

Hi-Lumi CC UK Engineering Update

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20/04/15

Content

- HOM Update
- DQW magnetic Shield
- RFD magnetic Shield
- Shielding Analysis
- Cavity Support System Update
- Helium Vessel feedback

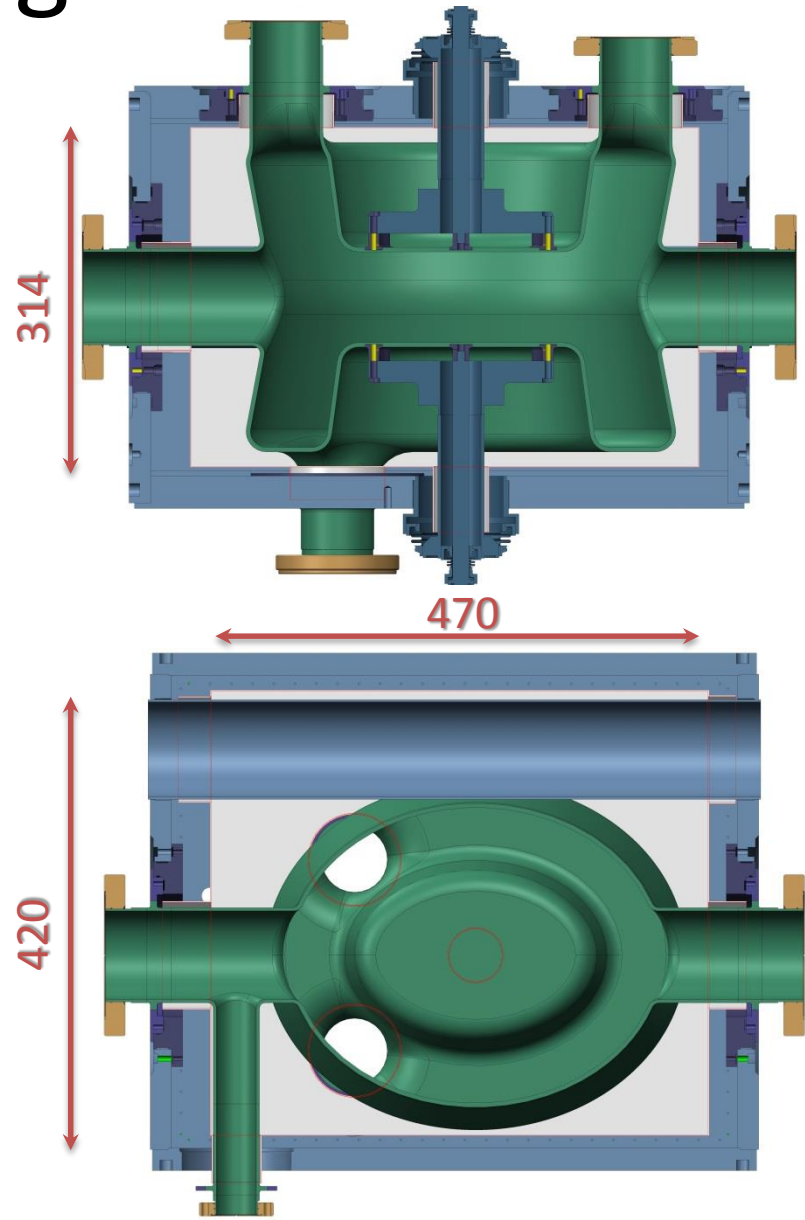
DQW & RFD HOMs

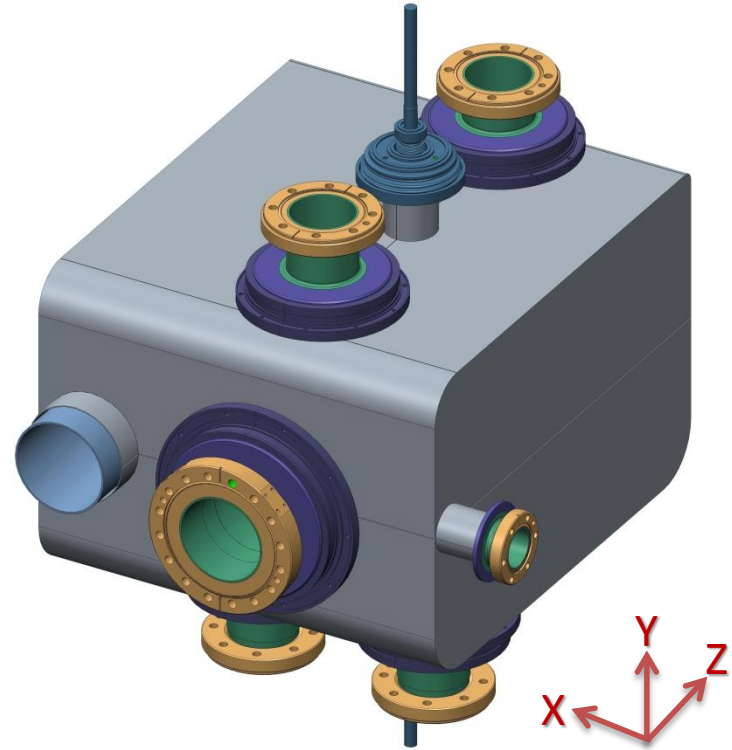
- RFD
 - Update model
 - HyeKyoung drawing comments
 - Waiting for BCP details before updating drawing revision
- DQW
 - Cooling modification?
 - Will review both drawings together

DQW Cold Magnetic Shield

Design intent:

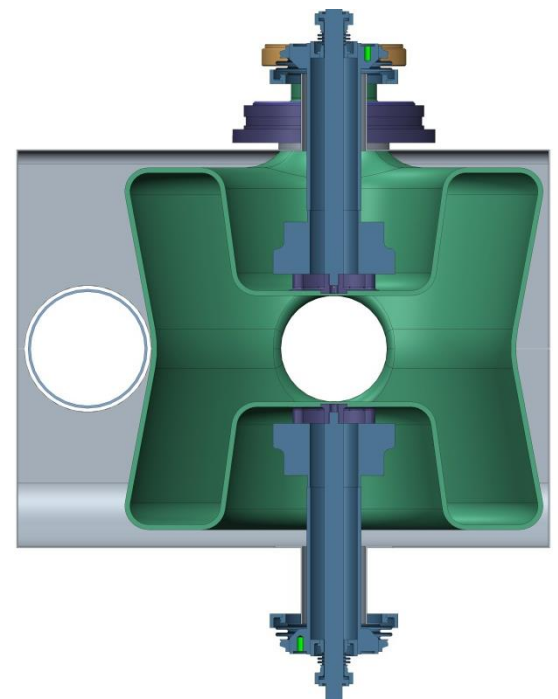
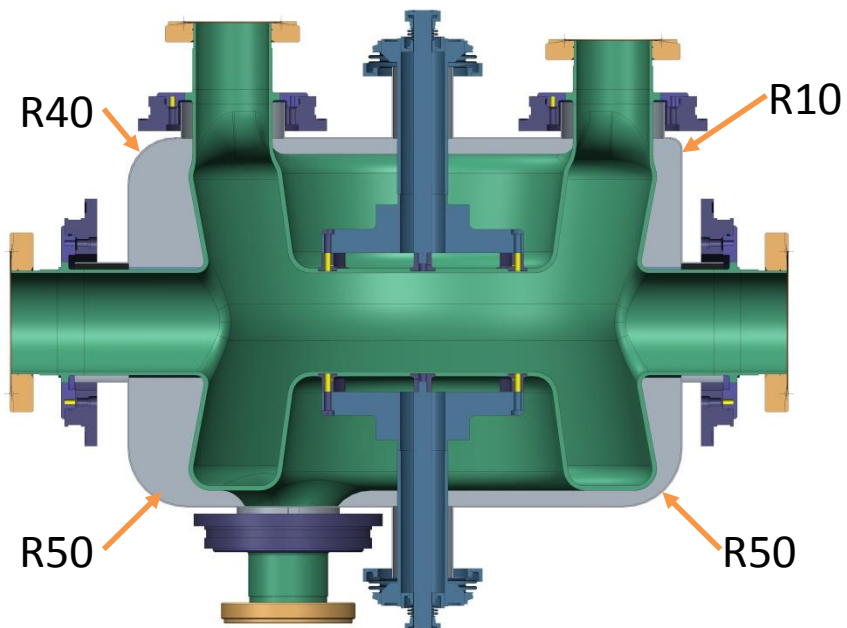
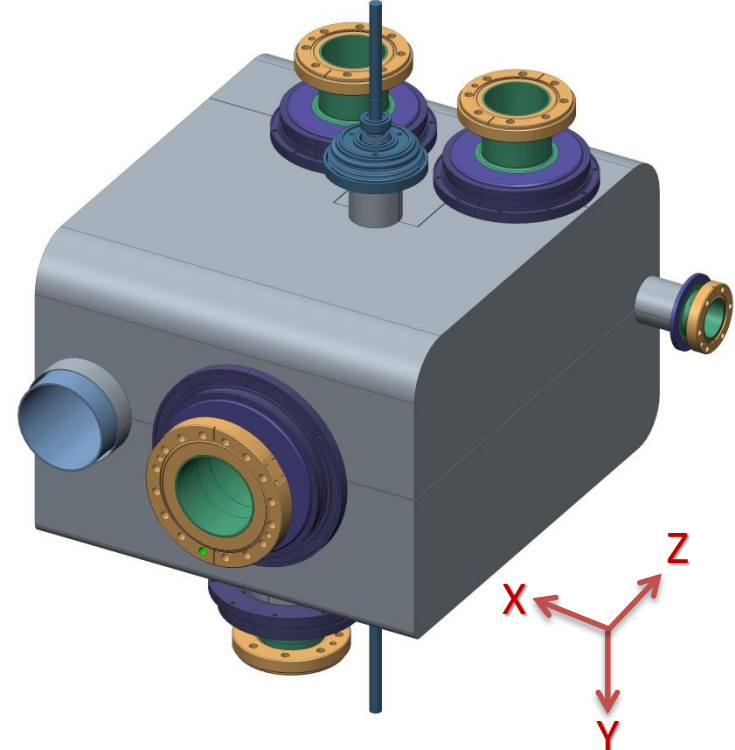
- Close fitting shield to maximise space for connections & mounts
- Minimise penetration size
- Maximise attenuation part (chimney) lengths
- Shield curvature provides structural rigidity & is more effective at containing channelled magnetic flux
- Multiple curvature and assembly designs considered...

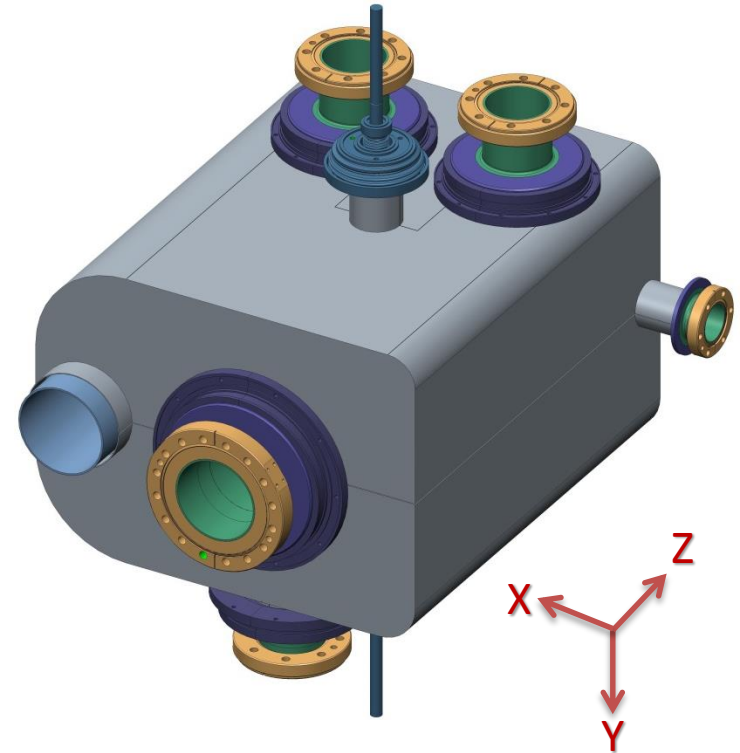
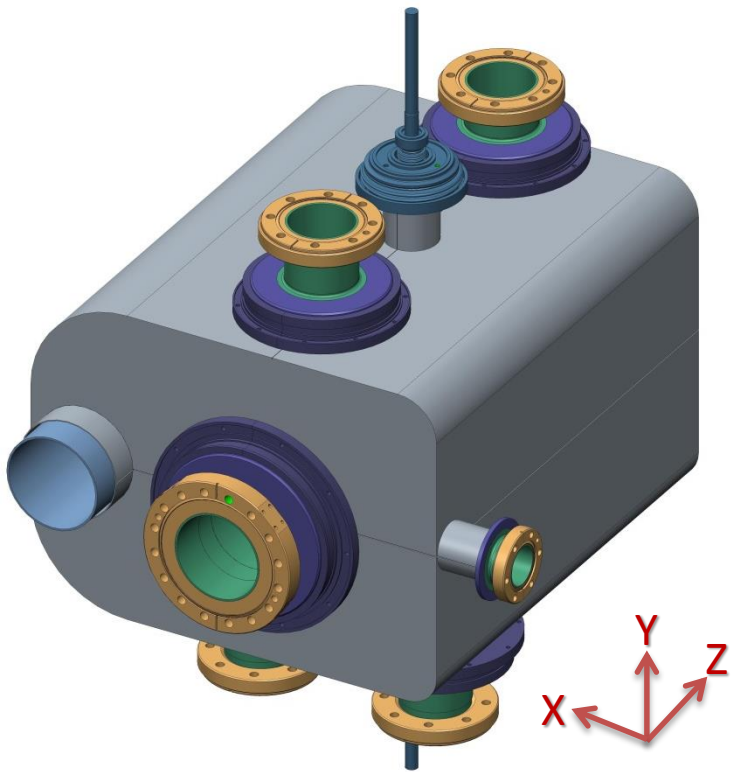




Concept A

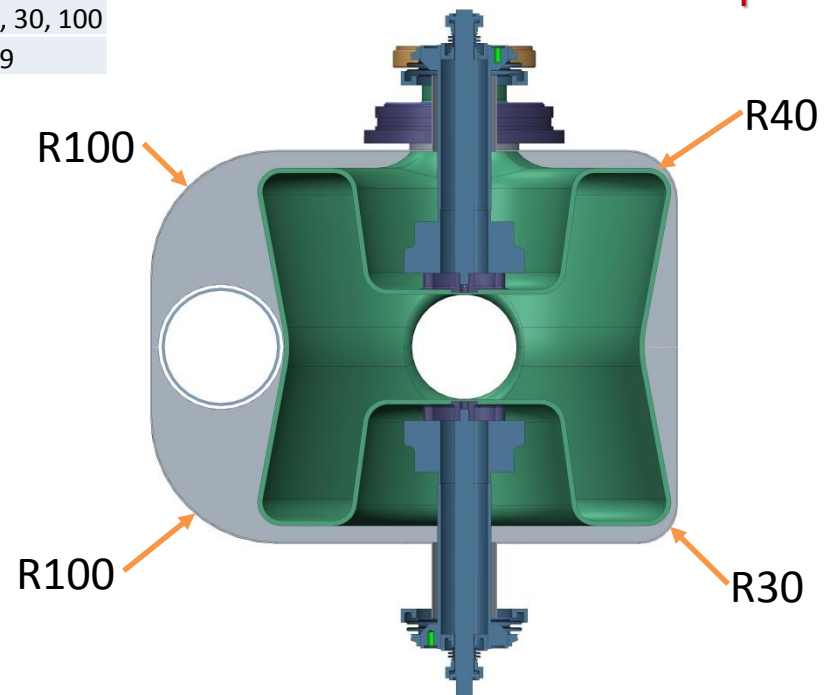
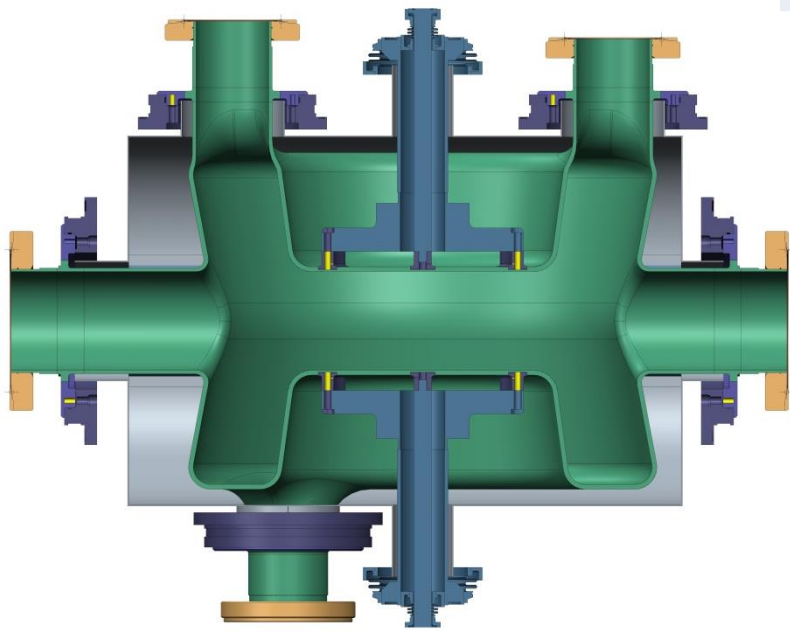
Curvature:	Longitudinal
Radius' (mm):	40, 10, 50, 50
Panels:	9

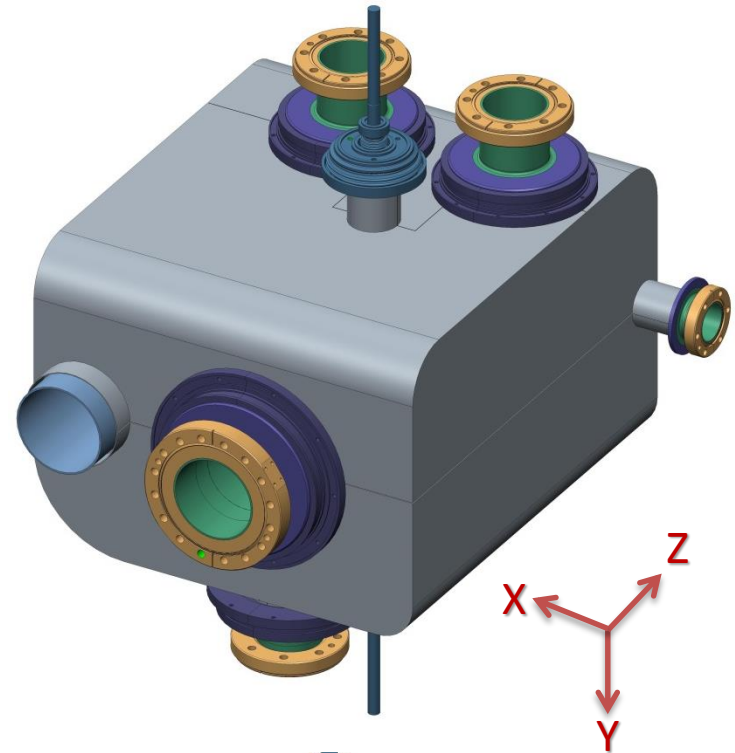
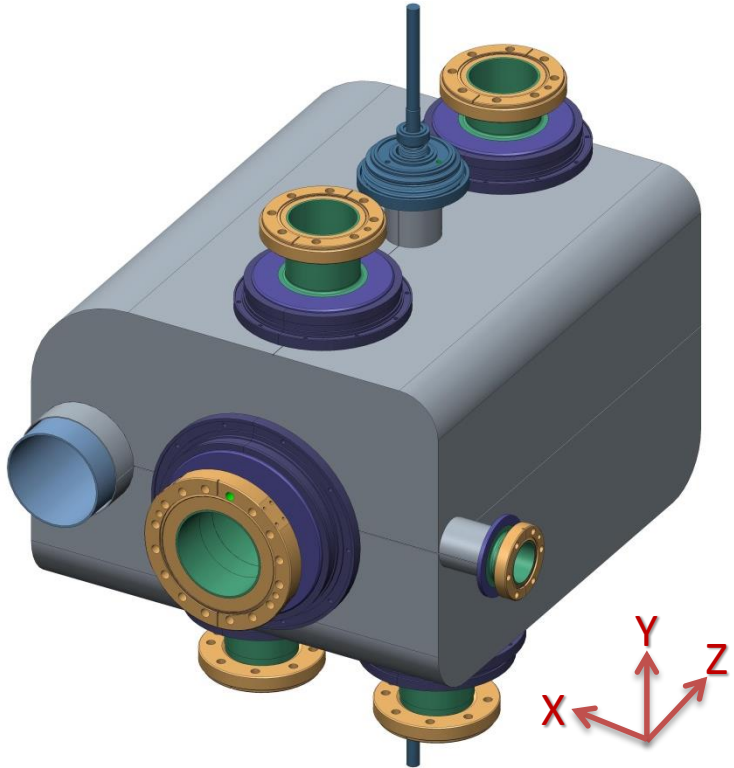




Concept B

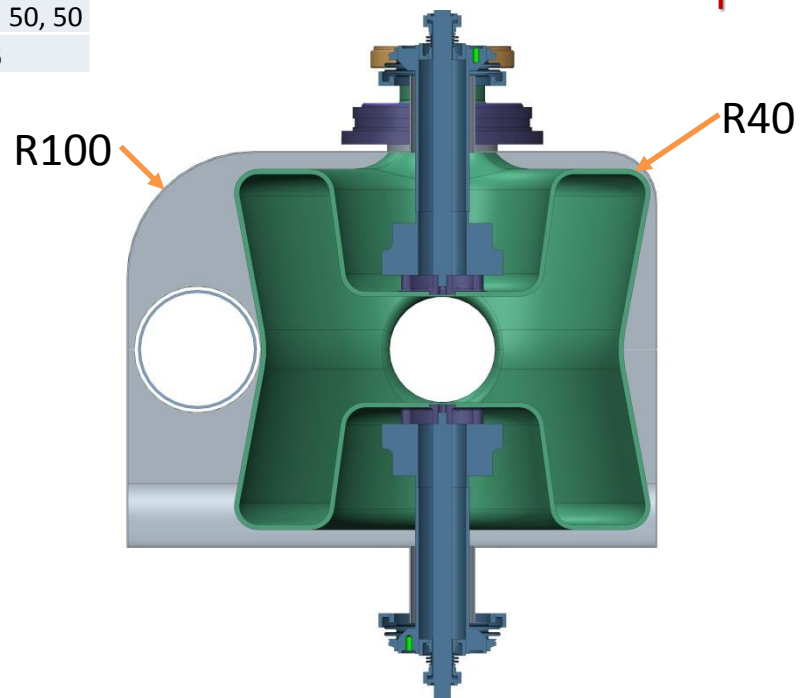
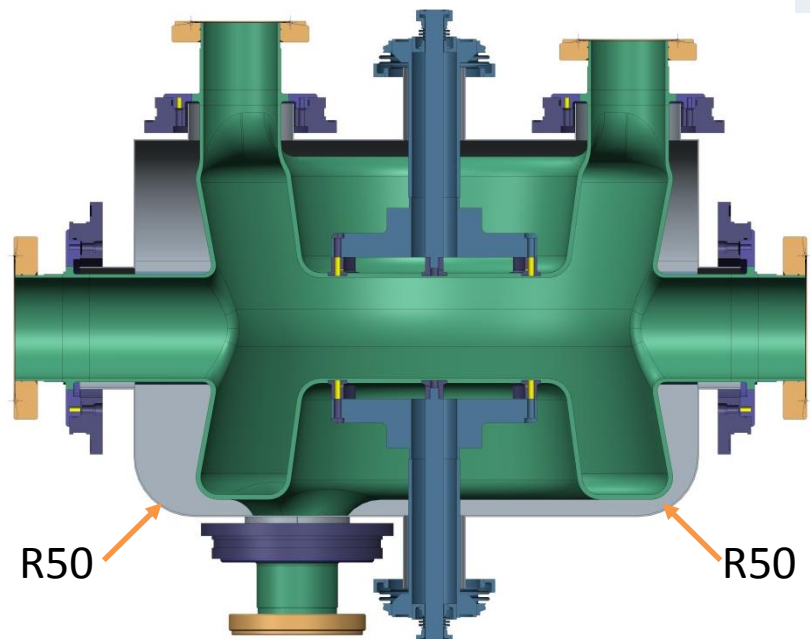
Curvature:	Transverse
Radius' (mm):	100, 40, 30, 100
Panels:	9



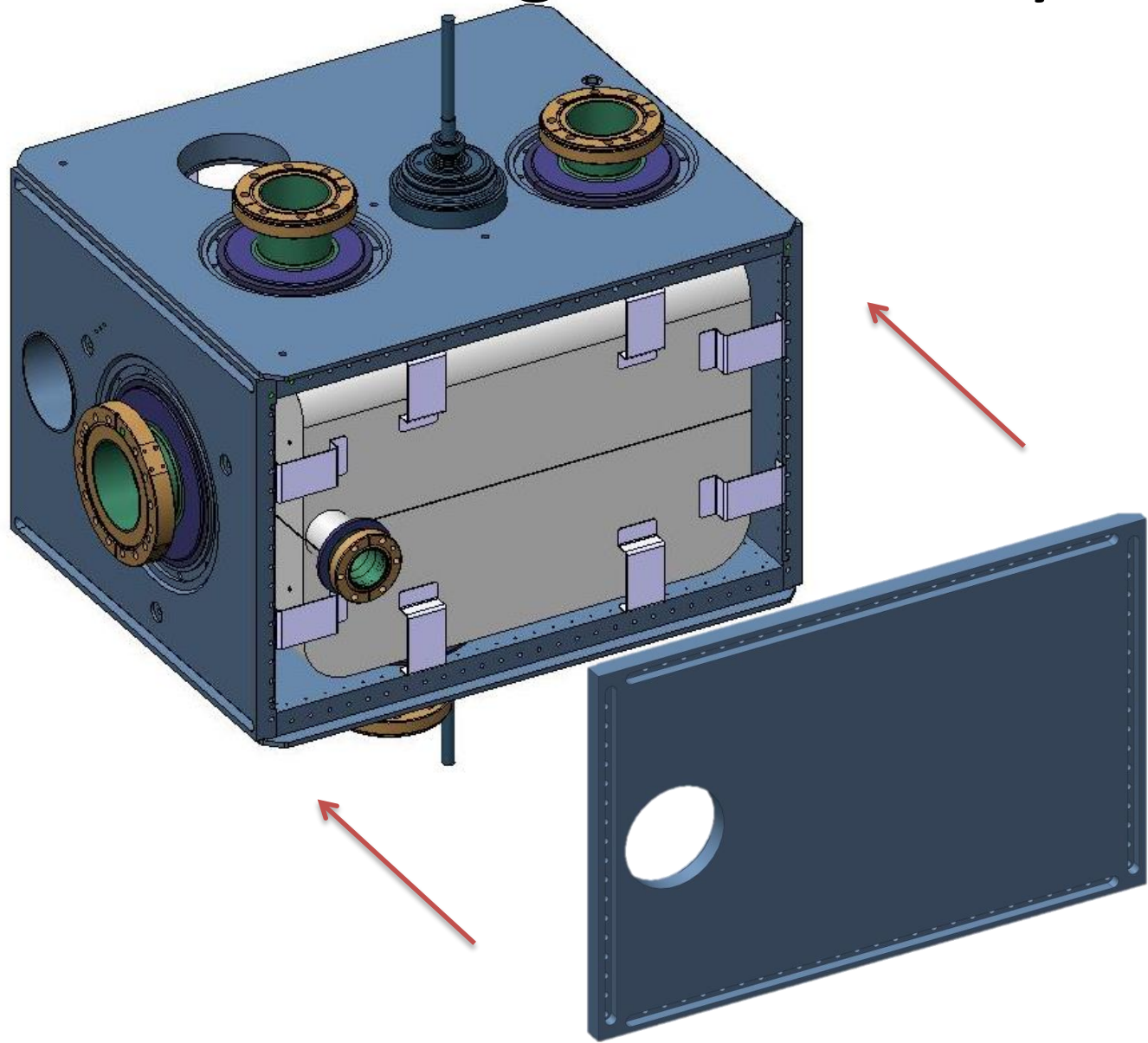


Concept C

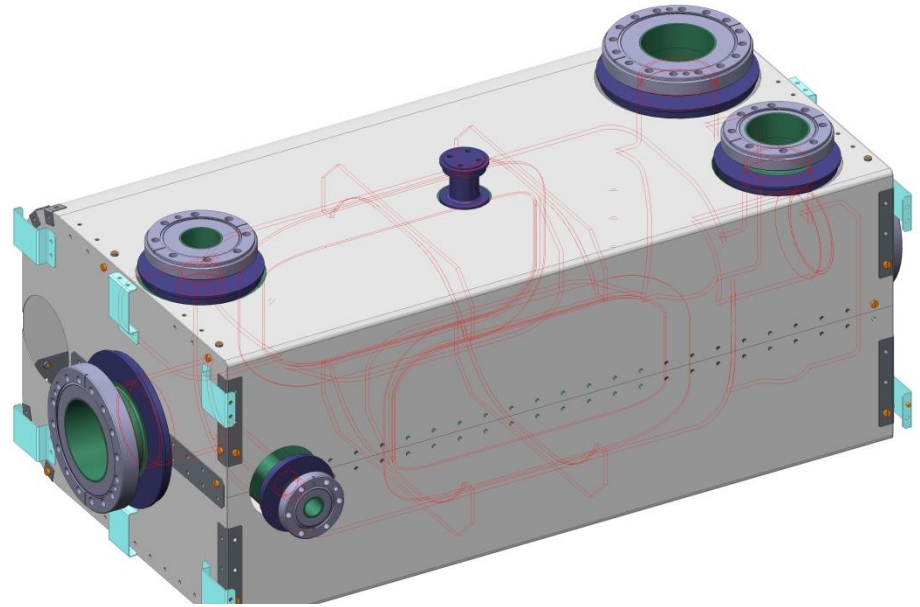
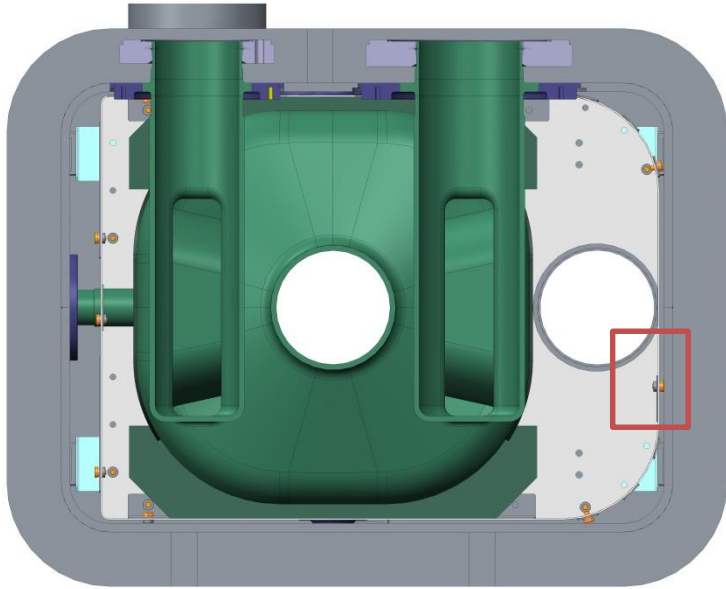
Curvature:	Transverse & Longitudinal
Radius' (mm):	100, 40, 50, 50
Panels:	6



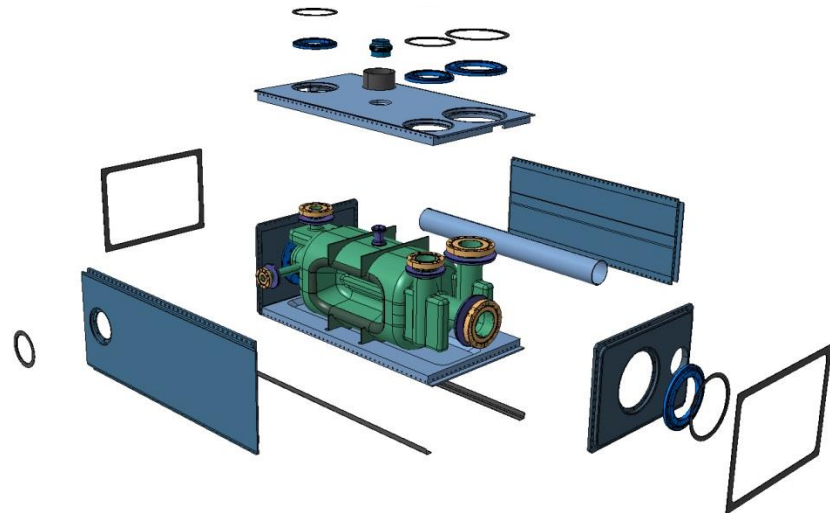
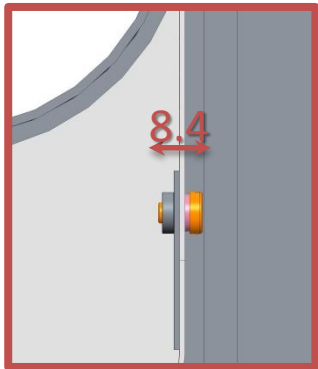
Shield Mounting & Assembly



RFD Magnetic Shield



Previous concept for welded Helium Vessel



Cavity Support System Update

- Currently performing Structural and Modal analyses (following on from Carlo, Jan)
- Exploring various options for increasing fundamental mode and supporting cavity securely
- Planning to apply LHC PSD and analyse vibration response
- Can update further at Friday meeting

Bolted helium vessel modification?

