

# Model Update – 16/01/2013

## Running Models

I've continued running models with the Racks behind the North Shield Wall and with the Compressors against the West Wall. I'm currently running a set of models with open fronted racks.

I'm going to add a couple of models to our table of rack models for closed racks with a 2mm skin and no iron inside. (We ran a model with no iron inside but the rack walls were very thick). This should give a full set of results to compare with other models as they become available.

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Step IV Magnets 240 MeV/c				
Compressors & NSW Racks	No Shield	Open Shield	Closed Shield	Closed Shield & Flange
All Iron in Skin	Model 31	x	x	x
2mm Skin, No Iron inside	?	x	x	?
2mm Skin, Reduced Core	Model 34	x	x	x
2mm Skin, 50mm Airgap, Reduced Core	Model 35	Model 36	Model 37	Model 44
2mm Skin, Single Solid Cube in Centre	Model 38	x	Model 40	Model 41
2mm Skin, 9 Solid Cubes	Model 39	x	Model 42	Model 43

Step IV Magnets 240 MeV/c		
Compressors & NSW Racks (OPEN FRONTS)	No Shield	Closed Shield & Flange
2mm Skin, 50mm Airgap, Reduced Core	Model 47 (TBC)	Model 48 (TBC)
2mm Skin, Single Solid Cube in Centre	Model 45	Model 46
2mm Skin, 9 Solid Cubes	?	?

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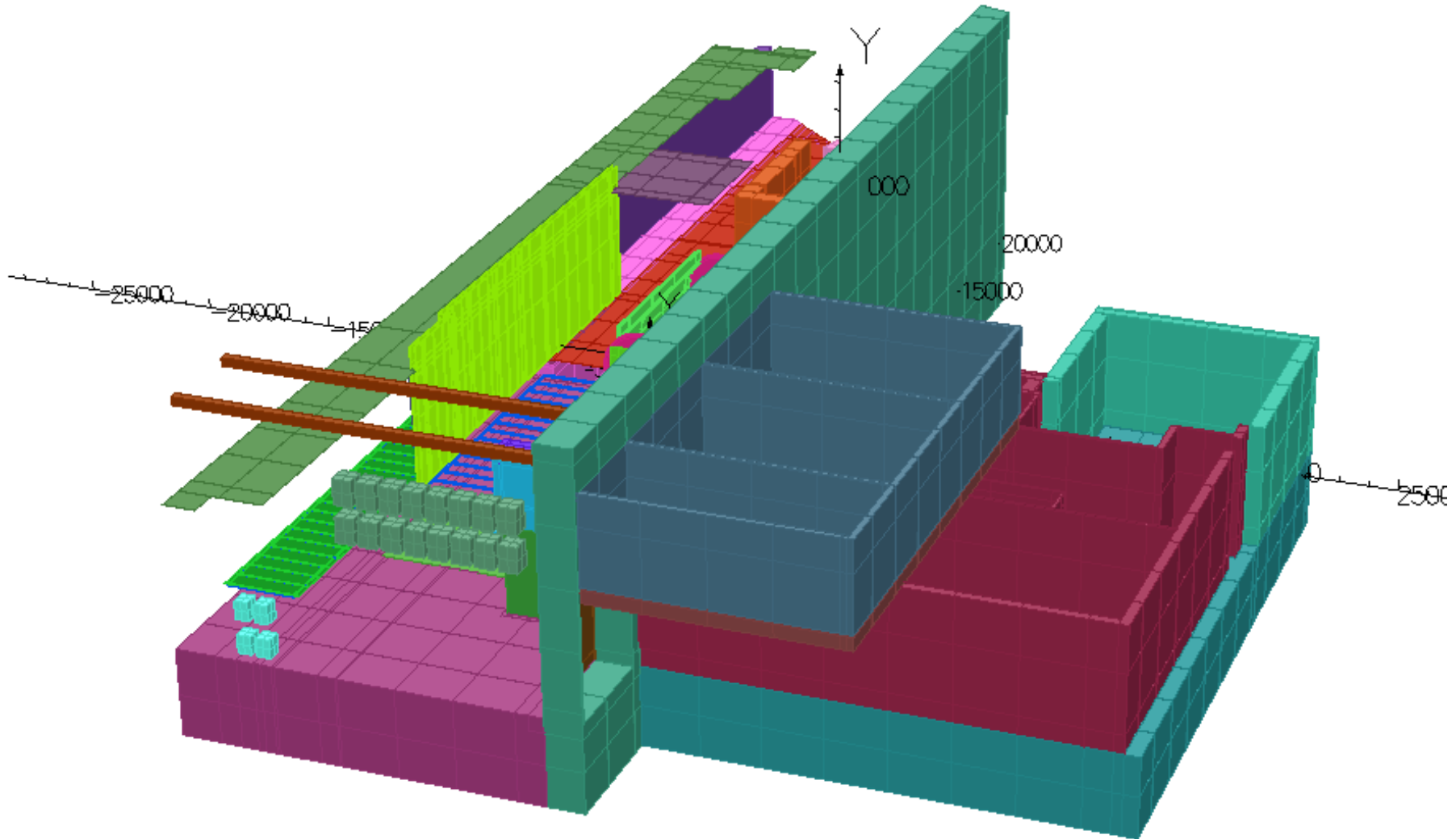
## Changes to Model

This week I've added most of the south side buildings. Done this in 2 iterations due to changes in dimensions of these buildings (2<sup>nd</sup> iteration wasn't a big deal as the geometry is based upon variables that are set in a separate file.)

It should be reasonably accurate with the exception of Rack Room 2. The geometry of this is awkward and will take some effort to get right in OPERA. For now it is represented as a square room that encloses RR2s volume. I will return to this once we have successfully run some initial models.

It seems to mesh ok but I want to run to models with these additional rooms to ensure that it runs to completion: 'Step IV no shield' and 'Step VI no shield'. This should give us a baseline and a first feel for what fields we see in some of those outlying regions using this model.

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## **Sub Modelling**

We have a meeting at DL on 31<sup>st</sup> Jan to discuss how we take the sub-modelling forward. We have an offer of help from Kiril (DL) & Melissa (Imperial).

I shall be having a discussion with Mike next week so that we can bring each other up to date with the details of our models and for us to discuss the best way of introducing the sub-modelling at DL. I will issue an ‘informal’ agenda to those involved shortly after speaking with Mike.

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## Other

After discussion with Craig we are going to try and update our modelling website so that we also include all of the results (i.e. Plots etc) alongside each model.

Holger and Vicky Bayliss would like to access my model of the compressors. It has been pointed out to me that the compressor model is integrated (entangled?) into the hall model and is difficult to extract independently. It's probably a fair comment.

So I shall try and extract this comi code for others to use independently – This could also be a useful starting point for a stand-alone rack sub-model. Of course once it's been extracted it won't be possible to keep this code updated with any further changes I make but I don't think that this will be an issue as the users are likely to want to alter the code in their own fashion anyway.