

# SBS Components in Hall C

## Hall C

Layouts of various SBS experimental setups with target downstream of pivot and between the SHMS and HMS.

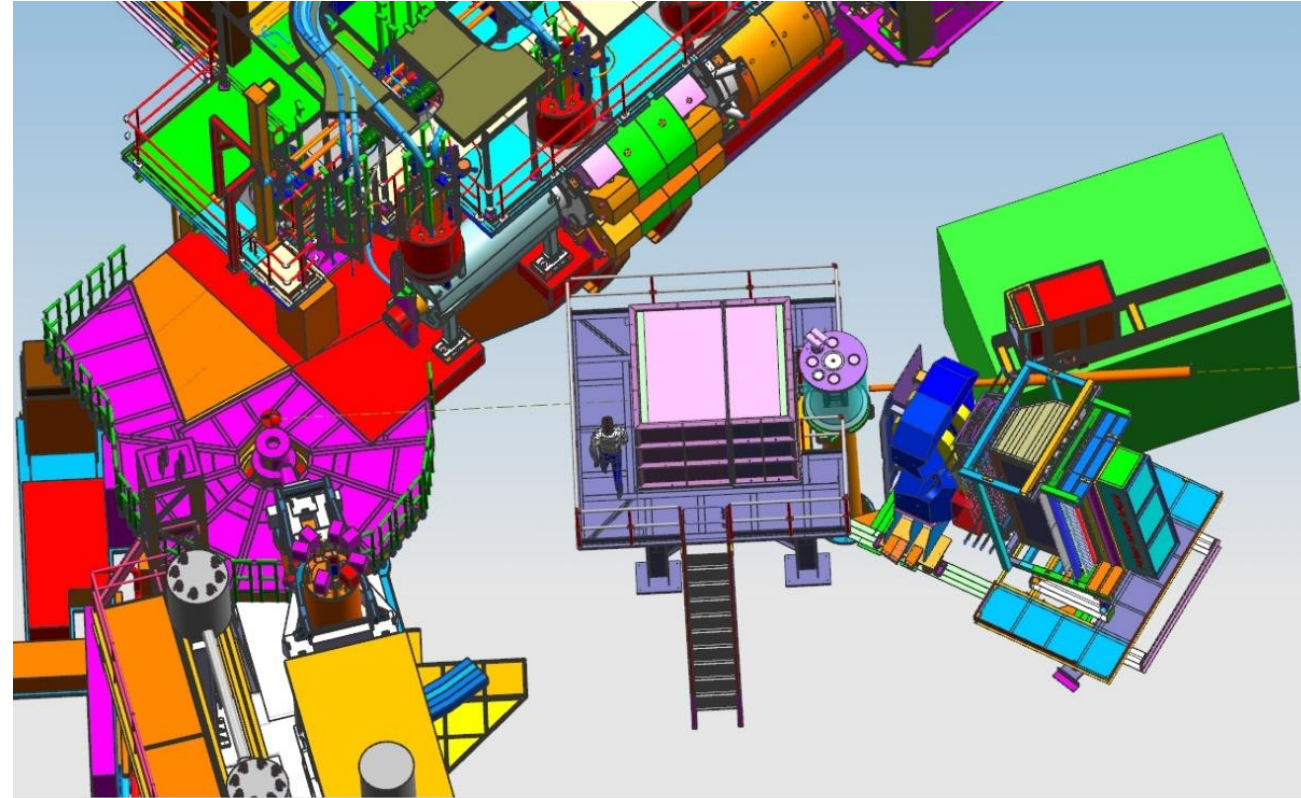
WACS – BigBite and NPS Calorimeter

TDIS – SBS

SIDIS – BB and SBS

SFF-with reconfigured HCAL Blocks

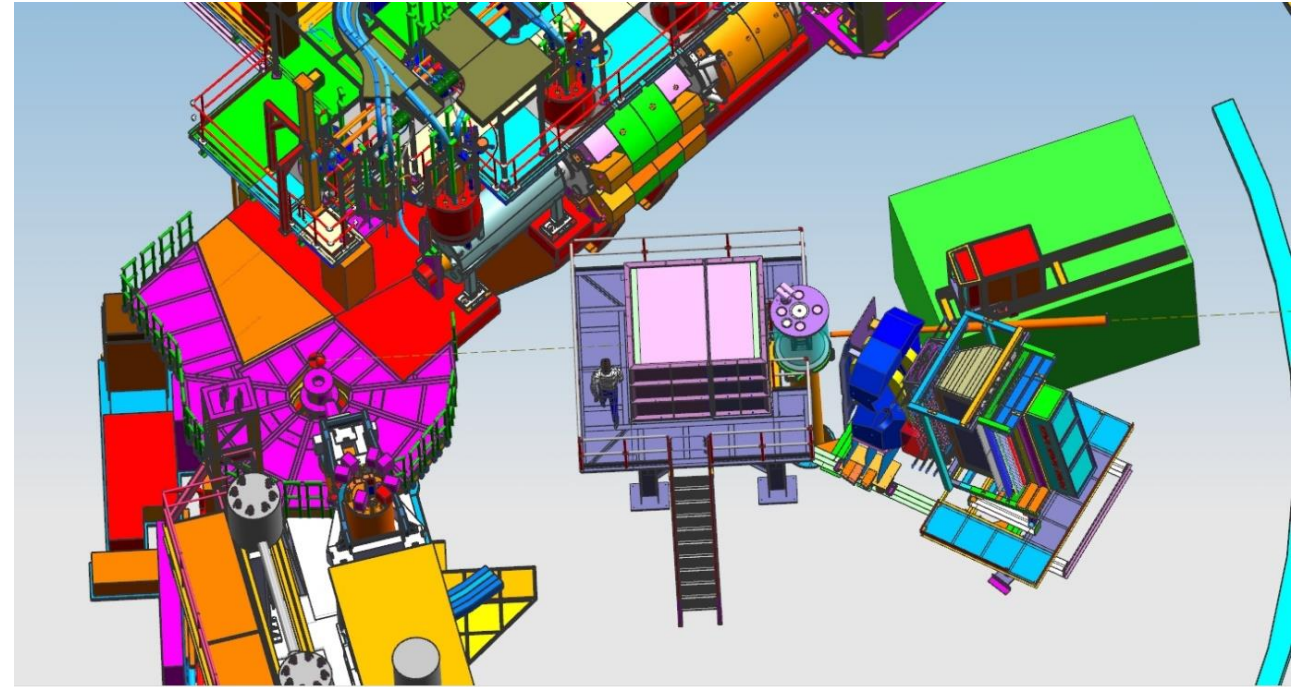
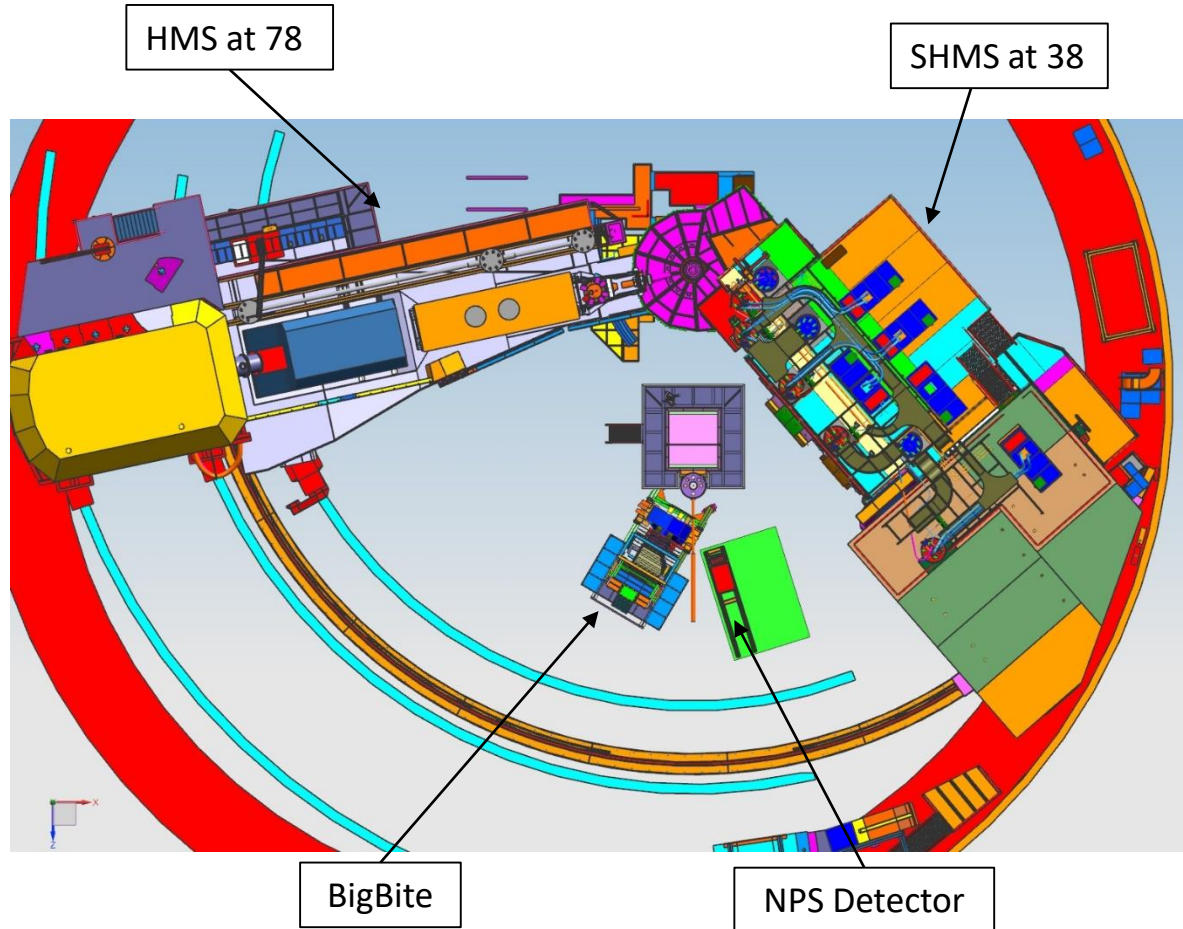
Steven Lassiter



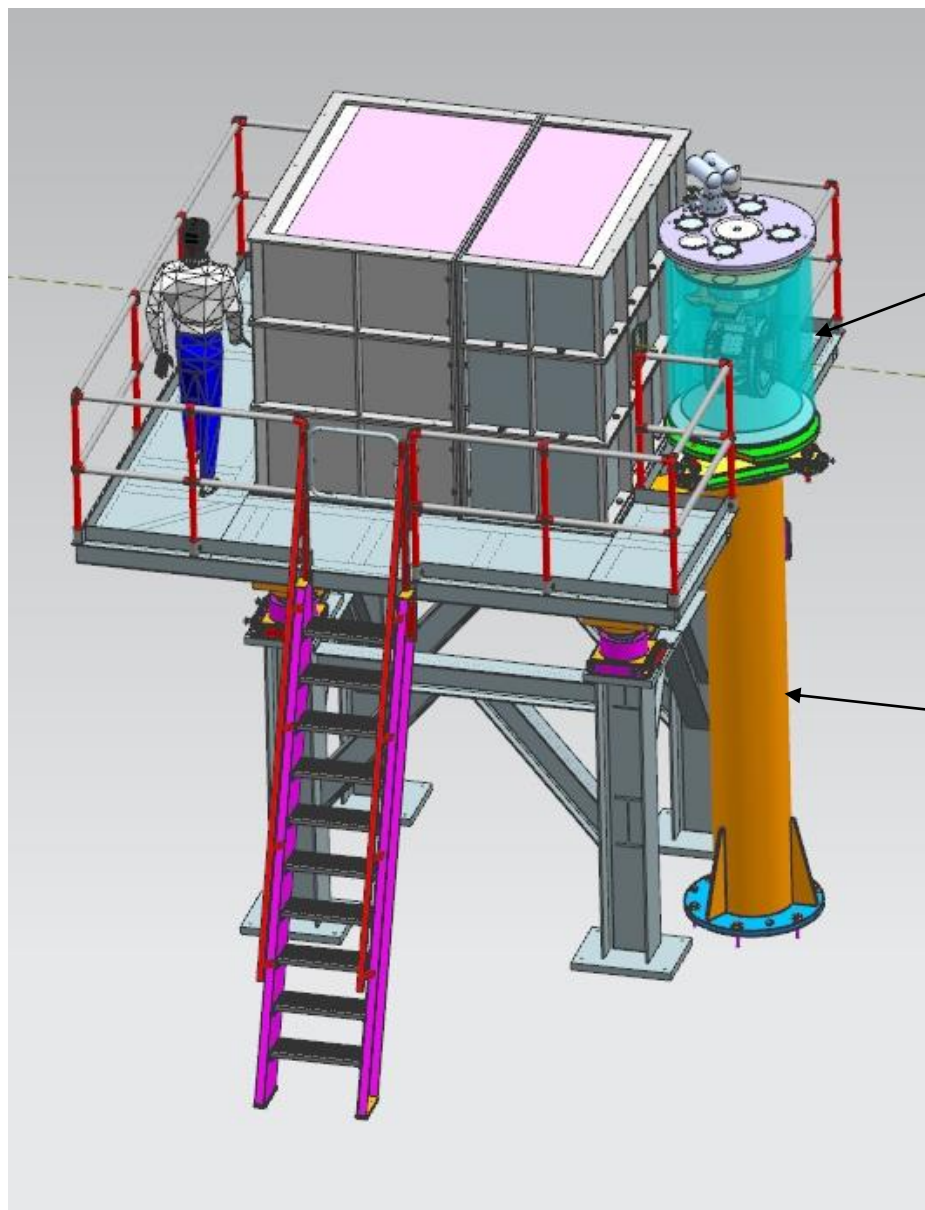
CPS with BigBite and NPS calorimeter

# WACS

## CPS with BigBite and NPS Calorimeter



# CPS with Polarizing 5T magnet

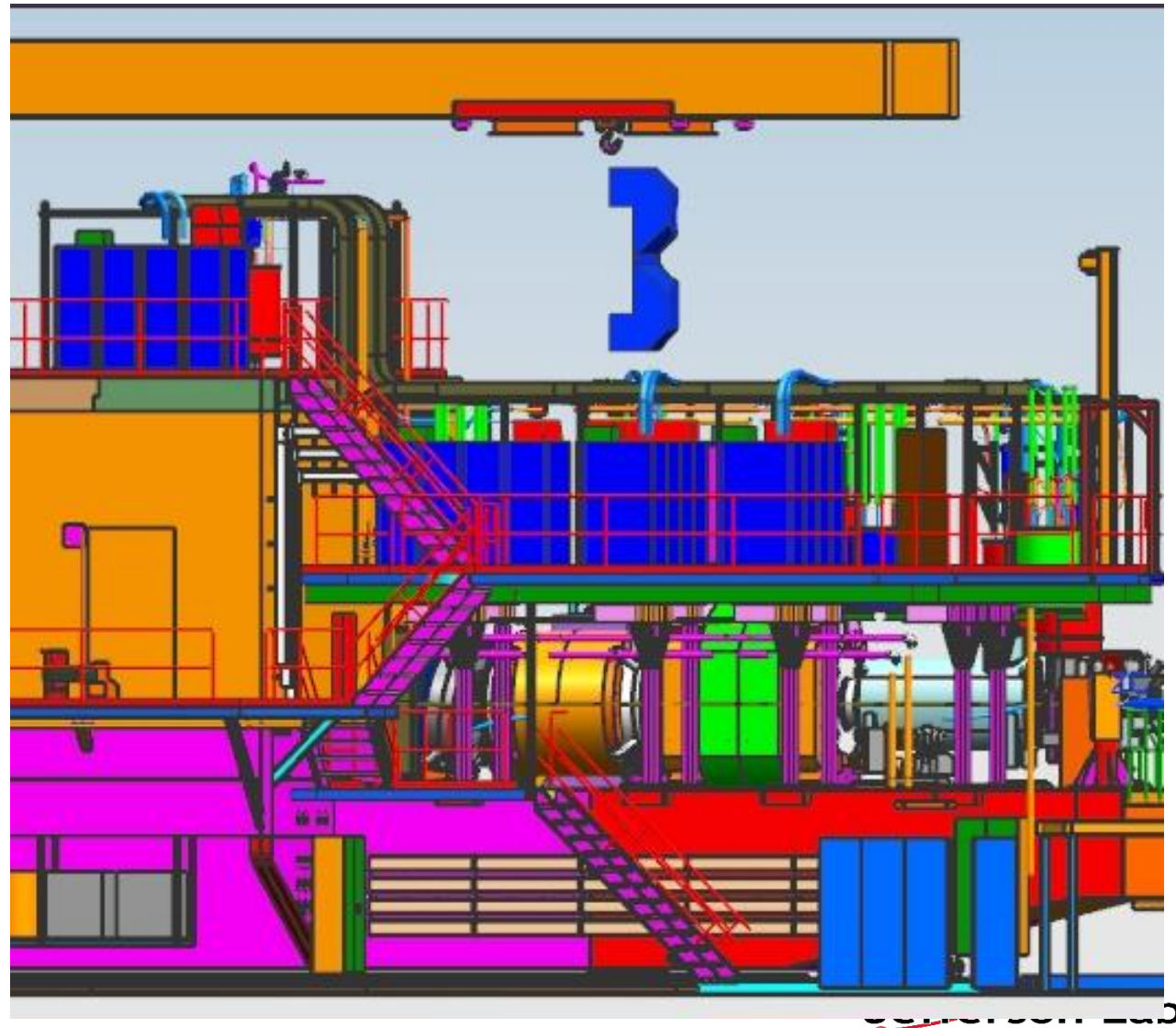
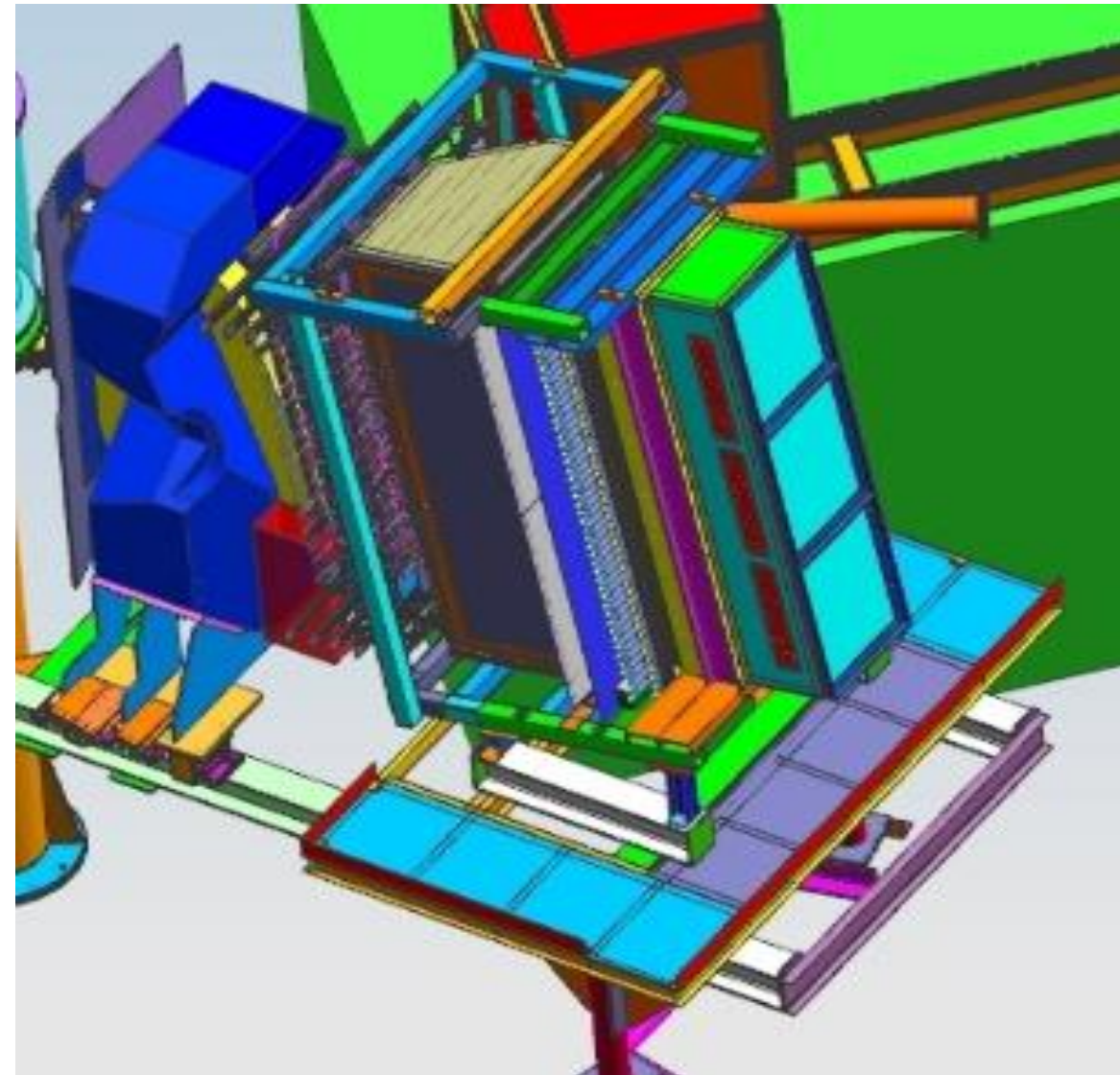


Target chamber (SCP0157)

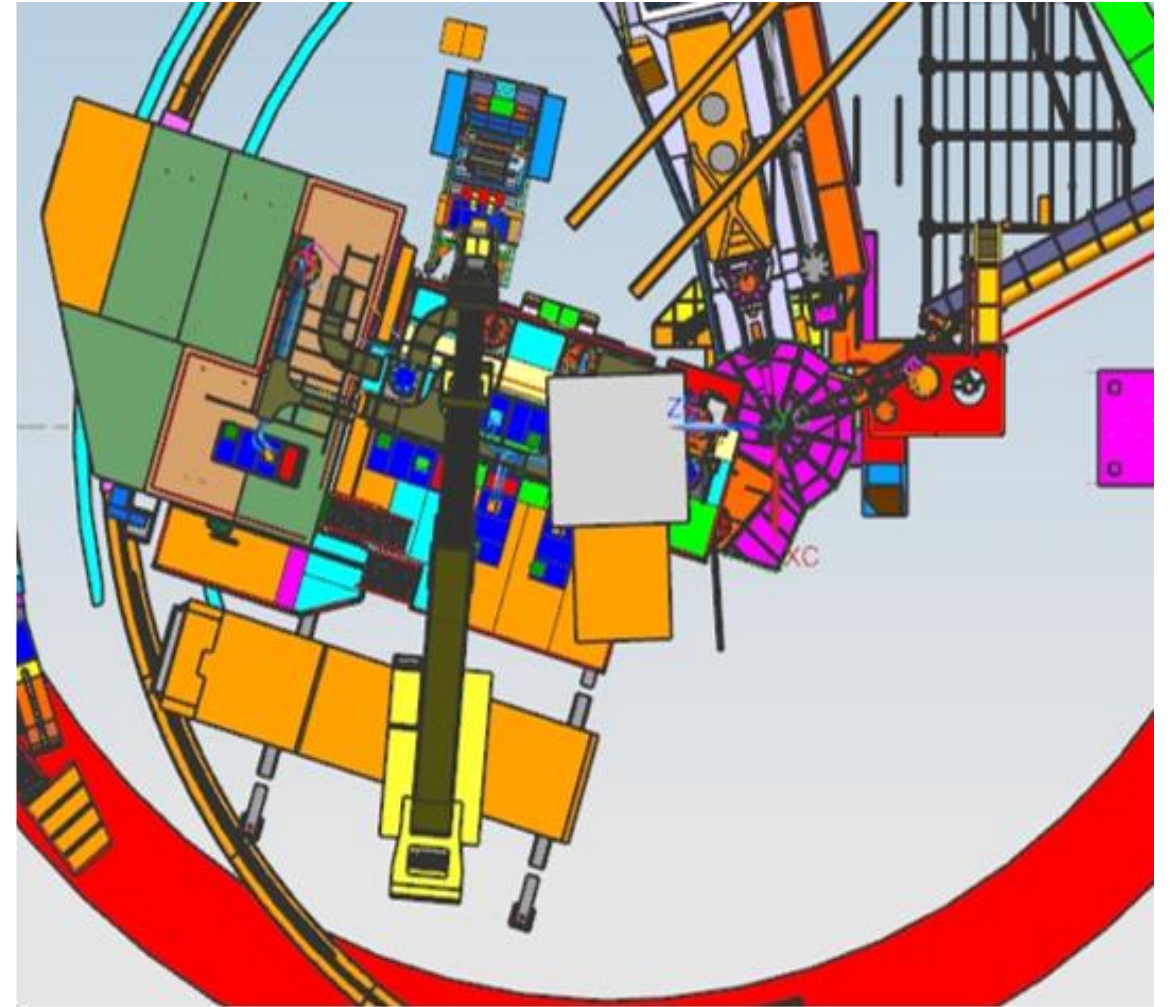
Hall C Existing  
Target Support  
Stand

## Getting Big Bite Magnet over SHMS

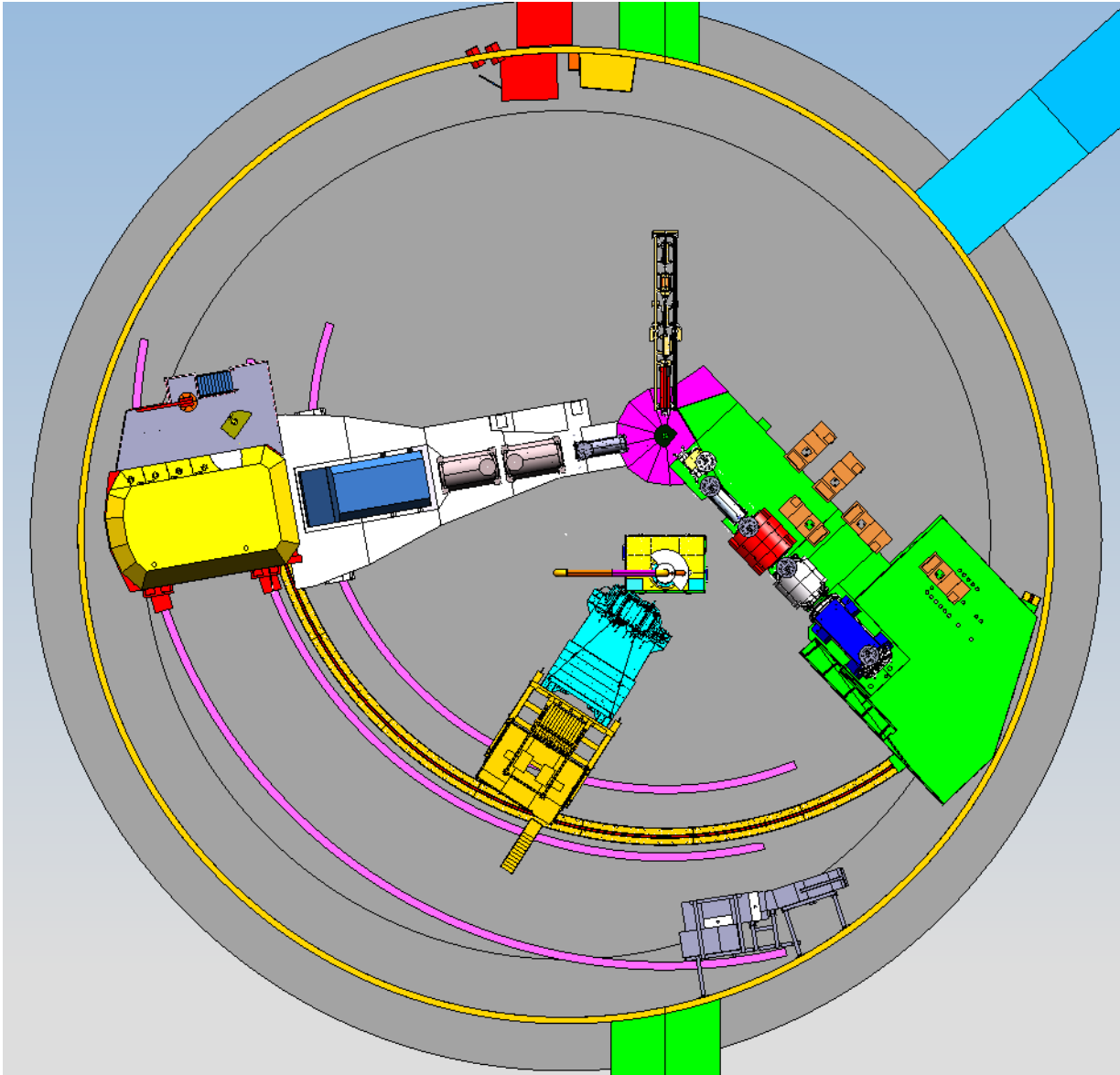
BigBite Magnet can be disassembled and lifted over the SHMS with Hall C standard crane



# Optional for BigBite Magnet to be lifted with a mobile crane



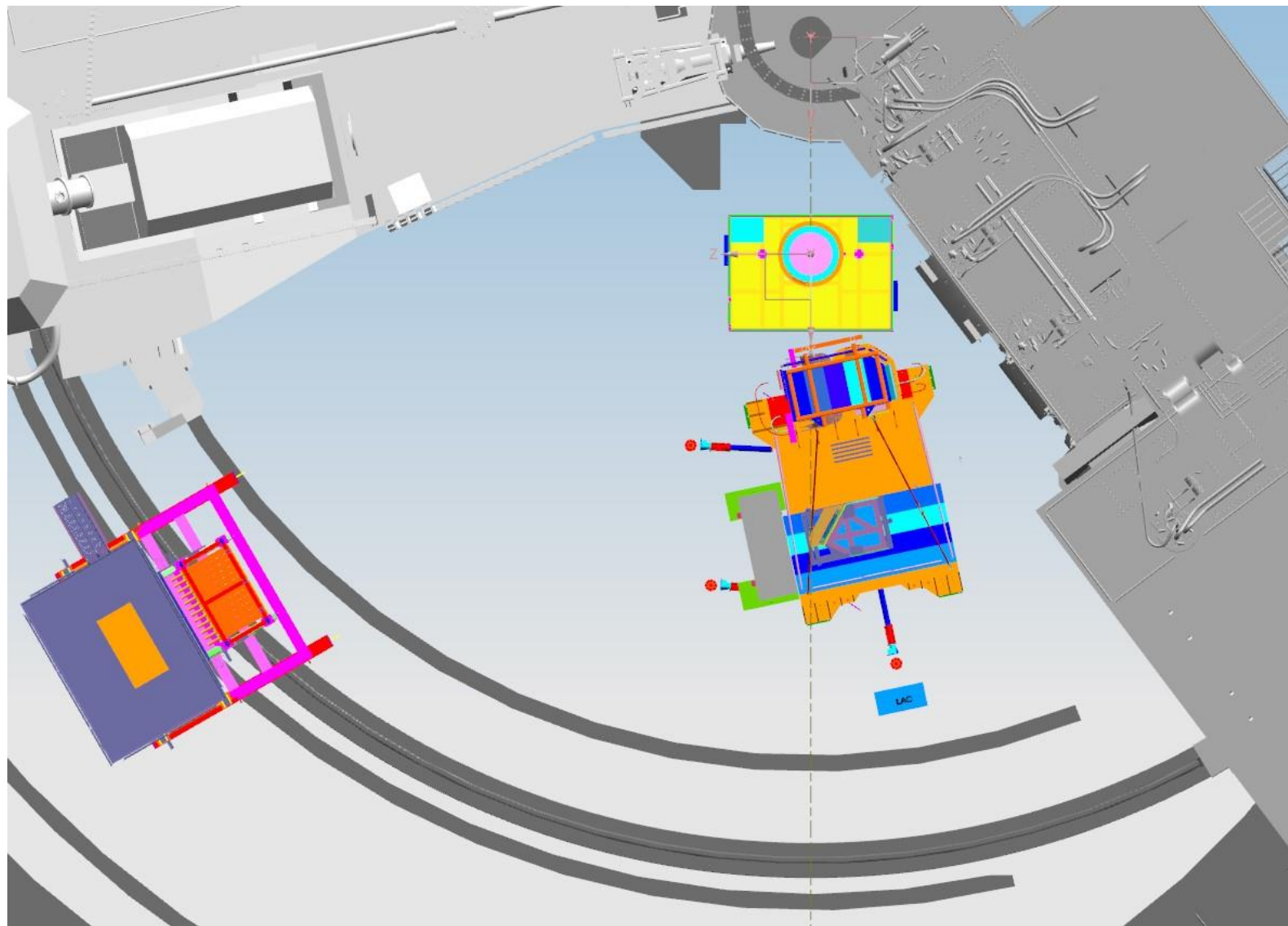
# TDIS with SBS In Hall C



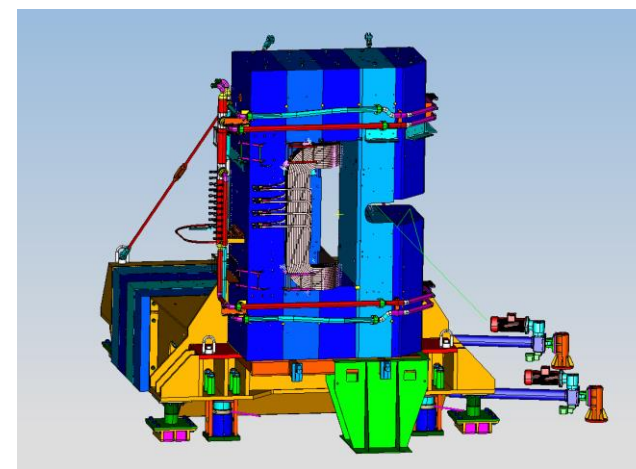
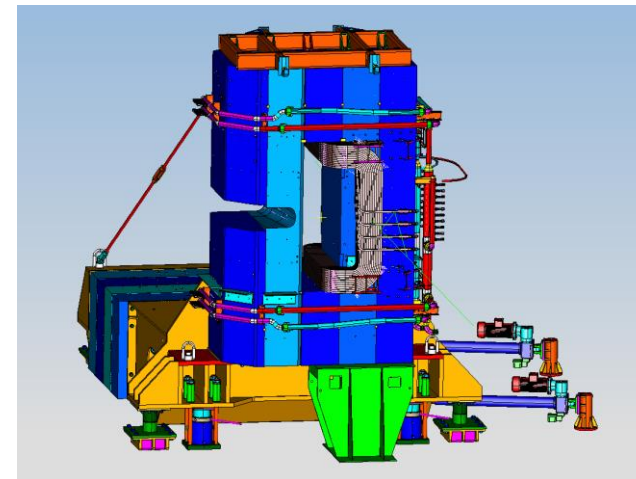
SBS & Hcal 2.5m downstream of Polarized target and @32.5 degrees.

SBS shown with Hall A's cantilevered support structure (not needed for Hall C but why change a good thing).

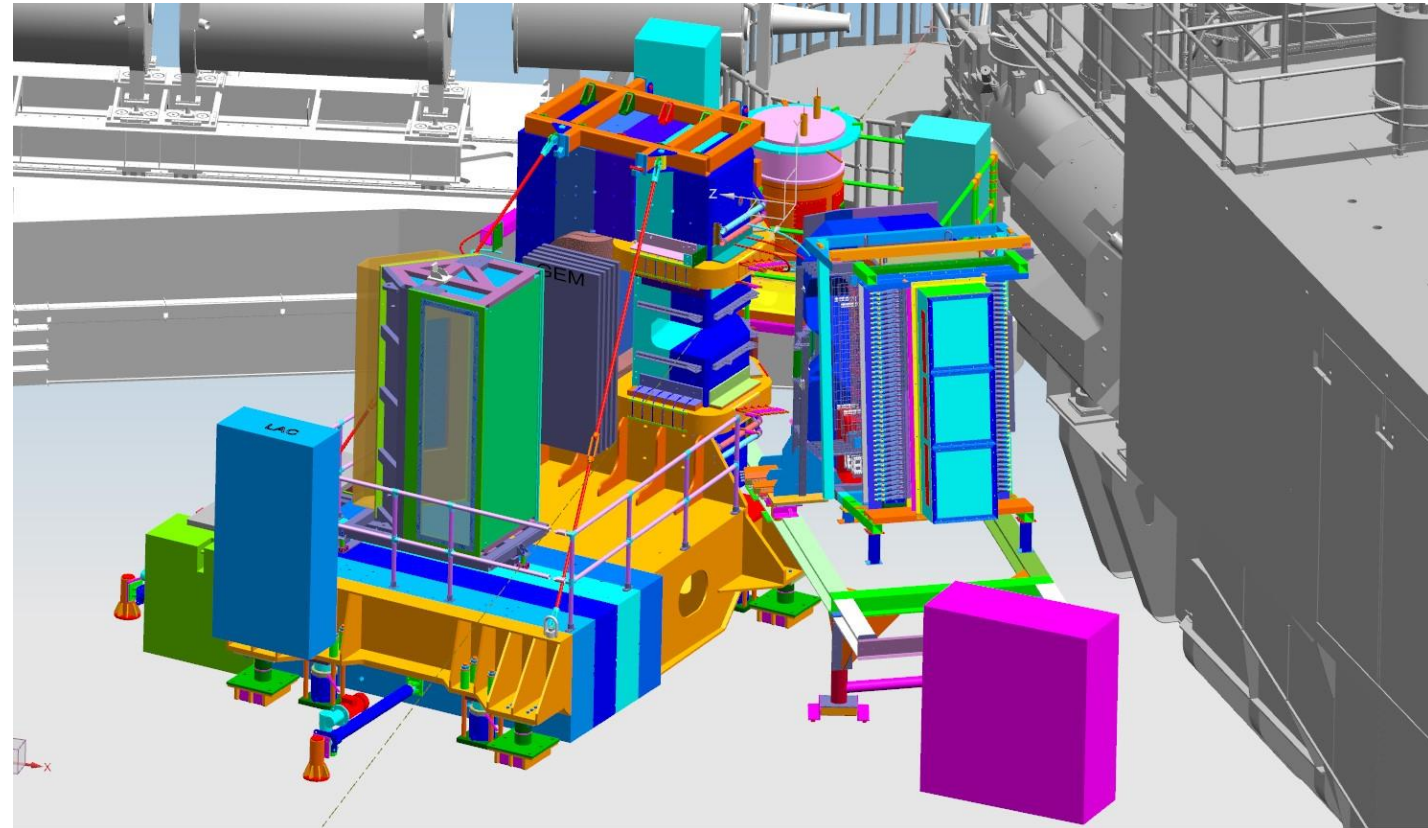
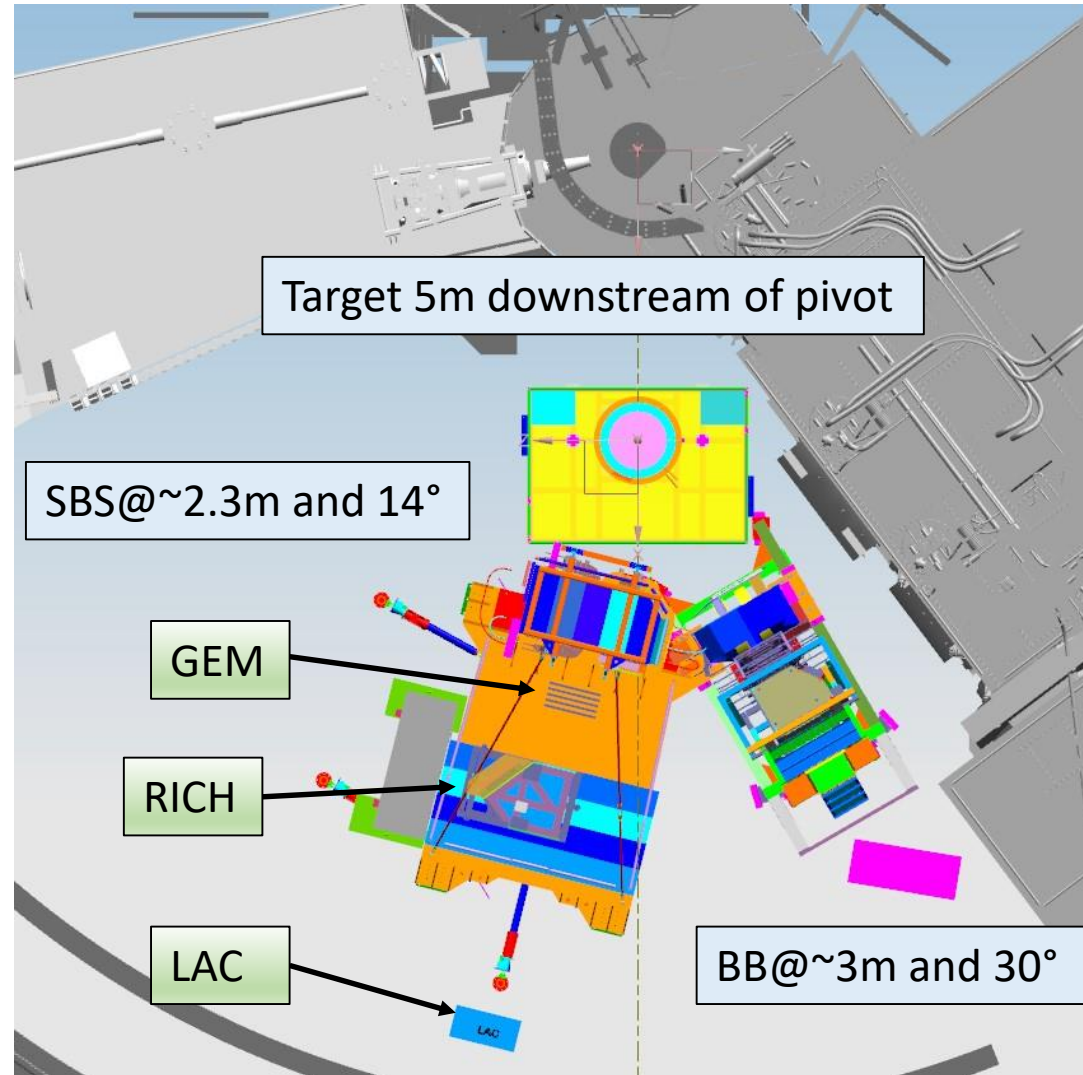
# TDIS SBS with HCAL – Calibration of mTPC



SBS @ 12°  
Hcal @ 60° and 15m from target

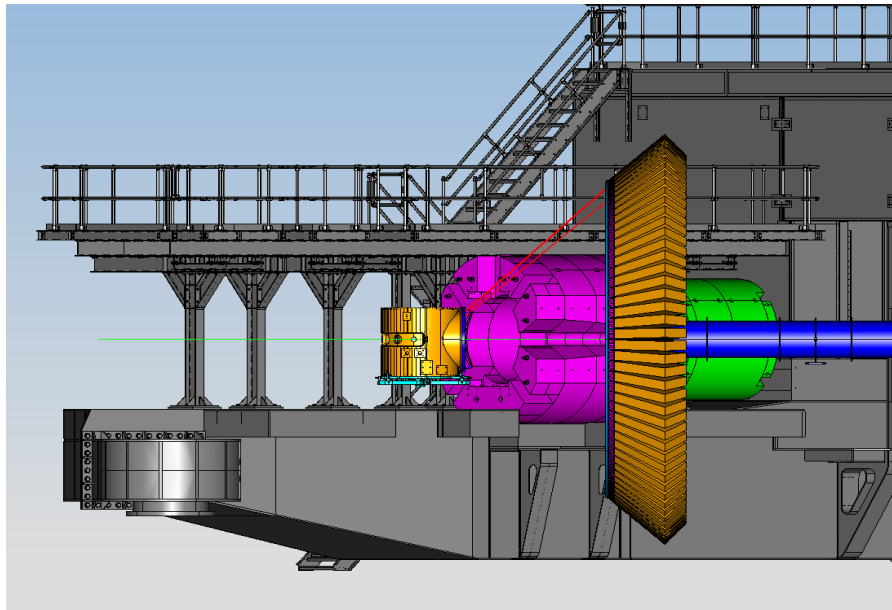
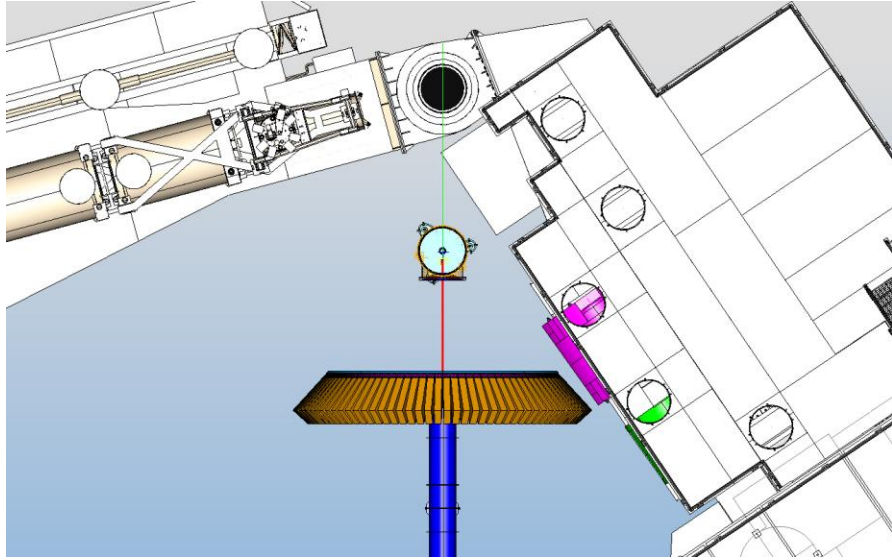


# SIDIS with BigBite and SBS

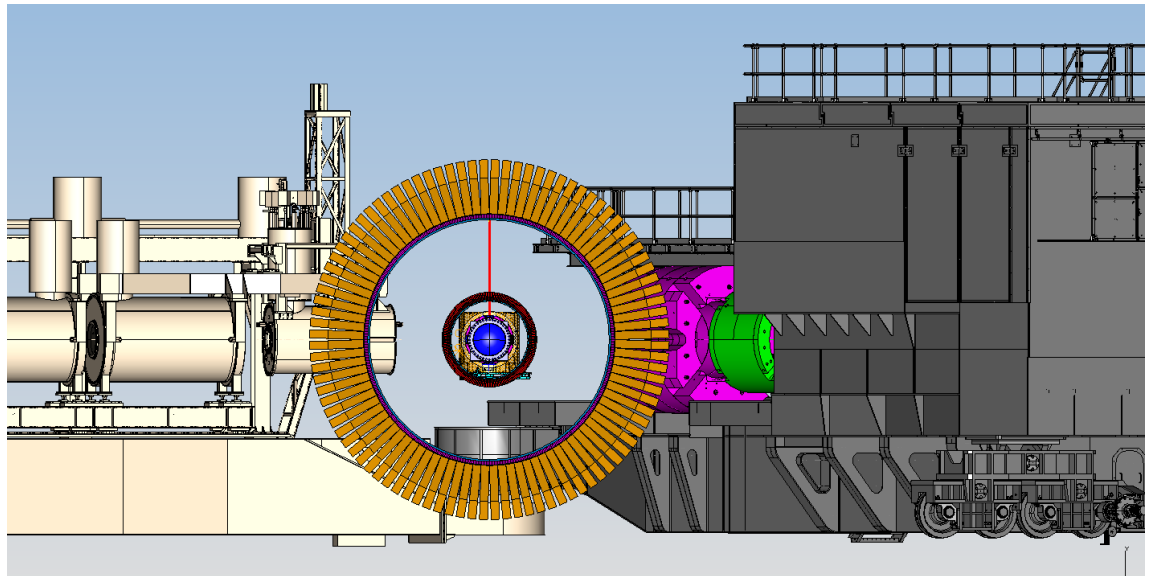
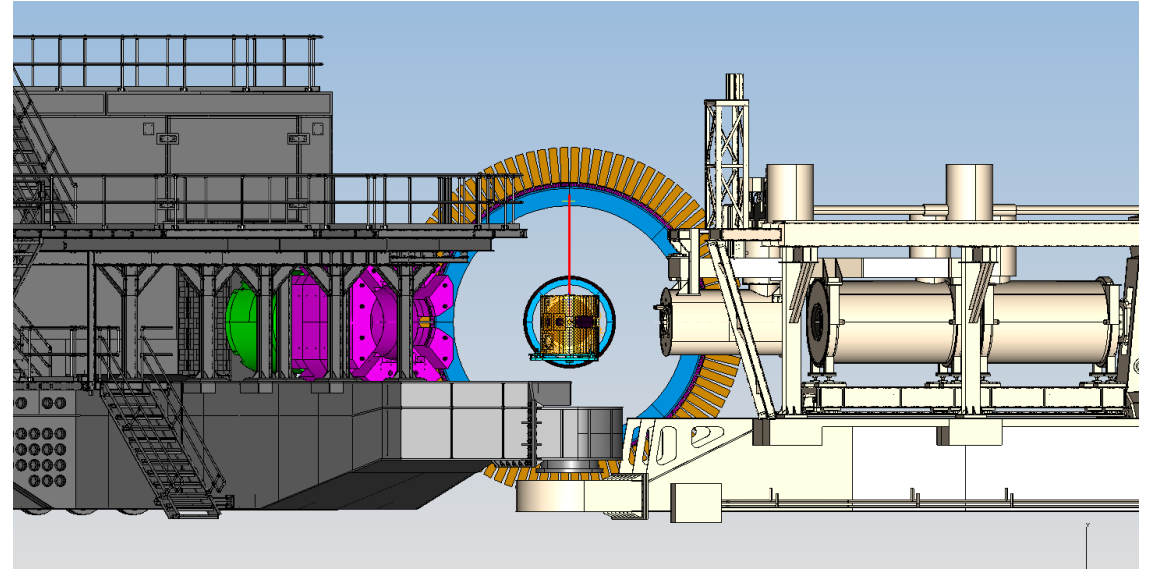




# SFF In Hall C



SHMS Q1 and HB not shown in this layout for clarity but will be left on SHMS.



# SFF Target and Detectors

## ECal

- 1,200 blocks
- Each block:  
2x2x20cm (volume=80cc)
- 40x5 blocks make up a sector
- 6 sectors
- 2.96M downstream of target
- Weight: 1,700lb

## HCal

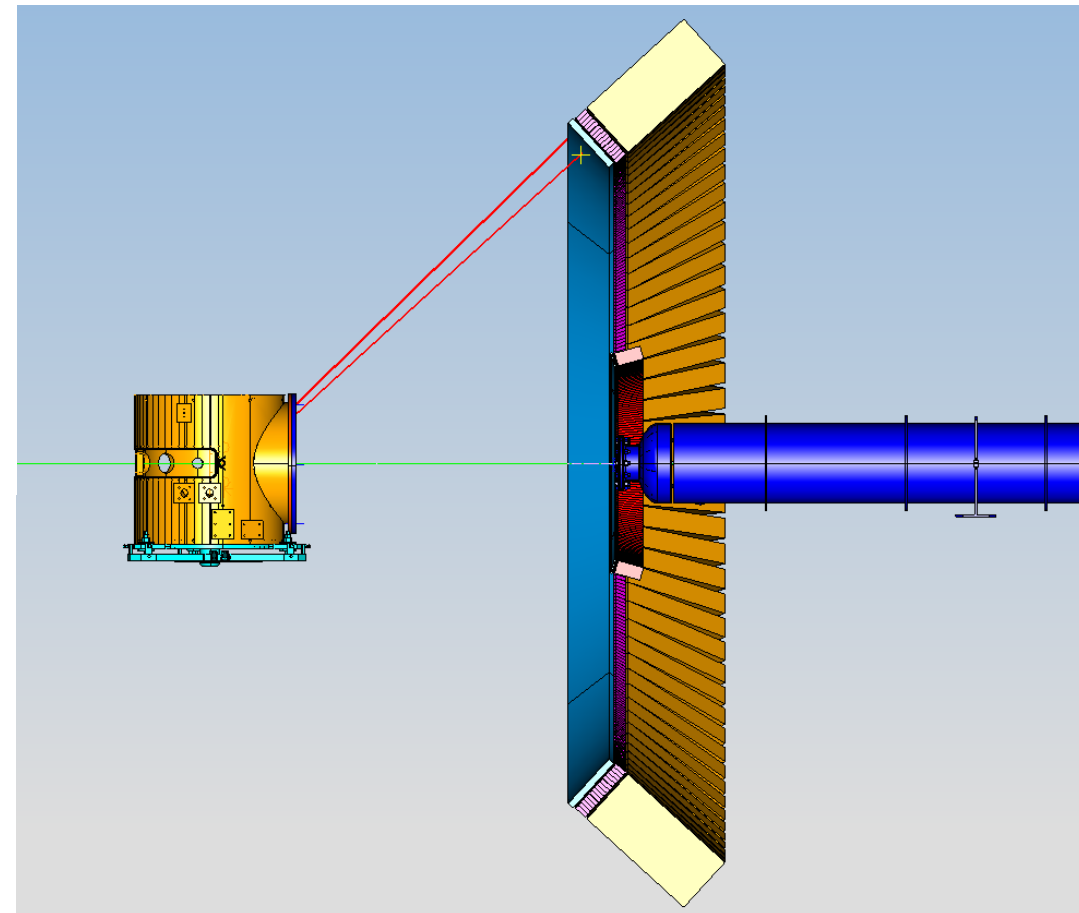
- 288 blocks
- Each block:  
15.5x15.5x100 cm (24,025cc)
- 16x3 blocks make up a sector
- 6 sectors
- 3.27m downstream of target
- Weight: 63,504 Lb

## Scintillators

- 7,200 blocks
- Each block:  
3x3x10 cm (Volume = 90cc)
- 5x5 blocks make a segment
- 48 segments make up sector
- 6 sectors
- Weight: 1,714.6lb

Target Chamber is centered 3.5m downstream of the pivot.

LH2 5cm diameter, 10cm long Target is slightly displaced 25cm downstream of target chamber center line.



# Conclusion

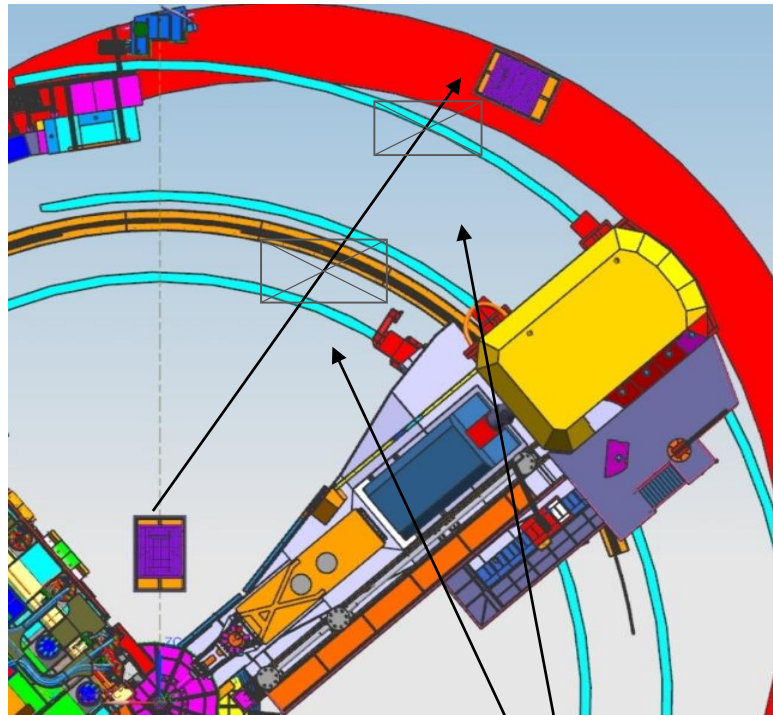
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- Conceptual layouts of BigBite, SBS and SFF in Hall C shown.
- Space is available and installation over SHMS is manageable.
- Target will be downstream of pivot.
- Engineering the details and support structures are in our future.

# Backup Slides

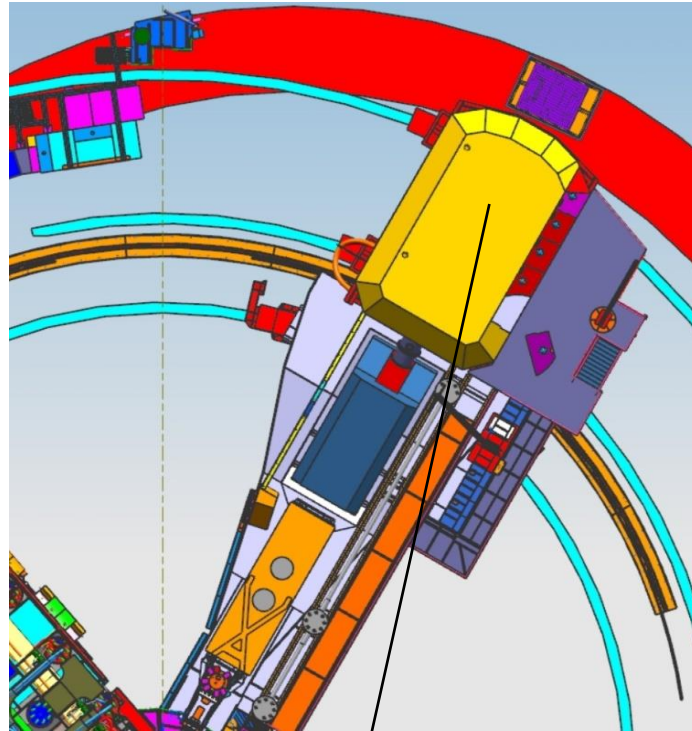
- CPS

# CPS Storage Location in Hall C

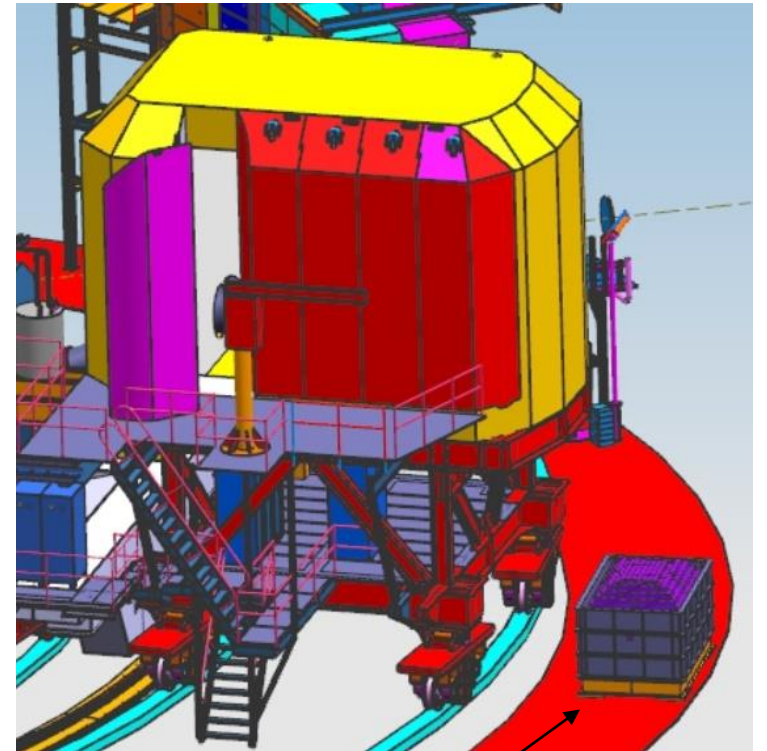


CPS moving to storage location

Ramps to go over SHMS, HMS rails

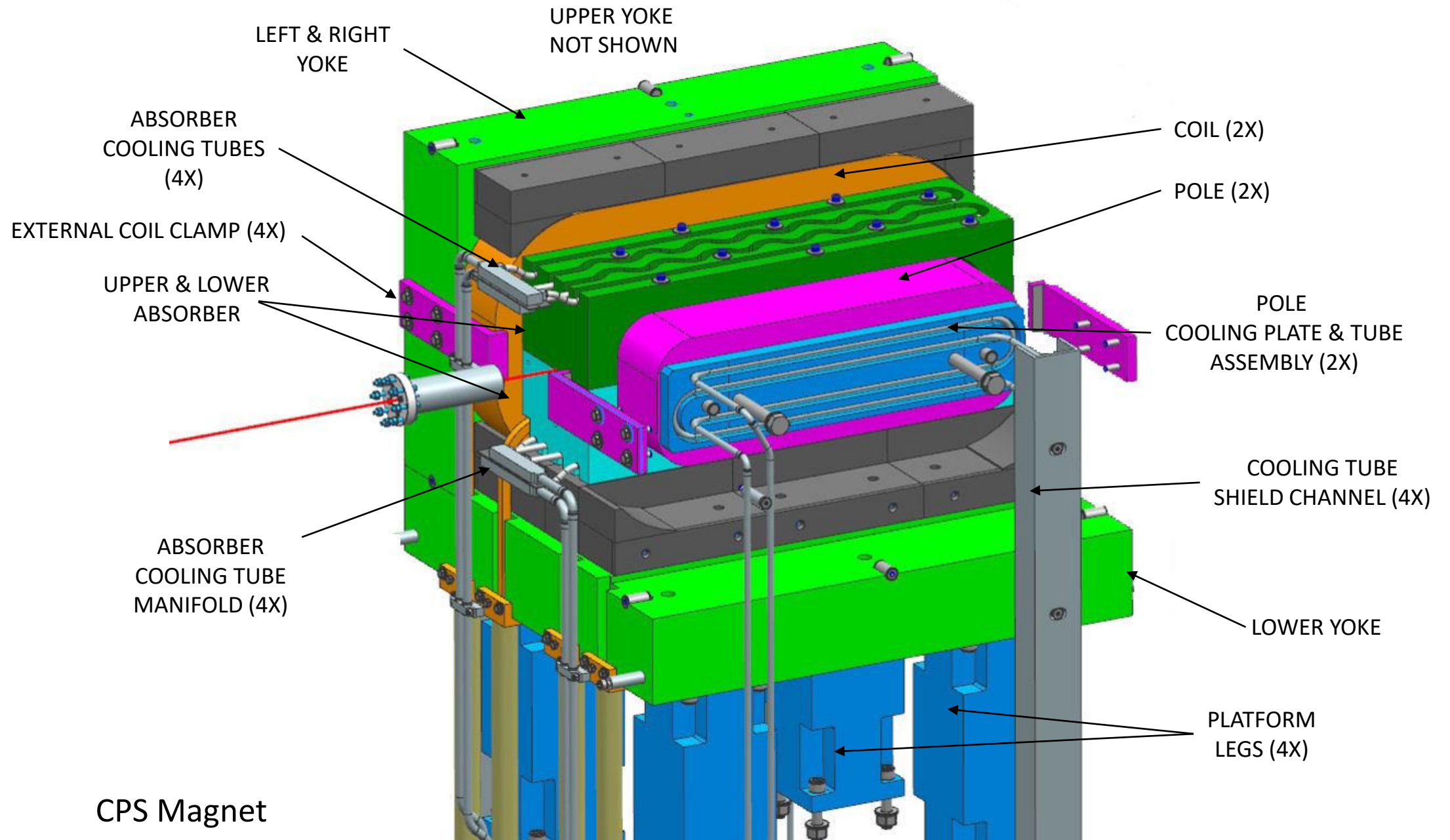


HMS shown at 30 degrees CPS in back



CPS in Storage Location

# CPS in Hall C



CPS Magnet

# CPS in Hall C

