Calvin Laboratory
Berkeley, California

HISTORIC STRUCTURE REPORT

Prepared for the
University of California, Berkeley

In collaboration with
PGAdesign Inc.

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I. INTRODUCTION

PURPOSE AND SCOPE

The Calvin Laboratory Historic Structure Report (HSR) has been completed at the request of the University of California, Berkeley (University) to inform planning for the Southeast Campus Integrated Projects (SCIP), initiated in 2005. The preparation of this report implements provisions of the UC Berkeley 2020 Long Range Development Plan Environmental Impact Report addressing cultural resources.¹ This HSR was undertaken as part of a larger study of the southeast campus area, specifically the landscape and streetscape of the Piedmont Avenue block between Bancroft Way and the Haas School of Business, the former single-family dwellings at 2222, 2224, 2232, 2234, and 2240 Piedmont Avenue, the former single-family dwellings at 2241 and 2243 College Avenue, Calvin Laboratory, and the landscape around California Memorial Stadium.

According to the National Park Service’s “NPS-28: Cultural Resource Management Guideline:”

A Historic Structure Report (HSR) is prepared whenever there is to be a major intervention into historic structures or where activities are programmed that affect the qualities and characteristics that make the property eligible for inclusion in the National Register. The report consists of the collection, presentation, and evaluation of anthropological/archeological, historical and architectural/engineering research findings on a historic or pre-historic structure, and their setting…It analyzes and records all periods of construction (not just significant periods), modifications, source materials, building techniques, other evidence of use, and setting.²

The primary goals of this Historic Structure Report are to analyze concisely the history of the site and building; document existing conditions of landscape elements; and examine the eligibility of Calvin Laboratory for listing in the National Register of Historic Places.

SUBJECT OF THIS STUDY

The subject of this report is Calvin Laboratory and its surrounding landscape. The building is located in the southeastern part of the University of California, Berkeley campus. Calvin Laboratory was constructed in 1964 to house the Laboratory of Chemical Biodynamics, led by Nobel Prize-winner Melvin Calvin. Calvin Laboratory is currently occupied by the University’s Physical Sciences Division.

¹ UC Berkeley 2020 LRDP EIR Continuing Best Practice CUL-2-a states in part: “If a project could cause a substantial adverse change in features that convey the significance of a primary or secondary resource, an Historic Structures Assessment (HSA) would be prepared.” University of California, Berkeley 2020 LRDP EIR, Volume 1, 4.4-54.
METHODOLOGY

Utilizing standards established by the State of California Office of Historic Preservation (OHP), Page & Turnbull and PGAdesign conducted an analysis of Calvin Laboratory and evaluated its eligibility for the National Register. The conclusions in this report are based on fieldwork and archival research led by Eileen Wilde of Page & Turnbull and landscape architects Cathy Garrett and Karen Krolewski of PGAdesign between April 2005 and December 2005.

Architectural Historian Eileen Wilde and University of California, Berkeley Planning Analyst/Historian Steven Finacom conducted research at repositories including the Bancroft Library; the University of California, Berkeley Capital Projects and Facilities Management Archives; the University of California, Berkeley Environmental Design Library; the University of California, Berkeley Environmental Design Archives; the University of California, Berkeley Earth Sciences & Map Library; the City of Berkeley City Clerk Department and Public Works Department; the Alameda County Public Works Department; the Berkeley Public Library; Berkeley Architectural Heritage Association (BAHA); Berkeley Historical Society; the Oakland Public Library; the Oakland Museum of California; Oakland Heritage Alliance; San Francisco Architectural Heritage; California Historical Society; and the Library of Congress. In addition, Steven Finacom conducted oral histories with former Calvin Laboratory employees. Architectural Historians Richard Sucré and Christopher VerPlanck, Preservation Planner April Hesik, and Architectural Conservator Mark McMillan contributed to the completion of this report.
II. **HISTORICAL CONTEXT**

**BRIEF HISTORY OF THE STUDY AREA**

The Calvin Laboratory site was originally part of a residential neighborhood known as the Berkeley Property Tract, subdivided by the College of California in the 1860s. The original boundaries of the Berkeley Property Tract extended north to Strawberry Creek, east beyond Prospect Street, south to Dwight Way, and west to College Avenue *(Map 2)*. A brief history of the development of the study area is included below.\(^3\)

**College of California**

In 1855, the College of California was incorporated in Oakland. Soon thereafter, the trustees of the College of California began searching for a new campus site removed from the perceived unwholesome temptations of San Francisco and Oakland. One of the only settlers in Berkeley, Captain Orrin Simmons, invited the trustees to look at his land holdings as a possible site. Although Berkeley was still an isolated outpost, it had the advantages of a temperate climate, and a range of hills that provided spectacular vistas of San Francisco Bay and the Golden Gate. After much consideration, the trustees decided to relocate the campus to the hills surrounding Strawberry Creek.\(^4\) On 16 April 1860, the future site of the College of California was dedicated at Founders’ Rock.

The process of raising money and acquiring land for the new campus proved to be arduous. In August 1864, the College of California purchased a tract of land from Captain Simmons that encompassed part of what became the Berkeley Property Tract and the northern part of present-day Piedmont Avenue. A key objective of the College of California trustees was to raise money for the school. To further this goal, the trustees decided to form a real estate group that would sell residential lots to provide financial support for the College. On September 1, 1864, the first real estate venture in Berkeley was launched with the incorporation of the College Homestead Association. 125 shares were offered at $500 apiece, and each share entitled the owner to a one-acre lot. A map of the College Homestead Association was recorded on May 15, 1866 *(Map 1)*.

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\(^3\) Please see the “2241 College Avenue Historic Structure Report” (Page & Turnbull and PGAdesign, 2006) for a more complete discussion of the history of the Berkeley Property Tract.

By October 1864, the College of California had retained landscape architect Frederick Law Olmsted to create a plan for their land north and east of the College Homestead Tract.\(^5\) College of California President Samuel Hopkins Willey asked Olmsted to lay out the northerly part of Piedmont Way—extending from Dwight Avenue to Strawberry Creek—because people were asking about purchasing lots and the College needed the income. Willey wrote Olmsted, “I have written [Palmer] that I will inform him immediately on the receipt of the proper map from you, setting forth streets, dimensions, &c., of that particular vicinity...Others are looking that way with the idea of purchasing as soon as we get the map, i.e. the map of that particular part of the Simmons tract. For the other parts we are in no haste.”\(^6\) By the October 3 meeting of the College trustees, Olmsted had apparently completed a draft survey of his plan:

The Secretary presented the draft of a portion of the Survey, from Mr. Olmsted, conveying that portion of the Simmons tract lying immediately East of the College Homestead Grounds, showing the Park and the Piedmont Way, as ground reserved for public purposes. By vote the Map was adopted...Messeurs Sherman, Simson and Willey were by vote, appointed a Committee to divide the portion of the Simmons land covered by the map just received from Mr. Olmsted, into lots for same, and determine the prices of the same.\(^7\)

This map had presumably been lost, but a copy of an 1868 map of the Berkeley Property Tract surveyed by Alameda County Surveyor William Boardman was recently discovered at the Alameda County Public Works Department with the original College of California seal; the seal appears to contain a date of 1865 (Map 2). Though unconfirmed, it seems possible that this is the version of the Berkeley Property plan as surveyed by Miller, and was handed in haste to the trustees immediately before Olmsted departed from California. Although the title block of the map indicates a date of 1868, the title block could easily have been a later addition. If this is the case, Boardman may have used the Olmsted/Miller plan as a base, confirming that Olmsted and Miller laid out the alignment and dimensions of this portion of Piedmont Way. Frederick Law Olmsted’s report for the College of California, which was titled, “Report Upon a Projected Improvement of the Estate of the College of California, at Berkeley, Near Oakland by Olmsted, Vaux & Co., Landscape Architects,” would eventually be completed and published in 1866 (Map 3).\(^8\)

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\(^6\) Willey to FLO, 22 September 1865. Reproduced in Ranney, 572.

\(^7\) 3 October 1865 meeting of the College trustees. Documents of the College of California, 1850-1869. Held by the Bancroft Library.

\(^8\) The report would be printed more than once; this version was printed by Wm. C. Bryant & Co. in New York in 1866.
University of California

During the mid-1860s, California Governor F.F. Low moved to use money provided under the 1862 Morrill Land Grant Act to start a new state university. After viewing the beautiful—albeit empty—College of California campus, Berkeley was chosen as the new home for an Agricultural, Mining and Mechanical Arts College to be built on land next to the College of California site. At the 1867 College of California commencement, Governor Low proposed merging the College of California with the planned university—the College had the land, and the State had the money to develop an institute of higher learning. After some debate, the College of California trustees voted on October 7, 1867 to dissolve. The College of California assets were given to the State for the university with the stipulation that the new school must include a College of Letters for the study of humanities and liberal arts, instead of solely being an agricultural and mechanical school. The State agreed with these terms, and on March 23, 1868, California Governor Henry H. Haight signed the Organic Act, forming the University of California.

The 2200 Block at the End of the Nineteenth Century

The 2200 block of Piedmont Way and College Avenue began to be developed in the 1870s. It was located very close to the University in a beautiful setting next to Strawberry Canyon with spectacular views of San Francisco Bay, making it likely one of the more sought-after areas of the Berkeley Property Tract. In its original layout, College Avenue—formerly Audubon Street—extended two long blocks north of Bancroft Way to the current vicinity of the Girton Hall childcare center. Thus, the homes on the 2200 College Avenue block were conveniently located near the University campus, but still within a private residential city district. West of College Avenue and south of Strawberry Creek was the Hillegass Tract, the undeveloped area now known as Faculty Glade (Image 1). Extending off of College Avenue to the west was a now-vanished, dead-end street known as Sylvan Way, which had a small enclave of private homes (Map 7).

Several structures on the 2200 block were residences of people associated with the University, including Professor Frederick Slate, future University Appointments Secretary May Lucretia Cheney, Dean of Mining Samuel Christy, and Professor Joseph LeConte. The Slate house (1883) stood in the vicinity of today’s Calvin Laboratory, immediately to the north of the Cheney House at 2241 College (1885). Dean Christy’s house (1887) was located on Piedmont Way, roughly east of the Cheney House. The LeConte house (circa 1884) was just west of Piedmont Way on Bancroft Way. The Zeta Psi fraternity, the first Greek letter collegiate organization formed at a college west of the Mississippi, 9 Ferrier, 101.
occupied a large, Mansard-roofed house (1876) approximately where 2251 College (1911) stands today (Map 8). In addition, residents unaffiliated with the University owned or rented homes on the block. The lot at 2245 College was infilled around 1894-96 with a house built by Mrs. Harriet J. Lee. Lee does not appear to have had a direct University affiliation, although she appears to have rented space to students.

The lots on the 2200 block of College Avenue and Piedmont Way varied in size. This appears to be in keeping with the original layout of the area, since the 1868 map also shows an irregular pattern of lot sizes (Map 4). The two lots at the northeast corner of the block—owned by the Simmons family—were quite large and took up more than one-quarter of the block (Map 6). The Simmons family had moved to Oakland after selling their tract to the College of California, but re-purchased part of their land for recreational use, adding a house to the site in 1890. The west side of the 2200 block of Piedmont Avenue remained largely undeveloped during the nineteenth century, likely because the Simmons family owned most of the frontage on the west side of the street. Block books from the 1880s suggest that most of the lots along College Avenue were 100 feet wide and approximately 260 feet deep, but by 1887, the lots in the center of the block had been divided in half, resulting in 50-foot frontages along College Avenue (Map 7). On the northwest corner of the block, Bernard Moses had amassed three adjacent lots by 1902, giving him a large parcel with a 283-foot frontage along College Avenue.

**Berkeley's Building Boom**

The beginning of the twentieth century would bring phenomenal growth to Berkeley. By 1910, Berkeley had become the fifth largest city in California after its population tripled between 1900 and 1910, a pace only bettered by three other United States cities. Although a great deal of the expansion was due to the 1906 Earthquake and Fire in San Francisco, which drove many refugees to Berkeley, the town was expanding even before the Earthquake. The construction of the Key System ferryboat and streetcar network made transportation between San Francisco and the East Bay quick and affordable, spurring the development of numerous residential tracts in Berkeley and Oakland.

General economic prosperity, and the rapid growth of the University in enrollment, programs, and prestige under the leadership of President Benjamin Ide Wheeler (1899-1919), also factored in the physical growth of the town during this era.

11 Ferrier, 82.
12 Charles Wollenberg, **Berkeley: A City in History** ([Berkeley, California]: Berkeley Public Library, [2002]), Chapter 4.
The rapid population growth in Berkeley spurred new civic improvements for both the University and the town. Between 1898 and 1899, Phoebe Apperson Hearst sponsored an international competition to find an architect to design a master plan for the University campus. The contest brought international recognition to the University. The winning campus plan, submitted by French architect Emile Bénard, was laid out on the concept of thematically grouped buildings. Bénard’s plan was revised by fourth-place-finisher John Galen Howard, who was appointed Supervising Architect for the University.

**Development of the 2200 Block**

Berkeley’s population boom sharply increased the amount of new construction in the city, especially between 1905 and 1912; the majority of the building permits were issued in 1906, 1907, and 1908. To accommodate demand for new residences, remaining larger tracts were subdivided into smaller lots. On the 2200 College Avenue block, several small cottages were added to existing properties to accommodate increasing housing demands, including the Cheney rental cottage at 2243 College Avenue (circa 1902) and two cottages designed by Julia Morgan at the rear of the 2245 College lot between 1903 and 1911. By the early twentieth century, the 2200 block north of the Cheney property consisted of the Slate property at 2231-39 College; 2227 College, a single-family house that appears to have been owned by Professor Clarence Cory (Engineering); and a parcel of undeveloped land that was owned by the Pacific School of Religion. The Pacific School of Religion at one point intended to build a seminary campus on the property, but would eventually sell the land to the University in 1922.

**University Expansion into the Berkeley Property Tract**

During the 1920s, the University sought to expand its land holdings beyond the original campus boundaries. Properties in the Berkeley Property Tract adjacent to the campus were considered desirable, because they were contiguous to existing campus property.

The biggest change to the study area occurred in 1923 when California Memorial Stadium was constructed in Strawberry Canyon on the east side of Piedmont Avenue. In order to accommodate the construction of California Memorial Stadium, several houses on the east side of the 2200 block had to be removed. In January 1923, the houses and most of the trees on the site were cleared, and a massive culvert was built to divert Strawberry Creek. At least five structures on the Stadium site, including one of the Palmer houses, were moved to the 2200 block of College Avenue. The site for

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15 Ferrier, 255.
the relocated buildings included the rear of the Cory property at 2227 College and a parcel of land to the north of the Cory property that was purchased by the University from the Pacific School of Religion in 1922. These buildings were put into various uses for campus programs and services. One building functioned as an office for Greek Theatre operations, two others were Music Department classrooms, and a fourth was used for “storage.” The relocated buildings were grouped near the rear, east side of the lots, rather than along the street front as was typical of the residential houses originally built on this stretch of College Avenue. The large lot containing the moved buildings was accessed by its own, irregularly shaped driveway that ran east from College Avenue, turned at right angles to the north, and curved around to meet College Avenue again (Maps 11 & 12).

By 1929, the east side of the 2200 block of College Avenue included the following structures starting from Bancroft Way and running north: the fraternity house at 2251 College, constructed in 1911; the former Harriet Lee property at 2245-2249 College, purchased by the University in 1926; the Cheney property at 2241-2243 College; the Slate property at 2231-2239 College; the Cory property at 2227 College; and finally, the group of buildings moved to College Avenue from the Stadium site (Map 12).

By 1955, all of the buildings on the east side of the 2200 block of College Avenue had been acquired by the University. Starting from Bancroft Way and running north, the buildings were: the Boalt Hall of Law at the northeast corner of Bancroft Way and College Avenue; the former fraternity house at 2251 College; the former Harriet Lee property at 2245-2249 College; the former Cheney property at 2241-2243 College; the former Slate property at 2231-2239 College; the former Cory property at 2227 College; the group of buildings moved to College Avenue from the Stadium site; and Cowell Hospital (Map 14).

During the mid- to late twentieth century, the University continued to build new University structures in the 2200 block. Construction of Wurster Hall and Calvin Laboratory in the 1960s led to the demolition of the houses north of 2241 and 2243 College and the closure of College Avenue north of Bancroft Way (Image 14). The stretch of College Avenue from Bancroft Way to just north of the future Calvin Laboratory site was completely removed between 1962 and 1964, but a truncated block of the street remains today as a campus roadway between Minor Hall and the Haas Business School complex. Around 1965, the Boalt School of Law expanded at the northwest corner of Bancroft Way and Piedmont Avenue, resulting in the demolition of the former Clinton Day and LeConte residences on Bancroft Way, and likely 2250 Piedmont as well (Map 17). In the early 1990s, the Haas School of
Business complex was constructed at the approximate intersection of Piedmont Avenue and Gayley Road, resulting in the demolition of Cowell Hospital and 2220 Piedmont Avenue. Today, only 2241, 2243, and 2251 College Avenue remain standing on the 2200 College Avenue block, and 2241 College is the only extant nineteenth-century structure in the Berkeley Property Tract north of Channing Way.

**UNIVERSITY PLANS FOR THE SOUTHEAST CAMPUS**

The history of the study area, which is approximately bounded by the Haas School of Business to the north (close to where Strawberry Creek originally ran above ground), the east side of California Memorial Stadium to the east, Bancroft Way to the south, and the remnants of College Avenue to the west, is intertwined with the expansion of the central University campus and “off-campus” acquisitions. The University plans for the campus and development in and around the study area are discussed below.

**University Land Acquisitions and Planning: Founding to 1890s**

The campus proper that was gifted by the College of California to the University in 1867 was about two-thirds the size of today’s Central Campus. The remaining one-third, which consisted of the areas lying north of Bancroft Way and south of the south fork of Strawberry Creek, was generally still in private ownership when the University moved its campus to the Berkeley site in the early 1870s. The College of California’s Berkeley Property Tract and College Homestead Tract subdivisions were part of this “off-campus” area.

At this time, the campus grounds ended to the north and northwest of the current study area. Bancroft Way did not touch the edge of the campus anywhere along its length. College Avenue (formerly Audubon Street) originally extended two full blocks north of Bancroft Way and would eventually become lined with private lots and buildings (Maps 2 & 5). Located on the west side of the 2200 block of College Avenue was the Hillegass Orchard or Hillegass Tract; this area remained primarily undeveloped through the end of the nineteenth century, except for a few lots and homes along Sylvan Way, a small, dead-end street that ran for a short block west from College Avenue (Map 7).

The southern campus border to the west of College Avenue at that time was the southern edge of Faculty Glade, located approximately where the Music Department buildings now stand. A historic photograph dating to the 1890s shows part of the undeveloped Hillegass Tract; in the distance, a low fence is visible at the edge of the campus with the trees of Faculty Glade and South Hall behind it.
East of College Avenue, the campus boundary largely paralleled the uneven, southern edge of the Strawberry Creek ravine. Thus, throughout the nineteenth century, the entire study area was in private ownership outside the campus proper.

During this era, there were several plans or diagrams of campus development prepared by a succession of designers: Olmsted in 1866; Wright and Sanders in 1868; Kenitzer and Farquharson in 1869, which resulted in the construction of South Hall, the first Berkeley campus building; and William Hammond Hall in 1874. None of these plans delineated any campus development on the study area. Olmsted’s plan for the Berkeley Neighborhood specifically designated the study area for residential use, and the remaining plans did not cover the project area since it was already in private hands and not part of the campus.

University Land Acquisitions and Planning: 1890s to 1920s

During the late nineteenth century, the University made some land acquisitions near the mouth of Strawberry Canyon, close to the study area. In 1900, the University and the Associated Students of the University of California acquired the Hillegass Tract property from the heirs of William Hillegass, who was the first American landowner of the parcel. This undeveloped parcel was designated for athletic facilities, in keeping with the Phoebe Hearst Architectural Plan approved that same year. Therefore, the first University planning undertaken in the twentieth century for the general vicinity of the project area intended that the area to the west of the 2200 block would be used for athletics.

The Bénard Plan, and Howard’s subsequent plans for the campus up through 1917, show the campus grounds extending up to the west side of the 2200 block of College Avenue but not extending into the study area. College Avenue remained a city street.

University Development

The first University building in the vicinity of the study area was Hearst Hall, erected on the west side of the 2200 block of College Avenue in 1901. Hearst Hall stood on the current site of the southern end of Wurster Hall, across College Avenue from the present-day section of parking lot between 2241/2243 and 2251 College Avenue (Map 10). The structure was donated by Regent Phoebe Apperson Hearst, and placed on a private lot she had purchased as a gift to the University. Hearst Hall was designed by Bernard Maybeck as a private reception hall, and originally constructed in 1899 on Channing Way, next to a house where Hearst resided during her visits to Berkeley. After Hearst

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Hall was disassembled and moved to the College Avenue lot, it was converted into a gymnasium for female students, a purpose it would serve until it was destroyed by fire in 1922.

In 1905, the University built the first campus football stadium, California Field, on the Hillegass Tract using ASUC funding. This field, which was partially enclosed with wooden bleachers, stood approximately where Hearst Gymnasium and North Field are located today. Around 1915, a running track with its own bleachers was added west of California Field on the site where the temporary Hearst Field Annex stands today.

In the area near Strawberry Creek west of College Avenue and northwest of the study area, the first elements of the Faculty Club were completed in 1902. The log-cabin-style Senior Hall was completed adjacent to the Faculty Club in 1906 (Map 11).

These four projects—Hearst Hall, California Field, the Faculty Club, and Senior Hall—were the primary University-built facilities near the study area in the early twentieth century. As the century drew on, additional University uses of the area immediately west of College Avenue occurred (Map 11). According to Harvey Helfand, the former Hillegass Tract became quite crowded:

…several temporary buildings designed by Howard were built for a variety of academic uses. These included the wooden Spreckels Physiological Laboratory…one of the first campus research labs, in 1903 and, the following year, the corrugated-iron Anthropology Building called the “tin bin” that housed Phoebe Apperson Hearst’s collections. West of these stood the wooden Fertilizer Control building…and the corrugated-iron Museum of Vertebrate Zoology (renamed the Decorative Art Annex 1930-1964), both built in 1909. And between California Field and Hearst Hall, the wooden Hygiene and Pathology Laboratory was inserted in 1908. Two wooden buildings designed by Clinton Day and originally built in 1898 were also moved to this congested area in 1921: the zoology laboratory East Hall and the Botany Building from the present sites of LeConte and Stephens Halls, respectively.15

Another early University development in the vicinity of the study area occurred in 1906, when the campus opened a temporary hospital for victims of the 1906 San Francisco Earthquake in an old residence, the Meyer House, located to the northwest of the project area on the present-day site of Minor Hall. The Meyer House had been acquired possibly in 1900 when the Hillegass Tract was purchased and had been used for campus storage prior to the Earthquake. This temporary hospital grew into the first students’ infirmary.

15 Ibid., 198-199.
Thus, the pattern of University development in the vicinity of the study area limited itself in the early decades of the twentieth century to various utilitarian and student service facilities built or sited as the need arose, all standing west of College Avenue. The cluttered and congested aspect of the area described by Helfand above, and visible in photographs of the area, implies that campus administrators at the time saw this corner of the campus as a convenient piece of land to site various peripheral campus facilities rather than an integral part of the permanently developed campus containing large, stately, academic buildings.

In 1888, 1895, and 1909, the University also purchased pieces of property, ranging in size from .84 acres to 20 acres at the mouth of Strawberry Canyon, in the vicinity of present-day California Memorial Stadium. One of these purchases—possibly a gift—was apparently the more southern of the two Palmer Houses on the future Stadium site, and its grounds east of Piedmont Avenue, in 1909. This property subsequently shows up on campus maps in University ownership. The acquisition of one of the Palmer Houses and its grounds would be the first expansion of the University into the study area.

**Acquisitions on the 2200 Block**

In the early 1920s, the University made its first major land acquisition on the 2200 block of Piedmont and College Avenues when it purchased a parcel owned by the future Pacific School of Religion on the east side of the 2200 block of College Avenue. At the same time—around 1922—the University began purchasing land on the east side of the 2200 block of Piedmont Avenue to be used as a site for California Memorial Stadium. At least five structures were moved from the Stadium site to the newly acquired parcel on College Avenue, and were placed in a row running north-to-south on and north of the current site of Calvin Laboratory, behind wood houses already existing on the site. The uses of these buildings—none of which are still extant on campus—seem to repeat the pattern of small, miscellaneous facilities development described on the former Hillegass Tract. A circa 1927 map of the site shows the buildings designated as “Greek Theatre Office,” “Public Health,” “Music #1,” and “Music #2” (Map 11).

Also in the early 1920s, as noted above, the old Hearst Hall on College Avenue was destroyed by fire. Gift funds from William Randolph Hearst allowed the University to build a new and more elaborate women’s gymnasium surrounded by playing fields and courts. It was located to the west of the Hearst Hall site on the old California Field site that no longer needed for football after the 1923 completion...
of California Memorial Stadium. This project became the present-day Hearst Memorial Gymnasium (Map 11).

During the late 1920s and 1930s, the University began to actively acquire additional individual properties in the study area. These included:

- The present-day site of 2234 Piedmont Avenue, the old Professor Christy family home site, was purchased from a fraternity in 1925 (it is unclear if this purchase included just the land, or a house as well; also unknown is when the Christy house was removed).
- 2223 Bancroft Way (formerly the Professor Wickson family home on the present-day site of the Law School) was purchased from Wickson heirs in 1926.
- The former Harriet Lee property at 2245-2249 College Avenue was purchased from Glennie Davis for $7,000 in 1926.
- A fraternity house at 2220 Piedmont Avenue (demolished in the 1990s to clear land for the Haas School of Business) was purchased in 1927.
- The old Professor Joseph LeConte family home at 2739 Bancroft Way was in University ownership by 1928. At this time, it became the headquarters of the newly established Institute of Child Welfare, which included a campus-run nursery school.
- The old Clinton Day family home at 2747 Bancroft Way was purchased in 1931 from Day’s daughter.
- In 1935, the University purchased 2250 Piedmont Avenue (north of the Day House) from a fraternity.
- In 1937, the old Professor Frederick Slate house at 2231-2239 College Avenue (just north of 2241/43 College) was purchased.
- In 1939, the Cheney property at 2241/43 College Avenue was purchased from May Cheney.
- In 1941, 2222 Piedmont Avenue, the Charles Bancroft home, was purchased by the University.
- In 1943, the Sigma Phi fraternity house on Bancroft Way was purchased (it would be moved later that decade to its present site at 2240 Piedmont Avenue).
- Sometime during this general period, a vacant lot at the northeast corner of Bancroft Way and College Avenue was also acquired.
After 1943, there seems to have been somewhat of a hiatus in acquisitions on the block, perhaps due to World War II. In the 1950s, acquisitions resumed:

- In 1955, 2251 College Avenue (the old Zeta Psi fraternity house, now the Archaeological Research Facility) was acquired. The University provided the fraternity with the old Hilgard family home on the south side of the 2700 block of Bancroft Way, across from the 2200 block. It was removed, and the fraternity built a new chapter house on the lot.
- In 1958, 2232 Piedmont Avenue, the Kellogg House, was purchased from the Kellogg estate.
- In 1962, the Professor Noble house at 2224 Piedmont Avenue was purchased. The Noble house appears to have been the last privately owned property in the 2200 block.

In addition to the acquisitions listed above, the University also purchased several private properties at the extreme northeast corner of the 2200 block, north of 2220 Piedmont. These were all private homes and fraternal houses fronting on Piedmont Place, which had been formally laid out in 1909 (Map 9). The acquisition history of those properties has not been researched. All of the buildings acquired on Piedmont Place were later removed, and their lots are now part of either Gayley Road or the Haas School of Business complex.

**University Planning: 1920s to 1940s**

During the 1920s and 1930s, no specific plan was formulated for incorporating the 2200 block into the central campus. Part of this may have had to do with the location of the block, which was then regarded as the extreme outer edge of the campus zone. Up through at least the early 1940s, when ample areas of developable land still remained on the original core campus north of Strawberry Creek, both University administrators and academic department heads were likely skeptical of adding the 2200 block to the central campus—viewing it as inconveniently distant from the campus core and impractical as a site for comprehensively planned academic facilities. During the early 1930s, however, University administrators and planners began informally discussing the 2200 block. Materials found in the Warren Perry Papers indicate that the pattern of acquisition on the 2200 block was consistent with the broad goal of ultimately adding the block to University ownership.

Architect Warren Perry served as Dean of Architecture at the University and designed buildings on campus including Edwards Track Stadium, the expansion of the Faculty Club, and the new School of Law building. He also provided periodic planning consulting to the University administration. In
1933, Perry was chairing the President’s Committee on Campus Development and Building Location: a three-member body that also included University Controller Luther Nichols and Professor Baldwin Woods. In a memorandum dated October 1, 1933 and titled “A Re-Study of the Central Area of the Campus – University of California, Berkeley, California,” the Committee reported to the President on the arrangement and expansion of the physical campus. The memo noted:

As the permanent buildings on the Campus increase in number it becomes possible to assign given areas to given uses with greater certainty than ever before. With the removal of the Physical Education plant (except for tennis courts) and the probably location elsewhere of the University Auditorium and Fine Arts Museum, what we have called the “Academic Area” between the two branches of Strawberry Creek is cleared for fairly logical and clean-cut segregation.

The memo then delineates the arrangement of academic groups north of Strawberry Creek and identifies preferred locations for other activities, including “Faculty and Student Welfare,” “Administration,” and “Circulation.”

The study block is mentioned in the memo under a section titled “Roadways and Entrances,” which contains a list of vehicular roadways on campus including “the Cross-Campus Road connecting College and La Loma Avenues (the future may well see the suppression of College Avenue within the Campus and the Cross-Campus road connecting Piedmont Avenue with Highland Place or La Loma Avenue)…” The “Cross-Campus Road” refers here to the future Gayley Road. It is clear from this memo that the present-day alignment of Gayley Road—which runs from Hearst and La Loma Avenues to Piedmont Avenue—had already been envisioned in the 1930s. The statement also implies that the incorporation of the study block into the central campus was already being contemplated in the early 1930s, since that would be the most likely motivation for “suppressing” College Avenue as a city street north of Bancroft Way. At this time, Cowell Hospital had been completed just to the north of the study block, but the Institute of Child Welfare, occupying a converted home, was the only University facility on the block itself. There is no clear indication in the 1933 report that specific campus facilities were contemplated for the remainder of the 2200 block.

Five years later, on August 31, 1938, Acting President Monroe E. Deutsch sent a quick note to Professor Perry asking “if I might secure from you a very full statement of the reasons prompting the recommendation for the proposed site of the new Administration building and a general statement

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16 Warren Perry Papers, Bancroft Library, BANC MSS 82/97c, Box 11, folder “Committee on Campus Development.”
17 Ibid.
concerning plans for the future…” In this case, the Administration Building referred to the future Sproul Hall (completed in 1941). Deutsch was apparently being asked by University Regents to explain why University staff members were proposing to site the building south of Strawberry Creek along what was still a commercial block of Telegraph Avenue, rather than elsewhere on the traditional campus. Perry replied to Deutsch with a letter on September 2, 1938, reaffirming the concept of siting primary academic facilities north of Strawberry Creek and keeping the central campus area “free for teaching.”

Perry then discussed the 2200 block:

…the area east of College Avenue and north of Bancroft Way has been thought of as the proper location of smaller self-contained units such as Child Welfare, Public Health and similar “institutes” which would be extended to include even the Law School; such units have little to do with the rest of the Campus, even with the Main Library.

This statement reveals three major points. First, the University was considering the acquisition of the study block as early as the mid- to late 1930s. This provides clarity to the seemingly scattered sequence of individual house acquisitions by the University that began in the 1920s and accelerated through the 1930s. Secondly, the block was being considered as a site for University units that didn’t need to be located in the academic core of the campus. Finally, from at least the late 1930s, the study block was being considered as a site for the relocation of a major campus facility: the Law School. During the late 1940s, Perry would prepare several studies of possible sites for the Law School, including the southern edge of Faculty Glade where the Department of Music buildings now stand, and various configurations at the southern end of the study block. The new Law School building, which was designed by Perry, was ultimately sited on the southern end of the 2200 block along Bancroft Way, and was completed in 1950.

Therefore, although there was not yet an official plan to formally incorporate the study block into the central campus during the 1920s and 1930s, the materials in the Warren Perry Papers help explain why the University was willing to acquire properties parcel by parcel on the study block. There prevailed in this era a pattern of buying houses as the opportunity arose on the 2200 block and either renting them out to private residents, or putting them into use as offices. In contrast, the University elsewhere made comprehensive land purchases targeted with specific development proposals in mind.

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18 Warren Perry Papers, Bancroft Library, BANC MSS 82/97c, Box 11, folder “University of California.”
19 Ibid.
20 Ibid.
After World War II, as the University began to rapidly expand, the 2200 block would have become much more desirable as a development area. One factor that probably hastened the migration of properties from private to University ownership on the 2200 block in that era is the fact that properties, at least on the south and west sides of the block, were also passing from the original owners into the hands of heirs who did not necessarily have the same attachment to the houses, and may not have used them as their primary residences.

Several of the properties—the Slate House, the Wickson House, and the LeConte House—appear to have been purchased from the children of the original residents, all of whom had been faculty members at the University. This is also the era when the elderly May Cheney, just three years before her death, sold her two houses to the University. In all of these cases, it is reasonable to speculate that the private owners might have either approached the University about acquiring the property or been receptive to University offers, remembering the original residents’ close affiliations with the campus. Those acquisitions recorded in University property records are presented as straightforward purchases, not condemnations.

**University Development in the Vicinity: 1920s and 1930s**

During the 1920s and 1930s, another major physical change took place that may have had an impact on the future of the 2200 block and the way its private residents perceived it. The University began developing large facilities in a horseshoe around the residential properties on the 2200 block. To the west, across College Avenue, as noted earlier, there was an increasingly dense cluster of University storage and other utilitarian buildings and facilities. To the immediate north, Cowell Hospital, an impressive, multi-story concrete building, was completed in 1930 as the new home for the University Infirmary. To the east, California Memorial Stadium was completed in 1923; International House was completed in 1930, after purchase and removal of the several remaining houses southwest of the Stadium (Map 13).

In one respect, this incremental encirclement by University facilities was accidental, not planned. While the Hearst Gymnasium development to the west fit in with the Hearst/Howard campus plans from the early twentieth century, the development of a major stadium at the mouth of Strawberry Canyon was not originally planned. Howard had projected stadium sites at other locations on or near the campus. However, when California Memorial Stadium was proposed, the University ultimately decided to use the Canyon site. The practical consequence of this siting decision was that the campus, for the first time, had a major facility to the east of City-owned Piedmont Avenue, making the 2200
block appear as an extension of private development into the campus, rather than an area fully beyond the campus edge. A few years later, prompted by a private gift, the acquisition of land and construction of International House adjacent to the Stadium further extended the encirclement of the block by University facilities.

For a resident of the block in the late 1920s and early 1930s, a walk in the neighborhood would have revealed a dramatically different neighborhood scene than twenty or even ten years before. Four large, new, and permanent University facilities—California Memorial Stadium, International House, Hearst Gymnasium, and Cowell Hospital—had arisen, three of them literally “next door” to or “across the street” from the remaining private homes (Image 6).

In addition, during the 1920s, the University purchased several blocks southwest of the campus and developed the Edwards Stadium/Evans Baseball Diamond complex, followed shortly by the new Men’s Gymnasium (now Haas Pavilion) in the early 1930s. This moved the campus boundary south to Bancroft Way along a broad front, leaving only two relatively small areas of private ownership projecting into the newly enlarged campus: the 2200 block of College and Piedmont Avenues; and the blocks adjacent to Telegraph Avenue where it ran north to Sather Gate.

Given these cumulative developments, private owners on the 2200 block during the 1920s and 1930s would have been keenly aware that Bancroft Way, not Strawberry Creek, was now functioning as the southern border of the campus, and that University development and acquisition was likely, if not inevitable, on the remaining blocks north of Bancroft. Therefore, it is not surprising that several of the private properties on the block were sold to the University during the 1920s and 1930s.

**1940s and Post-World War II Plans**

The first public University plan for the 2200 block appears to have come in the early to mid-1940s. Alumnus and architect Arthur Brown, Jr., appointed as University Supervising Architect in May 1938, prepared a 1944 General Plan for the campus that appears to be the first plan envisioning the entire 2200 block in University ownership, cleared of private dwellings, and built up with large academic structures. This, in various forms, would remain the planning vision for the 2200 block through the remainder of the century. Brown projected three new buildings labeled “Jurisprudence,” “Art – Household Art,” and “Unassigned,” as well as an expansion of Cowell Hospital. His plan, however, appears to have retained College Avenue as a public street on the west side of the block.
In 1950, presumably following the 1944 General Plan, the first unit of the current Law School—an “L” shaped building at the southwest corner of the block—was completed, after removal of the houses that had stood along the Bancroft Way frontage. This building would be expanded to the east in 1958/59 and again in 1965/67 until all of the old houses on Bancroft Way were removed, including the old LeConte house (later the Institute of Child Welfare) and the Clinton Day House (Map 17).

The 1956 and 1962 Long Range Development Plans (LRDPs) for the campus showed variations on Brown’s 1944 General Plan for the 2200 block. As with Brown’s Plan, acquisition and removal of all the existing buildings was assumed, with various new academic buildings infilling the sites. The details of the 1956 and 1962 plans for the block differ slightly in the placement and the nature of proposed buildings, but the general theme remained the same; the block was now clearly regarded as part of “the campus,” not a nearby neighborhood or transitional zone. The main difference between the two plans was that the 1956 Plan showed generic academic building footprints on the site, while the 1962 Plan incorporated the cylindrical Laboratory of Chemical Biodynamics (Calvin Laboratory) design and the Wurster Hall design to the west. A significant element of the 1956 Plan was that College Avenue north of Bancroft Way was projected to be eliminated as a public street, thus for the first time making the 2200 block into a fully contiguous “southeast corner” of the central campus, not simply a block filled with University buildings outside the traditional campus bounds.

Campus Development in the 1950s and 1960s

During the 1950s and the 1960s, the interior of the 2200 block—which consisted of the rear yards of the College and Piedmont Avenue houses—was quickly being converted to parking. The surviving houses were converted to office uses. Between 1958 and 1959, 2220 Piedmont, 2222 Piedmont, 2232 Piedmont, and 2234 Piedmont all began being used for offices. In the case of two and perhaps three of these houses, residential renters were removed to make way for the office use, as is explained in more detail in the descriptions of the individual houses. The reason for the conversions was likely due to pressure from the University Regents and the City of Berkeley. Both wanted the increasing needs of the University to be met on campus, rather than having the University continue to expand outside its boundaries while supporting non-University uses—like rental properties or fraternity houses—on the campus proper.²¹

In the late 1950s and early 1960s, demolition of existing houses began again with removal of the old Slate house at 2231-2239 College, and most probably its northerly neighbor, 2227 College, to allow for the construction of Calvin Laboratory, which was dedicated in 1964. Around the same time, the section of College Avenue immediately north of Bancroft Way was removed to allow for the construction of Wurster Hall, and the roadway was realigned to the east as a curving path.

**Campus Planning in the Study Area: 1960s to 1990s**

The 1962 Long Range Development Plan (LRDP), as discussed above, designated all of the older houses on the block as temporary, ultimately to be cleared for the construction of permanent buildings. Consulting Landscape Architect Thomas Church prepared a 1962 landscape plan to complement the 1962 LRDP. One of the goals of the 1962 LRDP was the removal of vehicles from much of the campus, and Church planned to implement this in part by closing College Avenue north of Bancroft Way, as discussed above. Church’s 1962 plan showed the alteration of this section of College Avenue from a vehicular street to a curvilinear pedestrian and bike path (Map 16).

The 1962 LRDP remained in force, with amendments, through 1990 when a new LRDP was adopted. In the early 1980s, the campus also undertook a space planning effort that had some elements of master planning, but was much more detailed than an LRDP in terms of focusing on existing building conditions, uses, and specific programmatic needs.

The 1981 Berkeley Campus Space Plan and 1990 LRDP continued to plan the same general type of development for the 2200 block as earlier LRDPs, and generally assumed that the smaller, older houses would be removed to allow for the construction of new, larger academic buildings. By the early 1980s, when the Campus Space Plan was completed, the 2200 block was being referred to as part of the “Arts, Music, and Professions” precinct of the campus, encompassing the existing programs which had facilities in the area at that time: the Department of Music, University Art Museum, Department of Art Practice, College of Environmental Design, School of Optometry, and School of Law. There were also some existing disciplines and departments in the vicinity that did not fit clearly with this designation, such as biochemical research in Calvin Laboratory, and the Department and Museum of Anthropology in Kroeber Hall. The “professions” aspect of the precinct would be strengthened in the late 1980s with the removal of Cowell Hospital and its replacement with the new, three-building complex of the Haas School of Business Administration.
The 1981 Plan noted:

Projects which have been proposed and could be considered in this precinct include a fourth floor central addition to Wurster…an underground addition to Calvin Laboratory on the east…a new building for the School of Business Administration, an addition to the University Art Museum, and major changes in Cowell Hospital…The precinct as a whole lacks a sense of cohesion…The spaces east of Wurster Hall and east of Cowell Hospital are crying for attention. A relocated School of Business Administration in some portion of these spaces has been proposed…completion of this project would liberate considerable space in Barrows Hall, thus absorbing the activities now housed in many of the residences on College and Piedmont which would have to be demolished or relocated because of their old age and deteriorated condition.  

However, the 1981 Plan also noted that “because of their diversity of architectural style, and their domestic scales the buildings along Piedmont Avenue in particular provide an attractive edge to the precinct and the campus.” The Plan did not specifically propose permanently preserving any of the houses on their current sites. In the case of one of the buildings, it suggested long-term relocation. The description of 2234 Piedmont stated, “should the University ever need the area for a larger building, this structure should be moved…and, if possible, restored.”

Following the 1981 Campus Space Plan, and as a prelude to the 1990 LRDP, a set of “Working Papers” were prepared by the campus and private consultants in the late 1980s outlining issues and opportunities for central campus development. The 1990 LRDP largely adopted the recommendations of the Working Papers for the study area. The removal of Cowell Hospital and 2220 Piedmont were planned, along with their replacement with the Haas School of Business complex. Some renovations were projected for the Law School complex. The Piedmont houses and 2251 College were identified as a “Piedmont Avenue Reserve Site” in a slightly more complex “L” shape than what was shown in the 1988 Working Papers:

Designated reserve sites include the site occupied by the remaining Piedmont buildings and 2251 College. In conjunction with this site, the parking lot to the east of Wurster Hall is designated as an open space reserve site for the possible future development of a new glade.

Actual physical changes in the immediate study area in the 1980s and 1990s included the demolition of Cowell Hospital and 2220 Piedmont (the former Kappa Sigma fraternity house), and shifting of the

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22 University of California, Berkeley, Art, Music and Professions, Phase I of Berkeley Campus Space Plan, revised October 1991, III.7-III.8.
23 Ibid., III.3.
24 Ibid., III.13.4.
adjacent access road south, next to 2222 Piedmont, to create a site for construction of the three-
building Haas School of Business complex. Other changes involved construction of a northern
addition to the Law School, completed in 1996, which filled in the parking lot space between 2240
Piedmont and 2251 College and made some alterations to the remainder of the parking lot. The last
remaining freestanding garage associated with the houses, located behind 2232 Piedmont, was
demolished, and the brick foundations of 2241 and 2243 College were replaced. In 2001, an
extensive seismic retrofit and renovation of 2251 College was undertaken; work was completed early
in 2004.

Uses of some of the buildings in or adjacent to the study area changed, including conversion of the
Law School’s Manville Hall residential annex into Simon Hall, used as an office wing for the Law
School. 2243 College was left vacant by the Space Assignments & Capital Improvements Committee
(SACI) in 2003.

**2020 Long Range Development Plan**

The 2020 Long Range Development Plan, adopted by the University Regents in 2005, does not
perpetuate the precinct planning of the earlier era but plans holistically for the “historic 180 acre
Campus Park, defined by Hearst on the north, Oxford/Fulton on the west, Bancroft on the south,
and Gayley/Piedmont on the east.” The illustrative concept completed for the UC Berkeley New
Century Plan, and included as Figure 2 in the 2020 LRDP, anticipates the removal of the College
Avenue houses and Calvin Laboratory, and their potential replacement with new buildings. 2251
College and the Piedmont Avenue houses are shown as continuing campus buildings through the life
of the Plan.

The landscape of the California Memorial Stadium environs is shown as rustic hill woodlands in the
diagram of Campus Park Preservation Areas in Figure 7 of the Plan, while Figure 8 shows the area
west of Piedmont Avenue as part of the “picturesque ensemble.” According to the 2020 LRDP:

> The campus identity is also shaped by another, more subtle ensemble: the variety of
> picturesque buildings along the creek, which also includes a number of historic
> structures. In contrast to the formality of the classical core, these picturesque
> buildings are designed as informal, highly articulated volumes that respond to the
> natural contours and features of the site. As exemplified by the Haas School of
> Business, new projects within the areas of picturesque influence should respect and
> continue these traditions.  

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27 Ibid., 43.
With respect to the landscape, the 2020 LRDP references the UC Berkeley Landscape Master Plan. As indicated in Figure 6 of the 2020 LRDP, “The Landscape Master Plan…designates the entire perimeter of the Campus Park as the Edges and Gateways Initiative: this group includes initiatives for each of the four perimeter roads and the entry points to the Campus Park.” For Gayley Road, the university-owned extension of Piedmont Avenue, the University’s New Century Plan states the campus should “Preserve and enhance the rustic character of Gayley Road as the seam linking the campus and the hills…[including] working with the City of Berkeley [to] refurbish the historic Olmsted streetscape from Haas Business School to Bancroft Way, improving the plantings and accommodating stadium crowds.”

**CALVIN LABORATORY**

Calvin Laboratory was constructed in 1964 as the home of the Laboratory of Chemical Biodynamics, an interdisciplinary group established by chemist and Nobel Prize-winner Melvin Calvin. The Laboratory was built on the former 2200 College Avenue residential block after it had been incorporated into the University campus.

**Melvin Calvin**

Melvin Calvin (1911-1997) was born in St. Paul, Minnesota. He received a B.S. from the Michigan College of Mining and Technology in 1931 and a Ph.D. in chemistry from the University of Minnesota in 1935. Following the completion of his Ph.D., Calvin participated in a postdoctoral fellowship in England. In 1937, he returned to the United States to become an instructor at the University of California, Berkeley, where he would remain as an active faculty member until his death in 1997. In 1946, Calvin formed the Bio-Organic Chemistry Group of the Lawrence Radiation Laboratory. In 1960, Calvin became director of an interdisciplinary laboratory known as the Laboratory of Chemical Biodynamics. In 1980, he relinquished his leadership of the Laboratory of Chemical Biodynamics, and the building was renamed the Melvin Calvin Laboratory in his honor.

Melvin Calvin was a prolific author, publishing over 500 papers and seven books. He was appointed to the President’s Science Advisory Committee under both Presidents Kennedy and Johnson, and acted as the chairman of the National Academy of Sciences Committee on Science and Public Policy. Calvin received the Nobel Prize in 1961 and the National Medal of Science in 1989. He was also the recipient of the Gold Medal from the American Institute of Chemists, and the Priestly Medal from...

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the American Chemical Society. After Calvin’s death, Chemistry Department Chair Paul Bartlett described Calvin as “one of our most illustrious colleagues,” and Chancellor Chang-Lin Tien said that Calvin “was a vital personality on the Berkeley campus who contributed greatly to science.”

Calvin’s greatest scientific prestige arose from his work studying and interpreting the “carbon cycle:” the process by which plants convert light energy to chemical energy through photosynthesis. It was for this discovery that Calvin was awarded the Nobel Prize in Chemistry in 1961 (Image 7). Calvin was introduced during the Nobel ceremony with the following words:

More than fifty years ago it was recognized that photosynthesis comprised two distinct phases, light reactions and dark reactions. The Nobel Laureate today, Dr. Melvin Calvin, has spent many years of research work on the chemistry of both phases of photosynthesis and, in the case of the second phase, that is to say the reactions leading from carbon dioxide to the assimilation products - to quote Calvin, “the path of carbon in photosynthesis” his work has resulted in the complete clarification of an extremely intricate problem.

Calvin’s photosynthesis work also included the publication of 23 papers and two books. In addition to the study of photosynthesis, Calvin studied the production of organic fuels from plants, the production of electrical energy from biological processes, organic geochemistry, and chemical carcinogenesis. He also conducted analysis of moon rocks and worked with NASA during its early explorations into extraterrestrial life in space.

“Rad Lab” Group

Melvin Calvin is one of 19 faculty members at the University of California, Berkeley to win a Nobel Prize, and one of nine Nobelists associated with the Ernest Orlando Lawrence Berkeley National Laboratory. During the mid-twentieth century, Berkeley became known as an institution with a stellar—perhaps unrivaled—group of Nobelist faculty members in physics and chemistry. They were nicknamed the “Rad Lab” group for their association with the Radiation Laboratory team led by Ernest Lawrence. The “Rad Lab” group was made up of brilliant researchers who successfully advanced the study of nuclear science from the 1930s through the 1960s. Most of the researchers in this group, including Calvin, did their seminal work at Berkeley.

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The “Rad Lab” group changed human history and the history of science. Although Berkeley is most prominently known in the field of nuclear science for Lawrence’s invention of the Cyclotron and for the role of the University in the development of the atomic bomb, other accomplishments include the discovery of several new atomic elements, the exploration of sub-molecular atomic structure, the creation of the field of nuclear medicine, and outgrowths such as the use of Carbon-14 dating in archaeology, and Calvin’s work in understanding the process of photosynthesis.

The work of these scientists also contributed to the evolution of what has come to be called “Big Science.” This approach, which was pioneered by Lawrence, involves large teams of researchers working in a coordinated way on major research questions. The teams are sometimes dispersed in several locations and often work in large laboratories using sophisticated, expensive, and physically expansive equipment. “Big Science” became a model of late-twentieth-century science, replacing the nineteenth-century scientific paradigm of a single brilliant researcher or inventor working alone, or with a small group of assistants, in one small facility.

Finally, the prestige that resulted from the successes of the Radiation Laboratory group established the University of California, and in particular, the Berkeley campus, as one of the world’s leading centers of scientific research in the physical sciences sector during the twentieth century; a status that has continued to the present day. Berkeley would not have grown so quickly and so prominently to become a world leader in science and higher education without experimental physicist Ernest Lawrence, his faculty colleague theoretical physicist Robert Oppenheimer, and the brilliant group of associates they assembled, including Glenn Seaborg, Edwin McMillan, and Melvin Calvin.

**Development of the Laboratory of Chemical Biodynamics**

After Melvin Calvin’s arrival at Berkeley in 1937 as one of three organic chemists on the research faculty, he collaborated with Dean Gilbert Lewis on research and a book on the color of organic substances. At the suggestion of Lewis, Calvin also collaborated with fellow professor G.E.K. Branch on a book called *The Theory of Organic Chemistry* (1941), which was the first book of its type written in the United States. According to Calvin,

> The publication…was the beginning of theoretical organic chemistry in the United States. Our book, in effect, organized all of organic chemistry in terms of electron theory…the publication of this book made Berkeley one of the foremost centers in the United States for theoretical organic chemistry.\(^\text{13}\)

Calvin also began to work with molecular geneticists on the Berkeley faculty in the early 1940s, marking a foray into the interdisciplinary research that would become the hallmark of his career. Calvin’s interest in interdisciplinary research was also a response to the death of his first child from Rh blood factor incompatibility; he worked to study the chemical basis for this condition not only with a bacteriologist-microbiologist and a medical doctor, but also with his wife.\textsuperscript{33}

Most of Calvin’s research during this period took place in the “old Chemistry Building:” an 1891 structure designed by Clinton Day on the present-day site of Hildebrand Hall. Calvin had both research facilities and an office in the building. He would later replicate elements of the office structure and furnishings, including a fireplace, in both his Calvin Laboratory office and an even later office in Latimer Hall.

During World War II, Calvin undertook research on “plutonium extraction and uranium decontamination,” bringing him into contact with Ernest Lawrence.\textsuperscript{34} Following the completion of the Manhattan Project and the end of World War II, Lawrence proposed that it was time to do something “useful” and suggested that Calvin could use some of the by-products of the Radiation Laboratory research to conduct organic research. Lawrence offered Calvin the remaining supply of carbon-14, the radioactive carbon that had been discovered in the Berkeley cyclotron in 1940, and Calvin responded with a proposal to form an interdisciplinary team called the Bio-Organic Chemistry Group.\textsuperscript{35} This team was the organization that would be the focus of Calvin’s subsequent research and would evolve into the Laboratory of Chemical Biodynamics.

Calvin’s Bio-Organic Chemistry Group was initially split between research space in Donner Laboratory, where Lawrence’s brother John, a medical doctor, was conducting research, and a portion of the “old Radiation Laboratory” building (Image 8) on the site of present-day Tan Hall:

The Old Radiation Lab, a decrepit wooden structure which once housed Lawrence’s 37 inch cyclotron, was assigned to Calvin for research on photosynthesis. The room where the cyclotron had been installed was a large open space without internal walls. This “open laboratory” promoted interaction between the scientists of diverse disciplines who worked in an atmosphere of free discussion and scientific cooperation. It was a physical setting perfectly suited to the “new biology” incorporating, as it did, scientists from diverse disciplines who had much to gain from steady interaction, discussion, and cooperation. The success it wrought led

\textsuperscript{33} Ibid., 49-50.  
\textsuperscript{34} Ibid., 51.  
\textsuperscript{35} Ibid., 52.
directly to the innovative design of Calvin's subsequent Laboratory of Chemical Biodynamics.\footnote{“Four University of California Bioscientists: Melvin Calvin (1911-1997), Photosynthesis” (Berkeley, California: Library, University of California, Berkeley, 2000). Viewed online at http://bancroft.berkeley.edu/Exhibits/Biotech/calvin.html.}

Calvin’s work in the study of photosynthesis took place primarily between 1946 and 1956, and in 1961, Calvin was awarded the Nobel Prize.

**Impetus to Build the Laboratory of Chemical Biodynamics Building**

Calvin’s success as a researcher and, in part, his winning of a Nobel Prize—the highest honor a scientist of his type could achieve—made it easier for him to gather funding and support for a new building to house the Laboratory of Chemical Biodynamics during the late 1950s and early 1960s. However, the planning for the building was in process before Calvin received the Nobel Prize, so it was not the sole reason that the University decided to allow him to have his own laboratory.

The development of the Calvin Laboratory building should be seen against the backdrop of University of California development during the mid-twentieth century. The Berkeley campus was rapidly expanding and building new physical facilities during the mid- to late 1950s as research and construction dollars began to flow freely from the State of California and the Federal Government. The atomic weapon research conducted on campus during World War II made the University well-connected and placed it in a position to benefit from Federal funding and support. Calvin would prove to be one of the beneficiaries.

During the late 1950s and early 1960s, the era when the Laboratory of Chemical Biodynamics building was conceived, planned, and constructed, the University as a whole was growing on an unprecedented scale; enrollment was soaring, new campuses—Irvine, San Diego, and Santa Cruz—were added, older campuses were expanded and generalized, and new academic programs were created. Enrollment in the University of California system was growing from 44,000 in 1958 toward a projected level of 120,000 in 1975. The University was changing from a pre-war institution with two “general campuses”—Berkeley and UCLA—and a variety of research stations, to a complex statewide network of campuses and facilities. Between 1958 and 1964, two new academic departments were formally created at Berkeley—Cell Physiology and Molecular Biology—both of which were relevant to the broad-based research interests of the future Calvin Laboratory staff. In addition, 14 new
organized research units were established on the Berkeley campus, including Calvin’s program, the Laboratory for Photosynthesis and Chemical Biodynamics.\textsuperscript{37}

The 1964 campus academic plan specified: “Berkeley will strengthen its established position on the frontier of many fields of knowledge and will seek to establish leadership in selected new areas of instruction and research as they develop.”\textsuperscript{38} Calvin’s research work was highly consistent with that vision and was also bolstered midway through the building development process by his newly minted celebrity status as a Nobel Prize winner. For example, the 1964 University of California system report devoted three pages to “Faculty Honors,” and included special mention of Calvin along with the other five University of California Nobel Prize winners. A photograph of Calvin leaning over a microscope was included in the report, and he was one of the few individuals identified by name in the photographs.\textsuperscript{39}

Finally, physical expansion and development of the University moved at a rapid pace in that era. The number of new building projects soared:

The six years...saw enormous expansion of the University’s physical facilities. Annual capital outlay expenditures [for building] had risen from the previous high of $29.8 million in 1953-54 to $52.0 million in 1958-59; they rose further to about $81.0 million in 1963-64...By 1963-64 the University had 260 major building projects in various stages of planning and construction, representing a total investment of about $418 million.\textsuperscript{40}

Throughout the University of California system, more than 18,000 acres of land were added to University ownership, including 305.8 acres in Berkeley acquired between 1958 and 1964. Much of the additional Berkeley land was in the Hill Area above the campus, but a substantial fraction was in the neighborhoods around the campus perimeter, including portions of the block where Calvin Laboratory would be sited.

As discussed above, the 1956 Long Range Development Plan (LRDP) projected substantial modifications in the southeast corner of the campus, which was still primarily occupied by older homes, some privately owned. In the southeast corner of campus, the 1956 Plan showed an expansion of the Law School along Bancroft Way, and two generic structures and a building similar in

\textsuperscript{38} Ibid., 6.
\textsuperscript{39} Ibid.
\textsuperscript{40} Ibid., 27.
siting to the future Wurster Hall. The future Calvin Laboratory site, however, was shown as an open or landscape space, not as a building site. In addition, the 1956 LRDP showed the section of College Avenue north of Bancroft Way as a narrow pedestrian path instead of a city street, although the street would not be removed until the early 1960s.

Even as the report was promulgated, however, a redevelopment of science facilities at the University would influence Calvin’s decision to build a new laboratory. Major physical improvements to the College of Chemistry complex were planned that would result in the removal of the “old Radiation Laboratory” building and several other obsolete structures, displacing Calvin’s group. The 1962 LRDP projected that over 400,000 net square feet would be added to the mathematics, chemistry, physics, and astronomy departments, with much of this space included in a sequence of new and replacement Chemistry buildings. Originally, Calvin and his group were slated to move to the Life Sciences Building with some space at the future Latimer Hall, but Calvin became concerned about the size and adequacy of the facilities. Calvin’s assistant, Marilyn Taylor, said during a 1996 interview that the decision to demolish the Organic Research Laboratory (the “old Radiation Laboratory”) was felt as “a personal psychological blow to Calvin,” because he was worried that his group would have to move to the Life Sciences Building and be separated from colleagues. As a result, Calvin began to work toward obtaining a separate building that would unite his group in one space.

The 1962 LRDP, in contrast to the 1956 LRDP, shows the southeast corner of the campus reconfigured to include the Chemical Biodynamics Building in its current cylindrical form. The generic “reserve building” shown just east of the Wurster Hall site in the 1956 LRDP had shrunk to the southern portion of the site to allow for the new laboratory. The 1962 LRDP listed the “Bio-Organic (Photosynthesis) Lab” as already “under construction as of June 1, 1962.” Thomas Church’s landscape plan for the 1962 LRDP showed College Avenue north of Bancroft Way as a curvilinear pedestrian and bike path, rather than a vehicular street (Map 16).

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Funding the Laboratory of Chemical Biodynamics Building

In order to secure a building for his group, Calvin realized he would have to find funding from outside sources. Calvin’s assistant Marilyn Taylor discussed the process during the 1996 interview:

First of all, he discussed it with the people on The Hill and the AEC [U.S. Atomic Energy Commission]. I think they would have funded it but he would have had to go up to The Hill, and he absolutely didn’t want to do that because, by that time, we had people from psychology, biophysics, biochemistry, molecular biology in his group. When it became clear that he did not want to move the group up The Hill, I think he discussed it with [Glenn] Seaborg, who was then Chancellor [of the Berkeley Campus] and they suggested there that were certain avenues he could apply to and the State would provide a certain percentage [of the construction costs]…

He also wrote at that time to all sorts of other foundations — I can’t remember, there were so many things going on. This was before computers, before Xeroxes; it was laboriously typed out over and over again. It came down that the NIH [National Institutes of Health] would give a certain amount of money, NSF [National Science Foundation] would give a certain amount of money, and the State; and then there was this $300,000 that the Kettering [Foundation] people [provided]. The AEC equipped the building. So, in a sense, it was joint thing — there was AEC money in the building in the form of equipment.”

Calvin explained the justification for getting funding from several sources in his memoir:

The reason for seeking outside funds for the building construction, even though the group had been supported since its inception by the U.S. Atomic Energy Commission (AEC), was that the AEC would not construct a building that it did not own and the Regents would not construct a building not their own to be located on the campus. If I had been willing to move the group up on the Hill with the other research groups…the AEC would have provided the construction funds…

According to Calvin, the Kettering Foundation funded one-third of the building, and the remaining money came from the National Institutes of Health (NIH), the National Science Foundation (NSF), and the Regents of the University of California. Obviously, winning the Nobel Prize did help Calvin in securing the final funding for his building.

Choosing the Site for the Laboratory

The current site of Calvin Laboratory was not the original site chosen for the new structure. In 1959, the campus designated a portion of “Central Strawberry Canyon” for a group of new research
facilities. The Campus Planning Committee (CPC) discussed this approach at its meeting of December 3, 1959:

Mr. Wagner [the campus planner], referring to a large study drawing of the easterly portions of the Berkeley campus, said that planning studies have progressed sufficiently far to allocate specific sites in the central Strawberry Canyon area to specific major functions…It is proposed that the four remaining major building sites be allocated to the following functions: Biomedical Complex [Donner Laboratory], Bio-organic Laboratory [Photosynthesis Laboratory], Inorganic Materials Laboratory, and Environmental Physiology Laboratory.  

The CPC approved and designated a site for the Bio-Organic Laboratory (Laboratory of Chemical Biodynamics/Calvin Laboratory) located across from the entrance to the Botanical Gardens.

Just a few months later, however, the Department of Botany objected to placing the new laboratory building “on the Strawberry Canyon site across North Canyon Road from the Botanical Gardens.” The minutes of the Campus Planning Committee do not include a discussion of what the specific objections were, but it is possible that the Department of Botany was concerned about the close proximity of the site to the Botanical Garden, or potential impacts on what would become the Mather Redwood Grove, a plantation of coastal redwoods that would later be annexed to the Garden’s management.

Other objections seem to have been raised by Calvin himself. Calvin recalled in his autobiography that he wanted his new building on campus, and opposed the idea of moving to “the Hill” above the campus at Lawrence Berkeley National Laboratory. Calvin wrote: “I was unwilling to do this because of my fear of being too separated from the interdisciplinary campus environment and the chemistry department.” Members of Calvin’s staff, although not having any detailed recollections of the siting decision, generally seem to confirm this view, commenting that they felt the site was chosen in part because it was close to the Chemistry complex and would allow Calvin and his group to easily communicate with their colleagues. The idea of placing closely related academic disciplines in the same sector of campus—in other words, in academic “precincts” of related buildings and disciplines—is a common principle in Berkeley campus planning documents, dating back to Emile

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46 Minutes of the Campus Planning Committee, 3 December 1959.
47 The exact coordinates were University Grid coordinates 800’ S, 5, 150’ E. Minutes of the Campus Planning Committee, 3 December 1959.
48 Minutes of the Campus Planning Committee, 3 March 1960.
49 Calvin, 110.
Bénard’s 1899 plan. Therefore, it was a logical decision to site Calvin Laboratory near related science buildings.

After several months, the decision was made to change the site to the current location. On October 25, 1960, the Campus Planning Committee had the following discussion:

The Committee recommends the following site approvals: Bio-organic Laboratory (Photosynthesis Laboratory)--the northerly portion of the “reserve site” immediately south of Cowell Hospital and immediately west of Piedmont Avenue (note: because of recent reevaluation of need for this facility to be near on-campus academic departments, this recommendation reverses an earlier site recommendation for its location in the central Strawberry Canyon)…53

The note mentioned at the above CPC meeting, “need for this facility to be near on-campus academic departments,” seems to confirm that Calvin wanted the building constructed on campus. Finally, at the January 26, 1961 meeting, the CPC recommended “approval of the following changes to the Long Range Development Plan drawing…Location of sites for the Bio-Organic Laboratory and an addition to the Environmental Design Building [Wurster Hall] east of the latter-named structure.” As part of this change, the CPC “urged careful study of problems of tree preservation, pedestrian circulation, and form of open spaces thus created,” which presumably led to the involvement of landscape architect Thomas Church in the project.54

In addition to the proximity issues, the Calvin site was presumably suitable to the University because it was not occupied by important existing academic buildings whose users would be displaced by a new building. Instead, the site contained two or three small, nineteenth-century residential buildings. The 1962 LRDP was fairly explicit about the temporary nature of these buildings:

The Berkeley campus contains a number of structures built originally for short term use, other structures that have outlived their period of usefulness, and some buildings that have been acquired through campus expansion and put to interim use pending permanent development of their sites. Evidently, if the quality of the campus and its facilities is to keep pace with future need, most of these buildings must be removed and new space found for their occupants.55

Under this definition, the houses at the proposed site of Calvin Laboratory would have fallen into the category of “acquired through campus expansion and put to interim use pending permanent

54 Minutes of the Campus Planning Committee, 26 January 1961.
development…” In fact, several structures with addresses from 2227 to 2251 College Avenue were listed as “Buildings To Removed” in the LRDP.  

The Site Prior to Construction

The site chosen for Calvin Laboratory covered portions of two formerly private lots with the street addresses of 2227-2229 and 2231-39 College Avenue. Prior to University acquisition, the 2200 block between 2227 and 2249 College Avenue contained late nineteenth-century and early twentieth-century wood-frame buildings built for private residential use when this part of College Avenue was still a city street. To the south of 2231 College were the Cheney House and rental cottage at 2241 and 2243 College, and the Harriet Lee property at 2245-2247-2249 College. The occupants of the buildings were mainly University faculty and staff members or rental tenants.

2231-2239 College was the home of Professor Frederick Slate, who purchased the property from Bela Wellman in 1884, likely around the same time that Warren and May Cheney purchased the adjacent 2241-2243 property from Wellman. Slate had become one of the first two graduate students enrolled at the University of California in 1873. He subsequently became a member of the faculty as Professor of Physics, a title he assumed after the death of Professor John LeConte in 1891. He remained chair of Physics for 27 years until his retirement in 1918. When he died on February 26, 1930, Slate had been continuously associated with the University for almost 57 years. At his memorial address, Professor Elmer E. Hall stated:

Professor Slate inaugurated the first laboratory instruction in physics in the University and in the State, and while California did not actually introduce the laboratory method until ten years after its introduction at the Massachusetts Institute of Technology, California was nevertheless not far behind the vanguard of institutions adopting the laboratory method.  

Professor Slate was married to Ella Slate, and they apparently had at least two children: Sarah Eleanor and Marjorie, who attended the University in the 1910s. Ella Slate died in 1925. Marjorie Slate was recorded in the 1930 Census as living in San Francisco. In 1937, Marjorie Slate and Sarah Eleanor Van Loben Sels sold the 2231-2239 College property to the University. The purchase price was $26,250, and the property was conveyed on June 17, 1937.

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56 Ibid., 20.
57 Address of Professor Elmer E. Hall at memorial service for Frederick Slate, 1930.
58 University of California, Berkeley “Green Book.”
The Slate house was constructed around 1883 and stood back from the street, midway on the lot, approximately in line with the façade of 2241 College.\(^9\) The property apparently included a rose garden, which would likely have been located on the west or southwest side of the Calvin Laboratory site.\(^9\) Directly to the north of 2231-2239 College was 2227 College, a single-family house that appears to have been owned by Professor Clarence Cory (Engineering). It appears that 2227 College became the “Nurses’ Home,” and housed University infirmary staff who worked at a building on the current Minor Hall site and later at Cowell Hospital, located at the northern end of the 2200 College Avenue block (Map 13). North of 2227 College was a parcel of land used to relocate at least five buildings from the site of California Memorial Stadium (Map 11). Thus, the site of the future Calvin Laboratory stood near the intersection of these property types: the single-family houses running from 2227 College Avenue southward, and the relocated buildings from the Stadium site running from the back of the 2229 College Avenue lot northward.

The houses at 2227-2229 and 2231 College were likely demolished in the late 1950s or early 1960s. It is implied in a table in the 1962 LRDP that they both still exist, since their addresses were given in a list of buildings to be demolished. The table, however, is slightly at odds with the statement made later in the same document that the Calvin Laboratory building was already “under construction.” It is quite possible that tables in the report were prepared before the document was finalized.

As part of the 1962 LRDP, the section of College Avenue north of Bancroft Way was removed. Although it has been difficult to pinpoint exactly when this happened, a note on the 1962 site plan for Calvin Laboratory labels the road as “College Ave (to be closed off by others),” and shows the future Wurster Hall building footprint sitting partially on top of College Avenue (Drawing 1). This suggests that this section of College Avenue was closed between 1962 and 1964, prior to the completion of Wurster Hall and Calvin Laboratory. The 2100 block of College Avenue still partially survives in an altered form as a curving pathway informally called “College Way,” which runs from Bancroft Way to the north side of Minor Hall.

**Choosing an Architect for the Laboratory**

Once the principle of a new building was established and Calvin began to gather funding commitments, a search for an architect began. Official steps in the design of the building can be traced through the minutes of the Campus Planning Committee in the early 1960s. The minutes for

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\(^9\) Address of Herbert M. Evans at memorial service for Frederick Slate, 1930.

the October 25, 1960 meeting—the same meeting at which the current Calvin Laboratory site was selected—note that approval of an Executive Architect for the project was postponed, and “Dean Wurster and Mr. DeMonte will present a list of qualified firms for consideration by the Committee at its November 2, 1960, meeting.”\(^{61}\) This at least hints at the possibility of some differing views on preferred architects. Therefore, two of the most influential players—Wurster, as Dean of Environmental Design, and DeMonte, as Campus Architect—were delegated to try to work out an appropriate compromise. At the November 2 meeting, Wurster and DeMonte suggested architects for six campus projects, resulting in the following action: “The Committee recommends Executive Architect appointments as follows: a. for Photosynthesis Laboratory -- Michael Goodman (preferred). George Rockrise (second choice). Hachiro Yuasa (third choice).”\(^{62}\)

Michael Goodman (1903-1991) was born in Lithuania. He attended the University of California, Berkeley School of Architecture and received his Masters degree in 1927. Goodman worked in the offices of Willis Polk and Miller and Pflueger before starting his own practice around 1933. Goodman later became a professor at the University and taught there for 48 years until his death in 1991. Goodman’s work includes the Memorial Chapel at Temple Emanu-El in San Francisco, the San Mateo County Courthouse in Redwood City, and several buildings designed for the University, including the Wendell Stanley Laboratory.

Michael Goodman designed two other major facilities on the University campus in the same general period as Calvin Laboratory: the original Stanley Hall (1950-52, demolished), and 2253 Fulton Street, an early 1960s remodel of a Neoclassical bank building designed by James Plachek in 1923. In these buildings, Goodman included elements that would also become part of his design for Calvin Laboratory, including simple, smooth-surfaced exteriors, aluminum windows, an exterior color scheme with overtones of light pink or terra-cotta, and minimal, subtle ornamentation. In the case of the 2253 Fulton Street remodel, for example, Goodman entirely obliterated Plachek’s traditional Neoclassical ornamentation and covered the four Classical columns at the front entrance in square enclosures of aqua tile. In his design for Calvin Laboratory, Goodman specified a smooth concrete finish for the curving exterior walls. The 1978 Campus Historical Resources Survey mentioned that Goodman had pioneered a new process or technique for making especially smooth concrete surfaces. Photographs of the building under construction appear to show a rough concrete shell being covered

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\(^{62}\) Minutes of the Campus Planning Committee, 2 November 1960.
by a thin, smooth, surface layer (Image 12). Unfortunately, the source of the statement is not cited in the 1978 survey.  

The Design of the Round Laboratory

Michael Goodman and Melvin Calvin apparently closely collaborated on the unusual cylindrical design for Calvin Laboratory. Some accounts credit Goodman with the suggestion of a complete cylinder, while others credit Calvin himself. More than one account states or implies that an early design concept was for a semicircular building, but practical objections were raised, one of them being how the roof tiles of a curving roof would meet a straight end wall. Calvin, in oral histories and his autobiography, stated that the circular design grew from his desire for an interactive space and from the positive experiences in the old Radiation Laboratory building, where researchers had been grouped together in one large room. In a 1995 interview, Calvin was asked about the circular design of the building:

(Interviewer) You wanted to retain some of the aspects of ORL [Old Radiation Laboratory], some of the interactive aspects, and was it your concept, as far as you remember, to have this round building with people facing the middle?
(Calvin) Yes.
(Interviewer) Do you think it worked?
(Calvin) Yes it worked — it’s still there.  

Marilyn Taylor, who was present at the interview added, “First it was going to be like a half-circle and that didn’t work out and then we had a full circle…It was Dr. Calvin’s idea and the senior staff supplemented it.”

Other research sources, however, imply that the architect, Michael Goodman, had a hand in the evolution of the circular design. For example, Professor Roderick Park, who later became Vice Chancellor at Berkeley, recalled this sequence of events in a 1996 interview:

I was involved in the design and construction of the new building as part of the building committee…The architect was Michael Goodman, who was on the faculty here, a typical inside job…Calvin had a distinct idea of what he liked. He wanted a building where people were forced to interact with each other, inter-disciplinary building, and that’s why it eventually ended up round. It kind of focused everyone at the coffee table or something with special facility rooms in the back.

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63 Most of the authors of that survey, who had known Goodman personally, are now deceased. It is likely that the statement came from the personal knowledge of one of the authors, perhaps after conversations with Goodman.
We had our first meetings and [Calvin] said what he wanted. Louis DeMonte was the campus architect at the time and Michael Goodman understood what Calvin wanted. He first started drawing a square building, which sort of forced people to interact, and then he drew a round building which had interesting design characteristics. If it’s smaller than a certain size, you can’t have interior corridors; if it’s larger than a certain size, you run into all sorts of problems also. It turns out that there are certain quantum sizes of round buildings that make them work well for science. So, Calvin’s building — Michael Goodman came in with this round design.65

Regardless of the differing accounts, it seems clear that the design of the Laboratory was shaped by Calvin’s interest in interdisciplinary research. This interest crystallized during Calvin’s tenure in the “Rad Lab” group in the 1930s and 1940s. Almost every account of Calvin emphasizes his focus on assembling scholars of diverse backgrounds to either tackle research problems together or cross-fertilize separate projects. Calvin’s laboratories were notable in combining people from widely diverse research disciplines and integrating foreign scholars into research work. It is likely that Calvin provided the inspiration and impetus for the design—as Professor Park stated in his interview: “He impressed on [Goodman] the programme, before the design, of how he wanted people to interact”—and Goodman came up with the round design to make that program work.66

**Round Buildings on the Berkeley Campus**

Prior to the construction of Calvin Laboratory, the Berkeley campus contained two other academic structures that had the form of a partial cylinder or drum. One of them was Bacon Hall, which was constructed in 1881 as a library and art museum building for the University, and was one of the first half-dozen major structures on the campus (Image 10). Bacon Hall was a large, ornate, red brick building with a clock tower (later removed for seismic reasons), and featured a multi-story drum-shaped rear elevation that provided several floors of library stacks. The stacks, placed like the spokes of a wheel on semi-circular galleries with wrought iron railings, overlooked a central atrium or gallery. On the prominent front of the building, facing west toward South Hall and San Francisco Bay, Bacon was conventionally squared off.

Bacon stood just west of the Chemistry complex on the present-day site of Birge Hall. The drum faced east, towards the Physics and Chemistry buildings. Calvin would have seen that prominent rear elevation every day on his way to his offices in the Chemistry building. In the early 1960s, Bacon was demolished and replaced by Birge Hall (1964). In his interview, Professor Park commented on Bacon

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66 Ibid.
Hall as a possible inspiration for Calvin Laboratory: “In Calvin’s mind the Laboratory] was a replacement for the old Bacon Hall which was a museum which used to exist down right to the south-east of the Campanile — that would have been torn down for the new physics building — and Calvin also thought of it as a replacement for Bacon Hall in terms of that kind of architectural statement on campus.”

Another half-cylindrical structure on the campus in Calvin’s day was Wellman Hall (originally Agriculture Hall), designed by John Galen Howard. The still extant structure features a horizontal block or bar with a symmetrically placed half-cylinder or drum projecting from the south façade. Although located further away from the Chemistry buildings, Agriculture Hall stands prominently on a rise north of the Life Sciences Building and presumably would have also been familiar to Calvin.

**Precedents and Antecedents of the Laboratory Design**

The extent to which the cylindrical, open space design of Calvin Laboratory is unique is unknown. No other research buildings from earlier eras have been identified with this design; as noted earlier, the partially cylindrical buildings at Berkeley which may have provided inspiration or precedent were not laboratory buildings. Those interviewed for this HSR have not been able to identify any buildings of later decades at research institutions that replicate the cylindrical design. The open laboratory format where researchers interact in large, flexible spaces is certainly present in many modern research facilities. However, present-day requirements for fire separations and hazardous materials controls have restricted the amount of open space that is allowable. A large, completely open work environment like Calvin Laboratory would likely not pass code today, and in fact, new requirements have led to some alterations to the Laboratory’s interior.

Richard Lemmon, one of Calvin’s colleagues, commented on the use of open space laboratories:

> [There was an] article in C&E News [Chemical & Engineer News] about a new laboratory building, I think it’s called the Beckman Chemical Sciences Building, at UCSD (La Jolla). In this new building, somebody was praising its architecture in having wide open spaces which would provide interaction between scientists of different disciplines so they could learn from each other what each other was doing. To my own recollection, Calvin was the first one who had that idea. Even Calvin, I can’t give him too much credit, because the Old Radiation Laboratory, which the group moved into, I described, and I think not unfairly, as looking like a cow barn. It was a big wide open space and the laboratory benches were put in there and, I think,

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67 Ibid.
maybe it was only after the fact that Calvin decided: “Gee; this wasn’t such a bad idea after all, to have the lab benches in wide open spaces.”

Professor Vivian Moses also stated that he believed that Calvin was the first cylindrical research building designed with open spaces to promote interactive research. Moses also said, “I don't know of any others like it but I am not an expert on scientific laboratory design.”

In the absence of contradictory evidence, it may be possible to conclude both that the Calvin Laboratory cylindrical design was a unique research design for its era, and that it remains unique and likely unduplicated. This would make the structure an unusual physical artifact and expression of a research vision, rather than the forerunner or exemplar of a broader trend.

**Vetting the Design of the Laboratory**

As with all University buildings, the design of Calvin Laboratory had to be carefully vetted before construction began. While the cylindrical shape of the building grew from Calvin’s program views, the exterior details of the building quite possibly evolved as a synthesis of the architect’s Modernist tendencies and a countervailing pressure for traditionalism from influential University officials.

The first hurdle was getting approval for a round building. The cylindrical design evoked some consternation when it was initially presented. At the time, the head of the University Office of Architects and Engineers was Louis DeMonte. DeMonte was also the Chief of Staff for the Committee on Campus Planning. In essence, DeMonte acted as the Supervising Architect of the campus, and proposed projects had to be vetted by him to insure a unity of architectural styles. DeMonte was apparently very unhappy with the idea of a round building. Richard Lemmon recalled DeMonte’s reaction:

[DeMonte] said like this: “Don’t be ridiculous — a round building? Do you know what you have to do to build a round building? You run a pipe a couple of yards and you have to make a bend or an angle of 15° and then another angle? It’s impossible!”

Well, all of us on the committee planning the building, Melvin, of course, was in charge of things, we all said that we’ve got to work in this building and even if it costs a little more we want it done this way, a round building.

So, finally, after a second or third meeting, this architect finally threw up his hands and let us go ahead on that basis. But it was quite a fight. Even though there is at

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69 Vivian Moses, personal communication to Steven Finacom, 23 July 2005.
least one partly-round building on the campus, one of the agricultural buildings [Wellman Hall] down at the other end of the campus is that way. What I particularly remember was the horror on the face of the University architect when that plan was first presented to him.  

Professor Park also remembered a similar situation:

The campus architect, Louis DeMonte, was absolutely shocked. He said, “Michael, when that goes to Sacramento we could lose every building in the building programme of the University;” he got really angry at Michael Goodman. Calvin kind of sat there and listened to it, didn’t say anything. We had a meeting again about ten days later. Calvin had obviously gotten to the important regents at that point. Louis DeMonte said “well, I think a round building might be rather attractive statement right at this point on the campus.” I saw University politics operating! I think [Donald] McLaughlin was probably the regent who pulled a turn on what kind of building Calvin could have.  

The regent that Park was referring to above was Donald H. McLaughlin, who had served as Dean of Mining at the Berkeley campus before becoming a University regent. He was part of a powerful triumvirate with Chancellor Clark Kerr (who later became University President) and the founding Dean of Environmental Design, William Wurster. During the 1950s and early 1960s, no campus buildings were constructed without the scrutiny and approval of these three. McLaughlin’s role was especially important because he not only participated at the campus level in building planning, but as a regent had final say on building proposals. In essence, McLaughlin seems to have helped plan campus buildings, and then voted on approving them. As a result, it is likely that no single regent was as influential in the planning of the Berkeley campus in the mid-twentieth century as McLaughlin; a fitting role since his mother had been a personal secretary to Phoebe Hearst, the last regent to have such an influential position. McLaughlin had grown up knowing Hearst and revering her efforts, along with those of John Galen Howard, in planning and shaping the early twentieth-century Beaux-Arts character of the Berkeley campus.

One of McLaughlin’s self-determined roles seems to have been to mediate between the strong Modern architectural design of the 1950s and 1960s, and the earlier Neoclassical character of the existing Berkeley campus at that time. This often expressed itself in efforts to add historicist design

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71 The recollections of Sylvia McLaughlin confirm that Regent McLaughlin was informally presented with the building design, but by Goodman, not Calvin as Park surmised. However, it may have been Calvin who arranged for Goodman to meet McLaughlin. Park/Moses interview, 9 July 1996 (The Calvin Lab: Bio-organic chemistry group at the University of California, Berkeley, 1945-1963. Interviews conducted by Vivian and Sheila Moses for the Regional Oral History Office (ROHO), Bancroft Library, University of California, Berkeley, December 1995-September 1997).
elements to what were essentially Modernist buildings, particularly at the roof level. One of McLaughlin’s typical additions was known as a “McLaughlin Hat”: a red-tile roof placed on a Modern building in an attempt to relate to existing buildings. Buildings constructed in the 1950s and 1960s with “McLaughlin Hats” include: Campbell Hall (Warnecke & Warnecke, 1957-59), Birge Hall (Warnecke & Warnecke, 1964), and Barker Hall (Wurster, Bernardi & Emmons, 1964). It is very likely that Calvin Laboratory, designed in the same era as Campbell, Birge, and Barker, fits into this campus design tradition and received its red tile roof, and perhaps, its surrounding colonnade, at least in part as a nod to both Neoclassicism and McLaughlin’s influence in building approvals. This would make the Laboratory the fourth “McLaughlin Hat” building. These four buildings differ substantially from several other Modern buildings developed on campus during the same era, including Barrows Hall, Evans Hall, Tolman Hall, and Wurster Hall.

Support for this assumption about McLaughlin’s influence on the design is lent by the recollection of McLaughlin’s widow, Sylvia McLaughlin. She remembered Michael Goodman visiting her home in North Berkeley for an early morning breakfast during which he earnestly, and somewhat nervously, explained the building design to Regent McLaughlin while showing him a small model of the proposed Calvin Laboratory. If Goodman went directly to McLaughlin to pitch the design, it is likely that the architect tried to incorporate elements that McLaughlin liked in new campus buildings as a counterpoint to the unusual cylinder shape that DeMonte feared would offend State officials.

Some staff members who worked for Professor Calvin when the building was designed state that both Calvin and Goodman “fought” for the tile roof, particularly in reaction to the adjacent Wurster Hall, a flat-roofed, concrete Brutalist composition entirely at odds with the earlier design traditions of the campus. They recall that both Calvin and Goodman disliked Wurster Hall; James Bassham stated, “Goodman said Wurster was like building an elephant with three different designers.” If this is accurate, Calvin and Goodman would not have had an opponent in McLaughlin, but a sympathizer. McLaughlin reportedly disliked Wurster Hall and later regretted approving the design as a Regent, as he did also with Evans Hall, another concrete, flat-roofed structure.

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73 Sylvia McLaughlin, personal communication to Steven Finacom, early 1990s.
74 James Bassham, interview with Steven Finacom, 21 July 2005.
Design Approval and Changes

At the January 21, 1961 meeting of the Campus Planning Committee, the schematic plans for the Laboratory were approved:

Mr. Michael Goodman, Executive Architect, and Mr. DeMonte explained the site and building form studies thus far made for the Bio-Organic Laboratory. It has been felt that the building can best be located immediately east of the proposed Environmental Design Building [Wurster Hall], and that a circular form 120' in diameter for the three-story structure is the best from both functional and aesthetic standpoints. Operations of the Laboratory and Dr. Calvin's wishes both dictate the circular form; this shape, surmounted by an outward-sloping tile roof, seems to make for happiest relationships with nearby buildings of varying orientation. Where possible, existing significant trees will be preserved. The Committee endorsed the direction of Mr. Goodman's studies and requested that he carry the schematic plans to completion.\(^7\)

The next month, on February 14, 1961, the Committee heard more details on the plans, indicating that the design work was well advanced. The meeting notes indicate several small Committee influences on the design and again hint at the controversy DeMonte feared over the cylindrical shape. There is also the implication in a brief comment by a “Mr. Eans” that all members of the Committee were not comfortable with the idea of building a relatively small, specialized building for one professor’s research group, in an era when the campus was generally removing smaller buildings and constructing large, multi-disciplinary facilities.

Mr. Michael Goodman, Executive Architect for this project, presented a site plan, floor plans, and perspective renderings representing schematic plans for the proposed Bio-Organic Laboratory to be located east of the proposed Environmental Design Building and south of Cowell Memorial Hospital. Circular in form, the building will contain three levels and will provide roof work space enclosed by a pitched tile roof. Alternative treatments of the ground level and fenestration were discussed; the Committee expressed preference for the study embodying a recessed wall and colonnade at ground level and vertically-oriented window forms on the upper two levels.

Mr. Eans, noting the small size and specialized nature of the building, cautioned against too-frequent exceptions to the principle of flexibility achievable through consolidation of space into relatively large structures within which space reassignments may easily be made as needed.

It was noted that the specialized form of the building would demand especially thorough justification, in anticipation of possible criticism based on cost factors. ACTION TAKEN: The Committee recommends approval of the schematic plans

\(^7\) Campus Planning Committee minutes, 21 January 1961.
for the Bio-Organic Laboratory, its precise siting yet to be the subject of further, detailed study.

Two months later, in April 1961, the Committee again heard from Goodman on the design. The minutes indicate that schematic plans for the building had been approved by the Regents, and the Committee was concerning itself with design details, not the major building concept.

Mr. Michael Goodman, Executive Architect for this project, presented drawings indicating design differences from the proposal as contained in the schematic plans for the project, already approved by this Committee and by The Regents. Principal change is to the exterior columns of the building; where a circumferential outdoor gallery had been contained earlier, it is not proposed to achieve this exterior circulation through a separate, roofed, area.

The Committee voiced its approval of this change and noted that interior floor space is also increased by such change. However, the Committee suggested that the porch roof be raised to the sill line of second-floor windows, and that great care be taken in the design of the light grille elements supporting the porch roof.

A month later, there were further minor refinements, bringing the Laboratory much closer in character to its built appearance.

Mr. Goodman, Executive Architect, and Mr. DeMonte presented drawings of the preliminary plans for the Bio-Organic Laboratory. Minor changes have been made since schematic plans were approved by The Regents: grilles on circumferential porch have been eliminated, and a five-foot planted area has been added outside the porch area. Mr. Evans suggested that the porch roof be tied into the building over the main entrance. ACTION TAKEN: The Committee approved the preliminary plans for the Bio-Organic Laboratory as being essentially in conformance with schematic plans for the project.

By 1962, the plans were completed, the design had been included in the official 1962 LRDP, and the Laboratory was under construction. The final mention of the building in available CPC minutes was this brief note about ground improvements in 1963, presumably as the building was under construction: “Mr. DeMonte reported that the preliminary plans are consistent with the schematic plans approved by The Regents and moved they be approved. Action Taken: The Campus Planning Committee approves the preliminary plans for Bio-Organic Laboratory, Ground Improvements.” These ground improvements were likely part of the landscape plans designed by Thomas Church for the Calvin Laboratory site.
Thomas Church and the Calvin Laboratory Landscape

The landscape around Calvin Laboratory was designed by noted landscape architect Thomas Church (1902-1978), widely considered to be one of the founders of modern California landscaped gardens. Along with Garret Eckbo, Robert Royston, and Edward Williams, Church became a significant West Coast proponent of the ideals of Modernism as they related to landscape architecture. Church was born in Boston and attended the University of California, Berkeley and Harvard University, graduating in 1922 with a Master’s degree in city planning and landscape architecture. After traveling in Europe, Church accepted a position teaching landscape architecture at the University of California, Berkeley. Around 1929, Church opened his own firm in San Francisco. He closed the firm when he retired in 1977. Although Church primarily worked on private gardens, often in collaboration with architect William Wurster, he also designed landscapes for the campuses of the University of California, Berkeley, the University of California, Santa Cruz, and Stanford University.

Church’s work at the Berkeley campus began in earnest when he was hired as a Consultant Landscape Architect (1957-1959) to produce a campus landscape master plan. He followed Lawrence Halprin, the first Consulting Landscape Architect, in this role. Halprin had prepared a campus master plan in 1954, but it was never adopted. According to the University’s 2004 Landscape Heritage Plan, “Church's focus was to plan for growth and for preservation of the campus landscape.” As the campus was physically an amalgam of works of the Picturesque and Beaux-Arts eras, Church faced the challenge of integrating new work with existing elements. The projects that Church designed are relatively identifiable by their Modernist expression of paths, walls, and plantings. Both his 1962 landscape plan and his discrete constructed projects on campus are tangible evidence of his significant contributions towards the planning of the campus during this era.

Thomas Church was appointed as Executive Landscape Architect for the Laboratory at a February 1961 meeting; at the same time, he was appointed to undertake “General Campus Improvements, 1962-63.” The CPC minutes also mention that Church was working on landscape designs for the Environmental Design Building (Wurster Hall) and the “College Avenue Entrance Areas,” presumably the section of College Avenue north of Bancroft Way. This would mean that Church was in an enviable position for a designer. He had simultaneous charge of designing the landscape for three interlocking sites—one plaza and two buildings—and could presumably coordinate and

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80 University of California, Berkeley, Landscape Heritage Plan ([Berkeley, California]: University of California, Berkeley, Capital Projects/Facilities Services, 2004), 28.
81 Ibid., 29.
82 Ibid., 12-15.
83 Campus Planning Committee minutes, 14 Feb 1961.
harmonize elements from the separate projects. It is, presumably, out of this process that the curved pathway replacing College Avenue emerged.

**Dedication of the Laboratory of Chemical Biodynamics**

The Laboratory of Chemical Biodynamics was officially dedicated on April 1, 1964 (Image 15). The audience was seated uphill, facing southwest toward the new structure. The dedication featured the Consul General of Sweden, AEC Chairman and former Berkeley Chancellor Glenn Seaborg (also a Nobleist), Berkeley Chancellor Edward Strong, the Director of the National Science Foundation, the Dean of Chemistry, and the Director of the Lawrence Radiation Laboratory, Edwin McMillan (also a Nobleist). The dedicatory speaker was Dr. Arne Tiselius, a renowned Swedish biochemist and the fourth Nobelist (Chemistry, 1948) present at the ceremony.

**The Laboratory and the Coffee Table**

As discussed above, Calvin’s primary goal for his new building was to have a space that promoted interaction and interdisciplinary work. He achieved that in part by connecting the general laboratories on the second and third floors with an internal staircase, so that researchers could easily move between floors without having to go to the main circulation space in the core of the building. According to Professor Park, Calvin “put in that little spiral staircase so that you didn’t have to go to the other staircases. That was a hell of a fight with the fire marshal and everybody else as to how you connect the two without having everything locked-off through doorways. But somehow they got it done.”

After the building was occupied, the main focus came to be on a large round coffee table in the center of the general laboratory on the second floor (Images 18 & 19). This table would take on iconic significance amongst the building’s occupants. Calvin described the table in his autobiography:

> The actual physical structure of the building (sometimes referred to as the Round House, or Calvin Carousel) was meant to promote interaction, discussion, and cooperation. Ideally, all working areas would be equidistant from the coffee pot situated on the large white central discussion table…the circular layout of the laboratories and offices offered distinct advantages for interdisciplinary research. Scientists from several disciplines were brought together to share their different ideas and distinct approaches. The lab benches radiate outward like spokes from a wheel, and there is a spiral staircase, which rises behind the coffee table, to aid

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*Not surprisingly, this staircase was later blocked off from use because of fire codes. Park/Moses interview, 9 July 1996 (The Calvin Lab: Bio-organic chemistry group at the University of California, Berkeley, 1945-1963. Interviews conducted by Vivian and Sheila Moses for the Regional Oral History Office (ROHO), Bancroft Library, University of California, Berkeley, December 1995-September 1997).*
movement between the floors of the building. The design of the building was evolved so that the several scientific disciplines housed there could interact with each other and bring their various talents to bear on what we called “the dynamics of biological structure and function.”

It is not uncommon at the University to find departments that cherish a time or place of casual daily interaction between faculty, researchers, and students. Other departments have more formal structures but encourage informal interchanges between scholars. At least one such early Berkeley campus tradition apparently had a strong influence on Calvin. This was a weekly research conference in the College of Chemistry, presided over in the early twentieth century by Gilbert Lewis. Lewis was a legendary Dean who led the College of Chemistry to international prominence and fostered several Nobel Prize winners and other distinguished researchers. Calvin recalled meeting with Lewis at his arrival at Berkeley in 1937 to take up a faculty position in Chemistry:

Lewis assigned to me the first formal task on meeting me in the hallway outside his office, a place he usually spent most of the time…The first instruction he gave me, before I had done any research work, was to undertake the arrangements for the weekly research conference held in the seminar room in Gilman Hall, just a few yards from his office.

At the weekly conferences, faculty and other scholars would present their research in an informal way, with considerable interaction between the speaker(s) and the audience of colleagues. This experience had a profound effect on many Berkeley researchers, and Calvin saw the value of getting people together to talk about research in a more casual environment. As a result, Calvin continued the tradition in his own laboratory.

When designing the general laboratories, Calvin modeled the space to include a large circular table in the center, a kind of “Round Table” of the Laboratory, which contained the coffee pot. Calvin’s colleagues recall the table as a central part of the design: “[Calvin] insisted on a round house—we had to face each other a lot—and he insisted on coffee breaks.” Free coffee was available, and 10 to 12 people could sit around the table at one time and talk. The coffee table became such an ingrained part of the Laboratory that when it was removed due to regulations that prohibited having food around laboratory chemicals, some of the researchers cried.

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85 Calvin, 105.
87 James Bassham, interview with Steven Finacom, 21 July 2005.
88 The table was preserved in a student lounge in one of the College of Chemistry buildings. Ibid.
Research at the Laboratory after Construction

When the Laboratory was first completed, it was heavily staffed. The post-World War II era was a golden age for science at Berkeley. Calvin was well-connected and able to find funding for his research projects. The Navy, the AEC (Atomic Energy Commission), and the NIH (National Institutes of Health) all provided significant funding for academic research in that era. Users of the Laboratory noted that as staff pursued their research projects, “it was certainly more than an 8-hour building.”

The early research at the Laboratory focused, not surprisingly, on photosynthesis and photochemical conversion. Later, Calvin’s personal interests turned to the study of alternative forms of energy production, spurred, in part, by the oil embargos of the early 1970s. As stated in his obituary: “Calvin’s work in deciphering the role of carbon in photosynthesis led to a lifelong interest in adapting photosynthetic techniques for energy production. In his final years of active research, he studied the use of oil-producing plants as renewable sources of energy.” Calvin had used much of his Nobel Prize money to purchase a ranch north of San Francisco. He grew various oil-bearing plants at this property; he then distributed the seeds to researchers. In 1969, Calvin published a book on the chemical evolution of life titled Chemical Evolution: Molecular Evolution Towards the Origins of Living Systems on Earth and Elsewhere.

After Calvin stepped down as Director of the Laboratory in 1980, Professor George Pimentel took over as Director. Pimentel also has his own namesake building in the Chemistry complex, 1 Pimentel Hall. After Calvin retired, some physical alterations were made to the structure. Calvin’s colleague, Richard Lemmon, noted: “I think [the open space] was certainly better than what followed it because when George Pimentel became the director and saw all this space, this wide-open space, he started putting little cubby-holes [everywhere], going back to the idea of everybody in his little niche and people not interacting so much as they inevitably did in those big labs.”

The Laboratory of Chemical Biodynamics was later reorganized as part of the Structural Biology Division of the Ernest Orlando Lawrence National Laboratory. In 1997, Structural Biology was

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89 James Bassham, interview with Steven Finacom, 21 July 2005.
90 Ibid.
reorganized as the Physical Sciences Division, in part to promote greater interaction with Berkeley campus faculty.

Some of the key people who worked at Calvin Laboratory and major research projects include (but are not limited to):

- **Richard Lemmon**
  Lemmon worked on the study of the evolution of life. He was also the leader of a group that did tritium research. The tritium laboratory, which eventually ended up at LBNL until it closed in 2001, was a place where “99% of the work was helping biomedical people to make compounds to follow a biological pathway” through the body. A goal was to have radioactive tracers in extremely minute amounts to result in “as little radiation as possible.” The tritium laboratory was a “highly productive lab” and “in 20 years of existence published over 400 papers.” It was the “most powerful [lab] of its type.” In addition to radioactive tracers, the laboratory “made the pheromones for the most harmful insects in Africa you could find.” This was part of a research project to trace the life cycles of insects like those that carry sleeping sickness.  

- **Kenneth Sauer**
  Emeritus professor of Chemistry Kenneth Sauer worked on photochemical reactions, studying how energy was created from light through biological processes. Berkeley was one of the starting points for this research, and according to Sauer, “that work is worldwide and goes on in many labs.” The end goal is finding an efficient way to convert sunlight to electrical power through biological processes, as opposed to conventional photovoltaic cells.

- **Andrew Benson**
  Benson took a major role in the early carbon work. Benson would later relocate to UC San Diego.

- **Melvin Kline**
  Kline worked on photochemical reactions.

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93 James Bassham, interview with Steven Finacom, 21 July 2005.
94 Ibid. 

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• The Human Genome Project

The Human Genome Project is run through LBNL, but some work was done in Calvin Laboratory.
COMPOSITE PLANS

The following composite plans detail the evolution of the College Avenue and Piedmont Avenue project area from the mid-nineteenth century to 2005.

1868

The 1868 composite plan shows a portion of Olmsted’s 1866 map for the Berkeley Neighborhood overlaid with W.F. Boardman’s 1868 map of the Berkeley Property. This section of Olmsted’s plan includes two roads: one road running south from the campus to Oakland; and a second road leading east up Strawberry Canyon. The road to Oakland closely correlates with Olmsted’s conception of Piedmont Way and the surveyed alignment of Piedmont Way as shown by Boardman in 1868. It is notable that the Boardman Map appears to be a copy of an 1865 map by Edward Miller, Olmsted’s surveyor, with a title added later. Prospect Street, although unnamed, aligns with Olmsted’s eastbound road. Audubon Street (now known as College Avenue) and Bancroft Way are both included in the survey. The surrounding lots, some which are shown to be a half-acre in size, were likely subdivided more than once since they are smaller than Olmsted’s envisioned one- to five-acre lots.

1911

On the 1911 Sanborn Fire Insurance Map, houses fill all but one of the lots in the study area. Houses show a diversity of setbacks from Piedmont Avenue and College Avenue, although a pattern of 50-foot setbacks from Piedmont Avenue is emerging within the study area on the west side of the block. Houses on the east side of Piedmont are set high on the rising slope rather than along the street frontage.

C.L. Huggins’ 1900 layout of Piedmont Avenue, showing the medians, aligns with the 1911 Sanborn Map with the exception of the appearance of a cul-de-sac at the northern end of Piedmont Avenue known as Piedmont Place. Piedmont Place was mapped as a street in 1909 to provide access to eleven parcels subdivided from a single parcel owned by the widow of Captain Simmons.

Victorian-era houses fill the lots on the east side of College Avenue, with multiple structures occupying some of the larger lots. A large fraternity building just south of the study area replaced an older fraternity house that appears on the 1903 Sanborn Map. Outside the study area to the west along Sylvan Way, houses are closely spaced to form a denser residential street edge than within the study area. The center line of College Avenue defining the study area appears to also demark the limit.
of the University in this time period; residential buildings occupy the east side of College Avenue, while the west side of College Avenue is occupied by several University facilities including Hearst Hall and the girls’ basketball courts.

1929
The significant element in the 1929 plan is the completion of California Memorial Stadium and the subsequent loss of residential character on the east side of Piedmont Avenue north of Bancroft Way. Other changes have occurred beyond the study area and include the loss of Hearst Hall in a 1922 fire, culverting of Strawberry Creek, and the expansion of University facilities to the west and north.

1950
The 1950 Sanborn Fire Insurance Map shows increasing development around the project area. International House has been constructed at the intersection of Piedmont Avenue and Bancroft Way, and the Boalt Hall School of Law and the Garret McEnerney Memorial Law Library have replaced houses along Bancroft Way. To the north, the Cowell Hospital Annex has replaced Piedmont Place.

Within the project area, road and lot alignments remain the same, but some buildings have either been demolished or moved. The fraternity house located deep in the lot now occupied by 2240 Piedmont Avenue has been destroyed by fire and replaced by the fraternity house that was moved from Bancroft Way. Dr. Wall's house at 2234 Piedmont Avenue has been moved from its former location on the International House site. Buildings neighboring the project area are increasingly large in scale and mass.

2005
The 2005 plan shows the increasing encroachment of large-scale University buildings on the former residential street. The section of College Avenue within the project area is closed to vehicular traffic and has become a curvilinear pedestrian and bike path. Surface parking lots affect the front and rear landscapes of the College Avenue houses and the rear of several of the Piedmont Avenue houses. The houses north of 2241 College Avenue have been demolished for Calvin Laboratory. Beyond the project area, the Law School has also expanded, resulting in the demolition of the former Clinton Day House and other buildings at the northwest corner of Bancroft Way and Piedmont Avenue. The Haas School of Business has replaced Cowell Hospital and 2220 Piedmont Avenue. Piedmont Avenue has been connected to Gayley Road, causing the northern end of Piedmont Avenue to be realigned.
Key to Plans:

Red line: Project study area
Orange lines: Olmsted, Frederick Law. Plan of Berkeley Neighborhood Including the Grounds of the College of California [map], 1866. From University of California Archives.
Black lines: William F. Boardman Co. Surveyors. Map of a Portion of the Berkeley Property Situated between the University of California and the State Deaf, Dumb and Blind Asylum, Oakland Alameda County, as Laid Out by F.L. Olmsted. Officially Adopted by the Board of Trustees of the College of California [map], May 1868. From City of Berkeley Archives.
Key to Plans:
Red line: Project study area
Blue lines: Huggins, Charles L., Berkeley Town Engineer.  
Improvement Map of Piedmont Avenue [map]. 1900. from City of Berkeley Archives.
Just prior to construction of International House Composite Plan

Key to Plans:
Red line: Project study area
Blue lines: Piedmont Avenue, Dwight Avenue to Piedmont Place, Concrete Curbs [map]. ca. 1928. City of Berkeley Department of Public Works.
Key to Plans:

Red line: Project study area
Blue lines: Piedmont Avenue, Dwight Avenue to Piedmont Place, Concrete Curbs [map]. ca. 1928. City of Berkeley Department of Public Works.
III. DESCRIPTION

SITE AND LANDSCAPE

Calvin Laboratory is located in the southeast quadrant of the University of California, Berkeley campus. The building is located to the north of 2241 College Avenue, to the west of 2222 and 2224 Piedmont Avenue, to the south of the Haas School of Business, and to the east of Wurster Hall. The site of Calvin Laboratory is characterized by mature trees, concrete planters, a concrete walkway, natural stone walls, and a large asphalt-covered parking lot (Figure 1).

Landscape Condition

Overall, the landscape elements appear to be in good to fair condition. On the western side of the building, the tree canopy is full and is comprised mostly of Coast Redwoods (Sequoia sempervirens). The eastern side is dominated by a steep slope and is sparsely planted with a few European Olives (Olea europaea), Italian Stone Pines (Pinus pinea), and one Specimen English Oak (Quercus robur).

See the Existing Conditions Inventory for Landscape (III. Description) for further elaboration on the location of hardscape and vegetation. The tree numbers below are references to the 2005 Tree Inventory (X. Appendix). Ratings for the condition of each tree can also be found in the Inventory.

Landscape Elements

Vehicular ways and parking

Description:
A 16-foot-wide, asphalt-paved vehicular loading zone is located at the eastern side of Calvin Laboratory. There is space designated for one parked vehicle, although up to three vehicles park at this location at times (Figures 58 & 60).

Condition: Good

Pedestrian pathways

Description:
Calvin Laboratory has an exterior colonnade paved with concrete, which provides pedestrian circulation around the building. On the north and east sides, a 7-foot-wide aggregate band is offset from the colonnade paving. This band is part of a French drain system designed by Thomas Church for the uphill side of the building (Figure 53). On the north side, a concrete pathway connects the building’s main entrance door to the vehicular road between Calvin Laboratory and the Haas School of Business (Figures 37 & 40). From this main entrance, a 6-foot-wide asphalt pathway retained by a concrete curb and gutter continues uphill towards Piedmont Avenue (Figure 38).

On the west side, two pathways designed by Thomas Church exist at different grades. The path closest to Calvin Laboratory is six feet wide, while the path adjacent to Wurster Hall is 12 feet
wide (Figure 23). A retaining wall separates these two paths. Together, these paths are located where College Avenue once existed. An asphalt path also designed by Church connects the loading area on the eastern side of the Laboratory to the front, southeast side of the adjacent 2241 College Avenue building.

**Condition:** Good

### Fencing and site walls

**Description:**
The western side of the building site has a double-tiered mortared stone wall designed by Church that defines the grade change between Calvin Laboratory and the former College Avenue pedestrian pathways (Figures 22-25). The lower wall is 150 feet long, and the upper wall is 25 feet long and surrounds a tree and utility structure. The stone wall is constructed of a natural stone that is brown-red in color. A cast-in-place concrete retaining wall also designed by Church surrounds an English Oak (Tree No. 515); the tree pre-dates the Laboratory. An unpainted split rail wood fence borders the northern sidewalk along the driveway leading to Piedmont Avenue (Figure 48).

**Condition:** Good

### Vegetation on east side

**Description:**
Calvin Laboratory’s east side has a mixture of two Italian Stone Pines (Pinus pinea), Tree Nos. 430 and 431 (Figure 49); three European Olives (Olea europaea), Tree Nos. 415, 416, and 417 (Figure 54); and one English Oak (Quercus robur), Tree No. 515 (Figures 55-59). Wood mulch and Canary Island Ivy (Hedera canariensis) form the understory with several non-specimen shrubs.

**Condition:** Good to Excellent

### Vegetation on west side

**Description:**
Calvin Laboratory’s western side has a grove of sixteen Coast Redwoods (Sequoia sempervirens), Tree Nos. 504, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 559, 560, 561, and 562, ranging from 4 to 24-inches in caliper. The stand of Redwoods is located to the east of an existing stone retaining wall and is bisected by a pedestrian path. A Canary Island Date Palm (Phoenix canariensis), Tree No. 424, is in the middle of the Redwood grove. In the southwestern landscape area, several mature trees exist including: American Elm (Ulmus Americana), Tree No. 334; Coast Live Oak (Quercus agrifolia), Tree No. 503; Deodar Cedar, (Cedrus deodar) Tree No. 566; Large Leaf European Linden (Tilia platyphellos), Tree No. 570; and Prunus cerasifera (Cherry Plum), Tree Nos. 623 and 624. The ground plane beneath these trees is covered in Canary Island Ivy.

**Condition:** Fair to Excellent
2005 EXISTING CONDITION INVENTORY LEGEND

- Asphalt Pathway - Wall
- Asphalt road or Parking Area - Wall
- Concrete Paving - Fence
- Brick Pathway - Sign
- Shrub Masses
- Groundcover Masses
- Unplanted Landscape Area
- Lawn Area
- Concrete ADA Ramp
- Wooden ADA Ramp
- Aggregate Paving

- Existing tree shown on 1991 UCB provided survey
- Field located by PGA, not included on 1991 UCB Survey
- Tree no longer exists, was shown on 1976 UCB tree inventory
- Specimen Tree per UCB Specimen Tree Program
- Unimproved pedestrian pathway
**BUILDING EXTERIOR**

Calvin Laboratory is three stories in height and is circular in its configuration (Figure 2). The Laboratory features a clay tile shed roof and has a smooth concrete finish with minimal ornamentation (Figure 3). A circular colonnade with a flat, tar-and-gravel roof wraps around the entire building (Figures 4 & 5). It is composed of rectangular concrete columns with chamfered edges (Figure 6). These columns contain drains for the roof. Most of the circumference of the colonnade roof is held off the face of the building by curved-edge spokes. These spokes, aligned with the outer ring of colonnade columns, fall in the middle of the bays defined by the pilasters and windows on the façade (Drawing 6). The articulation of the colonnade roof at the building wall creates an additional level of detail in the pattern of light and shadow on the building face at the ground floor.

Calvin Laboratory’s solid circular massing is interrupted by regularly spaced fenestration that appears on each floor. This fenestration is vertically aligned and is accentuated by flanking, grade-to-roof, square concrete pilasters. These pilasters have coved edges and rise up to form the soffit of the main roof eave (Figure 7). The typical fenestration is composed of three-panel, aluminum-sash windows with upper and lower fixed panels and a central awning panel. All of these windows have concrete sills, which provide a horizontal break to the vertical composition. Curvilinear concrete relief ornamentation appears between each of the concrete pilasters and between the vertical fenestration above the third floor windows. The two entries into the building are on the north and south façades and are composed of glazed doors in aluminum frames with single-light transoms (Figure 8). These two entrances are demarcated by light standards and concrete paths. On the east façade, a contemporary chain link fence has been erected underneath the covered colonnade to enclose three windows on the first floor.

**BUILDING INTERIOR**

The interior layout of Calvin Laboratory conforms to the circular design of the building. The round plan contains an elongated octagonal core at the center. The rooms at the perimeter of the building are separated from this central core by a corridor that is eight-and-a-half feet wide (Figure 9).

The heart of the Laboratory is on the second and third floors, which contain the large, open general laboratories. The first floor was used for offices and laboratory functions that required enclosed spaces. Offices placed on the edges of the open general laboratories have glass and wood partitions to

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96 An analysis of the conditions of the Calvin Laboratory building is beyond the scope of this report.
allow occupants to view activity in the general laboratories, and, perhaps, to monitor students. The open laboratories are accessed directly from the corridor; there are no doorways to divide the two. The only demarcation is that the laboratories and the corridors have different floor coverings. Almost every room in Calvin Laboratory opens onto the corridors, encouraging people to mingle as they move from space to space. Between the second and third floors, an exposed staircase with a half-circular landing was placed to look out over the general laboratory on the second floor (Figure 10). Calvin’s office was located on the second floor between other offices, and although his office contained a fireplace and private bathroom, the location made him accessible and offered no special privacy.

Offices were placed on the perimeter of the building to allow each space to have a window. In fact, the only perimeter rooms originally without windows were the mechanical room on the first floor, which had a louvered opening instead of sash; the experimental darkroom (Room 324); and a series of small laboratories on the third floor, which may have also needed to avoid natural light or were subsets of larger laboratory rooms (Rooms 316, 316A, 314A, 314B, 314C). Other rooms that required light and heat to be carefully controlled, like the darkrooms, cold rooms, and incubators, were placed in the central core. The central core also contains restrooms, janitorial closets, and the building’s circulation, which consists of a large elevator and two staircases.

**First Floor**
The first floor of Calvin Laboratory originally featured a continuous corridor that opened up into the lobbies on the north and south sides of the building (Drawing 2). This plan has now been altered somewhat to conform to fire standards by the insertion of partition walls and doors at the two lobbies, disrupting the circular flow of the interior spaces. Aside from the changes to the corridor and lobbies, the original irregularly shaped room layout on the first floor is intact with the exception of the addition of a few partitions walls within existing rooms.

**Second and Third Floors**
The second and third floors of Calvin Laboratory are largely identical in plan (Drawings 3 & 4). The eastern half of both floors is occupied by an open laboratory space (Figure 11). The central core is separated into two sections by a short cross-corridor running east-to-west. The second and third floors were also originally connected by an interior exposed staircase located approximately in the center of the building, but this staircase, although still extant, has now been blocked off at the ceiling with a metal partition because of modern safety regulations. Aside from this, the second and third
floors have retained their original floor plans with the exception of the insertion or removal of some partition walls inside offices in Rooms 211, 214, 214C, 218, 314, and 316A.

**Interior Finishes**

The interior of Calvin Laboratory contains finishes typical of mid-twentieth-century construction. The interior doors are solid core wood with a natural finish, or hollow metal doors. The wood doors are used for office spaces; the metal doors are used for the stairways, mechanical or custodial spaces, and on some specialized laboratories like the cold room, which features the type of door used on walk-in refrigerators. Some of the doors have been replaced using similar materials, and much of the original aluminum hardware has been replaced with crash bars or new, brushed aluminum handles to comply with ADA regulations.

The floors of Calvin Laboratory are finished with vinyl asbestos, linoleum, mastipave, and carpet. The stairways have concrete floors. Much of the original flooring is intact, with the exception of the carpeting and some sections of flooring that have been replaced because of general wear-and-tear. The flooring was specifically designed to mark changes in space; for example, the corridors on the second and third floor were finished in linoleum, while the general laboratories were covered in mastipave, signaling a change from the circulation space to the laboratory space.

The walls of the Laboratory are generally concrete, although some rooms have gypsum board walls or concrete walls clad in acoustical tiles. The ceilings in the offices of Calvin Laboratory are acoustical plaster over concrete, or in the case of dropped ceilings, are suspended acoustical plaster. Many of the offices have dropped ceilings with full-height ceilings near the windows. New dropped T-bar ceilings have been inserted in some offices, in part to abate radioactivity in the building. The general laboratories have concrete ceilings on the perimeter and acoustical plaster over concrete ceilings towards the center of the building. Calvin Laboratory also contains some gypsum board ceilings.

Calvin Laboratory retains most of its original mechanical systems, including ductwork, vents, pipes, and vent hoods (Figure 12). The original elevator is also still extant, along with the concrete staircases with metal handrails (Figure 13). Specialized laboratory equipment, including fumehoods, laboratory tables, eye wash stations, wood and metal cabinets, wood shelving, wood pegboards, vacuum racks, steel desks, and sinks are still in place throughout the building, and are sited in the main laboratories in a radial pattern, largely as Calvin and Goodman had first placed them (Drawings 2-17 and Figures 14-17). Some of the original darkrooms and cold rooms are also intact.
The lighting fixtures in Calvin Laboratory are generally original fluorescent lights mounted on the ceilings. In the general laboratories on the second and third floors, there is a very large circular fluorescent light with smaller spotlights around its perimeter (Figure 18). Lighting fixtures in some mechanical spaces consist of bare bulbs protected behind metal cages. Some more recent lights for specific laboratory uses have been installed in the building.

As is typical of a Modern building, the trim in Calvin Laboratory is minimal. One exception is Melvin Calvin’s original office, Room 226 (Figure 19). Although Calvin’s office has the same basic finishes—aluminum sash, vinyl sheet flooring, acoustical plaster over concrete ceilings—Calvin also specified the inclusion of a beautifully finished fireplace and cabinets, which were moved from his office in the old Chemistry Building (Drawing 18). The wood fireplace mantel features a cornice, dentils, and modillion blocks, and the fireplace surround is made of marble (Figure 20). The matching cabinets are no longer in Calvin’s office, but one of them is still extant in the Laboratory. Calvin’s former office also has a private sink and bathroom.
ORIGINAL BUILDING DRAWINGS

Drawing 1. Site Plan & Sections, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 2: First Floor Plan, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 4: Third Floor Plan, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 6. West Elevation and Sections, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 7. Interior Elevations & Details, Calvin Laboratory, 1962 (University of California, Berkeley)
<table>
<thead>
<tr>
<th>Room</th>
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<th>Finish Type</th>
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### Additional Details

- **Schedule of Finishes & Door Details**
- **Calvin Laboratory, 1962**
- **University of California, Berkeley**
- **Drawing 8**

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*PGAdesign Inc.*

*March 2006*
Drawing 9. Details of Roof, Stairs, Windows, & Doors, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 11. Lab Furniture on second and third floors, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 16. Fume hood details, Calvin Laboratory, 1962 (University of California, Berkeley)
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University of California, Berkeley
Berkeley, CA

Drawing 18. Fireplace and Toilet Room in Melvin Calvin's Office, Calvin Laboratory, 1962 (University of California, Berkeley)
Drawing 20. Landscape Plan: Planting & Electrical, Calvin Laboratory, 1964 (University of California, Berkeley)
IV. AREAS OF SIGNIFICANCE

The following section identifies character-defining features that contribute to the historic landscape character of Calvin Laboratory and the broader Southeast Campus area. 96

When evaluating the significance and condition of a resource, a scale is often used to rate the landscape architectural and historic value of the resource and its individual elements. The typical rating scale employs four categories: “Very Significant,” “Significant,” “Contributing,” and “Non-Contributing.” The definitions of these categories are included below. 97

- **Very Significant (VS)**
  - The building/element was built during the period of significance.
  - It is architecturally significant.
  - It is associated with a significant individual or event.
  - It remains intact or with only minor alterations.
  - It is physically in good to excellent condition.
  - It is highly sensitive to change.

- **Significant (S)**
  - The building/element was built during the period of significance.
  - It is of secondary importance.
  - It has been altered.
  - It is in deteriorated condition.
  - It was not built during the period of significance, but is architecturally significant.
  - It is sensitive to change.

- **Contributing (C)**
  - The building/element was built during the period of significance, but is not architecturally significant.
  - It is of secondary importance.
  - It has been altered.
  - It is in deteriorated condition.
  - It was not built during the period of significance, but is architecturally significant.
  - It is sensitive to change.

- **Non-Contributing (NC)**
  - The building/element was not built during the period of significance.
  - The building/element has been subjected to major additions or incompatible alterations.
  - It is incompatible in style, material, scale, character or use with the original building.
  - It is in poor to deteriorated or critical condition.
  - It is not particularly sensitive to change.

96 The analysis of character-defining features of the Calvin Laboratory structure is beyond the scope of this report.
97 Please note that the use of the terms in this rating scale does not equate the meaning as used by the California Environmental Quality Act (CEQA) to determine a project's potential impact on the environment.
Specimen Trees

The rating of trees as Specimen is based upon the Campus Specimen Tree Program established by the University. The specimen rating can be applied to trees and other plants such as shrubs and grasses. In general, the specimen should be in good health and not pose a hazard to traffic, existing buildings, or utilities. This specimen must possess one or more qualities in the following categories: Aesthetics, Historical, Educational, Strawberry Creek, or Natural Area. The Historical quality, which is most relevant for this report, is described as follows:

Historical: The tree was planted as part of a memorial planting or is a particularly outstanding example of the original botanical garden plantings. The tree is identified by landmark status, named with a plaque, is identified as a contributing feature in an historic structures report and/or identified in the LHP [Landscape Heritage Plan] as a character defining feature of the landscape.

LANDSCAPE

The circular form of Calvin Laboratory, as conceived by Calvin and Goodman, inevitably impacted the design of the site. The circular building and the fairly constrained sloped site were the starting points for Church’s landscape design. Melvin Calvin’s design focus appears to have been centered on the building, and there is no known record of him having influenced the landscape design of the site; it appears to have been almost exclusively the work of Thomas Church.

The 1962 Goodman construction documents show a limited site plan for Calvin Laboratory (Drawing 1). The existing section of College Avenue to the west of the site is labeled as “to be closed by others.” An existing concrete retaining wall shown in the 1962 Calvin Laboratory plans by Goodman (Drawing 1) pre-dates the Laboratory building and is part of the two residential properties that previously stood at this location. In Thomas Church’s 1964 Bio-Organic Laboratory landscape plans, the existing concrete wall is replaced by a curving stone wall (Drawing 19). In keeping with one of his primary goals for the campus—to remove the majority of vehicular traffic and parking on the campus—College Avenue is shown as removed and has been replaced with a split-level pathway. Church’s landscape plans (Drawings 19 & 20) reflect the layout of elements shown in his 1962 Landscape Plan for the LRDP (Map 16), and are the point of departure from the straight alignment of the College Avenue roadway toward a curvilinear treatment of pedestrian pathways. However, the alignment of College Avenue was respected and basically correlates with the pathway.

* University of California, Berkeley, 2020 Long Range Development Plan, 4.3.
The landscape elements designed by Thomas Church represent a small, though cohesive, example of one of the campus’ three primary periods of development as defined by the 2004 Landscape Heritage Plan: The Modern Era. In the Modern Era, the University’s plan for the landscape was heavily impacted by the growing use of the automobile. The change in how people circulated both by car and by foot influenced the emergence of a new set of priorities in planning and design. This re-evaluation of design principles led to an increased focus on functionality, preservation of existing landscape features, encouragement of pedestrian traffic over vehicular traffic, retention of open space, and the creation “a modern layer of geometric site definition.” Church became well known for his ability to integrate qualities of the site—both pre-existing elements and features intrinsic to the site—with Modernist architectural design.

Ratings for the historical value and condition of each tree can be found in the 2005 Tree Inventory (X. Appendix).

Hardscape Character-Defining Features:

Topography, pathways, roadway, and loading area

Significance: Significant
The topography, pathways, roadway, and loading area that exist today in the immediate environs of Calvin Laboratory exhibit the implementation of the 1962 Thomas Church Landscape Plan for the 1962 LRDP and much of the 1964 construction plans for Calvin Laboratory (Bio-Organic Laboratory) (Drawings 1, 19, & 20).

Stone retaining walls

Significance: Significant
Calvin Laboratory is substantially larger than the buildings previously on this site. The site was graded to create a building pad, causing the need for retaining walls above and below it and at significant trees (Figure 56). The stone retaining wall on the western side of Calvin Laboratory is a Church-designed wall that replaced the concrete retaining wall shown in the 1962 Goodman plan as marked for retention (Drawings 1, 19, & 20, and Figures 22-25). The wall is integral to the curvilinear pedestrian pathway planned by Church to replace College Avenue.

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99 University of California, Berkeley, Landscape Heritage Plan ([Berkeley, California]: University of California, Berkeley, Capital Projects/Facilities Services, 2004), 15.
100 Ibid., 16.
101 Ibid.
Landscape Character-Defining Features:

Trees at eastern side

Significance: Significant
Church’s 1964 plan and the 1962 Goodman plan for Calvin Laboratory show several existing specimen trees designated for retention (Drawings 1, 19, & 20), including the English Oak (Quercus robur), Tree No. 515 (Figures 57 & 59). It is apparent that this was a mature specimen at the time, and considerable effort was taken to preserve this tree during construction. This tree is significant; it likely dates from the early 1900s when a residence occupied the southern of the two parcels now occupied by the Laboratory. The two Italian Stone Pines (Pinus pinea), Tree Nos. 430 and 431, and the three Olives (Olea europaea), Tree Nos. 415, 416, and 417, on the east side of the Laboratory are part of a larger cluster of trees designed by Church (Figures 45 & 49). The original plans called for eight pines and nine olives. The cluster has diminished in quantity, but the trees that currently remain are in good condition.

Specimen Trees: Historical, Aesthetics, and Educational
The English Oak (Quercus robur), Tree No. 515, is considered a Specimen tree. It is rated as Historical for the reasons discussed in the above significance section. Aesthetically, it plays an important role in framing the eastern side of the Laboratory. It is also one of two English Oaks on campus and is a fine, well-formed, mature tree meeting the Educational criteria.

Trees at western side

Significance: Significant
Church’s 1964 plan and the 1962 Goodman plan for Calvin Laboratory show several existing specimen trees designated for retention (Drawings 1, 19, & 20). These include the English Oak mentioned above and the following extant trees:

- Deodar Cedar (Cedrus deodar), Tree No. 566
- Canary Island Date Palm (Phoenix canariensis), Tree No. 424
- American Elm (Ulmus Americana), Tree No. 334
- Large Leaf European Linden (Tilia platyphellos), Tree No. 570
- Coast Live Oak (Quercus agrifolia), Tree No. 503

Other trees including a Bronze Loquat (Eriobotrya deflexa) and several other Coast Live Oak trees were also marked for retention, but they are no longer extant. The trees extended down the slope towards the current 2241 College Avenue building. It is apparent that they were mature specimens at the time, and considerable effort was taken to preserve these trees during construction. These trees are significant as they likely date from the early 1900s when a residence occupied the southern of the two parcels now occupied by the Laboratory.

The grove of 13 Coast Redwoods (Sequoia sempervirens), Tree Nos. 504, 547, 548, 549, 550, 553, 554, 555, 556, 557, 560, 561, and 562, was likely planted shortly after Church’s plan was implemented. The trees are not shown on his plans, but they are shown newly planted in a circa 1964 photograph showing the recently completed Calvin Laboratory (Image 14).

Specimen Trees: Historical and Natural Area
Due to their condition, only the 13 Coast Redwoods mentioned above, along with one Coast Live Oak, Tree No. 503, and one Deodar Cedar, Tree No. 566, are considered Specimen trees. In
addition to the surrounding Coast Live Oak trees, they form part of the Southeast Campus woodlands area, meeting the criteria for a Natural Area. Historically, the Cedar and Oak likely date to the garden plantings of 2241 College Avenue.
V. HISTORICAL SIGNIFICANCE

CURRENT HISTORIC STATUS

Calvin Laboratory is not currently listed on any known register of historic resources.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is the nation’s most comprehensive inventory of historic resources. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. Typically, determination of eligibility for listing in the National Register applies to resources over fifty years of age; however, resources under fifty years of age can be eligible if it can be demonstrated that they are of “exceptional importance,” or if they are contributors to a potential historic district.

According to the National Register Bulletin Number 15: How to Apply the National Register Criteria for Evaluation, a property qualifies for the National Register by: 1) “Being associated with an important historic context” and; 2) “Retaining historic integrity of those features necessary to convey its significance.” There are four criteria under which a structure, site, building, district, or object can be considered eligible for listing in the National Register. The four criteria are as follows:

Criterion A (Event): Resources associated with events that have made a significant contribution to the broad patterns of our history;

Criterion B (Person): Resources associated with the lives of persons significant in our past;

Criterion C (Design/Construction): Resources that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components lack individual distinction; and

Criterion D (Information Potential): Resources that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to qualifying for listing under at least one of the National Register criteria, a property must be shown to have sufficient historic integrity. The concept of integrity is essential to identifying the important physical characteristics of historical resources and hence, in evaluating adverse changes to them. Integrity is defined as “the authenticity of an historical resource’s physical identity evidenced by

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the survival of characteristics that existed during the resource’s period of significance.” According to the National Register Bulletin: How to Apply the National Register Criteria for Evaluation, the seven characteristics that define integrity are as follows:

- **Location** is the place where the historic property was constructed.
- **Design** is the combination of elements that create the form, plans, space, structure and style of the property.
- **Setting** addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building(s).
- **Materials** refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property.
- **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history.
- **Feeling** is the property’s expression of the aesthetic or historic sense of a particular period of time.
- **Association** is the direct link between an important historic event or person and a historic property.

**EVALUATION OF SIGNIFICANCE**

**Historic Context**

The first step in determining the significance of a property is identifying its historic context. The historic context provides the framework for evaluating the significance of a resource. A resource can be considered significant on a national, state, or local level, and must be significant in the history, architecture, archaeology, engineering, or culture of an area. As described in Part II of this HSR, the historic context for Calvin Laboratory is the rapid and unprecedented expansion of the University during the 1950s and 1960s and the immense success achieved by scientists associated with the “Rad Lab” group in the post-war period. As funding poured into the University during the 1950s and 1960s, the prominent “Rad Lab” scientists were able to parlay their achievements into securing their own research groups, facilities, and in the case of Melvin Calvin, their own Laboratory building.

**Significance of Calvin Laboratory**

**Criterion A (Event)**

Calvin Laboratory does not appear to be eligible for listing on the National Register under Criterion A (Event). The Laboratory is not known to be associated with any events significant to history.

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11 California Code of Regulations Title 14, Chapter 11.5
Criterion B (Person)

Calvin Laboratory appears to be eligible for the National Register under Criterion B (Person) for its association with Nobel Prize winner Melvin Calvin. Calvin is a hugely significant figure in the field of chemistry and is especially noted for his work with photosynthesis. Built for Professor Melvin Calvin at the height of his career, Calvin Laboratory was the physical incarnation of Calvin’s ethic of interdisciplinary, collaborative research. Calvin worked closely with architect Michael Goodman to design a building that would allow his group to work effectively in an open space while promoting casual interactions. Calvin’s research successes allowed him to raise the necessary financing to construct his own laboratory on the Berkeley campus at a time when small, individualized buildings were being eschewed for large structures, and he remained directly associated with the building at least until his retirement from the University faculty in 1980, and possibly later. He continued to be actively involved in research and writing during his tenure at Calvin Laboratory, as well as serving on several major organizations, including the President’s Science Advisory Committee under President Johnson.

Although Calvin did his seminal Nobel Prize-winning work at a facility that predated Calvin Laboratory, this building was demolished in the late 1950s. According to the National Park Service, “Properties associated with an individual’s formative or later years may also qualify if it can be demonstrated that the person’s activities during this period were historically significant or if no properties from the person’s productive years survives [sic].”\footnote{National Register Bulletin Number 15: How to Apply the National Register Criteria for Evaluation (Washington, DC: National Park Service, 1998), 15.} If the “Old Radiation Laboratory” did survive, it would be the most significant building associated with Calvin. Since it does not survive, Calvin Laboratory is the most significant, surviving structure directly associated with Calvin.

Criterion C (Design/Construction)

Calvin Laboratory does not appear to be eligible for the National Register under Criterion C (Design/Construction). Although Calvin Laboratory features an unusual, innovative design, and a planned landscape by noted landscape architect Thomas Church, the property does not appear to rise to the level of “exceptional importance” required for buildings less than fifty years of age.\footnote{Please note that the “Fifty-Year Rule” is much less stringent under the standards of the California Register.}

Designed by Michael Goodman, and possibly Goodman’s most distinguished work on the University campus, Calvin Laboratory features an unusual, perhaps unique, laboratory design. The circular plan and the large general laboratories—connected via an open, internal stairwell—encouraged
collaborative thinking and research. The building is designed in the Modern style but incorporates some historicist elements in its graceful colonnade and clay tile roof. The organic shapes formed in the concrete on the façade and in the soffit may have been used to communicate the work of the group occupying the building, much as earlier University buildings were decorated with more stylized, formal, Classical imagery. It has not been possible to clearly document whether Calvin Laboratory was a model for later research facilities; therefore, the building design does not appear eligible.

The designed landscape at Calvin Laboratory also does not appear to be eligible for the National Register under Criterion C (Design/Construction). Although the landscape is the work of a master landscape architect, Thomas Dolliver Church, this particular example of his work does not appear to rise to the level of “exceptional importance.”

Church is considered to be one of California's foremost Modernist landscape architects. His designs responded to the greatly changed economic conditions of the post-Depression period. Church developed four principles upon which he built his designs: unity, function, simplicity, and scale. He incorporated these elements into his work on the University of California, Berkeley 1962 LRDP and at Calvin Laboratory in 1964. The 1962 LRDP is one of the more significant planning tools in the history of planning documents at UC Berkeley. The goals of Church's 1962 landscape plan for the LRDP are given tangible form at the Calvin Laboratory. Though of relatively modest size, the conversion of a rectilinear road to a curvilinear pedestrian path establishes this as a place primarily for people, not automobiles; helps unify disparate parts of campus; simply addresses required functional elements; and respects the intrinsic qualities of the sloped site. These are distinctive characteristics of the Modernist Period as expressed by Church and demonstrate his abilities to integrate new elements into the existing layered history and built form of the campus. However, this work is better viewed as part of Church’s design for the campus under the 1962 LRDP and not as work individually associated with Calvin Laboratory.

**Criterion D (Information Potential)**

Criterion D is most commonly applied to properties that contain, or are likely to contain, information relating to the field of archeology. The analysis of Calvin Laboratory for eligibility under National Register Criterion D (Information Potential) is beyond the scope of this report.

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106 Thomas Dolliver Church, *Gardens are for People* (New York: Reinhold Pub. Corp., [1955]).
Calvin Laboratory Integrity

Calvin Laboratory and its associated designed landscape have a high degree of integrity. Therefore, the Laboratory retains a sufficient degree of integrity to be listed on the National Register.

The building is on its original site and largely retains its original surroundings, including the Thomas Church designed landscape and the neighboring buildings at 2222 Piedmont Avenue, 2241 College Avenue, Wurster Hall, and Minor Hall. The building that was originally located to the north of Calvin Laboratory, Cowell Hospital, has been replaced by the Haas School of Business, but the Haas building is basically in the same location and designed in a scale similar to Cowell Hospital. Therefore, Calvin Laboratory retains integrity of location and setting.

Calvin Laboratory has been fairly unchanged since its construction in 1964. The building still has a striking Modernist feel, and the exterior features its original massing, configuration, fenestration pattern, aluminum windows and doors, and concrete ornamentation. The interior of Calvin Laboratory has only undergone minor alterations, mainly undertaken to comply with life safety or OSHA regulations. It retains much of the original floor plan, including the significant general laboratory spaces, circulation patterns, mechanical systems, finishes, and laboratory furniture, cabinery, and equipment. In fact, the building has an astonishing amount of original interior historic fabric, considering that it is used as a science laboratory. As a result, Calvin retains a high degree of integrity of design, materials, workmanship, feeling, and association.

The landscape surrounding Calvin Laboratory retains a moderate-to-high degree of integrity. The existing landscape retains many features from Thomas Church’s plans, including the pathways, roadway, and loading area; the site’s topography; plantings, including trees pre-dating the Laboratory that Church designated for retention; stone retaining walls; and curvilinear pathways. Overall, Calvin Laboratory and its planned landscape retain sufficient integrity to be listed on the National Register.
VI. HISTORIC PHOTOGRAPHS

Image 1. Hillegass Tract near the intersection of College Avenue and Bancroft Way, looking north towards campus, 1890s.
(Bancroft Library, UARC PIC 03:074)
Image 2. View from the vicinity of present-day LeConte Hall on the University campus, looking south, ca. 1899. East Hall in the foreground. In the middle right is the Hillegass Tract, and at the far left of the photograph is College Avenue. (University of California, Berkeley)
Image 3. Aerial view of campus looking east, ca. 1920. College Avenue is running through the center of the photograph; the 2200 block of College and Piedmont Avenues is at the right (Bancroft Library, UARC PIC 03:067).
Image 4. View of Piedmont Avenue and Piedmont Place looking west likely from California Memorial Stadium, late 1920s. The Haas School of Business is currently at the site of the large fraternity house (2220 Piedmont Avenue) in the center of the photograph; the future site of Calvin Laboratory is to the left behind 2222 Piedmont Avenue (photograph from undated newspaper article courtesy of the Denny Family)
Image 5: Aerial view of campus looking east, ca. 1931. College Avenue is running parallel to the Stadium; the 2200 block is approximately in the center of the photograph (Bancroft Library, UARC PIC 03:041)
Image 6. Looking north on the 2200 block of College Avenue from Bancroft Way during the “Big C Sirkus” parade, 29 February 1940. 2241, 2243, and 2251 College Avenue are to the right of the road, obscured by trees; to the left are the University tennis courts (courtesy of Robert Singleton)
Image 7. Melvin Calvin accepting the Nobel Prize, 1961
(Calvin, Following the Trail of Light)
Image 8. Old Radiation Laboratory at University of California, Berkeley in 1931. The Rad Lab was demolished in 1959. The large open space inside this building inspired the circular design of Calvin Laboratory. (LBL Image Library, Image #96602512)
Image 9. Rendering of the proposed Laboratory of Chemical Biodynamics, now Calvin Laboratory (Calvin, *Following the Trail of Light*)
Image 10. Bacon Hall (1881), University of California, Berkeley, demolished early 1960s. The half-round design of this building may have influenced architect Michael Goodman in his design for Calvin Laboratory (Willes, ed., *Picturing Berkeley: A Postcard History*)
Image 11. Calvin Laboratory under construction, ca. 1963
(Bancroft Library, UARC PIC 16V:2F)
Image 12. Calvin Laboratory under construction, ca. 1963
(Bancroft Library, UARC PIC 16V:2C)

Image 13. Calvin Laboratory and Wurster Hall shortly after Wurster was completed, ca. 1964 (Bancroft Library, UARC PIC 27A ser.3:13V)
Image 14. Calvin Laboratory, ca. 1964. The radial structures in the foreground are part of the Cowell Hospital Annex; to the left is 2220 Piedmont. Wurster Hall is shown under construction to the west of Calvin Laboratory. (Bancroft Library, UARC PIC 26V:6)
Image 15. Dedication of Calvin Laboratory, April 1, 1964
(LBNL Image Library, Image #97602731)

Image 16. Melvin Calvin in general laboratory in Calvin Laboratory, ca. 1965
(Bancroft Library, UARC PIC 16V:1)
Image 17. Calvin Laboratory looking east, ca. 1964 (Bancroft Library, UARC PIC 27A set, Proofsheet 1075M.9 & 14.)
Image 18. Calvin Laboratory, undated plan of second floor. This plan shows the large round coffee table where scientists would gather daily (Calvin, *Following the Trail of Light*)
Image 19. Melvin Calvin in second floor general laboratory, standing next to the round coffee table, 1979 (Calvin, *Following the Trail of Light*)
VII. Existing Conditions Photographs

Building Photographs

Figure 1. View of Calvin Laboratory and the Haas School of Business, looking east

Figure 2. Calvin Laboratory, northeast façade

Figure 3. Calvin Laboratory, northeast façade

Figure 4. Calvin Laboratory, north façade

Figure 5. Calvin Laboratory, north façade and colonnade

Figure 6. Colonnade columns
Figure 7. Ornamentation at soffit

Figure 8. North entrance

Figure 9. Calvin Lab corridor

Figure 10. Internal stairway between general laboratories, now closed off

Figure 11. General laboratory on second floor; note change in floor covering between corridor and laboratory

Figure 12. Original glass waste pipe
Figure 13. Calvin Lab stairway

Figure 14. Original fumehoods

Figure 15. Original sink vent

Figure 16. General laboratory on second floor with original lab benches

Figure 17. Original lab equipment

Figure 18. Light fixture in general laboratory on third floor
Figure 19. Melvin Calvin's office

Figure 20. Fireplace in Melvin Calvin's office
LANDSCAPE PHOTOGRAPHS

Figure 21. Pathway on the site of former College Avenue, looking north

Figure 23. Stone retaining walls on west side of Calvin Laboratory, looking northeast

Figure 25. Stone retaining walls on west side of Calvin Laboratory, looking south

Figure 22. Pathway on the site of former College Avenue, looking north; Calvin Laboratory is at right

Figure 24. Stone retaining walls on west side of Calvin Laboratory, looking south

Figure 26. Calvin Laboratory, west façade and Canary Island Palm
Figure 27. Calvin Laboratory, west façade and Canary Island Palm

Figure 28. Calvin Laboratory, west façade and Canary Island Palm

Figure 29. Specimen cedar tree to the west of Calvin Laboratory

Figure 30. Specimen redwood trees to the west of Calvin Laboratory

Figure 31. Pathway on the site of former College Avenue, looking north

Figure 32. Pathway on the site of former College Avenue, looking northeast towards Haas School of Business
Figure 33. Calvin Laboratory, north façade and specimen redwood trees

Figure 34. Calvin Laboratory, northwest façade and specimen redwood trees

Figure 35. Specimen redwood trees to the northwest of Calvin Laboratory

Figure 36. Calvin Laboratory, north façade, looking east toward 2222 Piedmont Avenue

Figure 37. North entrance to Calvin Laboratory, looking east toward 2222 Piedmont Avenue

Figure 38. Driveway running between 2222 Piedmont Avenue and the Haas School of Business, looking west toward Minor Hall
Figure 39. Calvin Laboratory colonnade, looking east toward 2222 Piedmont Avenue

Figure 40. North entryway paving accent

Figure 41. Colonnade at west façade

Figure 42. Colonnade at north façade

Figure 43. Looking north from Calvin Laboratory toward Haas School of Business

Figure 44. Looking east from Calvin Laboratory toward 2232 Piedmont Avenue
VII. Existing Conditions Photographs

Figure 45. Olive trees to east of Calvin Laboratory

Figure 46. View toward 2243 College Avenue; Calvin Laboratory is at right

Figure 47. View toward 2243 College Avenue

Figure 48. Driveway running between 2222 Piedmont Avenue and the Haas School of Business, looking west toward Calvin Laboratory and Minor Hall

Figure 49. Calvin Laboratory, east façade

Figure 50. Pine trees to the east of Calvin Laboratory
Figure 51. Plantings on the slope to the north of Calvin Laboratory

Figure 53. Calvin Laboratory, east façade

Figure 55. Specimen English oak to the east of Calvin Laboratory

Figure 52. Redwood trees to the east of Calvin Laboratory and at the rear of 2224 Piedmont Avenue

Figure 54. Calvin Laboratory, east façade and olive trees

Figure 56. Specimen English oak to the east of Calvin Laboratory
Figure 57. Specimen English oak to the east of Calvin Laboratory

Figure 58. Specimen English oak to the east of Calvin Laboratory

Figure 59. Calvin Laboratory, east façade and specimen English oak

Figure 60. Loading area at south façade

Figure 61. Pedestrian pathway to 2241 College Avenue at south side of Calvin Laboratory

Figure 62. Calvin Laboratory, colonnade at west façade
Figure 63. Specimen cedar tree to the south of Calvin Laboratory

Figure 64. Calvin Laboratory, colonnade at west façade

Figure 65. Calvin Laboratory, south façade and colonnade
VIII. Maps

Map 1. 1866 map of the College Homestead (Berkeley Department of Public Works)
Map 2. Map of the Berkeley Property marked with the College of California Seal (in the lower right corner) with the date of 1865 (Alameda County Public Works)
Map 3. Frederick Law Olmsted's 1866 plan for the Berkeley Neighborhood (Bancroft Library)
Map 4. 1868 W.F. Boardman map of the Berkeley Property (Berkeley Department of Public Works)
Map 6. 1897 map of the northern end of Piedmont Way (Berkeley Department of Public Works)
Map 7. 1899 map of Berkeley with overlay of modern map (Berkeley Department of Public Works)
Map 8. 1903 Sanborn Fire Insurance map showing southern portion of 2200 block of College and Piedmont Avenues.
Map 9. 1909 map of the northern end of Piedmont Avenue, establishing Piedmont Place
(Alameda County Public Works Department)
Map 10. 1911 Sanborn Fire Insurance Map
Map 11. Campus map of University of California, Berkeley, ca. 1927 (University of California, Berkeley)
Map 12. 1929 Sanborn Fire Insurance map showing west side of Piedmont Avenue.
Map 13. 1942 map of the University of California, Berkeley campus (University of California, Berkeley)
Map 14. 1950 Sanborn Fire Insurance map
Map 15. 1961 map of the University of California, Berkeley campus (University of California, Berkeley)
Map 16. 1962 Thomas Church Landscape Plan for the Campus Long Range Development Plan
(University of California, Berkeley)
Map 17. 1988 Roma Study of existing conditions of the southeast part of campus
(University of California, Berkeley)
IX. Bibliography

Published Materials


**UNPUBLISHED MANUSCRIPTS**


INTERVIEWS

Alberti, Marie, former researcher at Calvin Laboratory. Interview by Steven Finacom, University of California, Berkeley Planning Analyst/Historian, 20 July 2005.

Bassham, James, former researcher at Calvin Laboratory. Interview by Steven Finacom, University of California, Berkeley Planning Analyst/Historian, 20 July 2005.

Bennett, Edward, former researcher at Calvin Laboratory. Interview by Steven Finacom, University of California, Berkeley Planning Analyst/Historian, 20 July 2005.


Gordon, Benjamin, former researcher at Calvin Laboratory. Interview by Steven Finacom, University of California, Berkeley Planning Analyst/Historian, 20 July 2005.

McLaughlin, Sylvia, wife of Regent Donald McLaughlin. Personal communication with Steven Finacom, University of California, Berkeley Planning Analyst/Historian, early 1990s.

Moses, Vivian, former colleague of Melvin Calvin. Personal communication with Steven Finacom, University of California, Berkeley Planning Analyst/Historian, 23 July 2005.

Palsak, Lee, former resident of 2234 Piedmont. Interview by Steven Finacom, University of California, Berkeley Planning Analyst/Historian, via telephone, e-mail, and in person, various dates in fall 2005.

MAPS

Alameda County Public Works Departments maps.

City of Berkeley maps from Information Technology Department, Geographic Information System Division, and Department of Public Works.

Maps from University of California, Berkeley Capital Projects.

Maps from Earth Sciences & Map Library, University of California.


PUBLIC RECORDS

Assessor Records, City of Berkeley, Alameda County. Held by the Bancroft Library.

Block Books, City of Berkeley. Held by the Berkeley Historical Society.
Oakland Cultural Heritage Survey, City of Oakland, California.

REPOSITORIES

Bancroft Library

College of California. Records, 1850-1869.


Warren Perry Papers, Bancroft Library, University of California, Berkeley. Call number BANC MSS 82/97c, Box 11.

University of California, Berkeley photograph collection.

Berkeley Architectural Heritage Association

Architects Files. Binders are arranged alphabetically by last name of architect, and contain loose leaf material collected on each individual architect.

Block File for 2200 Block of Piedmont Avenue.

Building Files for 2241 & 2243 College Avenue.

Clinton Day Collection of historic photographs.

Ormsby Donogh Files. Donogh was a Berkeley realtor who maintained a collection of photographs and real estate listings and descriptions of Berkeley properties. The collection is organized by street address and includes photographs of many buildings, generally from the 1930s.

Oakland Museum

William F. Boardman Collection.

University of California, Berkeley, Facilities Services

Plan Books, Design and Construction unit, Capital Projects/Facilities Services, University of California, Berkeley. The unit maintains a Plan Room with architectural plans and drawings for campus buildings. Small-scale versions of the large drawings are maintained in binders organized alphabetically by building or by address. Research access questions should be addressed to Christine Shaff, Communications Manager, Facilities Services, University of California, Berkeley.
University of California, Berkeley, Office of Physical and Environmental Planning


Brown, Arthur, Jr. General Plan for the Berkeley Campus, 1944.

Campus Planning Committee minutes, 1958-63.


“List of Deeds To Properties Acquired By the Regents of the University of California Campus At Berkeley, California” (a.k.a. “The Green Book”). Real Estate Services Group, University of California, Office of the President, undated.

Long Range Development Plan, University of California, Berkeley, 1956.

Long Range Development Plan, University of California, Berkeley, 1958. (This is not in the form of a complete plan but rather an illustrative update to the 1956 Plan.)


University of California, Berkeley. Berkeley Campus Space Plan, October 1981.


University of California, Berkeley, Physical Plant-Campus Services

Deferred Maintenance Reports. Files organized by building name or address are maintained with miscellaneous records on deferred maintenance and repair work planned, studied, and/or undertaken on campus buildings. The contents of the files vary considerably, from memos and e-mails to studies, contractor invoices, work orders, and correspondence with building occupants. Materials are arranged in rough chronological order, but there is little consistency from building to building for the periods of time covered.

University of California, Berkeley, Space Management and Capital Programs (SMCP) Office

Facilities Inventory System/Facilities Data System, University of California, Berkeley. Informally known as the FDX, an annual inventory of building space assignments and use, and maintained at the Berkeley campus by the Space Management and Capital Programs (SMCP) office. Records are in hard copy and electronic form, in various formats, depending on the year. Records reviewed dated from the early 1960s through 2005.

Space Management and Capital Programs, University of California, Berkeley. Building Files. The office maintains chronological records containing miscellaneous correspondence, reports, studies, and other materials related to individual buildings. Files are organized by building name or street address. Files consulted included 2241 and 2243 College; 2222, 2224, 2232, 2234, and 2240 Piedmont; and Calvin Laboratory.
2005 TREE INVENTORY

Surveyed on July 19, 2005 by PGAdesign.
See 2005 Existing Conditions Inventory for Landscape for tree locations.

Legend:

NNU Number not used
NLE Tree no longer exists, but was previously shown on the 1976 UCB tree inventory or 1991 UCB survey. If species is named, the species name came from the 1976 UCB tree inventory.

Historic Rating

Historic Rating is based on the following Evaluation Criteria for Architectural and Historical Value.

VS (Very Significant):
- The building/element was built during the period of significance.
- It is architecturally significant.
- It is associated with a significant individual or event.
- It remains intact or with only minor alterations.
- It is physically in good to excellent condition.
- It is highly sensitive to change.
- This include Quercus agrifolia that are 30" or greater diameter at breast height (dbh).

S (Significant):
- The building/element was built during the period of significance, but…
- It is of secondary importance.
- It has been altered.
- It is in deteriorated condition.
- It was not built during the period of significance, but is architecturally significant.
- It is sensitive to change.
- Includes Quercus agrifolia that are 12" to 30" diameter at breast height (dbh)

C (Contributing):
- The building/element was built during the period of significance, but is not architecturally significant.
- It is of secondary importance.
- It has been altered.
- It is in deteriorated condition.
- It was not built during the period of significance, but is architecturally significant.
- It is sensitive to change.

NC (Non-Contributing):
- The building/element was not built during the period of significance.
- The building/element has been subjected to major additions or incompatible alterations.
- It is incompatible in style, material, scale, character, or use with the original building.
- It is in poor to deteriorated or critical condition.
- It is not particularly sensitive to change.
- Includes Quercus agrofolia that are less than 10" in diameter.
2005 TREE INVENTORY

Surveyed on July 19, 2005 by PGAdesign
See 2005 Existing Conditions Inventory for Landscape for tree locations.

Legend:

Health Rating

Health of tree is a general health assessment; it is not full horticultural assessment. Ratings are based on the following criteria for condition.

E (Excellent): The element is near original condition, i.e. The tree is a specimen quality tree in excellent form and health.

G (Good): The element is mostly intact, i.e. The tree is in good form and health.

F (Fair): The element is showing signs of wear or deterioration, i.e. The tree is in moderate health and form is poor.

P (Poor): The element is badly damaged, missing or not functioning, i.e. The tree is in poor health and form and should be considered for removal.

Specimen Tree

The rating of trees as specimen is based upon the University of Berkeley’s Campus Specimen Tree Program. A full description of this policy can be found on page 4.3-22 of the 2020 LRDP EIR; an abbreviated description is below.

The rating includes trees but can also be applied to evaluate other plants such as shrubs and grasses. In general the tree or group of trees needs to be in good health, not pose a hazard, and should possess one or more qualities under the following categories:

· Aesthetics
· Historical
· Educational
· Strawberry Creek
· Natural Area

Tree Caliper

As recorded on 1991 UCB survey or as field approximated, measured at DBH (diameter at breast height).
# 2005 TREE INVENTORY

Surveyed on July 19, 2005 by PGAdesign. See 2005 Existing Conditions Inventory for Landscape for tree locations.

<table>
<thead>
<tr>
<th>Number</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Historic Rating</th>
<th>Health Rating</th>
<th>Tree Caliper</th>
<th>Notes</th>
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# 2005 TREE INVENTORY

Surveyed on July 19, 2005 by PGAdesign.
See 2005 Existing Conditions Inventory for Landscape for tree locations.

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## 2005 TREE INVENTORY

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Surveyed on July 19, 2005 by PGAdesign
See 2005 Existing Conditions Inventory for Landscape for tree locations.

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March 2006

X-7
# 2005 TREE INVENTORY

Surveyed on July 19, 2005 by PGAdesign
See 2005 Existing Conditions Inventory for Landscape for tree locations.

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<th>Number</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Historic Rating</th>
<th>Health Rating</th>
<th>Tree Caliper</th>
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A NEW PERSPECTIVE IN PRESERVATION