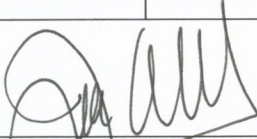

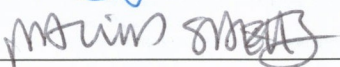

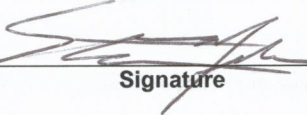

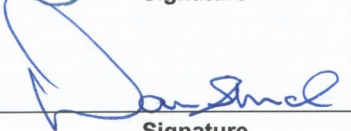


LCLS Room Data Sheet #	1.9-1009	Beam Transport Hall - Service Building #3	Revision 2
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Javier A. Sevilla Owner / Editor		8/15/05
	Signature	Date
Jim Welch Conventional Facilities System Physicist		8/18/05
	Signature	Date
David Saenz Conventional Facilities System Manager		8/15/05
	Signature	Date
Eric Bong Injector-Linac Manager		8/15/05
	Signature	Date
Stephen Milton Undulator WBS Manager		24 Aug 05
	Signature	Date
David Schultz E-Beams System Manager		8/18/05
	Signature	Date
Darren Marsh Quality Assurance Manager		8/22/05
	Signature	Date

REVISION INFORMATION

Rev 2. Changes of the building size, deleted raised floor, changes floor specs, general deletions, added electrical requirements, added new electrical panel, added racks for the UH, clarification of requirements for cable trays and power diversity. Changed lighting level. Changed heat rejected load for the racks. Updated applicable standards and Codes

ROOM DATA SHEETS

System & WBS Manager: Dave Schultz/Eric Bong, Steve Milton

FACILITY COMPONENT	BTH SERVICE BLDG#3 - ROOM DATA SHEET															
	Name of Building	BTH Service Bldg #3														
	Organization or Department	SLAC, Stanford University														
	Net area	109.3 sq. meters 1176 sf														
	Critical dimensions	<table border="1"> <tr> <td>H:</td> <td>3.66 m</td> <td>12'</td> </tr> <tr> <td>W:</td> <td>7.42 m</td> <td>24'-4"</td> </tr> <tr> <td>L:</td> <td>14.73 m</td> <td>48'-4"</td> </tr> </table>	H:	3.66 m	12'	W:	7.42 m	24'-4"	L:	14.73 m	48'-4"					
H:	3.66 m	12'														
W:	7.42 m	24'-4"														
L:	14.73 m	48'-4"														
	Hours of operation	24/7/365 locked, occupied only for equipment service and maintenance														
	Users/Occupancy	Only during service and maintenance periods														
	Building orientation	East/West														
FUNCTIONAL OBJECTIVE	To house rack mounted diagnostic equipment and free standing power supplies to run/monitor the downstream end (~last third section of BTH) of the LTU beamline(s). Also, it will house three double bay racks for the control instrumentation of the first three undulators.															
PLANNING CONSIDERATIONS & CRITICAL FACTORS	<ol style="list-style-type: none"> 1) Building is placed on top of BTH structure. 2) Provide two (2) 24" penetrations for the building (One near the North wall of the BTH housing & another on the South wall of the BTH housing). Opening shall be centered over trays in housing below. Penetrations must conform with Radiation Physics requirements. 3) Provide stairway for access. 4) Locate access doors to allow the loading and unloading of racks from ground level. 															
FINISHES	<table border="1"> <tr> <td>Wall</td> <td>Corrugated steel, insulated, painted surface (SLAC Home Spun brown exterior)</td> </tr> <tr> <td>Ceiling</td> <td>Corrugated steel, insulated</td> </tr> <tr> <td>Floor</td> <td>Housing roof of BTH. Sealed concrete floor-Epoxy painted</td> </tr> <tr> <td>Base</td> <td>None</td> </tr> <tr> <td>Doors</td> <td>Pair of 3 ft by 7ft high insulated hollow metal equipment doors on centerline. Provide a small window on each door.</td> </tr> <tr> <td>Fenestrations</td> <td>NA</td> </tr> <tr> <td>Acoustical</td> <td>NA</td> </tr> </table>	Wall	Corrugated steel, insulated, painted surface (SLAC Home Spun brown exterior)	Ceiling	Corrugated steel, insulated	Floor	Housing roof of BTH. Sealed concrete floor-Epoxy painted	Base	None	Doors	Pair of 3 ft by 7ft high insulated hollow metal equipment doors on centerline. Provide a small window on each door.	Fenestrations	NA	Acoustical	NA	
Wall	Corrugated steel, insulated, painted surface (SLAC Home Spun brown exterior)															
Ceiling	Corrugated steel, insulated															
Floor	Housing roof of BTH. Sealed concrete floor-Epoxy painted															
Base	None															
Doors	Pair of 3 ft by 7ft high insulated hollow metal equipment doors on centerline. Provide a small window on each door.															
Fenestrations	NA															
Acoustical	NA															
APPLICABLE STANDARDS	29 CFR Part 1910 Occupational Safety Health Standard Dept of Labor, 29 CFR Part 1926 Safety and Health regulations for Construction Dept of Labor. Uniform Building Code (UBC) 1997 including appendixes, National Electrical Code (NEC) 2002, Uniform Mechanical Code (UMC) including appendixes, 2003 Uniform Plumbing Code (UPC) including appendixes, 2003 Uniform Fire Code (UFC) 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 Health Act (OSHA), General Services Administration 41 CFR part 101-19, Environmental Protection Agency 40 CFR Parts 264 and 265 SLAC Environmental safety and Health Manual, General Industrial Activities Storm Water Permit (SLAC Permit), NFPA 101 Life Safety Code, Title 24 Energy Code Standards, DOE Standard 10 CFR Part 435, ASHRAE/IES Standard 90.1, NFPA Standard 13 and SLAC Fire Marshal requirements, LCLS Cabling Standard and SLAC LOTO															

Figure No. 1

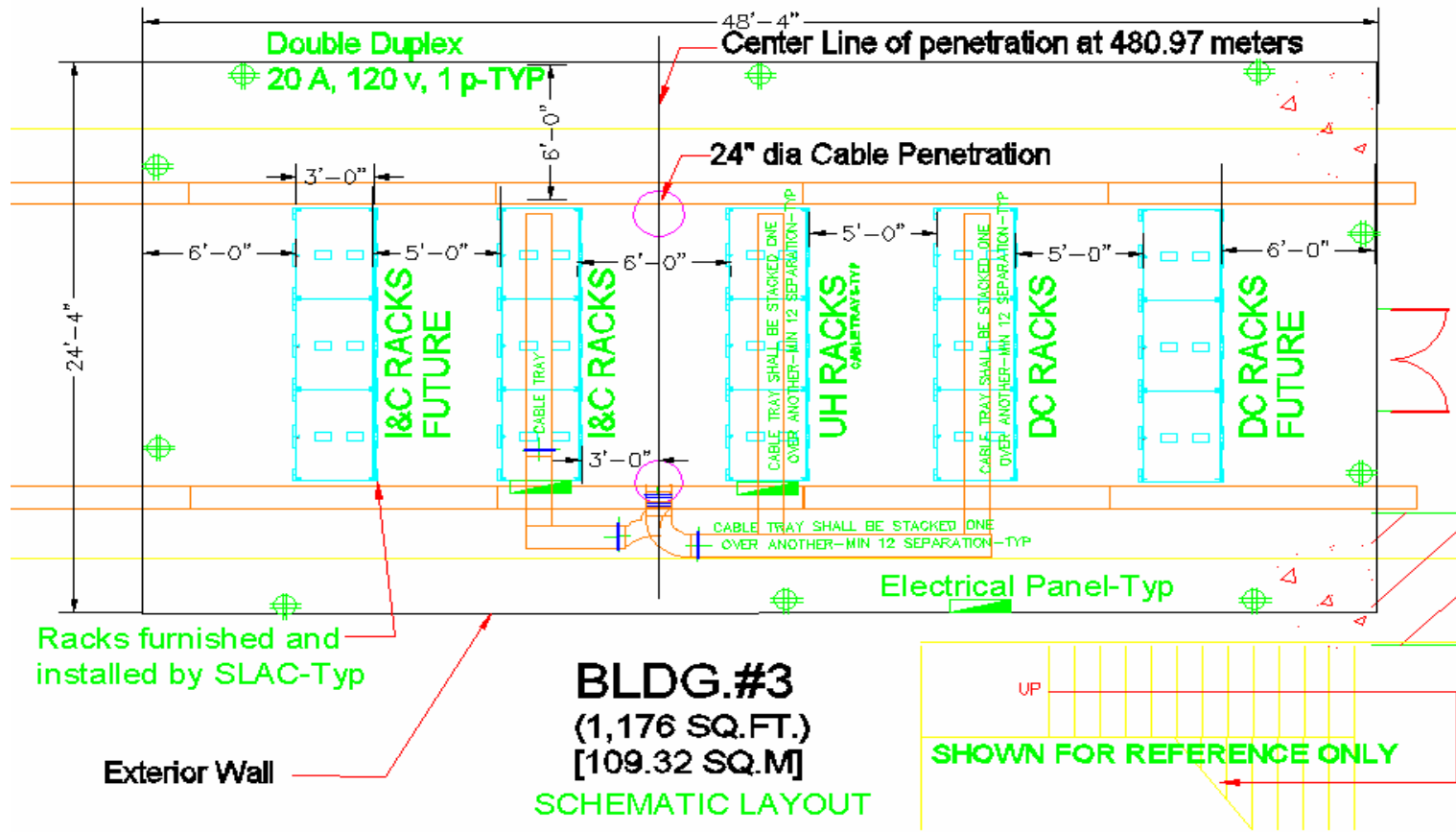
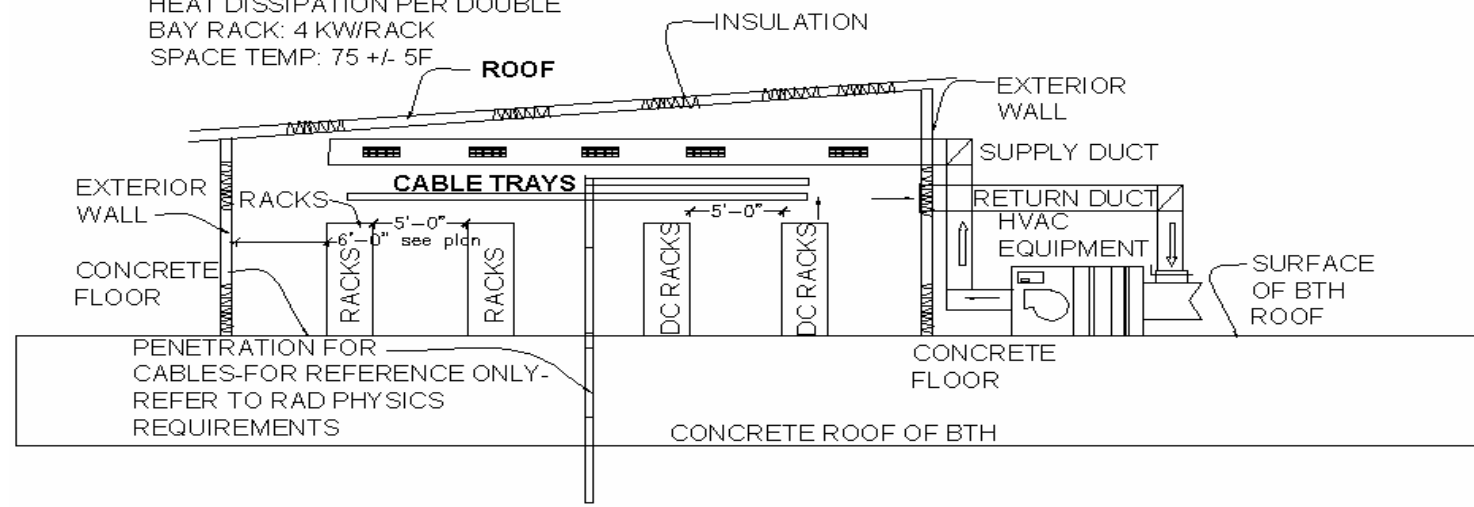


FIGURE NO. 2

DESIGN CRITERIA FOR AIR COOLING OF RACKS

HEAT DISSIPATION PER SINGLE
 BAY: 2 KW/RACK
 HEAT DISSIPATION PER DOUBLE
 BAY RACK: 4 KW/RACK
 SPACE TEMP: 75 +/- 5F



1 CROSS SECTIONAL VIEW OF A TYPICAL SERVICE BUILDING
 SCALE NONE

JULY 2005

MECHANICAL REQUIREMENTS	HVAC	<input type="checkbox"/> Heating system	Temp:	<input type="checkbox"/>	Mechanical humidification	
		<input type="checkbox"/> Air conditioning	Temp: 75F	<input type="checkbox"/>	Direct exhaust system	
		<input type="checkbox"/> Direct supply		<input type="checkbox"/>	Positive pressure system	
		<input type="checkbox"/> Indirect supply		<input type="checkbox"/>	Negative pressure system	
		<input type="checkbox"/> Smoke control system		<input type="checkbox"/>	Standard registers	
		<input checked="" type="checkbox"/> Temperature sensors connected to SLAC's DDC system		<input type="checkbox"/>	Requirement for gases	
		Room will be air conditioned. Maximum heat rejected load per each double rack is: 4 kW- Refer to figure No. 2		None		
	Communications	<input checked="" type="checkbox"/> Telephone- a phone at one location		<input type="checkbox"/>	PA speakers	
		<input checked="" type="checkbox"/> Data port- 2 outlets-one location per building		<input type="checkbox"/>	PA station	
		<input type="checkbox"/> Payphone		<input type="checkbox"/>	CCTV camera	
		<input checked="" type="checkbox"/> Fire alarm station		<input type="checkbox"/>	CCTV monitor	
		<input type="checkbox"/> Intercom				
		Comments: a) Provide 24" wide cable trays, 6" deep for I&C cables and control cables for DC racks, and 4" deep for cables for DC racks. b) Cable trays shall be made of galvanized steel, provide each cable tray with 1 # 4/0 bare copper wire as grounding. c) Racks to be furnished and installed by SLAC				
	Plumbing/Fire Protection	<input type="checkbox"/> Hot water system		<input type="checkbox"/>	Electric water cooler	
		<input type="checkbox"/> Cold water system		<input type="checkbox"/>	Drinking fountain Bottled	
		<input type="checkbox"/> Tempered water		<input checked="" type="checkbox"/>	Smoke detection system	
		<input type="checkbox"/> Waste drain		<input checked="" type="checkbox"/>	Wet sprinkler System	
		<input type="checkbox"/> Floor drain		<input type="checkbox"/>	Eye wash	
		<input type="checkbox"/> Trench drain				
ELECTRICAL REQUIREMENTS	Power supply	<input type="checkbox"/> 208 V outlets		<input type="checkbox"/>	Uninterrupted power supply	
		<input type="checkbox"/>		<input type="checkbox"/>		
		<input checked="" type="checkbox"/> 110V outlets -20 amps distributed along walls		<input type="checkbox"/>	Special electric	
		<input type="checkbox"/> Emergency power			Type:	
		Comments: a) Provide three (3) electrical panels , 120-208 volts, 3 ph (Two panels for "clean" power and one ""dirty"" power) . Each panel shall have a main breaker with a minimum capacity of 125 amps/Each. 42 circuits. Diversity factor: 70 % .-Refer to figure No.1 for locations b) These panels shall be independent of any power panel needed for Utilities, HVAC equipment and service outlets. Panel locations: Dirty power on the wall of service building and clean panel on the end of the I&C racks. All conduits and light fixtures are surface mounted.				
	Lighting	<input checked="" type="checkbox"/> Light fixtures		<input type="checkbox"/>	Remote lighting control	
		<input checked="" type="checkbox"/> Fixture type I: Downright		<input checked="" type="checkbox"/>	Light switches	
		<input type="checkbox"/> Fixture type II: Bollard (exterior)		<input checked="" type="checkbox"/>	Lighting level	FC: 30
		<input checked="" type="checkbox"/> Emergency lighting				
		Comments: Low profile fixtures preferred.				

RADIATION/SEISMIC/VIBRATIONS ISSUES	Comments: 1. Comply with Radiation Physics requirements for all penetrations thru floor (roof of BTH housing)					
SPECIAL REQUIREMENTS FOR EQUIPMENT	Comments:					
ENVIRONMENTAL NEEDS	Refer to cross sectional view for schematic layout of air conditioning system					