

# MICE Hall – South Mezzanine



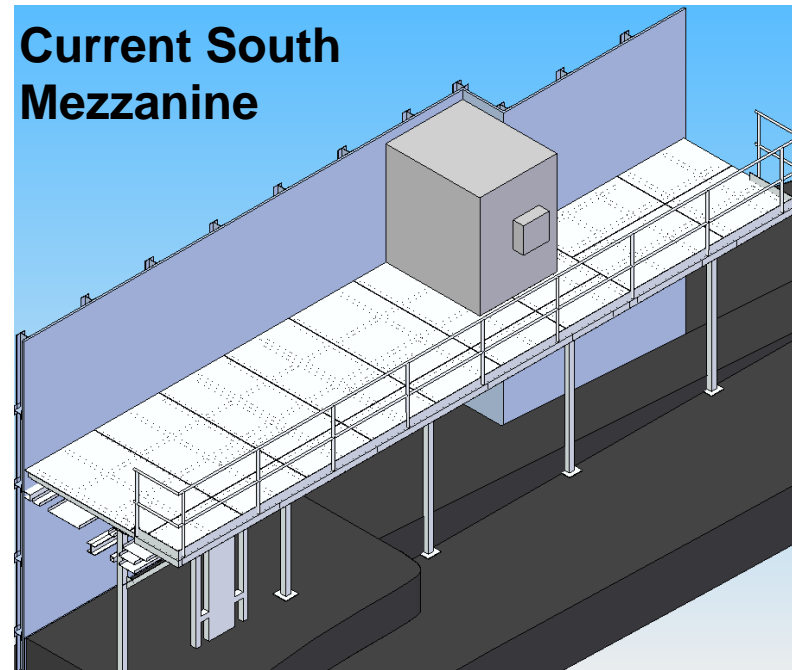
Jason Tarrant - STFC

- Contents
  - » Device checks with current South Mezzanine
  - » South Mezzanine change summary
  - » Conclusion

# MICE Hall – South Mezzanine



- Device checks with current South Mezzanine
  - » AFC
  - » Spectrometer Solenoids
  - » RFCC
  - » EMR / KL
  - » Hydrogen System

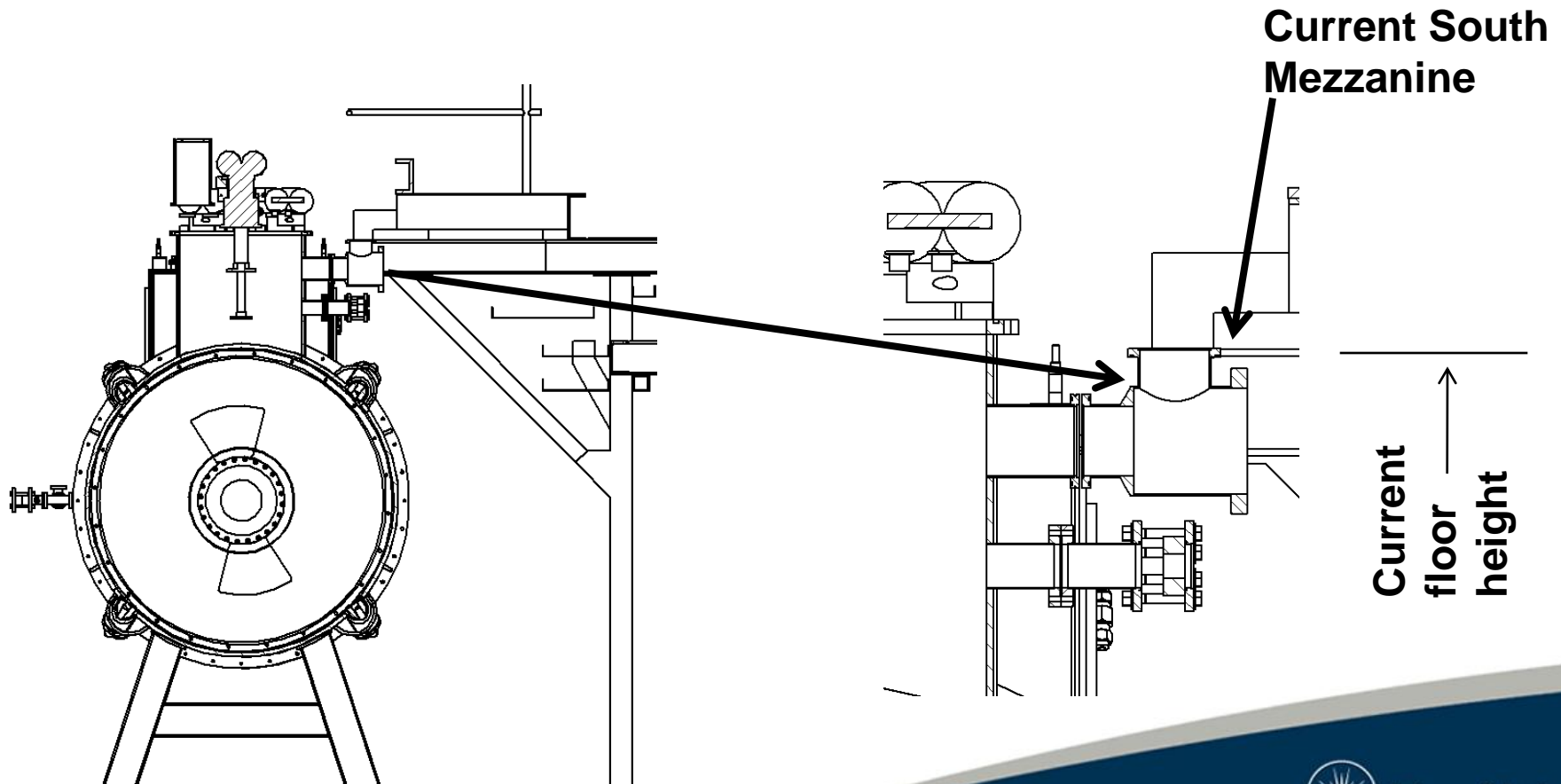


# MICE Hall - South Mezzanine



- AFC

- » Hydrogen Safety Vacuum Line port currently will clash with floor

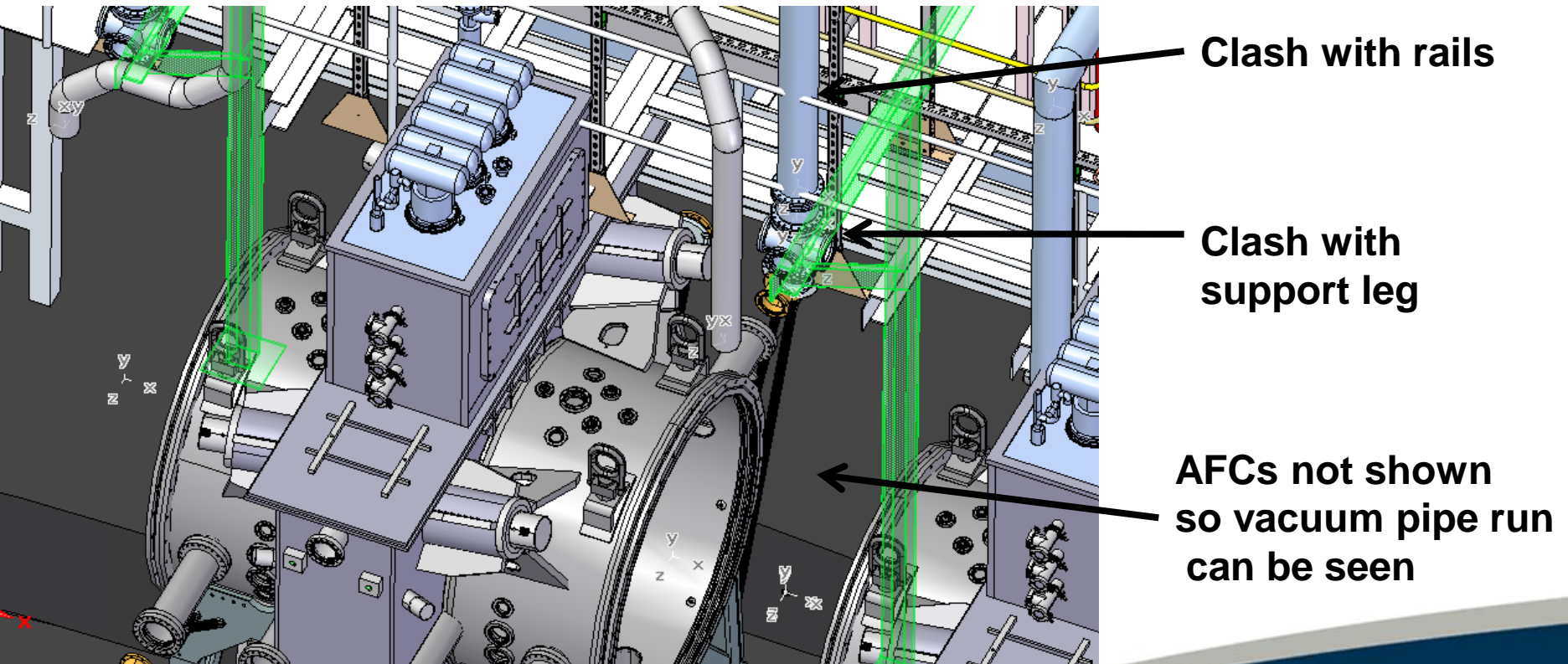


# MICE Hall - South Mezzanine



- AFC

» Hydrogen Safety Vacuum Line itself currently clashes with rails & support leg

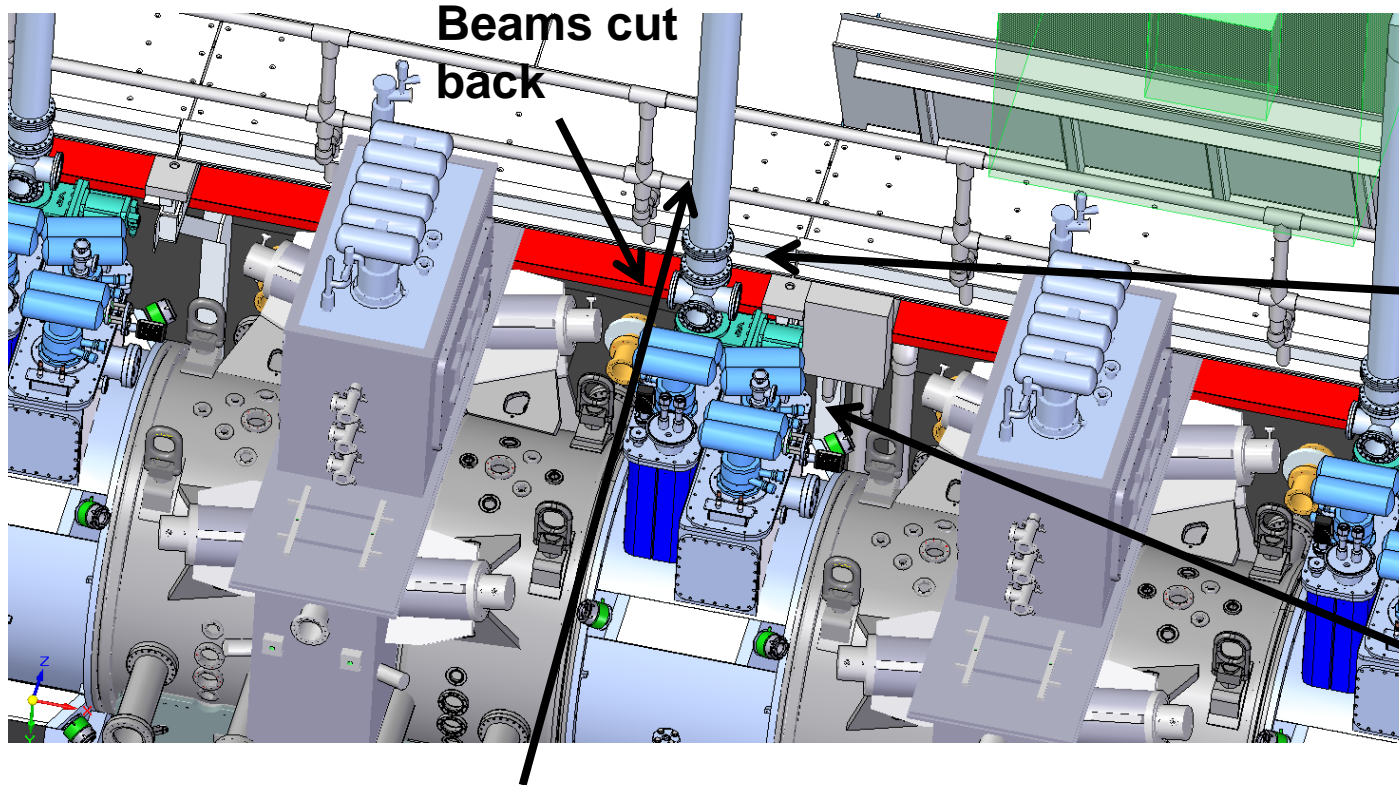


# MICE Hall - South Mezzanine



## AFC

» Raise platform, move support leg & cut beams back to resolve



Raised & shortened floor section (hinged)

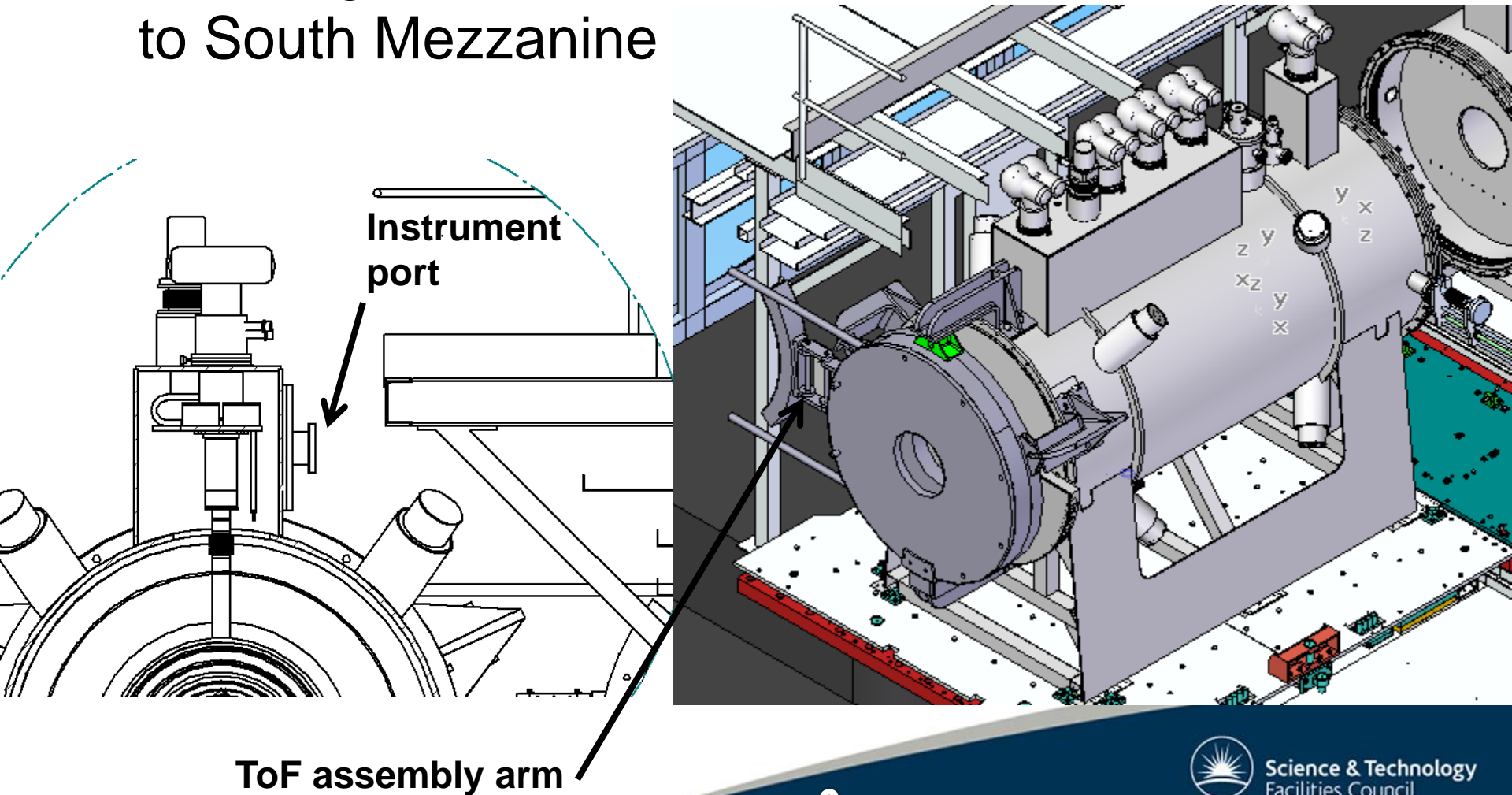
Support leg moved to next beam

'joggle' required in handrail around vacuum pipe

# MICE Hall - South Mezzanine



- Spectrometer Solenoid
  - » ToF Cage & instrument port close to South Mezzanine

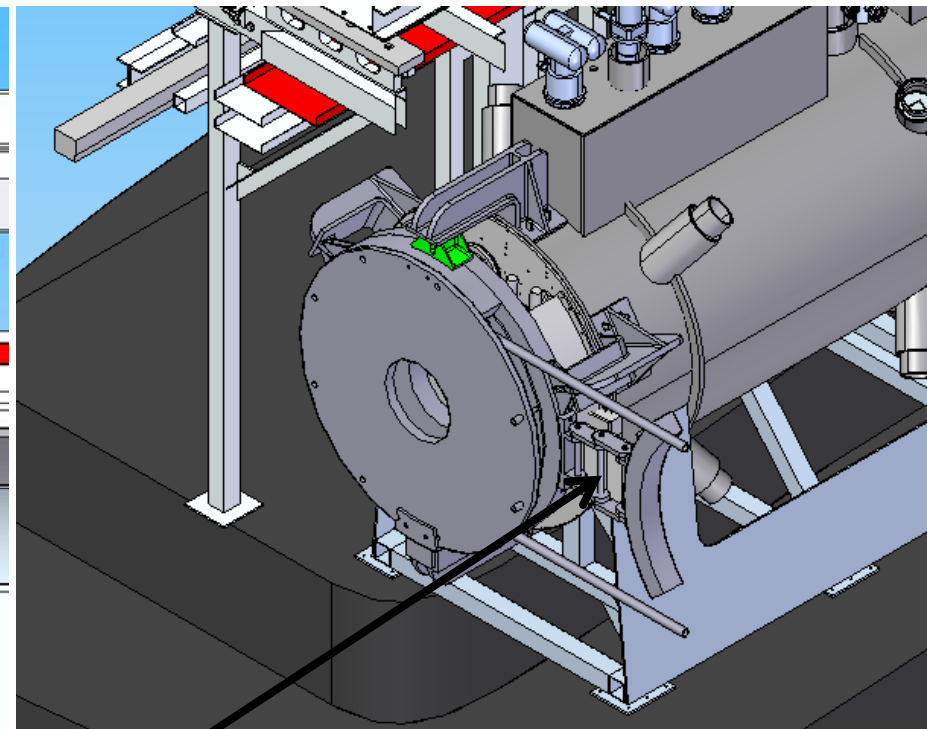
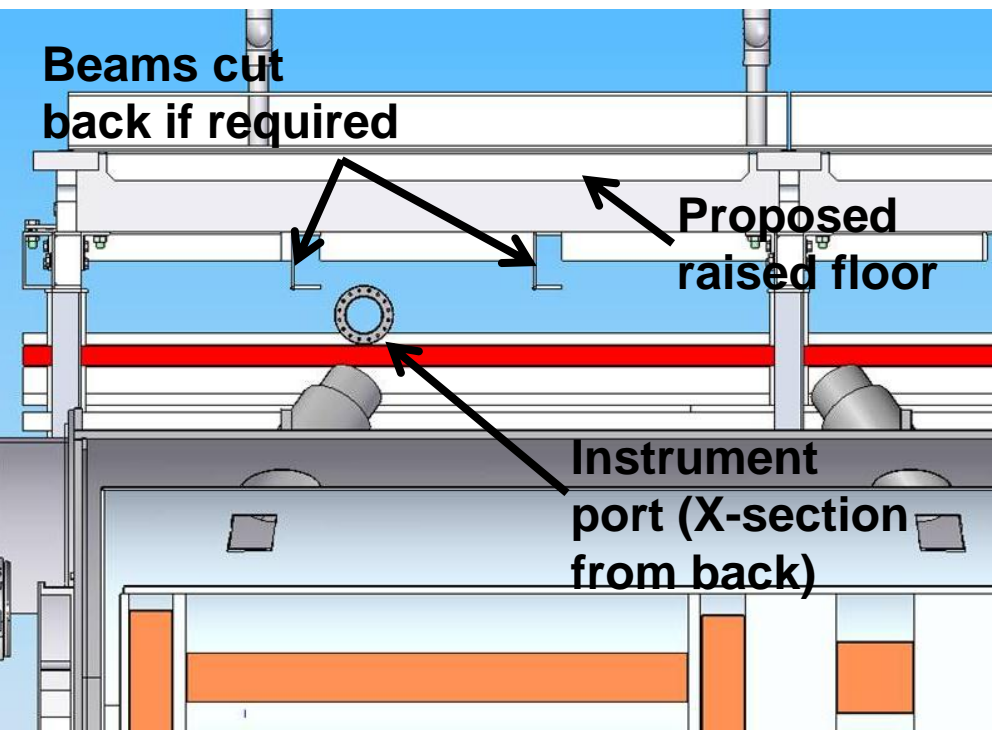




# MICE Hall - South Mezzanine



- Spectrometer Solenoid
  - » Rotate / mirror ToF arm & raise platform

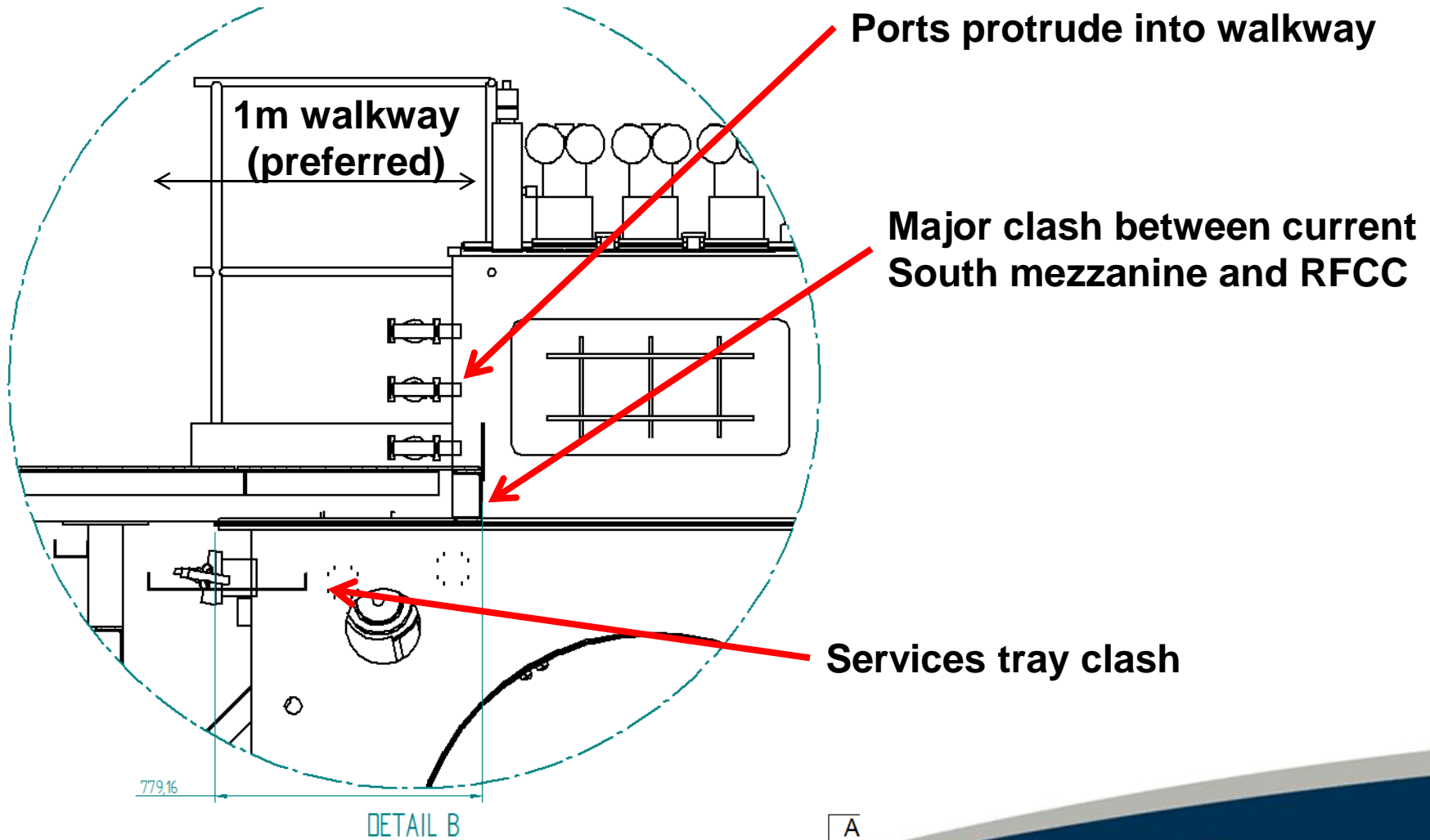


ToF assembly  
arm

# MICE Hall - South Mezzanine



- RFCC

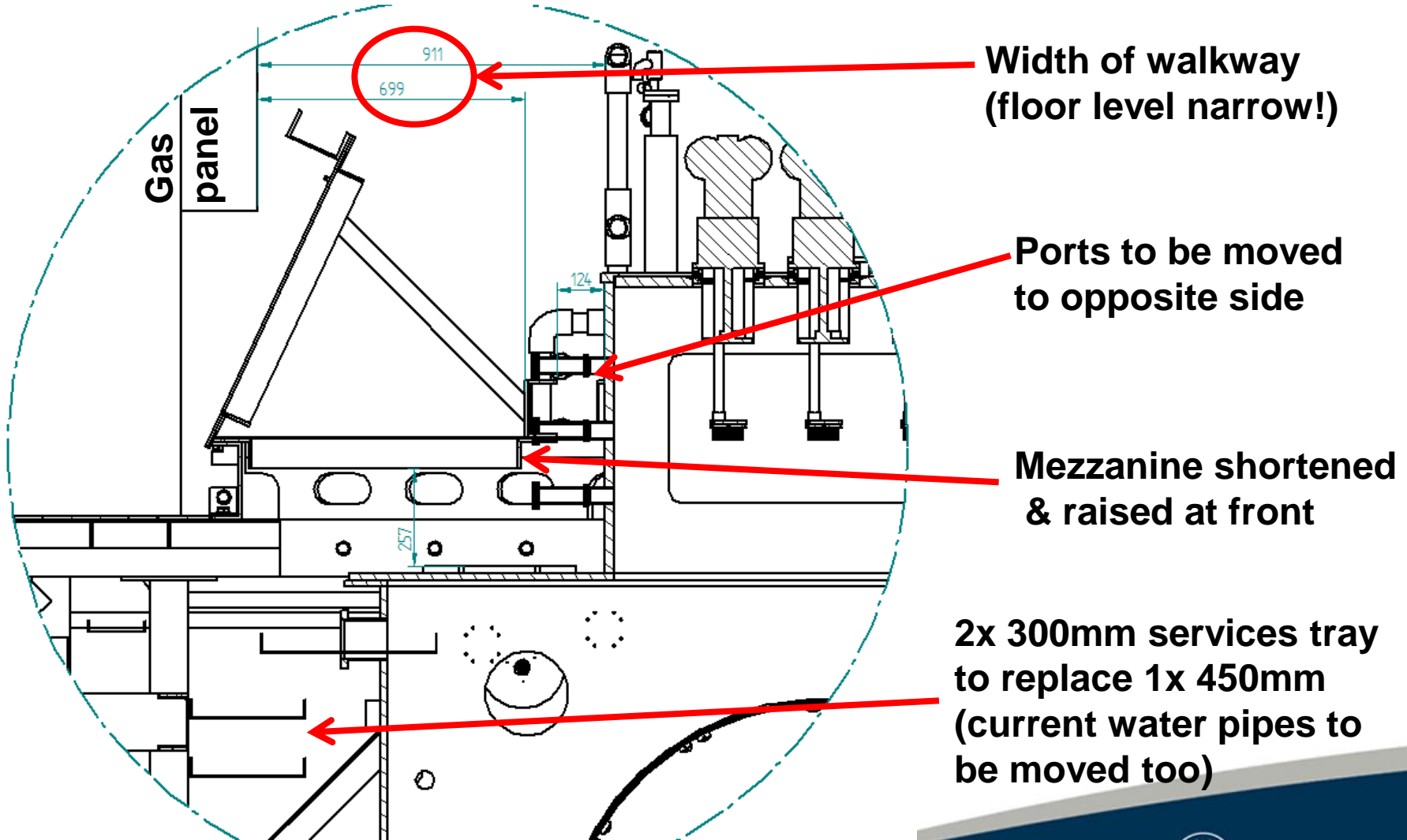




# MICE Hall - South Mezzanine



- RFCC

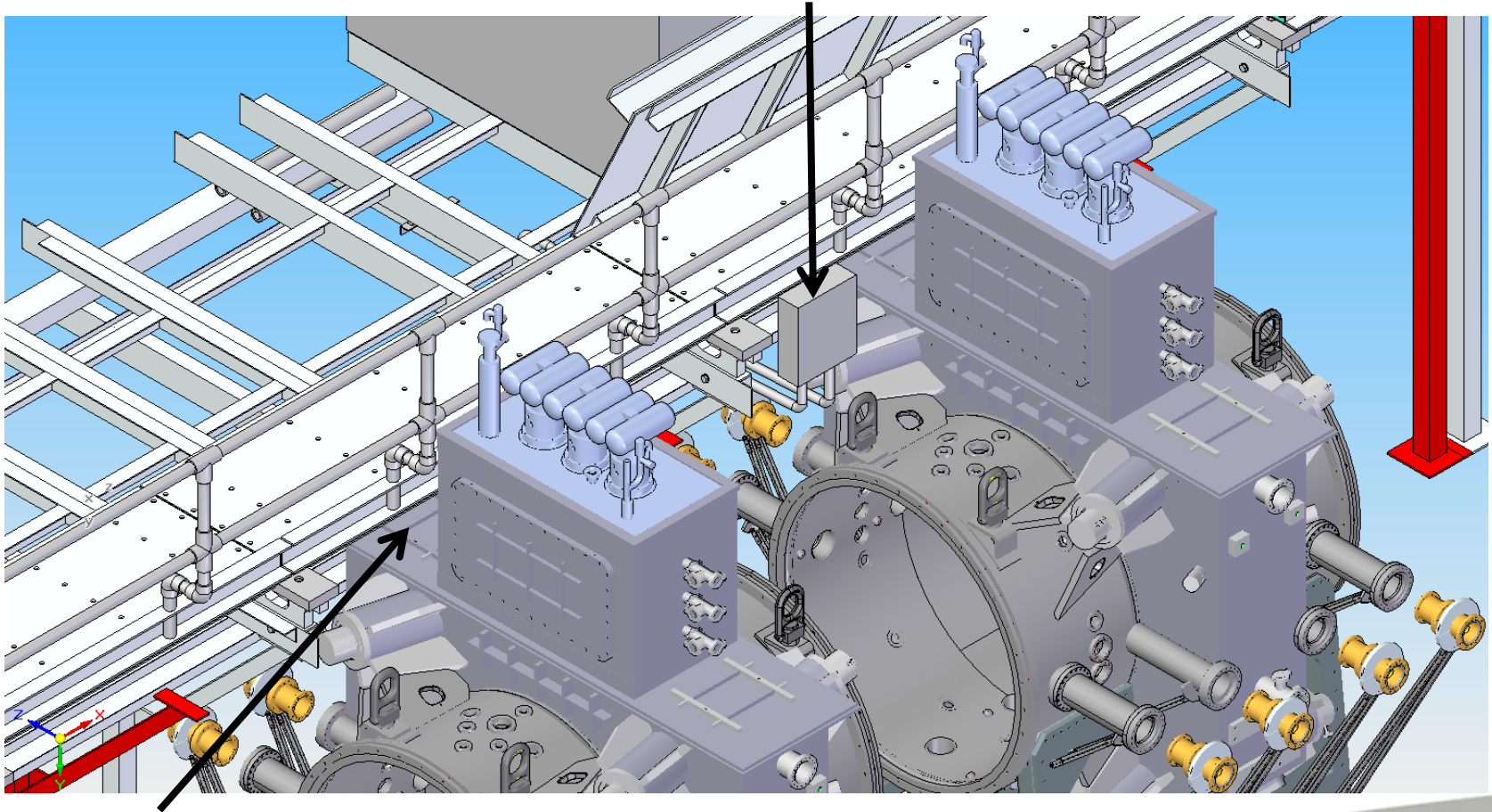


# MICE Hall - South Mezzanine



- RFCC

Water pipe  
& panel move



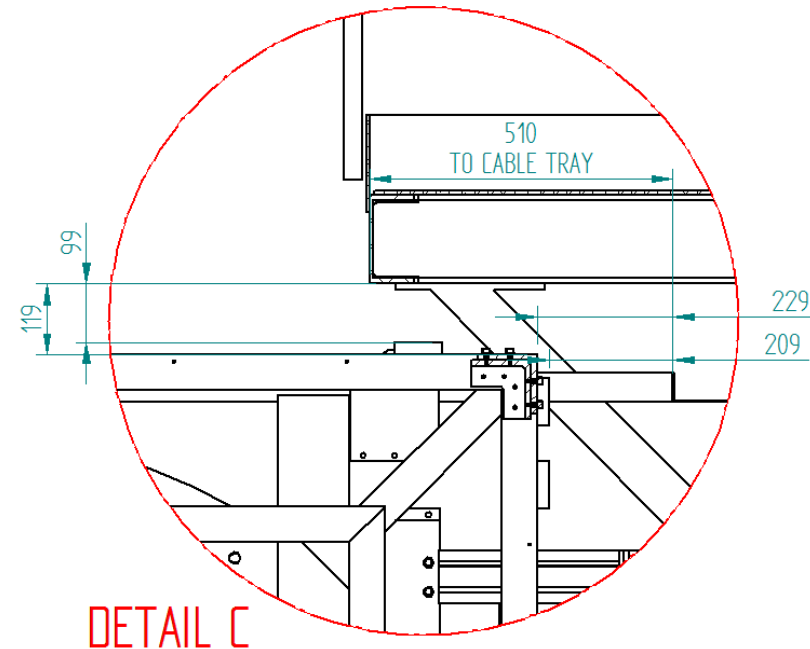
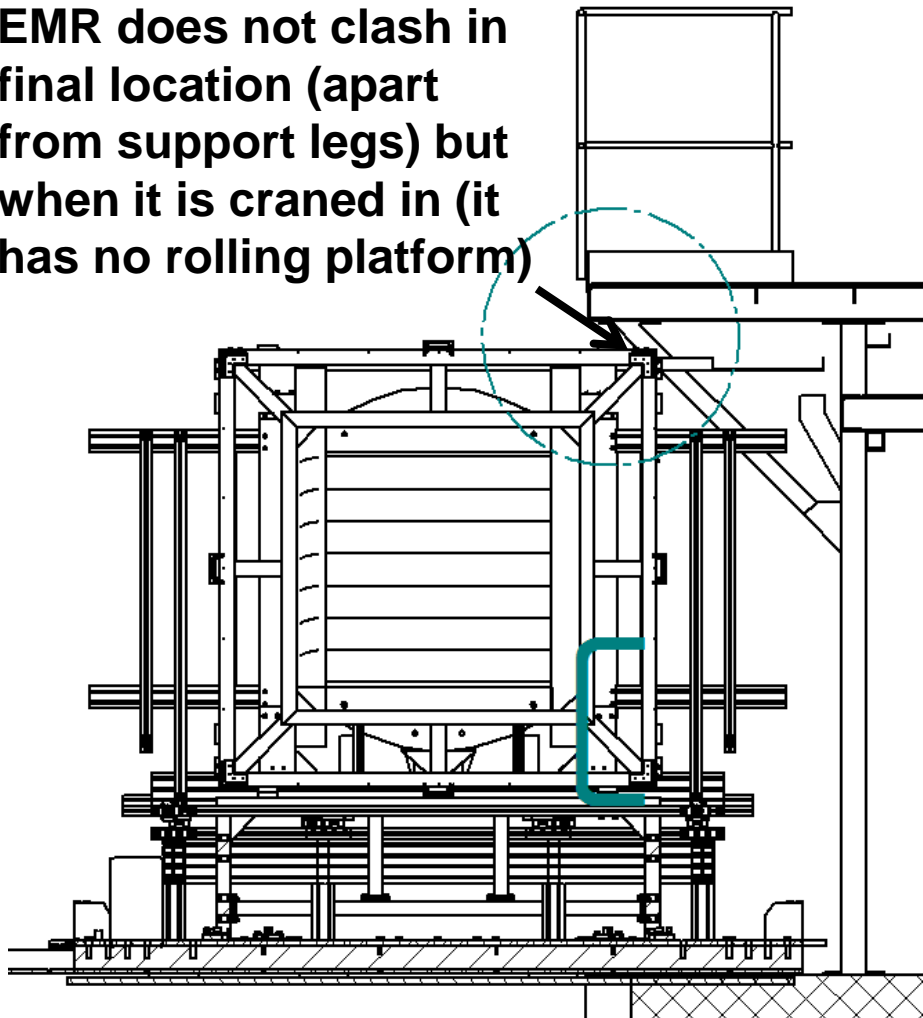
Mezzanine raised  
up over RFCC

# MICE Hall - South Mezzanine



- EMR

EMR does not clash in final location (apart from support legs) but when it is craned in (it has no rolling platform)

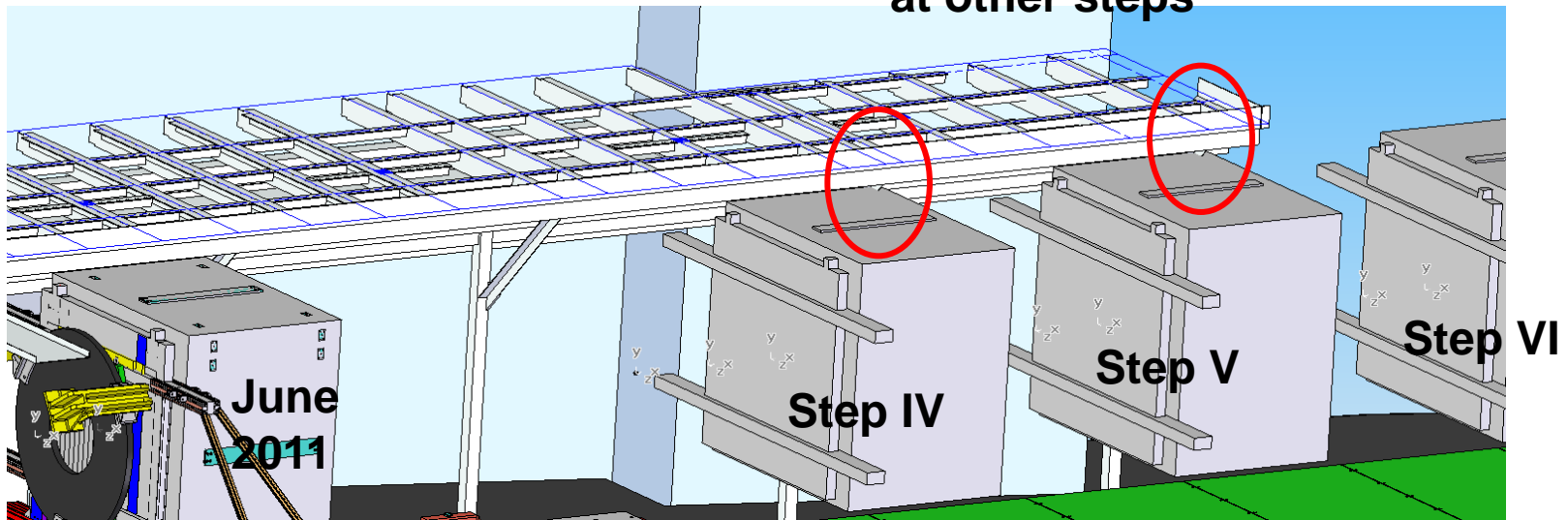


# MICE Hall - South Mezzanine



- Mezzanine & EMR

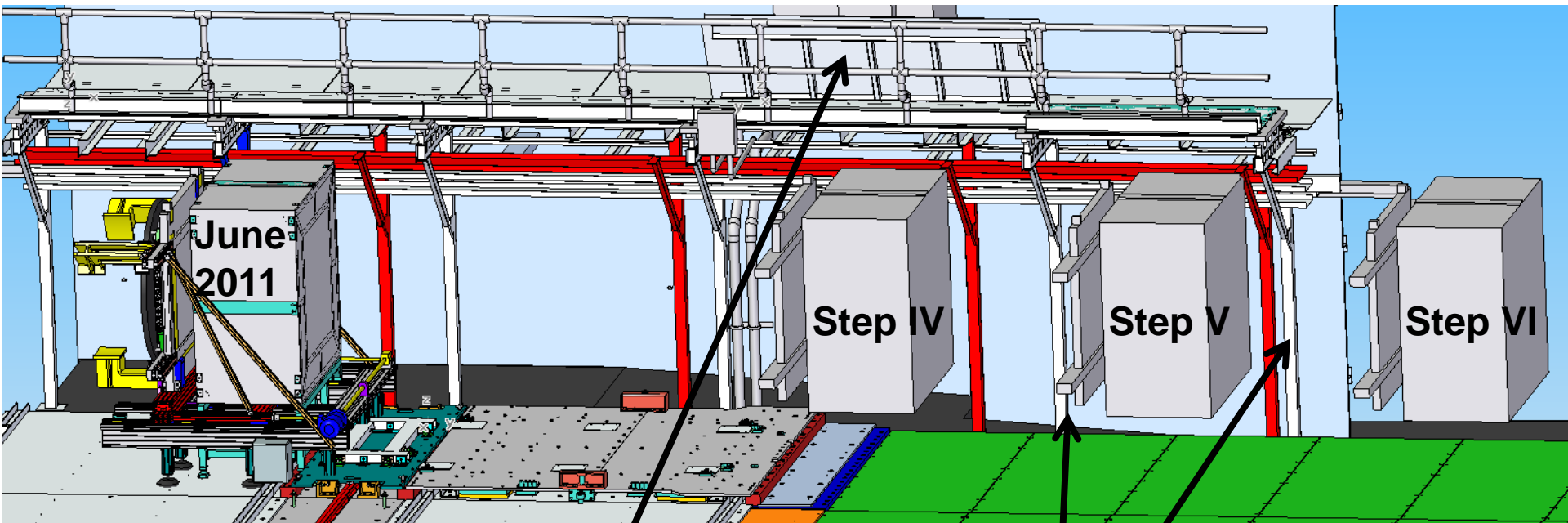
Potential clash  
with support pillars  
at other steps



# MICE Hall - South Mezzanine



- Mezzanine & EMR



Hinged floor section  
lifted to install

Support legs  
moved (red legs  
= old position)

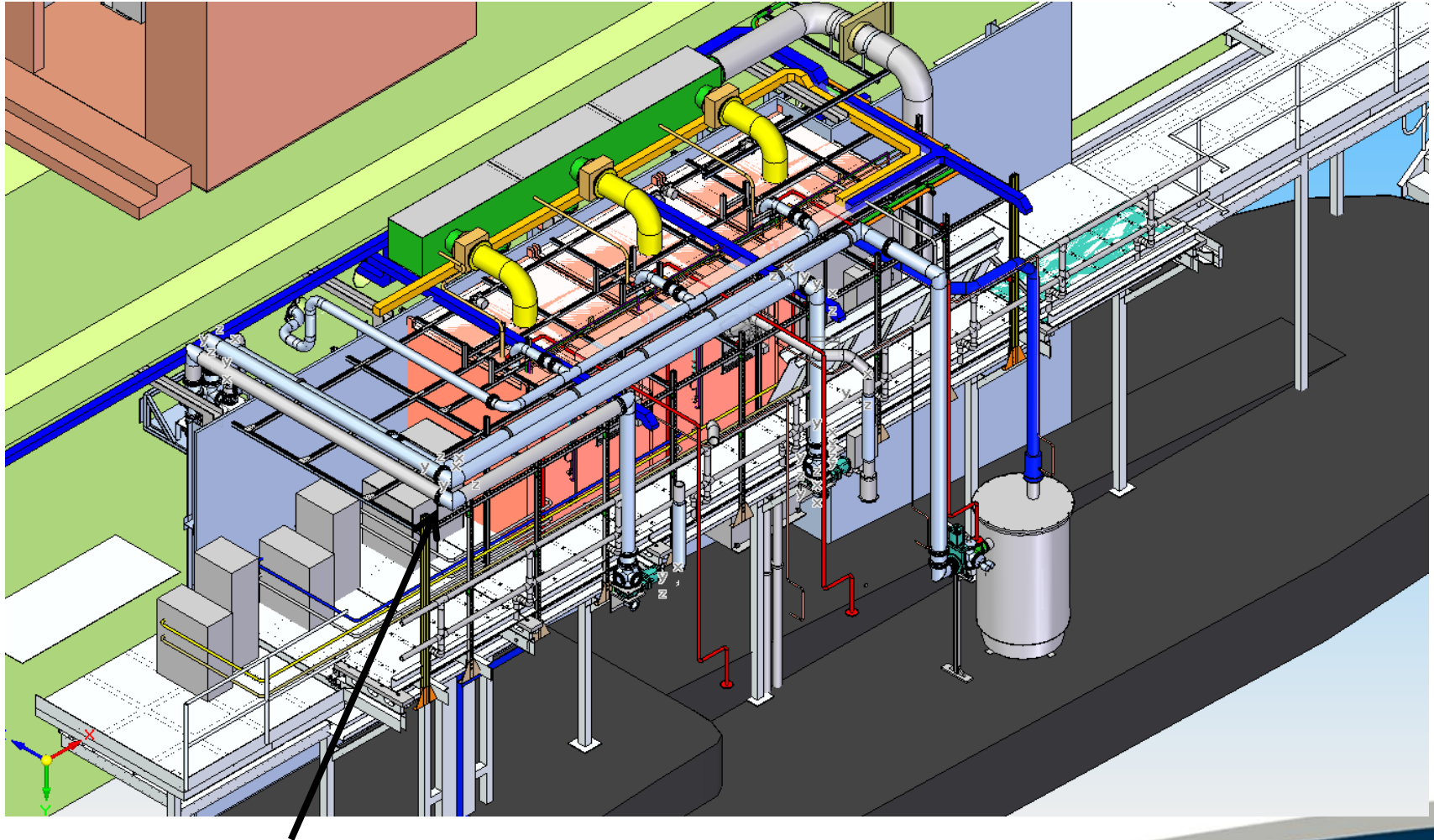




# MICE Hall - South Mezzanine



- Mezzanine & Hydrogen system



Only issue noted is that the H2 system services & frame to be raised in line with raised floor to give appropriate headroom on gangway



# MICE Hall – South Mezzanine

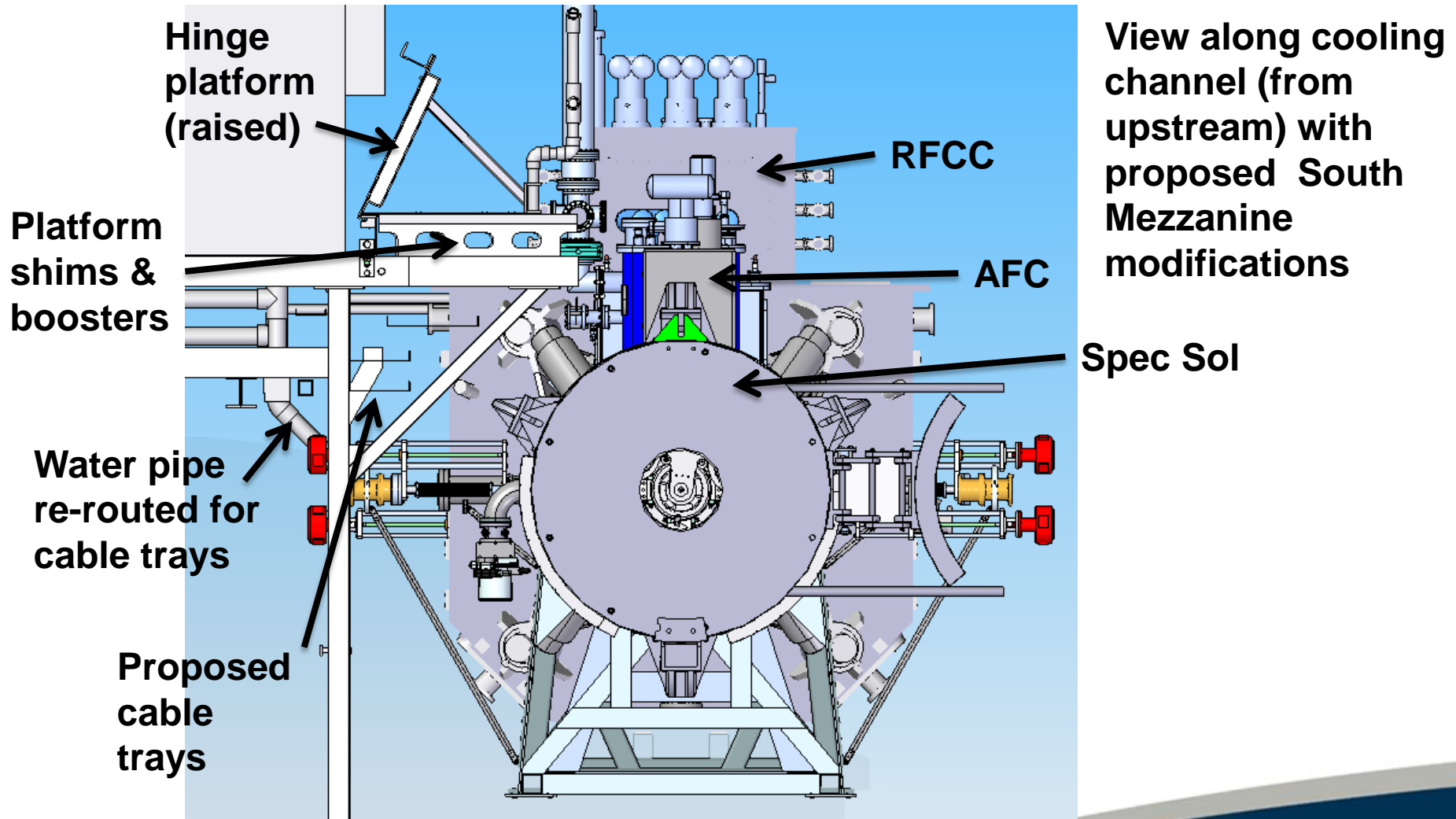


- South Mezzanine change summary
  - » Move 4 of 5 support legs to another beam, 1 extra added to minimise platform span
  - » Fit cross beam between support legs to support intermediate beams the cut back intermediates
  - » Fit hinged platform sections spanning between support leg beams
    - Higher & shorter than current mezzanine (avoids RFCC & AFC pipe line)
    - Rail with ‘dog leg’ fitted to outer beam

# MICE Hall - South Mezzanine



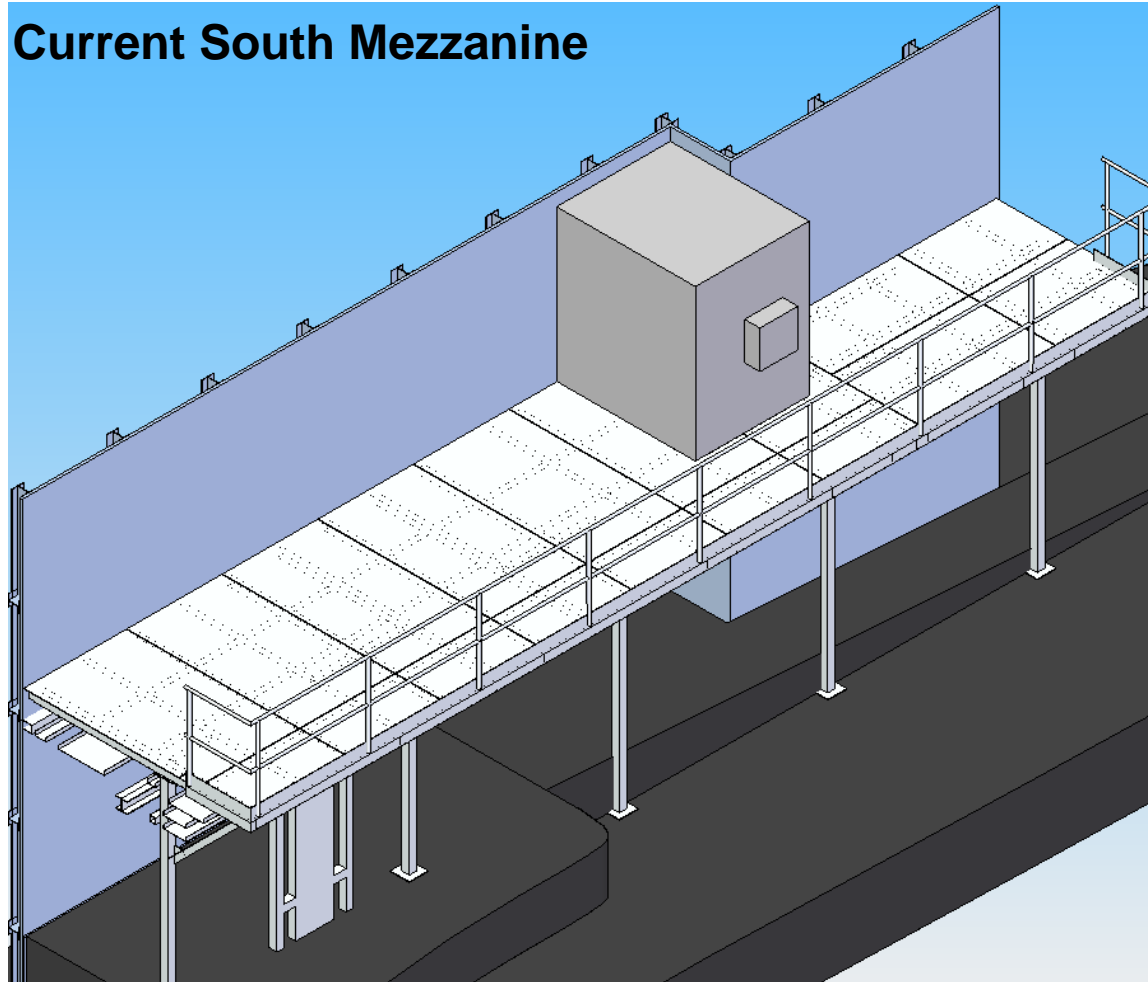
- South Mezzanine change summary



# MICE Hall - South Mezzanine



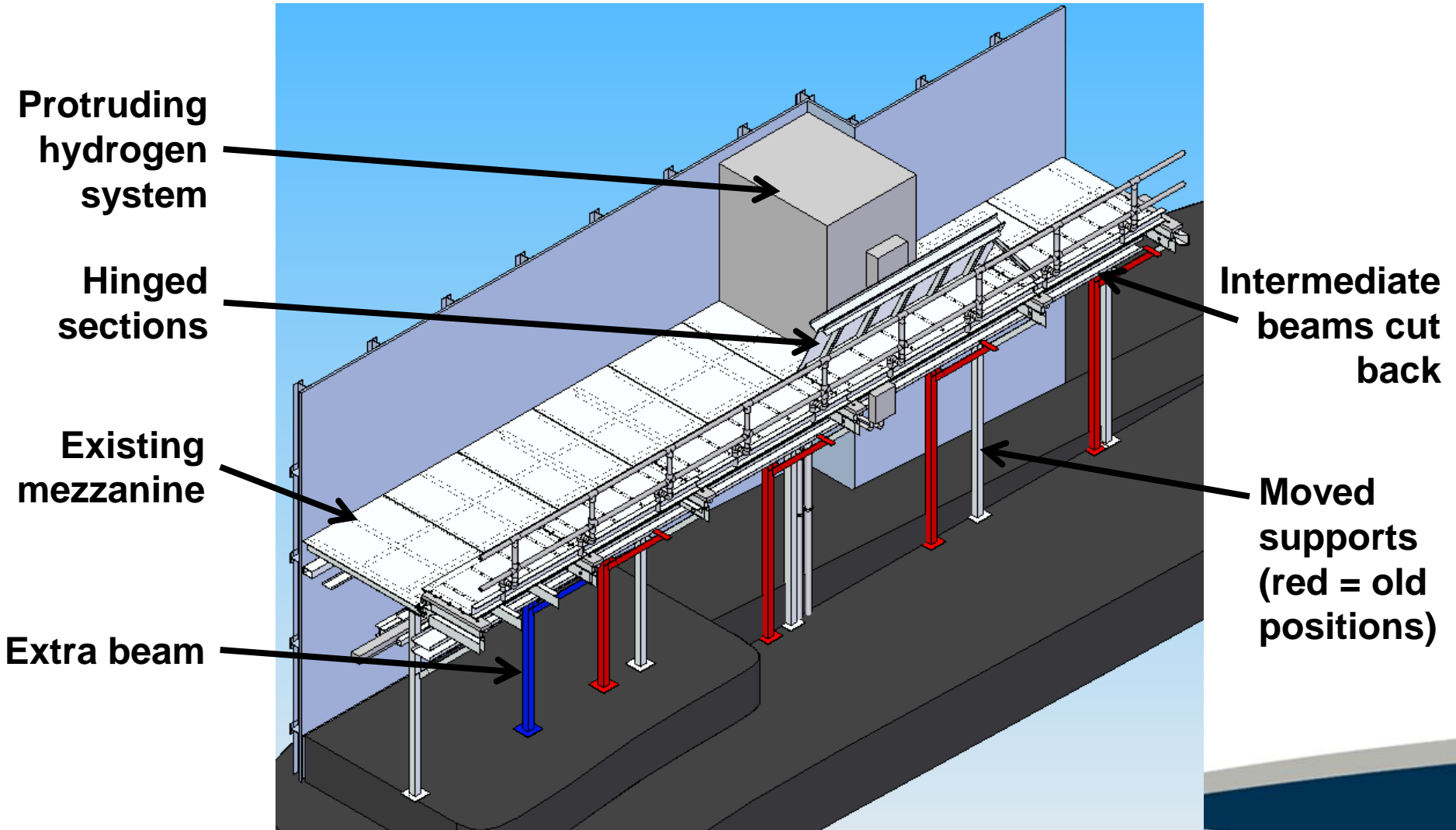
- South Mezzanine change summary



# MICE Hall - South Mezzanine



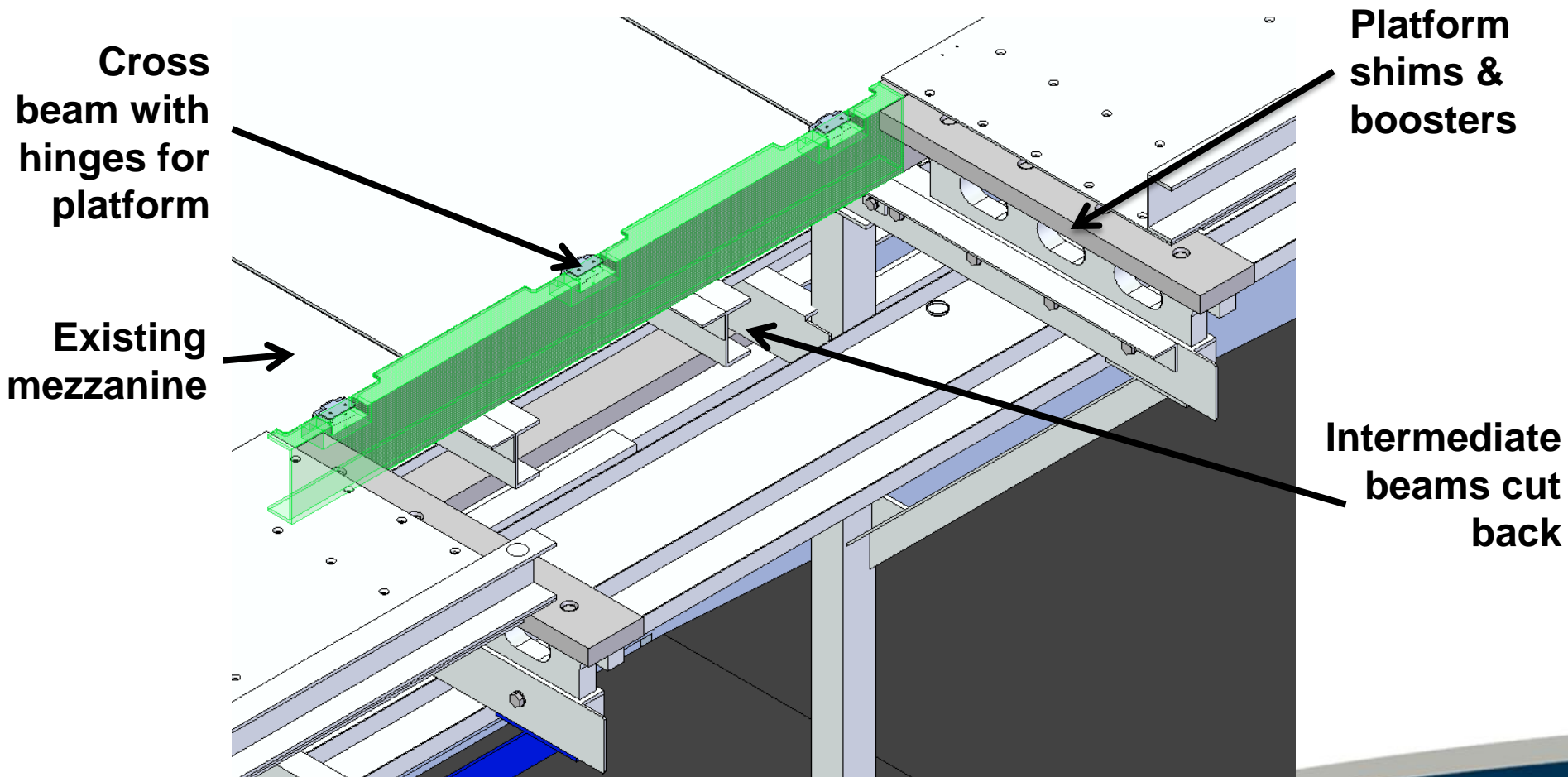
- South Mezzanine change summary



# MICE Hall - South Mezzanine



- South Mezzanine change summary



# MICE Hall – South Mezzanine



- South Mezzanine Design – Status
  - » Concept design complete
  - » Detail design nearly finished
  - » Manufacturing drawings to be started



# MICE Hall – South Mezzanine



## » Outstanding questions

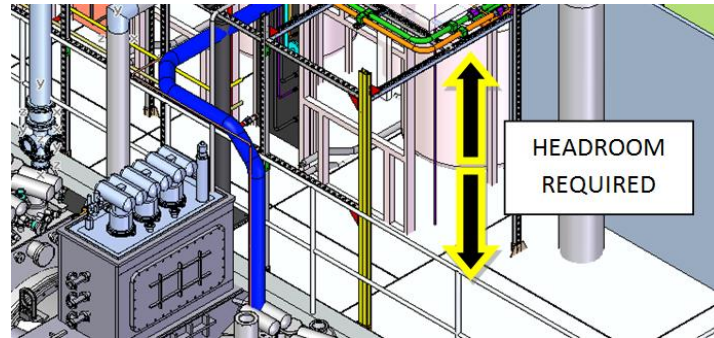
- Is the narrow walkway acceptable for safety?
  - OK'd by RAL safety, but suggested leave as late as possible to allow H2 system to be installed in relative comfort, i.e. Widest gangway
- Structurally OK?
  - Spoke with structural engineering consultant = OK'd in principle but awaiting final design / manufacturing drawings

# MICE Hall – South Mezzanine



## » Outstanding questions

- Can the H system frame & pipes be raised to give headroom?



- Is the raised floor compatible with the hydrogen racks?
- Who is responsible for ToF modification & can this be done?
- Can / is shutter mechanism on Spectrometer solenoids to be modified?

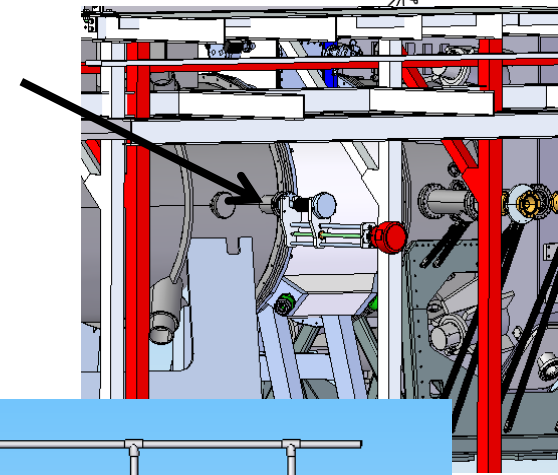
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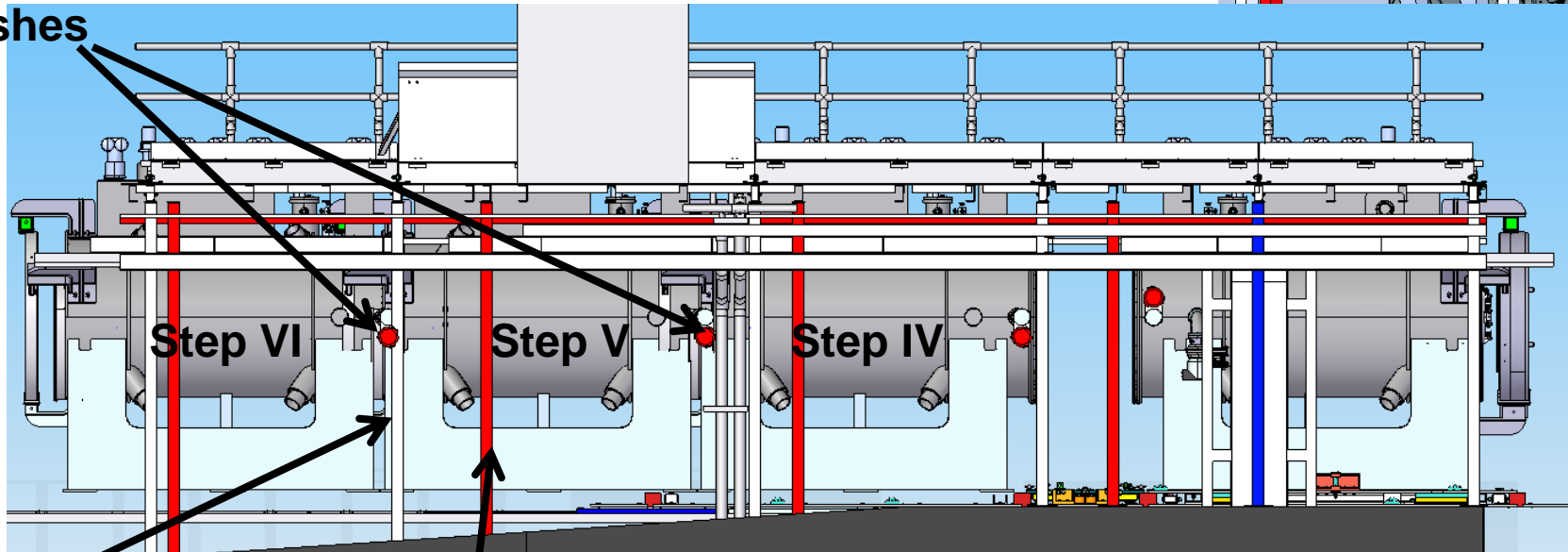
## » Possible clashes & resolutions

### – Spectrometer Solenoid shutter mechanism

- Shutter mechanism being redesigned?
- Could mechanism be modified?



### Potential clashes



To move post again would make platform span too big

Red post is old position = big clash with AFC

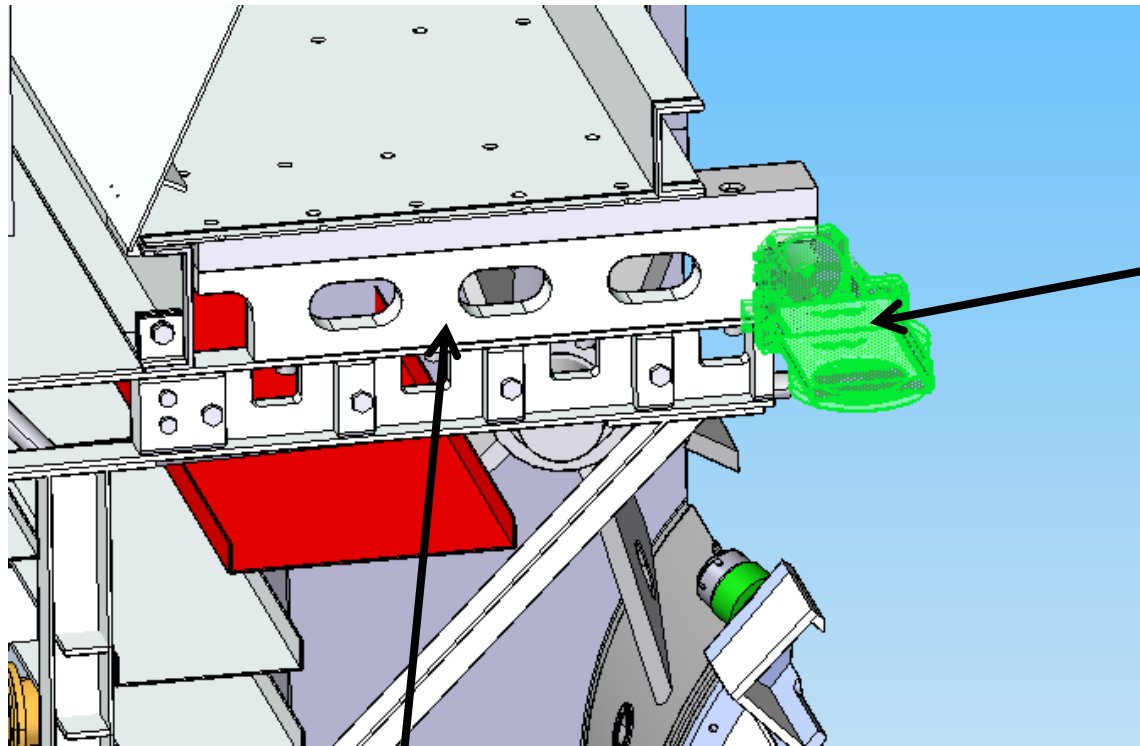
# MICE Hall - South Mezzanine



## » Possible clashes & resolutions

### – AFC Valve

- Final placement will determine extent of cut to beam & platform shims / boosters



Valve on middle AFC

Platform shims &  
boosters

# MICE Hall – South Mezzanine



## ● Conclusion

### » Step IV changes

- Waterpipe move
- Cable tray changes
- Upright support leg posts moved for AFC & 1 extra added
- 1 cut beam to be replaced
- Platform raised near Spectrometer solenoid instrument port unless instrumentation can be mounted to avoid Mezz ([awaiting instrumentation info from A Bross](#))
- Hinged platforms to be fitted over current EMR and Step IV EMR positions\*

\* Not installing all platforms would create an even floor unless simple temporary booster sections used to match floor level!

### » Step V changes

- All other platform changes!