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Facilities Quarterly

LAWRENCE BERKELEY LABORATORY FACILITIES DEPARTMENT NEWSLETTER

JANUARY
1995

SPACE—TURNING THE QUESTION AROUND

After the funding for a project is secured, researchers face the next question—Where can they find space to work? With 77 buildings and 121 temporary structures totaling over 150,000 square meters on the main site, searching for unused space at LBL is not only daunting, but time-consuming as well. Historically, researchers have staked their claims and divisions have bargained with one another in numerous, untrackable deals. But in FY94, Facilities Planning accepted the challenge of managing LBL's space allocation.



Facilities is helping researchers to fulfill their space needs, eliminating the need to resort to Old West-style claim-staking.

"Determining which spaces were assigned to which divisions sounds simple, but it proved to be quite a mystery," says LBL's space management planner, Lisa Sullivan, who is trained in both architecture and engineering. This task proved timely, as DOE's mandated Cost Accounting Standards called for a space charge, which was implemented at the start of FY95. Divisions now pay for space based on area occupied, allowing space costs to be removed from LBL overhead. This method gives researchers control over their space costs, improves LBL's ability to fill divisions' space needs, makes more cost-effective use of LBL space, and provides room for growth.

How space charge works

To implement the space charge program, LBL chose a simple plan where all space is billed at \$3.10 per square meter each month. The total revenue recovered is equal to the custodial budget plus the cost of basic building maintenance, which have now been removed from general overhead. Common areas—such as the cafeteria, auditorium, and conference rooms over 45 m²—are not included in the charge. Compared with local monthly rental rates of \$13/m² for offices and \$21/m² for labs, LBL's \$3 charge is minimal. In addition, the laboratory has eliminated its storage charge at Bldg 903 as an additional incentive to reserve onsite space for active use.

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ELECTRICAL EQUIPMENT AND YOUR SAFETY

Since the Tiger Team inspection of 1991, Facilities Electricians have made great strides in bringing LBL into compliance with electrical codes. Still, some problems remain. One of the most common types of violation is from the improper installation of electrical equipment by unqualified persons. A call to the Facilities Electrical Shop need not be reserved for when things go wrong. Facilities electricians can help you keep your electrical system safe and effective by advising you on your particular building's capabilities and installing appropriate equipment for you.

When purchasing electrical equipment it is tant to consider whether your building or lab support the equipment you are buying. The number of circuits and outlets in many LBL buildings

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INSIDE

From the Facilities Manager
At Your Service: Maintenance Technicians
Construction and You
Projects
WRC Handles LSAD Deficiencies

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SPACE

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How space charge helps researchers

Overhead reduced. Direct charges for space costs have helped reduce the Laboratory's overhead rate from 56% to approximately 48%. In addition, updated record-keeping has provided more accurate figures for campus occupancy, reducing costs incurred for occupying campus space by 20%.

Space available. The new incentive to "return" underused space makes rooms available to those who need them.

Space returns. Researchers can now reduce their space costs by returning space that is underutilized. For the PI, space has become a controllable cost, where divisions pay only for the space they need and use. To allow for advance planning and time to find new occupants, 90 days notice is requested when vacating a space.

How Facilities Planning is working to better meet your space needs

One-stop searching. Phase I of the space plan has improved LBL's data on space usage. With centralized data,

including knowledge of future plans, Facilities Planning can perform LBL-wide space searches. The new system also improves location of contiguous space and provides closer matching of space to division needs.

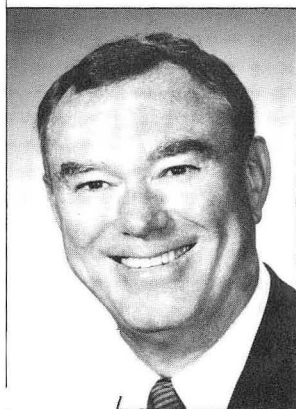
Division space coordinators. Under the new space management program, each division has a space coordinator who acts as liaison to Facilities on issues of space allocation. Anyone seeking additional space or wishing to return space should contact his/her division's space coordinator.

Database integration. Due to the space charge, LBL's space database is now updated monthly. Connections are now in place between the space database and LBL keyplans for graphic output, and are in progress with current HR occupant information.

Move coordination. Facilities' WRC now provides assistance in coordinating moves from one space to another. Coordination support includes: phones, computer drops, lock changes, keys, seismic restraints, labor and transportation, cleanup arrangements, and painting. Laborers will pack up the contents of a room on request and are experienced in the special care required for computer moves. There is no charge for the WRC coordination service, only for the moving services themselves.

Space is never static

The space charge is just one element of a more fluid solution to changing space needs. By improving flexibility, LBL can more readily take advantage of new opportunities and make better use of existing strengths. "Instead of waiting for divisions to ask us for space when it's reached a crisis level," Sullivan says, "we are asking them how much revenue they could generate if space were not a constraint. Then we work ahead of time to provide solutions"



FROM THE FACILITIES MANAGER...

While it may not be the final frontier, Laboratory space is certainly a place few have dared to go. As you may read in our lead article, Facilities has accepted the task of managing Laboratory space to ensure fair and equitable use of our limited assets. With the advent of a space charge, Facilities is also responsible for the accuracy of the database in order that no division is charged for space it does not use.

The Facilities Work Request Center continues to increase its service to the Laboratory and has recently accepted the coordination of Institutional LSAD. This move will simplify the LSAD process and move the WRC one step closer to being truly a one-stop service. Roxanne Miravalle has recently joined KaRyn Kelly to provide better coverage as the Laboratory increases its use of the WRC; this also enables us to keep the WRC open until 5:00 PM.

This winter looks to be a wet one. Over the past few years we have been fortunate to obtain funding for slope stabilization and have successfully completed several projects that make the Laboratory safer. M&O and our Civil Engineers are checking the hydraugers and slopes on a regular basis to make sure that the Laboratory stays on the hill.

We welcome a new member of the Facilities team. Mahesh Gupta now heads the Electrical Engineering section in Facilities. Mahesh is a professional engineer and has a Masters degree from UC-Berkeley.

As you read this, we will have completed the holiday shutdown. Many of the Facilities staff worked over the holidays to perform repairs and maintenance operations that would have disrupted research if done at other times throughout the year. We again owe them our gratitude for their dedication to an LBL THAT WORKS!

On behalf of all of us in Facilities, I wish you

A Happy New Year!

Bob Camper

FACILITIES DEPARTMENT

Facilities provides LBL with a full range of architect and engineering, construction, and maintenance services for new facilities and modification and support of existing facilities.

Architect and engineering services include planning, programming, design, engineering, project management, and construction management for new facilities and modifications to existing facilities. Maintenance and construction functions include custodial, gardening, and lighting services; operation, service, and minor repairs and replacements to equipment and utility systems; and construction of modifications,

alterations, and additions to buildings, equipment, facilities, and utilities.

Ongoing Facilities activities include renewal and upgrade of site utility systems and building equipment; preparation of environmental planning studies; in-house energy management, space planning; and assurance of Laboratory compliance with appropriate facilities-related regulations and with University and DOE policies and procedures.

The Work Request Center can expedite any facility-related work request, answer questions, and provide other support for your facilities-related needs.

FOCUS ON SERVICE: PLANT MAINTENANCE TECHNICIANS

Plant Maintenance Technicians (PMTs) are the backbone of the Facilities M&O system. The Maintenance Office comprises 36 Maintenance Technicians who are on duty 24 hours a day, seven days a week. "PMTs," says Don Weber, Manager of Maintenance & Operations, "are charged with maintaining LBL facilities and equipment in a manner that promotes operational safety, environmental protection and compliance, and cost-effectiveness; preserving the intended function and supporting the programmatic mission of the Laboratory."

Maintenance Technicians on the owl and swing shifts perform much of the maintenance that would be disruptive to LBL pro-

grams during the daytime, such as testing emergency eye washes and showers and servicing blowers and boilers. These "off shifts" are also responsible for surveillance of plant equipment and, when requested, research equipment. They service storm drains and sanitary sewers and provide jump starts and gasoline to stranded motorists.

There are several Maintenance groups that provide specialized services. The Regulator Shop overhauls regulators and liquid nitrogen dewars, builds manifolds, and performs pressure testing. The Utilities Group locates underground utilities and issues digging permits. Technicians specializing in water sys-

tems maintain cooling towers as well as treated water and low conductivity water systems.

Despite Preventive Maintenance, building systems and machinery occasionally break down. This is where the Maintenance Technicians' wide range of skills are brought to bear in resolving situations quickly and efficiently. And in emergencies, PMTs assist the Police and Fire Departments to ensure the safety of Laboratory personnel.

"Our primary objective," Weber says, "is to maintain the Laboratory's machinery and systems in a cost-effective manner, on a graded approach, and with minimum disruption to research."

WORK REQUEST CENTER

Telephone 6274
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E- or VAX-Mail FACILITY@lbl.gov
Mailstop 76-222

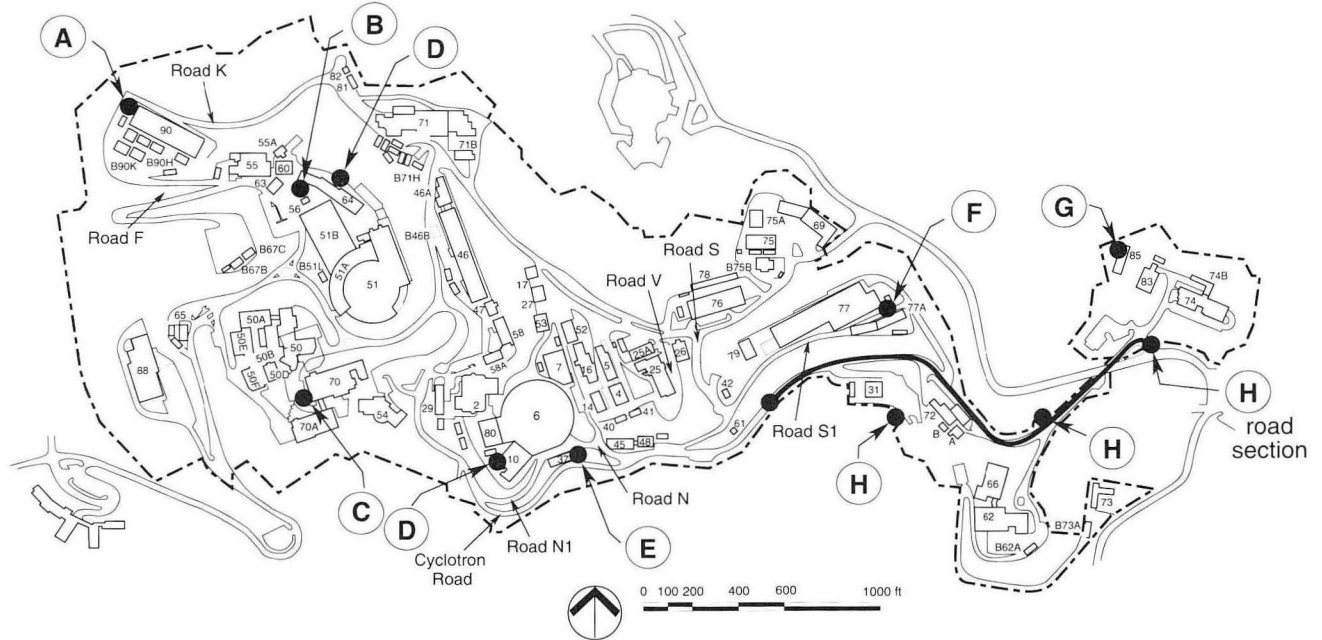
WRC welcomes questions or comments about the Facilities Quarterly.

COMPLIMENTS

- Dave Cooper and Joe Morse are thanked for quick response and resourcefulness at Bldg 55, saving irreplaceable equipment and documents endangered by roof leaks.
- Russ Ellis of MSD thanked especially Yongyop Kim for quick, efficient work that accommodated a busy meeting schedule and dramatically transformed the Bldg 62 conference room.
- Edward Patigalia, manager of the DOE Hoisting and Rigging Safety Program, expressed his appreciation to Ed Burgess and Peter Neubauer for their role in hosting the DOE Headquarters Hoisting Main Committee meeting and site tour.

CONSTRUCTION AND YOU

current construction projects affecting parking or vehicular or pedestrian circulation



Bldg 90 Seismic Rehabilitation

A	Bldg 90 Seismic Rehabilitation		
	JAN	FEB	MAR

Approx 20 spaces north of Bldg 90 will be used by the contractor during construction if an additional bulkhead wall is constructed at the north end of the building.

Bldg 56 Biomedical Isotope Facility

B	Bldg 56 Biomedical Isotope Facility		
	JAN	FEB	MAR

Construction began in late August. The contractor's laydown area will be located adjacent to Bldg 56, occupying several stack parking spaces.

Bldg 70 Hazardous Materials Safeguards

C	Bldg 70 Hazardous Materials Safeguards		
	JAN	FEB	MAR

Construction is scheduled to begin in February 1995. Approximately 10 spaces by Bldg 70 will be affected for a jobsite trailer and material storage.

Bldgs 10 and 64 Fire & Safety Upgrades

D	Bldgs 10 and 64 Fire & Safety Upgrades		
	JAN	FEB	MAR

Construction continues in Bldg 64 and will begin in Bldg 10 to provide Fire & Life Safety Upgrades. Parking spaces adjacent to the buildings will be reserved for construction operations.

Original Labsite Substation

E	Original Labsite Substation		
	JAN	FEB	MAR

Construction of the substation began in September 1993 and will continue through February 1995. Traffic delays may occur along Road N and Cyclotron Rd.

Bldg 77 Ultrahigh Vacuum Cleaning Facility

F	Bldg 77 Ultrahigh Vacuum Cleaning Facility		
	JAN	FEB	MAR

Construction began in June 1994. The contractor's laydown area will be located near Rm 156, occupying several parking spaces.

Bldg 85 Hazardous Waste Handling Facility

G	Bldg 85 Hazardous Waste Handling Facility		
	JAN	FEB	MAR

Construction began in October 1994. The contractor's laydown area will be restricted to the project site and access road and should not impact parking.

East Canyon Electrical Safety

H	East Canyon Electrical Safety		
	JAN	FEB	MAR

Construction is scheduled to begin in February 1995. There will be significant disruption to traffic and parking during this project. Portions of the road indicated between Strawberry Gate and the Grizzley substation (near Bldg 42) will be closed off, disrupting parking. Traffic will be rerouted to affected buildings. Work at the gate will be phased between the two sides to allow the gate to remain open.

ON THE DRAWING BOARD

projects in study or conceptual design

Roof Replacements, Phase II

A conceptual design report is in preparation for Phase II of the Roof Replacement project, which will replace 25% of LBL's 73,600 m² of roofs. As part of an ongoing program to evaluate the condition of LBL plant facilities, an independent roofing consultant evaluated roof condition throughout LBL's main site. Roof systems were analyzed in terms of membrane, insulation, flashing, drainage, and structure. Prioritization for replacement was then based on this assessment of condition, as well as building use, and role in meeting

present and future programmatic and institutional needs. Phase I re-roofed the highest priority areas; Bldgs 55, 58, 25A, 51B, 64, 74, 88. Continuing replacement of roofs in immediate need of replacement, Phase II will replace 18,400 m² of roof area. These are all high maintenance roofs prone to leakage, in critical need of replacement because repair is no longer cost effective. Re-roofing includes updated design and materials for better durability and water resistance and improved ease of maintenance and repair. Roof-top equipment platforms will be modified to accommodate new roof construction and rebuilt to facilitate future roof work and equipment maintenance. Phase II would start in FY97.

IN PROGRESS

funded projects

ALS Structural Biology Support Services

Design is being completed for this 1,100 m² ALS life sciences research facility on the second floor of the ALS and adjoining Bldg 80. The planning and preliminary construction for the necessary relocations out of Bldg 80 are also underway. Construction is expected to start in early April 1995, and be completed in late 1996.

Fire Safety Systems Upgrade

This project will modify and upgrade a selected group of 28 buildings to correct fire and life safety code deficiencies. Building improvements were selected and prioritized based upon internal and external fire and life safety surveys including DOE Technical Safety Appraisals, Environmental Reviews and Tiger Team reports. This data was supplemented by a comprehensive survey of all LBL facilities. Work items include addition of second exits, exit stairways, and exit passageways; repair of fire-rated wall assemblies including doors, dampers and fire stopping in walls and floors; upgrade of exit signage and emergency exit lighting; improvements to automatic sprinkler systems and the addition of heat and smoke detectors.

Bldg 56 Biomedical Isotope Facility

Construction is in progress for this laboratory for incorporating short-lived and stable isotopes into compounds for high-resolution positron emission tomography (PET) and high-field NMR studies. Bldg 56 is being completely remodeled, a new 83 m² concrete vault for a small radiopharmaceutical cyclotron added and a pharmaceutical lab and a storage area, greatly reducing the need to transport short-lived isotopes from offsite. Completion is expected in early 1995.

Slope and Seismic Stabilization, followup

Work was completed last October to repair two major landslides east of Bldg 51 and north of Bldg 77, which threatened Bldgs 46, 51, 77, and the Hilac Loop road.

During that work, additional, smaller-scale slides and instabilities were identified, requiring further work to fully stabilize the slopes. Completing this process, the current project will include installation of a pier system to stabilize the fire access entrance above and to the east of Bldg 51, and lime-cement soil treatment to stabilize newly identified surface slides downslope of the original Bldg 51 and 77 slides. The slide repair will reduce the need for annual maintenance, including slide debris removal, slope protection, and temporary drainage installation. Design is in progress, construction will start in late March 1995, expected completion is September 1995.

Site-wide EMCS, Group 1

LBL's distributed Energy Monitoring and Control System (EMCS) will be expanded. This system, designed around the Barrington Systems Starview 4000™ system, provides central monitoring and control for the conservation of space conditioning energy in designated buildings. Work includes all EMCS controls, LAN loop connections, system programming, start-up, testing, and training. Buildings included: 31, 31A, 42, 55A, 62A, 64, 69, 71, 71B, B-71K, 73, 75B, 75E, 77G, 78, 79, and 88. Work will begin in January 1995 and be completed by September 1995.

Bldgs 77/77A Energy Conservation Upgrades

A complete EMCS system will be installed, with variable-frequency drives for chilled water pumps, tower water pumps, heating water pumps, and cooling tower fan, a flat-plate heat exchanger for tower water cooling of chilled water, and a side stream filtration system for cooling tower water. Work will begin in January 1995 and will be completed by June 1995.

Bldg 2 Energy Efficient Upgrades

The existing EMCS system will be expanded to include boiler, hot water pump and air-handler control. Work also includes new premium efficiency motors, variable-frequency drives, and laboratory general exhaust volume controls with damper motors. Work will begin in January 1995 and be completed by June 1995.

ELECTRICAL EQUIP

continued from page 1

especially the older ones, are limited (e.g., single-phase/three-phase). Several months ago a Lab employee purchased a single-phase, high-powered vacuum pump. When electricians arrived to install the vacuum pump, they found the building did not have the proper circuit capacity to operate it. Had the employee called the Electrical Shop beforehand, he would have known to buy a three-phase model, saving himself hundreds of dollars.

If you are planning to purchase electrical equipment that requires more than 10 amps or 120 volts, or if you are unsure whether the equipment should be single-phase or three-phase, contact the Facilities Electrical Shop first.

Facilities electricians have complete information on the electrical systems of all buildings at the Lab and can advise you as to which machinery is appropriate for your location. Checking with Facilities first will help you save time and money that you might otherwise waste by buying the wrong items. Wherever electricity is concerned, you are always better safe than sorry.

While purchasing equipment that does not match building electrical specifications is a common and costly problem, several others also deserve attention:

- Ground fault circuit interrupters. These devices are recommended within six feet of sinks and near wet locations. Contact M&O if additional GFCIs are required.

- Electrical panels. Blocked or difficult access to panels prevents safe working practices for electricians and slows emergency access. The electrical code requires a work space in front of a panel that is 36" deep and 30" wide (or the panel width, whichever is greater).

- Commonly found electrical problems. Loose wires, bare wires, and damaged power cords can cause fires and shocks and must be repaired.

- Outdated equipment. Be sure that equipment brought into the Lab meets current codes and bears a UL label.

Contact the WRC, x6274, for assistance with electrical matters, from safety concerns and equipment evaluation to standards and requests for electrical work.

WRC AND INSTITUTIONAL LSAD DEFICIENCIES

The WRC has been enlisted by the Office of Assessment and Assurance (OAA) to act as a clearinghouse for newly identified candidate institutional deficiencies discovered through self-assessment inspections. This has resulted in the following procedural changes in how deficiencies are handled.

Deficiency routing. The WRC routes received deficiencies to the appropriate support organizations—Facilities, EH&S, Engineering, ICSD, and OAA—for action. The support organization either accepts responsibility for correcting the deficiencies or determines that correction is a programmatic rather than an institutional responsibility. In the latter case, it informs the discovering division.

Tracking. The WRC now tracks the

routing of institutional deficiencies. When a deficiency is accepted by a support organization, but funding is not available to immediately remedy the situation, the support organization notifies both the originator and the WRC. The WRC then provides the requester with written confirmation of the deficiency's status as a backlog list item. If a deficiency seems lost, the WRC will provide a trail for determining its status.

Divisions can refer candidate deficiencies by creating an export file of LSAD (LBL Self-Assessment Database) records and sending the file to the WRC via Quickmail or AppleShare. Appendix E of PUB-3105 contains further information on the new referral procedure. For guidance on the mechanics of referral, call Irene Kan at x6122.

Prioritizing. Institutional deficiencies are corrected on a prioritized basis, depending on the associated risk and available funding. Although the risk level is initially set by the discovering division, the responsible support organization reviews the deficiency and assigns a priority. If the support organization's assessment of the risk matches that of the requester, then no further action is required. However, to assign a lower priority, the support organization first consults the discovering division. The OAA rules on disagreements regarding priorities or non-acceptance of referred deficiencies.

Completion. The WRC is now notified when work to correct an institutional LSAD deficiency has been completed. The WRC provides written notice to the discovering division so that it can "close the book" on the corrected item.

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