NPS Form 10-900
(Rev. Aug. 2002)

OMB No. 1024-0018
(Expires Jan. 2005)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name **LeConte Hall**

143802

other names/site number **N/A**

01-0059

2. Location

street & number nearest intersection, **Hearst & Gayley** not for publication____
city or town _____**Berkeley**_____ vicinity ___
state **California, CA** county **Alameda**, code 001
zip code **94720**

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this __x__ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property __x__ meets ____ does not meet the National Register Criteria. I recommend that this property be considered significant __X__ nationally ___ statewide ___ locally. (___See continuation sheet for additional comments.)

Stephen D. Mikesell — 5/14/04

Signature of certifying official — Date

California Office of Historic preservation

State or Federal Agency or Tribal government

In my opinion, the property ____ meets ____ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

_____

Signature of commenting official/Title Date

_____

State or Federal agency and bureau

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4. National Park Service Certification

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I, hereby certify that this property is:

✓ entered in the National Register — 6/25/04
___ See continuation sheet.
____ determined eligible for the National Register
___ See continuation sheet.
____ determined not eligible for the National Register
____ removed from the National Register
____ other (explain): _____

	Signature of Keeper	Date of Action

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5. Classification

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Ownership of Property (Check as many boxes as apply)

___ private
___ public-local
XXX public-State
___ public-Federal

Category of Property (Check only one box)

XXX building(s)
___ district
___ site
___ structure
___ object

Number of Resources within Property

Contributing	Noncontributing	
one	_____	buildings
_____	_____	sites
_____	_____	structures
_____	_____	objects
one	_____	Total

Number of contributing resources previously listed in the National Register **__None___**

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

N/A This nomination is not formally part of a Multiple Property listing. However, it compliments a Multiple Property Listing added to the National Register in 1982 (March 25, 1982 MRA) for similar buildings at the University of California, Berkeley.

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat: **Education** Sub: **College**
Research Facility

Current Functions (Enter categories from instructions)

Cat: **Education** Sub: **College**
Research Facility
Work in Progress * **Functions will not change**

* *seismic rehabilitation*

7. Description

Architectural Classification (Enter categories from instructions)

Beaux Arts Classicism

Materials (Enter categories from instructions)

foundation **Concrete**
roof **ceramic tile, copper & glass skylight**
walls **Concrete**
other **Exterior coating of cement plaster**

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.) **(see attached)**

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

XXXX A Property is associated with events that have made a significant contribution to the broad patterns of our history.

XXXX B Property is associated with the lives of persons significant in our past.

XXXX C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

____ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

_____ A owned by a religious institution or used for religious purposes.

_____ B removed from its original location.

_____ C a birthplace or a grave.

_____ D a cemetery.

_____ E a reconstructed building, object, or structure.

_____ F a commemorative property.

_____ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions)

Education
Science
Architecture

Period of Significance **Education 1924 - 1949**
Science 1924 - 1949
Architecture 1924- 1949

Significant Dates _ **1924 Completion of construction.**
1929-30. Invention of cyclotron.
1930-37. Early development of Radiation Laboratory under Ernest Lawrence.
1944 beginning of work associated with development of atomic bomb

Significant Person (Complete if Criterion B is marked above)
Ernest Orlando Lawrence
J. Robert Oppenheimer

Cultural Affiliation _____

Architect/Builder ____**John Galen Howard, Architect**__

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.) **(see attached)**

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9. Major Bibliographical References. **Attached. See continuation sheets.**

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(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey # _____
___ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data
___ State Historic Preservation Office
___ Other State agency
___ Federal agency
___ Local government
XXX University
___ Other
Name of repositories: **Bancroft Library / University Archives, University of California, Berkeley. Office of Capital Projects, University of California, Berkeley.**

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10. Geographical Data

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Acreage of Property **<1**

UTM References (Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	**10**	**565,460**	**4,191,740**	3	__	_____	_____
2	__	_____	_____	4	__	_____	_____

___ See continuation sheet.

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

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11. Form Prepared By

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name/title__**Steven Finacom, Planning Analyst, on behalf of Department of Capital Projects, University of California, Berkeley.**
organization_____**University of California**_____ date___**September,2003**____

street & number_**300 A&E Building,UC Berkeley**__ telephone_**(510) 643-9926**__

city or town_____**Berkeley**_ state_**California**___ zip code__**94720-1382**_____

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps **(7.5 minute series attached)**
A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs
Representative black and white photographs of the property. **(Attached)**

Additional items (Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)
name _____

street & number_____ telephone_____

city or town_____ state_____ zip code _____

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.). A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number.

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to Keeper, National Register of Historic Places, 1849 "C" Street NW, Washington, DC 202

7. DESCRIPTION.
NARRATIVE DESCRIPTION.

LeConte Hall is a three-story over-one-basement Beaux Arts concrete academic building on the campus of the University of California, Berkeley. Because of its location on a sloping hillside, the building has a half-basement which is fully above grade at the southern, downhill, end. The building is rectangular, with a hipped red-tile roof surmounted by a copper and glass skylight; the top floor is contained under the eaves of the roof, giving the building the appearance of two main stories on its principal elevation. The original building was completed and occupied in 1923/24. The structure is made of reinforced concrete. The exterior is ornamented with neoclassical features including modified Ionic columns, pediments, gables, and decorative detailing, and surfaced with stucco. The interior is subdivided at the basement level into mechanical and shop spaces, and on the upper three floors into classrooms, faculty and administrative offices, laboratories, and ancillary spaces. The interior is utilitarian in character, originally finished with plaster walls, oak trim, oak doors with transoms, and linoleum floors. LeConte Hall is located on the Berkeley campus of the University of California, and was the first building on the campus constructed exclusively for use by the Department of Physics. It stands in the northeastern quadrant of the campus, on the edge of the Physical Sciences precinct; it is located at the southeast corner of a present-day complex of four buildings largely devoted to Physics, Astronomy, and Astrophysics functions, and lies westwards of a similar complex occupied by the College of Chemistry. Designed to be consistent in architecture and location with revised versions of the 1900 Phoebe Hearst Architectural Plan for the campus, LeConte Hall is located on a cross-axis of the campus, and paired across a small esplanade with Gilman Hall, a 1917 structure of similar design and character, built for the College of Chemistry which, during the period of significance, had close ties to the Department of Physics. LeConte Hall shares with several other Beaux Arts buildings of its period on the campus a neo-classical design character, red-tile roof, and copper and glass skylight.

LeConte Hall is in good condition, although in need of a seismic and systems upgrade which will be undertaken in 2003-04 within the structure, avoiding alteration to the elevations or significant interior spaces. The building has been previously altered as follows: in 1950 with the construction of an addition to the northwest (typically called the LeConte Annex or "new" LeConte Hall), linked to LeConte by a three-story connecting wing; in 1964 by the construction of a separate free-standing building to the west (Birge Hall), linked to LeConte by a three-level elevated steel and glass breezeway; in the 1960s with the removal of a two-story interior lecture hall, which was replaced with a mezzanine level accommodating additional laboratory space and offices. The principal eastern elevation of the building has not been altered, nor have the two end elevations (north and south). The rear, western, elevation has been modified by the links to the neighboring structures, as described above. From the south, east, and north the building appears nearly identical to photographs and plans from the era when it was constructed.

EXTERIOR APPEARANCE AND CHARACTER

All the direct quotations in the following architectural description, unless otherwise cited, are from "Historic Structures Report, LeConte Hall", October 1999, prepared by the architecture firm of Page & Turnbull.

On the exterior, LeConte Hall is a symmetrical structure with a neo-classical character. The east elevation has always been the principal elevation, containing two monumental entrance doors.

"The exterior elevations of LeConte Hall are carefully composed classical facades characteristic of late nineteenth and early twentieth century design and planning in the United States as practiced by American students of the Ecole des Beaux-Arts…the monumental scale and interpretive use of classical elements in the building are characteristic of Beaux-Arts architecture of the period." (Page and Turnbull, page 17).

"The elevation consists of a colonnade of nine bays, flanked by pedimented pavilions. The first full floor, above the basement, "is detailed as a striated plinth fourth monumental architectural orders above which occupy the second and third floors." Ornate spandrels and fluted columns with richly decorated Ionic capitals accentuate the portion between the second and third floor levels on all four facades. An ornate cornice runs around the entire building at the fourth floor level. The fourth floor of the building is concealed within the roof, which begins immediately above the top of the third floor. The structural columns, beams, floor, roof slabs, and exterior walls of the building are cast-in-place concrete. Ornamentation on the stone facades is executed in cement plaster over reinforced concrete. The material evokes the qualities of a Classical stone building while conveying the fact that it is made of concrete. The windows are wood double-hung and the visible portions of the roof are covered in red tile." (Page and Turnbull, page 16)

"The central zone of the east elevation has engaged columns in the Ionic order, resting on a simple stylobate which articulates the top of the first floor podium. The capitals crowning the fluted columns have stylized volutes indicating a departure from a more strict use of the Ionic order. The fascinated entablature contains a simple architrave and cornice with egg-and-dart molding and dentils. Unlike a traditional Ionic entablature, the one on LeConte Hall does not contain a frieze. There is a decorative spandrel panel between the windows of the second and third floors which is ornamented with cast anthemia or honeysuckle forms. The main entrances to the building span the height of the first and second floor portions of the outer bays of the central zone. Each entrance bay has a projecting frame and first and second floor portions of the outer bays of the central zone. Decorative console-shaped brackets rest atop side bands decorated with rosettes, which frame egg-and-dart and bead-and-reel moldings around the door opening. At each entry, there is a pair of doors each having an eight-lite transom above. The doors and transoms

are wood; the doors have no glazing. The door jambs are fluted pilasters topped by half-palmettes, supporting a panel with "LeConte Hall" incised in it. Each door is divided into square panels at the top and bottom and a rectangular panel in the center." (Page and Turnbull, pages 16-17)

"The pavilions which form the ends of the east elevation are similar to the center zone, except that instead of the engaged Ionic colonnade, each has a larger wall surface with a grouping of three windows at the center. The walls of the flanking pavilions are framed by simple pilasters crowned by acanthus capitals in the zone corresponding to the column capitals of the central bays. The end pavilions project forward in plan about two feet from the face of the center portion of the building; the flanking pavilions share the same fasciated entablature containing a simple architrave and cornice with egg-and-dart molding and dentils. The tympana of the pavilion pediments are unadorned. The original drawings show more detail on the east elevation than is found on the building as executed; it is possible the ornamentation was simplified because of construction or cost limitations.

The north, south, and west elevations of the building continue the design of the pavilions on the east elevation. The west elevation is identical to the east elevation, except that it has pilasters in the center zone where the east elevation has engaged columns. Instead of a single grouping of three windows found on the pavilions of the east and west elevations, the north and south elevations have five bays of paired windows. The north elevation has no doors; the south elevation has a large pair of flush metal doors to the basement…The west elevation originally had a door from the basement near the north end; that door now leads into "New" LeConte (Hall) and an additional door has been added on the south part of the west elevation below the bridge to Birge Hall." (Page and Turnbull, page 17)

"The roof, which is difficult to see from the ground level anywhere near the building, was easier to see when LeConte Hall was first built and is a typical example of John Galen Howard's classical designs. There are gables at the north and south ends, corresponding to the pedimented pavilions of the east and west elevations. In between is a larger gable running north and south along the long axis of the building. At the perimeter of the roof are voids where small decks with French doors provide light and air to fourth floor rooms; these are not visible from the ground. A hipped skylight with a gabled clerestory at its center occupies the peak of the main portion of the roof. This skylight is framed in steel and is glazed in wire glass, with copper exterior facing and flashing. The skylight orignally lit the entire attic,which was a single space with a large laylight into the two-story lecture hall (lost in a remodeling) and smaller glass block laylights into other fourth floor spaces. Although some of the smaller laylights still exist, they have been painted over and thus none of the original skylight functions remain." (Page and Turnbull, page 17)

"The east elevation, which is the primary façade of the building and the approach to the main entrances, is the most ornate. Although the south

elevation is simpler, it is more prominent in the campus as it has developed since the building was completed. Although some unsympathetic additions of mechanical equipment have occurred on these elevations, they are substantially unchanged...the west and north elevations have undergone more change; new equipment and services detract from the original design and new buildings have encroached on LeConte. Despite these changes, these elevations still convey their original design..." (Page and Turnbull, page 17).

INTERIOR APPEARANCE AND CHARACTER

"The original design of the building provided for large (interior) spaces on the north, south and west-center sides of the building, with the remainder generally occupied by smaller spaces. The circulation scheme consisted of a stairway in the center of the building behind each of the (two) main entrances on the east elevation and a double-loaded corridor running-north south between the stairways. The building did not have a hierarchically important lobby or public space; functionally, the large laboratories on the north and south ends of the second floor and the two-story lecture hall on the third and fourth floors in the center-west portion of the building were the largest spaces, but their architectural development does not indicate a strong hierarchy...The general lack of hierarchy in the building probably corresponds to the needs of the Physics Department: classrooms, laboratories and offices comprise most of the program and are roughly related in importance." (Page and Turnbull, page 18)

The interior of the building was largely finished with simple plaster walls and ceilings and battleship linoleum floors. Doors and door frames were generally wood, typically with obscure glass panes in the upper panel and, in some cases, a metal ventilation grill in the lower panel. Although the interiors of many rooms have been altered to accommodate modern equipment and linoleum floors have generally been replaced with vinyl tile, most of the circulation spaces in the building remain in a condition similar to their original appearance. The building retains some furnishings such as original laboratory tables and sinks in some classrooms.

The basement of the building was designed to contain mechanical spaces and workshops for the fabrication and repair of equipment used in the Department's laboratory research and instruction. The layout and uses of the basement are largely unchanged.

The first floor is largely original in layout, with a double-loaded "U" shaped corridor that connects to the two entrance stairwells on the east side. The first floor was and is largely given over to laboratory spaces and offices, with some classrooms at the northern end.

The second floor of the building has a similar layout and character to the first floor, with the exception of large laboratory spaces instead of offices or classrooms at the north and south ends.

The third floor of the building has been altered with the conversion of the large two-floor height lecture hall space at west / center to smaller workspaces and laboratories. A corridor inserted through this space has resulted in a rectangular corridor arrangement on this floor, rather than the original "U" shaped double-loaded corridor. The third floor primarily contains small classrooms, laboratory, and teaching spaces, a portion of the Physics Library, and office space.

The fourth and topmost floor of the building also has a roughly rectangular corridor layout, lined by an outer perimeter of small offices. As noted in the exterior description, most of these offices connect through French doors to small private balconies inset within the gabled roof. The interior of the fourth floor on the west side was originally part of the two-story lecture hall space; like the level below, it has been converted to laboratory and workshop space.

RELATIONSHIP TO CAMPUS

LeConte Hall was carefully designed and sited to integrate in character, appearance, and location with a master plan (the Phoebe Apperson Hearst Architectural Plan of 1900, as revised in 1914 by John Galen Howard) for the Berkeley campus. In form, LeConte is a rectangle, oriented roughly north/south on a sloping hillside. The east façade is the principal façade, facing onto an esplanade. LeConte is matched in scale, general character, height, and north-south length by Gilman Hall (1917) which sits parallel to LeConte on the opposite (eastern) side of the esplanade.

The two buildings, although completed seven years apart, were intended to form a pair of physical sciences buildings, symmetrically flanking the esplanade. Both LeConte and Gilman Hall are bordered to the south by a campus roadway, South Drive, which predates both buildings. Beyond South Drive is the south fork of Strawberry Creek, which runs through the Berkeley campus and also defines the southern edge of the Beaux Arts core.

At the time of its construction and for the next quarter century, LeConte Hall was a freestanding structure. In 1949-50 an addition, currently called the LeConte Annex, was completed, attached to the northwest corner of the building. Together the original building and the addition form two parallel three-story structures, offset and attached by a three-story link perpendicular to the two structures. The original part of LeConte is offset to the southeast of the link; the newer section is offset to the northwest.

In 1961 Bacon Hall, an 1881 brick building originally designed as an art gallery and library, was demolished and replaced with Birge Hall. Bacon Hall had been located west of the original LeConte Hall. When Birge Hall was constructed, it was connected by two, three-story glass breezeways to both the 1923 and 1950 sections of LeConte Hall; the breezeways are elevated one floor above ground level. The connection to the original LeConte Hall was made near the southern end of the western façade. In 1964, the final major change was

made to the LeConte vicinity; this was the construction of a new Mathematics / Statistics / Astronomy building, Campbell Hall, immediately north of LeConte. The two buildings are separated by a narrow service driveway; the structure of LeConte Hall was not altered by the Campbell Hall construction, although the context of LeConte was somewhat affected.

As a result of these alterations, LeConte Hall is now bordered on the west, northwest, and north by newer structures, and the western façade had been considerably altered by the construction of connectors and breezeways at its northern and southern ends. The northern, southern, and eastern facades of the original LeConte Hall remain intact. The eastern and southern elevations of the building frame, as John Galen Howard intended, the southeastern corner of the larger Physics complex and match the southwestern corner of the Chemistry complex to the east.

8. NARRATIVE STATEMENT OF SIGNIFICANCE

INTRODUCTION

LeConte Hall is "forever associated with the makers of American scientific history and the emergence of the atomic age." *(Helfand, page 99.)* It was the first building constructed exclusively for the use of the Physics Department of the University of California, Berkeley and the first modern physics building in the UC system; at the time of its construction it was notable among science buildings throughout the world for its size and provisions for research facilities. After its completion in 1924, its first two decades of use supported and paralleled the rise to prominence of the physical sciences at Berkeley. Much of the prominence and stature of the University of California, Berkeley (now consistently ranked as the best public university campus in the United States and one of the best graduate-education institutions in the world) derived from the University's innovation and leadership, from the 1920s onward, in the physical sciences. Major milestones in physics were accomplished in LeConte Hall. Most significantly these include the invention of the "atom smasher" or cyclotron, which led to a Nobel Prize (the first for a University of California faculty member, and the first for any individual associated with a public education institution in the United States) for Professor of Physics Ernest Orlando Lawrence. The beginnings of Lawrence's Radiation Laboratory (later the Ernest Orlando Lawrence National Laboratory) were in LeConte Hall. The accomplishments of the "Rad Lab", which for a time led the world in nuclear science, included the isolation and discovery of new atomic elements, the exploration of the structure of the atom and, later, the science of nuclear medicine. The development of "Big Science"—the practice of using large teams of expert researchers and large laboratory facilities and complexes to pursue scientific problems in a coordinated manner, usually utilizing public agency funding—is closely associated with Ernest Lawrence, initially using LeConte Hall facilities and later expanding to other buildings at and near the Berkeley campus.

LeConte Hall is also closely associated with the early days of the development of atomic weapons during World War II's Manhattan Project. In LeConte Hall under conditions of wartime secrecy Professor Robert Oppenheimer assembled one of the first scientific teams to discuss approaches to nuclear weapons research. Oppenheimer, long a member of the Physics Department faculty and, like Lawrence, an occupant of LeConte Hall, became the civilian head at the Los Alamos national laboratory where the first atomic weapons were designed, constructed, and tested under his direction. LeConte Hall is also associated with the development and growth of the School of Optometry at Berkeley. Finally, LeConte Hall is an important contributing structure to the Beaux Arts core of the Berkeley campus, one of the largest and most complete ensembles of Beaux Arts structures in North America. LeConte Hall was designed by the principal architect of Berkeley's Beaux Arts era, John Galen Howard, near the end of his career, and was carefully planned by him as a permanent academic building of the campus. A number of Howard's Beaux Arts buildings on the

Berkeley campus were added to the National Register in a Multiple Listing in 1980.

DEVELOPMENT OF SIGNIFICANCE

THE UNIVERSITY OF CALIFORNIA

The University of California was established in 1868 through a charter issued by the State of California. The University absorbed the donated functions and physical properties of the liberal arts College of California, its private predecessor institution, as well as taking on the responsibilities of a Federal Morrill Land Grant state college. Given this hybrid origin, the University of California was from the start a public institution devoted to practical pursuits such as research and instruction in mining and agriculture, scientific research and discovery, and education in the humanities and liberal arts.

The University moved in the early 1870s from its original home in Oakland, California, to a site north of Oakland in then-undeveloped countryside. This area was known as Berkeley, denoting both the campus site and the small town (incorporated in 1878) that grew up around it. The property had been acquired in the 1850s and designed in the 1860s by the private College of California as a future campus site, but the College never had the financial means to relocate its academic facilities from nearby Oakland.

The University was based primarily at Berkeley through the late 19th and early 20th century, with specialized off-shoots for medical education in San Francisco, astronomy at Lick Observatory near San Jose, California, and agricultural research at a number of locations. In the early 20th century a second "general campus" beyond Berkeley was developed in Southern California, becoming UCLA. Eight other general campuses and innumerable programs and research facilities followed. Today, the University of California is a ten campus system ranked among the most distinguished and largest institutions of higher education in the world.

The flagship Berkeley campus still occupies its original 1870s site (somewhat expanded from the original land area), accommodates more than 30,000 students, and is now surrounded on three sides by a city of 100,000+ still bearing the same name.

The city of Berkeley is located on the eastern edge of San Francisco Bay. In the early 19th century the entire land area now occupied by both the city of Berkeley and the University campus was part of a Spanish-era land grant rancho. American-era settlement dates to the 1850s and 60s as Gold Rush immigrants and other settlers began buying or appropriating land, developing farms, residences, and small manufacturing concerns. Geographically, the city includes both a broad littoral plane rising gently from the bay edge and originally seamed with small creek channels, and steep hills interspersed with deep, stream-cut, valleys, rising from its eastern edge. The "flatlands" streets of the city are largely laid out in a conventional grid pattern, while

the streets in the hills follow more meandering routes across the natural contours of the land. Berkeley is primarily residential, characterized largely by detached single-family home neighborhoods, but with a substantial amount of early and mid-20th century multi-unit housing in certain neighborhoods. Most of Berkeley's neighborhoods developed in the late 19th or the first half of the 20th century, often as "streetcar suburbs" with convenient commuter rail connections to the more urbanized city of Oakland immediately to the south and, via ferry, across the Bay to San Francisco. Berkeley has a compact historic Downtown commercial district and transit hub with many structures from the early 20th century located immediately west of the University's core campus, and linear neighborhood shopping districts along major streets in other neighborhoods. The western edge of the town closest to San Francisco Bay is also the oldest settled area in historic times and, in the late 19th and early 20th centuries, evolved into both a residential and manufacturing district.

The University's core campus encompasses a rough rectangle of about 180 acres of ground at the foot of the Berkeley Hills; the University also owns more than 1,000 additional acres of land on the slopes and in the valleys and canyons of the Hills. Two branches of Strawberry Creek, the primary water source for the original campus, cross the core campus and join near its western edge. The majority of both older and historic buildings of the campus are located on a sloping plain contained in the "V" between the Creek branches, or elsewhere near the Creek.

ORIGINS OF THE PHYSICS PROGRAM AND LECONTE HALL

Physics at Berkeley began in the 1870s with the appointment of the University of California's first professor, John LeConte, who would also serve as President of the University (1876 - 1881) and later, with his brother, fellow University of California faculty member Joseph LeConte, become the namesake of LeConte Hall For the first half century of the University's existence Physics was accommodated in South Hall, the University's original building on the Berkeley campus, located west of the present-day site of LeConte Hall. The physics laboratory in South Hall was one of the first such facilities in the United States. The Department awarded its first Ph.D. in 1903, and by the end of World War I the Physics faculty included three lecturers and four professors, among them Raymond Birge who would serve as department chair from 1933, during a period of unprecedented growth and achievement.

"LeConte Hall was constructed to provide a larger home for the physics department, which had outgrown historic South Hall while trying to meet the enrollment increases that followed World War I. The state-funded building was the fourth largest physics facility in the nation and one of the largest in the world when it was completed in 1924, and its provision of forty rooms for individual research was exceptional." *(Helfand, page 98)*. In addition to the growth of overall enrollment, an increased emphasis on graduate students in the postwar years contributed to the need for new Physics facilities, particularly increased laboratory facilities.

The University's postwar expansion needs were considerable. Funds for thirteen construction projects were requested from the State Legislature in 1921. LeConte Hall was one of two projects to actually receive funding as a result of that request.

LeConte Hall cost $433,000 to construct, with a total cost of approximately $500,000, including furnishings and equipment. It provided some two and a half times the space that had been available to Physics in South Hall. The building was actually ready for instructional use in August, 1923, but the formal dedication was not held until March 24, 1924. Since its completion, the building has been continuously occupied by the Department of Physics.

ROLE OF ERNEST LAWRENCE

The construction of LeConte Hall marked a turning point in the history of the physical sciences at Berkeley.

"The physicists at the University of California had also enjoyed more than an average share in the growth of American physics since the first world war. Their research facilities had been greatly improved...with the completion of LeConte Hall, the first physics building at a public American university built and furnished as lavishly as the best at the big private schools. Their departmental research fund rose from nothing to $13,000 a year between 1920 and 1930; though less than what Millikan had from Caltech's endowment, it yet represented a substantial, and growing, commitment of the State to the support of physics. Their staff increased in numbers and improved in quality. The acquisition of one-half of J. Robert Oppenheimer in 1929, the other half going to Caltech, may be regarded as symbol of Berkeley's rapid approach to parity with Pasadena...." ("Lawrence and His Laboratory: A Historian's View of The Lawrence Years", web based edition, cited July 15, 2003, from *http://www.lbl.gov/Science-Articles/Research-Review/Magazine/1981/)*

(The California Institute of Technology, in Pasadena, under the direction of Robert Millikan, was then regarded as one of the best scientific institutions in the United States.)

Following the construction of the building, the Physics Department grew both in size and in stature,as noted above. Leading young physicists were lured to Berkeley by the new facilities and the energetic efforts of the department. Two of the most important were Ernest Orlando Lawrence, who arrived from Yale in 1928, and Robert Oppenheimer, recruited from Harvard initially to a joint appointment at Berkeley and the California Institute of Technology.

In 1930-31 Lawrence accomplished a milestone in nuclear physics; the invention and practical testing of what he described as a cyclotron and the popular press dubbed an "atom smasher." The device provided a means to accelerate subatomic particles at immense speeds towards a "target" composed of a single element;

the velocity of those particles in the beam which passed through atoms in the target would spin off subatomic particles, creating new elements and isotopes. The first small prototypes of the cyclotron were constructed in LeConte, using the resources of the basement workshops, and also tested in the building, where Lawrence had his laboratory in what is now designated as Room 329. The first test was on January 2, 1931. The physical spaces associated with these events remain, although they have been modified somewhat on the interior (Room 329 is now a classroom).

"The cyclotron provided to be the most effective tool for generating high energy beams of nuclear particles with which to explore the atomic nucleus. The cyclotron and its descendants, developed at Berkeley and subsequently at other institutions around the world, have been a major factor in the flowering of nuclear sciences and the development of nuclear energy." *(Stadtman, Centennial Record, pages 323-324).*

Lawrence's first cyclotron was a mere 4.5 inch device that could be held in the palm of a hand. In 1933 an eleven inch machine was constructed. Both of these research tools were entirely constructed and tested within LeConte Hall. A progression of larger cyclotrons followed; 27-inches in 1934, 37 in 1938, 60 in 1939, and 184 in 1946 (the measurement refers not to the diameter of the whole device, but to its key components). The later, larger, machines required larger spaces and were accommodated outside LeConte Hall, first in an old civil engineering building nearby, later in the Crocker Radiation Laboratory building constructed northeast of LeConte Hall in 1937 with a gift from a University Regent and finally in increasingly expansive facilities constructed for the Radiation Laboratory on the slopes above the Berkeley campus. The "Rad Lab", formally designated as a separate campus unit in 1936, eventually became the core of the Ernest Orlando Lawrence Berkeley National Laboratory, managed for the Federal Government by the University of California, and still one of the world's leading centers of research in the physical sciences.

IMPACT OF LAWRENCE'S WORK

Lawrence's discovery led to a cascade of effects. First, was the isolation of new atomic elements; between 1937 and 1961 Berkeley researchers discovered 13 of 15 synthetic elements, and the Periodic Table of the Elements was increased from element 93 through 103. Several of these elements now bear names associated with Berkeley; Berkeleyium, Californium (for the University of California), Lawrencium, and Seaborgium.

Second, the discovery began to unlock the processes by which nuclear energy could be released, atomic weapons made, and nuclear power generated, transforming energy, military, and geo-politics of the second half of the 20th century.

Third, numerous artificial radioisotopes were described and could be produced at Berkeley using the cyclotrons, leading to the development of nuclear medicine (pioneered by Ernest Lawrence's brother, Dr. John Lawrence, at the

nearby Donner Laboratory structure, built for this purpose), as well as other scientific advances such as carbon-14, widely used in the accurate dating of ancient artifacts and materials. Fourth, Lawrence drew together a large team of researchers at Berkeley, concentrated initially in LeConte Hall, then spreading outwards into newer facilities. "The Berkeley Laboratory (of Lawrence) is acknowledged to be the prototype of the big, interdisciplinary science laboratory now represented by national laboratories in this country and abroad." (Stadtman, Centennial Record, page 324). By the mid-1960s the Laboratory had some 3,200 employees and five major research divisions, all grown initially from the embryo of Lawrence's LeConte Hall experiments and administration in the 1930s.

Beyond the world of scientific discovery, Lawrence's work in LeConte Hall had profound effects on the University of California. In the 1920s the University was one of the larger state universities in the country and of considerable prominence, but had not yet risen to the highest rank of educational achievement internationally. Lawrence's discoveries, the other advances and successes they stimulated and, in particular, Lawrence's Nobel Prize for Physics in 1939 helped accelerate the University of California and its Berkeley Campus in particular, into the first rank of institutions of higher education both in the United States and worldwide. Lawrence was the first faculty member / researcher at a public institution in the United States to receive a Nobel. Subsequently, no less than six other members of the Department of Physics or College of Chemistry faculty at Berkeley—several of whom had worked with Lawrence in the critical era of research in the 1930s and 40s—have been awarded Nobel Prizes. Physics at Berkeley became one of the University of California's most important and high-profile academic programs.

The prominence of the Berkeley Physics Department, the personal influence of Ernest Lawrence, and the close working relationship of University of California administrators with Federal agencies positioned the University, after World War II, to receive a steady flow of Federal funding for research in physics and related fields. The experiments which began in the late 1920s in LeConte Hall contributed to the elevated standing of the University of California as the United States entered on an era of massive Federal support for scientific research in the 1950s and 1960s.

"Thus the growth of the University of California into a research and teaching institution of international stature was hastened, in part, by the success of Lawrence in LeConte Hall…the reputation achieved by Lawrence and his work were among the first public confirmations of the University's success in building its programs and facilities to an international level." *(Page & Turnbull, p. 10).*

ROLE OF ROBERT OPPENHEIMER AND SIGNIFICANCE OF HIS WORK

In addition to the development of the cyclotron and its effects, described above, LeConte Hall also hosted a key activity during World War II in the

development of the atomic bomb.

Following warnings from both American and immigrant scientists that atomic weapons were possible and that Nazi Germany might develop them, the administration of Franklin Roosevelt embarked on a secret wartime program to develop nuclear armaments, which culminated in the successful testing of an atomic bomb on July 16, 1945, at Alamagordo, New Mexico.

Much of the scientific work of the program, including the theoretical design and construction of the first nuclear bombs was carried out at a research facility near Los Alamos, New Mexico, managed during the War and ever since by the University of California. The early research teams at the Los Alamos facility incorporated many staff and researchers brought from the Berkeley campus and its Radiation Laboratory and Department of Physics. The leader of this effort was J. Robert Oppenheimer, like Lawrence a professor on the Berkeley Physics faculty and an occupant of LeConte Hall since the 1920s (he served on the Berkeley faculty from 1928 through 1947, before relocating to the Institute for Advanced Studies at Princeton).

Oppenheimer was appointed as the civilian administrator of the bomb project and led the research effort throughout the war at Los Alamos. His direction and contributions are regarded by historians as essential to the process of assembling a large group of brilliant researchers and support staff and, under difficult conditions, effectively harnessing their skills, talents, and ideas to produce one of the scientific milestones of the 20th century.

Oppenheimer began his work in secret in 1944 at Berkeley, when he assembled a small team of brilliant physicists to discuss how a nuclear bomb could be designed. This group, which included Edward Teller, met under Oppenheimer's direction in two fourth floor rooms—thought to be Oppenheimer's Room 426 office and the adjoining Room 425--at the northwest corner of LeConte Hall during the summer of 1944, "where, under wartime security measures, they worked out the theory of the atomic bomb" before departing for Los Alamos to continue their research and development. *(Helfand, 100)*. Their research papers were stored in a safe in these rooms and the exterior balconies (described in the narrative for Section 6) were covered with a heavy wire mesh to prevent any unauthorized entry from the exterior.

OTHER NOTABLE RESEARCHERS ASSOCIATED WITH LECONTE HALL

Other researchers of stature directly associated with LeConte Hall during its period of significance include: Professor Raymond Birge, who ably headed the Physics Department administration and played a key role in the recruitment and selection of promising faculty and graduate students; Professor Emile Segre, later a Nobelist in Physics who worked in Room 119 on research in radio chemistry; Professor Edward McMillian who received a Nobel for the co-discovery of Plutonium; Professor Luis Alvarez, also a Physics Nobelist who was a graduate student in LeConte Hall, a University of California faculty member, and, much later, one of the originators of the "asteroid theory of dinosaur

extinction."

SCHOOL OF OPTOMETRY

In addition to the distinguished associations of LeConte Hall with the fields of theoretical and experimental physics, the building is connected to the origins of the program in optometry at the Berkeley campus. Optometry was originally formalized in 1923 as a division of Physics because of the natural location of the foundation of optometry, the study of optics, within the physical sciences. The new program was headed by Professor Ralph Minor, who had been a member of the Physics faculty since 1903. Optometry offices and research space occupied part of the upper floors of LeConte Hall, and also some basement facilities at one time. The program became a department independent of Physics in 1939, a school in 1941, and was relocated to its own building in 1948. Thus, the development of optometry as both a science and a professional discipline is associated with the Period of Significance of LeConte Hall.

ARCHITECTURAL CONTEXT AND SIGNIFICANCE

Beyond its historic significance in the development of modern physics and the atomic bomb, LeConte Hall has significance as an important component of the architectural development of the Berkeley campus during the early 20th century, and as part of one of the most extensive and well-realized compositions of Beaux Arts public architecture anywhere in the United States.

"LeConte Hall is an important contributor to the Beaux-Arts campus plan as completed under John Galen Howard", a study of the building by the historic architecture firm of Page & Turnbull concluded in 1999. (LeConte HSR, page 7).

In the late 1890s University Regent Phoebe Apperson Hearst (widow of Senator George Hearst, and mother of newspaper publisher William Randolph Hearst) initiated and funded an international architectural competition intended to produce a comprehensive physical plan for the development of the Berkeley campus of the University of California.

The competition--inspired, in part, by the "White City" of the 1893 Columbian Exposition in Chicago that helped popularize Beaux Arts design and planning ideals in the United States, and which Regent Hearst had visited—was one of the first events to bring international attention to the University of California, which was at the time barely a quarter of a century old, in troubled administrative condition, and without extensive academic achievement in comparison to older private universities.

Architects from throughout the world entered, and the competition goals and prospectus, the pedigree and deliberations of its distinguished panel of judges, and its results were all widely publicized. Many people throughout the United States and in Europe in particular heard clearly about the University of California for the first time, and in a favorable context. The Competition

publicity, coupled with the arrival in 1899 of an energetic new University President, Benjamin Ide Wheeler, who would serve for 20 years, helped "put the University on the map".

The competition extended over a period of nearly three years, included preliminary judging in Antwerp, Belgium, in 1898, and culminated in a final judging in San Francisco in 1899 and the subsequent selection of French architect, Emile Benard, as the winner.

Bernard's plan for the campus, revised after a visit to Berkeley and adopted pro-forma by the Regents in 1900"embodied the aesthetic principles of the pre-eminent French architectural academy, the Ecole des Beaux Arts. It featured formal axes, bilateral symmetry, monumental scale and an eclectic classical style for the buildings. The belief that a design in accordance with universal architectural principles would insure 'that there would be no more necessity of remodeling its broad outlines a thousand years hence than there would be of remodeling the Parthenon,' was stated in the program." *(Campus Historic Resources Survey, 1978, page 7.)*

Despite Bernard's award, for various reasons he was not selected as the architect to actually design the buildings of the new campus. The first such structures—including a "President's Mansion" and a Mining Building, the latter to be funded by Phoebe Hearst--were already being planned as the competition was coming to a close. Fourth place finalist in the Competition, New York based and Ecole de Beaux Arts trained architect, John Galen Howard was selected to design the Hearst Memorial Mining Building and, ultimately, chosen as Supervising Architect for the campus.

JOHN GALEN HOWARD

Born and raised near Boston, John Galen Howard was trained in architecture at two of the premier design institutions of his era; the Massachusetts Institute of Technology, and the Ecole de Beaux Arts in Paris. (He did not graduate from either institution. He left MIT after three years of study, following the death of his father and a decline in the family's financial fortunes. At the Ecole des Beaux-Arts he studied in the prestigious atelier of Victor-Alexandre-Frédéric Laloux and earned more points—twenty seven out of thirty-one—towards a diploma than any other American student who had studied there, but ultimately returned to the United States without a degree, following the death of his mother and his own marriage to a young lady, Mary Robertson Bradbury, who he had met in Paris. Howard's principal biographer, Sally Woodbridge, wrote, "…for most Americans the école's diploma seemed hardly worth the time and effort needed to acquire it. The prestige of having attended the école, however, was a generally sufficient entrée to the most desirable offices..." *(Woodbridge, page 19).*

In the United States, Howard had worked in the offices of two leading American design firms, Henry Hobson Richardson in Brookline, Massachusetts, and McKim, Mead and White in New York. He also had a brief sojourn in Los Angeles where

he had gone in 1887, hoping to benefit from a development boom brought about by the opening of a new rail line to Southern California and a resultant price war in transportation; although the experience did not prove financially successful, it exposed Howard for the first time to California vernacular architecture, particularly the Spanish Missions, and styles which he would later adapt to his designs for the Berkeley campus.

In 1893 Howard founded a design practice in New York in partnership with engineer Samuel M. Cauldwell. The firm won second place in the design competition for the New York Public Library, and designed several hotels and private homes in New York as well as the Newark, New Jersey, high school and the Majestic Theater in Boston. In 1898 the firm submitted an entry in the Hearst Competition. Howard's design eventually placed fourth but he was ultimately selected not only as the architect for the first academic building of the Hearst Plan—the Hearst Memorial Mining Building—but also as the Supervising Architect for the University and the implementer of the Plan.

Howard enjoyed a formal association of more than a quarter century with the University. In addition to serving as Supervising Architect and design architect for almost all the campus buildings constructed between 1900 and 1925, Howard was the University's first Professor of Architecture (1903), founded and chaired the School of Architecture at the University and pursued a successful private practice off-campus.

Howard's biographer, Sally Woodbridge, wrote: "John Galen Howard's life offers us a window on the wide-open world of California and its state university in the period from the end of the nineteenth century to the Great Depression. His buildings, standing as solid evidence of his contribution to that world, remain the crowning jewels of the university campus.." *(Woodbridge, page 175)*.

John Galen Howard is not well known beyond Northern California, in part because a broad biography of his life and design work was not published until 2002 (a much shorter monograph focusing on his Berkeley campus work was published by a different author in 1978). In addition, most of his non-University commissions have been demolished, leaving little visual record of him or his work beyond the University campus. For example, almost all of the commercial structures he designed in Berkeley were removed in the second half of the 20th century. However, he can be appropriately classed as one of the most important professionally trained architects to practice in California in the early 20th century and the creator of what is generally regarded as one of the most extensive ensembles of Beaux Arts design in the United States. In addition, his long tenure as Chair of the School of Architecture at Berkeley should rank him as an important figure in the development of the design profession on the West Coast.

IMPLEMENTATION OF THE HEARST PLAN

Howard enjoyed a formal association of more than a quarter century with the University. In addition to serving as Supervising Architect and design

architect for almost all the campus buildings constructed between 1900 and 1925, Howard was the University's first Professor of Architecture (1903), founded and chaired the School of Architecture at the University and pursued a successful private practice off-campus.

One of Howard's early acts was to convince the Regents to adjust the Benard Plan to align the primary view corridors of the campus with the then-unbridged Golden Gate, lying to the west across San Francisco Bay. This was not an original idea—something similar had been proposed for the campus by Frederick Law Olmsted in the 1860's when he prepared a plan for the College of California, the University's private predecessor institution--but the concept had temporarily given way during the Competition to a formal alignment of the campus with the surrounding street grid of the City of Berkeley.

With this readjustment Howard not only ensured that University views would be oriented to one of the most inspiring vistas of any college or university site in the country, but began the process of reshaping the Hearst Plan to fit his own version. In his subsequent designs of individual buildings and official revisions of the Hearst Plan (in 1908, 1914, and 1917) he made other modifications and the physical form of the campus essentially became de facto a Howard Plan.

Classically trained and imbued with the ideals of the Beaux Arts era, he came to California and put his distinctive stamp on the Berkeley campus. In 1903, early in his tenure as Supervising Architect, he articulated this vision: "It is the principle that it is owned to the people to establish on these grounds a standard of artistic excellence. It is the University's bounden duty to cultivate artistic ideals just as distinctly and indisputably as it is its duty to teach the beauties of literature and the wonders of science. The University fulfills only a part of its mission when it teaches the theory of beauty without its practice. Its duty is to inspire, to cultivate, to edify. And to do that completely it must have fine buildings. By fine is not meant elaborate or even costly, but buildings whose lines are so pure and whose aspect so beautiful that the student coming into their presence is uplifted and his ideas enlarged and purified. Men and women come here at the most impressionable period of their lives, and lost is the most important of opportunities for raising the standard of their taste and cultivating their higher instincts, if they do not find themselves at once in an atmosphere of fine artistic surroundings…The University shall take on incomparable beauties and stand as an exponent of all that is best in life." *(Campus Historical Resources Survey, 1978, page 1).*

At Berkeley, Howard's Beaux Arts training was fused with the early 20th century fascination of the University of the California that it was destined to become the "Athens of the West" or "Athens of the Pacific", helping to spearhead a century in which the dynamism of the newly-settled State of California would lead the way to American economic, political, and cultural hegemony over the Pacific world, much as Greece and Rome had dominated the ancient Mediterranean. Further reinforcing this vision was the mild Mediterranean style climate of

California and the Classical interests of President Wheeler, a philologist who idealized ancient Greece, taught in Athens, and participated in the first modern revival of the Olympic Games in 1896.

The result was a campus with buildings designed in neo-classical style, featuring Howard's carefully selected ornamental referants to ancient and European culture. The University Library, for example, was a columned "Parthenon" for the new "Athens", featuring a bronze bust of Minerva, Goddess of Wisdom, above the main entry. The University's major outdoor amphitheatre was a 7,000 + seat facility that was one of the first buildings of modern times modeled on ancient theatres. The buildings were planned by Howard to lie in regular arrays on terraces laid out on the campus hillsides, oriented to a major east/west axis, and smaller cross-axial roads and promenades.

Between his arrival at Berkeley and his forced retirement in 1926, Howard designed and completed some fifteen major permanent buildings for the campus and a number of other structures, several of which were regarded by him as temporary, but have since taken on historic and architectural significance.

At the heart of Howard's work is a group of neo-classical academic buildings, most of them sheathed in white granite from the Sierra Nevada on the eastern edge of California, and topped with red-tile roofs and copper and glass skylights.

The energies of President Wheeler, the benefactions of private donors, and public appropriations of funds both by the State Legislator and the electorate through periodic bond issues, provided a stream of funding for these projects.

LeConte Hall belongs to the last era of Howard's design work on campus, when his design talents continued unabated but his authority had been diminished by the retirement of President Wheeler in 1919 and the death of his patron, Regent Phoebe Hearst, in the same year. In this period he was busy with campus design but was constrained by budget shortages, and had been forced to turn from his characteristic Sierra White granite exteriors to less expensive materials, principally concrete covered with cement plaster, with cast ornamental details. He designed six buildings of this sort between 1917 and 1923: Haviland Hall for Education, Hilgard Hall for Agriculture, Gilman Hall for Chemistry, LeConte Hall for Physics, Stephens Union for student offices and activities, Hesse Hall for civil engineering laboratories, and California Memorial Stadium for athletics.

Of these structures, all but Stephens Union (a Collegiate Gothic structure) were designed in a Beaux Arts / neo-classical style.

LeConte Hall was planned by Howard as part of a matching pair of buildings. Along with Gilman Hall, situated to its east, it flanked a small esplanade running south to Strawberry Creek near the eastern edge of the campus. LeConte and Gilman are extremely similar in their principal façade appearances, with very similar architectural detail, arrangment of building elements, and massing

along the esplanade. In many respects the buildings are close to twins or mirror images, although they were completed about seven years apart.

Howard's plans indicate that he intended for additional and, in some cases, larger physical sciences structures to extend outwards from the Gilman / LeConte alignment; nine additional physical sciences buildings (including an extensive wing addition to LeConte Hall itself) were subsequently built in the vicinity from the late 1940s through the 1990s.

Several of these additions departed in scale, design character, and placement from Howard's plan. However, although they differ somewhat in design character and exact placement from Howard's plans, the buildings adjacent to the original LeConte structure—Birge Hall, "new" LeConte Hall, and Campbell Hall—do respect Howard's plan to have an integrated complex of physical sciences structures in two large blocks—one for Chemistry, and one for Physics—east of Sather Campanile and its esplanade, and south of the Mining Circle and the University Axis.

At the center of these complexes LeConte Hall and Gilman Hall retain their principal main facades and southern facades intact, as well as their formal relationship to each other across a small sloping esplanade, and express a partially accomplished sense of Howard's vision in this part of the campus.

Together, they are representative of the end of John Galen Howard's distinguished design tenure on the Berkeley campus and are among his final accomplishments in shaping what is now regarded as one of the most extensive and impressive assemblages of Beaux Arts public design in the United States.

In 1980 several of John Galen Howard's Berkeley campus buildings and other designed features were placed on the National Register of Historic Places as part of a Multiple Listing nomination. For reasons unclear today, Gilman and LeConte were not included in that nomination. Later, individual nominations added additional Howard buildings—including his "log cabin" Senior Hall and California Craftsman Naval Architecture Building—to the National Register.

This nomination proposes the addition of LeConte Hall to the list. A complimentary nomination is also proposed for the adjoining Gilman Hall, which shares a similar historic and architectural pedigree.

MODIFICATIONS

LeConte Hall has undergone three major modifications since its construction. One of them comes at the end of the Period of Significance, and the other two are from later decades.

John Galen Howard had designed LeConte Hall with a simplified west façade, in anticipation of expansion of the physical sciences complex in that direction. In his day one building stood immediately westward of LeConte, Bacon Hall, constructed in the 1881 as the first library and art gallery for the campus.

Howard regarded almost all of the earlier University buildings as replaceable structures, and his plans included eventual removal of Bacon Hall. However, the building was not removed during his lifetime, and the first modification to LeConte came in 1949-50 when a structure variously called the "LeConte Annex", "LeConte Addition" or just "new LeConte" was constructed north of Bacon Hall and northeast of LeConte Hall, connected to the old building by a multi-story wing at its northeast corner. This project converted LeConte Hall into a large zig-zag or "S" shaped structure, with additional offices, classrooms, and laboratories contained in the new wing. The addition was designed in a stripped neo-classical style by the firm of Miller & Warneke, with concrete exterior, tile roof, and symmetrical main façade facing west but a lack of elaborate exterior detailed.

The second and third alterations came in 1964, following demolition of Bacon Hall. The firm of Warnecke & Warnecke designed Birge Hall as a third Physics laboratory, office, and classroom building on the Bacon site. Like the LeConte Addition, Birge was connected to "old" LeConte, but not by a solid structure; instead, a three-story steel and glass breezeway structure was constructed between the two buildings, connecting to the south end of the west elevation of "old" LeConte; the breezeway is elevated one level above the ground, allowing a pass-through beneath into a narrow open space between the two buildings.

Also during 1964, part of the interior of the original LeConte was remodeled to remove the large two-level classroom that had been located on the third and fourth floors just within the west elevation. The apparent reason for this was the existence of newer large lecture halls in both Birge Hall and the LeConte Addition; the space in the original LeConte was subdivided and converted to additional laboratory and ancillary uses.

Although, as noted in Section 7, LeConte Hall has been modified by the LeConte Addition and Birge Hall connectors on the west elevation, the principal elevations of the building on south and east remain intact, and the original north elevation also remains, although somewhat altered and crowded by a nearby building. Original portions of the west elevation do remain visible between and around the connectors.

The construction of the LeConte Addition at the end of the 1940s and the considerable expansion of physics activities and nuclear science research into the Radiation Laboratory, followed by the construction of Birge Hall in 1964, reduced the importance of the original LeConte structure as the sole center of physics research at Berkeley. The Physics Department continued its distinguished trajectory—including Nobel Prizes in the 1960s for other Berkeley physicists such as Charles Townes and Donald Gazer who had arrived after the early Lawrence era—but their work was not primarily undertaken in the original LeConte structure.

BUILDING NAME

LeConte Hall was named in 1923 in honor of John LeConte the first Professor of Physics and third president of the University of California, and his brother, also a UC professor, Joseph LeConte. The two brothers were distinguished as campus leaders and scholars in the physical and natural sciences, and among the most prominent and revered early faculty of the University. A number of smaller features of the campus, including a tree and memorial chairs, are also named in their honor. Although the LeConte brothers are part of the distinguished heritage of the University of California and the Physics Department originated with John LeConte, both of the brothers were deceased well before the building was designed and constructed, and they are not personally connected with its history or significance. However, the fact that their name was chosen, indicates the importance of the building to the leaders of the University at the time.

Additional Information on association with Ernest Lawrence and Robert Oppenheimer

Ernest Lawrence was directly associated with LeConte Hall with assigned office/workspace there from late 1928 - late 1942, at a minimum. After 1942 his office and primary base of operations shifted to various buildings assigned to the Radiation Laboratory.

Robert Oppenheimer was directly associated with LeConte Hall with assigned office space from late 1928 to 1947, when he left to accept an academic and administrative appointment at Princeton. During this period there was at least one year--1929--when he appears to have been absent on leave at CalTech. During another approximately 2 year period, 1941-43, he was presumably spending most of his time at Los Alamos, New Mexico, although he retained a LeConte Hall address.

Background:
Ernest Lawrence appears to have had work space in old LeConte Hall continuously from his arrival on the faculty as an associate professor in 1928 to mid-1943, when his primary office moved to nearby Durant Hall (now known as Minor Hall). Durant Hall was built in that era and taken over for classified war work, so Lawrence presumably moved there to direct the nuclear research activities of the Radiation Laboratory. He appears not to have returned to any primary office in LeConte Hall thereafter.

Robert Oppenheimer had work space assigned in old LeConte Hall when he arrived on the faculty as an associate professor in 1928. He then appears to have spent part or all of 1929 at CalTech in Pasadena, where he held a joint appointment. Throughout the 1930s he is back in LeConte Hall, and he continues to have a LeConte Hall office address in campus directories through early 1947. After than point he does not appear in Berkeley campus directories, which is consistent with his 1947 move to the Institute for Advanced Studies at Princeton. There is a bit of ambiguity in the 1941-43 period when Oppenheimer was the director of the University's Los Alamos Scientific Laboratory, where the atomic bomb was developed, built, and tested. Clearly he was in Los Alamos, which was a self-contained research city with year-round housing, much of this time. However, the directories list him as at LeConte Hall throughout the period. The ambiguity is presumably explained by wartime practices; the public directory at Berkeley, one assumes, would have continued to list him as based at LeConte Hall, while he was off conducting highly secret military research; also, perhaps he did retain an office at LeConte as a working base during visits to Berkeley, although I am not certain of this.

There is also some ambiguity as to the nature of the spaces assigned to Lawrence and Oppenheimer at LeConte Hall. Room numbers are given in the directory, but they are not additionally specified as laboratories or

offices. A safe conclusion--based in part on descriptions of their activities in other sources--is that because of the nature of his work--experimental physics--Lawrence had both office activities and laboratory activities in LeConte; later, as his equipment grew, most of his experimental facilities moved to separate buildings for the Radiation Laboratory. Oppenheimer, as a theoretical physicist, presumably primarily had office space in LeConte.

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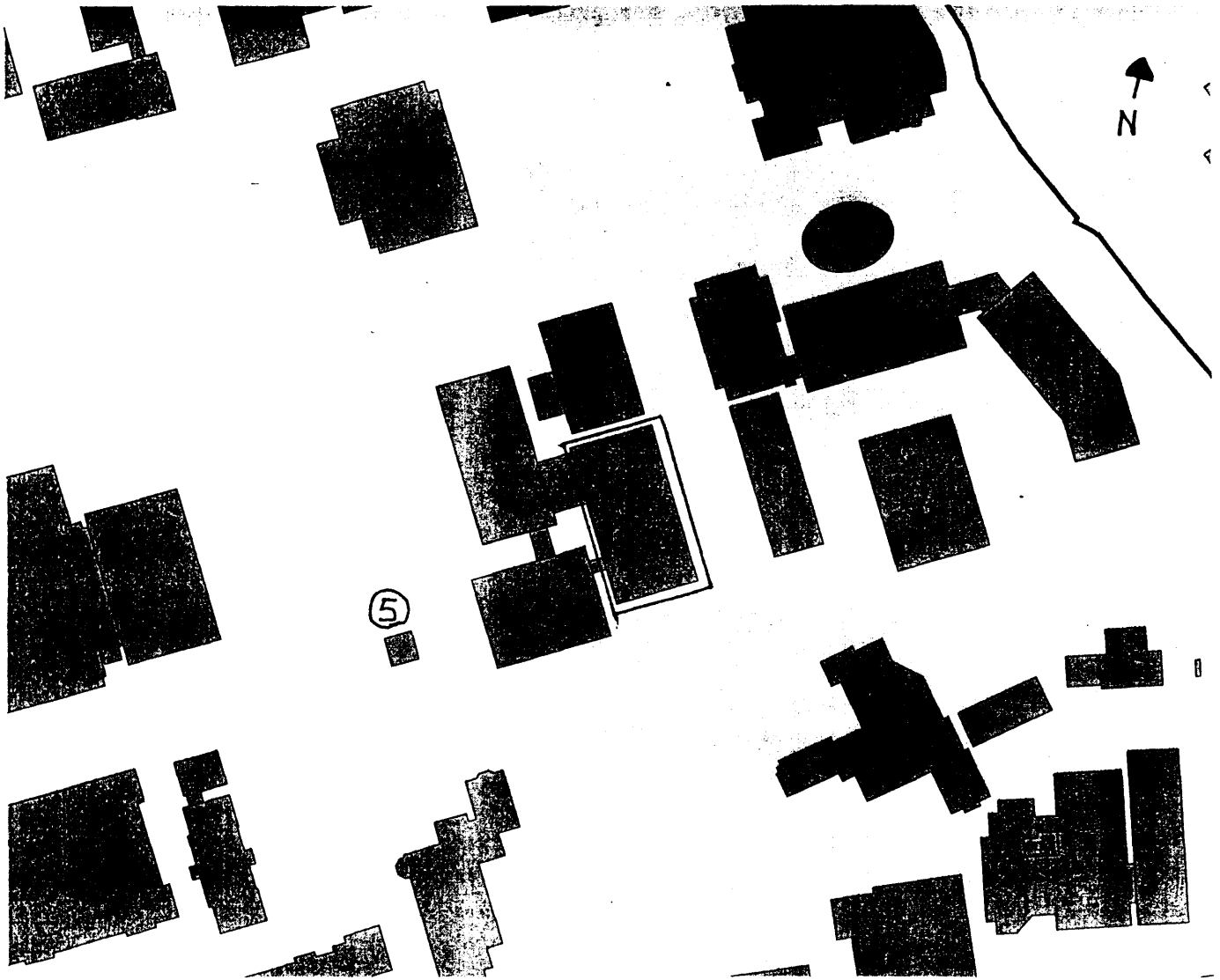
"Lawrence and His Laboratory: A Historian's View of The Lawrence Years". Web-based history. Available at http://www.lbl.gov/Science-Articles/Research-Review/Magazine/1981/ Cited July 20, 2003.

Boundary Description: The boundary consists of the footprint of the 1924 building, not including connectors to newer buildings.

Boundary Justification: The boundary has been drawn to include only the historic building, due to the close proximity of other buildings that are not part of this application.



BOUNDARY MAP / LECONTE HALL
UNIVERSITY OF CALIFORNIA, BERKELEY

1. LeConte Hall (original portion)

—— Boundary of nominated structure/site

2. LeConte Annex / LeConte Addition
3. Birge Hall
4. Campbell Hall
5. Sather Tower (Campanile)
6. Gilman Hall
7. Other buildings of the College of Chemistry Complex
8. Faculty Club

2004

200 0 200 400 Feet

Alameda County

NPS Form 10-900-a
(8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

ADDITIONAL DOCUMENTATION CONTINUATION SHEET - PHOTOGRAPHS Page _1_

LeConte Hall, UC Berkeley
Alameda County, California

PHOTOGRAPH INDEX

Photos are labeled on back by #.

#1. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Photograph taken from the top floor of Tan Hall, looking southwest towards LeConte Hall. LeConte Hall in foreground, showing roof arrangement and skylight; east and north facades are visible in this view. Birge Hall is the truncated pyramidal building just beyond LeConte. Lower portion of Sather Tower visible at extreme upper right. At middle right is the top of the bridge connector between LeConte Hall and the LeConte Addition / LeConte Annex. Triangular shape in lower left hand corner of image is portion of Tan Hall roof.

#2. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Taken from northeast, looking south / southwest at LeConte Hall's primary (east) façade, from ground level. Construction clutter and fencing visible in foreground is related to 2004/05 seismic retrofit of building.

#3. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Photograph taken from top floor of Tan Hall, same position as photograph #1, looking southwest towards LeConte Hall. View focuses on the northern end of the building. Portion of east façade visible in sun, north façade in shade. Birge Hall above building, and Sather Tower beyond Birge. Portion of Campbell Hall visible at right. Small portion of Tan Hall roof visible in lower left hand corner of photograph.

#4. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Taken steps of Gilman Hall, looking

north/northwest towards north end of LeConte Hall. View primarily shows end of eastern / principal façade of building, including lower level, two main floors, and fourth floor / roof level just visible behind pediment (note clay tile roof and, at extreme upper left, a partially visible portion of one of the inset decks for top floor offices.) Tripartite bank of upper windows, just below pediment, fronts the laboratory space used by Ernest Lawrence during his early Cyclotron research. One of the two main entrances to LeConte is visible at lower left; wooden doors and transom above doors have been temporarily filled in with plywood for protection during seismic retrofit work.

#5. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Taken from south, looking north at the south façade of LeConte Hall. Note rusticated base, decorative spandrels between banks of windows, and columns between windows. South elevation is similar to north elevation.

#6. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Taken fron north, looking south/southeast at the northeast corner of LeConte Hall. View shows the junction between the original LeConte Hall and the bridge connector to the LeConte Addition / LeConte Annex. Division between the two sections of building runs vertically roughly left of center of the image. Flat projecting roof at left is part of rear (west) of adjacent Campbell Hall.

#7. LeConte Hall, Alameda County, California.
Photographed by Steven Finacom, April 2, 2004
Original negative to be deposited in University Archives, University of California, Berkeley.

Description of view: Taken from the south, looking northeast at the southwest corner of LeConte Hall. View shows the original wall of the building and the glassed-in "bridge" connector to Birge Hall. A small portion of Birge Hall roof eaves visible at upper left. Note additional original portion of west façade of LeConte Hall visible through the glass, beyond the bridge connector. Bird outline on bridge glass depicts a hawk, placed there to deter small birds from flying into the glass.