

Structural Science Building

Pickens County, South Carolina

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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 _____
- 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
- public-State
- public-Federal

Category of Property (Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

Contributing	Noncontributing
<u> 1 </u>	_____ buildings
<u> 1 </u>	_____ sites
_____	_____ structures
_____	_____ objects
<u> 2 </u>	<u> 0 </u> Total

Number of contributing resources previously listed in the National Register 0

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

Historic Resources of Clemson University

Structural Science Building

Pickens County, South Carolina

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat: Education Sub: College

Current Functions (Enter categories from instructions)

Cat: Education Sub: College

7. Description

Architectural Classification (Enter categories from instructions)

Modern Movement, International Style

Materials (Enter categories from instructions)

foundation Not Visible
roof Not Visible
walls Brick, Aluminum, Glass, Steel
other

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

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)

- X A Property is associated with events that have made a significant contribution to the broad patterns of our history.
X B Property is associated with the lives of persons significant in our past.
X 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.

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8. Statement of Significance, Continued

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)

- Architecture
- Education
- Landscape Architecture

Period of Significance 1957-1965

Significant Dates 1957-58, 1963. 1965

Significant Person (Complete if Criterion B is marked above)

McClure, Harlan E., FAIA

Cultural Affiliation _____

Architect/Builder McClure, Harlan E. (Architect)
Lockwood, Greene and Company (Builder)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(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
- University
- Other

Name of repository:

Clemson University, Special Collections, and University Facilities Department

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10. Geographical Data

Acreage of Property 4.13 acres

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

	Zone	Easting	Northing	Zone	Easting	Northing
1	17	<u>331631</u>	<u>3838381</u>	3	<u>17</u>	<u>331467</u> <u>3838231</u>
2	<u>17</u>	<u>331587</u>	<u>3838202</u>	4	<u>17</u>	<u>331520</u> <u>3838405</u>
___ 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.)

11. Form Prepared By

name/title: Robert W. Bainbridge, Senior Scholar
organization: Strom Thurmond Institute, Clemson University date 04-09-09
street & number: 36 E. Hillcrest Drive telephone: 864-232-9455
city or town: Greenville state: SC zip code: 29609

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

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.

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: Clemson University Board of Trustees
street & number 201 Sikes Hall telephone (864)-656-5191
city or town Clemson state SC zip code 29634

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Structural Science Building
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Narrative Description

Introduction

The original 1958 Structural Science Building at Clemson University is a three-dimensional composition consisting of two courtyards and three building elements. The larger courtyard is framed by the Civil Engineering Wing to the north, the Mechanical Engineering Laboratories to the east, and the Architecture Wing to the south. The large courtyard opens into the smaller courtyard through a breezeway. The smaller courtyard is almost square and is enclosed by the Architecture Wing on all four sides. (See CM-5: Building Diagram, and H1, Rendering)

The Civil Engineering Wing is a rectangular block with three stories above the courtyard level. The Mechanical Engineering Laboratory wing is only one story tall facing the courtyard, but steps down in back to become two to three stories tall. The Architecture Wing is two stories tall at the north façade and courtyard, but has lower level spaces at the back.

The building is part of the campus of Clemson University and does not have a defined property line or lot. When built, it was the southernmost building on the campus and was designed with principal entry facades to the north and west. The entry through the Civil Engineering Wing is directly on axis with the breezeway, courtyard, and entrances to the Architecture Wing. The east end of the Civil Engineering Wing connects to the north end of the Mechanical Engineering Laboratories, and a covered breezeway connects the south end of the Laboratories with the Architecture Wing.

The building is an excellent example of the Modern Movement in the International Style. The exterior treatments are devoid of ornament and directly express the structure and construction of the building. In order to manage sunlight, all facades differ depending on their orientation. North walls have extensive glass areas, while east and west facades have few if any openings. Many windows have fixed or moveable aluminum fins for sun control. All buildings have flat roofs.

The two courtyards were originally simple spaces with grass and a simple network of concrete sidewalks that echoed the modernist design of the buildings. The courtyard in the Architecture Wing was redesigned by noted Landscape Architect J. Edward Pinckney, FASLA, in 1965. (Photos H6 and R06) The center area was recessed about three feet with broad stairways at the north and south edges along the central axis of the building. The courtyard has brick walls matching the building and is surfaced with reddish-brown twelve-inch square pavers. Narrow paths run along both sides of the courtyard at the upper level. Trees and shrubs are chosen for shape and textures rather than colors, a hallmark of modernist landscape architecture. The courtyard is a

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Introduction, continued

strong contributing element. The larger courtyard (Lee/Lowry Courtyard) was redesigned and replanted in 1999. (Photos H5A, H5B, R06) Plant growth has been rapid and now obscures views of the building facades.

Exterior cladding is non-load bearing orange brick. While it is not structural, it is laid in running bond with full-rake mortar joints that show strong shadow lines. Vertical channels that align with the structural grid separate panels of brick. At entry lobbies the brick carries directly into the interior of the building. Glazing is clear and set in two-inch aluminum frames except for operable awning windows which have steel frames. Entry doors have aluminum frames with full height glazing. Most interior details are not striking, but ground floor hallways have a terrazzo surface that ends in an unusual coved molding under brick walls.

In 1975 a major addition was constructed to the south of the original Architecture Wing. It is physically connected to the older portion, but the connecting link is recessed to provide clear visual separation. (Photos R16, R17, R18, R19) The addition is larger than the original building and has a three-story tower on the south. The addition provided a new main entrance, library, and auditorium, and changed the way visitors experienced the structure. But it is not visually intrusive and obscured no details of the original building. A covered entryway at the southwest corner, now used as a vending area, is less compatible with the building but is clearly distinguished from the original and could be removed without significant damage to the structure.

A four-story tower was added south of the 1975 addition in 1991. In 2005 the auditorium was renovated and a new elevator was installed in one of the original stair towers in the Architecture Wing. A new elevator was constructed on the north side of the Civil Engineering Wing (Lowry Hall) in 2007. (See CM-5)

Exterior Description

All facades have a clear constructional logic and reflect interior structure and function. The building has interior columns that support concrete slab floors. (The system is very similar to that used by Le Corbusier at the Maison Domino (1915) and Villa Savoye (1928-29). Kostof, 1995, p. 706-707)

Columns are steel beams encased in concrete that support a steel framework for floors and flat roofs. Some columns include concealed downspouts. Floors at Lee Hall are concrete on steel joists while Lowry uses concrete slabs. The floor structure is expressed on the exterior by metal channels painted white. Roofs are flat and originally surfaced with tar and gravel.

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Exterior Description, Continued

The floor levels are expressed on the exterior by horizontal steel channels painted white. Small vertical channels that serve as reveals express the column lines; they are painted grey. Windows are large clear glass panes with aluminum frames, except for steel frames on operable awning windows. Solid walls are orange brick laid in running bond with full rake mortar joints. There is no exterior ornamentation.

The first façade seen by most visitors was the north wall of the Civil Engineering Wing (Lowry Hall). (Photo R11) It is a long rectangular structure rising three stories above ground. The upper two floors are cantilevered beyond the ground floor. The white steel channels at floor levels are topped with a band of orange brick, and then by windows. The windows alternate between an operable awning window above a larger fixed panel and a larger fixed panel above an operable awning window, giving excellent flexibility for natural ventilation. At the column lines, spaced every four windows, a tall vertical aluminum fin provides sun control for early morning summer sun. The main entry is off-center to the right but aligns with the courtyard in the Architecture Wing (Lee Hall) beyond. On the ground floor, west of the main entry is the auditorium, and there are no windows. Walls are brick on the north and south and plain white panels on the west. At the east corner there is a second entry with a set of concrete steps. Windows for the lower level are visible. The 2007 elevator tower is clearly visible, but was designed to be compatible with, but distinct from, the original building.

The west façade of the building has no windows or doors, simply the white channels, orange brick, and white panels at the ground floor.

The south façade of the Civil Engineering Wing (Lowry Hall) has fewer windows than the north façade and no sun control fins. The upper floors are again cantilevered beyond the ground floor. The east façade is not visible.

The Mechanical Engineering Laboratory Wing has its principal façade on the west, where it appears to be one story tall. The entry is north of the central axis of the courtyard. Glass extends from the ground to the roof at the entry; the rest of the façade has a narrow band of glazing above a solid orange brick wall. The glazing band makes the roof appear to float above the building. The north façade of the laboratory wing has windows similar to the adjoining Civil Engineering Wing, while the south façade has no windows. The east façade is rarely seen by students or visitors and has a number of large service doors. The two-story laboratory on the south end of the wing has dramatic glazing that contrasts with the adjoining pine forest.

The primary façade of the Architecture Wing is on the north, and is dominated by large studio windows with alternating high and low awning windows and fixed glass on the second floor, which is dramatically cantilevered over the ground floor to create a sheltered walkway. The second floor has a

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Exterior Description, Continued

brick band about three feet high over a white steel channel, while the ground floor has a brick wall only about sixteen inches high. The upper floor has vertical aluminum fins for sun control aligned with the structural grid. The center of the ground floor is a covered breezeway leading to the interior courtyard.

The east and west facades are virtually identical. (Photos H3A, H3B, H04, R01, CD04 and CD05) They have solid brick walls at the north and south ends from the fire stair to the corner. In between they have extensive glazing with closely spaced operable aluminum fins for sun control. (Photo R09) The cantilevered area on the north of both walls is glass.

The courtyard elevation on the north is floor-to-ceiling glass with a small projecting porch at the second level. There is a double door in the center and single doors to either side. The east and west walls have a band of brick and windows above similar to the perimeter elevations, with double entry doors aligned with the northern fire stairs. The wall on the west side of the courtyard has a low brick band and tall windows on the ground floor (faculty offices) while the wall on the east side has a taller brick wall, above which is a narrow band of windows. The south elevation (north side of the courtyard) has the breezeway at the lower level, above which is a band of brick and windows. All windows have fixed glass above and an awning window below them. (Photos H06, R03, R08)

The south façade was almost solid brick, with windows at the offices of the Department Head and his secretary, and second floor studio windows at the east and west ends. Two solid metal doors provided access to the exhibition/gallery space. Most of this wall is obscured by the 1975 Addition.

The 1975 addition (for which Dean Harlan McClure served as part of the Lockwood-Greene design team) is attached on the west to the old building by a low central hallway that is about four feet below the level of the old main floor. The linking façade is principally glass with a cantilevered display nook of orange brick with a sloped glass roof. The roof edges and walkway columns are covered in concrete panels with bright white crushed stone surface.

The glazing in the new wing simply abuts the brick of the existing wall, making it easy to distinguish and possibly even reversible. Next to the entry is a large auditorium sunk one level into the ground with an all brick exterior.

On the south is a four-story studio tower roughly the same dimensions as the old Civil Engineering Wing (Lowry Hall). It is similar to the old building, but does not have the fixed fins for sun control. The south face has full-height plate glass windows and broad cantilevered balconies that provide excellent protection from southern sun. The railing has a large dimension wood rail supported by delicate square aluminum stanchions.

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Exterior Description, Continued

The east wall of the addition has offices on the main floor with operable sun-control fins similar to those of the old building. Spaces below the main floor have been modified over time.

The 1991 tower is the same height as the 1975 tower and is only about 1000 square feet per floor. Brick is in stacked bond rather than running bond, and floors are marked by opaque glass spandrel panels. Windows are located at all four corners. The ground floor is open except for four support columns.

Interior Description

In keeping with the Modern Movement/International style, the interior and exterior flow together in many places, separated only by a glass curtain wall. At the four fire stairs in the Architecture Wing, the brick from the exterior was also used on the interior. Interior walls and ceilings are plaster painted white. Circular skylights provide daylight in several second floor studios. Entry areas and other heavy traffic areas have durable terrazzo floors with unusual curved coves that appear to disappear behind brick walls at the entry and stairs. The stairs themselves are made of "floating" concrete steps supported by steel channels. (Fire code personnel were reluctant to approve the open stairs.) The stairs have curved and detailed wood railings on slender aluminum supports. Each stair tower had a circular skylight centered over the stair and a built-in planter at the second floor level.

Hallways have black and white tile floors. Office and restroom doors are plain wood panels with a clear finish and bring warmth to the interior of the building. Lighting in the gallery and small auditorium has been revised over time, but some egg-crate fluorescent fixtures in the studios are probably original.

Windows are the same inside as out, but from the inside it is easier to see that they are set on bluestone sills. Controls for the operable fins are on the inside of the windows.

Setting

The building is still at the southern end of the Clemson Campus and is the last in a row of buildings leading up to Tillman Hall at the top of the hill. The ground slopes steadily down to the south, and the additions to the Architecture Wing (Lee Hall) stepped down as well. The site is on a ridge and slopes off steeply to the east obstructing access to the building from that side. A small parking area and service drive reaches the shop area that is part of the 1975 addition. A small parking area and service drive reaches the

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Setting, Continued

back side of the Mechanical Engineering Laboratory Wing from the north. Most of the east façade of the building is screened with a dense planting of pine trees.

Many plantings in the central courtyard of the Architecture Wing are original to the 1965 design, though the upright holly trees have grown dramatically. Two Japanese maples were added later as memorials. The latest addition is a bronze bust of Harlan McClure placed on a concrete pedestal in the breezeway area.

For many years, the Lee/Lowry Courtyard was a grass lawn with concrete walks. About 2001 it was redesigned by Barrett Anderson and replanted with fast-growing trees and shrubs that have come to dominate the space and block views of the building.

To the south of the building, there is a semi-circular shallow amphitheater, a grass lawn, and parking lots, screened with evergreen shrubs.

Cul-de-sac streets bound the north side of the Civil Engineering Wing and the west side of the building. The sidewalks on the west and north sides of the Architecture Wing are in brick pavers the same color as the brick walls. All other sidewalks are plain concrete.

Summary / Integrity

As the architecture program grew, a larger facility became necessary. Between 1972 and 1974, a major addition was constructed along the south wall of the original complex. While the addition changed the sense of Lee Hall, the south wall was never intended to be seen in the original design, which was oriented entirely toward the north and west. The only entry on the south wall was a solid double service door to the exhibit space. (No photograph of the south wall has been found.) A new auditorium and entry on the west side of the building changed how people entered the space, but the only modifications to the west façade were construction of a small covered vending machine area and a brick wall along the sidewalk.

A second addition in 1991 added a small four-story tower to the south side of the 1974 addition. This addition had no impact on the original complex.

In 2006-07 a new elevator tower was built at Lowry Hall. It is visible on the north façade, but its materials and design are complementary to the existing structure without giving the impression that they were always there.

In general, the exterior walls of the original complex have extremely high integrity except for the south wall of Lee Hall and the Lowry elevator.

More numerous changes were made to interior room arrangements and finishes. For example, the northwest studio on the ground floor was divided into two seminar rooms and currently has one side divided into office cubicles.

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Summary/Integrity, Continued

The four corners of the open-plan studios on the second floor were enclosed with permanent partitions. The large lecture room and the exhibition space/gallery have also been modified and upgraded over time.

Perhaps the most significant change was the replacement of the southeast stair tower with an elevator in 2004c.

Bathrooms have also been modified to provide wheelchair access and to increase toilet facilities for women.

The reading room/library on the west side of the second floor was replaced by the new Gunnin Library in the 1974 addition and returned to studio use.

The exterior of the Structural Science Building has a high degree of integrity. The main changes are the 1975 addition to the Architecture Wing (Lee Hall) and the 2007 elevator addition to north side of the Civil Engineering Wing (Lowry Hall).

The 1975 addition does not seriously compromise the original building because it is lower, set back from the façade line, and was attached to a side of the building that had little design character and was never meant to be seen. The design uses similar materials but has enough design differences that it is clearly distinct from the original.

The 2007 elevator was carefully designed to respect the original design and uses similar materials and continues major floor lines of the original. Again, it is compatible without being imitative, and is visually separated from the original structure by a reveal.

The interior spaces have had more alterations over the years, but a remarkable number of design features, particularly three of the four fire stairs, have considerable integrity.

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Statement of Significance

The Structural Science Building at Clemson University is eligible for listing in the National Register of Historic Places under Criterion A for its association with the growth and development of the Department of Architecture, later the College of Architecture, at Clemson College (after 1964 Clemson University) during the period 1958-1965; under Criterion B for its association with Harlan Ewart McClure (1916-2001), long Dean of the College of Architecture, a nationally-recognized leader in architecture education, a noted architect, and the design architect of the Structural Science Building; under Criterion C as an outstanding early example of Modern or International style architecture in South Carolina and also for its courtyard designed by noted landscape architect J. Edward Pinckney; and under Criteria Consideration G for its exceptional significance in the growth and development of the College of Architecture during its formative years and also through the critical role McClure and the college played in the desegregation or integration of Clemson College in 1963 by architecture student Harvey Gantt, the first African-American student to be admitted to a previously all-white college or university in South Carolina.

Additional Information

Criterion A: Events, and Criteria Consideration G: Less Than Fifty Years Old

The growth and development of the architecture program at Clemson from 1955 through 1965, from a university department, to a School of Architecture, to the College of Architecture—still the only architecture program in South Carolina—is an exceptionally significant event in the history of Clemson University and of higher education in the state. Harlan McClure, who came to Clemson in 1955 as head of the Department of Architecture in the School of Engineering, worked tirelessly to transform his department into a separate school and to plan, design, and construct a new home for the School of Architecture. The Structural Science Building (then called Lee Hall) was essentially complete when the School of Architecture was established on July 1, 1958, with McClure as its first Dean. (Ellers 1987, pp. 96-98)

The successful desegregation or integration of Clemson College in 1963—Clemson was the first white college or university in South Carolina to admit an African-American student—is also an exceptionally significant event in the history of the state. Harvey B. Gantt, a native of Charleston, applied for admission to Clemson in 1961 to study architecture but was denied. He reapplied in 1962, and when university and state authorities unwilling to admit him delayed making a decision, Gantt sued in federal court in 1962, beginning

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his studies at Iowa State University while waiting. Clemson President Robert C. Edwards, meanwhile, worked behind the scenes to plan for Gantt's eventual enrollment at Clemson, enlisting the support of politicians such as former Governor Ernest F. Hollings and state senator Edgar Brown—then also chairman of the Clemson board of trustees—and prominent businessmen such as Charles Daniel and John K. Cauthen. It was feared by many that Gantt's enrollment at Clemson might lead to the same sort of violence that had occurred at the University of Mississippi when James Meredith enrolled there in the summer of 1962. Edwards's plan has been called a "conspiracy for peace." The United States District Court in Charleston ruled in January that Clemson should admit Gantt, and it did so on January 28, 1963, without incident. The success of what has been called "integration with dignity" set a statewide precedent for peaceful integration or desegregation of South Carolina colleges and universities. Gantt graduated with honors in 1965. (McMillan 1963, 17-21; Ellers 1987, pp. 45-58)

The Structural Science Building has a close association with this significant event because Harlan McClure, as dean of the School of Architecture, was instrumental in the plans behind admitting Harvey Gantt to Clemson as an architecture student, and because so much of Gantt's education at Clemson from 1963 to 1965 took place in this building.

Criterion B: Significant Person: Harlan E. McClure

Harlan Ewart McClure was born on October 19, 1916, in Chattanooga, Tennessee. (*Greenville News*, 11-03-2001) He was the son of Alexander Ewart McClure and Jeanette Huffman. He grew up principally in Washington, D.C., where his father was a Civil Engineer.

He attended George Washington University where he received a Bachelor of Architecture degree in 1937. Following graduation, he spent a year of graduate study at the Royal Swedish Academy in Stockholm. In 1941 he earned a Master of Architecture degree from the Massachusetts Institute of Technology.

During World War II he served in the U. S. Navy, rising from Ensign to Lieutenant Commander. He was construction manager for several Air Operational Training Centers while in the Navy.

McClure accepted his first teaching position at the University of Minnesota in 1945, where he was named full Professor in 1952. The same year he received a Fulbright Fellowship for teaching and served as a Visiting Professor at the Architectural Association School in London.

In Minnesota, he began a distinguished architectural career, designing several notable residences, including the Kyle C. and Claire Morris House (1948). (*With Respect to Architecture*, Minnesota Chapter of the Society of Architectural Historians, May, 2007)

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At Minnesota he also developed his ideas on how to teach architecture, leading to the publication of *Study of an Evolving Architectural Design: A Text for Beginning Students in Architecture* in 1947. Two years later the book was re-issued as *The Study of Architectural Design: A Text for Beginning Students in Architecture*.

In 1955, after a nationwide search pushed by Architect William C. (Bill) Lyles, he became the Head of the Department of Architecture at Clemson College. At that time, Architecture was still a part of Engineering, but within three years McClure was successful in implementing a new School of Architecture. He was named Dean in 1958.

At the same time he was designing and working to secure funding for a new Structural Science Building at Clemson because he considered Riggs Hall too small and too outdated for the type of architectural program he wanted to implement. As a full-time academic administrator and teacher, McClure never built up a true professional office, so Lockwood Greene and Company was hired to prepare final drawings and specifications for the new structure.

Drawings for the architectural unit are principally dated in 1957 with the Civil Engineering drawings following in 1958, the year the building was completed. The office labeled "Head" in the drawings became McClure's Dean's Office.

He consistently served the profession of architecture in South Carolina and the United States. He was a member of the South Carolina Board of Architectural Examiners from 1955 until 1986, serving as both Vice-Chairman and Chairman. He served as Secretary and President of the Association of Collegiate Schools of Architecture and as President of the National Architectural Accrediting Board. He served on thirty-seven university accrediting teams and chaired seven. In 1977 the National Council of Architectural Registration Boards published McClure's *NCARB Information Manual*. He also served as Editor of the *Journal of Architectural Education*.

In 1970, as part of South Carolina's Tricentennial celebration, he collaborated with Vernon Hodges and photographers including Sam Wang to produce *South Carolina Architecture, 1670-1970*.

While McClure did not maintain a large professional practice, he served widely as a design consultant, particularly for Lyles, Bissett, Carlisle & Wolff (LBC&W), a major national firm based in Columbia. (Chandler 2006) He assisted in the design of five award-winning projects including Forest Lake Country Club, the Columbia Post Office, a state office building, a Habitation Center for Retarded Children and a dormitory at Columbia College. Through his consulting he brought the "gospel" of Modernism to professional offices in the state.

In 1973 he traveled to Italy with the objective of establishing an architectural center for Clemson. After visiting Venice and Tuscany, he worked with his old friend Cesare Fera to locate an appropriate building in Genoa. The Clemson Advancement Foundation (CAF) purchased it with help from the state

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chapter of the American Institute of Architects. (McClure was one of the founders of the CAF in 1956.) After Mrs. Charles Daniel of Greenville made a generous contribution to pay off the mortgage, the villa was named the Charles E. Daniel Center for Building Research and Urban Studies. Almost a thousand students and alumni have benefited from experience abroad as a result. He also established a design center in Charleston to broaden student experiences.

Harlan McClure's hard work and talents led to extensive public recognition. In 1983, he was awarded The Order of the Palmetto, South Carolina's highest honor. In 1984, the South Carolina Arts Commission presented him the Elizabeth O'Neill Verner Award. In 1986 he received the Distinguished Professor Award from the Association of Collegiate Schools of Architecture (ACSA). In 1994, he earned the Topaz Medallion for Excellence in Architectural Education, awarded jointly by ACSA and the American Institute of Architects. The South Carolina Chapter of the American Institute of Architects presented him the "25 Year Award," the state's highest honor for an individual architect.

Harlan McClure retired in 1984 and was named Dean Emeritus in 1987, when he was awarded an honorary Doctor of Humanities degree by Clemson University. He continued his love of art through sketches, drawings, and watercolors. He died on November 1, 2001, after an extended illness.

While McClure made broad contributions to the state and nation, his greatest achievement is the remarkable growth of the architecture program at Clemson College and later Clemson University, which changed under his leadership from a minor department to a nationally recognized leader in architectural education. Under McClure, the program was transformed from the Department of Architecture in the School of Engineering to an accredited School of Architecture in 1958 and later to a College of Architecture. In addition to architecture, the College included programs in Art, Building Construction and Management, and City and Regional Planning. Visiting lecturers and critics supplemented an increasingly strong faculty and McClure secured state funding and private funding to offer more competitive salaries.

Criterion C: Architecture and Landscape Architecture

The building was designed in 1956 and completed in 1958. It includes an architecture unit in the shape of a hollow square, and a Civil Engineering unit including a three-story classroom tower and an 'L' shaped extension housing engineering laboratories. McClure organized it as a unified composition involving the three building elements and two courtyards enclosed by the structures. (See Figures H-1 and CD-1)

The building is poised on the top of a ridge and makes skillful use of the topography, with lower level spaces stepping down on the east side where the land slopes off sharply toward a nearby creek. As the southernmost campus building at the time, McClure designed the building to be seen and entered from

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the north. A pedestrian axis extends from S. Palmetto Boulevard through the Civil Engineering unit (now Lowry Hall) across the large courtyard, and through a passageway or breezeway into the central courtyard in the architecture unit (now Lee Hall).

The design represented a dramatic change from earlier architecture at Clemson. In line with the Modern or Modernist tradition, it has no ornament of any kind, expresses its construction system directly, uses simple geometric forms in an asymmetrical composition, and uses floor-to-ceiling glass to dissolve the boundaries between indoor and outdoor spaces.

McClure consciously intended to set a pattern of materials for construction of all future buildings at the University, and that palette was adopted, in part, in many later buildings. (McClure and Hodges 1970, p. 108) Students referred to the "constructional logic" of the choice of materials and how they were used in the final building. Because it is audacious, the building became a marketing piece to demonstrate the advanced state of architectural education at Clemson, and strongly influenced more than a generation of students and practitioners.

Sustainability and Building Systems

The Structural Science Building includes numerous far-sighted design ideas for energy conservation. Most visible are vertical aluminum fins that block direct penetration of sunlight into the building. Fins on the north wall are fixed in place while fins on the east and west are operable. They can be closed in the morning on the east and the west in the afternoon, but can be opened for clear views the rest of the day. There were no fins on the south wall, which had few windows.

Interior lighting for second floor studio spaces came in part from exterior windows but also from round skylights or roof windows. Frosted glass brings filtered daylight deep into the open plan classrooms. Similar skylights in the windowless stairwell towers illuminate the stairs. Originally, the skylights supported planter boxes that were built in at the top of the stairways in Lee Hall.

Heating and air-conditioning used forced air systems in the auditorium, offices, exhibit space, and one ground floor studio, supplemented by wall-mounted units in some lecture rooms and semi-recessed baseboard diffusers in others. Heating came from campus steam lines and air conditioning from chilled water and a Freon-based chiller.

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Building Design and Pedagogy

The design of the architectural unit was firmly rooted in Harlan McClure's approach to architectural education. He believed that artists and architects should collaborate on most if not all projects, and included artists' studios on the main floor. To encourage free interchange among architecture students, design studios on the upper floor were open plan spaces with few interior partitions. The Exhibition Space/Gallery was both a place for presentations of student art and design projects but also a place for interaction with the general public.

Landscape Architecture

J. Edward Pinckney's design for the Lee Hall Courtyard, completed in 1965, is an outstanding example of modernist landscape design and is a contributing element to the Structural Science Building complex. It features a clear geometry that respects the principal pedestrian access of the complex. The central space is lowered about three feet below the main floor level of the building. Each side has three simple rectangular backless benches. Above brick walls that match the building walls are narrow brick tile pavers as paths that lead to the building entries.

Plant materials avoid color and emphasize distinctive shapes and textures. They are dominated by three large hollies on the east and west sides of the courtyard as well as smaller shrubs and lirioppe used as a ground cover. Two Japanese maples by the gallery were memorial trees planted long after the original project.

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Major Bibliographical References

Books

Ellers, Joseph C. *Getting To Know Clemson University Is Quite An Education.* Clemson, S.C.: Blueridge Publications, 1987.

Kostof, Spiro. *A History of Architecture: Settings and Rituals.* New York: Oxford University Press, 1995.

McClure, Harlan, and Vernon Hodges. *South Carolina Architecture: 1670-1970.* Columbia: South Carolina Tricentennial Commission, 1970.

Drawings

Lockwood-Greene Architects and Engineers, Construction Documents for the Structural Science Building Clemson University, 1957.

Lockwood-Greene Architects and Engineers, Construction Documents for the Lee Hall Addition, 1972.

Neal-Prince & Partners, Construction Documents for the Lee Hall Tower, 1991.

Articles

Brown, Millicent Ellison. "Harvey Gantt." In Walter B. Edgar, ed., *The South Carolina Encyclopedia.* Columbia: University of South Carolina Press, 2006.

Chandler, Andrew W. "Lyles, Bissett, Carlisle & Wolff." In Walter B. Edgar, ed., *The South Carolina Encyclopedia.* Columbia: University of South Carolina Press, 2006.

McMillan, George. "Integration With Dignity: The Inside Story of How South Carolina Kept The Peace." *Saturday Evening Post*, 16 March 1963.

The News and Courier (Charleston, S.C.) 1 July 1957.

"Georgia Firm Gets Clemson Contract", *The State* (Columbia, S.C.), 14 November 1972.

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Internet Resources

The Greenville News, 11-02-2001, Brief Obituary for Harlan E. McClure
(www.greenvilleonline.com)

The Greenville News, 11-03-2001, Obituary for Harlan E. McClure
(www.greenvilleonline.com)

Clemson Campus Album (www.lib.clemson.edu/campus/central/Lowry)

Clemson Campus Album (www.lib.clemson.edu/campus/central/Lee)

AIArchitect, December 2001, Obituary for Harlan McClure
www.aia.org/aiarchitect/thisjustin/tjistories/1108tjimcclure.htm)

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Verbal Boundary Description:

From the curb edge at the corner of Fernow Street Extension by the front entry of Lee Hall, slightly east of north 141 feet to the curb line north of Lowry Hall, then east along the curb line 314 feet to the traffic circle on S. Palmetto Boulevard, then slightly west of south 147 feet then south-southwest 529 feet, then slightly north of west 153 feet along the balcony line on the south side of Lee Hall, then slightly west of south 39.5 feet and slightly north of west 37.5 feet around the tower, then slightly east of north 115 feet, then slightly north of west 75 feet around the auditorium, the slightly east of north 75 feet to the curb line, then slightly south of east 38 feet to the point of beginning. See CM05: Property Boundary Map

Boundary Justification:

The Structural Science Building is part of the Clemson University core campus and does not have its own parcel designation. The boundary above is one created specifically for the National Register designation and is drawn quite tight to the building line, especially on the south side of the building. The boundary does include the sidewalks along the west side of the building, and the plaza and sidewalks north of Lowry Hall. Service drives along the east side of the building are also included as Civil Service Drive, providing access to the Civil Engineering Laboratories, was part of the original building concept.

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Context Maps and Building Diagram

CM02 Structural Science Building, Pickens County, SC, Tax Map Source: Pickens
County Geographic Information Systems Department

CM05 Structural Science Building, Pickens County, SC. Property boundary map
for the National Register of Historic Places. Source: Clemson University,
Campus Planning Services, University Facilities, August 2008.

CM06 Structural Science Building, Pickens County, SC, Diagram of the Structural
Science Building, (Lee and Lowry Halls) showing construction dates and
significant additions and alterations, Diagram by Robert W. Bainbridge based on
research by Alisha N. White.

Historic Renderings and Photographs

H1 Structural Science Building, Pickens County, SC, Rendering of the Proposed
Structural Science Building. Source: *The News and Courier*, Charleston, SC,
July 1, 1957.

H2 Structural Science Building, Pickens County, SC, Photo of Harlan McClure
standing in front of the breezeway during construction of the Architecture
wing, 1958. Photographer unknown. Source: Special Collections, Clemson
University.

H3A Structural Science Building, Pickens County, SC, View of the northwest
corner of the Architecture wing, ca. 1960. Photographer unknown. Source:
Special Collections, Clemson University.

H3B Structural Science Building, Pickens County, SC, Photo of the northwest
corner of the Architecture wing, ca. 1976. Photographer unknown. Source:
Special Collections, Clemson University.

H4 Structural Science Building, Pickens County, SC, Photo of Harlan McClure and
the project team during the installation of movable light fins on the east
façade of the Architecture wing. Photographer unknown. Source: Special
Collections, Clemson University.

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Historic Renderings and Photographs, Continued

H5A Structural Science Building, Pickens County, SC. View of the Architecture wing (Lee Hall) from the northwest, 1966. Photographer unknown. Source: Special Collections, Clemson University.

H5B Structural Science Building, Pickens County, SC. Night view of the Architecture wing in 1960. Photographer unknown. Source: Special Collections, Clemson University.

H6 Structural Science Building, Pickens County, SC. Photo of the exhibit space / gallery during construction, 1958. Photographer unknown. Source: Special Collections, Clemson University.

H7 Structural Science Building, Pickens County, SC. Photo of Lee Hall Courtyard under construction, 1965.

H8 Structural Science Building, Pickens County, SC. Rendering of the east façade of the Proposed Addition to Lee Hall, 1973. Source: Special Collections, Clemson University.

Recent Photographs

R01 Structural Science Building, Pickens County, SC. Northwest Corner of Lee Hall, 2007. Digital photo by Alisha White.

R02 Structural Science Building, Pickens County, SC. Lee Hall Entry Passage or Breezeway, 2007. Digital photo by Robert W. Bainbridge.

R03 Structural Science Building, Pickens County, SC. Lee Hall Courtyard as Viewed from the Breezeway; Bust of Harlan McClure in Foreground, 2007. Digital photo by Alisha White.

R04 Structural Science Building, Pickens County, SC. Lee Hall, West Wall with Exterior Details and Aluminum Lettering, 2007. Digital photo by Robert W. Bainbridge.

R05 Structural Science Building, Pickens County, SC. Lee Hall, as Viewed from Lowry Hall, looking South along Central Axis, 2007. Digital photo by Alisha White.

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Recent Photographs, Continued

R06 Structural Science Building, Pickens County, SC. View of Lee Hall / Lowry Hall Courtyard, looking East to Laboratory Wing, 2007. Digital photo by Alisha White.

R07 Structural Science Building, Pickens County, SC. Northeast Corner of Lee Hall, Showing Connection to Lowry Hall, 2007. Digital photo by Alisha White.

R08 Structural Science Building, Pickens County, SC. Upper Level of Lee Hall Courtyard, with Facade Details, 2007. Digital photo by Alisha White.

R09 Structural Science Building, Pickens County, SC. Lee Hall, West Wall, Showing Detail of Operable Aluminum Light Fins, 2007. Digital photo by Alisha White.

R10 Structural Science Building, Pickens County, SC. Lee Hall, Skylight and Planter in Stairway at Northwest Corner, 2007. Digital photo by Alisha White.

R11 Structural Science Building, Pickens County, SC. Lowry Hall, North Elevation, 2007. Digital photos and splicing by Robert W. Bainbridge.

R12 Structural Science Building, Pickens County, SC. Lowry Hall, Northwest View, Showing Operable Aluminum Light Fins and 2007 Elevator Addition, 2007. Digital photo by Robert W. Bainbridge.

R13 Structural Science Building, Pickens County, SC. Lowry Hall, East Elevation, Civil Engineering Laboratory Wing, 2007. Digital photo by Robert W. Bainbridge.

R14 Structural Science Building, Pickens County, SC. Lowry Hall, East Elevation, Civil Engineering Laboratory Wing, Two-Story Laboratory at Southern End, 2007. Digital photo by Robert W. Bainbridge.

R15 Structural Science Building, Pickens County, SC. South Wall of 1991 Tower Addition, 2007. Digital photo by Alisha White.

R16 Structural Science Building, Pickens County, SC. Lee Hall, Southwest Corner, showing 1976 Addition at Right and Vending Area at Left. Digital photo by Robert W. Bainbridge, May 2008.

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Construction Documents, Continued

CD07 Structural Science Building, Pickens County, SC. Ground Floor Plans, Civil Engineering Unit, Lockwood Greene Engineers, Inc., 1957, Drawing A-2. Original drawings at University Facilities, Clemson University.

CD08 Structural Science Building, Pickens County, SC. Second and Third Floor Plans of Civil Engineering Unit, Lockwood Greene Engineers, Inc., 1957, Drawings A-4 and A-5. Original drawings at University Facilities, Clemson University.

CD09 Structural Science Building, Pickens County, SC. Principal Elevations, Civil Engineering Unit, Lockwood Greene Engineers, Inc., 1957, Drawing A-10. Original drawings at University Facilities, Clemson University.

CD10 Structural Science Building, Pickens County, SC. Elevations, Civil Engineering Unit, Lockwood Greene Engineers, Inc., 1956, Drawing A-11. Original drawings at University Facilities, Clemson University.