LCLS Room Data Sheet #	1.9-1043	Central Lab Office Complex - Chemical Lab	Revision 2

Javier A. Sevilla			8/12/05
Owner / Editor		**Signature**	**Date**
Jim Welch			8/5/05
Conventional Facilities System Physicist		**Signature**	**Date**
David Saenz			8/12/05
Conventional Facilities System Manager		**Signature**	**Date**
Stefan Moeller	Stefan Moeller		8/12/05
X-R Endstations WBS Manager		**Signature**	**Date**
John Arthur			8-12-05
Photon Beam System Manager		**Signature**	**Date**
Darren Marsh			8/5/05
Quality Assurance Manager		**Signature**	**Date**

REVISION INFORMATION

Rev 2. Changed amperage to 120 volts, 1 phase outlets, indicated location of compressed air, added eye wash/shower. Updated Standards and Codes-

Added plumbing on the east wall, diversity factor for electrical panels

ROOM DATA SHEETS

FACILITY COMPONENT	CHEMICAL LAB (CLOC) - ROOM DATA SHEET		
	Name of Building	Chemical Lab (CLOC)	
	Organization or Department	SLAC, Stanford University	
	Net area	139.4 sq. meters	1500 SF
	Critical dimensions	**H:**	9'-0" min.
		W:	25'-0"
		L:	59'-0"
	Hours of operation	Facility is locked with controlled access	
	Users/Occupancy	Laboratory reseachers prepare and run experiments. Maximum occupancy: 10	
	Building orientation	Chemical Lab will be located on the second floor- South side of the CLOC building -	
FUNCTIONAL OBJECTIVE	1- Must be able to use the chemical lab for two separate experimental groups with the possibility of a central shared area. The implication of this is that lighting, mechanical, electrical and all utilities are to stress flexibility as the layouts		
PLANNING CONSIDERATIONS & CRITICAL FACTORS	1- The Chemical Lab requires two access. One access shall be near the elevator for equipment using one pair of 3'x7' doors with key lock. Another access door for personnel, 3' x 7' with small window and card key reader.		
FINISHES	Wall	Painted gypsum wall board.	
	Ceiling	Mylar wrapped acoustic tile panels within suspended Unistrut framing grid capable of supporting experiment specific diagnostic equipment on suspended shelf below the ceiling above eack laser table. Each shelf estimated weight is 500 lbs each.	
	Floor	Epoxy coated concrete floor	
	Base	Rubber base	
	Doors	Flush hollow metal doors.	
	Fenestrations	Provide two windows 4' x 5' (fixed) along wall on side of hallway	
	Acoustical	Typical laboratory decibel level required. NC: 35	

BUILT-IN CABINETRY	Upper and Lower cabinets	**Furnished by SLAC**				
APPLICABLE STANDARDS	29 CFR Part 1910 Occupational Safety and Health Standards Dept of Labor, 29 CFR Part 1926 Safety and Health Regulations for Constructions Dept of Labor, Uniform Building Code (UBC) 1997 including appendixes, National Electric Code (NEC) 2002, Uniform Mechanical Code (UMC) 2003 including appendixes, Uniform Plumbing Code (UPC) 2003 including appendixes, Uniform Fire Code (UFC) 2003 including appendixes, California Code of Regulations Title 8 Industrial Safety, Title 19 Public Safety, NFPA 70 National Fire Codes, National electrical Safety Code ANSI C2, Occupational Safety and Health Act (OSHA), General Services Administration 41 CFR part 101-19, Environmental Protection Agency 40 CFR Parts 264 and 265, SLAC Environmental Safety & Health Manual, General Industrial Activities Storm Water Permit (SLAC Permit), NFPA 101 life Safety Code, Title 24-Energy Code, DOE standard 10 CFR Part 435, ASHRAE/IES Standards 90.1, NFPA Standard 13 and SLAC Fire Marshal requirements, LCLS Cabling Standard, SLAC LOTO					
VIEWS & SCHEMATICS (N. T. S.)	**Refer to CLOC Overall RDS**					
MECHANICAL REQUIREMENTS	**HVAC**	☒	Heating system	Temp:	☒	Mechanical humidification
	Provide filtered clean air using Pre-filters, 85% efficiency filters in the air handling unit. 50-60 FPM average room velocity or less,	☒	Air conditioning	Temp: 72 degrees F+_2 degree F	☒	Chemical exhaust system - for two chemical hoods-See special requirements
		☐	Direct supply		☐	Positive pressure system
		☐	Indirect supply		☒	Negative pressure system
		☐	Smoke control system		☐	Standard registers
		☒			☐	Requirement for gases
		Centralized Mechanical Utilities: 1- Clean dry oil-free compressed air 20 SCFM, 100 psig. Provide three (3) locations (along east wall) 2- No dry N2, no gases			1- Low velocity less than 60 FPM 2- Relative Humidity shall be 45% +/- 10% 3. Direct Digital Control (DDC) for operations and interface w/ SLAC Energy Management System	

MECHANICAL REQUIREMENTS, continued	**Communications**	☒	Telephone- 2 phone lines/location-see comments	☐	PA speakers	
		☒	Dataport- 2 jacks/location-see comments	☐	PA station	
		☐	Payphone	☐	CCTV camera	
		☒	Fire alarm station	☐	CCTV monitor	
			Intercom			
		Comments: Provide three locations along each long wall and two locations along each short wall				
	Plumbing/Fire Protection	☒	Hot water system	☐	Electric watercooler	
		☒	Cold water system	☐	Drinking fountain	
		☐	Tempered water	☒	Smoke detection system	
		☒	Sinks-See comments			
		☒	Process Cooling Water			
		☒	Waste drain	☒	Wet sprinkler system	
		☒	Floor drain	☒	Eye wash/shower	
		☐	Trench drain			
		Comments: 1-One sink in each fume hood to handle acids and one (1) additional sink in the center of east wall. 2. Process Cooling water: 15 GPM, 25 PSI (min. pressure drop) at 68 F supply water temperature in Chemical Lab. Refer to LCSL ESD Water Cooling Specification. Terminate piping 12" above ceiling level. Provide shut off valve and pressure gauge, header at convenient location (e.g. east wall).				
ELECTRICAL REQUIREMENTS	**Power supply**	☐	208 V 1ph and 208 volts, 3 phase outlets	☐	Uninterrupted power supply	
		☒	110V, 1ph Double duplex outlets, 20 amps locate at 10ft apart on walls	☒	Special electric	Type:
		☐	Emergency power		a) Provide two panels, 208 volts, 3 ph-120 volts, (One "clean" and one "dirty" power). Each panel shall have a main breaker. 42 circuits each panel. Capacity of each panel: **125** amps minimum-Diversity factor: 60%	
		Comments: 1-Heat dissipation from equipment for entire room expected: ca. 10kW 2- Number of circuits: 42 per panel				
	Lighting	☒	Light fixtures - 2 x 4 recessed flourescent standard	☐	Remote lighting control	
		☐	Fixture type I: Downlight	☒	Light switches	
		☐	Fixture type II: Bollard (exterior)	☒	Lighting level	FC: **75**
		☒	Emergency lighting			
		Comments:				

RADIATION/SEISMIC/VIBRATIONS ISSUES	**Comments:** 1- All equipment (HVAC, cable trays, panels, etc) and systems are to be seismically braced and restrained per SLAC's Seismic Standards and Code. 2- Vibration generating HVAC equipment, pumps, and any other equipment located adjacent to the Chemical Lab are to be mounted on vibration isolating assemblies to mitigate the transmission of vibration into the building structure and affect the experiments.
SPECIAL REQUIREMENTS FOR EQUIPMENT	Comments: 1- Two 4 ft Fume hoods located at the north and south ends ends of the east wall (4'x3' sash opening at velocity of 120 FPM, constant volume exhaust). Each hood needs to be ducted into the process exhaust system .

CHEMICALS / GASES

CHEMICALS			SPECIALTY GASES		
#	Chemical Type	Quantity	#	Gas Type	Quantity

ENVIRONMENTAL NEEDS