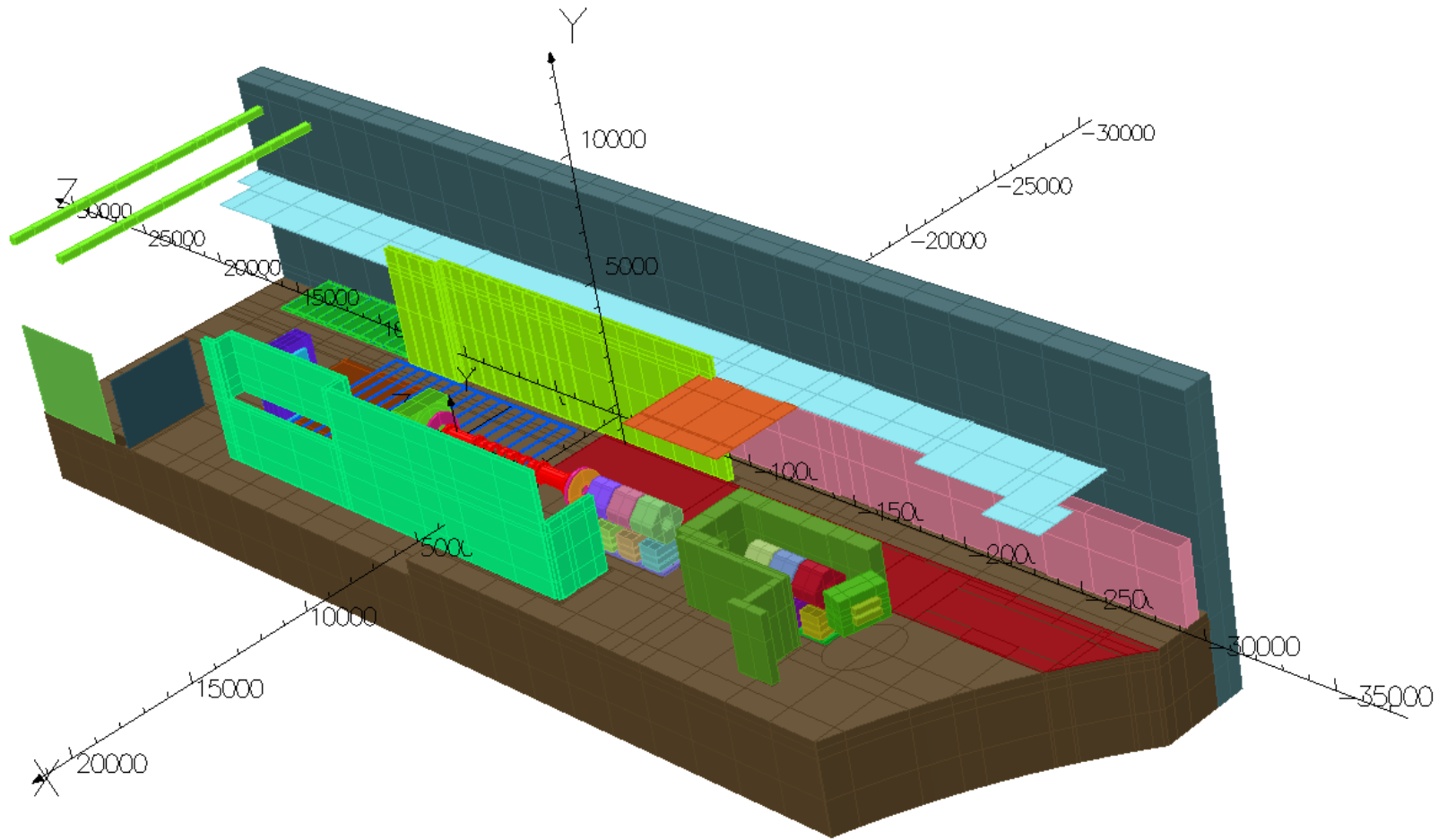


# Modelling Update – 31/10/12



# Items in the model

## Ferrous Components

Beam Dump  
Floor Web  
D2  
DSA Steel  
North Shield Wall  
Q4-Q9 (Solid Blocks)  
South Shield Wall  
Virostek Plates  
EMR (Inaccurate)  
Quad Bases in Cellar  
Linac Wall  
SW Distribution Board  
Steel Door to MICE Hall  
North Mezzanine (No Structural Steel)  
Flooring above the trench  
False Floor Behind NSW  
Quad Bases and Floor plate  
Equivalent Iron Representation of Crane

## Non - Ferrous Components

Hall Floor  
Hall Roof  
Hall Walls  
Solenoids Step IV (S-mode)  
Solenoids Step VI (S-mode)  
Cellar  
Trench

# Items to add to the main model?

## Ferrous Components

South Mezz Stairs  
PPS Cages (may not be possible)  
West Wall Stairs  
Additional Steel Framework?

Other Items of interest?

Substation  
Power Supplies  
etc

## Non - Ferrous Components

Outline of MLCR  
Outline of ISIS CR  
Plant Room  
(Basically South End  
structures)

Solenoids Step IV (F-mode)  
Solenoids Step VI (F-mode)

# New Computer...

It was taking ~52 hours to solve the model on the old machine...

The first time I solved using the new machine (and the model had additional structures - Trench Floor plates - compared with the last solve on the old machine...)

**21 hours**

Added more structures (Quad Bases & Crane Iron)

**24 hours**

Added more structures... (First Attempt at Racks behind NSW)

**28 hours**

So we are at a turnaround of just over a day which I think is quite good.

# Additional Structures

Over the last couple of days I've tried adding a couple of other objects just to see how the model will cope.

## **The seven racks behind the NSW – Assumed Steel**

I initially had to guess the dimensions of the racks (wasn't too far out) and I've managed to get the sides of the rack down to 1.5mm!!.

This model is currently solving but I will re-run with correct dimensions shortly. This could be useful as a cross check against the sub-model process if it works ok

## **Holger's Step IV Shield**

It is now possible to place the Step IV shield into the model, this could be useful to compare with Holger's results. I had to shorten the shield 0.5m at one end as it interfered with the EMR block. For symmetry I also shortened it by 0.5m at the other end. A model with the Step IV shield in-situ is in the system and ready for solving

**Plan is now to get plant room and MLCR into the model.**

# Additional Comments

I would like to visit Mike in the next week or so to discuss where we are with the model and the way forward from here. The main goals would be to:

- 1) Validate the model so we can start to produce 'official' results. By official I mean a system will be in place so that all the solutions are available and that it will be possible to track what was in the model for that given solution. All the results produced so far have been 'test models' and I think we are ready to move over to 'production models' which we should initially treat as a baseline.

Note that this does not imply that the model is 'complete' as we expect further refinements to be made

- 2) To understand how we can start to generate sub-models now that Mike seems to have a better understanding of how this works.

I currently can't upload to the repository as the new machine is not set up correctly. I'll ask Matt Robinson to resolve this when he is back off A/L.

# Additional Comments

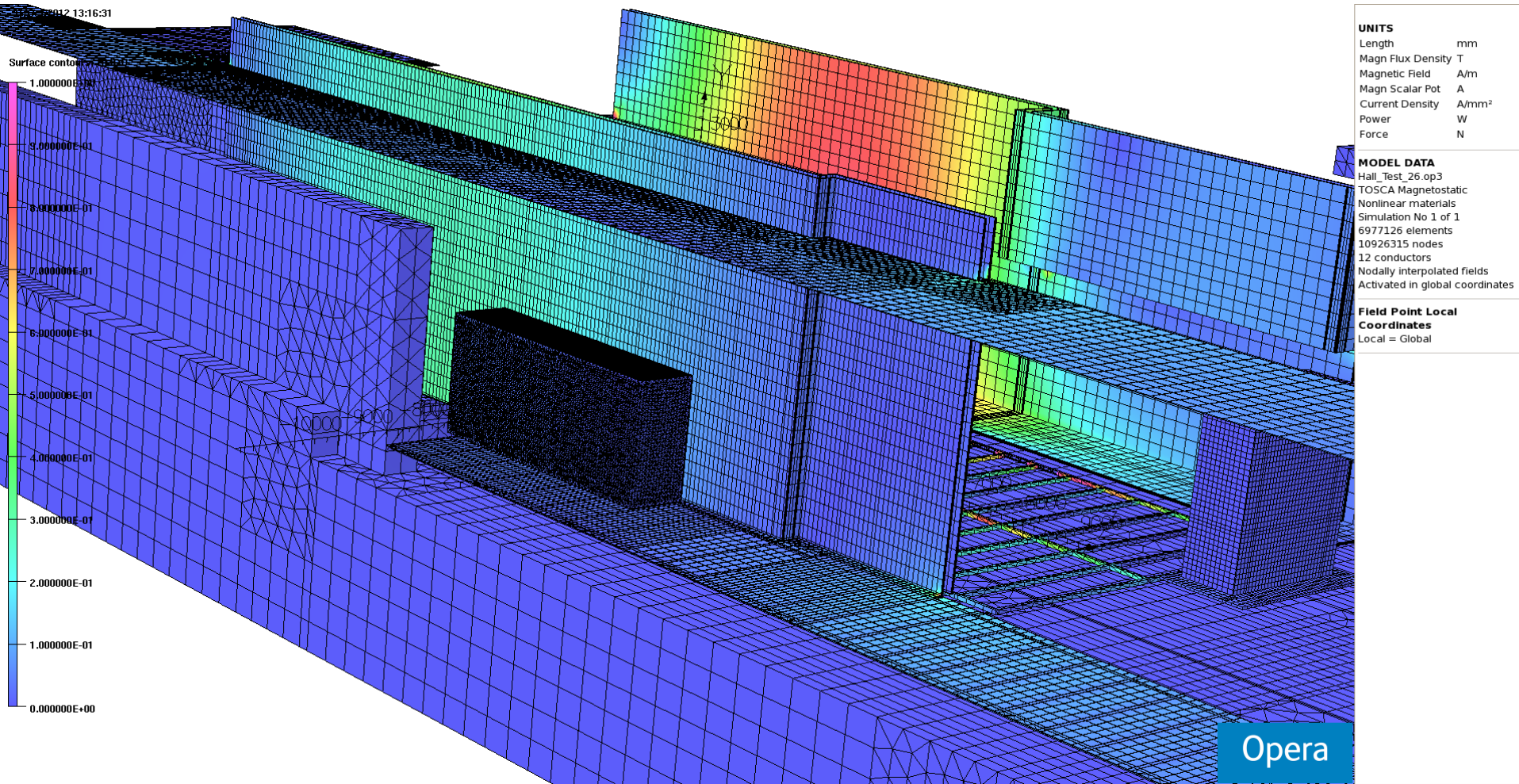
I'm not really getting the opportunity to take a proper look at the solutions that the model is generating. I was hoping that Craig would take a poke around but he's on A/L this week.

I've been posting the solutions that I'm happy with on the Web (i.e. those that I know don't have errors) so if you have OPERA you can take a look yourself.

<http://www.hep.shef.ac.uk/tmp/>

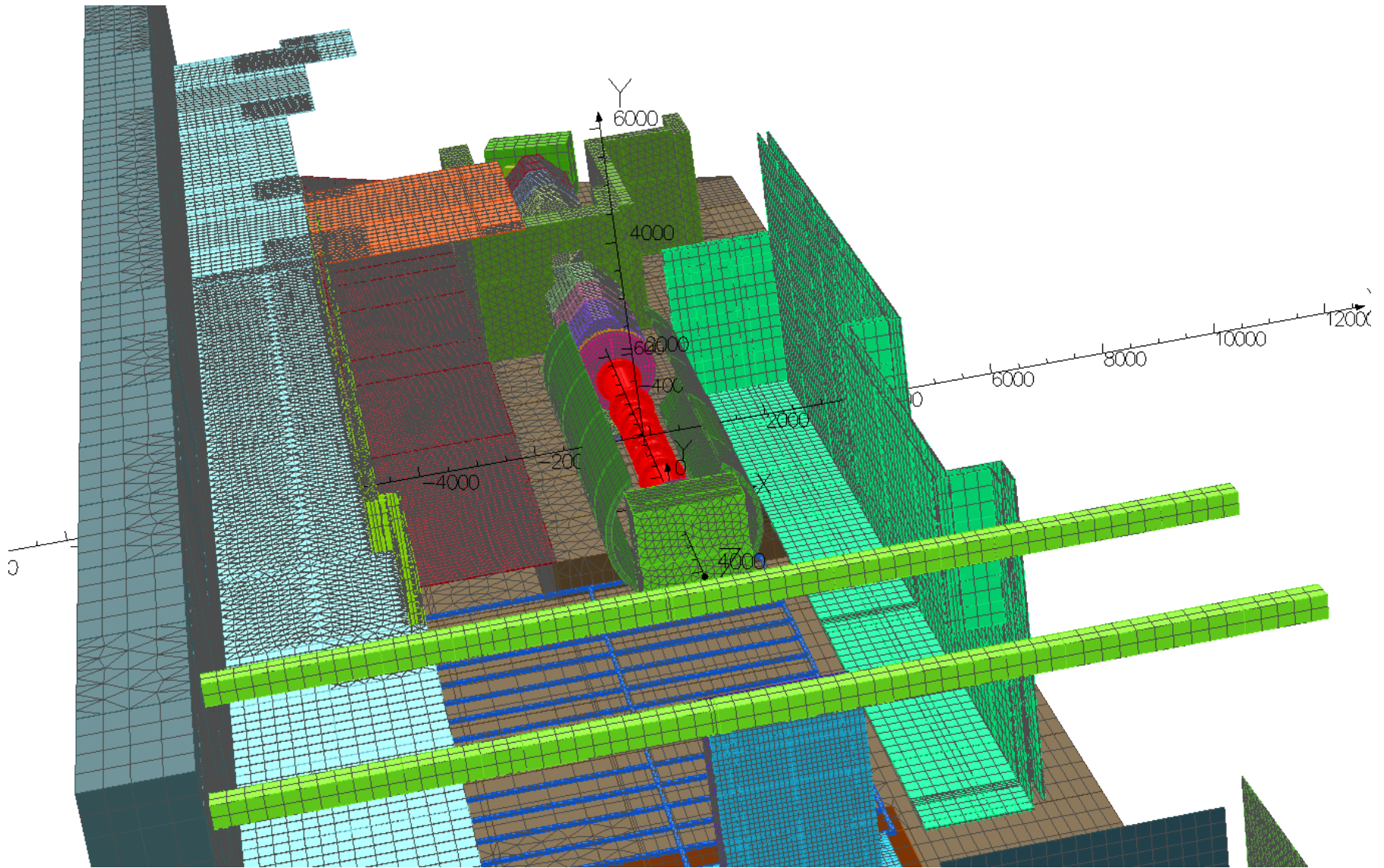
Directories are [/Hall Test XX](#)

I will ask if Craig if he will continue his good work when he gets back.



First attempt at placing the racks behind the NSW. Wrong location, Wrong dimensions, no blister pack and wall thickness too thick so I'm not showing any solutions – but it looks promising...





Step IV shield – shortened by 0.5m at either end. Model has yet to be solved