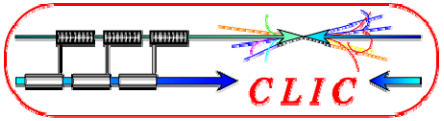
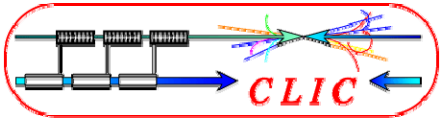


CLIC / ILC Collaboration Meeting

8 Feb 2008

Civil Engineering and Conventional Facilities

J.Osborne (CERN), C. Hauviller (CERN), V. Kuchler (Fermilab), A. Enomoto (KEK), W.Bialowons (DESY)



Introduction

- A video conference meeting was held on 29 Jan 08 to prepare for this meeting
- Basis of our discussions have been technically driven rather via resources !
- We have looked at civil works and other CFS activities (TS) where the projects are similar and could possibly share resources

Civil Engineering and Conventional Facilities

10:15-10:45	Introduction of CFS works for CLIC (J.Osborne)	Bld 61-1 Salle C
10:45-11:15	**Joint with BDS & Detectors** : Interaction Region	Bld 61-1 Salle B
11:15-11:30	Model for HVAC and Process Water	Bld 61-1 Salle C
11:30-11:45	Model for Developing Criteria	Bld 61-1 Salle C
11:45-12:15	Additional Topics	Bld 61-1 Salle C

Exit and Egress Studies
Model to Develop Electrical Design
Model to Develop Underground Space Utilization
Model to Develop Overall Project Schedules
(Including Environmental Needs)

Civil Engineering

- CE is a cost driver for both projects so essential that general layouts are kept up to date to allow costing and construction planning to be updated

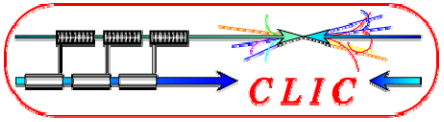
- Any Civil costing or planning studies are directly applicable to both projects eg TBM techniques, rates etc.

- Shallow solution could be studied for ILC & CLIC

  (as an example cut & cover studies for CLIC Injectors provide input toward ILC near surface alternatives)

- One v Two tunnel configurations (siting critical, safety regulations)

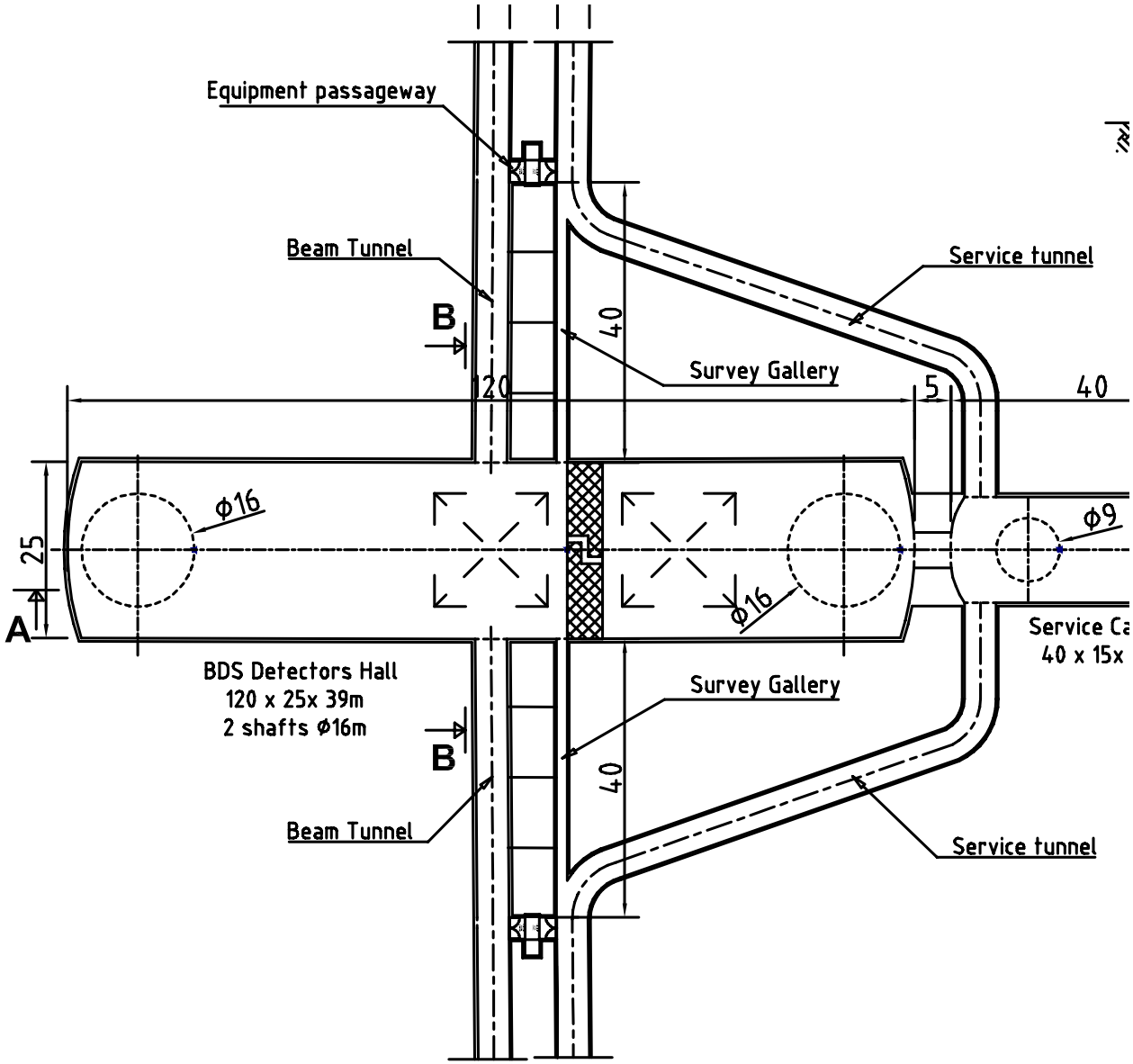
- Environmental aspects are very similar for both projects eg with or without cooling towers, shaft locations, radiation, impact studies etc.

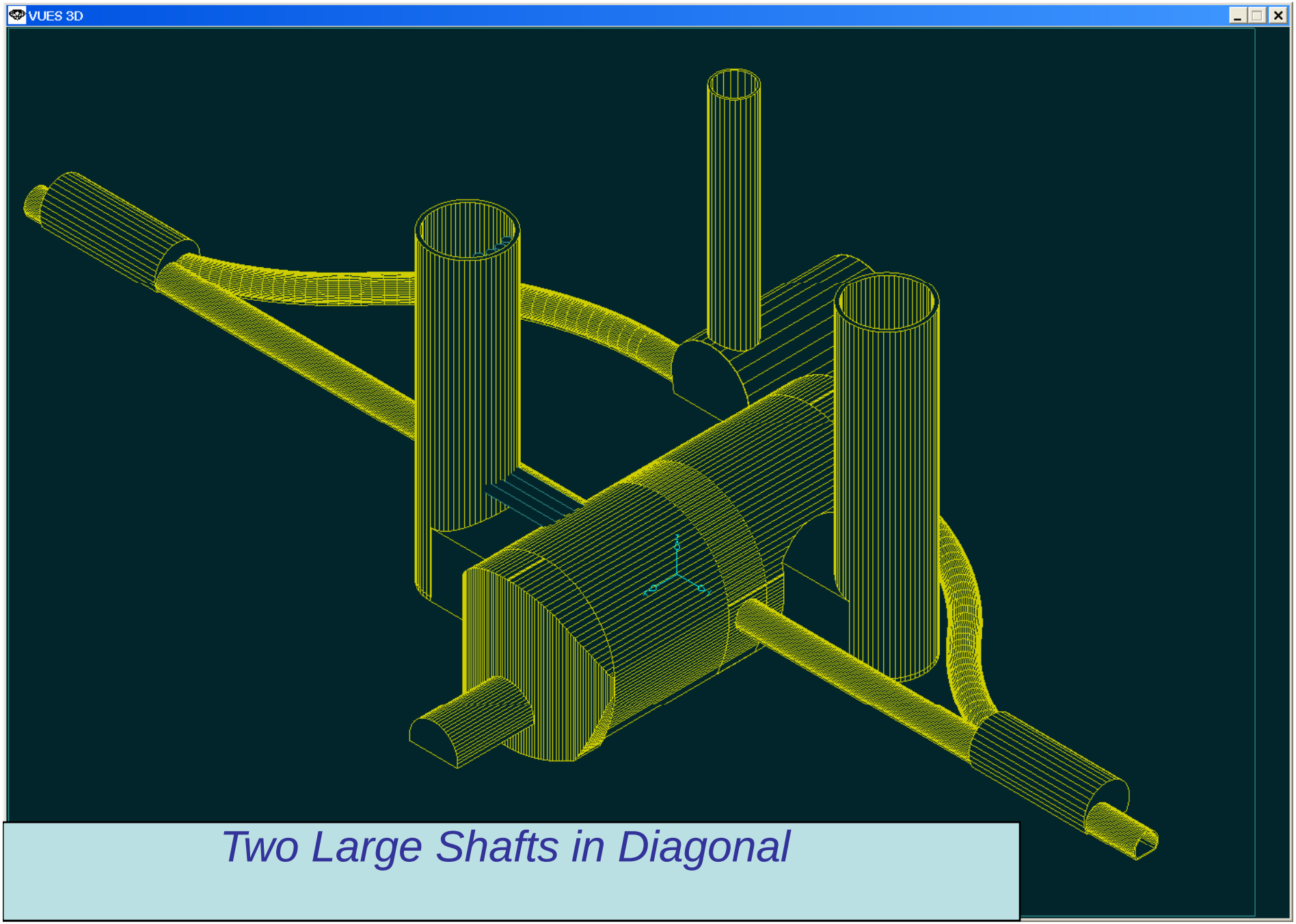


Interaction Region

- ILC RDR and CLIC Interaction Regions are identical
- CMS philosophy has been considered, recent LHC experience gained should not be lost
- Two detectors are moved using ‘Push-Pull’ concept, very similar to the CMS concrete shaft cover
- Useful dialogue has already started on optimising the IR layout and services and developing common criteria
- Workshop at IRENG07 in SLAC in September 07

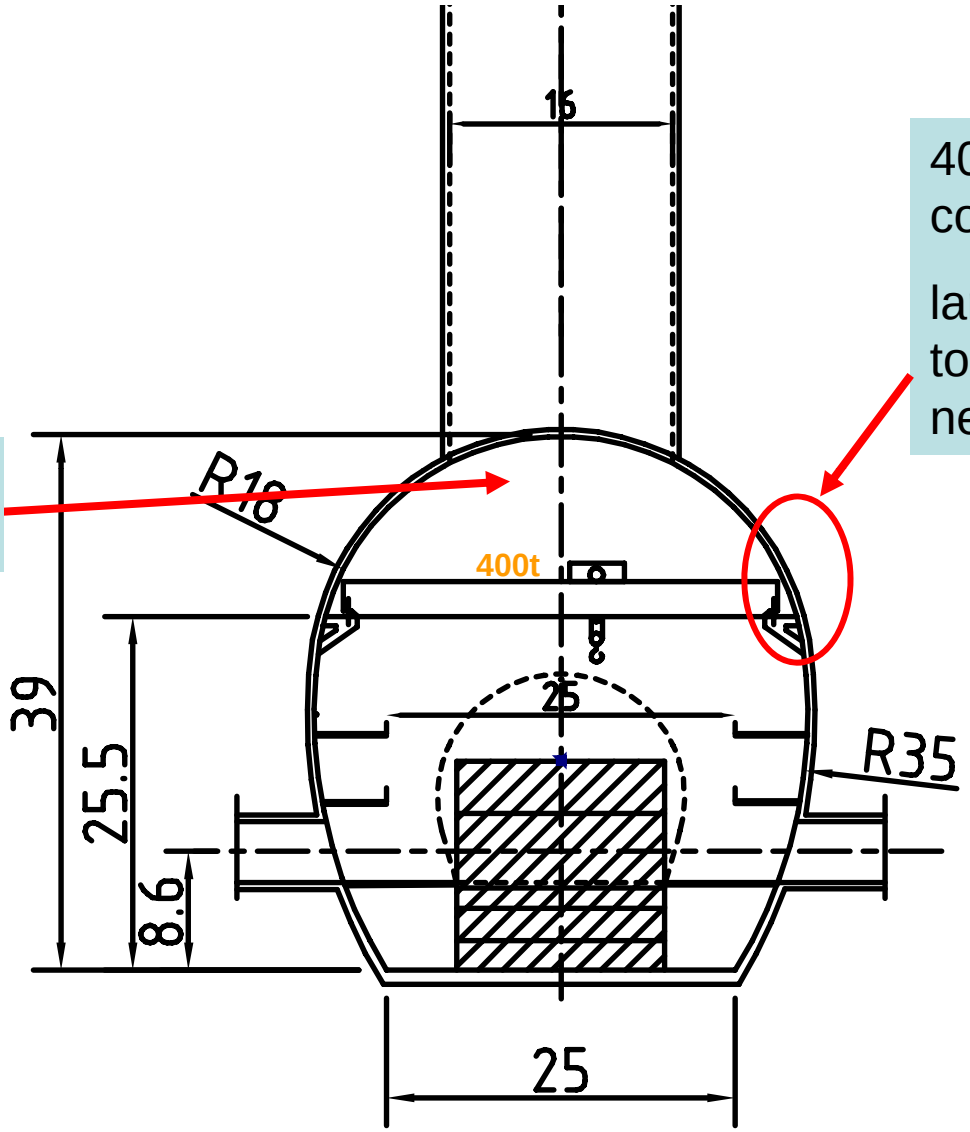
ILC RDR Baseline Layouts for Interaction Region





Two Large Shafts in Diagonal

RDR Baseline for IR cavern

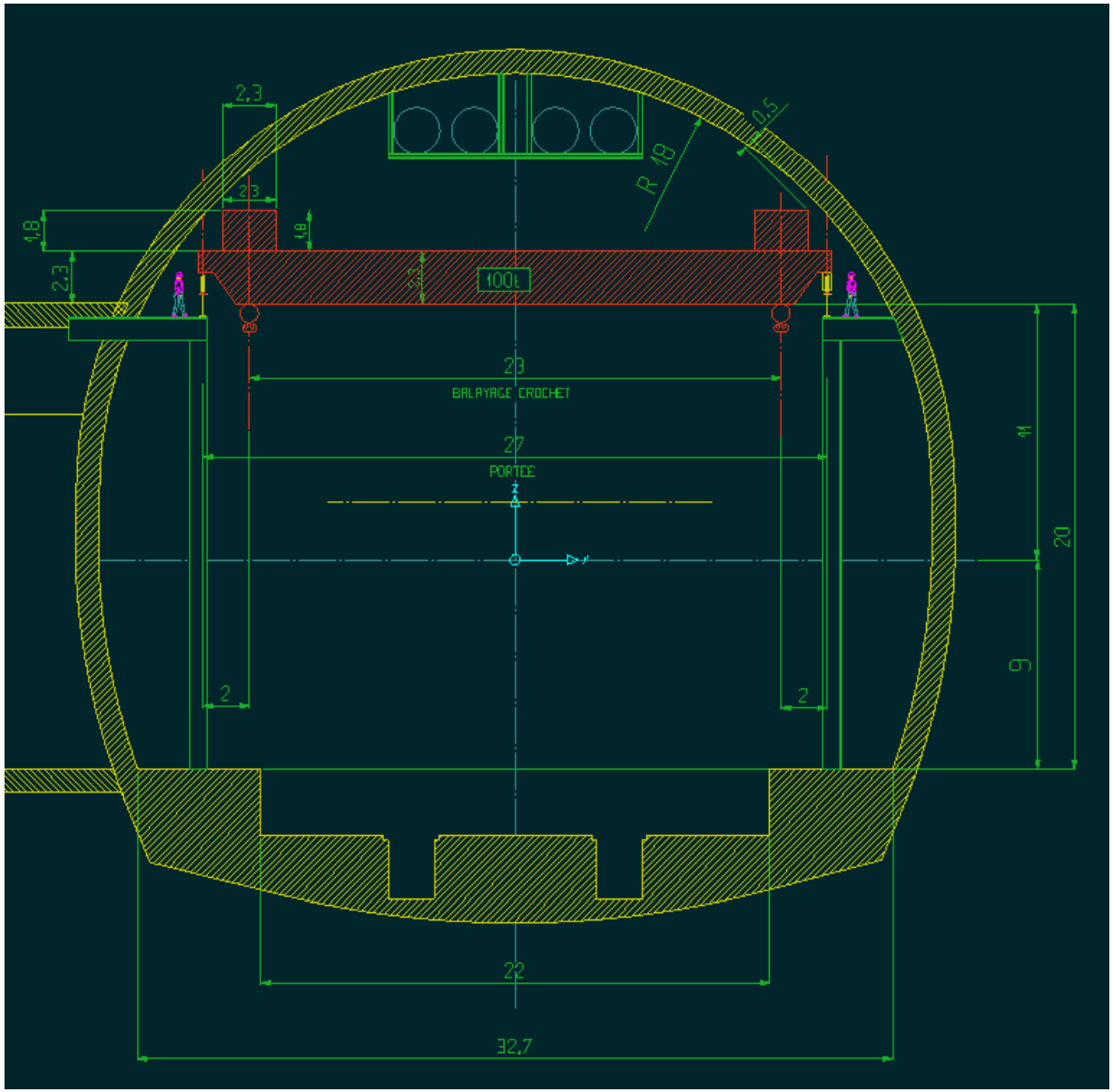


400 ton gantry crane is the cost driver

large steel columns down to floor level would be needed

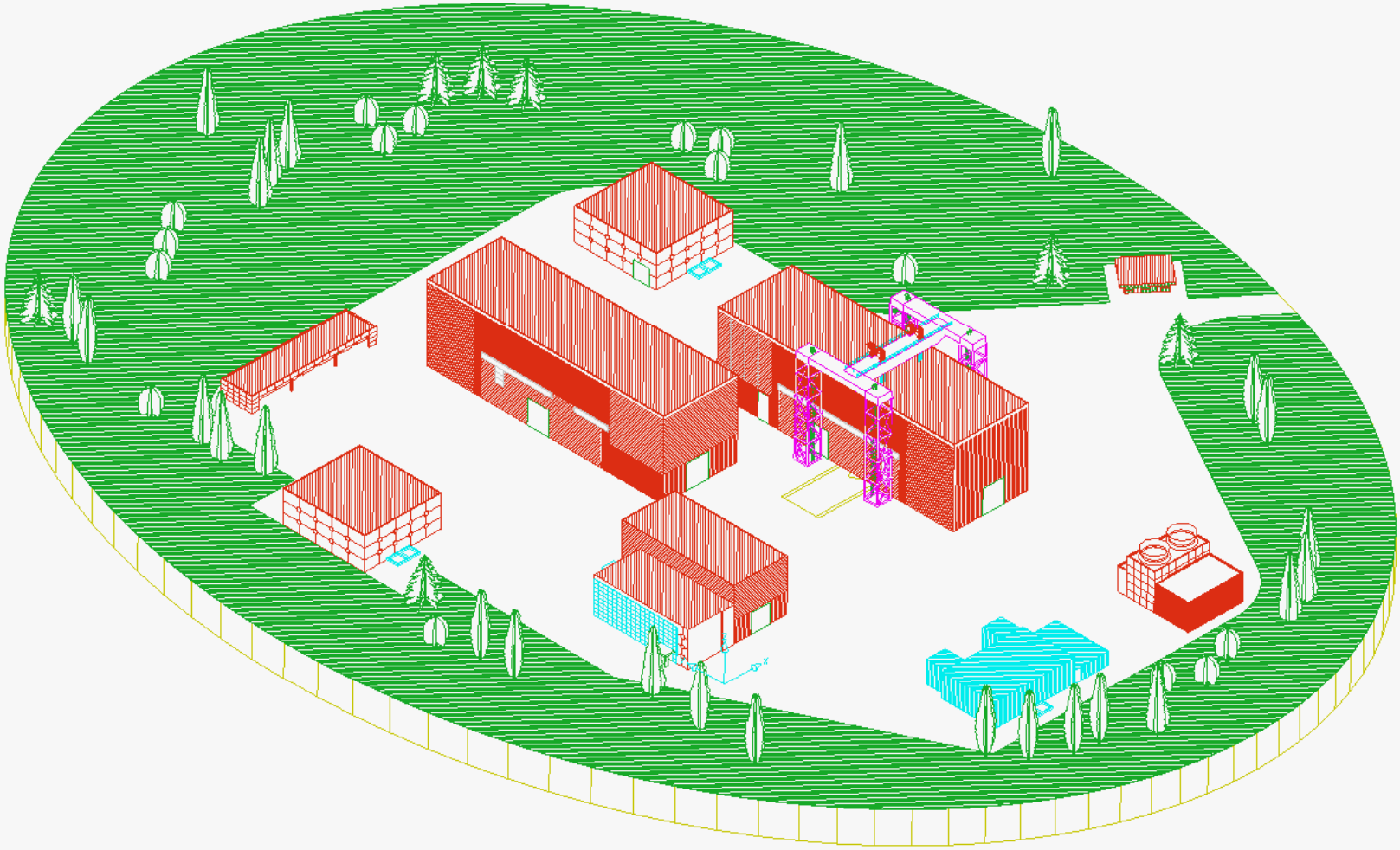
Lot of lost space

Proposed new cross section



VUES 3D

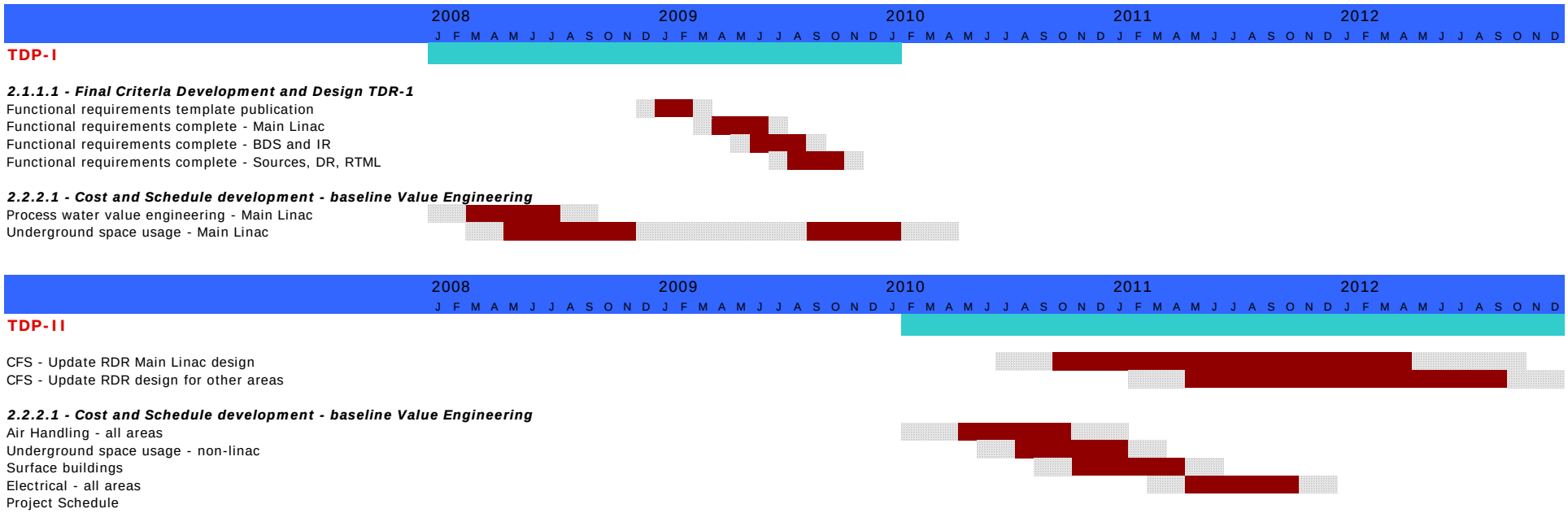
Possible New Surface Layout for Experimental Area with 2 smaller, surface assembly halls studied, very similar infrastructure will be needed for CLIC & ILC



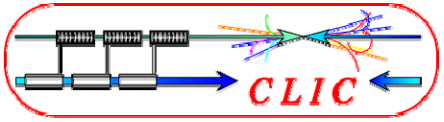
Other CFS Areas

- Rather than simply compare the two projects to identify differences, models could be produced to develop criteria for :
  - HVAC - (strongly linked to egress/exit studies)
  - Cooling - **(KEK may have extra resources for this item)**
  - Perhaps CLIC could review ILC studies for some of these issues
  - Underground Space utilisation
  - Other areas :Electrical, Handling

Criteria Development



John Carwardine 6 Feb 2008



Value Engineering

- CFS is one the biggest cost drivers
- Value Engineering exercises may take place in 2008 for various disciplines
- Even if resources don’t allow detailed studies, perhaps specialists could be invited to take part in common workshops or Value Engineering exercises

Conclusions

- Interaction Area is obvious area where resources can be shared
- Civil Engineering models can be worked on ‘in parallel’ for ILC & CLIC.
- Other possible areas of collaboration in the TS area : Ventilation, Electricity, Handling….
- Resources to be defined, if limited, then perhaps Joint ‘Value Engineering’ exercises could be the way forward, rather than full blown studies…..
- First milestone : At Sendai meeting develop deliverables for 2008 for ILC Value Engineering and ILC/CLIC common efforts
- Identify link persons for highlighted areas
- CFS Video meetings will continue with possible CLIC input on specific subjects