



LINEAR COLLIDER COLLABORATION

Designing the world's next great particle accelerator

SiD and MDI Meeting
CR-3 Implementation Plans and Intro to CR-4

V Kuchler
13 January, 2015



Overview

- **ILC Change Management Board**
- **Change Request 3 Implementation Plan**
- **Change Request 4**



Change Management Board (CMB)

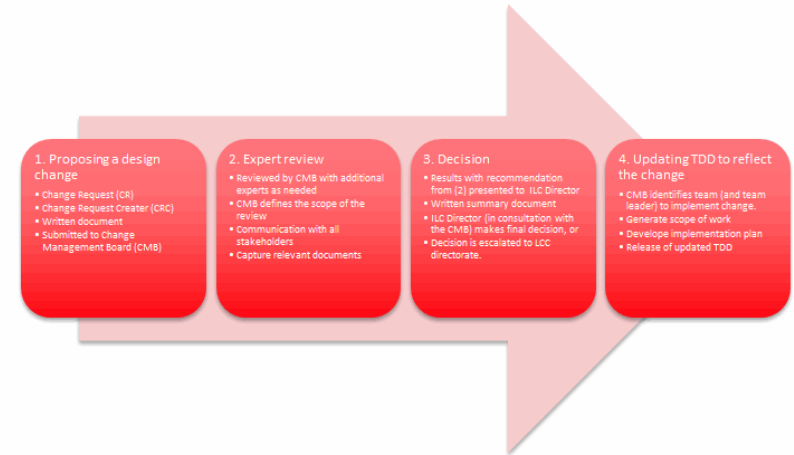
Change Management for the ILC

Release Version 2
26.09.2014

Prepared by: B. List, M. Harrison, N. Walker

Proposed Change Management process for the LCC phase

Overview



At a practical level, we can think of the evolving design process as essentially having four important steps:

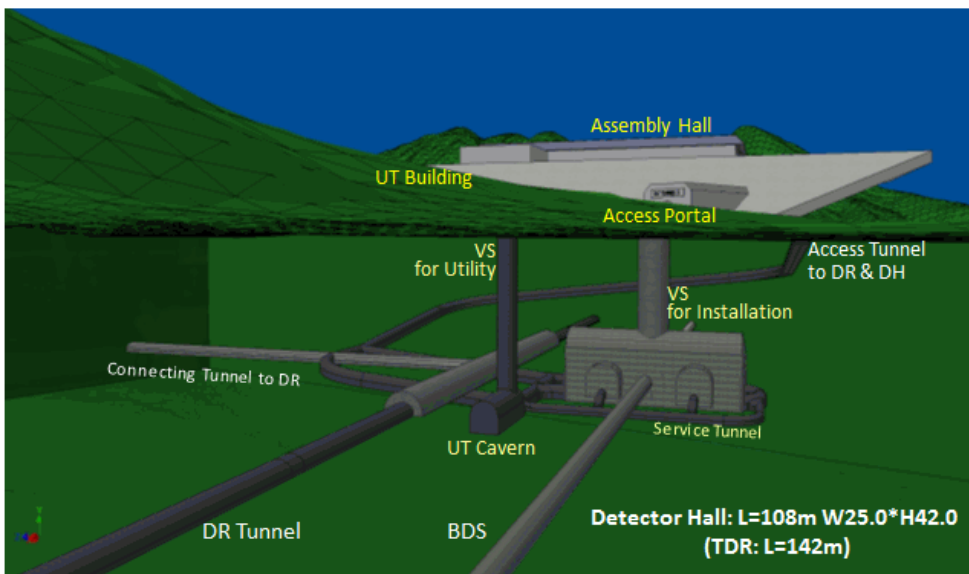
1. Formally capturing the need for a design change
2. Communicating, discussing and reviewing the merits of the proposed modifications with *all stakeholders* affected by the proposals
3. Making a decision based on all available input
4. In the event of the proposals being accepted, updating all impacted technical design documentation and communicating those updates to all stakeholders





Change Request - 3

Hybrid A' Solution Image



CHANGE REQUEST NO. ILC-CR-000N

EDMS No: **D0000000xxxxxxx**

Created: 16-09-2014

Last modified: 16-09-2014

DETECTOR HALL WITH VERTICAL SHAFT ACCESS

Change the underground experimental hall to a design that has a large vertical shaft and allows for the “CMS style” assembly of the detectors.

RATIONALE

Introduction

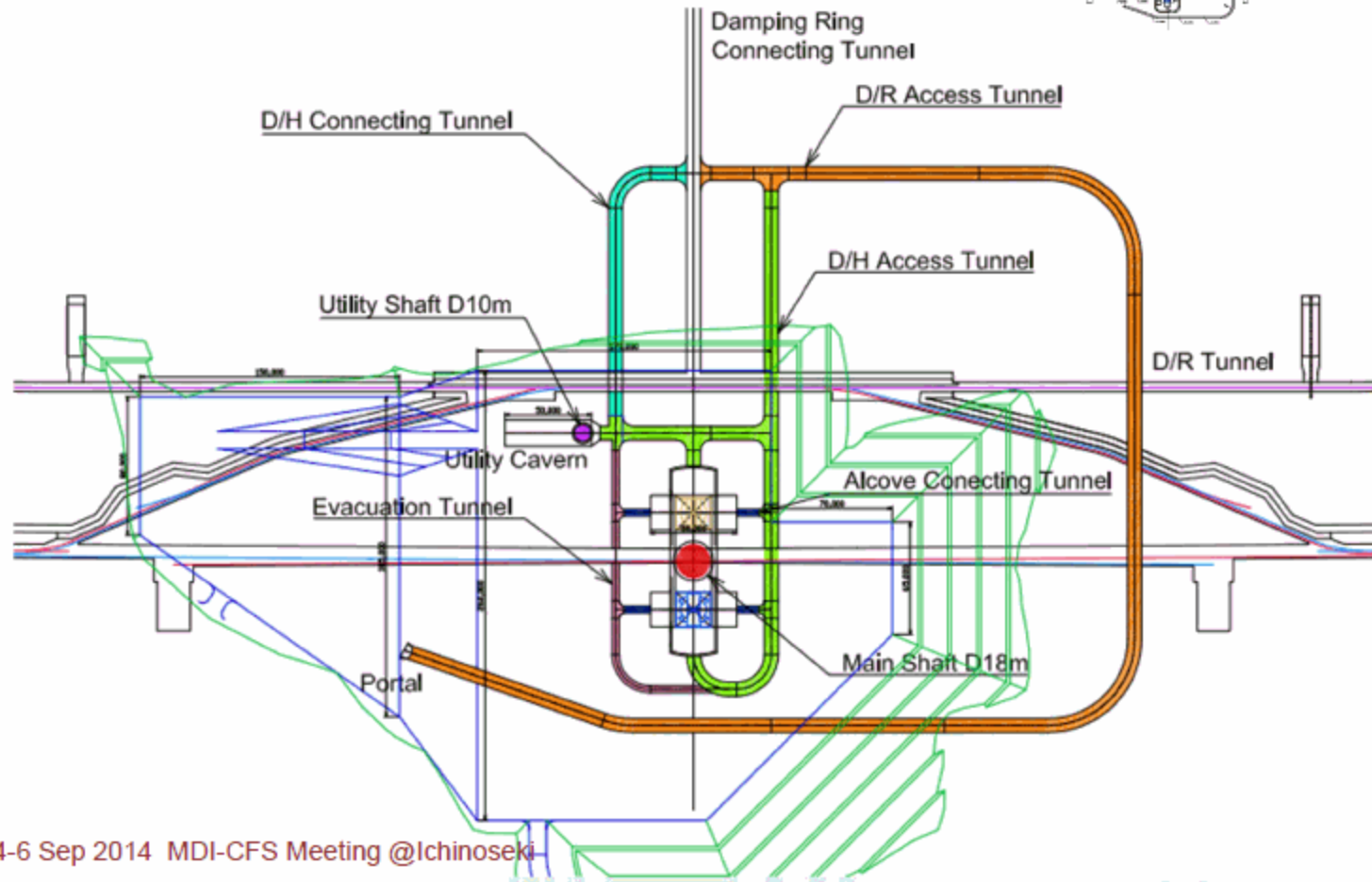
The baseline (TDR) design of the interaction region (IR) for the ILD in Japan foresees an underground experimental hall that can be accessed only via a horizontal O(1km) long tunnel with ~1 m diameter and a slope of O(7%). This has been defined before the Kitakami site has been selected for the ILC in Japan under the assumption that any Japanese site would be in a mountainous area that does not allow to have an assembly and maintenance area directly on top of the underground IR. The Kitakami site, however, allows to find a position for the IR that has a reasonably flat area above the IR and where a vertical shaft of O(100m) length could be built to access the underground areas.



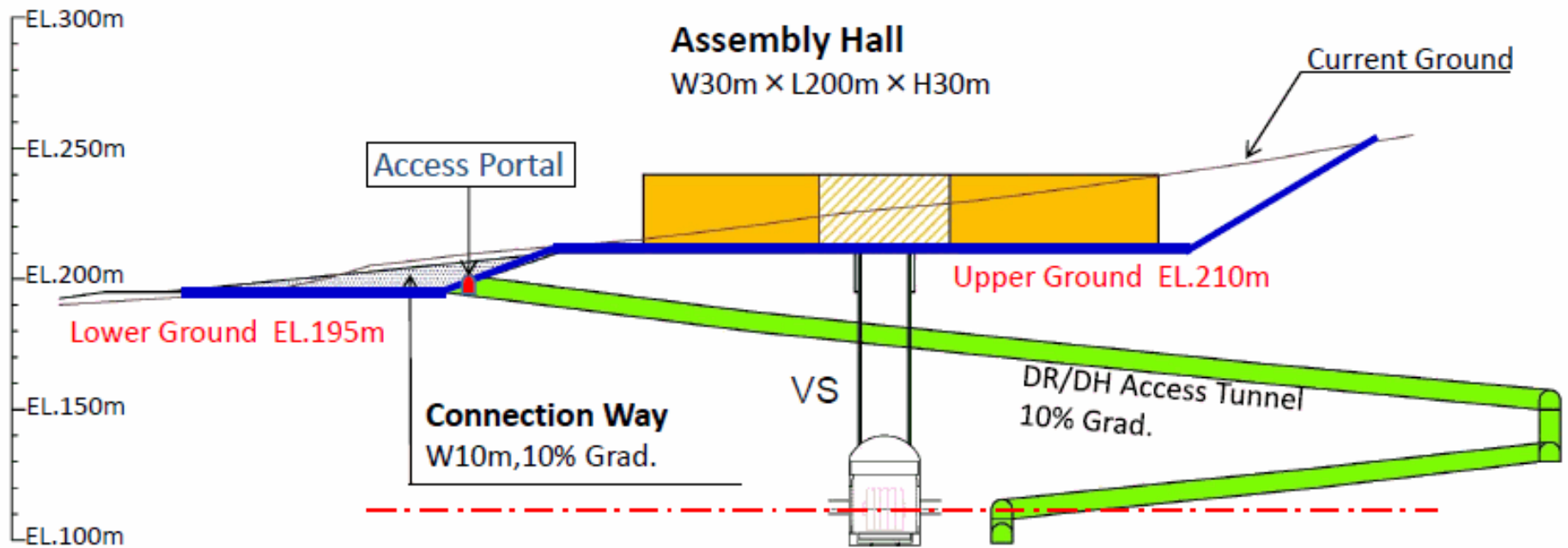
CR-3 Implementation Plan

- **Implementation Team Named by CMB**
 - V Kuchler, K Buesser, T Markewicz, M Miyahara, J List, B List, T Sanuki
- **There are Complicating Factors**
 - TDR Contains Existing Drawings, Text and Cost Estimates
 - The Scope of CR-3 Includes a Change in the Detector Hall Design and Access as Well as a Change of Location
 - The Site has not yet Been “Officially Selected” by the Japanese Government as the Host Site
 - The Current Design will be Subject to More Changes Before a Complete Site Specific Design is Completed
 - The Change in the Detector Hall Location Will Affect One of More of the Horizontal Access Entry Locations and Overall Tunnel Lengths
 - How to Properly Document the Effect of the Approved Change is the Challenge at Hand

Hybrid-A' General layout

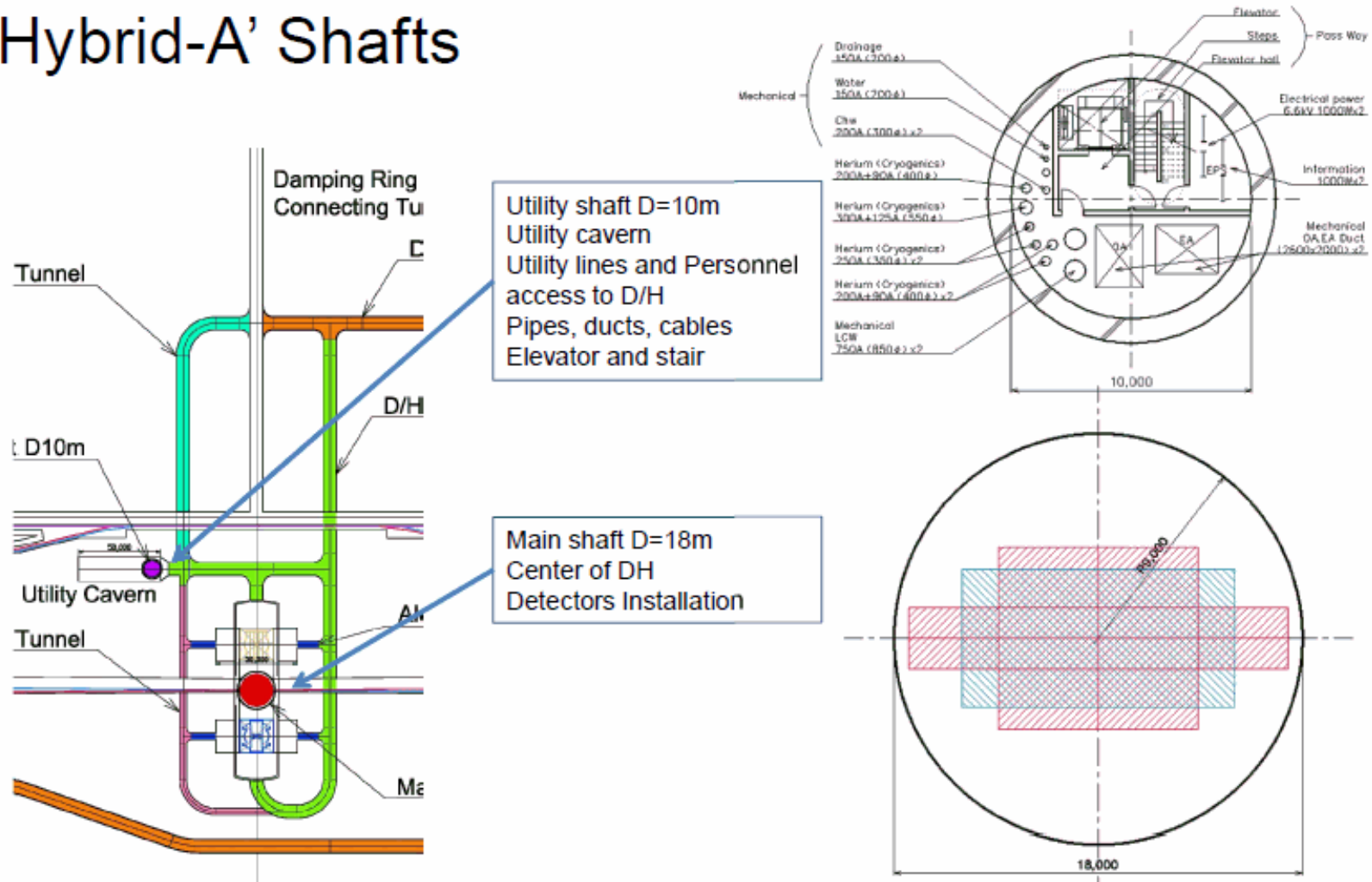


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Longitudinal section

Hybrid-A' Shafts

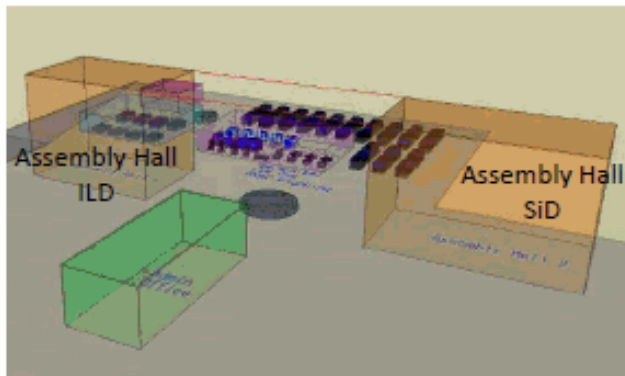
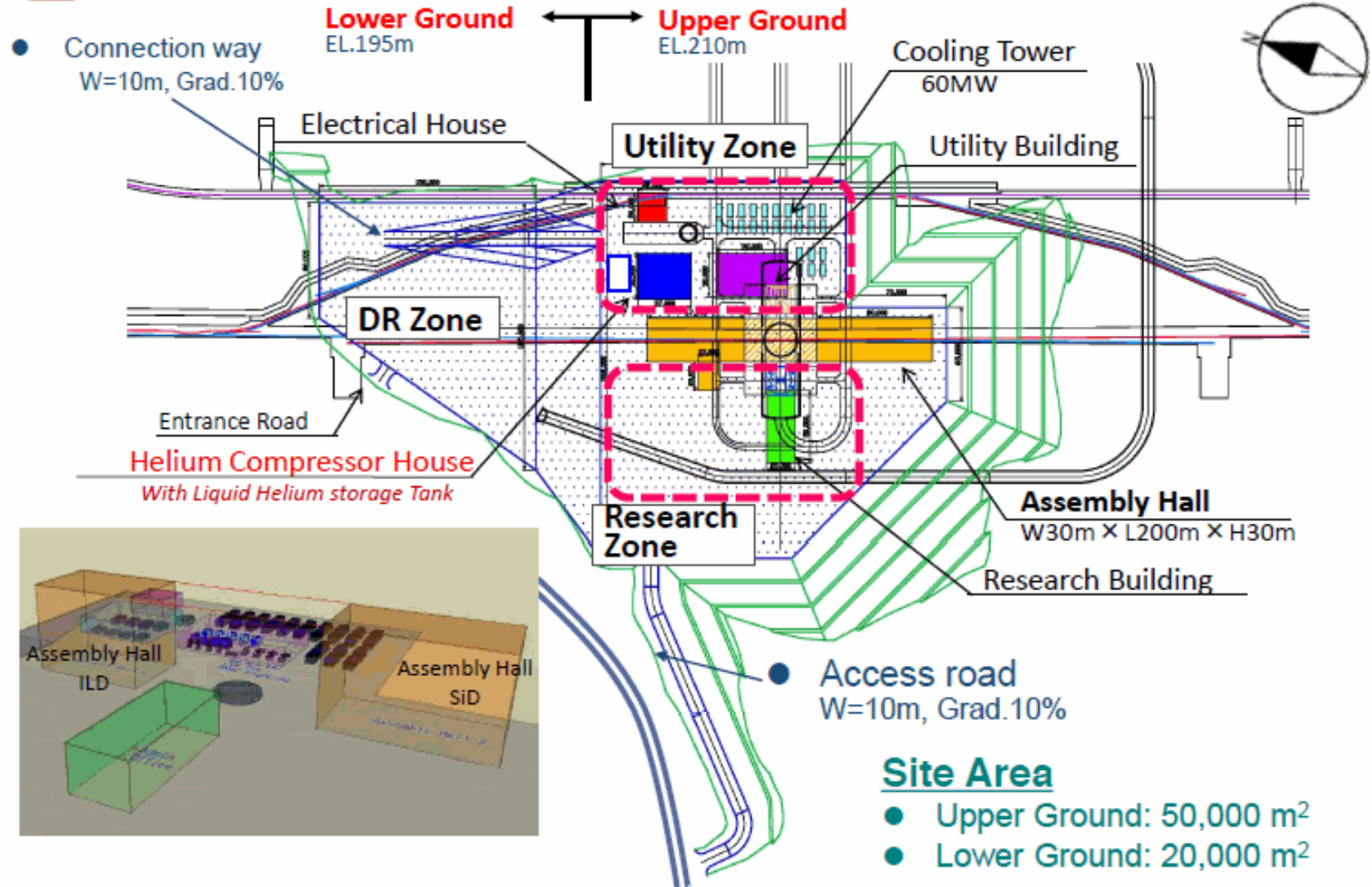


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Facility Arrangement Plan







CR-3 Implementation Plan cont.

- **The Focus will be to Limit the Effort to the Detector Hall Area Only**
- **B List has Put Together a List of Affected Existing Documents**
- **These will Be Reviewed and an Evaluation of the Scope and Resources Needed will be Developed**
- **This is the First Change Request that has been Approved So We are Developing a Process**
- **A Method to Capture the Correct Amount of Documentation in EDMS will be Developed**

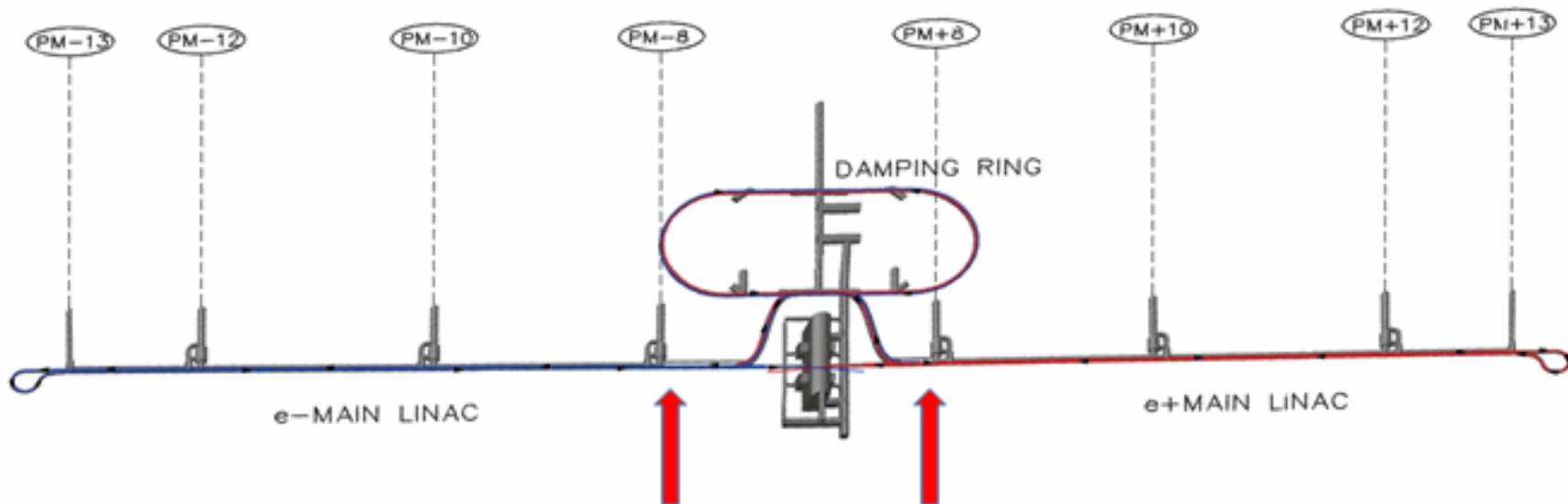


Change Request 4

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CHANGE REQUEST NO. ILC-CR-0004	EDMS No: D*01092915	Created: 18-12-2014		
		Last modified: 18-12-2014		
EXENSION OF THE ELECTRON AND POSITRON MAIN LINAC TUNNELS BY APPROXIMATELY 1.5 KM				
It is proposed to extend both the electron and positron main linac tunnels by approximately 1.5 km (total machine length approximately 3 km). For the baseline the additional tunnel length will be filled with simple passive beam transport lines.				

Where should the extra linac tunnel be inserted?

- High energy ends of linacs
 - ✓ Cryogenics station at PM+8 can be reinforced later
 - ✓ Additional access tunnel not needed





Summary

- **CR-3 has been Approved**
- **A Method for Documenting the Change and Collecting the Data in EDMS is Currently Being Developed**
- **CR-4 has just been Submitted**
- **Further Discussion of CR-4 will Take Place at the Next AD&I Meeting at the End of January**
- **It is Likely that CR-4 will Initially Focus Only on the Civil Construction Impact and Not a Technical Review of How the Space will be Utilized**