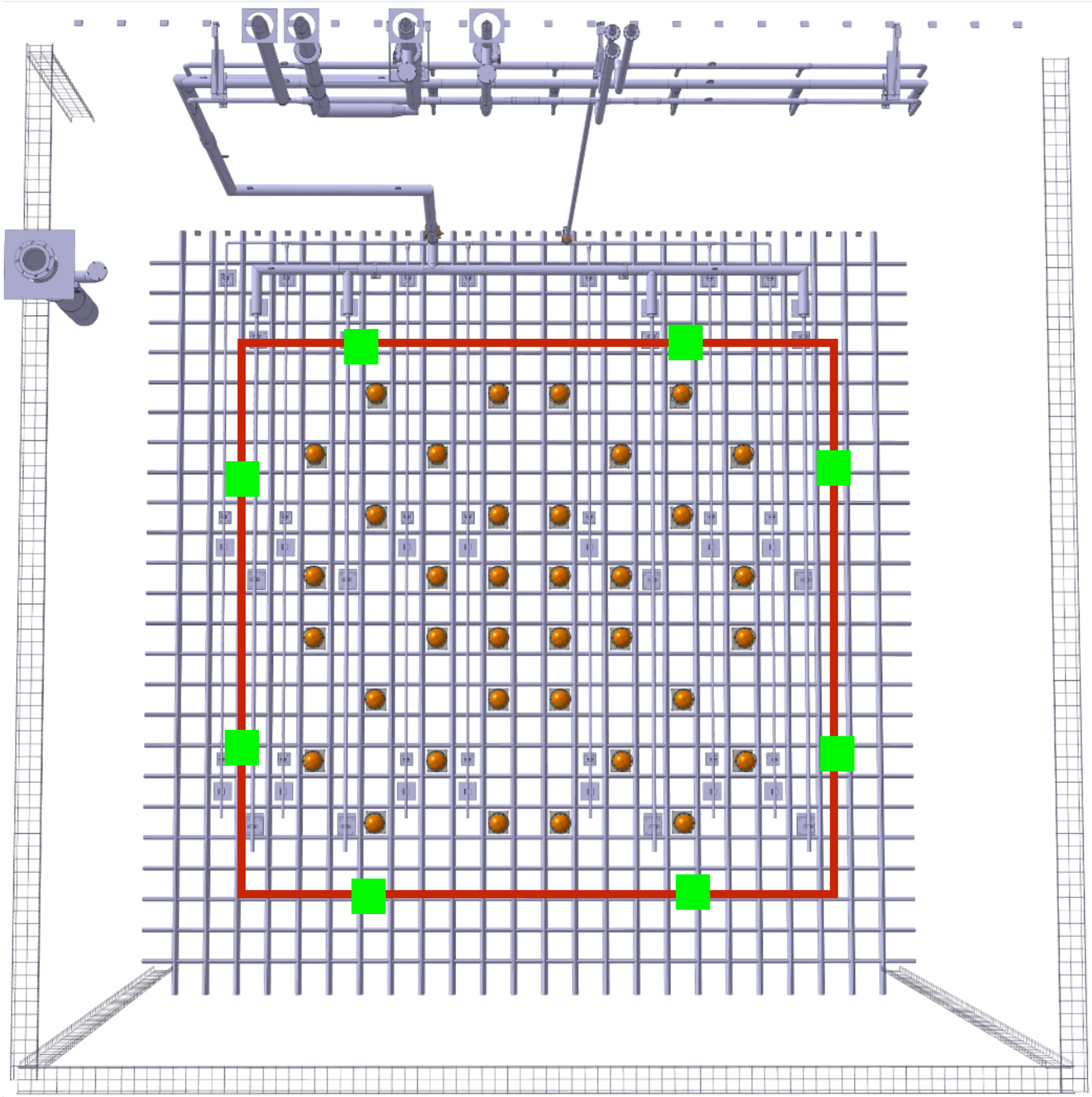
Layout of sensors: heaters



heaters connected in series

1-2 kW total power available (can be more). Exact layout TBD

Layout of sensors: level meters



1 coax level meter per drift cage submodule