University of California, Santa Cruz

BUSINESS CASE ANALYSIS

SCIENCE AND ENGINEERING LIBRARY RENOVATION

January 17, 2017

APPROVAL OF BUSINESS CASE ANALYSIS

George Blumenthal

2/10/17

Date

George Blumenthal, Chancellor

University of California, Santa Cruz

University of California, Santa Cruz
Science and Engineering Library Renovation
Business Case Analysis
January 17, 2017

Executive Summary

The Science and Engineering Library (S&E Library) opened its current facility on the UC Santa Cruz campus in 1991. Considered one of the most beautiful buildings on campus, the award-winning facility is located at the heart of Science Hill, a major campus hub of both academic and social interaction. With 78,000 OGSF (outside gross square feet), the building was programmed to support science academic programs, research collections, and services for students and faculty in the former Division of Natural Sciences, as well as provide individual and group study spaces for use by students in all divisions. It currently houses 56,000 ASF (assignable square feet) of space for collections and library services, reading and study rooms, a computer laboratory, academic and administrative offices, and support space.

The S&E Library has served UC Santa Cruz for more than 25 years. During that time, the campus created the Jack Baskin School of Engineering, reorganized the Division of Natural Sciences into the Division of Physical and Biological Sciences, more than doubled the number of academic STEM programs, and more than doubled campus student enrollment. The S&E Library has adapted to keep pace, as well as to meet the external challenges of a networked academy.

21st century academic libraries have evolved to be more than repositories of physical collections. Innovations in information technology like mobile computing, social media, and the wide variety of new data retrieval, sharing, and distribution platforms necessitate a library that is fully responsive to the demands of the digital age. New ways to learn and collaborate, provide instruction, and engage in research are driving the transformation of today's libraries into vibrant and collaborative environments that advance their core missions to provide efficient access to collections and research services for students and faculty.

The library services, student study, and reader spaces that were created for the 1991 S&E Library cannot adequately address the information seeking, access, and individual and group learning needs of today's STEM community. It lacks both the capacity to serve a far larger student population and the technological infrastructure and spatial flexibility to adapt to current and changing needs. As a vital community hub on Science

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Hill, it also cannot meet the overwhelming demand for student study, collaboration, and gathering space. As part of the campus priority to transform the student experience, the *Campaign for UC Santa Cruz* has included in its fundraising initiatives a level of support for a renovated and reimagined S&E Library to give students new spaces and resources for collaborative learning, study, and research.

As a facility, the 25-year-old S&E Library faces the challenges of an aging and obsolete mechanical, electrical, and plumbing infrastructure and the associated rising operational costs. Building systems require frequent costly repairs, lack the capacity to meet the demand of an ever-increasing number of users, and fail to meet current code and UC and campus sustainability goals.

This Business Case Analysis (BCA) considers three alternatives:

Alternative A: No renovation, or project deferral
Alternative B: Full renovation—single phase
Alternative C: Full renovation—multi-phase

The BCA concludes that Alternative C is the optimal solution, within funding constraints, to address the project objectives of providing science and engineering students with a contemporary academic learning and research environment, one supported by a robust and modernized infrastructure, creative reallocation of functional areas, and enhanced study and collaborative learning spaces.

Project Drivers

Evolution of the Academic Library

The academic publishing business model has changed markedly in the last quarter century. What was a print-first model when the S&E Library opened in 1991 has evolved into an electronic-first model today. CD-ROM journal indexes came and went in the nineties, eJournals broke through around the turn of the millennium, and eBooks eventually followed, coming into an early maturity only in the last five years. Academic libraries (particularly academic STEM libraries) adapted at every step and now provide

better and more immediate access to the scholarly literature online. This has major implications for both the allocation of library space and for the infrastructure required to access digital information and conduct research.

The S&E Library was programmed as a late 20th century academic facility, with a strong emphasis on space for print journal collections and open stacks for browsing. As information retrieval and sharing now occur primarily via electronic access and from multiple locations, we have an opportunity and an imperative to rebalance the space devoted to collections and the space devoted to users and services.

Although the building's planners anticipated an emerging role for digital information and network technology in support of library research, the now obsolete network infrastructure is unable to meet current and future needs. Increased AC power and wireless network access are essential to support the number of networked devices students and faculty bring into the S&E Library every day. As the needs of STEM disciplines change rapidly, the library must also have the capacity to adapt to new information technology.

Evolving modes of teaching, learning, and research are placing new demands on STEM libraries through:

- the rising demand for richly supported informal learning environments;
- the need for flexible, innovative spaces that support project-based, collaborative, and interactive learning;
- the emerging role of digital scholarship, with its new access and visualization tools;
- the expanding place of interdisciplinary scholarship in STEM curricula.

The role of an academic STEM library, as a facility, has evolved from that of a physical repository and archive of print materials to one that must offer physical spaces that are flexible and technologically robust, enhancing academic collaboration and student learning.

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Enrollment and Program Growth

In 1991, the two library facilities that comprise the University Library—McHenry Library and the S&E Library—supported 9,720 undergraduate and graduate students. By 2015-16, that number had nearly doubled to 17,335. The S&E Library, built to accommodate 860 users, originally supported 26 degree programs in the former Division of Natural Sciences; by 2016-17, that number had grown to 59 degree programs in both the current Division of Physical & Biological Sciences and the Jack Baskin School of Engineering.

The McHenry Library houses collections in the Arts, Humanities, and Social Sciences. A major addition and renovation project, completed in 2011, reinvigorated the flagship facility and helped address the campus's critical need for additional space devoted to user services and individual study; however, the S&E Library continues to fall short of University of California standards for library seats per FTE.[1] In addition, the deficit is projected to double over the next decade.[2] For students in STEM disciplines, library services and facilities are seriously outdated and lack the capacity and functionality critical to support research, collaborative learning, and study.

Changes in technology, communications, information sharing, and distribution

In 1991, when the S&E Library opened, most of the main floor collection space was dedicated to print indexes and abstracts. Scholarly journals packed the current periodicals room. Searching indexes and abstracts was a slow and iterative process. No library full-text online databases were available: "Dialog" searching was expensive, difficult to use, and necessitated direct assistance of a librarian; Google and Wikipedia did not exist. A few other electronic databases on CD-ROM required dedicated workstations that could be used by only one person at a time. The S&E Library's original network capacity was only sufficient to meet infrastructure demand in the days before the World Wide Web.

[1] University of California Library Planning Standards (May 1993).

[2] See attachment: 2013-1014 Science and Engineering Library Space Analysis Table.

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Today, individuals have many more options for seeking and sharing information quickly and efficiently. Online searching has evolved and eBooks, eJournals, and data sets are readily available. Print indexes and abstracts have been replaced by subscriptions to hundreds of online tools, and scholarly journals now are mostly electronic. The University of California is committed to the Open Access publishing model and more faculty research and data are becoming available in institutional and society repositories, allowing maximum access by the scholarly community. With increased network and personal computing, today's students use laptops, tablets, and mobile phones—all of which process text, data, and media. With the rise of social networking and the expectation of ubiquitous connectivity, the demands on the technological infrastructure of the library have increased rapidly.

Increased Demand for Student Study Space

As campus enrollment has increased, particularly in STEM, demand for both quiet individual study space and collaborative group study areas has risen significantly. Existing S&E Library seating is beyond capacity and cannot accommodate current demand, particularly at times of heavy use during exams. The need has intensified as student housing becomes more crowded, affording little quiet study space. With a reduction in print collections, the space formerly occupied by stacks can be reclaimed for a large number of individual and group study areas to address the need.

Evolution of the Science Hill Neighborhood

Since its opening in 1991, the S&E Library has witnessed an explosion of growth on Science Hill and is now at the center of a high-density collection of research and classroom buildings dedicated to STEM. It serves as the heart of that community—a nexus of learning and research, innovation and discovery, academic collaboration and social activity. There is high demand for facilities that support the intensive use of this area for both academic and social interaction, including access to food services and/or a café.

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Aging Facility Infrastructure

At 25 years old, the S&E Library's mechanical, plumbing and electrical infrastructure is aging, obsolete, and code-deficient. Building systems continue to deteriorate, leading to increasing maintenance costs associated with patchwork repair and emergency replacement. Existing systems lack the capacity to meet rising user loads and cannot provide the long-term benefits and cost-effectiveness of new durable, energy-efficient systems that comply with the goals of the UC Sustainable Practices Policy and the UCSC Campus Sustainability Plan.

Context and Objectives

Renovation of the S&E Library supports several campus-wide objectives, priorities, and ongoing initiatives. A critical goal of *Envision UC Santa Cruz: Our Strategic Plan* is the advancement of student success and significant improvement in retention and graduation rates, particularly among the growing number of students from diverse backgrounds. A revitalized S&E Library would provide critical academic support for STEM students. It would also serve as a vital destination where students and faculty can gather, relate to one another, and learn together.

The current *Campaign for UC Santa Cruz* seeks to transform the student experience by investing in shared facilities and experiential learning. Its aim is to foster a supportive environment that strengthens a sense of community and shared investment in learning and achievement, innovation, and discovery. Specifically included in the campaign is fundraising support toward the renovation of the S&E Library to give students new resources for study, collaboration, and research.

The University Library plays a pivotal role in supporting the campus's national reputation for excellence and providing a transformative experience for students and faculty. This is achieved through maintaining state of the art facilities, placing major emphasis on digital scholarship, offering efficient research and instruction services, and providing a physical space that both enriches the student experience and supports teaching, learning, and research. Reinvigorating the S&E Library will strengthen its computing and research information infrastructure, expand digital resources and access,

offer significantly expanded student study space, and better align services with users' needs.

Opportunities

Fundraising

As much as any other single entity on the campus, the services provided by the University Library reach the greatest number of students in support of the campus's core mission of excellence in teaching, learning, and research. As such, the renovation and enhancement of campus library facilities remains a strong priority for the campus. Faced with the absence of State capital funding and competing demand for campus resources, the campus intends to raise gift funds toward the renovation of the S&E Library through the ongoing *Campaign for UC Santa Cruz*.

Related Projects

The recently completed Telecommunications Infrastructure Improvements Phase B work in the S&E Library upgraded and expanded the building's technology infrastructure. The improvements accommodate more intensive high-speed use, portable computing, and ubiquitous wireless network access critical to the library's modernization.

In fall 2017, the S&E Library will become the home of the currently under construction Active Learning Classroom, an active and inquiry-based learning environment separately funded by the campus in support of a Howard Hughes Medical Institute grant to transform STEM education. Located in a prominent, well-traveled area on the main floor, the Active Learning Classroom will help spark the vision for the new and reimagined library, a place where learning is visible and collaborative, and students are actively engaged in discovery.

All or a portion of the fire alarm system in the S&E Library will be upgraded by a Deferred Maintenance (DM) project getting ready to go out to bid. A base bid and an additive bid alternative will allow the campus to scale the scope of work to the

available funds. Any work not completed under this DM project will be incorporated into the future renovation of the S&E Library.

Program Goals

The S&E Library seeks to address the following program goals:

- Reallocate space for student study to increase capacity from 860 to 1,700 seats.
- Efficiently manage the physical core collection.
- Increase the space devoted to individual quiet study and provide up to 34 additional technologically equipped group collaborative learning and study spaces.
- Provide an enhanced Information Commons to improve students' access to and use of innovative information technologies.
- Provide a café to meet heavy demand on Science Hill for food service and social gathering and "collision" space.
- Create flexible space to partner with related units, offices, and divisions promoting student success in the STEM fields.
- Create an environment which fosters active engagement in the scientific/academic community through:
    - collaborative learning;
    - seamless and flexible spaces that can evolve with time and need and allow learning to happen anywhere; and
    - high visibility of the process of learning and exploration.
- Upgrade building mechanical, plumbing, and electrical infrastructure to accommodate increased capacity. Replace aging and code-deficient systems with institutional-grade, sustainable, energy-efficient models.

Potential program goals:

- Provide an expanded, technologically enhanced Gaming Lab for instruction, research, and production space in response to the rapidly growing program in gaming development.

- Develop an Innovation Lab, or "makerspace," to promote enhanced hands-on, active learning.

Alternatives – Evaluation Criteria

An exploration of alternatives to address the demonstrated needs and program goals is based on the following objectives and criteria, with priority given to the factors that contribute the highest value to the program:

1. **Amount of Program Space:** Does this alternative provide an adequate amount of space to meet program goals?
2. **Type of Program Space:** Does this alternative provide suitably allocated space to meet program goals for increased seating, specialized learning spaces, and social gathering space?
3. **Quality of Program Space/Environment**: Does this alternative provide functional and flexible spaces to meet program goals, as well as long-term flexibility to accommodate program changes and future advancements in technology or information delivery systems? How efficient is the use of space? Does it meet the goals and aspirations for program synergy, experiential quality, and formal and informal interaction?
4. **Building Systems:** Does this alternative address the need for upgraded, code-compliant, and durable mechanical, electrical and plumbing infrastructure to accommodate increased capacity and to comply with campus energy and sustainability goals?
5. **Consistency with Campus-wide Objectives:** Does this alternative align with current objectives, priorities, and ongoing initiatives?
6. **Timeline for Delivery:** How does this alternative compare in terms of time to delivery of the full program?
7. **Degree of Disruption:** How does this alternative compare in terms of disruption to operations during construction?
8. **Project Cost:** How does this alternative compare with the others in terms of design, construction, and equipment (PWCE) cost?
9. **Life-cycle Cost:** How does this alternative compare in terms of ongoing cost of operation, maintenance, and renewal?

10. **Fundraising Opportunities:** How does this alternative compare with the others in terms of maximizing gift potential?
11. **Risk Factors:** How does this alternative compare in terms of risk (financial, environmental)?

Alternatives Considered

Alternative A: No renovation, or project deferral

Without any renovations in the S&E Library, beyond the two related projects previously noted, none of the program goals would be met, and the limitations of the existing facility would only become increasingly problematic in the face of growing demand. Although deferring the project might allow some or all of the program goals to be met in the future, current critical needs would not be addressed in a timely way. In addition, the impact of construction cost escalation could result in a reduced scope of work that did not meet all of the original objectives.

Alternative B: Full renovation—single phase

The S&E Library would be fully renovated in a single phase. This alternative would meet all project goals and would deliver the project in the shortest time frame, with the least impact on the project budget from escalation. However, the library facility would be fully offline for the duration of the construction, with significant impact to academic program support and student services. Funding for the full scope of the project would need to be secured before the start of construction.

Alternative C: Full renovation—multi-phase

This alternative would meet all project goals if fully implemented. The S&E Library renovation would be delivered as a series of discrete projects, implemented as gift funds were raised. A master plan of five phases would provide the framework for renovations, subject to the pace of fundraising and specific donor opportunities. A phased delivery would not require a complete shutdown of the library, and selected floors or areas could remain in use during each phase of construction. Because the length of time

required to implement the full scope of work would be dependent on the success and pace of fundraising, the total construction cost would be subject to significant escalation.

Recommended Solution

Alternatives B and C, both of which realize a full renovation of the S&E Library, achieve all project goals. However, because funding for a complete renovation has not yet been secured, a single-phase project delivery is not feasible at this time, and realization of any improvements to the facility would likely be deferred for at least several years. Utilizing a multi-phase approach, as presented in Alternative C, is the only viable solution to achieve all project goals. As gift funds are raised, discrete phases aligned with available resources and donor opportunities can be implemented over time, resulting in earlier delivery of incremental improvements. A major benefit to this approach is that the facility would not need to be fully offline at any time. A major drawback is the impact of multi-year construction cost escalation and the need to target higher levels of fundraising. As a result of pre-design studies completed in 2014, a master plan for a five-phase implementation was developed and is included in the Appendix of this document.

Qualitative Analysis Matrix

The appropriateness of each option compared to criteria is displayed the attached Qualitative Alternatives Matrix.

Operational Cost Summary

No renovation, or a deferral (Alternative A), would subject the campus to increasingly higher operating costs associated with the maintenance of deteriorating building systems and the likelihood of emergency repair or replacement. With a full renovation (Alternates B and C), subject to further analysis during design, the operational costs of accommodating higher user loads are expected to be offset by the substantial savings from new durable, energy-efficient, and sustainable systems. The inclusion of a café in the facility (Alternatives B and C) would trigger additional operational cost considerations. Because a potential renovation project is currently in a preliminary

stage, further analysis would be required during design. However, the University Library's current planning assumption is that a café would be overseen in the same manner as the Global Village Café in McHenry Library, the operation of which is leased to an outside vendor. Under the lease, the vendor would pay a base rent, calculated as a percentage of sales (8-9%), and would be responsible for direct reimbursables associated with café operations (grounds/maintenance, refuse, fire alarm, HVAC, plumbing, utilities, and compost). The library would be responsible for structural and systems costs allocated to the University under the lease agreement. The annual net revenue of the Global Village Café is estimated at $98,000, or a total of $490,000 over the life of a 5-year lease.

Attachments

- Qualitative Alternatives Matrix
- Proposed Phasing Plan
- 2013-14 Science and Engineering Library Space Analysis Table

UC Capital Project Business Case Analysis - Qualitative Alternatives Matrix

Campus: Santa Cruz **Project:** Science and Engineering Library Renovation

	Evaluation Criteria	Alternative A No Renovation, or Project Deferral	Assessment (+/0/-)	Alternative B Full Renovation--Single Phase	Assessment (+/0/-)	Alternative C Full Renovation--Multi-Phase	Assessment (+/0/-)
1	Amount of space: Provides a sufficient amount of space to meet program goals and objectives.	Although there is adequate square footage within the library, without the reallocation and redistribution of space, the current configuration of the library spaces cannot meet program objectives.	-	Achieves all objectives, assuming reallocation and redistribution of space to meet program goals.	+	Achieves all objectives, assuming reallocation and redistribution of space to meet program goals.	+
2	Type of space: Reallocates space from print collections and reconfigures to meet changing student study/learning behavior.	Would not achieve objectives.	-	Achieves all objectives.	+	Achieves all objectives.	+
2a	Seating capacity: Doubles seating capacity to 1,700; provides individual quiet study areas and technologically equipped group collaborative learning and study spaces.	Would not achieve objectives.	-	Achieves maximum desired capacity for individual and group study areas.	+	Achieves maximum desired capacity for individual and group study areas.	+
2b	Specialized learning spaces: Provides enhanced Information Commons to promote student access to innovative information technologies; Innovation Lab, or Maker Space for hands-on, experiential learning; expanded and tecnologically enhanced Gaming Lab for instruction, research and production space in support of rapidly growing gaming development program.	Would not achieve objectives.	-	Provides all specialized program spaces.	+	Provides all specialized program spaces.	+
2c	Food service: Provides full-service Café to meet heavy demand on Science Hill for food service, social gathering and "collision" space.	Would not achieve objectives.	-	Serves library users as well as Science Hill community at large in an underserved area of campus.	+	Serves library users as well as Science Hill community at large in an underserved area of campus.	+
3	Quality of space/environment: Provides flexible and efficient spaces to meet program goals, as well as long-term flexibility to accommodate program changes and evolution of technology or information delivery system. Meets goals and aspirations for program synergy, experiential quality, and formal and informal interaction.	Would not achieve objectives.	-	Achieves all objectives for flexible, dynamic, learning-centered environment.	+	Achieves all objectives for flexible, dynamic, learning-centered environment.	+

UC Capital Project Business Case Analysis - Qualitative Alternatives Matrix

Campus: Santa Cruz **Project:** Science and Engineering Library Renovation

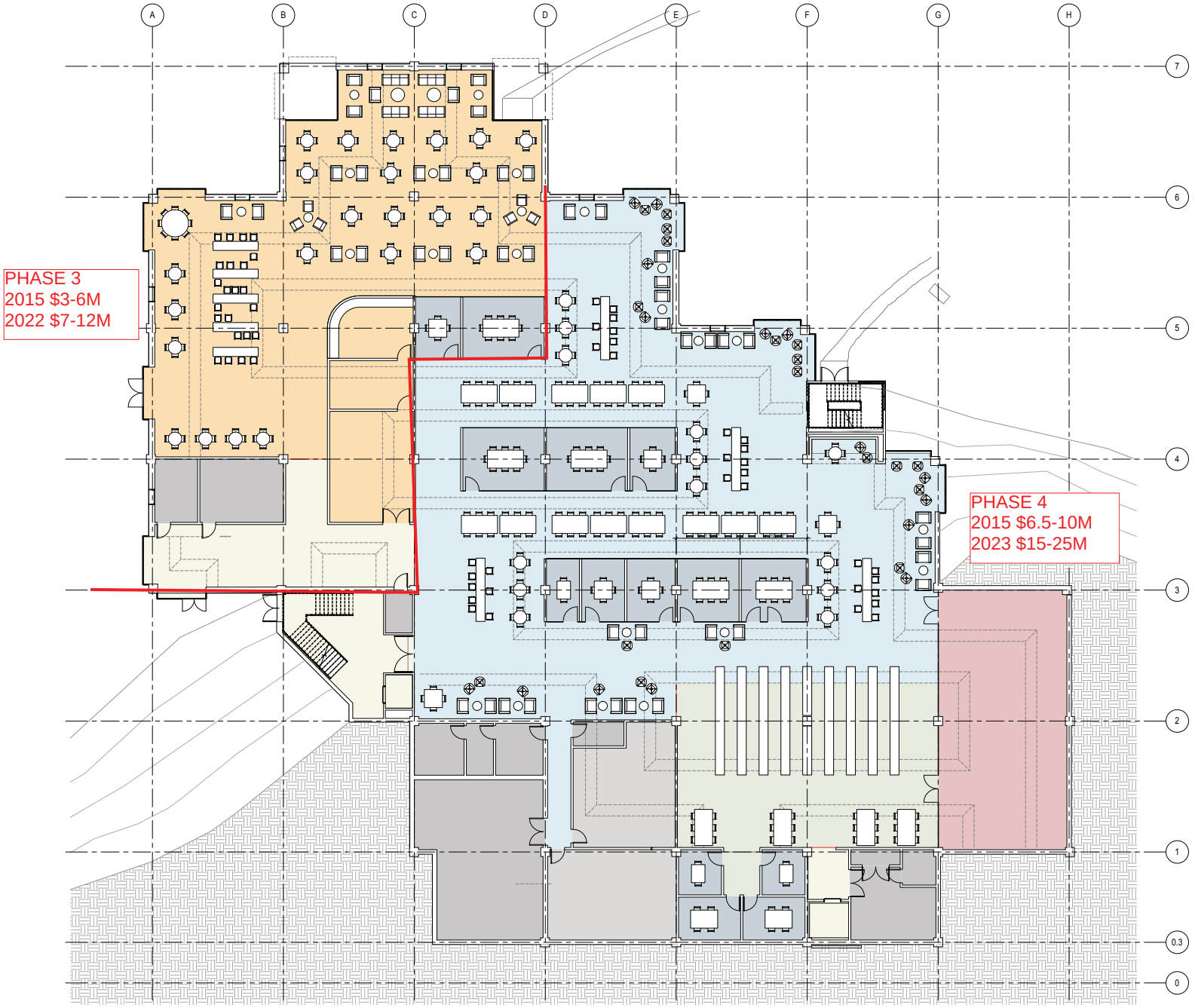
	Evaluation Criteria	Alternative A No Renovation, or Project Deferral	Assessment (+/0/-)	Alternative B Full Renovation--Single Phase	Assessment (+/0/-)	Alternative C Full Renovation--Multi-Phase	Assessment (+/0/-)
4	Building Systems: Upgrades mechanical, electrical and plumbing infrastructure to accommodate increased capacity and replaces aging, code-deficient systems with institutional grade, sustainable, energy-efficient models.	Would not achieve objectives. Would not comply with UC and UCSC campus sustainability goals.	-	Fully achieves objectives. Would comply with goals of UC Sustainable Practices Policy and UCSC Campus Sustainability Plan.	+	Fully achieves objectives. Would comply with goals of UC Sustainable Practices Policy and UCSC Campus Sustainability Plan.	+
5	Campus-wide objectives: Consistent with campus-wide objectives, priorities, and ongoing initiatives.	Would not provide benefits of a revitalized and modernized facility.	-	A revitalized S&E Library would provide critical enhanced academic support for STEM students, promoting the advancement of student success and increasing retention and graduation rates; would support the transformation of the student experience by investing in state-of-the-art shared facilities and experiential learning.	+	A revitalized S&E Library would provide critical enhanced academic support for STEM students, promoting the advancement of student success and increasing retention and graduation rates; would support the transformation of the student experience by investing in state-of-the-art shared facilities and experiential learning.	+
6	Timeline for delivery	N/A if no project. Unknown, if project is deferred.	0	Most efficient delivery would require complete shutdown of library operations during 24-30-month construction period. However, if work is staged by area to avoid shutdown, project cost and time of delivery would increase.	-	Longest time to full completion. However, phased implementation would result in earlier delivery of incremental improvements. Anticipated duration of each phase would vary from 7 to 17 months.	+
7	Degree of disruption	N/A if no project. If deferred, degree of disruption to operations would be dependent on approach to delivery.	0	Would likely require complete shutdown of library operations during 24-30-month construction period, resulting in significant impact on academic programs.	-	Would require partial shutdown of affected floors or areas during construction periods. Remaining areas of the library would remain available for use.	+
8	Project Cost	N/A if no project. If deferred, substantial but unknown construction cost escalation.	0	$28-45M in today's dollars.	+	$53-82M if 1st of 5 phases commences in 2017-18 per attached phasing plan timeline.	-

UC Capital Project Business Case Analysis - Qualitative Alternatives Matrix

Campus: Santa Cruz **Project:** Science and Engineering Library Renovation

	Evaluation Criteria	Alternative A No Renovation, or Project Deferral	Assessment (+/0/-)	Alternative B Full Renovation--Single Phase	Assessment (+/0/-)	Alternative C Full Renovation--Multi-Phase	Assessment (+/0/-)
9	Life-cycle cost	Building systems continue to deteriorate and require patchwork repairs that do not provide the long-term cost-effectiveness of new durable, energy-efficient, sustainable systems. Increasing operational and/or capital costs for maintenance and emergency repair or replacement.	-	Increased operational costs to accommodate higher user loads expected to be offset by savings from energy-efficient, sustainable building systems. If construction were deferred indefinitely until gift funds are raised, campus would face increasing operational costs for maintenance of aging building systems and likelihood of emergency repair or replacement. Cafe would be operated under a lease agreement with outside vendor, who would pay rent and direct reimbursables; library would be responsible for structural and systems costs; anticipated net revenue.	0	Increased operational costs to accommodate higher user loads expected to be offset by savings from energy-efficient, sustainable building systems. If upgrades to building systems were not completed within the first two phases per attached phasing plan, campus would face likelihood of increased operational costs for maintaining deficient systems in the near-term. Cafe would be operated under a lease agreement with outside vendor, who would pay rent and direct reimbursables; library would be responsible for structural and systems costs; anticipated net revenue.	0
10	Fundraising opportunities	N/A	0	Would require an extremely lengthy fundraising campaign that may inhibit short-term momentum, create difficulty in establishing fundraising targets, and could defer the project indefinitely.	-	Offers the best opportunity for manageable fundraising targets and for stimulating momentum in raising gifts.	+
11	Risk factors	Sunk costs for ongoing maintenance of deficient building systems. Counterproductive to achieving sustainability goals.	-	Most cost-effective way to achieve all project goals if construction were to start in near future. However, without gifts in hand, project could be completed only with external financing; high risk.	-	Although this option, if fully implemented, results in the highest project cost, financial risk is well managed with incremental phasing.	+

ehdd.



Updated
12 Jan 2017

Updated
08 May 2015

UCSC Science & Engineering Library Renovation, Phase 1 - LOWER LEVEL - Proposed

10/14/2014

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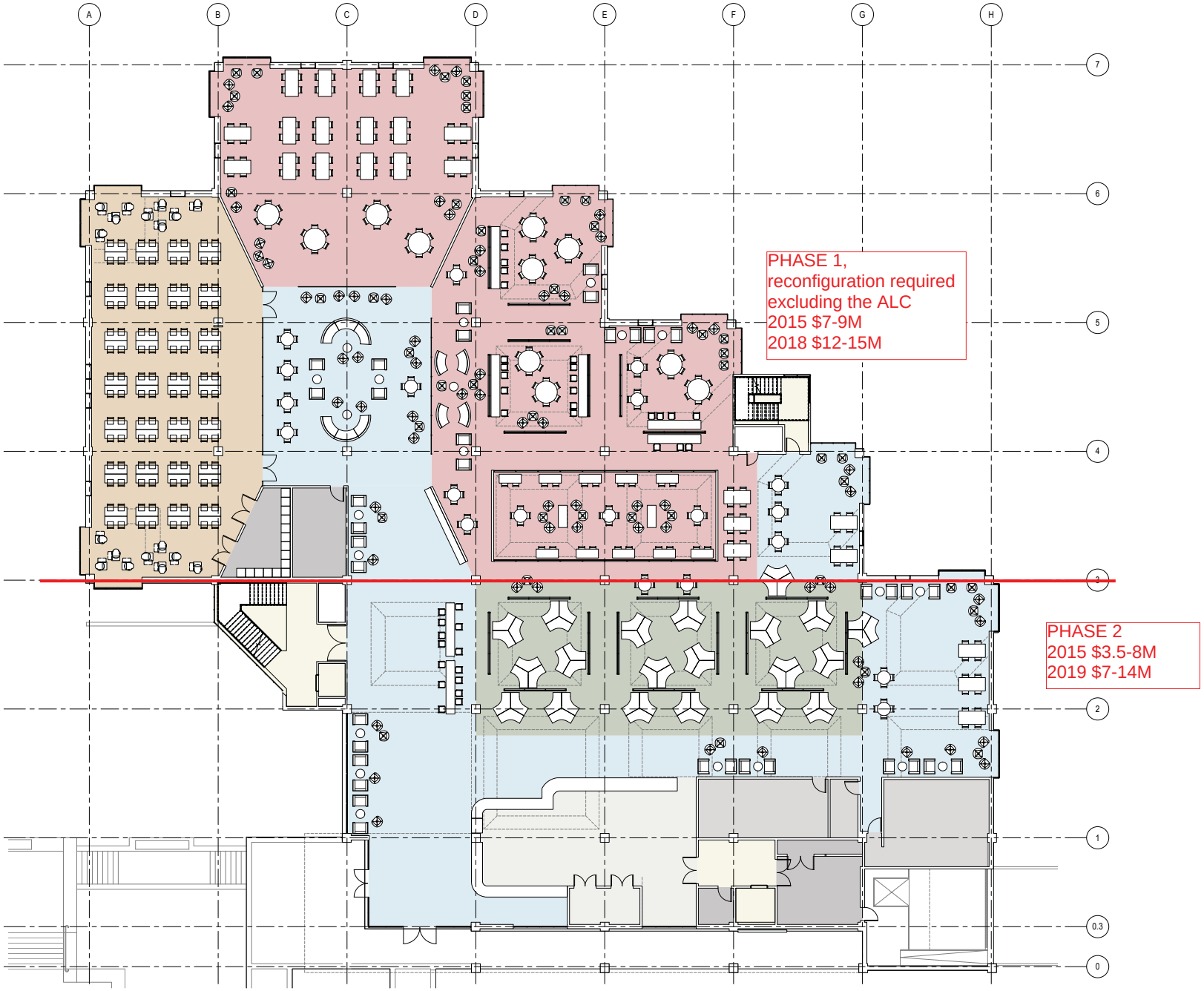

Updated
08 May 2015

UCSC Science & Engineering Library Renovation, Phase 1 - MAIN LEVEL - Proposed

10/14/2014

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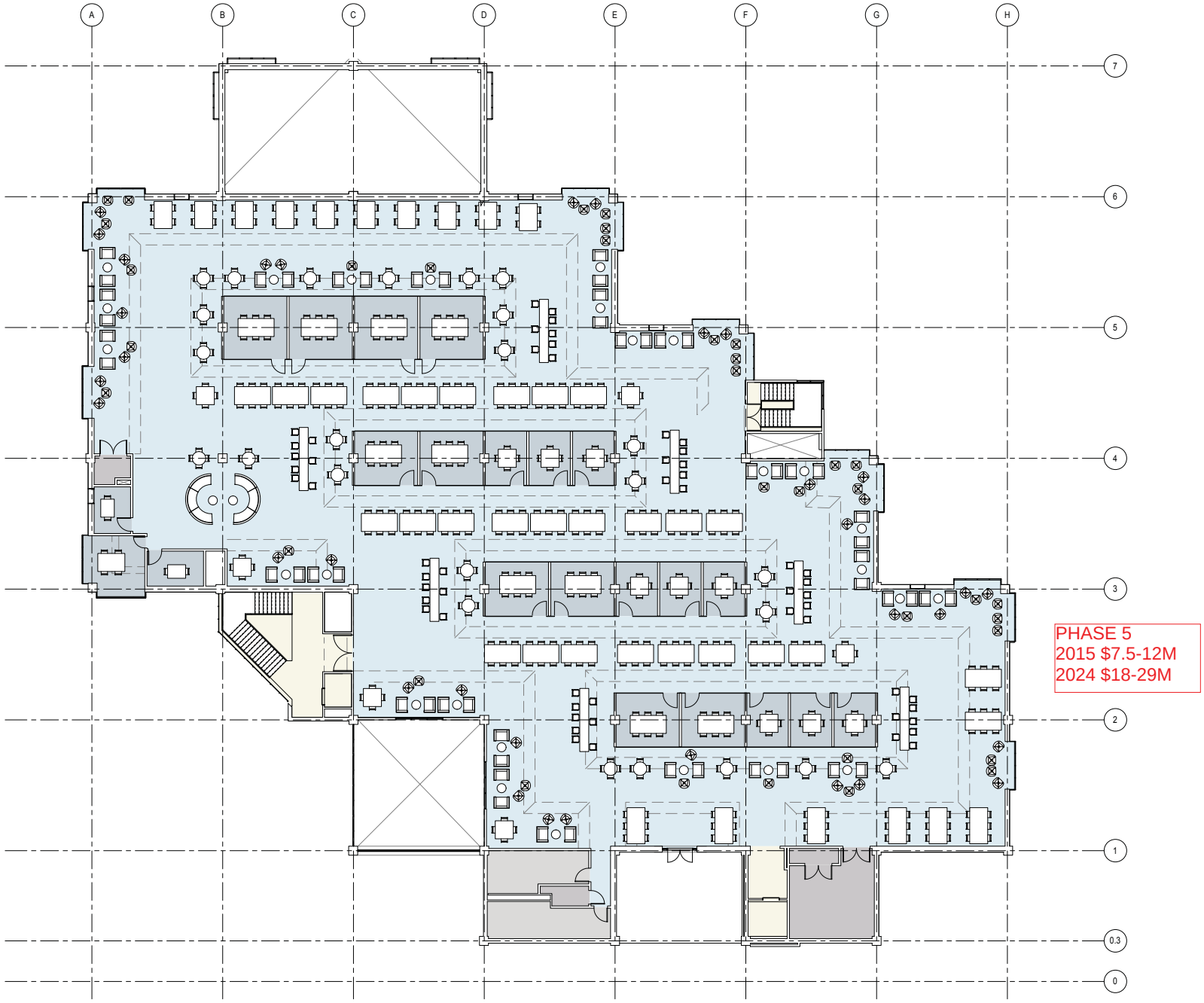

PHASE 5
2015 $7.5-12M
2024 $18-29M

Updated
08 May 2015

UCSC Science & Engineering Library Renovation, Phase 1 - UPPER LEVEL - Proposed

10/14/2014

Table 3

SCIENCE & ENGINEERING LIBRARY

SANTA CRUZ SCIENCE & ENGINEERING LIBRARY SPACE ANALYSIS

Library Component	Growth Per Year	Unit Area Standard	June 30, 2013 No. Items	June 30, 2013 ASF	2013-2014 (1) No. Items	2013-2014 (1) ASF	2023-2024 (2) No. Items	2023-2024 (2) ASF
COLLECTION								
Bound Volumes (3)	16,269	12.50 vol/asf	389,149	31,132	405,418	32,434	568,108	45,449
Other Materials (3)								
Maps (4)	-200	24.00 itm/asf	35,235	1,468	35,035	1,460	33,035	1,376
Manuscript Units	0	1.332 mu/asf	0	0	0	0	0	0
Documents (5)	0	115.00 itm/asf	0	0	0	0	0	0
Sound Recordings	0	57.50 itm/asf	3	0	3	0	3	0
Microfiche (6)	27	1,150.00 itm/asf	2,692	2	2,719	2	2,989	3
Microfilm Reels	-2	46.00 itm/asf	134	3	132	3	112	2
Periodicals (display)(7)	-70	1.00 sub/asf	83	83	13	13	13	13
Periodicals (boxed)(7)	-135	3.45 sub/asf	162	47	27	8	25	7
Microform/Electronic/Media Stations	0	25.00 asf/itm	103	2,575	103	2,575	103	2,575
Subtotal, Other Materials				4,178		4,061		3,976
Collection Total				35,310		36,495		49,425
NRLF Storage (vol. equiv.)(8)	2,000	12.50 vol/asf	97,106	7,768	99,106	7,928	107,106	8,568
Collection, Net on Campus				27,542		28,567		40,857
USERS								
Enrollment (annual avg HC)			7,419		7,335		8,740	
25% of Enrollment		25.00 asf	1,855	46,369	1,834	45,844	2,185	54,625
LIBRARY STAFF FTE		168.75 asf	7.500	1,266	7.500	1,266	7.500	1,266
SPACE SUMMARY								
Total Library Allowance				75,177		75,677		96,748
Existing Library Area				55,965 (9)		55,965		55,965
<DEFICIT> or SURPLUS				<19,212>		<19,712>		<40,783>

(1) Based on collection size as of June 30, 2014.
(2) Campus enrollment of approx. 19,422 reached as of 2023-24; collections continue to grow through 2024. Based on collection size as of June 30, 2024.
(3) 4-yr. average growth as of 6/30/13; 16,269 vols. added per annum.
(4) Maps holdings as of 6/30/13 were revised to reflect the subsequent transfer of approximately 50% of the holdings at the S&E Library to McHenry Library.
(5) The documents collection no longer exists.
(6) Exceptional withdrawals in recent years have skewed the 4-year average for microfiche (at both libraries), therefore the growth figure is based on an estimate that current holdings will increase 1% per year.
(7) Following 2013-2014, it is estimated that the cancellation rate of periodicals will decrease sharply so that, as of 2023-2024, 38 periodicals will remain at Science & Engineering Library.
(8) 2,000 v.e. to be transferred to the Northern Regional Library Facility (NRLF) during 2014-18 and NRLF at full capacity by 7/1/18.
(9) Library assignable square feet (asf) in the Science & Engineering Library.

SANTA CRUZ: OFFICE OF THE CAMPUS PROVOST
AND EXECUTIVE VICE CHANCELLOR

October 16, 2014

M. ELIZABETH COWELL
University Librarian

ROBERT L. WHITE
Assistant University Librarian (retired)

GREG CAREAGA
Head of Assessment and Planning, University Library

Committee on Planning and Budget Representative

Graduate Student Representative

Undergraduate Student Representative

Dear Colleagues:

Re: Science and Engineering Library Renovation Programming Committee

Thank you for agreeing to serve as a member of the Programming Committee for the pre-design phase of the Science and Engineering (S&E) Library Renovation project. University Librarian Elizabeth Cowell will chair the Committee. The Committee will report to the Advisory Committee on Campus Planning and Stewardship (CPS) and will be responsible for keeping me informed of its progress. I anticipate that the Committee will convene for monthly meetings from October 2014 through early Winter 2015.

The Committee will be assisted by Senior Educational Facilities Planner Alix Wills of Capital Planning and Space Management (CPSM) and Project Manager Andrea Hilderman of Physical Planning and Construction. Others will be invited to serve as resources on an as-needed basis.

The campus Project Manager is responsible for the following: Overall management of the project; monitoring the project program, budget, and schedule; formal direction of the design professional; and representing the University in all of the project's contractual and management matters.

The Programming Committee will be responsible for coordinating the planning process with the units and organizations that will be impacted by the project, and with the campus as a whole.

The charge of the S&E Library Renovation Programming Committee is as follows:

1. Identify and define the elements that will go into the S&E Library Renovation and work with assigned campus staff and consultants to develop a Facility Program. The Program should define specific area and functional requirements for the building overall and on a space-type basis. The Program should include physical planning information, site issues, functional relationships of program elements, overall design requirement, IT and security requirements, and specific program and design requirements.

    A. Sustainability targets and carbon-reduction goals should be identified early on in the programming process and specified in the Program. The Committee should include in its considerations the University of California Policy on Sustainable Practices.
    B. The Program will enable the campus to prepare a project budget, establish fundraising targets, and develop fundraising materials suitable for use in the Comprehensive Campaign.
    C. The Facility Program will be the primary document used in project design by the Executive Architect retained by the University.

2. Develop a Business Case Analysis (BCA) and Major Capital Improvement Project Summary with CPSM. The BCA will establish the need for the renovation of the Science and Engineering Library, examine alternatives for meeting that need, and identify the most appropriate solution. The Project Summary will be the primary source document that describes and justifies the project. In addition to demonstrating that both the campus plans and the project itself are credible, the Project Summary will document the appropriate campus approvals.

3. Function as the University "client" during the pre-design phase of the project. In this role, the Committee will work with assigned campus staff and with the design professional in developing programming elements.

The timeline for the pre-design phase of the project calls for the Facility Program and project budget to be completed by January 2015, and the Business Case Analysis and Project Summary to be completed by early Winter 2015. At that point, the Committee's work on the programming phase will be complete. At such time as funding becomes available for the design phase of the project, a Building Committee will be appointed. The Building Committee will work with the Executive Architect and associated staff during the development of the design for the project.

The pre-design phase of the project will be provided by campus funds. The design and construction phases will be gift-funded, with funds to be raised through the Comprehensive Campaign. The campus will be held to stringent budget constraints for this project. Because programming is a key driver of the budget, it will be critical to be diligent and thorough throughout the programming process. Once the budget is established by the campus, the project must proceed within the budget limits.

Thank you for your willingness to serve on the S&E Library Renovation Programming Committee. The advice and input of the Committee is of critical importance and essential to the success of the project. If you have any questions, please contact Alix Wills at 925 890-2734 or alixw@ucsc.edu.

Sincerely,

Allison Galloway
Campus Provost and
Executive Vice Chancellor

cc: Associate Vice Chancellor Barnes
Chancellor Blumenthal
Academic Senate Chair Brenneis
Vice Chancellor Delaney
Director Draper
Committee on Budget and Planning Chair Friedman
Associate Architect Hilderman
Vice Chancellor Latham
University Library Operations Head Thayer
Senior Educational Facilities Planner Wills
Advisory Committee on Campus Planning and Stewardship
Graduate Student Association
Student Union Assembly Committee on Committees