

# SNOLAB Facility Status



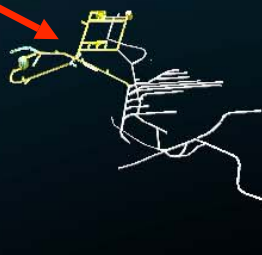
Fraser Duncan  
SNOLAB Workshop  
27 August 2009

Surface Facility

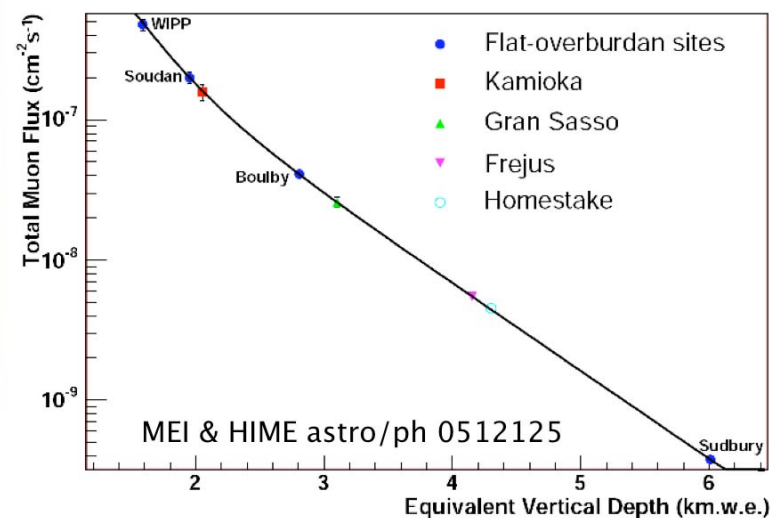


2km  
overburden  
(6000mwe)

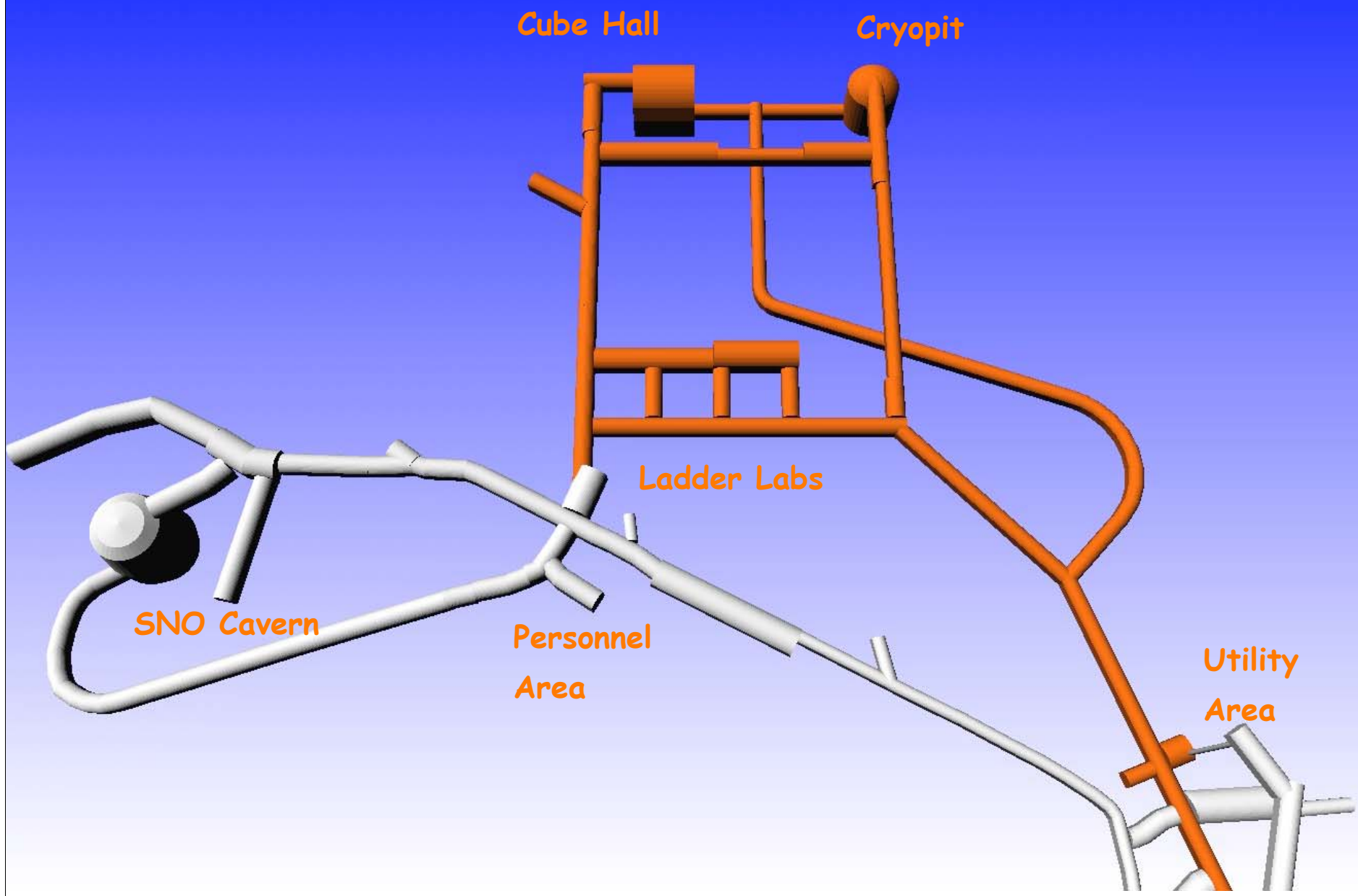
Underground Laboratory



Muon Flux = 0.27/m<sup>2</sup>/day



# The SNOLAB Expansion

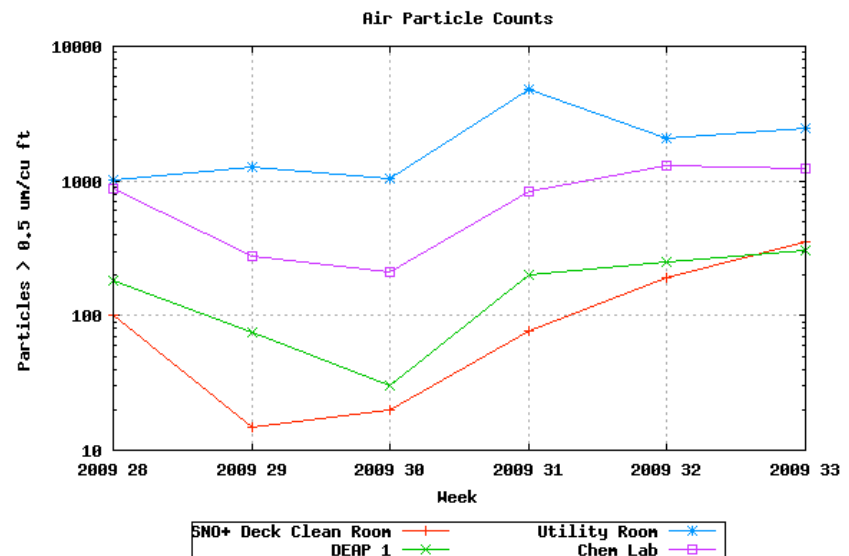


# Laboratory Space



	Excavation Area	Excavation Volume	Clean Rm Area	Clean Rm Volume	Laboratory Area	Laboratory Volume
Original	20,049 ft <sup>2</sup>	582,993 ft <sup>3</sup>	12,196 ft <sup>2</sup>	470,360 ft <sup>3</sup>	8,095 ft <sup>2</sup>	412,390 ft <sup>3</sup>
SNO Areas	1,863 m <sup>2</sup>	16,511 m <sup>3</sup>	1,133 m <sup>2</sup>	13,321 m <sup>3</sup>	752 m <sup>2</sup>	11,679 m <sup>3</sup>
Original	65,340 ft <sup>2</sup>	1,367,488 ft <sup>3</sup>	41,955 ft <sup>2</sup>	1,049,393 ft <sup>3</sup>	26,117 ft <sup>2</sup>	837,604 ft <sup>3</sup>
+ Phase I	6,072 m <sup>2</sup>	38,728 m <sup>3</sup>	3,899 m <sup>2</sup>	29,719 m <sup>3</sup>	2,427 m <sup>2</sup>	23,721 m <sup>3</sup>
Original	77,636 ft <sup>2</sup>	1,647,134 ft <sup>3</sup>	53,180 ft <sup>2</sup>	1,314,973 ft <sup>3</sup>		
+ Phase I&II	7,215 m <sup>2</sup>	46,648 m <sup>3</sup>	4,942 m <sup>2</sup>	37,241 m <sup>3</sup>		

- All clean spaces to be operated as Class 2000 clean room.



# Status



- Since last workshop in October 2008
  - Chiller and sewage treatment plant went operational in Dec 08
  - Commissioned HVAC in all new areas.
  - Rough cleaned and painted Ladder Labs.
  - Relocated personnel area to new refuge station 3 Feb 09.
  - Transitioned to clean room conditions in Ladder Labs 5 Aug 09.
  - Last major Contractor work: Concrete floor in "TAC" drift outside Cryopit; 5 T Monorail beam in Cryopit.
- Continuing operation of the PICASSO and DEAP-1 Dark Matter Search experiments and the PUPS seismology station.



Chiller







Chiller



Occupied New Personnel  
Facilities 3 Feb 2009

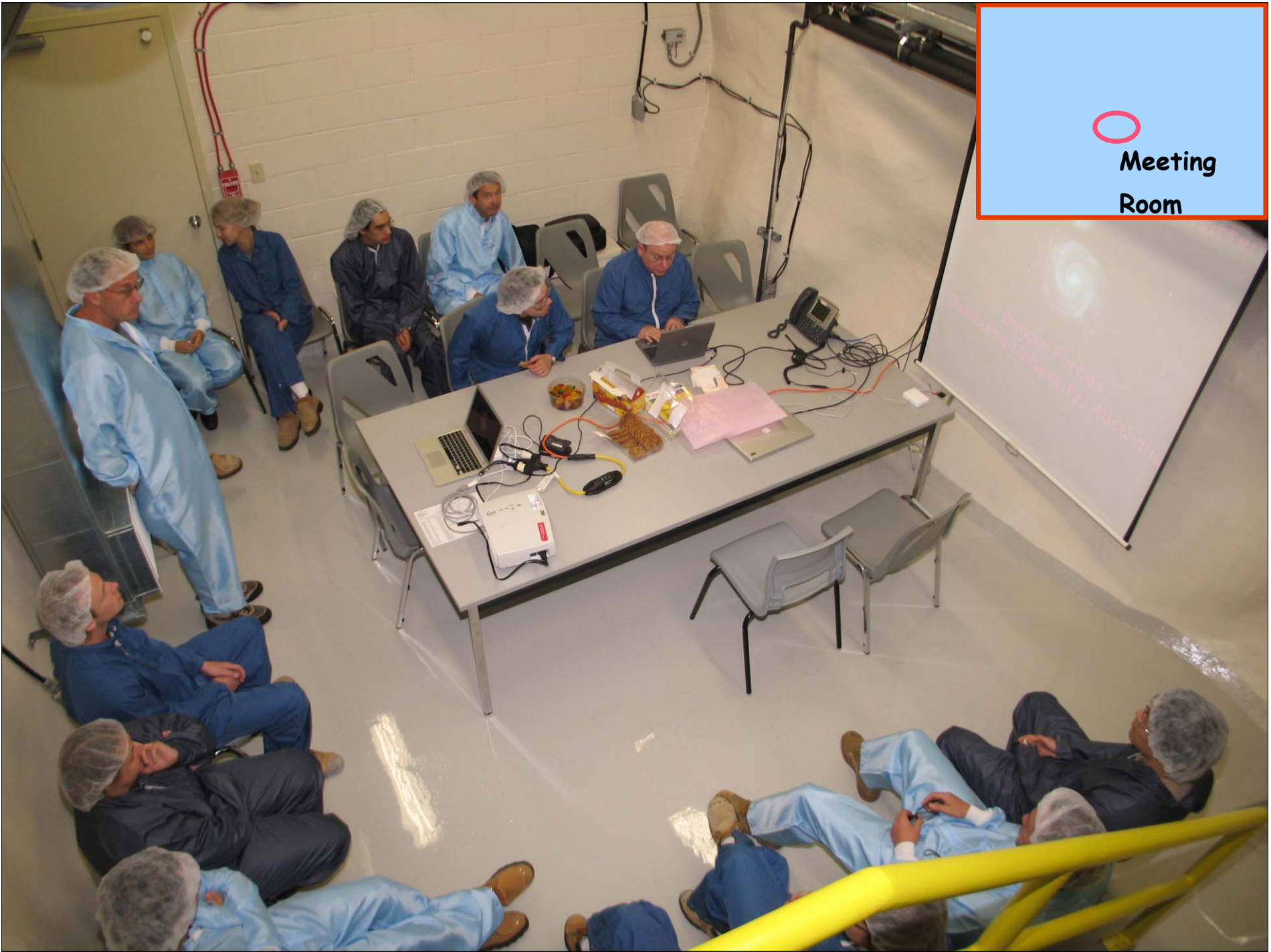
Lunch  
Room







Lunch  
Room



○  
Meeting  
Room





**Cryopit  
Access**





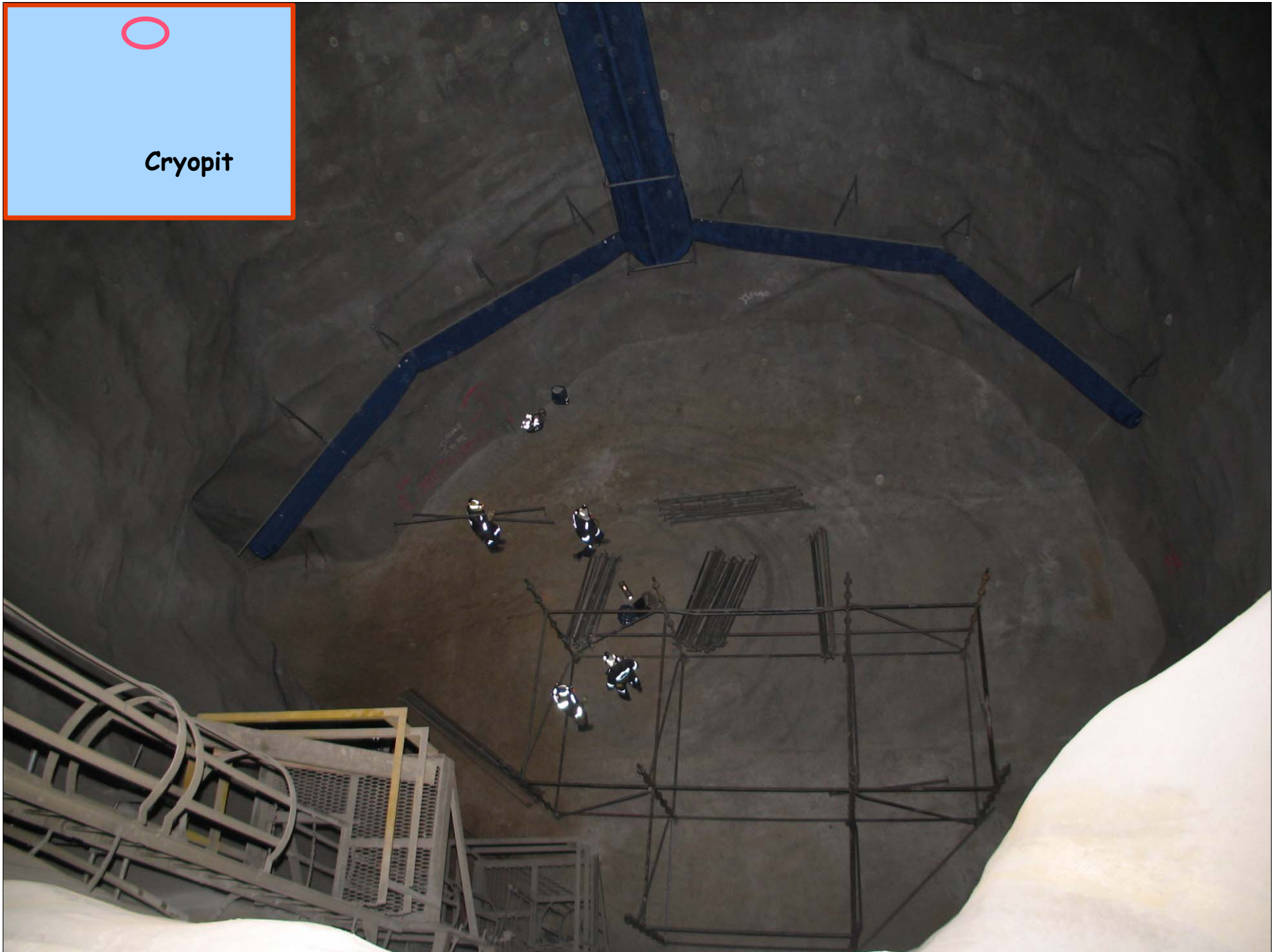


**Cryopit  
Access**





Cryopit







**Cryopit**







Cube  
Hall



Cube  
Hall





Unsealing door to Ladder Labs



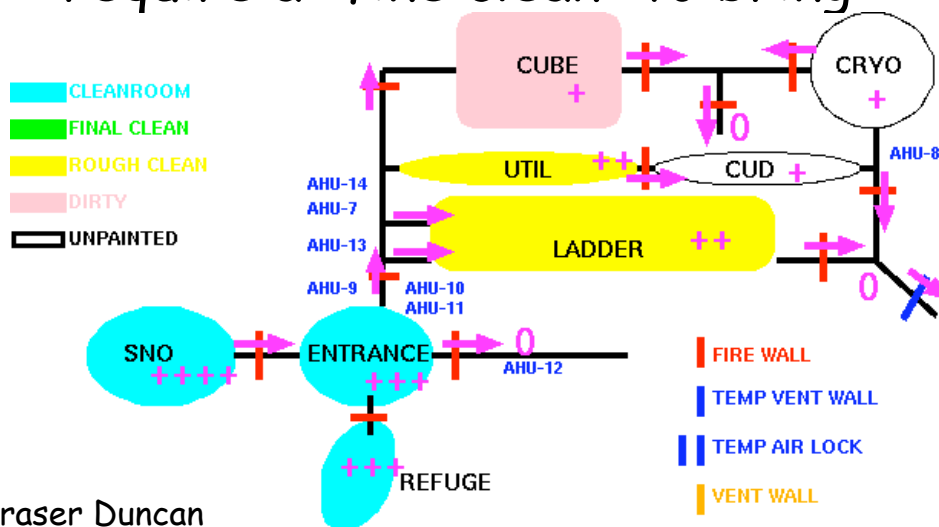
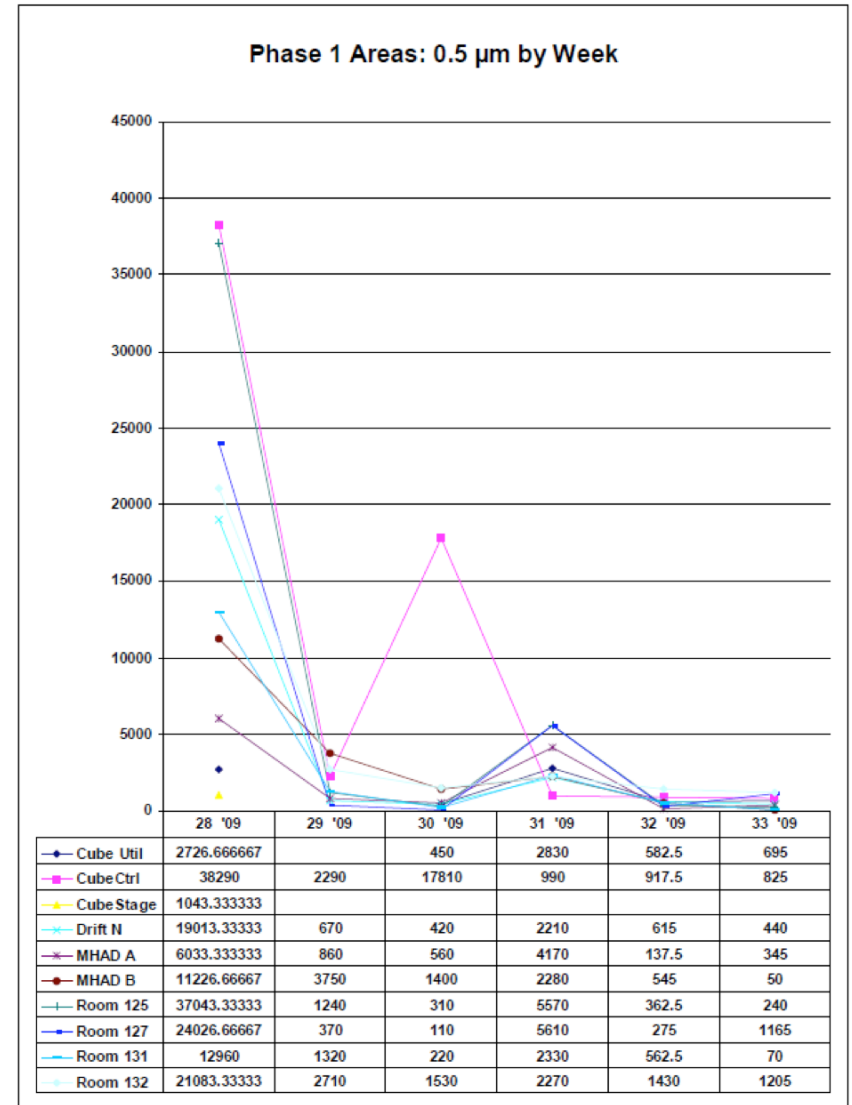


Ladder  
Labs

# Construction Status



- With the "going clean" of the Ladder Labs there is now 40,000 ft<sup>2</sup> (3,700 m<sup>2</sup>) of space inside the clean room boundary of the lab. For comparison the surface building is 32,000 ft<sup>2</sup>.
- However the Ladder Labs still require a "fine clean" to bring



# Facility Construction Schedule



- Contractor work almost done (still some "building automation" and fire alarm tasks).
- Remaining work will be done primarily by SNOLAB personnel (with contractors as necessary).
- Next facility construction activities:
  - Fine cleaning of Ladder Labs
  - Installation of services (plumbing, electrical) in Ladder Labs and Cube Hall.
  - Cryopit: prepare and paint.
  - Renovation of old Personnel Area (reclaim for experiments or infrastructure).



# Experiment Installation



- **Cube Hall**
  - Installation of steel work for DEAP-3600 and MiniCLEAN this fall. Contract awarded, construction to begin in September. Will go clean after civil work is complete.
- **SNO Cavity**
  - Repairs to cavity liner and modification of detector support to hold down the Acrylic Vessel for liquid scintillator.
- **SNO Utility Room**
  - Excavation of pit for liquid scintillator purification system.
- **Other**
  - Work as necessary for other experiments such as HALO

# Facility Personnel



- Nominal staff of ~40 including scientists, engineers, technicians, cleaners, admin, IT.
- New Hires
  - Project Engineer, Tom O'Malley (started 4 Aug)
    - Will be working on installations for DEAP-3600, MiniCLEAN, SNO+ and others.
  - Process Systems Engineer, Allan Barr (starts 31 Aug).
    - Will be maintaining the SNOLAB Ultra Pure Water Systems as well as participating in the installation and

# Summary

- Major laboratory construction complete.
- Most spaces now under clean room conditions.
- Now preparing for the Day 1 experiments
  - Civil work in Cube Hall starts next month.
- Time to do some (more) science.





End