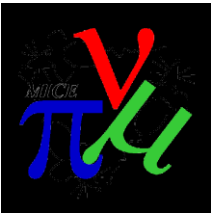


Contents

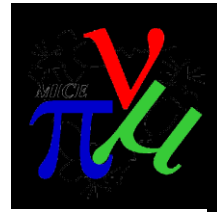


Jason Tarrant – Integration Engineering

- West Wall Compressors
- MICE Local Control Room & Rack Room 2
- Magnetic Shielding Yoke

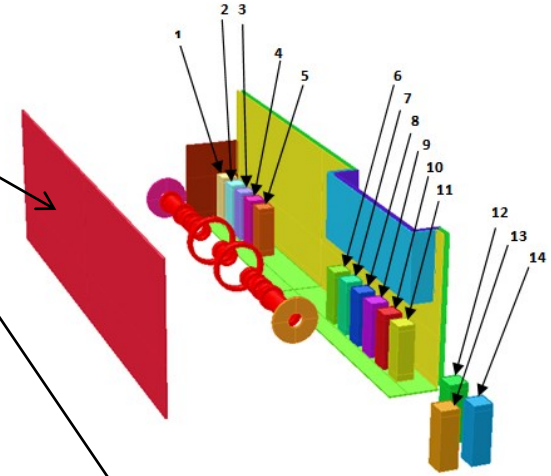


West Wall Compressor Move



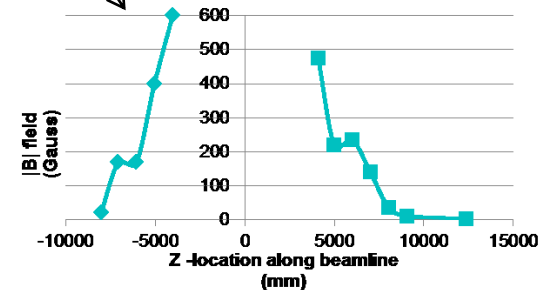
Why

- Compressor location under south mezzanine platform shown to sit in high magnetic field
- Length limit of ~30m on hoses from compressor to cold heads (unable to place outside MICE Hall)
- West wall relatively uncluttered + opportunity to build mezzanine platform



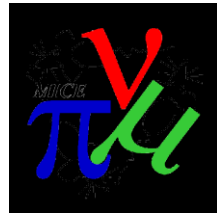
Requirements

- ~30m hose lengths
- Platform to support compressors, personnel etc.
- Safe personnel access
- Compressor handling & installation
- Equipment delivery & assembly space for MICE experimental devices



Analysis by V Bayliss

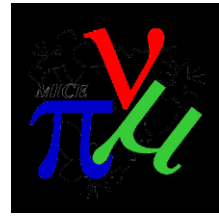
West Wall Compressor Move



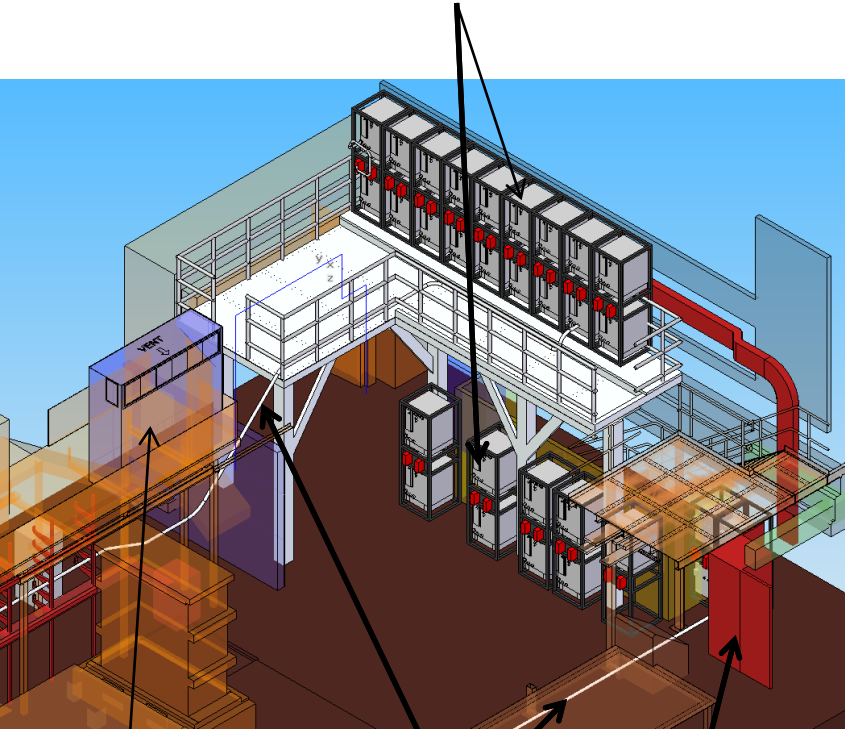
- What

- Mezzanine platform on west wall of MICE Hall
- Reconfiguration of south mezzanine platform stairs
- Distribution board move
- Compressor stands (with integrated power)
- Water services, including water plant relocation
- Services installation & management
- PPS reconfiguration
- Lightweight equipment crane move
- Some related infrastructure changes
 - Lighting
 - PPS
 - Power cables
 - South west air-con & supply services

Platform, Compressor & Services



19 Compressors for Step IV +
12 for Steps V & VI in stands

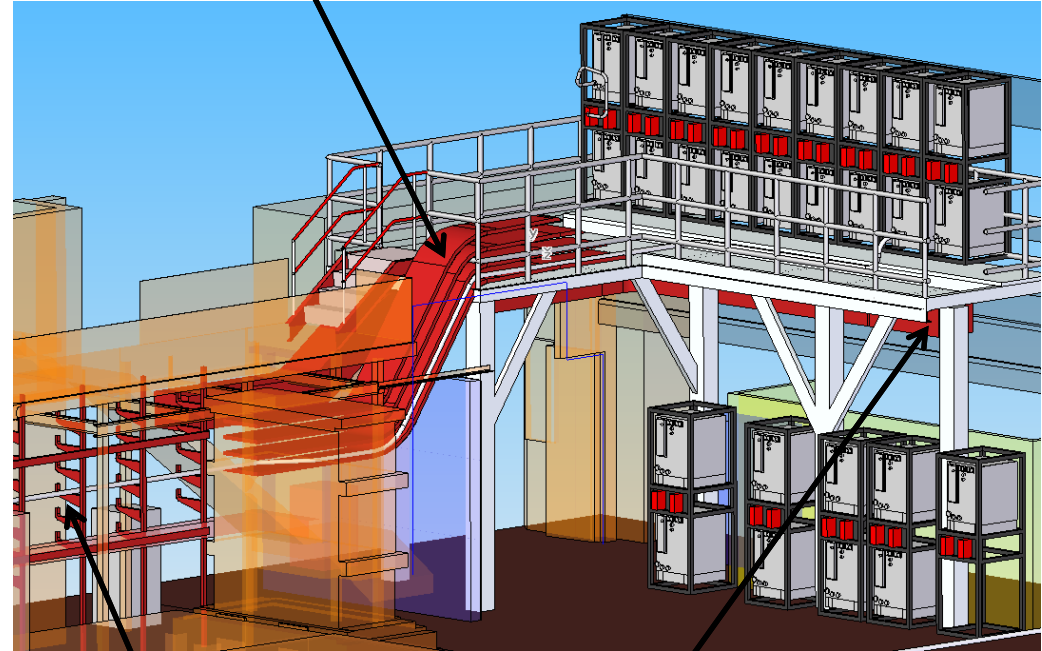


Air-con
Move

< 30m Hoses

Control
Rack

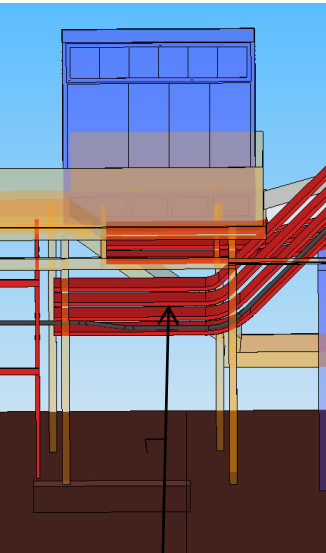
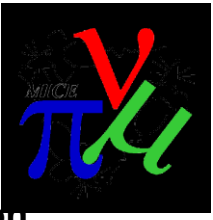
Cable trays for compressor
hoses & power cables from
first floor compressors



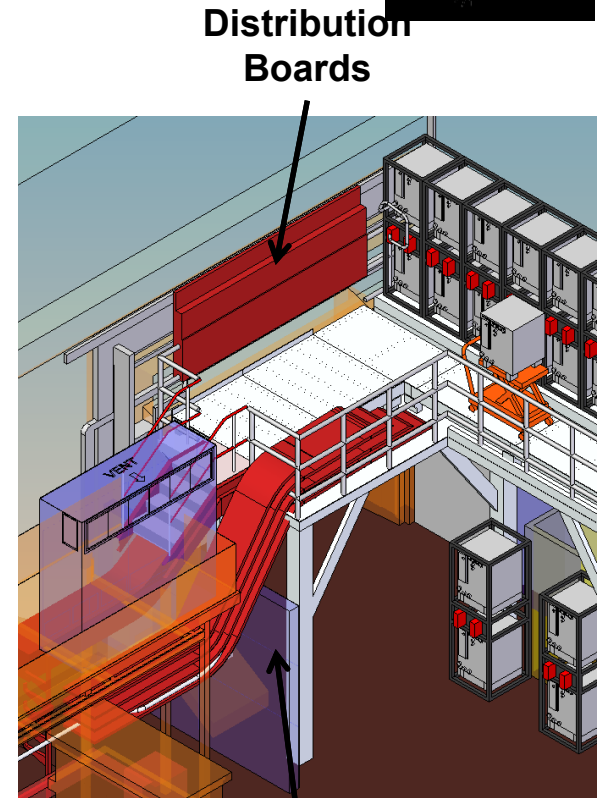
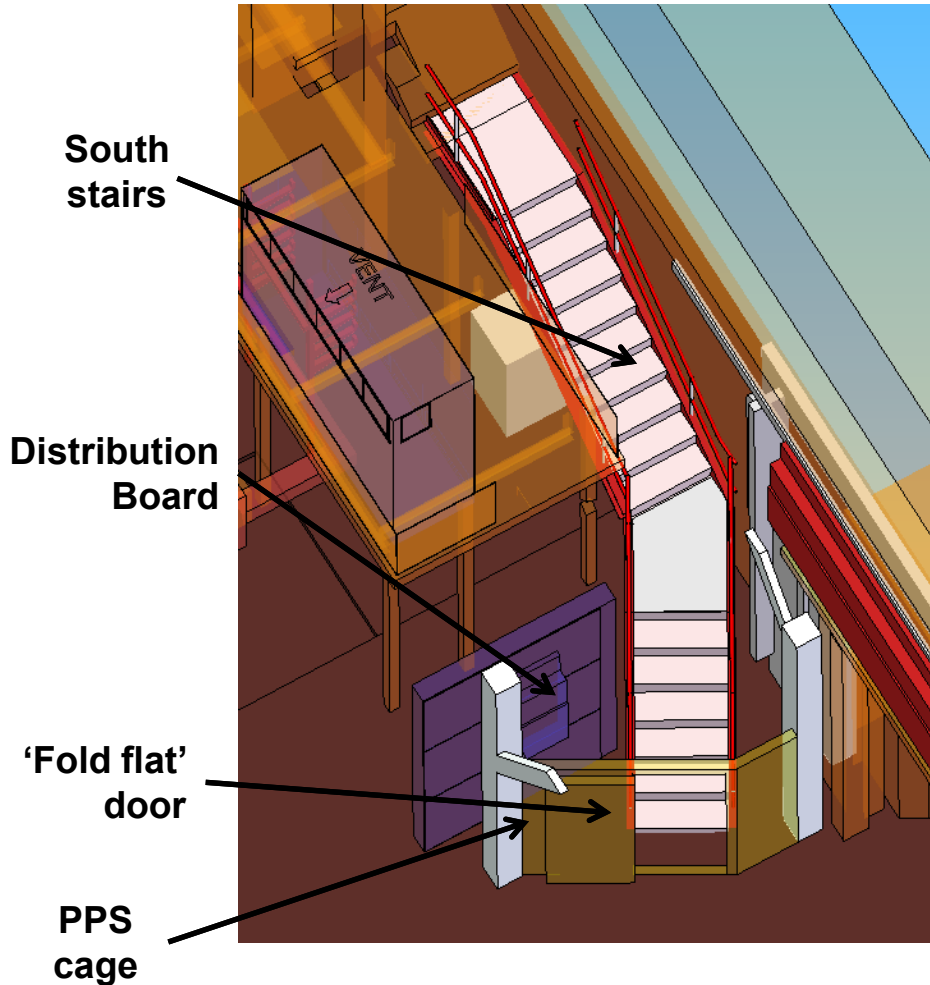
Hose and cable
tidy along south
mezzanine corridor

Cable trays for compressor
hoses & power cables from
ground floor compressors

South Stairs & Distribution Boards

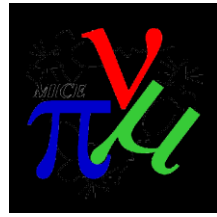


Cable trays block existing stairs



Move boards from current position on this end wall

Existing West Wall Services



West wall mezzanine will be at this level between the existing services

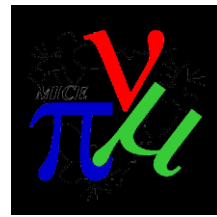
PPS system trunking

Existing high power cable to be moved

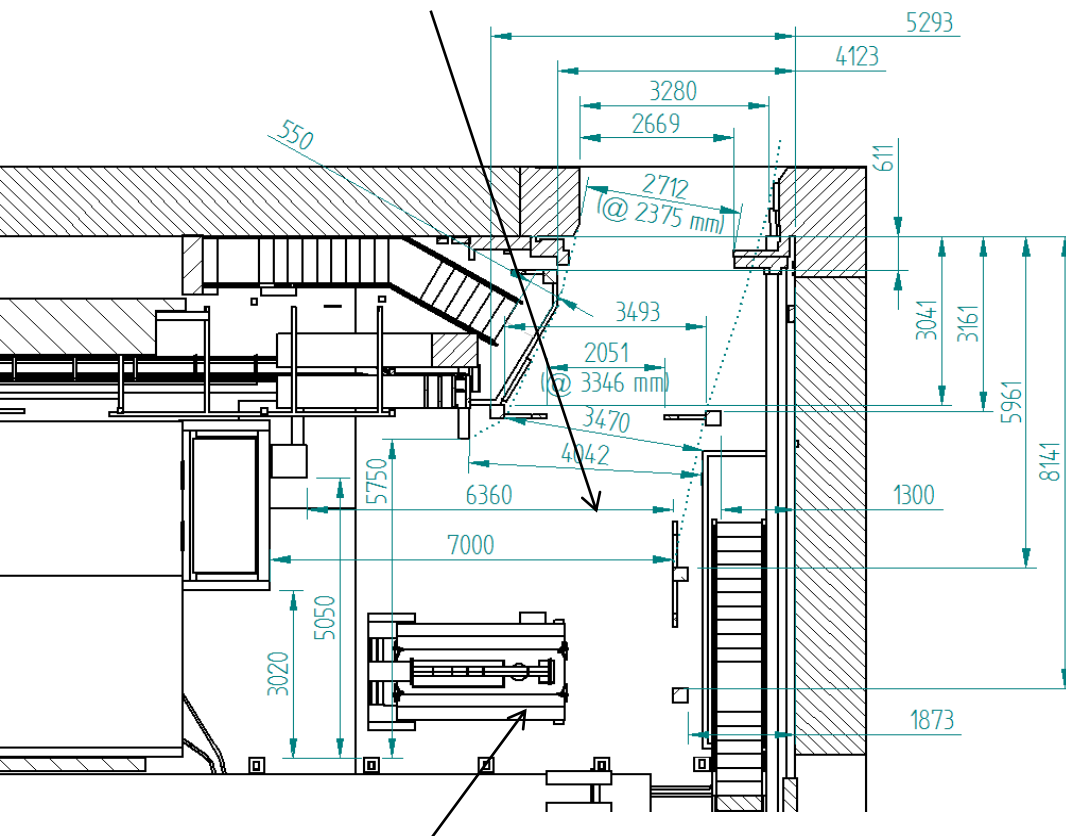


Services to be moved or bridged by the west mezzanine

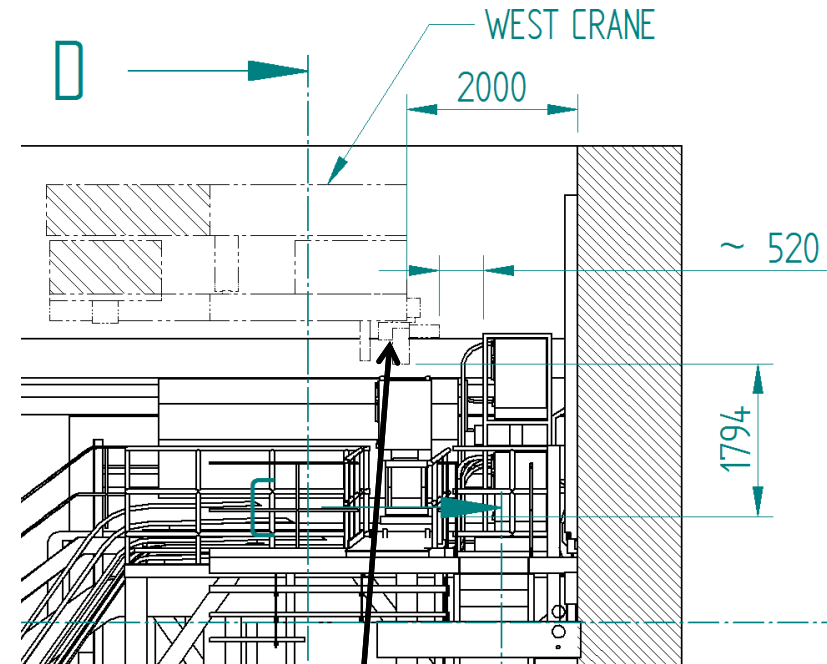
Delivery, Assembly & Handling



Floor plan showing legs of platform and room for delivery and assembly area of the MICE experimental devices

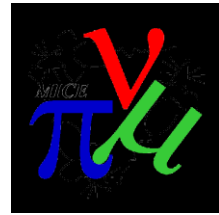


SS in lifting position with tandem lifting frame

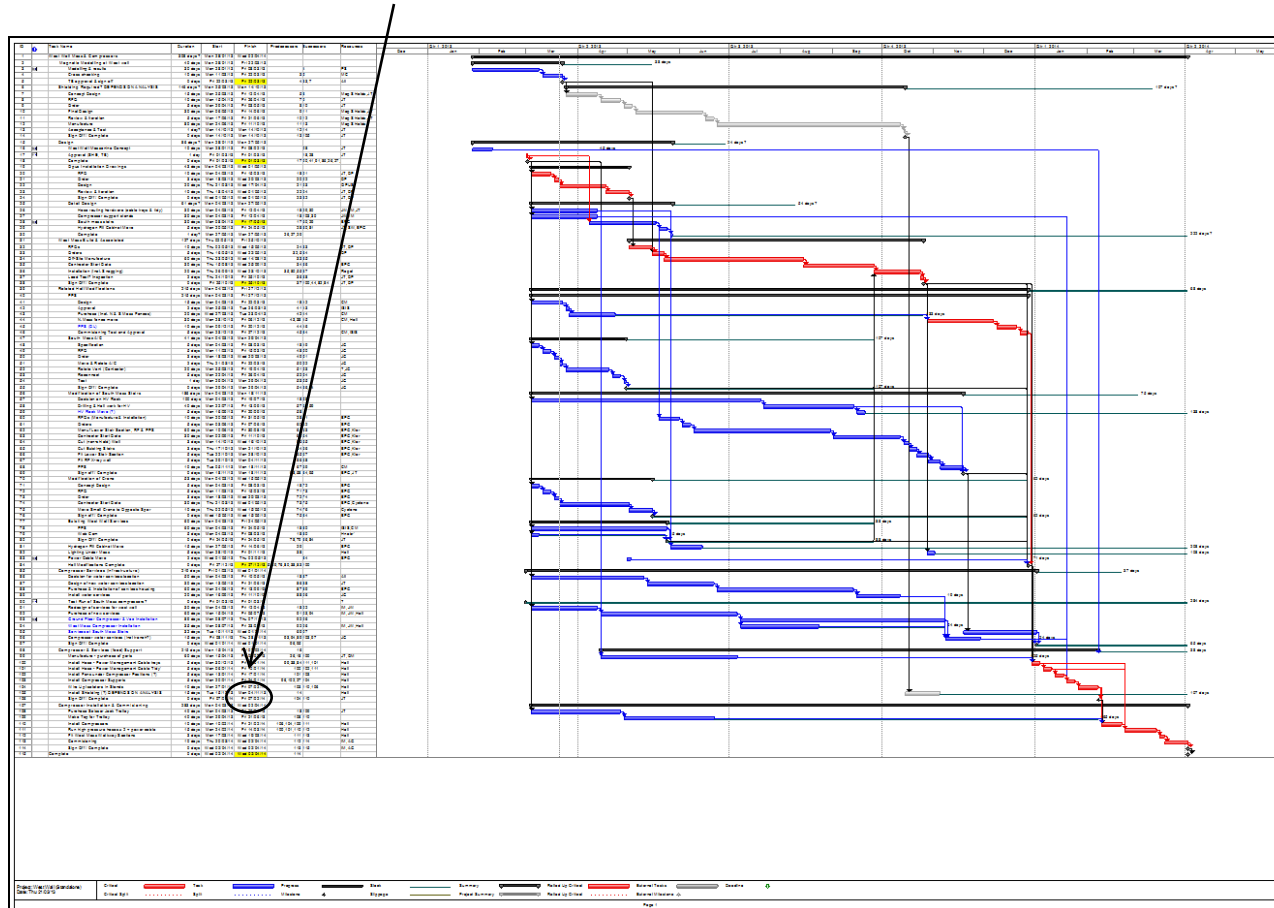


Small equipment crane

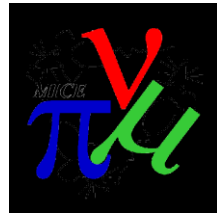
West Wall Compressor Move



- When
 - Ready for Compressor installation 7th February 2014



RR2 & MLCR



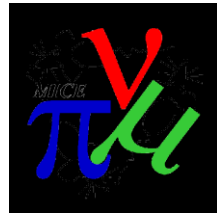
- Why

- Same magnetic field problem as compressors but longer services length to move out of Hall to new Rack Room 2 (RR2)
- Allows operational changes without breaking PPS or disrupting running
- Current Mice Local Control Room (MLCR) comfortable for 4 people, extend for the 6 that are expected during running

- Requirements

- Capacity in RR2 & MLCR to eventually house all racks for Step VI running & all personnel required for experimental operations respectively
- Minimal change to building (cost related and for benefit of ISIS)
- Fire safe, including services runs
- Safe access to racks
- Manage climate: Thermally for RR2 & comfort for operational personnel in MLCR

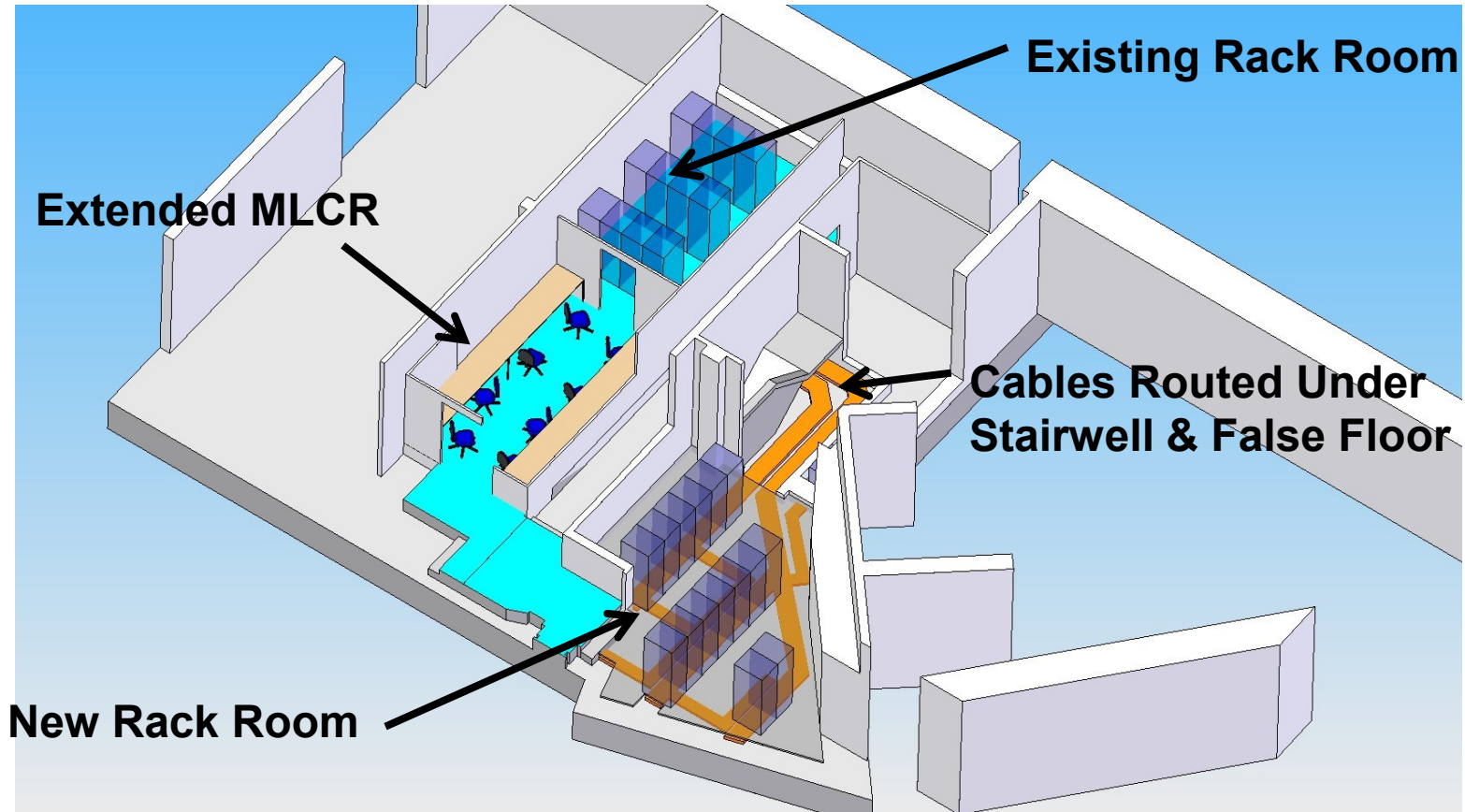
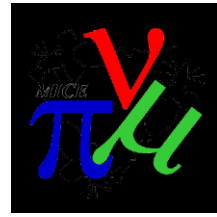
RR2 & MLCR



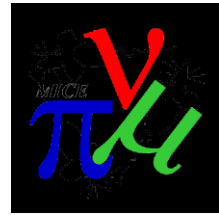
- What

- Apertures cut in stairwell walls for cable routing
- Wall to be built under stairwell to enclose cable trays (fire safety)
- Holes to be drilled through MICE Hall wall to allow cable routing from new rack room
- Air management & temperature control
- False Flooring (Computer Flooring) throughout new rack room
- Cable trays for new rack room
- Install services & power distribution
- Corridor wooden false floor replaced with fire safe false flooring
- Door move when MLCR to be built
- MLCR extension: walls, fittings and furnishings

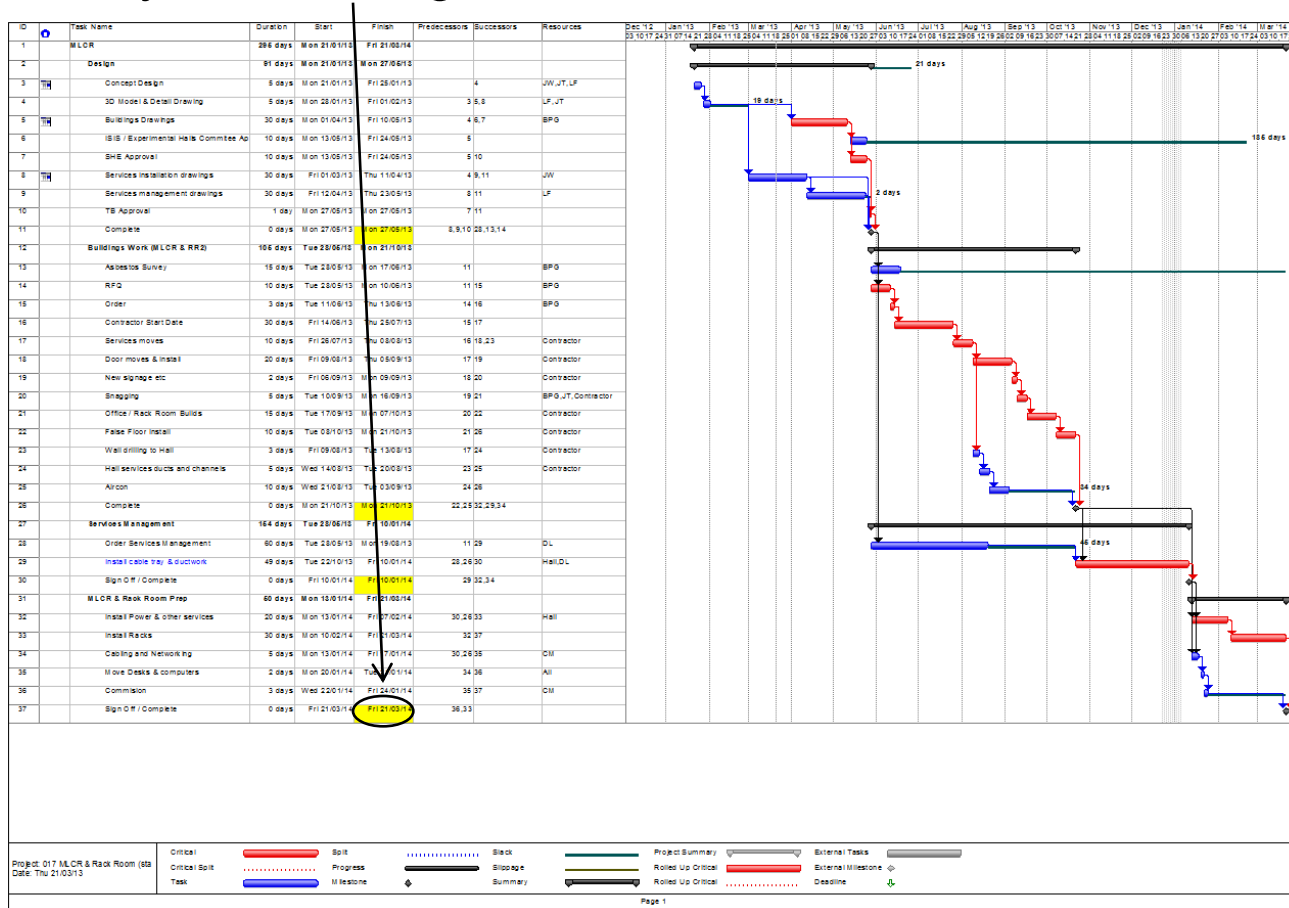
RR2 & MLCR Reconfiguration



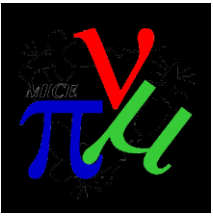
RR2 & MLCR



- When
 - Ready for Running 21st March 2014



Magnetic Shielding Yoke



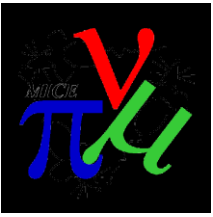
- Why

- Though the compressors & racks are protected from magnetic field as described above, there are many other components and systems in the proximity of the Step IV MICE experimental devices that could malfunction in the level of magnetic field that will be produced.

- Requirements

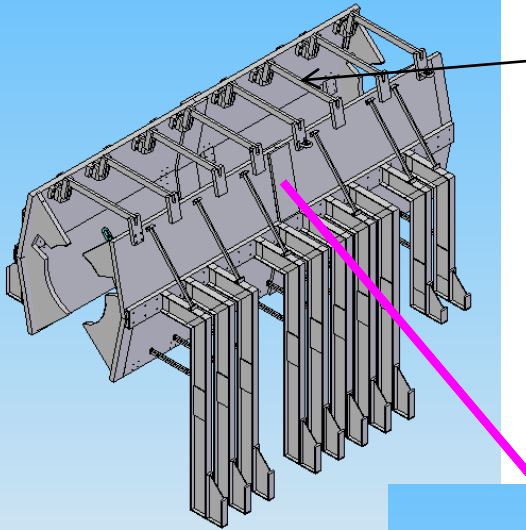
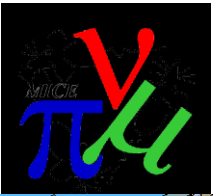
- Magnetic shielding yoke that sufficiently lowers the level of the magnetic field to enable safe operation of the experimental devices and the infrastructure of the MICE Hall, as well as protecting the ISIS control room.
- Compatible with the MICE Hall environment, MICE experimental devices, services, maintenance etc.

Magnetic Shielding Yoke

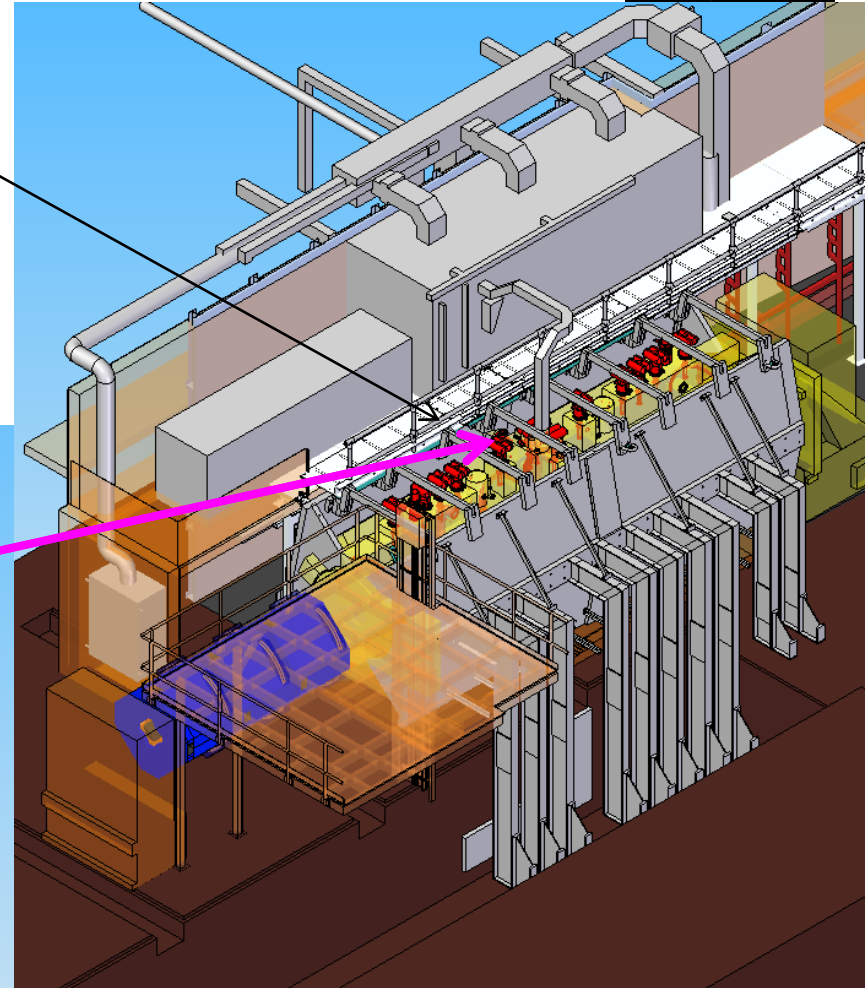
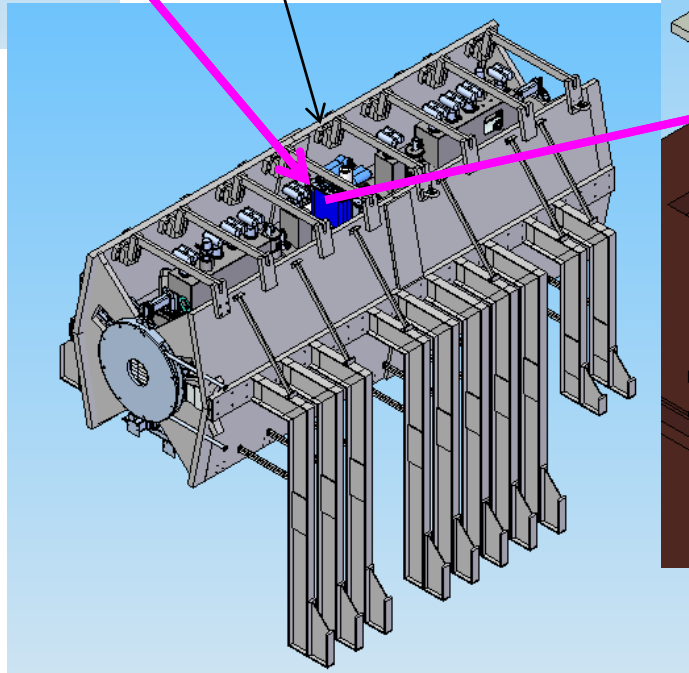


- What (UK)
 - Change front of south mezzanine to fit around yoke
 - Reconfigure & extend on-device services connections, thus compatible with reduced access when yoke installed
 - Reconfigure cold head hoses & power, vacuum lines and magnet cables & their management to fit with yoke
 - Move Tracker Cryo & extend waveguides if necessary (waveguide = US purchase)
 - Move hydrogen filling station
 - Provide modifications for lower yoke columns into trench and floor on north side, requires significant modifications to false flooring and trench roof
- What (US)
 - Supply Step IV yoke
 - Min 1x installation representative

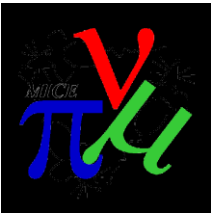
Magnetic Shielding Yoke



Integrated
with Step IV
Devices



Magnetic Shielding Yoke



- When
 - Work in progress = TBD

