

UC Berkeley

Facilities Reoccupation Policies and Procedures

Developed by the Facilities Reoccupation Group

of the

Business Resumption Coordination Group

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EXECUTIVE SUMMARY

The Facilities Reoccupation Group (FROG) was charged with 1) developing and documenting campus procedures for evaluating, securing, and reoccupying buildings following a disaster, 2) establishing a process for allowing emergency temporary access to critical buildings, and 3) ensuring that all relevant campus units understand their roles and responsibilities in post-disaster facility assessment and reoccupation. This plan details items 1 and 2, and will be used to accomplish item 3.

After extensive discussions and consultation with both internal and external experts, the group agreed that the following considerations should guide facilities inspections and reoccupation on the UC Berkeley campus.

Evaluation and Security

- In the immediate aftermath of a damaging earthquake or other major disaster, the campus Emergency Operations Center (EOC) will dispatch inspection teams to all buildings.
- The Vice Chancellor-Facilities Services, acting as the Campus Building Official, will evaluate structural soundness and, in consultation with other pertinent units, consider the overall safety of each building, and authorize reoccupation as appropriate.
- Environment, Health & Safety (EH&S) will determine whether hazardous materials are present and coordinate any necessary clean-up. Other health/safety issues will be evaluated with input from University Health Services (UHS) medical professionals as appropriate.
- Facilities Services-Physical Plant will assess the condition of the interior and exterior utilities and coordinate their repair.
- The Office of Laboratory Animal Care (OLAC) personnel will accompany inspectors into all animal facilities and will be consulted on safety and use issues.
- After structures are deemed structurally safe, and appropriate clean-up and repairs are accomplished, the Fire Marshal (in EH&S) will evaluate fire and other life safety aspects of the facility's intended use.
- The UC Police Department (UCPD) or contractual security personnel will secure all buildings while they are being inspected, repaired and cleaned up. Until each of the inspectors and specialists named above has approved the general occupancy of a building, security personnel will not allow general entry and usage.

Evaluation Protocol

- Facilities Services will follow the building safety criteria spelled out in ***Procedures for Post-Earthquake Safety Evaluation of Buildings*** (also known as ATC 20) used by the California Office of Emergency Services to guide building safety assessments statewide. Facilities Services has adapted the ATC 20 tagging categories to UCB's unique situation and needs in order to protect our employees, our students, and our assets (see Appendix A):
 - All obviously damaged buildings will be tagged red (UNSAFE—no entry) until they are comprehensively inspected by structural engineers and repaired as necessary.
 - All other buildings will be tagged yellow (RESTRICTED USE—only authorized inspectors or repair specialists) until they are cleared of hazardous materials, the

- utilities are either functional or safely turned off, and the structure has been deemed safe.
- In the cases of yellow-tagged buildings holding animals or other critical research materials, the EOC will arrange emergency access for authorized faculty or staff, accompanied by Facilities Services or other appropriate safety personnel.
 - No building will be posted green (general occupancy permitted) until all appropriate inspectors have cleared it for use.

Reoccupation

- Appendix B contains a definitive listing of minimal conditions that must be satisfied in order to permit use of campus buildings. “Building Usage and Conditions for Occupancy” sets forth the different levels of access for various groups, and the criteria that must be met in order to allow each of the following groups back into buildings:
 - Inspectors, engineers and other specialists to evaluate damages.
 - Clean-up and repair professionals to ready buildings for use.
 - The general campus community to use them safely, if not exactly conveniently.

SECTION I. BACKGROUND AND PLANNING PROCESS

Charge

The Facilities Reoccupation Group (FROG) was constituted in early 2003 by the UCB Business Resumption Coordination Group when consideration of one aspect of the campus business resumption plan raised a question about how quickly damaged buildings could be returned to use. The ensuing discussion revealed that there was some vagueness about which units have roles in post-disaster building inspection on campus, who will be making decisions about access to damaged buildings, and what criteria will be used. Because we want to resume teaching and research quickly yet safely, and in light of the fact that many faculty members, graduate student researchers, and staff members will be demanding access--especially to laboratory buildings, libraries, and museums—it is critical for the campus to clarify responsibilities and procedures. The FROG was therefore charged to:

- A. Develop and document campus procedures for evaluating, securing, and reoccupying buildings following a disaster
- B. Establish a step-by-step process for allowing emergency temporary access by faculty and other personnel to buildings posted yellow (Restricted Use)
- C. Ensure that all relevant campus units understand their roles and responsibilities in post-disaster facility assessment and reoccupation.

Group Process

The FROG began meeting in March, 2003, and held 14 meetings before completing its work in November, 2003. The group first reviewed plans already in place and general assumptions, and then it moved on to consider ways to improve or change those plans.

1) Previous Plans

In early meetings, work group members were acquainted with the basic plan for evaluating damaged buildings on the UCB campus. Based on plans by the Office of Emergency Preparedness, UCB will use the technique set forth in ***Procedures for Post-Earthquake Safety Evaluation of Buildings*** (also known as ATC 20 because it was developed by the Applied Technology Council for the State Office of Emergency Services). Our approach will generally be that engineers or building inspectors from Facilities Services-Capital Projects will evaluate structures; technicians from Environment, Health & Safety will survey for hazardous materials; and technicians and trades people from Facilities Services-Physical Plant will check on utilities. The Fire Marshal (in EH&S) also has some code compliance issues to weigh in on. But the work group members had a number of remaining questions:

- Which personnel should enter damaged buildings, and in what order?
- When any of the above specialists decide that a building is not fit for general occupancy, will we secure it against public entry?
- If so, is UCPD solely responsible for doing so?

2) Pertinent Issues

In subsequent discussions, members of the FROG familiarized each other with the problem areas that will be encountered in evaluating, securing and reoccupying buildings on such a large and diverse campus:

- There may be structural damage to many buildings, some of it severe, and it will be exacerbated by every aftershock.
- There will be nonstructural (contents) damages in most buildings, especially serious in laboratory buildings, museums and libraries.
- Some of the damaged contents will need to be retrieved from the buildings quickly.
- In many buildings, hazardous materials spills and releases, including airborne asbestos, will need containment before anyone can be allowed in safely.
- Utility systems will be damaged on campus or off, with resultant water, sewer, gas or electricity outages and associated hazards.
- Fire suppression systems and fire alarms will be damaged or nonfunctional and that will militate against full reoccupation.
- Automatic locking systems will be damaged or nonfunctional, and that will necessitate posting special security personnel to safeguard both safety and assets.
- At least in the first days after a quake, there will not be a full complement of UCB employees on hand to deal with the aforementioned problems.

The work group considered the actual make-up and size of inspection teams that could be fielded. With reference to structural damages, about 50 Facilities Services-Capital Projects personnel have been trained in the ATC-20 structural inspection protocol sanctioned by the State of California, but two people would be needed on each team. In light of post-disaster exigencies, 12 teams seemed a realistic estimate of what we will be able to field in the days after a quake. Facilities Services expects some assistance from consulting engineers under contract to the campus, but that has not been formalized in any agreements to date.

Facilities Services-Physical Plant personnel will be deployed according to their specialties in particular mechanical/ electrical/plumbing systems, as follows:

- Plumbers will evaluate potable water, sewer, and gas functioning and safety
- Electricians will evaluate electrical system and fire alarm functioning and safety
- Utility specialists will evaluate utilities outside buildings
- Heating/ventilating/air conditioning specialists will evaluate ventilation and refrigeration

Because they are highly specialized, more than one Physical Plant staff member will be needed on each inspection team.

EH&S personnel will be assigned by the DOC to inspection teams. If possible, EH&S specialists with hazardous material and health and safety experience will be assigned to each team. When they become available, qualified hazardous materials contractors will supplement EH&S personnel.

The work group weighed whether each inspection team should be made up of Capital Projects, Physical Plant, and EH&S personnel, or whether it makes more sense to send each specialty group out on its own according to some agreed-upon order of inspecting and entering risky buildings. After considerable discussion, and input from the experts noted below, the FROG determined that the former arrangement was preferable.

3) Additional Intelligence

The group's deliberations soon revealed that there were areas—notably the realities of structural evaluation and hazardous material clean-up—with which members needed more familiarity before proceeding. Accordingly, a number of outside authorities were invited to meetings. The visiting specialists helped to both broaden the group's perspective and sharpen its focus.

- Ron Norton, Director of EH&S at California State University Northridge, related how they handled building safety assessments and hazardous materials clean-up there after the 1994 earthquake. Serendipitously, they had under contract at the time a large structural engineering firm that was assisting in a project to develop a computer-based map of the campus' infrastructure. Shortly after the earthquake, some of the consultant engineers arrived on campus and directed the building evaluations from that moment on. The day after the quake, the campus also contracted with a large hazardous waste clean-up firm that took over most of that undertaking, working closely with the engineers on conditions for safe entry into each of the damaged buildings. The costs for both firms were covered by federal disaster assistance funds.
- Evan Reis, a structural engineer who is familiar with a widely used post-disaster structural safety assessment tool, explained the optimal use of that protocol. Developed by the Applied Technology Council, *Procedures for Postearthquake Evaluation of Buildings* (also known as ATC 20) is used by the State Office of Emergency Services to guide the post-disaster damage assessment and building posting by all structural design professionals in California. Because a university campus is an environment unlike a city or county, and notably with one owner, some of the ATC 20 posting provisions are not applicable. Reis recommended developing posting guidelines that meet our needs and ensure the safety of all members of the campus community. Reis has worked with Stanford University to adapt ATC-20 to its special needs, and he described in detail Stanford's inspecting and posting plan.
- Joan MacQuarrie, Chief Building Official of the City of Berkeley, who is also experienced in using the ATC-20 protocol, described how she will coordinate building inspections in Berkeley after an earthquake. The work group had expected that the campus may be asked to help the city with its safety assessment teams, especially since a number of campus units are in private rental buildings in Berkeley. However, MacQuarrie made it clear that she wants only people trained and certified in the ATC 20 protocol working in her municipality, and anticipates getting most of her help from volunteer safety assessment professionals that will be brought in through the auspices of the State Office of Emergency Services. Some personnel in UCB Capital Projects are

trained in ATC-20, but there may be a pressing need for them on campus. There should be further exploration of the possibility of using UCB inspectors for private property that UCB rents with the City of Berkeley and the Chief Building Officer.

- Michael Sabbaghian, an engineer with the State Office of Emergency Services, coordinates the ***Post-Disaster Safety Assessment Plan***, a mutual aid program for jurisdictions overwhelmed by building evaluations after a disaster. Under the plan, volunteer building design professionals (engineers, architects, building officials) from all over the state are trained in the ATC 20 protocol on a regular basis. Then, within a day or two of a damaging earthquake, they are sent to cities and counties to help with building safety assessments. They work at the direction of the local building official. Sabbaghian pointed out that though the structural evaluation techniques in ATC 20 are certainly the gold standard, the building posting approach is most suited to cities and counties. Since the university is a separate entity, owns most of the buildings it occupies, and has its own building officials, it is quite acceptable for it to alter the posting regulations if that works better.
- Bob Charbonneau, the Environmental Assessment Coordinator from UCOP, also attended three of the meetings to ensure that the procedures we developed fit within the system-wide post-disaster safety assessment plan. UCOP endorses the use of the ATC 20 protocol to the greatest extent possible, especially the structural evaluation techniques, but it prefers to adapt slightly different building posting guidelines and does not intend to ask for volunteer professionals through the State Office of Emergency Services. Instead, UCOP recommends that each campus within the UC system have structural engineering firms on retainer for use when necessary, and expects that EH&S, facility, and utility specialists from other campuses will be asked to help their colleagues at a damaged campus.

SECTION II. BUILDING EVALUATION AND SECURITY

After hearing from the invited experts, the work group met again, both en masse and in small stakeholder groups, to apply its acquired wisdom to the task for which it was charged. Work group members agreed upon the procedures described below.

Threshold for Activation

After any damaging earthquake or other disaster, the inspection process will be activated by the campus Building Official, after consultation with the Emergency Operation Center (EOC) and the Chancellor's Emergency Policy Group (CEPG). The CEPG will make the decision to close campus buildings until they are properly inspected, and UCPD will implement that decision. Moderate-magnitude earthquakes that affect the campus will be dealt with on a case-by-case basis: the FS, EH&S and UCPD DOCs will do a preliminary survey, or hear from building occupants, to determine if there is enough damage to warrant a full-fledged inspection.

Evaluators

When the decision has been made to activate inspection teams, the EOC will dispatch inspection teams to campus buildings. That will be accomplished through the EOC Operations Team and the Planning & Engineering Team, working with the pertinent Departmental Operations Centers: Facilities Services, EH&S, and UCPD.

The Vice Chancellor-Facilities Services is the official Campus Building Official. Facilities Services personnel and engineering consultants will evaluate structural soundness. In consultation with other pertinent units (below), they will consider the overall safety of each building. The VC-Facilities Services will then authorize reoccupation as appropriate.

EH&S will determine whether hazardous materials are present and coordinate any necessary clean-up. Because of insufficient personnel and equipment to undertake extensive monitoring and clean-up, EH&S will contract with outside firms to perform most of the work. These and other health/safety issues will be evaluated with input from UHS medical professionals as appropriate.

Facilities Services-Physical Plant (FS-PP) technicians and trades people will assess the condition of the interior and exterior utilities and coordinate their repair.

OLAC personnel should accompany all inspectors and specialists into animal facilities to help them take precautions against dangerous animals, and to advise the inspectors about minimal conditions of habitability for the animals. OLAC personnel should, in turn, be advised by inspectors about timelines for reoccupation so they can initiate evacuation or euthanization of animals if necessary. Before a disaster, selected OLAC personnel should be trained in the use of special equipment, such as self-contained breathing devices, so they are able to enter hazardous buildings without delay.

After structures are deemed structurally safe, and appropriate clean-up and repairs are accomplished, the Fire Marshal (in EH&S) will evaluate fire and other life safety aspects of the facility's intended use. The Fire Marshal may authorize only parts of the building for general

occupancy, or may require special provisions for the building to be fully occupied (see Appendix B for minimum occupancy criteria). The Fire Marshal understands the pressing need for campus buildings to be reopened, and will do everything to aid that need by a flexible interpretation of the pertinent laws.

Security

To maximize the safety of the campus community and to protect UCB's valuable assets, the UC Police Department or private security personnel will secure all buildings while they are being inspected, repaired and cleaned up. In some cases this may take a matter of a few days, in other cases, it may take months or years. Longer-term clean-up and repair projects will allow for contracting with private security firms. Until the VC-Facilities Services has approved the general occupancy of a building, security personnel will not allow general entry and usage.

Evaluation Protocol

Facilities Services will follow the building safety criteria spelled out in *Procedures for Post-Earthquake Safety Evaluation of Buildings* (ATC 20) used by the California Office of Emergency Services to guide building safety assessments statewide. That protocol allows for input from other specialists as named above in determining the overall safety and usability of a building.

However, because UC Berkeley's situation is unlike most covered in the ATC 20 tagging procedures, we will change the wording on the standard red, yellow and green tags that determine who can enter and occupy a building. We will err on the side of safety for all employees and students, and have fairly stringent requirements for entry and reoccupation. Facilities Services-Capital Projects (FS-CP) has adapted the ATC 20 tagging categories to UCB needs, as follows (see Appendix A):

Red: UNSAFE. No entry for general public because of visible exterior or interior damage. Only authorized specialists may enter to analyze damage and reparability.

Yellow: RESTRICTED USE. Parts or all of building unsafe for general public because of suspected contaminants, utility hazards, or structural problems. Entry limited to authorized specialists doing damage analysis, clean-up or repair.

Green: INSPECTED. Safe for general occupancy. Possible inconveniences but no hazards.

Led by FS-CP, all campus inspecting units will operate according to the following ground rules:

- All obviously unsafe buildings will be tagged red until they are repaired.
- All other buildings will be tagged yellow until they are cleared of hazardous materials, utilities are either functional or safely turned off, and the structure has been deemed safe.
- No building will be posted green until all appropriate inspectors have cleared it for use.

The implications of the third rule--no building will be immediately posted green—are significant and should be understood by every member of the campus community. Buildings in which the EOC and DOCs are located will be inspected as quickly as possible so they may be used by emergency responders, but other buildings—even lightly damaged ones--will not be immediately accessible. Business resumption plans should take into account that no buildings will be usable for at least a day or two.

Emergency Access

For cases in which yellow-tagged buildings hold animals or other critical research materials that must be cared for or dealt with soon after the disaster, the EOC will arrange emergency access for authorized faculty or staff so they can rescue or feed animals, retrieve or protect living organisms, or remove vulnerable objects from further damage. Specifically, at a given time and for a short duration, faculty or staff may be allowed into buildings accompanied by one or more safety specialists, as appropriate. Special protective measures and equipment may be required.

The ***Research Recovery Action Plan*** has a number of planning tools researchers can use to help improve their back-up of data and protection of research materials. Such preparations will reduce the need for researchers to enter dangerous buildings in the immediate aftermath of a disaster. The Research Recovery Advisory Committee, newly established by the VC-Research, should include in its work plan activities to promote preparedness and loss reduction among faculty members.

Since UCB will have on hand only a limited number of safety specialists to escort people, periods of emergency access may be restricted and will need to be scheduled and coordinated for various buildings. This means that there will not be constant and simultaneous access to all yellow-tagged buildings. Given this, the Office of the Vice Chancellor- Research should be prepared to serve as the lead contact for FS-CP in developing a list of which particular researchers will be given priority access to their labs, once the damage is known and appropriate protective measures have been determined.

Faculty members have a wealth of knowledge, especially pertinent to the contents of lab buildings, and will be eager to help out in the damage assessment and clean-up process. Others without any special technical knowledge will nonetheless be willing to serve as liaison for their building, aiding in communication to faculty members in the building and in arranging for access. The Academic Senate Disaster Preparedness Work Group and the Research Recovery Advisory Committee should consider workable ways to organize faculty to help out in these ways.

In cases where red-tagged buildings hold animals or other critical research materials, engineers will be consulted on whether even emergency access can be permitted. If the structural engineers approve, access will be arranged in the same fashion as with yellow-tagged buildings, above.

SECTION III. BUILDING REOCCUPATION

Just as different types of buildings have different criteria for reoccupation under the Fire Code, it is reasonable to categorize our buildings according to use and to spell out the reoccupation criteria for each use. Such an exercise makes the campus better able to put together different kinds of inspection teams for various buildings, and to make occupancy decisions based on the most comprehensive information. Obviously, some flexibility will be needed in interpreting this “code” for reoccupation of many buildings, but the parameters should be thought out now and not invented on a wing and a prayer.

Appendix B--“Building Uses and Conditions for Occupancy”—was developed by the work group to guide campus decisions. It covers conditions for entry by inspectors and other specialists, and sets the minimal conditions for general occupancy. It recognizes three categories of people who need to get into damaged buildings:

1. **Specialists**—a) inspectors who look at structural and nonstructural damage;
b) technicians who survey or test for hazardous materials; and c) plumbers, electricians, HVAC specialists, and other trades people to deal with utilities and MEP systems.
2. **Workers**—clean-up and repair people who will get buildings ready for full occupancy.
3. **Regular occupants**—who may have pressing demands to get into buildings, but whom UCB must protect as they re-enter or reoccupy buildings.

Scrutiny of Appendix B will reveal that every possible building usage has been cross-referenced with all categories of users. Facilities Services and EH&S personnel, as well as other inspectors, should consult this matrix in determining the general level of access for each building under consideration.

SECTION IV. MAJOR RECOMMENDATIONS

Outside Help

Facilities Services-Capital Projects should engage private structural engineering firms to help with the building evaluation process.

EH&S will need consultants and contractors to assist in hazardous materials inspection and clean-up, so they should identify firms that can meet campus needs. In particular, firms with offices and resources outside the Bay Area should be sought.

The Office of Business Resumption should retain a disaster recovery firm to help Facilities Services and EH&S with the wide array of challenges involved in getting all systems up and running again.

FS-CP, FS-PP and EH&S should establish or verify existing mutual aid agreements with their counterparts at UCOP and other UC campuses so that additional UC staff (specialists) can assist in evaluations, clean-up and repair.

Data Base

The inspecting, posting, reoccupying process could be best managed if we had a comprehensive inventory of all our buildings and their contents, in one place. Also helpful would be easy access to the structural drawings—electronic or on paper—for each one. The FASDI database should be further developed, and integrated with other electronic tools if necessary, to serve this end.

Training

Senior staff in each of the pertinent DOCs (Facilities Services, EH&S [including OLAC], and UCPD) should be trained once a year on the contents of this plan. Representatives of these groups should also meet periodically to review and revise the procedures as appropriate. More staff in FS-CP should be trained in ATC 20 procedures.

Building Access

Faculty and staff should be informed/reminded of the provisions of this plan as regards access to damaged buildings. Departmental business resumption planning should be done in recognition of likely access constraints during the early stages of business resumption. The Office of Business Resumption, the Office of the Vice Chancellor-Research, and the Office of the Vice provost-Academic Planning & Facilities should publicize the anticipated restrictions in access, and encourage pre-disaster nonstructural hazard mitigation and data back-up in order to reduce damage and make immediate access a less desperate need for faculty and staff.

The Office of the Vice Chancellor-Research should prepare to serve as the lead contact for FS-CP in developing a list of which particular researchers will be given priority access to their labs, once the damage is known and appropriate protective measures have been determined

The Office of the Vice Provost-Academic Planning & Facilities, working in cooperation with the Academic Senate Disaster Preparedness Work Group and the VC-R's Research Recovery

Advisory Committee, should develop ways to organize faculty to help out in damage assessment and in managing emergency building access. At the very least, faculty presence should be anticipated and checklists for tasks developed before a disaster. With pre- and post-disaster coordination, the faculty group can be made a valuable aid in the building reoccupation process.

Privately Owned Buildings

UCB has hundreds of its employees working in leased buildings, especially in Berkeley. Those buildings will be subject to the inspection and access regulations of the city they are in, but the campus must do what it can to ensure the safety of the people who work in them. That includes advising them before a disaster that they are expected to follow the local Building Official's rules. An information program should be developed to advise employees in leased buildings about safety considerations after a disaster. Liability issues should be included as well; for example, UCB will not be liable for any injuries or damages employees incur if they enter a leased building illegally.

Some personnel in UCB FS-CP are trained in ATC-20, the state-approved protocol for assessing building damage. Because UCB may want to help speed up the inspection of privately owned buildings that UC units rent, Facilities Services should further explore with the City of Berkeley and its Chief Building Officer the possibility of UCB offering some of its personnel to do damage assessment on private property with UCB renters.

APPENDIX A

UC BERKELEY DAMAGE STATUS POSTING TAGS For Use Following Disaster

The Tags

GREEN: To be posted only after FS (Capital Projects and Physical Plant), EH&S, and Fire Marshal personnel have inspected for all hazards, and determined that the structure is safe and general occupancy permitted.

YELLOW: To be posted initially on every building, and to remain in place while FS, EH&S, and FM personnel are inspecting for all hazards, or cleaning up and repairing, **and hazards still exist.**

RED: To be posted either upon initial inspection if the building looks seriously damaged, or after detailed inspection finds the building seriously damaged.

Directions for Using the Tags

The tags included here can function as copy masters. Before a disaster, a supply of each color should be made on appropriate colored paper by each unit that will have safety assessment responsibilities. Use intense colors—no pastels! Keep the tags in a convenient place for use immediately after a major disaster.

INSPECTED

LAWFUL / GENERAL OCCUPANCY PERMITTED



This structure has been inspected and no apparent hazards have been found.

Date: _____

Time: _____

Report any unsafe condition to building coordinator or Facilities Services; reinspection may be required.

(Caution: Aftershocks since inspection may increase damage and risk.)

Facility Name and Address:

Inspected by:

PRINT NAME: _____

SIGNATURE: _____

If other than University, list agency: _____

Inspector Comments:

UC Berkeley Facilities Services coordinated inspection of this facility.
FS can be reached at: _____

green

**Do Not Remove, Alter, or Cover this Placard
by Order of the University of California, Berkeley Building Official**

RESTRICTED USE

ENTRY LIMITED TO SPECIALISTS AUTHORIZED BY THE EOC



Date: _____

Time: _____

Structure is at risk to one or more of the following hazards:

- | | |
|---|--|
| <input type="checkbox"/> Hazardous Materials / Asbestos | <input type="checkbox"/> Structural Damage |
| <input type="checkbox"/> Mechanical & Building System Failure | <input type="checkbox"/> Fire Alarm / Life Safety System Failure |
| <input type="checkbox"/> OTHER: _____ | |

Entry is limited to the following Authorized Personnel:

- | | |
|---|--|
| <input type="checkbox"/> ENVIRONMENT, HEALTH & SAFETY | <input type="checkbox"/> FACILITIES SERVICES--Physical Plant |
| <input type="checkbox"/> FIRE MARSHAL | <input type="checkbox"/> FACILITIES SERVICES--Capital Projects |
| <input type="checkbox"/> OTHER: _____ | engineers & inspectors |

☐ **Entry and Occupancy are restricted as indicated below:**

Facility Name and Address:

UC Berkeley Facilities Services
coordinated inspection of this facility.
FS can be reached at:

--

**Caution: Aftershocks since inspection may
increase damage and risk.**

yellow

**Do Not Remove, Alter, or Cover this Placard
by Order of the University of California, Berkeley Building Official**

DO NOT ENTER OR OCCUPY UNSAFE



This structure has been inspected and found to be unsafe to occupy, as described below:

Facility Name and Address:

red

Date:

Time:

Inspected by:

PRINT NAME:

SIGNATURE:

If other than University, list agency:

UC Berkeley Facilities Services
coordinated inspection of this facility.
FS can be reached at:

**Do Not Remove, Alter, or Cover this Placard
by Order of the University of California, Berkeley Building Official**

APPENDIX B**UC BERKELEY BUILDING USAGE AND CONDITIONS FOR OCCUPANCY
Following Disaster**

The matrix on the following pages summarizes the minimal levels of functionality required for certain kinds of post-disaster building occupancy: inspection, clean-up and repair, and general public use. The criteria were distilled into the matrix by specialists and regulatory officials in Facilities Services (Capital Projects and Physical Plant), Environment, Health and Safety (including OLAC), and the Fire Marshal's office. All safety assessment personnel should have copies of the matrix so they can make informed decisions about access and occupancy in a post-disaster situation.

Building Usage and Conditions for Occupancy
8/27/04

Structural Inspection Protocol	Building Usage	Security & Access Control	Contaminants	Exits (fire escape, egress path, exit lighting)
1) All obviously unsafe bldgs on campus will be tagged red by FS-CP inspectors. Red tagged buildings closed until fixed. 2) With EH&S assistance, structural engineers will further evaluate red-tagged buildings. 3) Every other structure will be tagged yellow by FS-CP inspectors until it is checked by specialists. 4) EH&S, FS-PP specialists will check for other hazards in the building. 5) Buildings in need of specialized clean-up or utility repair will be yellow until clean. 6) Only when ALL specialists certify its safety will any building be tagged green.	1) Office and Classroom	Inspect and clean-up/repair: secure by UCPD or contract security firm until cleared by all specialists For gen'l occupancy, normal access controls must be operable OR supplementary security staff must be present. Routine patrol services from UCPD req'd..	Inspect & clean-up/repair: buildings with potential asbestos contamination will be closed until EH&S establishes requirements for personal protective equipment, medical exams, and other precautions. EH&S must give clearance for gen'l occupancy	Not needed for inspection. In high-rise --exits fully functional for clean-up and occupancy In low-rise --occupancy load determined according to exit capacity
	2) Residential (housing and dining)	Inspect and clean-up/repair: secure by UCPD or contract security firm until cleared by all specialists For gen'l occ, a locked perimeter AND entry monitors (eve and night), and RAs.	Inspect & clean-up/repair: buildings with potential asbestos contamination will be closed until EH&S establishes requirements for personal protective equipment, medical exams, and other precautions. EH&S must give clearance for gen'l occupancy	Not needed for inspection. In res. halls and apts --exits fully functional in order to allow sleeping. In dining halls --occupancy load determined according to exti capacity
	3) Laboratories with hazardous materials (and Tang Center)	Inspect & clean-up/repair: secure by UCPD or contract firm until cleared by all specs. For gen'l occ, reestablish normal security measures or their equivalent. Routine patrol services from UCPD.	Inspect & clean-up/repair: buildings with potential radiological, chemical, or biohazard contam. will be closed until EH&S reqs for personal protective equipment, medical exams, and other precautions are followed. EH&S must give clearance for gen'l occupancy	Not needed for inspection. Occupancy load determined according to exit capacity.
Tagging Definitions Green = Inspected. Certified safe for general occupancy. Possible inconveniences, but no hazards.	4) Libraries and Museums	Inspect & clean-up/repair: secure by UCPD or contract firm until cleared by all specs. For gen'l occ, reestablish normal security measures or their equivalent. Routine patrol services from UCPD.	Inspect & clean-up repair: areas with potential radiological, chemical or biohazard contam. will be closed until EH&S reqs for personal protective equipment, medical exams, and other precautions are followed. EH&S must give clearance for gen'l occupancy	Not needed for inspection Occupancy load determined according to exit capacity.
Yellow = Restricted Use. Parts or all unsafe for general occupancy because of suspected contaminants, utility hazards, or structural problems. Entry limited to authorized specialists doing damage analysis, clean-up and repair.	5) Assembly (gyms and auditoria)	Inspect & clean-up/repair: secure by UCPD or contract firm until cleared by all specialists. For gen'l occ, reestablish normal security measures or their equivalent. Routine patrol.	Same as 1 and 2 above EH&S must give clearance for gen'l occupancy	Occupancy load determined according to exit capacity. Not needed for inspection
Red = Unsafe. No entry by general public because of visible exterior or interior damage. Only authorized specialists may enter to analyze damage and reparability.	6) Animal Facilities	OLAC specialist to accompany all inspectors. For clean-up & repair, keep secured until cleared by all specialists. For full use, reestablish normal security measures or their equivalent.	Same as 3 above. OLAC specialists must advise on segmented use of a facility. EH&S must give clearance for gen'l occupancy	Not needed for inspection Occupancy load determined according to exit capacity.
	7) Utility and Infrastructure (and generator fuel tanks)	Access controlled by FS-PP & CNS. For full use, reestablish normal security measures or their equivalent.	Same as 1 and 2 above EH&S must give clearance for gen'l use	Occupancy load determined according to exit capacity. Not needed for inspection
	8) Daycare Centers	Same as 5 above. Same as 5 above.	Same as 1 above. EH&S must give clearance for gen'l occupancy	Not needed for inspection. Fully functioning for occupancy AND clean-up.

Building Usage	Electricity	Refuse Removal	Natural Gas	HVAC
1) Office and Classroom	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Not needed for inspection or preliminary repairs by specialists Needed during clean-up Some service needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy Full service not required for gen'l occupancy	Not needed for inspection, preliminary repairs by specialists, or clean-up Needed for gen'l occupancy when air conditioning only form of ventilation
2) Residential (housing and dining)	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Power (B or R) needed for gen'l occupancy	Not needed for inspection or preliminary repairs by specialists Needed during clean-up Some service needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy Full service not required for gen'l occupancy	Not needed for inspection, preliminary repairs by specialists, or clean-up
3) Laboratories with hazardous materials (and Tang Center)	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Not needed for inspection or preliminary repairs by specialists Heavy duty removal of contaminants may be needed during clean-up Full service needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy Full service not required for gen'l occupancy	Not needed for inspection or preliminary repairs by specialists May be needed in some lab buildings for clean-up and repair Needed for occupancy with negative-pressure
4) Libraries and Museums	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Not needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy Full service not required for gen'l occupancy	Not needed for inspection, preliminary repairs by specialists, or clean-up Needed for gen'l occupancy when air conditioning only form of ventilation
5) Assembly (gyms and auditoria)	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Some service needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy	Not needed for inspection, preliminary repairs by specialists, or clean-up Needed for gen'l occupancy when air conditioning only form of ventilation
6) Animal Facilities	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Sealable bags and cold storage needed for carcasses if no refuse removal for a few days Needed ASAP for bedding--autoclaved first in BL2 and BL3 Some service needed for gen'l occupancy	There must be no leaks for clean-up and gen'l occupancy Full service not needed for gen'l occupancy	Not needed for inspection by specialists. May be needed in some areas for clean-up and repair. Depending on weather, H or AC may be needed to sustain animal life. Needed in BL3 areas and for gen'l occupancy
7) Utility and Infrastructure (and generator fuel tanks)	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for gen'l occupancy	Not needed for gen'l occupancy	Full service not required for gen'l occupancy There must be no leaks for clean-up and gen'l occupancy	Not needed for gen'l occupancy
8) Daycare Centers	Not needed for inspection or preliminary repairs by specialists Back-up or regular power needed for clean-up and repair Regular power needed for fen'l occupancy	Not needed for inspection or preliminary repairs, but may be needed for clean-up Some service needed for gen'l occupancy	Full service not required for gen'l occupancy There must be no leaks for clean-up and gen'l occupancy Full service not required for gen'l occupancy	Not needed for inspection, preliminary repairs by specialists, or clean-up

Building Usage	Fire Alarm	Fire Suppression System	Potable H2O	Sewer
1) Office and Classroom	In high-rise --operational for gen'l occupancy In low-rise --operability not required Not needed for inspection or clean-up	In high-rise --operational for gen'l occupancy In low-rise --operability not required Not needed for inspection and clean-up	Not needed for gen'l occupancy when bottled water is available	Not required for gen'l occupancy when portapotties are available
2) Residential (housing and dining)	In res. halls and apts --operational or approved fire watch to allow sleeping In dining halls --operability not required Not needed for inspection or clean-up	In res. halls and apts --not needed for occupancy if alarm system fully operational In dining halls --operational if cooking equipment being used. Not needed for inspection or clean-up	Not needed for gen'l occupancy when bottled water is available	Not required for gen'l occupancy when sufficient portapotties are available
3) Laboratories with hazardous materials (and Tang Center)	Operational for gen'l occupancy Not needed for inspection or clean-up	Operational for gen'l occupancy Not needed for inspection or clean-up	Needed for gen'l occ (e.g., eyewash showers)	Not required for gen'l occupancy when there are alternate means of disposing of gray water
4) Libraries and Museums	Not needed for gen'l occupancy, clean-up or inspection	Operational for gen'l occupancy Not needed for inspection or clean-up	Not needed for gen'l occupancy	Not required for gen'l occupancy when portapotties are available
5) Assembly (gyms and auditoria)	Operational for gen'l occupancy Not needed for inspection or clean-up	Operational for gen'l occupancy Not needed for inspection or clean-up	Not needed for gen'l occupancy when bottled water is available	Not required for gen'l occupancy when portapotties are available
6) Animal Facilities	Not needed for inspection or clean-up. Alarm or approved fire watch needed for gen'l occupancy	Not needed for inspection or clean-up. Operational for gen'l occupancy.	For animal clean-up, some supply of non-potable water needed. Not needed for gen'l human occupancy when potable bottled water available.	Not needed for gen'l human occupancy when portapotties available Required for use of BL3 Required for cage sanitation in 2-3 weeks.
7) Utility and Infrastructure (and generator fuel tanks)	Not needed for use, clean-up or inspection	Not needed for use, clean-up or inspection	Not needed for gen'l occupancy	Not required for gen'l occupancy when portapotties are available
8) Daycare Centers	Not needed for inspection or clean-up Operational for gen'l occupancy	Not needed for inspection or clean-up Operational for gen'l occupancy	Not needed for gen'l occupancy when bottled water is available	Not required for gen'l occupancy when portapotties are available