



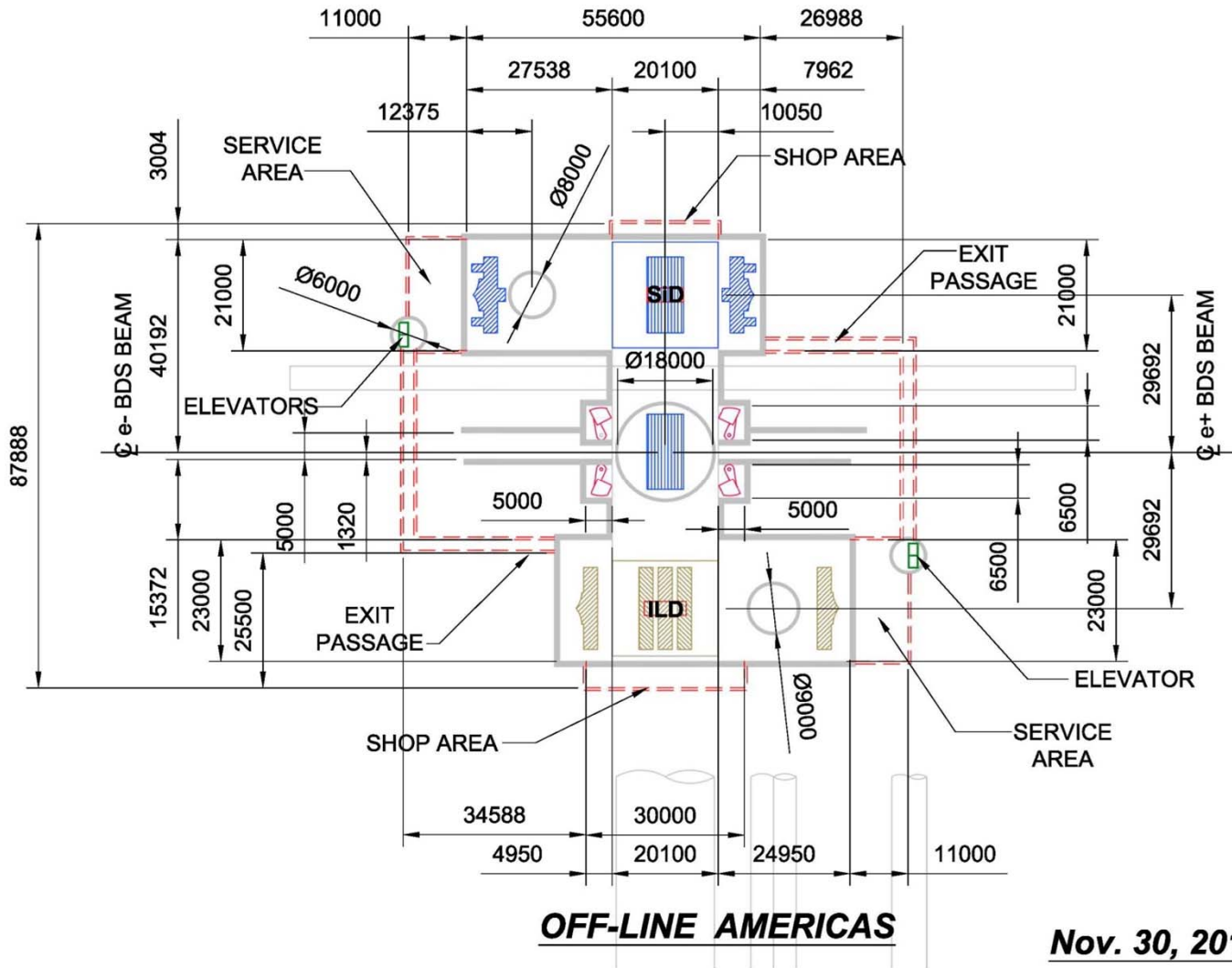
Detector Hall Design and Cost Information

CONVENTIONAL FACILITIES AND SITING

T. Lackowski



Global Design Effort - CFS

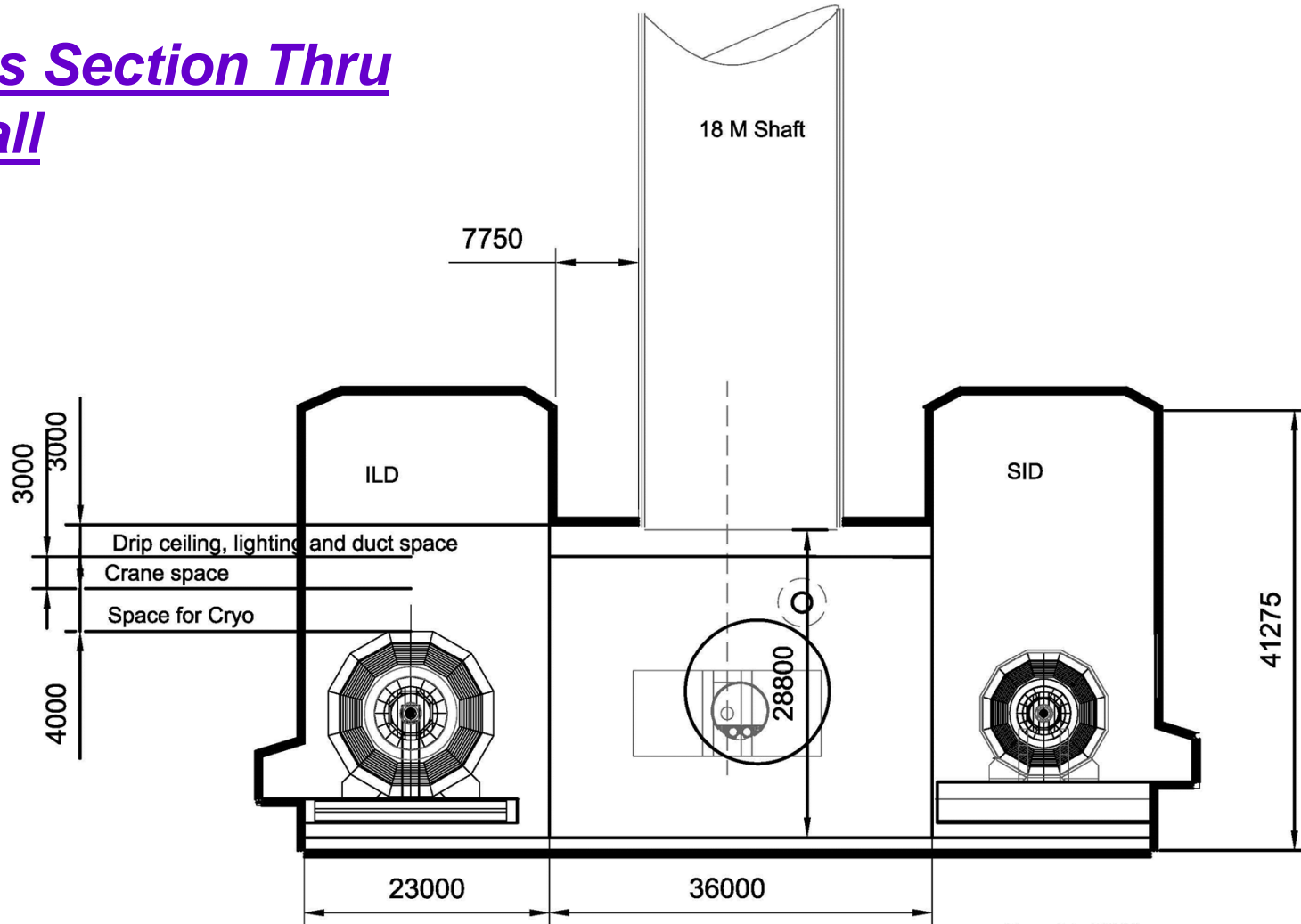


OFF-LINE AMERICAS

Nov. 30, 2011



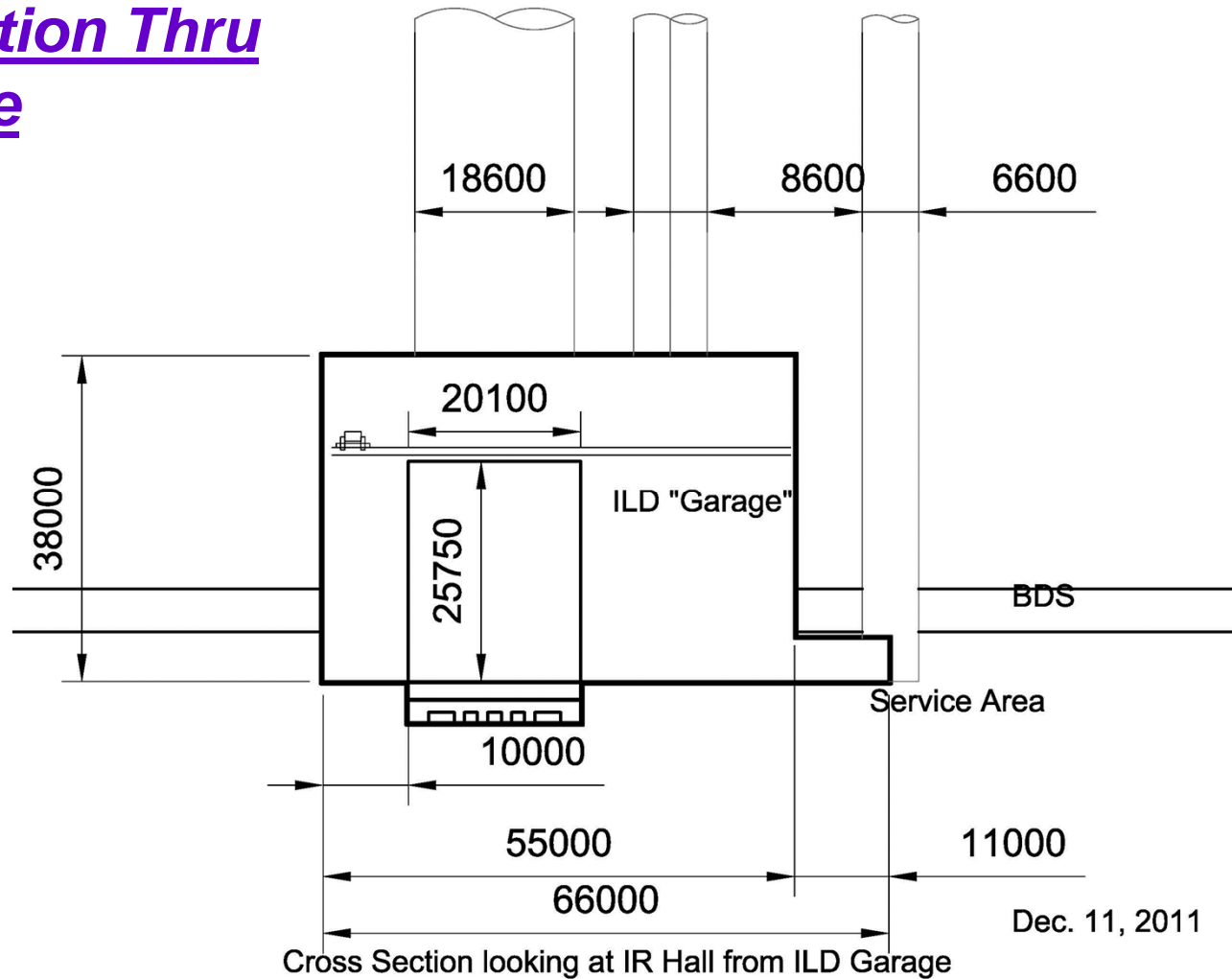
Cross Section Thru IR Hall

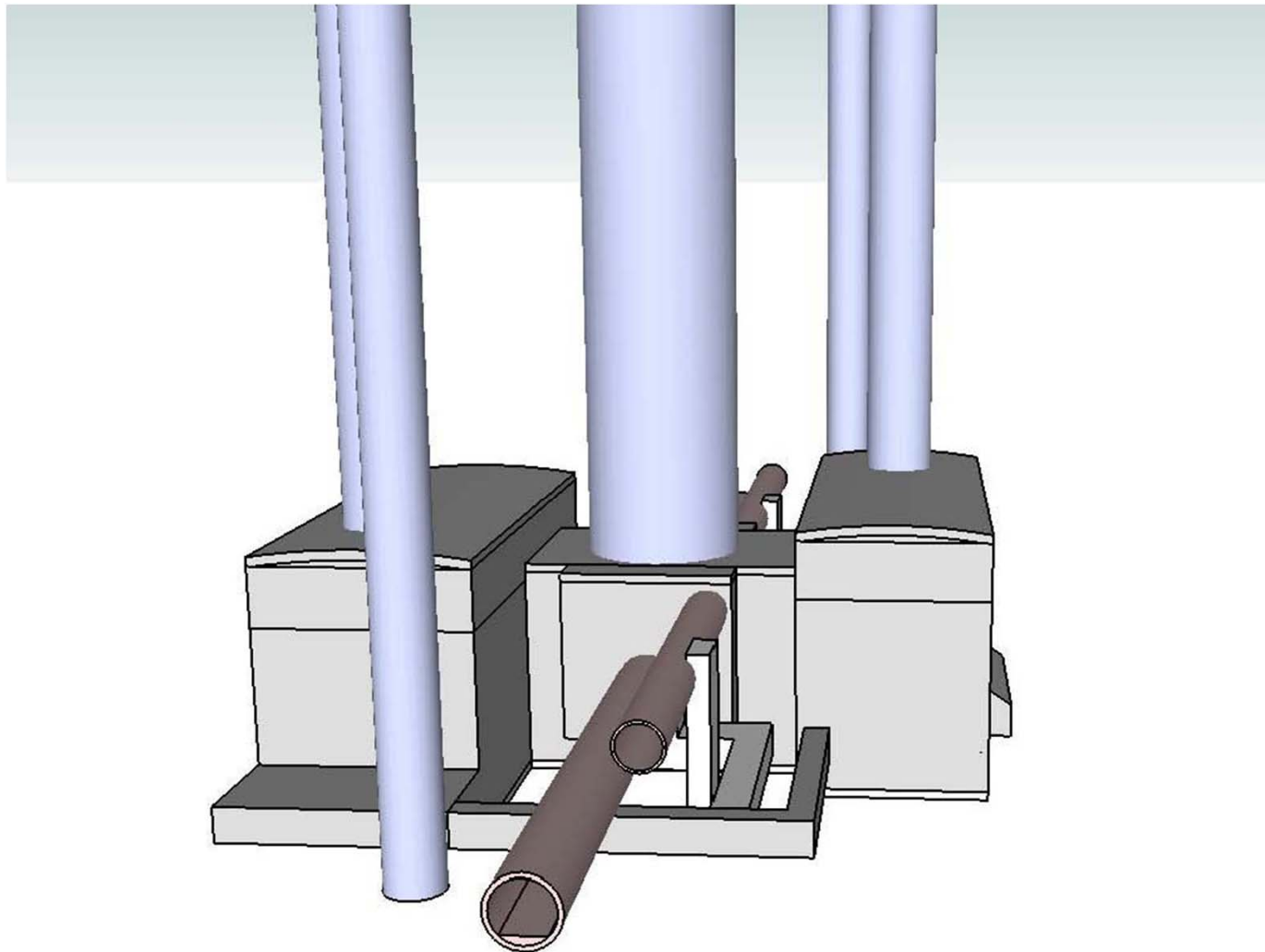


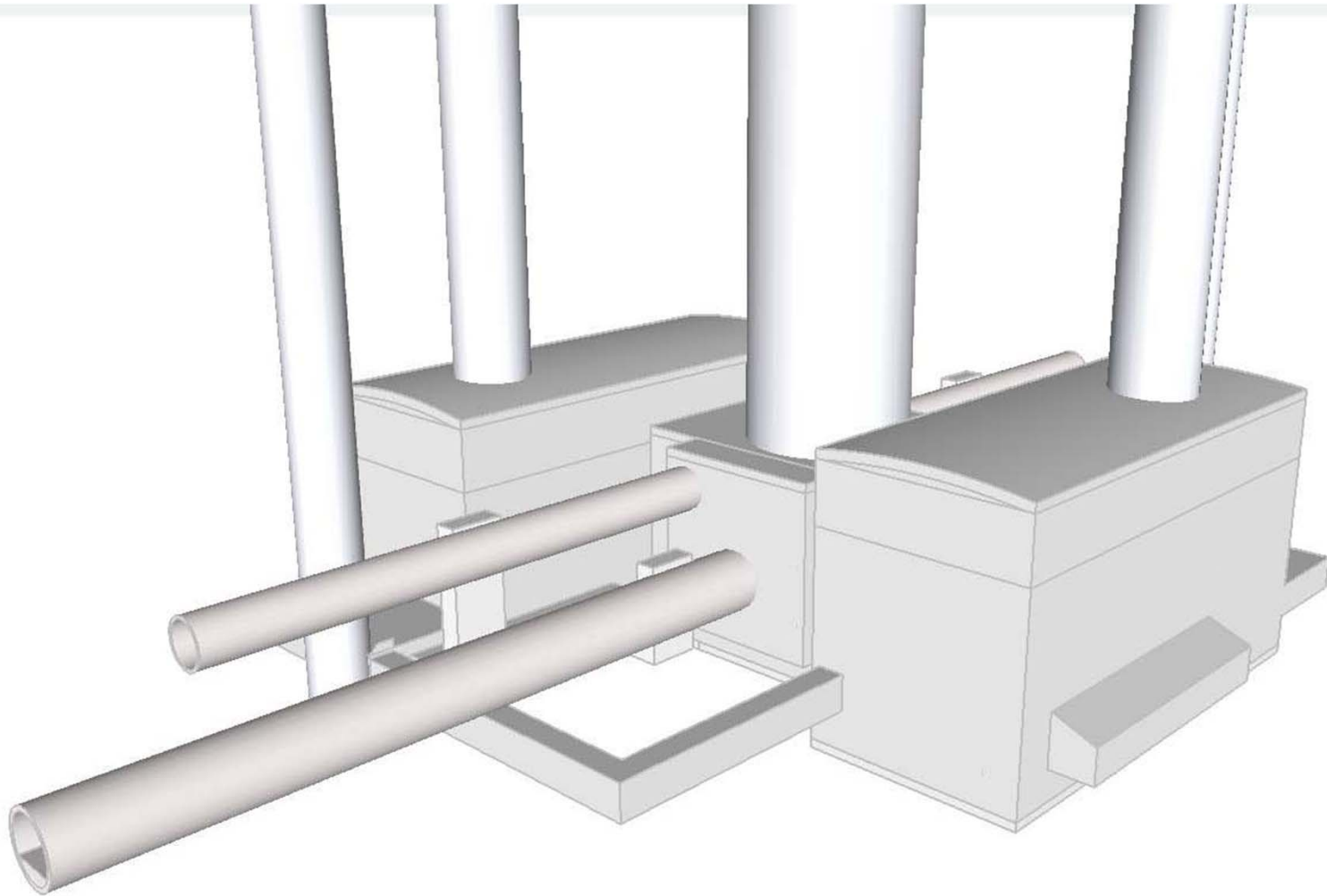
Cross Section Thru IR Hall

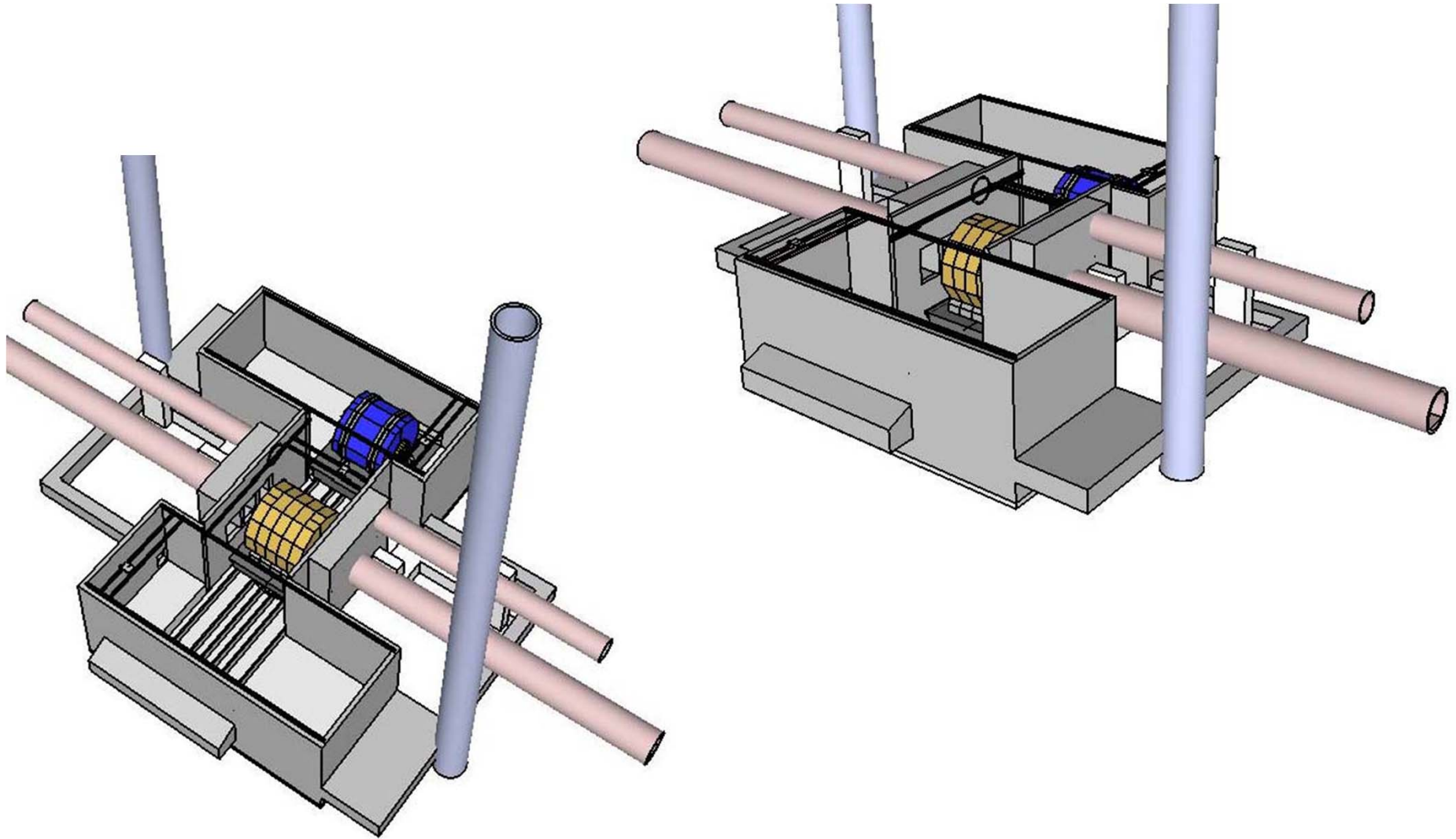


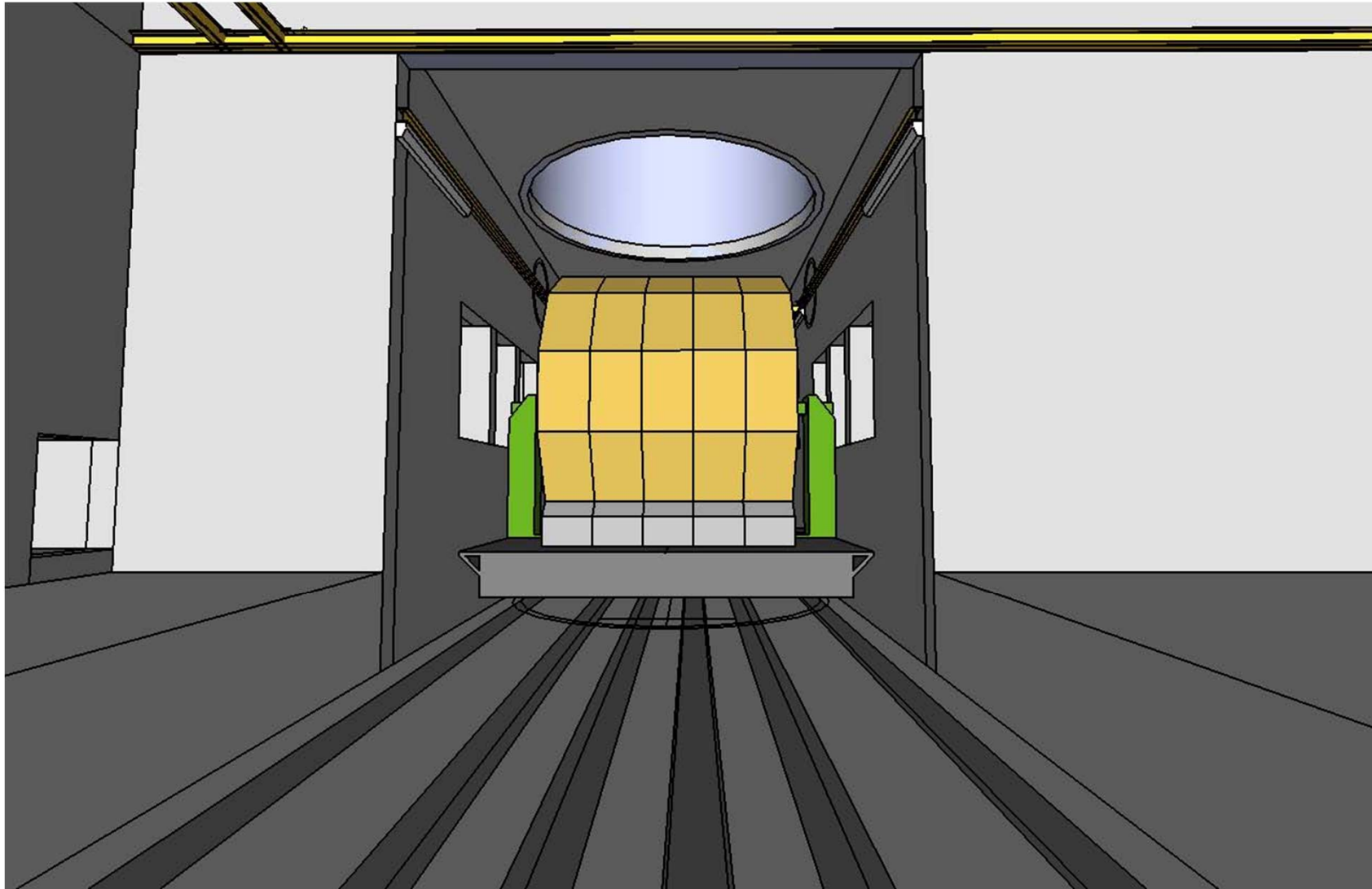
Cross Section Thru ILD Garage

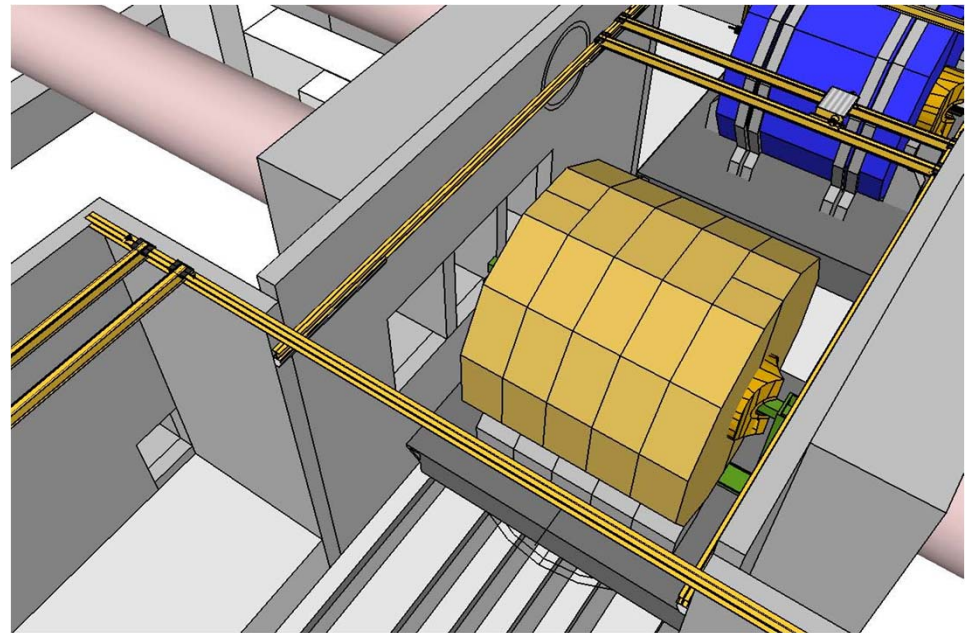
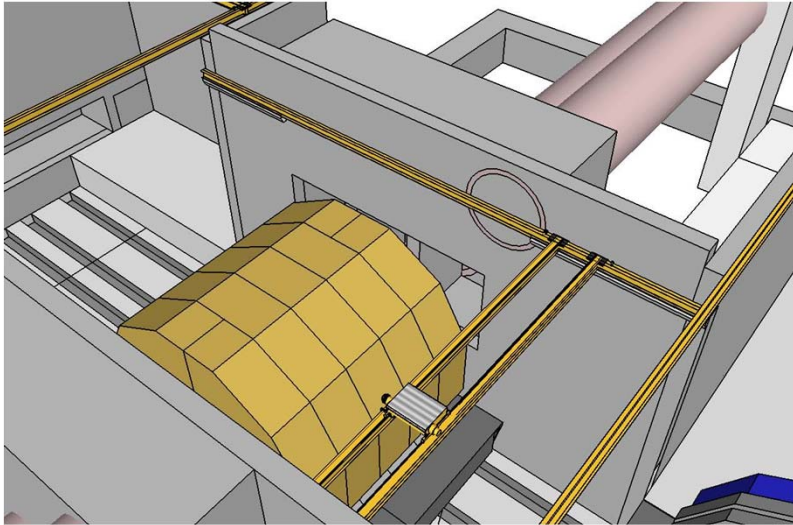


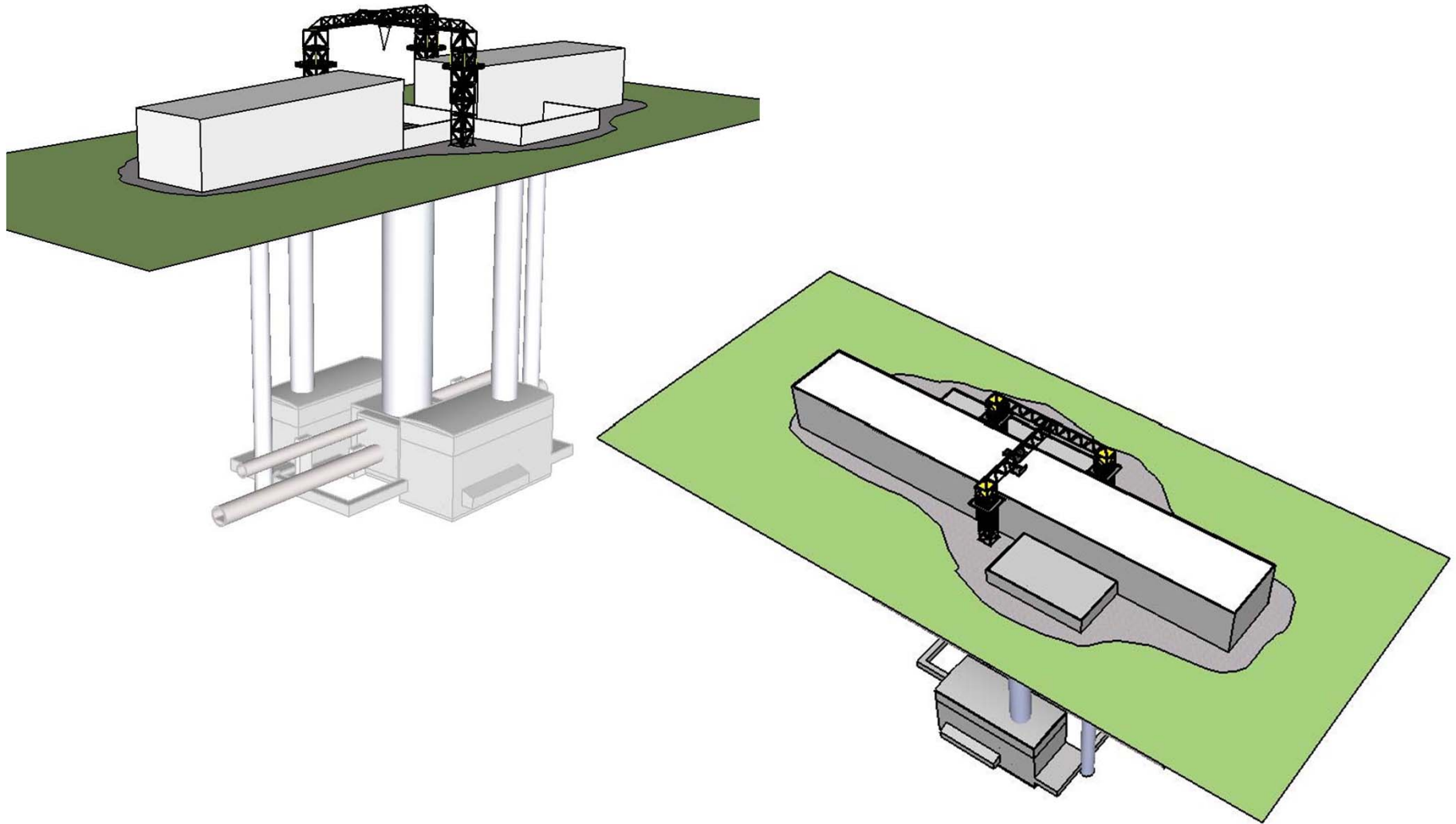






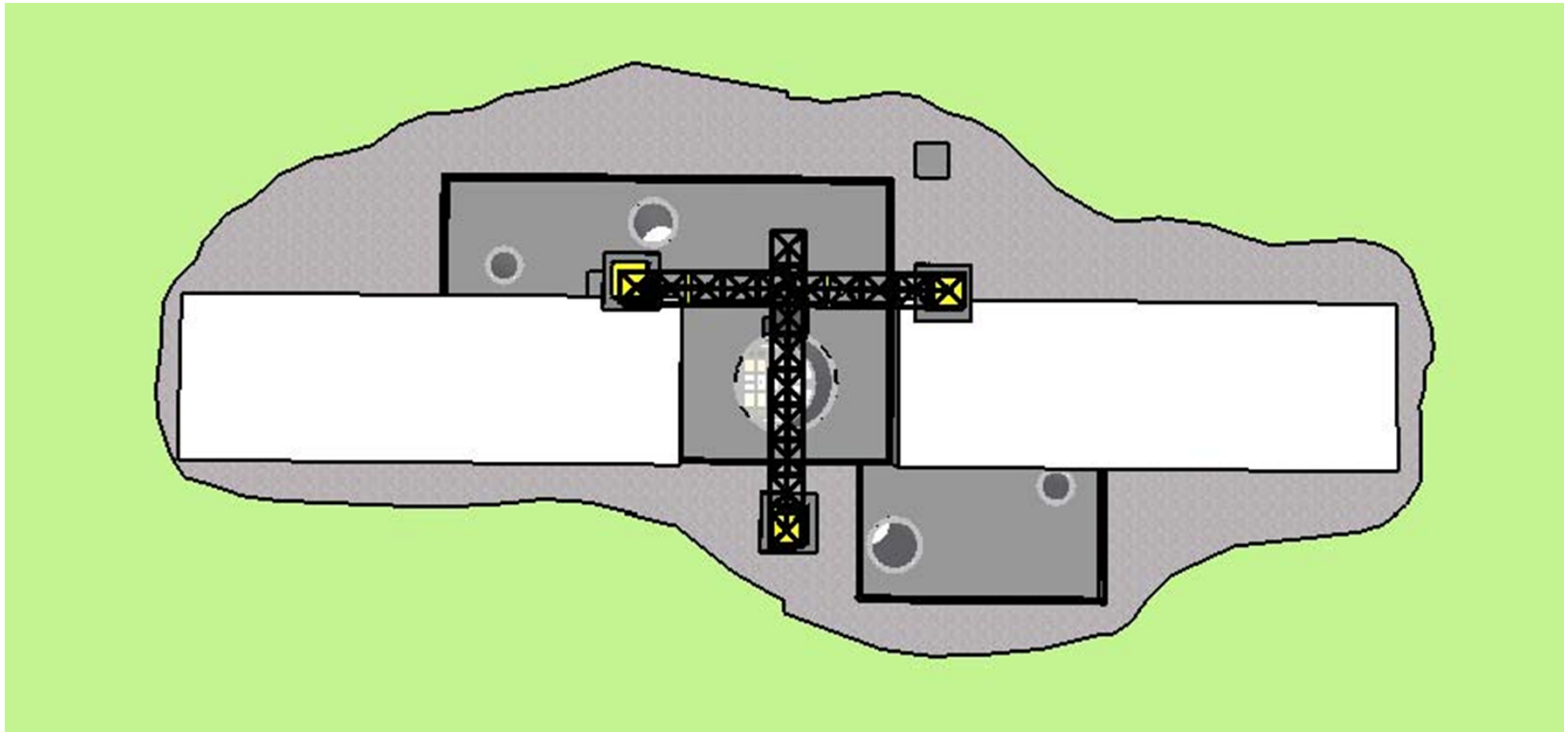


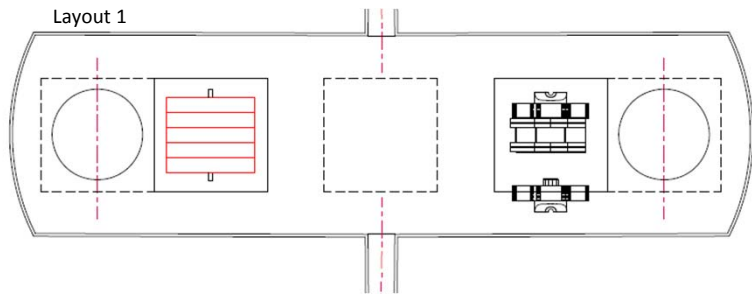






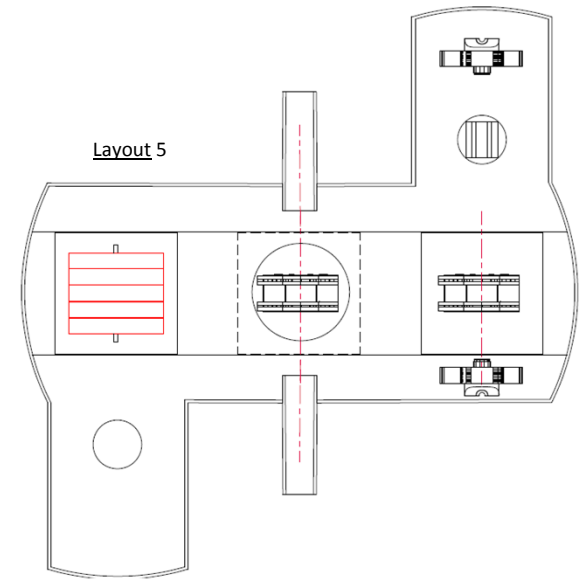
Building Plan



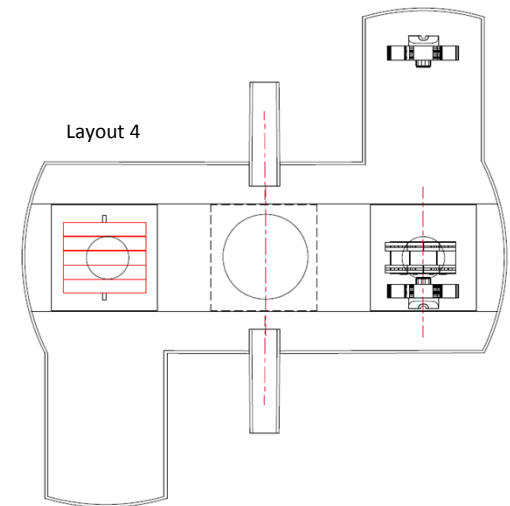
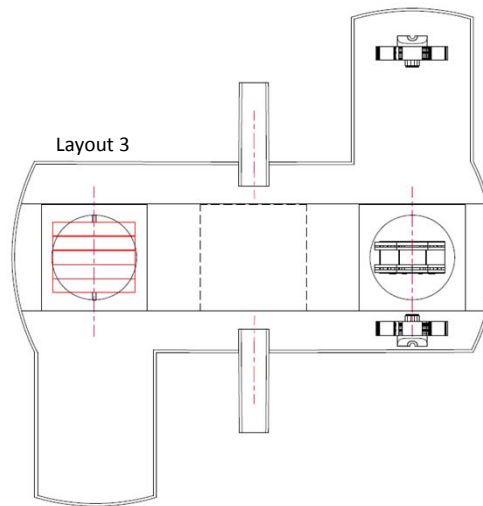
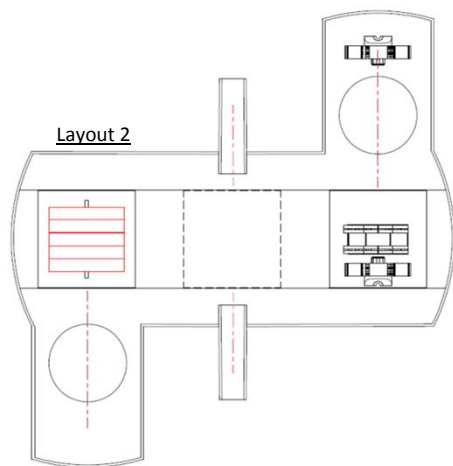


Rating Scale 1 ÷ 5 : 1=Low, 5=High

#	Requirement	Layout 1	Layout 2	Layout 3	Layout 4	Layout 5
1	Surface assembly of Magnet	1	4	3	3	4
2	Underground installation of Tracker, Calorimeters and Forwards	1	4	2	2	4
3	Number and Size of Cranes	3	3	3	2	4
4	Costs: Shafts and Halls size	4	2	2	2	3
5	Infrastructures	NA	NA	NA	NA	NA
6	Easy Maintenance, Smooth Operation	2	4	3	2	4
7	Beam Commissioning	1	1	1	4	4
8	Safety	2	4	2	2	4
Final Score		14	22	16	17	27



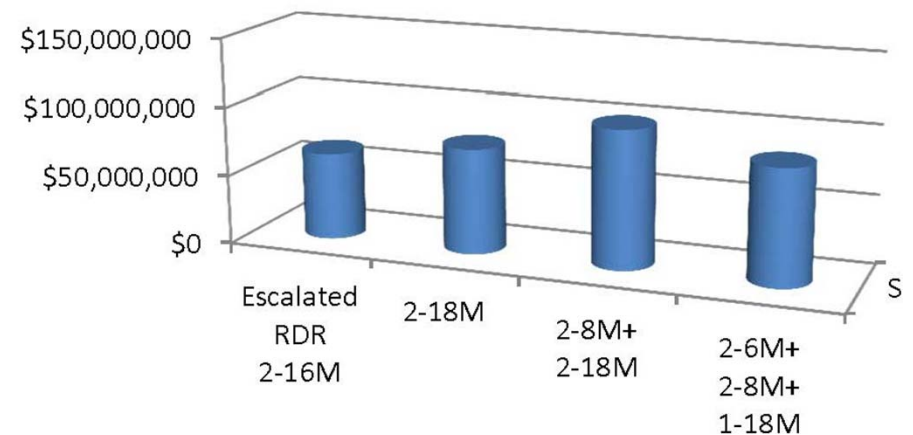
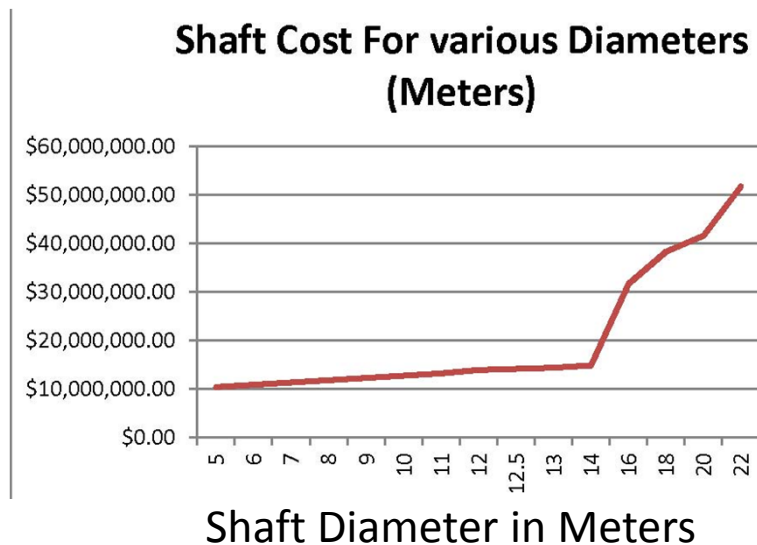
From Marco Oriunno
Granada Spain





Cost of Shaft Excavation

- **Includes excavation, lining, pre-grouting**
 - **Costs are for projected depth**
 - **FY 12 dollars**
- **Cost of impact on crown not included**
 - **Crown support cost may increase due to stress concentration**





Detector Hall Excavation

- *RDR volume = 116,167 CM*
- *Hall as shown = 121, 940 CM*

Cranes and Platforms

- *ILD and SID Platforms in Hall*
- *Additional Crane in Hall*
 - *Two 40 Tons, one in each Garage areas*
 - *Plus one XX Tons in IR Region*
- *Additional Cranes in Building*
 - *4000 Ton Main Hoist*
 - *Two 400 Ton. One in each Assembly Building*
 - *Plus XX Ton over Cryostat Shaft*



Catwalks and Access

- *All platforms and stairs/ladders for the Detector is provided by each detector group*
- *CFS will provide catwalk in IR Hall and access to cranes*

Finishes (unless needed for structural support)

- **Floors**
 - **Cast in Place Concrete, Steel Troweled Finish**
- **Walls**
 - **Formed Cast in Place Concrete in IR Hall**
 - **Shotcrete in Garage Spaces**
- **Roofs**
 - **Shotcrete, Rolling Drip Ceilings at shafts**

