

**Office of the President**

**TO MEMBERS OF THE COMMITTEE ON GROUNDS AND BUILDINGS:**

**ACTION ITEM**

*For the Meeting of July 21, 2015*

**APPROVAL OF PRELIMINARY PLANS FUNDING, UC HALL RETROFIT AND RENOVATION, SAN FRANCISCO CAMPUS**

**EXECUTIVE SUMMARY**

The San Francisco campus proposes the retrofit and renovation of UC Hall (UCH), an existing 148,200- gross-square-foot (gsf) building (88,100 existing assignable square feet), located on the Parnassus Heights campus. In addition to addressing seismic deficiencies, the proposed renovation would provide three floors of desktop workspace with 150 to 200 seats for academic and administrative uses, and three floors of housing providing 134 beds.

The building is located on Parnassus Avenue, which is the main vehicular circulation spine through the UCSF Parnassus Heights campus. This 1917 building includes office, research laboratory, clinical, and educational space, and requires seismic remediation to comply with the University's Seismic Safety Policy.

The provision of desktop work space is integral to UCSF's clinical enterprise plan at the Parnassus Heights campus and the need to accommodate growth in clinical faculty. The conversion of housing would advance the goal to provide more student housing, as well as reduce the campus space ceiling coverage by 68,300 gsf.

Preliminary estimates for this project, which would include the cost of site improvements to the adjacent sidewalk, range from \$170 million to \$183 million total project cost, to be funded from external financing and campus funds, comprising centrally managed, pooled, unrestricted funds (non-State, non-tuition).

This item requests approval of preliminary plans funding ("P") in the amount of \$11 million from campus funds, specifically from a centrally managed pool of unrestricted funds (non-State, non-tuition), including indirect cost recovery on sponsored contracts and grants, gift assessments, and investment earnings. The proposed funding would allow the campus to engage an executive architect and construction professional to program and explore structural design alternatives, develop a cost-effective renovation plan, and advance the proposed project through Design Development. Approval of full budget and the associated external financing as well as design and California Environmental Quality Act documentation will be requested at a future meeting.

## RECOMMENDATION

The President of the University recommends that the Committee on Grounds and Buildings recommend to the Regents that the 2015-16 Budget for Capital Improvements and the Capital Improvement Program be amended to include the following project:

San Francisco:            UCSF UC Hall Retrofit and Renovation – Preliminary Plans –  
\$11 million to be funded from campus funds.

## BACKGROUND

### *Context*

The Parnassus Heights campus (Parnassus) (Attachment 4, Figure 1), which is one of multiple UCSF campus sites, is the home of all four UCSF professional schools: Schools of Medicine, Pharmacy, Nursing, and Dentistry. The campus also contains wet and dry biomedical research laboratories and offices, core instructional facilities (including classrooms, auditoria, etc.), UCSF Medical Center inpatient and outpatient clinical facilities, and other campus support functions.

UCSF has embarked on a long-range renewal plan for the Parnassus site, consistent with the campus' Long Range Development Plan (LRDP), Physical Design Framework, and Ten-Year Capital Financial Plan. The renewal plan contains a number of goals, which include:  
1) remediating seismic hazards; 2) renovating obsolete laboratory space in existing high-rise laboratory buildings; 3) improving the office space supporting UCSF faculty and staff who provide patient care, educate students and trainees, and conduct research at Parnassus; and, 4) increasing housing for students.

With the renewal plan, the programmatic emphasis at Parnassus would remain essentially the same, except that the plan called for the women's, children's, and cancer clinical programs and their faculty to relocate to Mission Bay to the new UCSF Medical Center at Mission Bay and Mission Hall, which took place in early 2015. Clinical programs serving adult patients at Parnassus will backfill the space vacated by the programs that moved to Mission Bay.

Approximately 190-200 new faculty and staff are being hired to support the clinical growth in Parnassus programs by 2021. The new faculty hires would require dry research and desktop work space at Parnassus adjacent to the clinical facilities. UCH will help meet this demand.

### *Space Ceiling*

In response to neighborhood concerns about development of the Parnassus Heights campus, in 1976 the Regents adopted the "*Designation of Open Space Reserve, Alteration of Campus Boundaries, Commitment of Houses to Residential Use, Authorization to Negotiate Sale of Properties and Commitment to Transportation Studies, San Francisco*" (known as the "1976 Regents' Resolution") in connection with the 1976 LRDP. The Resolution called for numerous actions, including establishing a cap on the total amount of structured space within the

campus boundaries not to exceed 3.55 million gsf, excluding space committed to residential use on certain streets and avenues (known as the “space ceiling”). The 2014 LRDP, which modified the space ceiling policy to exclude all residential space from the space ceiling calculation, recognizes the importance of campus housing in supporting housing goals as mentioned above, while also improving UCSF’s jobs-housing balance, lessening traffic impacts, enhancing campus vitality, and focusing the monitoring of space on non-residential uses.

As of November 2014, approximately 3.712 million gsf of space subject to the space ceiling exists, which is approximately 162,400 gsf (4.6 percent) above the 3.55 million gsf space ceiling limit. The LRDP proposes to reduce the amount of space above the space ceiling over the life of the plan by converting some existing office space (including UCH) to residential use, demolishing a number of buildings after relocating occupants elsewhere, and excluding all residential space from the space ceiling calculation. UCSF proposes to seismically retrofit, renovate, and reuse UCH for housing and offices in this project. Consistent with the LRDP, UCSF plans to convert the offices in the retrofitted UCH to housing after Moffitt Hospital (Moffitt) is decommissioned for inpatient use. Moffitt must be decommissioned by 2030 to comply with seismic regulations. UCSF expects that it will renovate Moffitt for other uses, including office space, starting in the 2030 timeframe once the building is vacated of inpatient uses. Reusing UCH for housing would remove the residentially occupied space from the space ceiling calculation. This UCH project would reduce the overage by 68,300 gsf.

### ***The Building***

The six-level steel and concrete UCH building is located on Parnassus Avenue, the main public street bisecting the Parnassus campus, and is adjacent and connected to the Clinical Sciences Building (CSB). (See Attachment 4, Figure 2.) UCH was designed in the Beaux-Arts style by master local architect Lewis Hobart. There are terracotta embellishments on the exterior of the building. The building is eligible for historic designation. In addition, artist Bernard Zakheim, a student of Diego Rivera, was commissioned in 1938 to paint a series of murals depicting the history of medicine in Toland Hall, a small auditorium in UCH. These murals will be preserved in place and the space would be maintained as a general use space, such as a common room for the building or a meeting space.

## **PROJECT DRIVERS**

### ***Seismic***

UCH is rated Level V under the University’s Seismic Safety Policy, requiring that the building be retrofitted or demolished. Per the California State University Seismic Review Board, which is advising the Regents on seismic safety, UCSF must make immediate progress towards remediating UCH’s seismic conditions. The process of vacating UCH would begin once the seismic retrofit and renovation of CSB is completed in 2017. In order to perform the UCH remediation, the building would be completely vacated by mid-2019. Research laboratories and clinics in UCH would be relocated to renovated space in other Parnassus or Mission Bay

buildings under separate projects. Desktop workspace occupants would be relocated to other campus space on Parnassus (also under separate projects).

***Desktop Space Need***

UCH desktop workspace is required to accommodate growth that is estimated to include 190 to 200 new clinical faculty and staff. The new faculty and staff will require dry research and desktop workspace at Parnassus. Some of this workspace, roughly 85 seats, will be accommodated in CSB which will be retrofitted and renovated by mid-2017. The seats planned for three floors of desktop space in UCH (estimated at 150 to 200 seats) will accommodate the remaining new clinical faculty and staff, and provide space for additional program growth and clinical faculty hires.

***Adjacency Needs***

Desktop work space needed for clinical faculty and staff at Parnassus must be located near clinical facilities, as well as near instructional and research space. There is no space to meet these programmatic needs elsewhere at Parnassus. Clinical faculty must be within a short walk of the clinical and instructional facilities, as well as their research space in order to maximize productivity. The faculty to be housed in UCH will have clinical responsibilities at Moffitt/Long Hospital and outpatient clinics, including dental clinics, at Parnassus, and many also teach students or trainees, or conduct research at the campus site. UCH is an ideal location for clinical faculty academic workspace because it is a very short walk from UCH to clinical facilities. (See Attachment 4, Figure 2.)

***Housing Needs***

On-campus housing at UCSF is available to eligible students, postdoctoral scholars, clinical fellows, residents, and faculty. However, there is not enough UCSF-controlled housing to meet the demand by eligible UCSF students and personnel.

Demand for on-campus housing has increased significantly, as housing rents in San Francisco are among the highest in the nation, and are not affordable to many UCSF students, trainees, and faculty. Moreover, some students, trainees, and faculty have been deterred from coming to UCSF or have left UCSF because of the high housing costs. Therefore, it is imperative that UCSF increase its on-campus housing to meet the needs of its students, trainees, and faculty.

Table 1 shows that there is a significant gap between the current UCSF housing portfolio that provides 1,004 beds and the campus housing goal, which is ideally 2,357 beds for the existing UCSF population. The shortfall is 1,353 beds for the current population.

**Table 1: Campus Housing Goal Status**

Existing Housing by Population Type	Approx. 2013 Population	Current % Housed	Current Population Housed	Housing Goal	Goal for Population Housed	Shortfall as of 2015
Postdoctoral Scholars*	1,550	19%	300	25%	388	88
Students	3,080	18%	543	40%	1232	689
Clinical Residents	1,680	7%	115	25%	420	305
Faculty	3,170	1%	46	10%	317	271
<b>Existing Total</b>	<b>9,480</b>		<b>1,004</b>		<b>2357</b>	<b>1,353</b>

\*For purposes of housing category, Postdoctoral scholars (1,100) includes Clinical Fellows (450)

The LRDP proposes to increase the UCSF housing portfolio by 1,162 beds by 2035. The number of beds proposed in this UCH Project is 134. Future conversion of UCH offices to housing would provide another 78 beds. Other housing projects are proposed in the LRDP besides UCH, and they are all needed to help meet the growing demand for on-campus housing.

**Cost**

UCSF evaluated a number of options for the UCH building. Of the options analyzed, the option to renovate and the option to demolish and build a new replacement building were the two most viable ones. The retrofit/renovation option is less expensive than a demolition/rebuild option, which includes the high cost of the demolition work as well as the cost of a new building shell. (Please refer to Attachment 2, Alternatives Analysis.) The selected renovation meets the campus’s objective for a plan that is cost-effective and fundable.

**PROJECT DESCRIPTION**

The proposed UCH retrofit and renovation project would be to decant the building, remediate the seismic hazards in the six-level building in compliance with the University’s Seismic Safety Policy, upgrade building systems, improve disabled access, create a new desktop workplace in support of clinical programs in Moffitt/Long Hospital, provide for student and trainee housing, and upgrade the meeting space within the building to contemporary standards. The existing 148,200 gsf building would be reduced in size by 2,100 gsf to a final project total of 146,136 gsf as a result of the conversion of the UCH/CSB shared lobby into a multi-purpose classroom that will be part of CSB gsf (and no longer counted towards UCH gsf).

The shell of the building would be renovated per the U.S. Secretary of the Interior's Standards for Treatment of Historical Properties. The asset would be improved and provide a high-performing, seismic and code-compliant facility with an extended life of 50 plus years after the renovation is completed.

The proposed project would be to seismically strengthen the building, replace aging building systems, and renovate the interior of the building as contemporary dry research work space and student housing. The building would be vacated prior to retrofit and renovation. The renovation would modernize the aging interior and provide highly efficient and flexible office layouts on three floors, to encourage collaboration and provide flexibility for growth and contraction of programs without costly future construction. The open layout minimizes enclosed space, and thus, lends itself to conversion to housing in so far as the investments in walls are minimal. In addition, the building infrastructure will be designed to support the housing planned for these three floors.

The proposed project would be completed in one phase, in order to avoid the additional cost of phased moves, disturbance to existing occupants, project overhead, and cost escalation because of drawn-out construction schedules.

### *Decant*

The relocation of most of the wet research laboratories now in UCH to other locations on campus would be complete by the summer of 2015. Ophthalmology clinics in UCH would be relocated to new clinical space in the proposed clinics and desktop building on Block 33 at the Mission Bay East Campus. Vacant space in UCH will be used temporarily to accommodate CSB desktop programs (academic and administrative) that need space while CSB is being retrofitted and renovated. The programs would remain in UCH for two years until the CSB project is completed. At that time, the existing UCH desktop programs and CSB programs temporarily occupying UCH would relocate permanently to CSB or elsewhere, thus allowing UCH to be retrofitted and renovated.

### *Seismic*

UCH is a steel frame building, with concrete decks and a brick masonry exterior envelope. Lateral forces are braced in part by the brick infill exterior envelope, which is engaged with the steel frame on the perimeter, and by concrete basement-level retaining walls on the south side of the building, extending from the basement level to the top of the second floor. The west end of the building is considerably taller than the east end of the building, as the ground slopes from east to west. In addition, the west end is less engaged with the hillside to the south, which results in the west end being more flexible (and subject to significant earthquake damage) than the east end. UCH lacks adequate shear strength, particularly at the west end, to fully withstand earthquake force levels required under Chapter 34 of the California Building Code. These structural deficiencies have led to a seismic performance rating of Level V ('Poor'). The project would seismically retrofit the building to meet current University Seismic Safety Policy.

***Infrastructure***

The building's infrastructure is aged and out of date. Restrooms are not compliant with current code and need to be made compliant. The main air-handling and electrical equipment and switchgear must be replaced. The existing mechanical and electrical equipment spaces in the building are too small for code-compliance, and need to be expanded in size and reconfigured to allow room for contemporary equipment and code-mandated maintenance access. The roof would be replaced. Electrical distribution and information technology distribution systems need to be replaced.

***Site Work***

Site work for the project would include the areas between the building wings on the south side of the building, reinstatement of the west end loading dock, and to the curb on the Parnassus Avenue or north side of the building. The campus has a phased streetscape plan that will be implemented in accordance with the LRDP between 2015 and 2035.

***Program***

The renovation of UCH would provide both desktop work space and student housing. The desktop work space layout would be a mix of private offices and open workstations. New housing units would be built consistent with modern housing needs. Table 2, below, summarizes the proposed program:

**Table 2: Program Table**

<b>FUNCTION</b>	<b>ASF After Project (Approximate)</b>	<b>GSF After Project (Approximate)</b>
Office	47,000	51,000
Housing	52,000	63,000
Instructional (Toland Hall auditorium)	2,000	2,000
Mechanical, Electrical, Data, other Building Support Functions	13,000	14,000
Circulation	N/A	16,000
Total ASF / GSF	114,000	146,000

***Approval Request and Schedule***

The requested preliminary plans funding of \$11 million in campus funds (i.e., centrally managed, pooled, unrestricted funds [non-State, non-tuition] derived from a variety of sources, including indirect cost recovery on sponsored contracts and grants, gift assessments, and investment earnings) would enable UCSF to refine and confirm the scope of the project, develop a budget, and produce preliminary plans to support future Regents' approval.

The funding would support completion of programming and concept design, development of hazardous abatement and site surveys, and development of California Environmental Quality Act documentation and cost analysis. The campus intends to submit the project for full budget, financing, and design approval at a future meeting. Following budget, financing, and design approval, it is estimated that interior decontamination, soft demolition, and partial hard demolition would commence in late 2017, with the goal of starting construction once the Ophthalmology clinic and associated offices relocate to Mission Bay in 2019.

**Key to Acronyms**

ASF	Assignable Square Feet
CEQA	California Environmental Quality Act
CSB	Clinical Sciences Building
EH&S	Environmental Health and Safety
GSF	Gross Square Feet
LRDP	Long Range Development Plan
MEP	Mechanical, Electrical, and Plumbing
P	Preliminary Plans
TI	Tenant Improvements
UCH	UC Hall

**ATTACHMENTS:**

- Attachment 1: Preliminary Plans Budget
- Attachment 2: Alternatives Analysis
- Attachment 3: Delivery Model
- Attachment 4: Project Location (Figure 1)  
Project Site (Figure 2)



**PRELIMINARY PLANS BUDGET**

<b>Category</b>	<b>Amount</b>
Fees <sup>(1)</sup>	\$3,850,000
Campus Administration <sup>(2)</sup>	\$ 1,665,000
Surveys, Tests, Plans and Specifications <sup>(3)</sup>	\$ 822,000
Special Items <sup>(4)</sup>	\$ 4,663,000
<b>Total Preliminary Plans Budget</b>	<b>\$ 11,000,000</b>

The proposed funding would allow the campus to engage an executive architect and construction professional to program and explore structural design alternatives, develop a cost-effective renovation plan, and advance the proposed project through Design Development. The campus also intends to develop hazardous abatement and site surveys, and develop the California Environmental Quality Act documentation and cost analysis. The campus intends to submit the project for full budget financing, and design approval at a future meeting.

---

<sup>1</sup> Architect and Technical Team including MEP, Development of Technical Criteria, Design Development to Regents Design, Construction Management Consultants

<sup>2</sup> Campus Project Management, Campus Administration, and Contract Administration

<sup>3</sup> Includes Hazardous Materials Survey and Testing, existing structural testing, foundation investigation

<sup>4</sup> Programming, Legal and CEQA Consultants, Community Presentations, CEQA Approval, Telecommunications, Security, Structural Peer Review, Audio/Visual Consultant, Waterproofing Consultant, Elevator Consultant, Historic Preservation Architect, Interior Designer, Acoustical Consultant, Plan Review and EH&S

## ALTERNATIVES ANALYSIS

Three options have been identified for remediating the seismic risk posed by UCH:

- A. Fully decant UCH and, once empty, rehabilitate the building.
- B. Demolish and rebuild UCH on-site.
- C. Demolish UCH and create a landscaped open space.

UCH is a 148,200 gsf building, constructed as the first University of California Hospital on the south side of Parnassus Avenue at the western side of the Parnassus campus. UCH houses offices, clinics, research laboratories, and educational spaces. UCSF included plans to demolish UCH in the 1997 LRDP in order to reduce the amount of space by which UCSF exceeds the Parnassus Campus Space Ceiling. In 2008, UCSF analyzed the cost of demolition of UCH, and found that the scope and cost were considerable.

Reducing the amount of Parnassus space in excess of the Space Ceiling can also be accomplished by conversion of UCH to student housing. Conversion accomplishes other goals which demolition cannot accomplish: conversion to housing increases the amount of affordable student housing available at Parnassus, thus reducing demand for housing placed on the neighborhood around the Parnassus campus and reducing the number of trips to and from the Parnassus campus.

The following analysis, considered by the Chancellor's Executive Committee, evaluates three alternatives: to demolish UCH and create a landscaped open space; to demolish and rebuild UCH for housing; or to rehabilitate and reuse the building for other purposes (housing or office space).

Based on this analysis, the Chancellor's Executive Committee endorsed retention of UCH based on a program of three floors of student housing and three floors of office space. Should demand for office space not materialize during the time required to decant and renovate CSB, the program for renovation of UCH would become all student housing.

### Option A - Rehabilitation and Reuse (\$183 million)

This option would call for demolition of the interiors of UCH, installation of shear walls and structural upgrades to bring UCH into conformance with the California Building Code, UC Seismic Policy, and UCSF structural performance objectives, and then build out of new interior improvements in accordance with final program choices for the building. The historic exterior of the building would be repaired and the terra cotta detailing preserved. Option A has been accepted by campus leadership.

Option B - Demolition, followed by construction of a new building on the site  
(\$215 million)

Due to issues of site access, staging, and logistics, and other site-specific factors, in addition to the cost of new construction, already high at the Parnassus Heights site, the campus would incur costs which could be avoided by seismic remediation and renewal of the existing building. Demolition costs are considerable at Parnassus due to the cramped sites, lack of access, use of lower floors as retaining walls, and the need to demolish with full decontamination after decades of clinical and laboratory uses. Additionally large volume of excavation would be needed to prepare the UCH site for construction, were it decided to build there after demolition. This assumes the new construction would provide 30 percent more units than would be available through renovation of UCH.

Option C - Demolition, followed by construction of open space on the respective sites  
(\$102 million)

This option would demolish UCH and replace it with landscaped open space on the site.

*Cost and Value Analysis*

**Option A** would call for renovation of UCH. A range of program options has been considered for a rehabilitated and reused building. The cost of rehabilitation of the shell is \$151 million. (Partial interior construction with a cost of \$32 million would be funded by housing rents.) Subtracting the cost of UCH Option C (\$102 million) from the cost of the rehabilitated warm shell (\$151 million) leaving a cost differential of \$49 million. This represents the additional dollars that the campus would need to pay above the cost of demolition and site improvements to reuse the building. Option A also fulfills the goals of removing the square footage of UCH used for housing from the Parnassus Space Ceiling, and of providing additional student housing at Parnassus, thereby lowering UCSF's impact on the surrounding community. This option also preserves UCH, which is a structure that is eligible for the National Register of Historic Places. Preservation of UCH is of interest to the historic preservation community in San Francisco.

**Option B** would call for demolition of UCH and replace it with a newly constructed housing complex. This option would include the cost of demolition in addition to the cost of new construction. This option assumes 30 percent more units than would be available through renovation of UCH for housing to amortize the cost of construction of foundations and site work across as many units as possible and thus make the cost per unit of housing as low as possible.

The cost of Option B warm shell for a new housing building is \$183 million. (Partial interior construction with a cost of \$32 million would be funded by housing rents.) Subtracting the cost of Option C (\$102 million) from the cost of the warm shell (\$183 million) leaves \$81 million, which represents the amount the campus would need to pay for construction of a new housing building on the UCH site. Both demolition and new construction would have considerably greater noise and dust impacts compared with renovation, as during renovation the existing building shell would contain much of the noise and dust associated with construction. Option B fulfills the goals of removing the area of UCH housing from the Parnassus Space Ceiling

overage, of providing additional student housing at Parnassus, and thereby lowering UCSF's impact on the surrounding community. This option would not preserve UCH itself, which would lead to friction with the historic preservation community in San Francisco. Noise, dust, and construction logistics impacts would be much higher than reuse of the existing building, leading to unavoidable neighborhood impacts.

**Option C** would call for demolition of UCH, excavation of the site to regularize the indentation of the building footprint on the hillside to the south, construction of slope stabilization and retention structures, and landscaping of the hillside as a park and open space. While Option C would remove the area of UCH from the Parnassus Space Ceiling overage, no usable space would be created by this expenditure, and the additional goals of providing student housing at Parnassus thereby lowering UCSF's impact on the surrounding community would not be met. For purposes of this analysis, the cost of demolition and construction of an urban park on the site is considered a cost incurred without being able to achieve significant goals. Noise, dust, and construction logistics impacts would be higher than reuse of the existing building but lower than if a new building were built on the site.

UCH Renewal Options A-C have been analyzed and costs estimated to a rough order of magnitude, for planning purposes and summarized in the following table:

**Options Table**

Option	Description	Cost	GSF After Renovation	Duration including Demolition	Program Cost/GSF	Notes
A	Renovate UCH for Office and Housing	\$183,000,000	146,136	24-30 Months Construct	\$1,200	Renovation of UCH for office and housing; includes approx. \$32M for Housing Tenant Improvements (TI)
B	Demo UCH, Construct new Housing on site	\$215,000,000	146,136	30-36 Months Construct	\$1,470	New office and housing building on UCH site, 30% more beds than full renovation for housing; includes approx. \$32M for Housing TI
C	Demo UCH, construct park on site	\$102,000,000	0	36 Months Construct	N/A	Demolition of UCH and construction of park on site, including hillside stabilization

*Note: Costs presented in the table above are accurate to within +/- 20% in nominal present dollars and do not include the level of budget development and risk analysis required for final project budgeting. They are order-of-magnitude costs intended to highlight the relative differences between options as an aid to decision-making.*

### ***Factors Affecting Cost and Schedule***

Costs have been estimated based on conceptual design options but are subject to a high level of imprecision. Preliminary plans funding will allow UCSF to build a final project budget grounded in a thorough risk mitigation plan. Because of factors that are discussed below, UCSF proposes to develop a project plan that will effectively mitigate risk and boost construction labor productivity.

Project costs and construction costs at the Parnassus Heights campus have historically been high, because of the extreme urban density and the interconnectedness of the buildings and utilities systems. These conditions erode daily construction labor productivity and increase risk for contractors and subcontractors. This loss of productivity is by far the largest cause of high construction costs at the Parnassus Heights campus.

Factors which impact labor productivity include:

1. Lack of close-in contractor parking.
2. Lack of lay-down space and/or material handling and staging space, which forces contractors to use just-in-time delivery. Any impediment to the smooth delivery of materials to the site impacts crew productivity.
3. Cost of managing site access by delivery vehicles and construction equipment in a location visited by 16,000 persons per day.

### ***Conclusion***

Based on the above analysis, Option A is the most financially feasible option that also provides for the office and housing space needs at the Parnassus Heights campus.

**DELIVERY MODEL**

For the following reasons, the Construction Manager (CM) at Risk delivery model has been selected for the renewal of UCH:

Cost control for projects at the dense, urban Parnassus Heights campus site depends upon comprehensive logistical planning, risk management, and, for a renovation option, careful calibration of the design for cost effectiveness. The campus's analysis of what alternative best serves the campus needs points to the renovation option (Attachment 2). If the renovation alternative is ultimately the preferred alternative, the likely range of delivery models for the proposed project is:

1. Basic Design-Build
2. Design-Bid-Build
3. Construction Manager at Risk

The delivery models were analyzed for their ability to address the project planning and risk management needs, and were evaluated against versions that incorporated Lean Construction methods used for Clinical Sciences Building and UCSF's Smith Cardiovascular Research Building at the Mission Bay campus site (Lean CM at Risk) and the Dolby Regeneration Medicine Building (Lean Design-Build) at the Parnassus Heights campus site.

Use of a CM at Risk delivery model allows UCSF to work with the contractor and the design team to develop bid documents with a fine-grained approach to risk mitigation. The bid documents will inform subcontractors of specific measures and programs designed to mitigate risks inherent to individual trade packages. This will, in turn, allow more effective management of labor productivity, construction escalation, and of the work itself, leading to smoother workflow and improved labor productivity.

Figure 1: Project Location



**Figure 2: Project Site and Adjacency to Clinical Facilities at Parnassus (Ambulatory Care Clinics and Moffitt/Long Hospitals)**

