

Historic Structure Report for Lincoln Hall

University of Nevada, Reno Historic District
Reno, Nevada



Prepared for:
The University of Nevada, Reno

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Cover Image: Lincoln Hall. Image Source: University of Nevada, Reno Special Collections & University Archives, UNRA-P1831-1 ca.1896.

I. INTRODUCTION

Lincoln Hall is a historic property located on the University of Nevada, Reno campus located at 1664 North Virginia Street, Reno, Nevada 89503. The University has assigned Lincoln Hall as building 60. The property is owned by the University of Nevada, Reno and has been since the building was constructed in 1896. Lincoln Hall was listed as a significant cultural resource by the National Register of Historic Places on February 25, 1987 as part of the University of Nevada Reno Historic District.

A request for proposal was issued by the University of Nevada, Reno on December 18, 2014 for a programming study and the writing of a Historic Structure Report (HSR) of Lincoln Hall. TSK of Reno and IS Architecture of San Diego jointly responded to the RFP to undertake the programming study and HSR, respectively and on February 26, 2015 was awarded the contract. IS Architecture's portion of the contract was to deliver a Historic Structure Report that fully documents the interior and exterior of the building.

The following professionals prepared this report. From IS Architecture: Ione R. Stiegler, Architect, FAIA, Heather Crane, Assoc. AIA and Marissa Feliciano, Photographer is the historic preservation architecture firm for the project; Melvyn Green, Structural Engineer with Melvyn Green & Associates is the historic preservation structural engineer; From TSK: Pat Pusich, AIA, Official Principal, Chris Lujan, Assoc. AIA, Designer and Mark Benzing, LEED AP, Project Manager will be acting as the lead architecture firm for the project; Terrance Tobey, Structural Engineer with Tobey Wade Consulting will be acting as the lead structural engineer; TJ Dobson, Project Manager with CR Engineering will be providing mechanical and plumbing services; James P. Solaro, PE, Principal and Craig Soule, Project Manager with JP Engineering will be providing electrical and fire protection services; Frank A. Bidart, P.E. with Odyssey Engineering, Inc. will be providing Civil Engineering services; Dale Doerr, A.S.L.A., will be acting as the Landscape Architect; Frank Fernandez, Managing Director with Cumming will be providing Cost Estimating services; AMR Labs provided mortar analysis; and Kirsten Moffitt, Conservator and Paint Analyst provided paint analysis.

The research, testing, field examination, and compilation of this report were completed over a period of 8 weeks from March 2015 to May 2015. The Historic Structure Report provides a base recordation of the Lincoln Hall and includes recommendations for further research and work on the structure. The report gives an overview and assessment of the general conditions of the building; the role of this site in the larger history of the area; a description of the building; the chronological history of additions and changes that have occurred over time; the present condition of the building inside and out; structural concerns and proposed rehabilitation/preservation recommendations of the structure.

A site visit was conducted over a two-day period, from March 4 to March 5, 2015 and was attended by: Ione R. Stiegler, Heather Crane, Marissa Feliciano, Melvyn Green, Pat Pusich and Chris Lujan. During the site visit, existing conditions were observed, as-built dimensions were taken, mortar samples were extracted, and photo documentation was carried out. Each façade was thoroughly photo-documented which included overviews of each elevation and close-ups of character-defining features. On March 5, 2015, a meeting

was held at the office of TSK. Attendees included Ione R. Stiegler, Heather Crane, Pat Pusich, Chris Lujan, Melvyn Green, TJ Dobson, Craig Soule and James Solaro. Another meeting was held later that day at the office of John Walsh, Director Capital Improvement Projects/ Facilities Department, University of Nevada, Reno. John Walsh, Ione R. Stiegler, Heather Crane, Pat Pusich and Melvyn Green attended this meeting.

An additional site visit was conducted on March 19, 2015 as a follow-up to the initial March 4-5 site visit. Attendees included Pat Pusich, Chris Lujan, Terrence Tobey, Ken Hodson, Jr. and University maintenance staff. The objective of the site visit was to perform exploratory demolition to select areas of the building to better understand existing structural conditions. Walls and ceilings were opened up, conditions were documented and then the openings were closed the same day. The observations were shared with Melvyn Green and are reflected in the structural portions of this report.

A. Purpose of the Report

A Historic Structure Report (HSR) provides a valuable foundation for the rehabilitation, restoration, stabilization or reconstruction of a historic building. The document is particularly important if the proposed work involves fabricating significant missing architectural or landscape features, recapturing the appearance of a property during a particular period in its history, removing later additions, or substantially modifying existing historic fabric. The HSR provides a project architect and others involved in the stewardship of a historic property with the information necessary to make appropriate decisions based on recommendations in the Secretary of the Interior's Standards for the Treatment of Historic Properties.

"Just as an art conservator would not intervene in the life of an artistic artifact before obtaining a thorough knowledge of its history, significance, and composition, so those engaged in the preservation of buildings...should proceed only from a basis of knowledge. Too often in the past, the cultural integrity of countless buildings...has been compromised by approaches to restorations grounded on personal whim, willful romanticism, and expedient notions of repair...The preparation of a historic structure report is the first step in adopting a disciplined approach to the care of a historic building."¹

A Historic Structure Report is valuable as:

- A primary planning document for decision-making about preservation, rehabilitation, restoration, or reconstruction treatments
- Documentation to help establish significant dates or periods of construction
- A guide for budget and schedule planning for work on the historic structure
- A basis for design of recommended work
- A compilation of key information on the history, significance, and existing condition of the historic structure
- A summary of information known and conditions observed at the time of the survey

¹ The University of Virginia, Pavilion 1, Historic Structure Report, Mesick Cohen Waite Hall Architects, 1988.

- A readily accessible reference document for owners, managers, staff, committees, and professionals working on or using the historic structure
- A tool for use in interpretation of the structure based on historical and physical evidence
- A bibliography of archival documentation relevant to the structure
- A resource for further research and investigation
- A record of completed work²

The purpose of this report is to provide a clear description of the architectural history of Lincoln Hall, including its original appearance, what changes were made and when, and its present condition. It also provides guidance for any proposed new work, ensuring that the most appropriate treatment plans can be established and met.

B. Methodology

This report is divided into 11 parts, (1) Introduction including Purpose of the Report and Methodology, (2) Historical Overview, (3) Construction History defining modifications to the building, (4) Building Evaluation, (5) Existing Condition Assessment, (6) Maintenance Requirements, (7) Proposed Work including treatment and work recommendations and (8) Bibliography and References and (9) Appendices, which include photographs, drawings and reports by others.

The building comprises four levels. The basement sits partially below grade. Above the basement, are sited the first, second and third floors, respectively. For the purpose of this report, rooms were assigned numbers that reflect the most recent set of drawings for Lincoln Hall.³ The numbering system assigns Basement room's numbers between 01 and 13B. First floor rooms are numbered 100 through 117. Second floor rooms are assigned 200 through 221 and third floor rooms 300 through 318. Some rooms which have been subdivided or are tertiary have been designated with an "A" or "B" after the room number. Letters before a room number represent the following spaces:

- S – Stairs
- E – Elevator
- C – Corridor
- R – Restroom

The report is organized to take the reader from a general overview of the structure's historic development and general description of features to a micro analysis of individual exterior and interior character-defining features that comprise the building. The report continues with a discussion of significance and architectural condition assessment and concludes with treatment and work recommendations.

² Slaton, Deborah, "Preservation Brief 43, The Preparation and Use of Historic Structure Reports" Washington, D.C.: National Park Service, 1988.

³ Lincoln Hall, Building Number 60, May 17, 1997 revised January 2015.

C. Period of Significance

The Period of Significance for Lincoln Hall was established at the year built date of 1896. The Dormitory retains architectural significance as an excellent example of turn of the century dormitory architecture and has as an overall high level of integrity. This conclusion was drawn by evaluating the seven aspects of integrity as set forth by the National Park Service for the evaluation of historic properties. Those aspects include location, design, setting, materials, workmanship, feeling, and association.⁴

⁴ National Park Service 1997: 44-45

II. LINCOLN HALL HISTORICAL OVERVIEW

The broad historic context within which the resource was evaluated for significance was previously identified by Mary Beth Hamby and Nancy E. Sikes in their National Register of Historic Places Inventory Nomination Form for the University of Nevada Reno Historic District written in 1987. *Italicized* words are those of Ms. Hamby and Ms. Sikes.

Establishment of the "State University" was specifically provided for in Nevada's State Constitution, adopted in 1864. Wording of the eight separate sections on education assured entitlement to funds from the federal land-grant endowment under the terms of the 1862 Morrill Act, and the independence of the new university from the state legislature. Nevada subsequently established a land-grant college in Elko in 1874.

Late 19th Century:

In 1885 the State government decided to move its college from Elko to Washoe County. Reno was then a small railroad town with a population under 3,000. The campus' first land was a ten acre parcel, located one mile north of the railroad depot. The site was an elevated prominence surrounded by pastures and alfalfa fields. The first building constructed was an all- purpose one, Morrill Hall, built in 1886 in the Second Empire style.

Morrill Hall served for many years as the "Main Building", housing administrative offices, classrooms, and dormitories. The abandoned alfalfa field behind the building was used as a parade ground for the battalion of Nevada State University Cadets required of land grant institutions. A combined woodshed and stable in the immediate rear of the building completed the facilities available to the 75 full-time students enrolled for the first full academic year 1886- 1887. Another ten-acre parcel was purchased, directly north of the first one, and four additional buildings were constructed, all with their main entrances facing south toward Reno. Morrill Hall is the only surviving structure of the original five, and is listed individually on the National Register (1 May 1974).

Fifteen additional acres were purchased in 1895, extending the campus boundaries west to the State Road (Virginia Street). Two modern dormitories were erected on the new land in 1896. Their architectural style was borrowed from dormitories on eastern campuses, with hip and gable roofs and gabled dormers. Manzanita, originally the girls' Cottage, was half its present size and L-shaped when first erected on the west edge of campus. The present size and modified H-shape came, in 1910, from adding to its north end a mirror image of the south. Lincoln Hall men's dormitory was H-shaped in original design.

In 1905 a Dining Hall was added between Manzanita and Lincoln Halls, and in 1907 the three buildings were connected by boardwalks. The living complex occupied an isolated spot on what was then the extreme northwest corner of the campus near the State Road. The placement of these two dormitories reflected the then-current educational ideal of the

"cottage system" of housing, a scattering of home-like buildings in a less-formal naturalistic setting. Of this group only the dormitories remain today.

20th c. - Clarence Mackay's Influence:

The development of the UNR campus in the 20th century was greatly influenced by Clarence H. Mackay, son of Comstock 'King' John Mackay. The younger Mackay not only donated buildings and land in his own and in his father's name, but he also held stylistic control over campus development, from 1906 until his death in 1938.

Mackay, and therefore the development of the University of Nevada, was influenced by a new period of American campus architecture, called Jeffersonian Revival. Stanford White, of the New York firm of McKim, Mead & White, was Mackay's architect. In 1898 White had rediscovered Jefferson's 1817 plan for the University of Virginia campus. White designed a set of structures for the UVA campus, to close the south end of Jefferson's Lawn. The campus was originally a set of classically-inspired structures facing on a quadrangle, with a domed rotunda at the head of the quad. White enlarged the plan in the Beaux-Arts style, adding buildings in a symmetrical pattern on a new axis perpendicular to the original quad. The resulting plan was the basis for future development of the Reno campus, under the collaboration of White's New York firm and Bliss and Faville of San Francisco.

Mackay's first undertaking on the UNR campus, in 1906, was to construct a new School of Mines building, directly north of Morrill Hall and facing toward Reno. It was designed by W. S. Richardson, a member of the firm of McKim, Mead and White. The design was classical, a symmetrical two-story brick structure, with a two-story Tuscan portico of limestone at the main entrance. This building is on the National Register of Historic Places (1 April 1982).

Formal landscaping of the campus began with the construction of the new Mines building. University President J.E. Stubbs recommended that the new quadrangle area created between the rear of Morrill Hall on the south and the front of the new building on the north should be "fitted up with trees and a lawn." Mackay donated the funds and hired the architectural firms that had designed and overseen construction of the Mines building to design appropriate landscaping. Work was completed by the 1908 dedication of the building.

In that same year, Bliss and Faville submitted a master plan to the state legislature, reserving the quadrangle as a perpetual park. Every building to be constructed and every tree planted would be part of a harmonious whole. Following this plan, new buildings were to be oriented facing the quadrangle instead of toward the town of Reno.

The focal point of the master plan was a massive, domed, combination library/administration building, to have replaced Morrill Hall at the top of the Hill. Elaborate concrete steps from Lake and 9th Streets were proposed to bring pedestrians up

to the rotunda, which would be visible for miles around. Mackay and Stubbs actively sought funding from Vanderbilts and other national figures for this building.

Also in 1908, Mackay increased the acreage of the campus by ten acres. He bought and deeded to the university Evans Field, a natural hollow northeast of the main campus, formerly rented from J.N. Evans for athletic purposes. Mackay also donated the funds for building a new grandstand, training quarters, and formal track, all designed by McKim, Mead and White. The field and facilities were in use until 1966, when the new Mackay Stadium was built on new acreage further north; the old Evans Field now holds several departmental buildings arranged around a small quadrangle.

In 1911, Mackay and President Stubbs formalized Mackay's growing influence over the campus. They conferred in Mackay's New York offices, and agreed that Mackay would have prior approval of any new campus construction. At Mackay's request, President Stubbs and architect Bliss visited the University of Virginia campus at Charlottesville. In another pitch for Bliss & Faville's master plan, Stubbs reported to the Board of Regents on the similarities between the two campuses and on Mackay's plans for UNR's future appearance. The University of Virginia campus, with its tree-lined quadrangle surrounded by a double row of buildings, and its rotunda library was proposed as the model for UNR. Bliss presented Mackay with a watercolor rendering of the future Reno campus.

While beautification was taking place in the new quad area, plans were made to create a lake on campus. As early as 1903, President Stubbs had lobbied the Board of Regents and the state legislature in favor of enlarging the pond in the small valley west of the academic buildings. Mackay sent his personal landscape architect in 1909 to carry out plans for beautifying the campus, and at that time plans were made to dam up the pond to create a lake. Manzanita Lake was finally developed in 1911. The dam terminated with a walkway which connected Virginia Street with the center of campus. The lake and the area south of it were landscaped with grass, trees and shrubbery.

The Mackay School of Mines set the architectural tone for building design on the campus between 1913 and 1941, a time when enrollment increased from fewer than 500 to over 3,000 students. The master plan for building placement was followed as well, using the Beaux-Arts principles of axiality and symmetry applied by White at UVA. Since funding for the proposed rotunda library had not been found, a new library was still needed. Books and students were overcrowded in the cramped basement of Morrill Hall and overflowing into other buildings.

A temporary library was funded, designed by Reno architect (sic: Fredric) DeLongchamps. This "temporary" structure was constructed in 1914 on the southwest side of the main quadrangle, facing onto it, according to the master plan. At the same time, funding was also legislated for a new Dairy Building, the first structure on campus specifically given to Agriculture. This also was designed by DeLongchamps, and was placed behind the Mechanical Building, beginning a second eastern row of structures behind the first row facing the quad. This brought the number of buildings on campus in

1914 to 16, sited on 45 acres. Of these 16 buildings, six (sic: five) stand today: Morrill Hall, Manzanita and Lincoln Halls, Mackay School of Mines, the Veterinary Science Building (Dairy) (sic: demolished in 1982 for Paul Laxalt Mineral Research Building), and the "temporary" Library, now Jones Visitors Center (sic: Jones Center).

Three buildings constructed after the temporary library formed an avenue behind the western row of structures on the main quad. The Agriculture building, now Frandsen Humanities, was erected in 1918, beginning the row. It was placed behind the temporary library, mirroring the location of the Dairy Building. In 1920, a new Education building, now Thompson Student Services, was added to the row, north of Agriculture. The row was completed in 1927 with the addition of a new Library, today Clark Administration Building, south of Agriculture. These three buildings remain intact today.

During this same period, a new Federal Mining Experimental Station was authorized by the federal government, the facility to be on the UNR campus. The building was designed in 1920 by DeLongchamps, and completed in 1921. It was purposely designed to be simple and unobtrusive, and was placed out of the way, directly behind the Mines building.

In 1930, in honor of his long commitment to the university, Clarence Mackay dedicated a building to himself. The new building, Mackay Science Hall, was placed on the east side of the main quad, just north of Morrill Hall, on the site once occupied by the old Physics building. The architecture echoed that of Mackay School of Mines.

After Mackay - 1938-1945:

Mackay's period of control ended with his death in 1938. In that same year, plans were made for construction of two buildings on campus, a new engineering building and a new gymnasium. Palmer Engineering was constructed on the Lower campus at the east end of the axis perpendicular to the main quadrangle. Its entrance is in a direct line with that of Thompson Student Service. Palmer is the last building on campus to follow the classical styling and to be placed according to the old master plan.

The new Gymnasium, located on a site near the north end of campus behind Lincoln Hall and next to Virginia Street, was designed and funded at the same time as the Engineering building, but was not completed until 1945. Delays were due to heating system problems and the war. This building is in the Arte-Moderne style.

Modernism - Non-Contributing Buildings:

Subsequent construction on the UNR campus has been in a modern or International style, buildings having flat roofs, ribbon windows, and metal and concrete decorative elements. Five newer buildings exist within the area proposed as a historic district, and are noncontributing members. Two occupy sites that have never been occupied before, and three have replaced older structures.

The Jot Travis Student Union was begun in 1952, and the final stage was completed in 1963. This building is located behind Frandsen Humanities, on the north shore of Manzanita Lake (sic: several additions were added after 1963).

Silas Ross Hall was built in 1957 as the Business building. It is located on the west side of the main quad, at the north end near Mackay School of Mines. It was built on the site of the old Chemistry Building.

White Pine Hall, a men's dormitory, was built in 1960, on a site that begins between Lincoln Hall and Virginia Street and runs north along Virginia.

Juniper Hall was built in 1962 as a women's dormitory. It sits on the site of the old Dining Hall that was once connected to the 1896 dorms by boardwalks. This building is joined to the north elevation of Manzanita Hall by a party wall.

The New School of Mines building (sic: Paul Laxalt Mineral Engineering building) was added to the main quad in 1983. It is located on the east side, at the north end near the old School of Mines. The site was once occupied by the Mechanical Building.

UNR Campus Today:

Other new construction, outside the proposed district, surrounds this historic district on all sides except the south. At the south end, Morrill Hall and its historic neighbors are still the buildings nearest to and overlooking the town of Reno, and they are still the first impression a visitor has of the campus of the University of Nevada-Reno. The main entrance steps still climb from Lake and 9th Streets to Morrill Hall. The main motor traffic entrance winds up from Center and 9th Streets to Clark Administration and Jones visitors Center, the 1927 and 1914 campus libraries, and on to Morrill Hall.

Many other campus improvements have taken place since the 1987 writing of the National Register of Historic Places Inventory Nomination. The William N. Pennington Student Achievement Center is currently under construction east of Lincoln Hall. South of the Lincoln Hall is the Jot Travis Building built in 1952 and expanded on in 2004, which houses the Davidson Academy and "The Overlook". Directly west of Lincoln Hall is White Pine Hall, another Men's dormitory constructed in 1960, which is slated for demolition in June of 2015.

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III. CONSTRUCTION HISTORY

Many of the substantial modifications performed to Lincoln Hall were in response to the need of improved egress. The original 1896 design of the building placed one stairwell at the center of the H-shaped building. From an egress and life safety point of view, each end of the building created a dead-end corridor. Occupants needing to exit the building in the case of a fire or other emergency could become trapped at each end of the building or may have to risk their life traversing a smoke-filled corridor to reach the center-positioned stairwell.⁵ In addition, an open stairwell can also create a stack effect for smoke. This is why stairwells today are constructed with fire-rated materials and are able to be closed off from the rest of the building. As building codes were revised to better meet the life safety needs of building occupants, modifications to Lincoln Hall were made accordingly.

Modifications were also made out of necessity and function. The Hall was refurbished on a number of occasions to create a more homelike setting for the occupants. Refurbishing included new furniture (i.e. beds, rugs, and drapes), new non-Mechanical, Electrical and Plumbing (MEP) equipment and new light fixtures. Other more extensive modifications implemented out of necessity included the excavation of the west wing of the basement in 1934-1936 to create a large room (approximately 20x60 feet) which students in residence could use as a meeting and general recreation room. As a result, the first documented adverse effect occurred to the exterior of the Lincoln Hall. The basement vent openings in this area were enlarged and in-filled with metal casement windows; reflecting their present-day appearance.

As for function, Lincoln Hall has not always been used as a men's dormitory for University students. For the 1918 and 1943-1944 school years, the Dormitory served as barracks for Soldier Training Detachments and Army Air Force College Training Detachments, respectively. No known modifications were made to Lincoln Hall during 1918 or as a result of the military occupation. However, this was not the case during WWII. A fire north of the Hall burned the Army barracks in August 1942 resulting in exterior damage to Lincoln Hall. The near loss of Lincoln Hall and threat to its occupants, prompted the military to install the first ever fire alarm system in the building. Other modifications were on a more temporary basis, such as placing linoleum over the existing hardwood floors to protect the floors from wear.

Mechanical, electrical and plumbing (MEP) equipment was upgraded as existing equipment became insufficient and as technologies advanced.

The Special Collections & University Archives for the University of Nevada, Reno online Documents & Publications comprise Annual/Biennial Reports of the Board of Regents of the State University. These reports, dating from the University's conception through the 1960s, document improvements and repairs made to campus buildings. The following are excerpts of these reports pertinent to Lincoln Hall as well as other known modifications made to the structure.

⁵ After the original construction of the structure, exterior fire escapes were first added to the east façade of the building, then the west. The fire escape on the west façade was relocated to the north façade. All exterior fire escapes have since been removed with only visible scars remaining.

Timeline – Construction Chronology and Notable Events

Year	Modification/ Event
April 24, 1895	Board of Regents receiving sealed bids for mason work, carpentry work (except elct.) as set forth in plans and specification now on file in office of president of UNR. ⁶
c. 1895	Sealed bids contractors and amounts. 12 bids. Richard Ryland was 3 rd lowest of \$18,990 accepted. Lincoln Hall was to be completed by December 1, 1895. Contractor to execute a \$10,000 bond. Basement completed and work started on 1 st floor on June 20, 1895. ⁷
1896	Annual Report of the Board of Regents, 1896: Four new buildings have been erected and about fifteen acres of land purchased. The first of these to be finished was the Boys' Dormitory, known as "Lincoln Hall," a three-story and basement brick and, stone building, containing rooms for 100 students, the masters' rooms, reading and reception-rooms. It has every modern convenience for the comfort of the students. There are stationary washstands in each room, and splendid porcelain bathtubs on each floor, with hot and cold water. The building is heated with hot water, using a Furman heater and Bundy or Perfection direct-indirect radiators, all of which we find to be first-class. The ventilation of the building is perfect, each room having an open plaster ventilator in the wall connecting with a flue, leading to the cupola on top of the building. There is also a fresh air duct at each radiator so that the cold air on coming in has to pass through it and is thereby heated before entering the room. The building is lighted throughout by electric lights, incandescent system. All that "Lincoln Hall" now needs is a dining-room and kitchen, built to the north and connected with the Hall by a passage way which could be used as a vestibule to the dining-room.
February 1897	Month of February 1897 the electric light works were closed for a period of 2 or 3 weeks because of machinery failure. The condition was so serious at the UNR that iron piping was connected to Lincoln Hall and the Girls' Cottage and to the gas main for gas lights. ⁸

⁶ Zraggen, Dusty, "History of Lincoln Hall." Reno Evening Gazette, April 24, 1895. University of Nevada, Reno (Microfesh 65V1-5). 1980. Pg. 4.

⁷ Zraggen, Dusty, "History of Lincoln Hall." Reno Evening Gazette, no date. University of Nevada, Reno (Microfesh 66V105). 1980. Pg. 4.

⁸ Zraggen, Dusty, "History of Lincoln Hall." Board of Regents Minutes, April 7, 1897. University of Nevada, Reno (Microfesh 122V1-5). 1980. Pg. 5.

1903-1904	Biennial Report of the Regents, 1903-1904: “Estimate of expenses for the ensuing two years: Painting outside of Gymnasium, Shop and Lincoln Hall \$775.00” “Improvements – Donnels & Steinmetz, fittings for Manzanita Hall, Morrill Hall, Stewart Hall, and Lincoln Hall \$318.75.”
November 5, 1905	Meeting Minutes. Boardwalk from Lincoln Hall to Dining Hall approved. ⁹
1905-1906	Biennial Report of the Regents, 1905-1906: “Deficiencies - It was absolutely necessary to put a new furnace in Manzanita Hall, where there has always been more or less suffering from cold during the winter months. And also a new furnace in Lincoln Hall, where the same conditions of suffering have prevailed and where it has always been impossible to heat the rooms farthest removed from the furnace.”
November 1, 1907	Paving of walks from Virginia Street to Lincoln Hall and from Virginia Street to the Dining Hall and from Ninth Street to the College Gates. ¹⁰
c. 1907	Exposed ceiling joists are extant at the front entry porch. Also extant is a pendant light fixture with a frosted white globe hanging from a ceiling joist centered over the south-facing entry doors.¹¹ A wood boardwalk was constructed in 1907 to connect the Dining Hall, Manzanita Hall and Lincoln Hall. The presence of the boardwalk in the cited photograph dates these features to circa 1907.¹² All basement vent openings on the south and east facades are of equal size. A rectangular window on the first floor east façade between the middle windows is consistent with the 1896 first floor plan of the building.¹³

⁹ Zraggen, Dusty, “History of Lincoln Hall.” Board of Regents Minutes. University of Nevada, Reno (Microfesh 398V1-5). 1980. Pg. 5

¹⁰ Zraggen, Dusty, “History of Lincoln Hall.” Board of Regents Minutes, November 1, 1907. University of Nevada, Reno (Microfesh). 1980. Pg. 5

¹¹ University of Nevada, Reno Special Collections & University Archives, P59-1, c.1907.

¹² Hamby, Mary Beth and Sikes, Nancy E., “University of Nevada, Reno Historic District” National Register of Historic Places Inventory – Nomination Form, 1987.

¹³ University of Nevada, Reno Special Collections & University Archives, P1831-1, c. 1907.

1909-1910	Biennial Report of the Regents, 1909-1910: “Buildings and Grounds – Lincoln Hall, the boys’ dormitory, is in good condition, but as it has been constructed for a number of years, is in need of some repairs and improvements. Last year we took occasion to call the attention of the Board or Regents to the importance of rewiring some of the older buildings and providing for fire-escapes, particularly in the case of Stewart Hall. We again emphasize the importance of these matters.”
April 22, 1911	Contract for plumbing repair services for Lincoln Hall between Clock & Shea and University of Nevada, Reno.¹⁴
1911-1912	Biennial Report of the Regents, 1911-1912: “It is very necessary that Lincoln Hall, the young men’s home, should be thoroughly refurnished and made more comfortable. It needs a thorough cleaning, and the old fittings should be discarded and new furniture supplied throughout the building, and \$2,500 is asked for this purpose.” “Closing Statement by Vice- and Acting President Robert Lewers – I submit elsewhere an estimate of expenditures necessary for the repair of the buildings on the grounds. I wish to call especial attention to the necessity of refurnishing the students’ rooms in Lincoln Hall. The bedsteads have been in use for many years and are falling to pieces. The rooms need to be papered and brightened up. They ought to be made more homelike in some way. I wish to commend the young men in Lincoln Hall for the general good care they have taken of their rooms and for their general good behavior the last two years. They have shown by their conduct that they are worthy of a good home, and I believe in fixing up Lincoln Hall. The estimate calls for the expenditure of \$2,492 for this purpose, and I heartily recommend it. Manzanita Hall is not in need of so much in the way of repairs at this time.”
c.1911	By 1911, historic photographs show a concrete sidewalk had been constructed parallel to the south façade.¹⁵
1912	

¹⁴ “Clock & Shea, Contractors and Builder.” Contract for plumbing services. University of Nevada, Reno Archives (AC 243), April 22, 1911.

¹⁵ University of Nevada, Reno Special Collections & University Archives, P1997-49-364, c.1911.

	A fire escape spanning all three levels is present on the east façade and is accessed from the second bank of windows from the north. ¹⁶
June 14, 1913	Contract and Specifications for heating and plumbing installation at Lincoln Hall. Service performed by Savage Heating & Plumbing Co. ¹⁷
July 25, 1913	Contract and Specifications for tile and marble installation at Lincoln Hall. Exact location of tile and stone installation is unknown. ¹⁸
February 18, 1914	A high intensity earthquake shook Reno. No reports of damage were identified for University Hill or Lincoln Hall.
1913-1914	Biennial Report of the Regents, 1913-1914: “The Legislature at its last session granted to the University funds for the construction of a Library, a Dairy Building, the improvement of Lincoln Hall, and of the grounds of the University, and in general provided better facilities for the students.”
April 24, 1914	Two chimneys at Lincoln Hall were leveled due to a high intensity earthquake. ¹⁹ Historic photographs of Lincoln Hall dated to this time period appear to show shorter chimneys post 1914. ²⁰ According to the Biennial Report of the Board of Regent of the State University of Nevada \$269.00 was spent on “Earthquake damage” in 1913-1914. Based on newspaper reports, damage included two fallen chimneys at Lincoln Hall and Manzanita Hall and a stack at the Hatch Station. For the same year, \$3,327.29 was also allotted to “Improvements and Repairs” of Lincoln Hall. ²¹
1917-1918	Biennial Report of the Regents, 1917-1918:

¹⁶ University of Nevada, Reno Special Collections & University Archives, P229-1, c.1912.

¹⁷ “Contract between University of Nevada and Savage Heating and Plumbing Co.” June 14, 1913. University of Nevada, Reno Archives (AC 243).

¹⁸ “Savage Heating and Plumbing Co.” Contract and specifications for heating and plumbing services. University of Nevada, Reno Archives (AC 243), June 14, 1913.

¹⁹ dePolo, Craig M. and Garside, Terri M. “The November 21, 1910 Tonopah Junction Earthquake, and the February 18, 1914 and April 24, 1914 Reno Earthquakes.” Nevada Bureau of Mines and Geology, University of Nevada, Reno. March 2006.
<<http://earthquake.usgs.gov/research/external/reports/04HQGR0114.pdf>>.

²⁰ University of Nevada, Reno Special Collections & University Archives, P229-1, c.1912 & P3513-25, c.1914.

²¹ “Biennial Report of the Board of Regents of the State University of Nevada.” University of Nevada. Board of Regents. 1913-1914 Pg. 78.

	“Soldier Training Detachments – The first direct war call for special University service came from Washington in the spring of 1918. The University answered this call by contracting with the Federal Government to give special training to 103 newly enlisted soldiers for two months beginning June 15, 1918. These soldiers were housed in Lincoln Hall and were given the freedom of the Campus for their leisure and for their military training.” “University Finances – Lincoln Hall, the men's dormitory, is in imperative need of a completely new system of heating pipes. The old pipes are very small. They were fitted for steam-heating and will not properly operate with the present hot-water plant.”
c. 1920	The east chimney received a metal cap and flue pipe; doubling its' overall height.
1921-1922	Biennial Report of the Regents, 1921-1922: In 1921 drinking fountains were placed on each floor. During the summer of 1922 a much needed cement floor was put in the hot-water boiler pit, the floor in the men's parlor was refinished and three rooms in the apartment were redecorated. Also one dozen new Douglas chairs were purchased for the men's reading-room. Plans are on foot to start a Lincoln Hall library; this departure will necessitate book shelves in either men's parlor or the reading-room.
1923-1924	Biennial Report of the Regents, 1923-1924: “The interior woodwork of Lincoln Hall has been painted, and an oil burner added to the heating plant in the Greenhouse. Much of this work was done by the University force. An addition of 108,000 square feet to the lawns by improving the tract south of Lincoln Hall, and lying along Virginia Street, was the most expensive work done on the grounds for some years. By careful supervision the cost was kept surprisingly low. The lawn was graded to make a pleasing landscape, and then was covered with rich loam.....” “Plant Improvements – In addition to ordinary necessary repairs, the driveways to the front and rear of Lincoln Hall were improved... and reinforcing pumps were added in the dormitories to better their heating system.” “The dormitory groups have been active in making their halls more home-like. Browsing libraries have been started in each hall and new

	pianos have been purchased by the respective hall groups both for Manzanita and for Lincoln.” “The Master of Lincoln Hall – The Condition of the Hall – During December, 1923, the library and reading-room were redecorated and indirect lighting fixtures installed. New curtains were purchased for the windows and a new rug for the library floor. New bookcases were placed in the library and a set of Encyclopedia Britannica for the use of the men in the Hall. Some palms and fern baskets were also brought in to brighten the corridors on the first floor. During the summer of 1924 the corridors and all the study-rooms on the two upper floors were redecorated and thus made brighter and more cheerful.” “The Honorary Board of Visitors – A new grass plot north of the campus lake to Lincoln Hall and a new roadway in front of Lincoln Hall from Virginia Street to the University main drive have been completed. The Board was informed of three very substantial improvements to be made during the summer. These improvements have been duly made. First... Second ...Third, substantial alterations and improvements in the Lincoln Hall Dormitory, including an overhauling of all rooms on both the second and third floors. These improvements add very substantially to the beauty and utility of the University grounds and buildings.” “Schedule 9 Statement of Receipts and Expenditures from Students’ Fees January 1, 1923, to December 31, 1924 – Lincoln Hall – Furniture and Fixtures: \$3,497.06, Repairs: \$479.51.”
1925-1926	Biennial Report of the Regents, 1925-1926: The Condition of Lincoln Hall – “Hardwood floors have been laid on the first floor corridors, the library and the lobby. The apartments of the Master of the Hall were also done over, and made pleasant and convenient. The kitchen of the apartment is available and is used by the boys in preparation for social functions.”
August 31, 1927	University funds approved for the pointing up of brick work and the down spouts to be completely restored or to have new gutters and spouts of copper installed. \$700 approved for down spouts and gutters. Also for extension of eaves and weather stripping on Lincoln Hall.²²

²² Zraggen, Dusty, “History of Lincoln Hall.” Board of Regents Minutes, August 21, 1927. University of Nevada, Reno (Microfesh 4V5). 1980. Pg. 5

1927-1928	Biennial Report of the Regents, 1927-1928: Condition of Lincoln Hall – The brick work of the exterior has been repointed and the building entirely fitted with copper drains and down spouts and the windows and doors have been fitted with metal strips. Thomas. F. Cole gifted a sum of \$3,152.08 for the repairs of Lincoln Hall.
1929-1930	Biennial Report of Regents, 1929-1930: New rugs and drapes have been installed in the Reading room and Library and, in addition, these rooms have been repapered and tinted. A lamppost was installed across the street from the south entry to Lincoln and remained in place through the 1960s.
c. 1930	Historic size of basement vent openings on west side of south façade is extant.²³
1931-1932	Report of the Regents, 1931-1932: Improvements in Lincoln Hall – “Necessary limitations in budgeted funds has necessitated carrying on with a minimum of expenditures for much needed equipment and repairs.”
c. 1932	The west chimney was fitted for a metal cap and flue pipe to match the east chimney.
May 1933	Board of visitors (Mrs. Lem Allen, Fallon; Mrs. Frank Millard, Ely; Mr. James Leonard, Virginia City) complained to the Board or Regents about the deplorable condition of Lincoln.²⁴
Summer 1933	Report of the Regents, 1932-1934: “Improvements in Lincoln Hall – “Repairs, were made with the aid of special Federal unemployment relief funds. Chief among the improvements was the following: 60 new beds, 120 new chairs, new water closets and seats in all toilets, 75 washable mattress covers, 58 mattresses completely renovated, study tables recovered and

²³ University of Nevada, Reno Special Collections & University Archives, P474-1, c.1930.

²⁴ Zraggen, Dusty, “History of Lincoln Hall.” Board of Regents Minutes, May 1933. University of Nevada, Reno (Microfesh 128V5). 1980. Pg. 5.

	varnished, and complete renovation of all sections of the Hall, except the Master's quarters.”
1934-1936	Report of the Regents, 1934-1936: 1) Linoleum replaced in hallways and on stairways; (2) floors repainted in all rooms; (3) each room equipped with a metal wastebasket; (4) complete and extensive renovation of the Master's apartment; (5) cement floor laid in southeast area of basement, and partition constructed to provide a needed room for general storage purposes; (6) basement under the west wing of the Hall excavated to full depth and floored with cement. This has made available a large room (approximately 20 x 60 feet) which the students in residence use for meetings, informal social functions, and as a general recreation room. A 1952 construction document set for New Stairs and Interior Alterations of Lincoln Hall show existing walls in the Master's Room and Kitchen area to be demolished. When mapped, the demolished walls reflect a different floor plan than the 1896 design. Considering 1934-1936 is the only mention of an “extensive renovation” of the Master's Apartment between 1896 and 1952, it can be speculated the existing floor plan from 1952 is likely from 1934-1936. It can also be speculated during this renovation, a small window on the east façade was created between the first and second windows from the north. In addition, a door replaced the west window of Room 100. Refer to Appendix B for traced floor plan of 1952 demolished walls.
1936-1938	Report of the Regents, 1936-1938: Report of the Honorary Board of Visitors – We think the advisability of putting fire escapes in Lincoln Hall, should receive the consideration of the Board of Regents at an early date.” New ice box in the Master's quarters was replaced with an electric refrigerator, and modern lighting fixtures were installed in the men's reading room and library.
1942-1944	Report of the Regents, 1942-1944: Lincoln Hall was occupied by the Army Air Force continuously from February 26, 1943 to May 30, 1944. The fire which destroyed the old Army Barracks north of Lincoln Hall in August 1942 seriously threatened and damaged the dormitory. Several fires on the roof were extinguished by the Reno Fire Department and the men of the University Maintenance Crew. The searing heat from the flames broke

	all the window glass on the north side of the building, and all the paint work had to be renewed. The Army also insisted upon, and paid for, a fire alarm system—the first ever installed in the dormitory. Linoleum floor covering was provided in Manzanita Hall and Lincoln Hall, reducing the wear and tear on the hardwood floors.” Recommendations to the Board of Regents – “Following the occupation of the Hall by the Air Force, some work of reconditioning is being undertaken. It should perhaps be pointed out that such work is necessarily of a more or less temporary nature. Lincoln Hall is inadequate in size and unsafe in construction. The fire hazard, inherent in the nature of the building, is intensified by the presence in the basement of the repair and paint shops of the maintenance department. It is recommended that plans for complete reconstruction and fireproofing of the old part and construction of two additional wings to enlarge the capacity, be included in postwar building plans of the University (see biennial report of President Hartman for 1940-1942). It is recommended that, pending the execution of the above- mentioned plans, an adequate system of fire alarms be installed. This system should be automatic in nature and should be connected directly with the Reno Fire Department. Such a system should be correlated with a similar system in the other two dormitories, to the end that maximum safety is provided for the students of the campus who live in the residence halls.”
1943	The basement vent openings on the west side of the south façade have been enlarged to preset day appearance. This likely occurred in 1934-1936 when the west basement rooms were excavated and made into habitable space. Chimney caps are still visible on both south-facing chimneys. The pendant globe fixture is still extant hanging in front of the south façade entry doors.²⁵
c. 1943 – 1952	Chimney caps are still visible on both south-facing chimneys. A fire escape spanning all three levels, of similar appearance to the east façade, is present on the west façade and is accessed from the second bank of windows from the north. The west facade fenestration has not yet been reconfigured to accommodate the 1952 interior stair relocation.²⁶
May 30, 1946	One sheet construction document set for “Piping & Radiation – Lincoln Hall.”²⁷

²⁵ University of Nevada, Reno Special Collections & University Archives, P346-01, c. 1943.

²⁶ University of Nevada, Reno Special Collections & University Archives, P1498-1, dated 1943-1952.

²⁷ “Piping & Radiation – Lincoln Hall.” Headman, Ferguson & Carollo. 1 sheet. University of Nevada, Reno Special Collections & University Archives. May 30, 1946.

1946-1948	Report of the University of Nevada, 1946-1948: Recommendation to Board of Regents for maintenance and paint shops in the basement of Lincoln Hall to be moved. Also recommended that the dormitories of the campus be connected directly to the central fire station with automatic fire alarms.
January 2, 1952	20 sheet construction document set by Russell Mills Architect & Engineer for the "New Stairs and Interior Alterations of Lincoln Hall." Work included but is not limited to: Complete installation of the heating plant in Lincoln Hall; construction of fireproof stairways in both ends of the building and removal of the present central stairway and construction of room space in this area; re-plumbing and rewiring. When the central stairs were removed, the windows servicing the stair landing were shifted up or down reusing the existing sills. More efficient convection radiation was installed using steam. Light shafts at each end of building were removed. A dry standpipe was installed. Rear stairs from grade to first floor were removed. New stairs from basement to grade were installed at rear of building. Chimney stack at rear of building was enlarged to vent new boiler. Fire escape at east end of building was removed. Existing fire escape at west end of building was moved to north façade. Interior work included but was not limited to: Arched opening between the first floor Lobby and Hall was removed. Pipe soffit was installed in most rooms. 1896 Master's room reconfigured as students rooms. The door between Parlor (103) and Room 100 was infilled with brick. Northeast corner of first floor was converted into kitchen, dining room and bath with private entry. Window sills in Kitchen (114) were elevated up to allow for installation of countertops. New flooring was installed over existing flooring throughout. Alterations to existing wardrobes called for existing drawers to remain and new 1-3/8" thick doors. New lighting was installed throughout. Individual wash basins in each room are no longer extant at the time of this remodel. The west window of Room 100 is shown as a door. A note on the drawings states to remove existing door and change its swing.
May 19, 1953	Opening bids to cover completion of remodeling of Lincoln Hall. R.E. Hansen \$47,175.20.²⁸

²⁸ Zraggen, Dusty, "History of Lincoln Hall." Board of Regents Minutes, May 19, 1953. University of Nevada, Reno (Microfesh 418V6). 1980. Pg. 5.

c. 1950s, post 1952	Ivy plants on the east façade are also visible between the first and second window from the south and the third and fourth window from the south. ²⁹
1952-1968	The westernmost window of the First and Second Floor Shower & Toilet Room (R101 & R201)) was removed and infilled. By 1968, the former opening was being used to vent a bathroom exhaust fan. ³⁰
1957	5 sheet construction document set for Improvements to Lincoln Hall: Basement: Recreation Room (02), Study Room (01) and TV & Card Room (09) were remodeled to include new light fixtures, install new finned piping, acoustical ceiling tile and new 40" galbestos wainscot. First Floor: New concrete slab at south entry, Living Room (Rm. 107) and Lounge (Rm. 103) were remodeled to include new lighting fixtures, cast stone mantel, 1/4" mahogany squares at fireplace walls, rubber baseboard and 1/4" mahogany plywood wainscoting. The opening along the west wall of the Living Room (107) was removed. The opening into the Lounge (103) was relocated north. The Lobby (C102) was also remodeled to include a new front desk, mail slots, mahogany wainscot, vinyl floor, a new concrete sill at the entry door and a new partition between the Lobby and the Hall with double doors east of the partition.
August 1957	Remodeling interior bids. Hardesty & Son \$11,585.00. ³¹
July 18, 1958	One sheet construction document set for "Concrete Pad & Piping for Installation of 2 Washing Machines." ³²
December 2, 1960	One sheet construction document set for new fire alarm line from vault T5 to new men's dormitory. ³³
February 9, 1961	

²⁹ University of Nevada, Reno Special Collections & University Archives, P2024-01, c.1950.

³⁰ "Lincoln Hall Remodel," University of Nevada, Reno Special Collections & University Archives, 3/28/1968.

³¹ Zraggen, Dusty, "History of Lincoln Hall." Board of Regents Minutes, August 1957. University of Nevada, Reno (Microfesh 363V7). 1980. Pg. 5.

³² "Lincoln Hall Concrete Pad & Piping For Installation of 2 Washing Machines." Drawn by: Don. 1 sheet. University of Nevada, Reno Special Collections & University Archives. July 18, 1958.

³³ "Fire Alarm Line From Vault T5 to New Men's Dormitory." University of Nevada, Reno Special Collections & University Archives. December 2, 1960.

	One sheet construction document set for “New Men’s Dormitory – Landscaping.”³⁴ One sheet construction document set for “New Men’s Dormitory – Sprinkler Installation.”³⁵
April 23, 1963	One sheet construction document set for “Paving in front of Lincoln Hall.” ³⁶
April 23, 1964	One sheet construction document set for “Lincoln Hall Driveway Paving and Curbs.” ³⁷
March 28, 1968	4 sheet construction document set for the Remodel of Lincoln Hall: First Floor: Remodel shower and toilet rooms, install a 6'-0" L-shaped partition wall in West Lounge (107) to create an Office space and a Work Area, narrow opening into West Lounge to fit a single door, new entry door kick plates same side as push plate and undercut entry door by 1/2". First and Second Floor: new ducts, existing exhaust fans shall remain. All Floors: new floors in janitor closets, new lighting fixtures in select rooms, new aluminum windows installed in bathrooms, broken window glass replaced, new hardware on select doors.
July 25, 1977	Note: the work outlined in the following construction document set does not appear to have been executed. 2 sheet construction document set for repair of existing parking areas and installation of volleyball courts north of Lincoln Hall. ³⁸
August 2, 1979	One sheet construction document set for “Lincoln Hall – Repave Access Road & Parking.” ³⁹

³⁴ “New Men’s Dormitory – Landscaping.” University of Nevada, Reno Special Collections & University Archives. February 9, 1961.

³⁵ “New Men’s Dormitory – Sprinkler Installation.” University of Nevada, Reno Special Collections & University Archives. February 9, 1961.

³⁶ “Paving in front of Lincoln Hall.” Drawn by: Don. 1 sheet. University of Nevada, Reno Special Collections & University Archives. April 23, 1963.

³⁷ “Lincoln Hall Driveway Paving and Curbs.” Drawn by: Don. 1 sheet. University of Nevada, Reno Special Collections & University Archives. April 23, 1964.

³⁸ “Repair Existing Parking Area and Install Volleyball Courts – North of Lincoln Hall.” University of Nevada, Reno Special Collections & University Archives. July 25, 1977.

³⁹ “Lincoln Hall – Repave Access Road & Parking.” Drawn by: DCR. 1 sheet. University of Nevada, Reno Special Collections & University Archives. August 2, 1979.

c.1980	Railing spanning between the south porch entry arches is painted a light tan-green color as opposed to the light blue it is currently painted. Base of cupola is light gray in color ⁴⁰
c. 1980s	Elevator servicing Basement, First and Second floor was installed. Exterior access door to elevator appears as existing in 1989 construction document set for Reroof and Misc. Exterior Improvements to Manzanita Hall and Lincoln.
June 11, 1984	One sheet construction document set for the Remodel of Shower Doors for Lincoln Hall: work contained to First, Second, Third Floor Shower and Toilet Rooms.
February 26, 1987	Note: the work outlined in the following construction document set does not appear to have been executed. Duplicate work and non-executed work appears in a construction document set dated February 24, 1989. One sheet construction document set for Renovations to Lincoln Hall Dormitories by Ted Fuetsch Associates: work contained to south entry porch and surrounding three façades and east and west side entry doors. Porch: Strip existing paint from all window and door frames and repaint, install new 1/4" tempered glass at windows, install new removable glass molding at windows, install steel plate over hinge tap at windows, new 16 ga. Hollow metal doors with reinforced plates, new threshold at front door, new 4" sill at sidelight, new 2x12 wood fascia and 3" half round trim to match existing at edge of porch, strip and repaint existing ceiling decking, reinstall or replace loose or damaged boards and strip and repaint existing railing. Porch Roof: replace missing downspout pipe on west side of porch roof to match east downspout. East and West Façade: Remove existing double doors and thresholds and replace with single hollow metal door and sidelights. The drawing calls for the existing granite threshold to remain.
1987	The pendant light fixture present in the 1907 historic photograph hanging in front of the south-facing entry doors has been replaced by a square surface-mounted fixture. ⁴¹
c. 1987	

⁴⁰ University of Nevada, Reno Special Collections & University Archives, P3149-2, c.1980.

⁴¹ University of Nevada, Reno Special Collections & University Archives, P1681-171, 1987.

	Chimney caps are still visible on both south-facing chimneys. Three flagpoles are anchored to the south-facing roof deck and are centered above the front entry porch. The bottom louver on the south-façade of the cupola is missing.⁴² The exposed porch ceiling joists are still extant.⁴³ Vertical bead board siding is visible surrounding the fireplace in either room 103 or 107. The fireplace features a wood surround and mantel.⁴⁴
February 24, 1989	Five sheet construction document set for Reroof and Misc. Exterior Improvements to Manzanita Hall and Lincoln Hall by Gather Melby Lee Architects and Planners: South Elevation: Repoint both sides and underneath of all seven arches, entire wood ceiling area to be stripped and repainted. West Elevation: replace lower bent portion of northern copper downspout. North Elevation: cupola to be stripped and repainted, repoint/reset bricks on both sides and inside vent opening. Inside Corner West Elevation: replace in-kind entire copper downspout from conductor head to roof drain. Porch: entire wood decking areas to be stripped and repainted. All brick and granite masonry on entire building shall be repointed, typ. Roof: existing built-up roof w/ gravel ballast over porch to be replaced with pedestrian traffic bearing waterproofing, cupola roof to be stripped and repainted to match existing, existing wood shake roof to be replaced with composition shingle. Cornice & Gutter: existing brick cornice to be repointed typical around perimeter of building. Resolder all gutter joints, splices and gutters to downspout connections. Window Head/Sill: broken and cracked bricks shall be removed and replaced with full bricks to match color and texture of existing as closely as possible, typical throughout. new flashing at window sills. South façade fire escape and chimney caps are shown in the above mentioned construction document set. Porch ceiling joists are exposed with a bead board-like paneling set between the ceiling joist and roof.
July 12, 1989	Two sheet construction documents set for the Lincoln Hall Boiler Room Asbestos Abatement Project (Project No. 89-PP-58).
December 27, 1991	

⁴² University of Nevada, Reno Special Collections & University Archives, P1681-172, c.1987.

⁴³ University of Nevada, Reno Special Collections & University Archives, P1681-165, c.1987

⁴⁴ University of Nevada, Reno Special Collections & University Archives, P1681-168, c.1987.

	One sheet construction document set for automatic parking gate for Lincoln Hall parking lot. ⁴⁵
April 12, 1999	4 sheet construction document set for Lincoln Hall Auxiliary Plan: new data cable and TV in select rooms.
June 19, 2002	13 sheet construction document set for high temperature piping replacement at Lincoln Hall and Jot Travis Student Union. ⁴⁶
No date	Early photograph likely taken 1896-1901 showing a wood picket fence on the outer sides of the south entry steps. ⁴⁷
No date	The two stacks on the north façade were shortened at an unknown date. In 1952, the west stack was removed and a new stack was constructed. At present, the east stack is approximately 3'-0" shorter than its historic appearance. The newer brick mechanical stack is closer to the historic height.

⁴⁵ "Automatic Parking Gate – Lincoln Hall Parking Lot." University of Nevada, Reno Special Collections & University Archives. December 27, 1991.

⁴⁶ "High Temperature Piping Replacement at Lincoln Hall and Jot Travis Student Union for University of Nevada Reno." University of Nevada, Reno Special Collections & University Archives. June 19, 2002.

⁴⁷ University of Nevada, Reno Special Collections & University Archives, P1831-1, no date.

IV. BUILDING & SITE EVALUATION

A. Architectural Character

The architectural character of Lincoln Hall was previously documented by Mary Beth Hamby and Nancy E. Sikes in their National Register of Historic Places Inventory Nomination Form for the University of Nevada Reno Historic District written in 1987. *Italicized* words are those of Ms. Hamby and Ms. Sikes.

“LINCOLN HALL – 1896

Lincoln Hall is a two-and-one-half story brick dormitory building completed in 1896 from plans by the firm of Percy and Hamilton of San Francisco. Its design was a copy of the eastern United States college dormitory style popular during the period, an eclectic blend of architectural features including elements of Colonial, Flemish and Romanesque Revival styles. It is located between the present campus library and Virginia Street, and faces south toward the Student Union. With very few external modifications or modernizations, this building appears now as it did originally.

The building is an H-plan, covering a ground area of 124' x 70', and consisting of a rectangular, hip-roof central block with gabled wings crossing both ends. The long axis of the structure is oriented east and west, with the main entrance in the center of the central block, on the south elevation.

The hip-roof central block shows a Colonial Revival influence, having a chimney at each hipped end, a central cupola, and three gabled dormers front and rear. The roofs of the wings are gabled, with Flemish parapet gabled walls facing front (south) and rear (north), and four gabled dormers each, facing the sides. The roof is clad in red asphalt shingles (sic: composition shingles were installed in 1989, replacing existing wood shingles). Reaching from wing to wing across the central block on the building's main, or south, elevation is a flat roofed, one-story arcade which includes the main entrance. The building is clad in red brick laid in common bond, and has heavy, rusticated granite block accents which, with the arches of the arcade, give the building a Romanesque flavor.

All original windows in the building are wooden, two-over-two light, double hung sash, with wood surrounds and stone sills. Those on the first story are round-headed, with semicircular brick arches. The remaining windows are flat with flat arches.

The principal, or south, entrance is through the central arch of the arcade. The rusticated stone arch is supported by two rusticated stone columns. "LINCOLN HALL" is chiseled into the stonework above the arch. On each side of the stone arch is a set of three brick arches interconnected by plain, wood balusters. Each brick arch is supported by a brick pier with a plain stone capital. Inside the arcade, the double single-light main doors are metal, with an arched transom, partial sidelights, wood surrounds, and a brick arch. The

floor of the arcade is wood, with an area of concrete replacement in the heavily travelled center section. Eight granite steps with a closed railing lead up to the central arch.

Fenestration on the south facade is symmetrical. The six central block first-story windows are located inside the arcade, three on each side of the main door. Each of the three dormers has a pair of windows, and the six second story windows are arranged in pairs matching the dormers. The gable wall of each wing has two windows in each story, while the half-story windows are arranged in pairs which correspond to the central dormers.

Original openings in the east and west elevations are symmetrical. There are four windows in each story, below four single-window dormers. A central ground-level entrance has been added to both elevations, and includes two-light, metal double doors with a single opaque transom. Two windows were also added, one in each story over the doors. On the west elevation, a new single-light, metal frame door with a metal awning for handicap access has replaced one first-story window.

The rear, or north, elevation is similar to the front facade, but lacks the arcade. The six first story windows are grouped in pairs as are the second story and dormers. A first and a second story blind extra window makes fenestration unsymmetrical. The central dormer, on this elevation larger than the other two, is the size of the wing gables. Two exterior, brick chimneys (sic: brick mechanical stack), one larger and newer than the other, intersect the central dormer, one on each side of the windows. A set of metal fire escape stairs abut the large chimney from roof to ground level. (sic: fire escapes are no longer present).

Copper gutters and downspouts were replaced and some of the brickwork was repointed in 1927. Despite the addition of doors and windows on the east and west facades, the addition of handicap facilities and reconfiguration of a chimney, and other minor modernizations and repairs to this old building, it retains its architectural integrity.

Additional repointing and copper gutter repair occurred in 1989.

B. Character Defining Features

Exterior character defining features of Lincoln Hall include:

- Hip-roof central block with gabled wings crossing both ends,
- Flemish parapet gabled walls facing front (south) and rear (north),
- Three gabled dormers on south and north facades,
- Four gabled dormers on the east and west façades,
- Round louvered attic vent on north facing central gabled dormer,
- Brick chimney at each hipped end,
- Cupola and weather vane,
- East exterior brick chimney on north façade,
- Location of west exterior brick chimney on south façade,

- Location and presence of cornice assembly: copper gutter and corbelled brickwork,⁴⁸
- Copper downspouts,⁴⁹
- Red brick laid in common bond,
- Romanesque style sandstone quoins, window sills and granite belt course,
- Wooden windows: two-over-two light, double hung sash, with wood surrounds, sandstone sills and brick jack arch,
- Fresh air vent intake locations and metal grille,
- Arch-topped basement vent openings,
- “LINCOLN HALL” chiseled into south façade,
- South façade porch assembly: stone arch, stone columns, brick arches, eight granite steps, wood balusters and wooden porch deck and
- South façade entry door, sidelight and transom configuration and brick arches.

Interior character defining features of Lincoln Hall include:

- “H” shape floor plan,
- Central corridor location and overall dimensions,
- Lobby location and overall dimensions,
- Reading Room (103) location and overall dimensions,
- Pool Room (107) location and overall dimensions,
- Segmental arches at end of each corridor and
- Fireplace openings and andirons.

C. Non-Significant Features

Exterior non-significant features of Lincoln Hall include:

- Two flagpoles mounted to roof of porch,
- West stack on north façade,
- South exterior entry door (panels only),
- East and west exterior entrance doors,
- North basement doors, concrete stairs and tube railing,
- Awning over west exterior entrance,
- Windows directly over east and west exterior entrance doors
- Windows in all basement rooms. Windows (excluding sills) in the following rooms: 110, 111, 117 (west window and sill), 118, R101, R100, R200, R201, 215, 216, R300, R301, 313, 314,
- Window screens,
- Mechanical vents and
- All light fixtures.

⁴⁸ Copper gutters are not original. Of importance for this report are the gutter locations.

⁴⁹ Copper downspouts are not original. Of importance for this report are the downspout locations.

Interior non-significant features of Lincoln Hall include:

- All doors,
- All finish carpentry with exception to south entry door trim and sidelight paneling, interior window trim and sills and wardrobes,⁵⁰
- Drinking fountains and all plumbing fixtures,
- Fire alarm system,
- Electrical system and all lighting fixtures,
- Radiators and all mechanical systems,
- Fireplace surrounds, hearth and mantel and
- Wallpaper.

D. Site Assessment

Lincoln Hall is H-shape in plan, measuring approximately 125'-3" in the east-west direction and 68'-7" in the north-south direction with an overall gross floor area of 7,756 square feet.⁵¹ Directly north of Lincoln Hall is a parking lot currently being used as a construction yard for the new William N. Pennington Student Achievement Center currently under construction east of Lincoln Hall. South of the Men's Dormitory is the Jot Travis Building built in 1952 and expanded on in 2004, which houses the Davidson Academy and "The Overlook". Directly west of Lincoln Hall is White Pine Hall, another Men's dormitory constructed in 1960.

Circulation around Lincoln Hall consists of pedestrian sidewalks paralleling the south, east and west facades and a single lane service road, which is also used by pedestrians to the south of the structure. As mentioned above, a large parking lot sits directly north of the site and provides handicap access to the west façade entrance of Lincoln Hall.

As for vegetation, low lying shrubs are planted amongst a rock garden along the south and east facades. Medium-sized deciduous trees flank the south entry and ivy plant has taken root on the north side of the building acting as ground cover and growing up the facades' west interior corner and adjacent to the larger and newer brick mechanical stack.

E. Civil

The Civil Evaluation was prepared by Frank A. Bidart, P.E. of Odyssey Engineering Incorporated.

The existing Lincoln Hall Building is located within the University of Nevada Reno Campus in Reno, Washoe County, Nevada. The main UNR Campus is located within Section 2, Township 19 North, Range 19 East, M.D.M.

⁵⁰Access to all dorm rooms was not available during the site visit. Further investigation would need to be had to determine the authenticity of all dorm room wardrobes.

⁵¹ Gross floor area was measured per digital CAD files provided by the University of Reno, Nevada. A gross floor area of 7,756 square feet includes the basement, first, second and third floor.

The site of the existing Lincoln High Building is bordered on the west by White Pine Hall which lies next to North Virginia Street, the east by the Student Achievement Center which is currently under construction and the south by Jot Travis building. The site is bordered on the north by an existing parking lot that currently is a construction yard and the UNR Old Gym. The existing structures primary pedestrian access is on the south side of the building.

1. Pedestrian Access

Primary pedestrian access to Lincoln Hall is from the buildings southerly entrance. Additional entry points are on the east and west ends of the building. The west end provides ADA access to Lincoln Hall.

2. Water Service

The Truckee Meadows Water Authority will provide water service for the project. The existing water system at the site is owned and maintained by UNR.

No fire water service is present at Lincoln Hall.

3. Sanitary Sewer Service

The City of Reno will provide sanitary sewer service for the proposed offices at Lincoln Hall. The building has an existing sewer lateral which connects to a main line maintained by the City of Reno.

4. Storm Drainage

The roof drainage system consists of gutters, leader heads and downspouts. The downspouts along the north façade of Lincoln Hall outlet into concrete channels, which carry the water away from the building. Downspouts on the south façade of the building are integrated into the porch columns and outlet approximately 4'-0" above grade.

Most hardscape surfaces abutting the building are impervious; either asphalt or concrete. There are minimal pervious surfaces surrounding the building for storm water to naturally saturate into.

There is currently no underground system in place to carry storm water away from Lincoln Hall.

5. Electric, Gas and Communication

It is anticipated that other disciplines will look at these utilities.

F. Landscape

1. Landscape and Irrigation

The existing landscaping at Lincoln Hall is fairly mature along the north and south elevations. There are many Juniper shrubs within the vicinity of Lincoln Hall. The mulch on the south side is a rock cobble. The front entry at the south elevation includes a 15 foot wide planter on both sides of the stairs. The adjacent walkway currently serves as a major route through campus, at least until the Student Achievement Center (SAC) is completed. The south building elevation is symmetrical and formal, typical of the older period buildings along the nearby quad.

At the southwest side of the main entry there are two mature White Birch trees. Below the Birch are mature Junipers and some newer Blue Nest Spruce. On the southeast side of the entry there are two existing fairly mature Pin Oak trees planted within 6-7 feet of the building face. Like the Birch trees they provide needed shade for the windows above. Below the Oak trees are more mature Junipers, a few newer Blue Nest Spruce and a large Pyracantha shrub.

In the north side planters English Ivy is trailing along the ground and up the side of the brick walls. There are also Virginia Creeper vines on the building and a few Tatarian Honeysuckle plants along the walkway edge. The planter width on this side is about 12 feet wide.

As noted, at the east side of the building there are a few boxwood plants recently installed within a 3 ft. wide planter with rock cobble. Most of the area is asphalt that extends up to the building face.

Along the west side of the building is a concrete walkway directly along the building edge. To the outside or west edge are planters. The walk is between 8 and 12 feet in width.

The irrigation system includes two points of connections with $\frac{3}{4}$ " backflow units in the planter along the south side of the building. It is assumed that each backflow unit irrigates one side of the main entry. The irrigation system is a drip type, with buried flexible tubing and emitters. The controller is not on the outside walls, but likely within the building.

G. Architectural – Exterior of Building

1. Foundation

In basement room 13, about 2'-0" of exposed continuous stone footing is visible. Atop the stone footing is clinker brick laid in a common bond pattern. Posts in this room are set on stone boulders embedded into a concrete slab. On the opposite side of the basement in rooms 1 and 2, the basement floor was excavated in 1934-1936 to achieve a higher ceiling and thus more usable space. These rooms have a concrete skirt that wraps the exterior walls concealing the stone footing. Posts in these rooms do not have exposed footings.

According to the original 1895 specifications for Lincoln Hall, the footings of all walls were built of granite boulders set on hard pan. Spaces between boulders were filled compactly with smaller stones and mortar. Posts throughout the interior bear on a single boulder having a bearing surface on the hard pan equal to 16"x16" and a flat place on top to receive posts. The top of granite footings were made true and level for brickwork.

The overall width of the stone footing appears to be 3"-5" wider on each side of the brick basement wall, making the overall width approximately 24"-26" wide. Additional investigation would need to be performed to determine how deep the stone footing projects into the ground.

2. Walls

The construction and thickness of the wall assembly varies as the wall increases in height. The basement wall is a 21" thick solid brick up to the first floor. From the first floor to the roof, the wall is composed of two brick walls separated by a 4" air space. The exterior wall, composed of a double wythe, measures 9" thick and the interior wall of single wythe is 4-1/2" thick. The original 1895 specifications call for the two parts of the wall to be bound with continuous wythes of brickwork, 4-1/2" thick and not over 3'-0" apart. However, it is unclear whether the through stone ties the two walls or just the double wythe of the exterior wall. Every seventh course is a header course.

Building materials used to construct the walls of Lincoln Hall include red clinker brick, which makes up the 21" thick basement walls, followed by a granite water table, which wraps the entire building. Above the water table sits one header course of brick followed by six rows of common bond brick by one row of header course and so on. The next visual divide is at the sill of the second floor windows. The sandstone window sills and sandstone belt course are one in the same and also wrap the entire building. At the roofline are three courses of corbelled brickwork, with every other course of brick jogged vertically by three rows of brick. Under most windows is a fresh air vent opening, rectangular in shape and covered with a decorative metal grille. Out-corners of the building feature rough sandstone quoins, which begin at the water table and terminate at the gable end parapets on the north and south facades of Lincoln Hall.

The character of the south façade is unique in that a series of six brick Roman arch-topped openings and one centrally position rough cut granite elliptical arched opening enclose the south entry porch of Lincoln Hall. The spring point of each arch is constructed of a granite column capital. Refer to Appendix B: Field Drawings for profile of capital.

The mortar used to construct the masonry walls was analyzed to determine its chemical make-up. Two mortar samples were taken from the interior wall of the basement; one from the stone foundation and one from the brick foundation.⁵² The basement was selected for extracting mortar samples because unlike the exterior of Lincoln Hall, which has been repointed at least twice, the basement interior wall of Room 13 appears to be untouched. Samples were taken of the brick and stone mortar from the north wall of Room 13 and of

⁵² See Appendix D; Mortar Analysis.

just the brick mortar on the east wall of Room 13. The mortar analysis revealed the presence of lime and Portland cement. Limes increases the workability of setting mortar, but decreases the strength of the mortar once set. Portland cement increases the strength of mortar once set. Original specifications from 1895 called for the mortar for all mason work to have one barrel of Portland cement mixed with eight barrels of lime mortar. The volatile state of lime combined with the basements damp microclimate explains the friable state of the mortar in the basement.

3. Roof Assembly

There are two roof assemblies at Lincoln Hall. The primary roof covers the “H” shape portion of the structure. The other roof is over the south entry porch.

The original 1895 specifications for Lincoln Hall call for the hipped and gabled roof as well as the tops and side of dormer windows to be roofed with No. 1 redwood shingles.⁵³ The specs call for all hips and ridges to be covered with 1” x 4” saddle boards, all valleys in the main roof to be lined with similar tin 15” wide and the entire roof of the porch and cupola to be covered with old style re-dipped roofing tin.

The last record of Lincoln Hall being reroofed was in 1989. The plans called for existing wood shingle roof to be replaced with composition shingles. It does not appear the roof has been reroofed since.

The primary roof is composed of a hip roof over the hyphen of the “H” and a gable roof at each wing. The ridgeline of the hip roof sits higher than the ridgeline of the gable roofs. The ends of each gable roof form Flemish style frontispieces. Four dormers are located at each wing. An additional three dormers are located on each side of the hyphen. The central dormer on the north façade is larger and more prominent than the others, with its ridgeline of same elevation as the hip roof. At the intersection of hip roof and larger north dormer is the cupola.

The other roof type present at Lincoln Hall is a flat roof over the south entry porch. There is a drain at each end of the roof which outlets to the south side of the building. During the same time the main roof was replaced, the porch roof was also reroofed. The existing built-up roof w/ gravel ballast over porch was replaced with pedestrian traffic bearing waterproofing.

Lincoln Hall has two brick fireplace chimneys and two brick stacks. The fireplace chimneys are on located on the south side of the hip roof and are approximately as tall as the ridgeline of the roof. Historically, the chimneys were twice their current height, but toppled during an earthquake in 1914. Following the earthquake, the chimneys were rebuilt to their current height. The tops of the chimneys have two courses of corbelling and the top course aligned with the exterior face of the chimney.

Water removal consists of a system of applied gutters, leader heads and downspouts. Historically, all gutters, leader heads and down spouts were constructed on galvanized iron.

⁵³ Further description of feature is illegible.

In 1927-1928, the building entirely was fitted with new copper drains and downspouts. In 1989, basic maintenance was performed to the drainage system. There are four downspouts on the north and south facades and two downspouts on the east and west façade. At one time, the east and west facades had a third downspout centered on the wall. The third gutter was removed in 1952 so it would not overlap with new window openings.

4. Cupola

Access to the roof was not available to the cupola; therefore all observations were made from ground level or adjacent buildings.

The cupola is centrally positioned where the east-west hip roof intersects with the north gable end. The plan of the cupola forms an octagon. Each of the cupola's eight sides has an arch-top opening with keystone. Inlaid into each opening are horizontal louvers. A small Doric pilaster is placed between openings, terminating at the spring point of each pilaster. The cupola's eave assembly consists of dentils below a crown molding. The roof consists of eight terne-plated panels which diverge into the cupola's finial. The finial consists of a small bulb atop a large fluted bulb. Capping the small bulb is a weather vane with letters N, E, S, W and a running wolf.

5. Stairs & Railings

Constructed of solid granite and servicing the south porch, the entry steps are a prominent feature to Lincoln Hall's south façade. They consist of 7 treads (plus 1 tread if counting the landing) and 8 risers measuring 12" with a square nosing and 6-1/2", respectively. The top tread is flush with a concrete landing. Each side of the stairs is a stepped brick wall with a sandstone cap that matches the dimensionality of the window sills. Control joints between the granite steps are staggered every other step so the first step from grade contains three slabs of equally spaced granite, the second step has two equally spaced slabs, the third step matches the first, and so on. The overall width of the stairs is 12'-11".

At the rear of the property is a flight of concrete stairs leading to a pair of doors used to access the basement. The stairs start at grade and descend approximately 3'-0" to 4'-0" to a concrete landing. Each side of the stair well is a tube-steel guardrail set atop a concrete retaining wall. Traversing each side of the stair is tube-steel railing.

On the south façade, a railing and balustrade enclose the porch. The railings are anchored to the adjacent walls and have no floor supports. The tops of the top rail and bottom rail are chamfered about the midpoint to allow water flow off it. Seven square balustrades approximately 3"x 3" are evenly spaced with the end balustrades only half the distance from the adjacent wall.

Below the railing is a wood bullnose that caps a wood skirt board. The ends of the bottom rail, bullnose and skirt board have been scribed to fit the adjacent stone.

The entire rail assembly is painted light gray.

6. Fenestration

Fenestration includes all exterior wall openings, doors and windows.

a. **Doors**

There are a total of five exterior entrances. The primary entrance is centrally located on the first level of the south façade and consists of out-swinging double doors measuring 6'-0" wide by 7'-0" in height. The lower half of the door consists of a shaker style recessed panel whereas the upper half of the door is a sash-cased pane of fixed glass. Hardware is limited to three, 5-knuckle flat topped hinges and an aluminum pull handle with back plate on each door. Access to the Lobby is gained using a keyless card reader. The reader is surface mounted east of the double doors. In addition, the easternmost door has a keyhole in the upper portion of the back plate. From the interior, a touchpad style exit device is mounted just below each fixed pane of glass and each door is equipped with an automatic door closer. Surrounding the entry doors are flanking sidelights and an elliptical arch transom. The sidelights have a solid raised panel on the lower half and a sash-cased fixed pane of glass for the upper half of the assembly. The transom is divided into the three sections of door assembly; sidelight, double door and sidelight. Each section of transom is a sash-cased fixed pane of glass, with the center section divided by two vertical mullions. The total height of the door assembly measures 8'-3" to the top of the elliptical arch with a spring point of 7'-4". The overall width measures 10'-9".

One entry point is located on the east façade. The single hollow metal door services the east stair hall. The door is left hand outswing and has the same hardware as found on the easternmost door of the entry double doors. The door has a single light in the upper half of the door and a three-light sidelight to the south and a single-pane transom directly above the door. The interior of the door is equipped with a touchpad style exit device and an automatic closer.

The south façade consists of one double door servicing the basement level. Each door has a recessed shaker style panel comprising the lower half and a sash-encased pane of wired glass comprises the upper half. Dividing the wired glass is a horizontal mullion that sits flush with the face of the door. Hardware consists of three flat-topped 5-knuckle hinges on each door, a thumb latch on the easternmost door and a rectangular metal cover plate on the west door. Interior hardware includes an automatic door closer on the easternmost door, a crossbar style exit device on the westernmost door and a pad lock with latch securing the two doors in place.

The west façade door fenestration is nearly a mirror image of the east façade with exception of an additional door for Americans with Disabilities Act (ADA) compliance, which services an interior elevator. The door has two lights, with a dividing panel displaying the international symbol for accessibility. Hardware consists of a thumb latch and pull from the exterior and a touchpad style exit device and automatic door closer from the interior. The door is of right-hand outswing type. Above the ADA door is a standing seam metal roof overhang that spans the width of the door opening and slopes back toward the building. The upper portion of the overhang infills the arch-topped portion of a non-extant window opening.

b. Windows

There are a total of 42 window openings on the south façade⁵⁴, 16 on the east façade, 41 on the north façade⁵⁵ and 14 on the west façade.⁵⁶ A hierarchy of windows is present at Lincoln Hall with the largest, arch-topped windows placed at the first level, slightly smaller rectangular windows with jack arches at the second level and smaller jack arch-topped rectangular windows at the third level. The basement, being partially underground has the smallest window openings.

Basement

The basement, originally designed for lesser use than its' present day arrangement, had arch-topped vent openings, which were originally inlaid with woven metal mesh screen. As the basement took on different uses, some vent openings were enlarged and converted to windows while others were infilled with various window types of various materials. Basement vent openings which were enlarged and filled in with metal French casement windows are located on the west wing of Lincoln Hall. The opening was enlarged by increasing the head height to the underside of the granite water table and widening each side for overall measurements of 3'-0" wide x 2'-3" high. The enlarged basement windows have a concrete-coated sill sloped to drain and overhangs the exterior brick wall by 2". Below the sill is a header course of brick. A steel plate serves as the window header. Each sash of the French casement is a two-over-two light pattern and houses various patterned wired glass. Interior hardware comprises of cranks at the sill and casement window handles and strike just above the dividing mullion of the window.

All other basement vent openings retain the segmental arch appearance from the exterior and have been infilled with metal louvers, exhaust vents or square wood casement windows. Hardware for the casement windows vary window to window, however, types observed include spring loaded transom window latches and decorative spring loaded cupboard latches. Hinge types also vary including 5-knuckle ball top and 3-knuckle cupboard hinges. Glass types include wired and single pane annealed.

A third type of basement window can be found in the Janitors Room (06). This room has two wood awning type windows on the south wall. Both windows have the same height but vary in width, with the west window approximately 6" narrower than the east window. The windows have a center vertical mullion.

Refer to "Vent Openings" of this section for description of basement vent openings.

First Floor

All original first floor windows are constructed of wood, are double-hung, have a two-over-two light pattern and have a Roman arch with four courses of rowlock brick. All original windows are set into the exterior brick wall a depth of 8-1/2" measured from the face of the exterior brick to the face of the window sash. A round wood brick mold measuring 1-1/4" diameter follows the outer edge of the window face and extends from the sill, curves with the arch and terminates at the other side of the sill. The sill projects 5-1/2" from the face of

⁵⁴ Including interior corners and porch.

⁵⁵ Including interior corners.

⁵⁶ Including all basement vent openings which have been in-filled with various window types.

the window sash and has a thickness of approximately 5-1/2". From the bottom of the sill to the top of the water table, the exterior face of the brick wall steps in 4" creating a visual elongation of the window opening. Exterior screens are present on the lower sash.

First floor windows that have been modified are of exception to original window design. These windows include a pair of wood double hung windows on the north façade. These infill windows have a segmental arch which once housed double doors; these served as an entrance for the building's north façade.

Other first floor non-historic windows are the two windows associated with Room 114 on the northeast corner of Lincoln Hall, where a kitchen was installed in 1952. Both window sills in this space were shifted up to allow for countertops to be installed. It appears the original sills were reused and new wood French casement windows and transom were installed. Each casement has a one-over-one light pattern and the Roman arch transom is segmented by a vertical mullion. Similar detailing of the round wood brick mold is present at these replacement windows.

Two aluminum French casement windows with an upper transom and lower hopper window are also not original to the 1896 design of Lincoln Hall. These replacement windows were installed in 1968 when all Lincoln Hall bathrooms were reconfigured. A third window directly west was infilled between 1952 and 1968. The sill was left in place, but consequently, the window was removed and the opening infilled with brick. The brick infill was done in such a manner consistent with present-day Secretary of the Interior's Standards, where the infill brick was set in from the face of the exterior wall creating a distinct shadow line. The same infill of aluminum windows occurred on the second floor, except a rectangular transom was installed rather than an arch-top transom. The window opening west of the third floor aluminum infill windows was also infilled with brick using the same technique as described on the first floor. Both window infills contain large mechanical exhaust vents that service the adjacent bathroom. The exhaust vent for the third floor restroom penetrates the roof.

Second Floor

Original 1896 second level windows are akin to first level windows in type, width, sill material and dimension, round brick mold and light pattern. In contrast, second level windows are rectangular and have a jack arch rather than a Roman arch.

Modifications to second level windows are concentrated to the north façade. When the central stair was removed in 1952, the window openings at the former stair landings were shifted upward and new windows were installed. The new windows retained their existing stone sills, historic width and overall appearance; however, the height of the window was increased to match adjacent non-modified windows. The same shifting effect of windows occurred on the third level as well.

Third Floor

Third floor windows are a smaller version of second floor windows. They are constructed of wood, are double hung and have a two-over-two light pattern. The top of the window is framed by a jack arch. The only observed modification to third floor windows is located in line with the aluminum infill windows on the north façade of Lincoln Hall. Two windows

were replaced with aluminum French casements. The sandstone sill, jack arch overall opening dimensions were retained in place.

Half Floors

Windows unique to the east and west façades, installed upon the construction of the 1952 egress stairs, are the addition of two metal framed double hung windows. The windows do not align with any historic openings nor do they align with the belt course. They were placed at the landing for each set of stairs. The lower window is about one-third taller than the upper window and both windows have a concrete sill.

c. Openings

There are three Roman arched openings and one elliptical arched opening at Lincoln Hall.

The primary opening is an elliptical arch centrally located on the south façade. Flanking the elliptical arch are three brick Roman arches making up a colonnade of seven arches that enclose the south porch. The elliptical arch is composed of 12 voussoirs⁵⁷, one keystone⁵⁸ and two springers.⁵⁹ The arch has a rise of 4'-11" with a spring point of 7'-0". The keystone is not embellished like a typical keystone, but rather matches the adjacent voussoirs. Each springer rests atop a carved pillar set approximately 10'-0" apart. At the spring point is a smooth granite capital. This granite capital also embellishes the brick Roman arch openings. The voussoirs terminate into a sandstone belt course only found on the south façade running the length of the porch. Above the belt course is an etching of the words "LINCOLN HALL". Above that is a sandstone sill that caps the porch parapet.

The Roman arches are constructed of four courses of rowlock brick, with the outermost rowlock course sitting directly below the sandstone belt course. As already mentioned, the arch terminates into a granite capital which bears on a brick column measuring 1'-5" square. Spacing between brick columns measures 6'-9". The Roman arch has a rise of 2'-11" with a spring point of 7'-0". Refer to Appendix B for elevation and dimensions of the column capital.

d. Vent Openings

Vent openings are located in the basement. The original configuration for these openings is square with a segmental arch top and inlaid with a woven metal mesh. The segmental arch is composed of 2 courses of rowlock brick with a rise of 1'-3/4" and a spring point of 1'-0". The overall width measures 1'-6". Each vent opening has a sandstone sill measuring 6" thick, 2'-0" in length and projects off the wall 3". Many of these openings have been reconfigured or infilled with wood casement windows. Other vent opening has been retrofitted with mechanical exhaust vents and metal louvers as noticeable on the south façade. None of the original vent opening configurations are extant.

⁵⁷ A voussoir is the wedge-shaped unit, when assembled, forming the structural arched opening.

⁵⁸ The wedge-shaped, often embellished voussoir at the crown of an arch, serving to lock the other voussoirs in place.

⁵⁹ The springer is the first voussoir resting on the impost of the arch, which is the uppermost part of the column from which an arch springs.

Refer to “Windows” in this section of the report for basement vents which have been infilled with windows.

e. Light Shafts

Original to the 1896 design were two light shafts placed at each end of the corridor. The light shaft also provided means for exhaust air to escape the building. The exhaust air would enter the shaft at the corridors and the bathroom and then exit the building through a low lying stack. The shafts were constructed of brick. Their removal came in 1952, when the building was extensively remodeled.

H. Architectural – Interior of Building

Lincoln Hall is an “H” shape building with a central east-west corridor which forms the hyphen of the “H”. At each end of the corridor is a stairwell connecting all four levels of Lincoln Hall; comprising three floors above grade and a basement positioned two-thirds below grade. All other spaces, i.e. dorm rooms, common areas, etc. are placed to each side of the central circulation corridor.

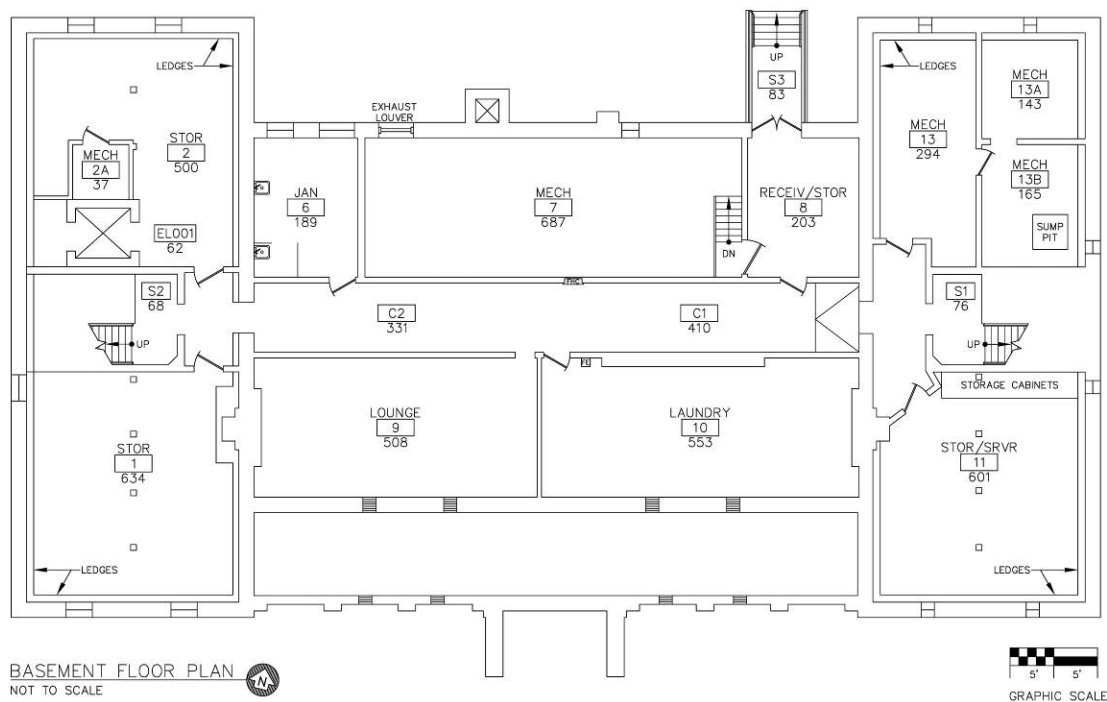


Figure 1: Lincoln Hall basement floor plan. Drawing Source: University of Nevada, Reno with revisions by TSK Architects, May 2015.

1. Basement

The basement is used for storage, laundry and houses mechanical, electrical, plumbing and fire systems. Historical records state the basement of Lincoln Hall was once used as the maintenance departments' repair and paint shop. Reports to the Board of Regents expressed the apparent danger of having a maintenance shop in the basement of Lincoln Hall and urged the Regents to have it removed. The facility was relocated elsewhere on campus when Lincoln Hall underwent an extensive remodel in 1952.

a. C1 & C2 – Corridor

The basement corridor measures approximately 69'-3" long by 7'-10" wide with a ceiling height of 7'-7". The space serves as circulation to all rooms as well as acts as an artery for electrical conduit, plumbing pipes and fire sprinkler pipes traversing the ceiling. The flooring material is asphalt tile squares laid in a checkered pattern and the floor at the east end of the corridor ramps up approximately 6". A sewer cleanout is present in the floor at the west end of the corridor. The corridor is illuminated by five ceiling mounted fluorescent lighting fixtures.

The north wall is constructed of white painted brick laid in a common bond pattern with every seventh course a header course. The strike of the mortar joint varies with some areas having a flush strike and others a concave strike. The outlines of three segmental arched openings are present on the north wall. The openings have been infilled with brick, but the segmental arch with one course of rowlock brick remains. To each side of the infilled openings is a door that services Room 6 and Room 8. Also on the north wall is a centrally positioned fire hose cabinet.

The south wall is constructed of wood frame construction and has two doors located at the center of the corridor. The east door enters Room 10 used as the Laundry Room and the west door enters Room 9, a multi-purpose room for students.

The east and west walls of the basement corridor have rectangular openings to adjacent stairwell vestibules.

b. Room 1 – Storage

Room 1 is currently used for storage and measures approximately 26'-4" in the north-south direction and 24'-3" in the east-west direction. A post and beam system spans the length of the room. As noted in historic documentation and as seen as physical evidence, Room 1 and 2 as well as the Stairwell in between, were originally not usable space. It can be speculated the west wing was more of a crawl space. In 1934-1936, these three spaces were excavated down and made into a common space for use of students in residence. It can also be speculated that the basement vent openings in these spaces were enlarged and infilled with metal casement windows at this time. As a result of lowering the finish floor, the post and beam systems were modified and a concrete skirt was constructed around the perimeter walls to conceal the now exposed stone foundation.

The floor in Room 1 is concrete and the ceiling is plaster with applied acoustical tile squares. The room is illuminated by ceiling-mounted fluorescent light fixtures. Exposed piping traverses the ceiling.

The north wall is shared with S2 stairwell which is constructed of board form reinforced concrete. One door is positioned at the east end of the north wall.

The east wall is constructed of white painted brick laid in a common bond pattern. The primary feature on the east wall is a foundation for the west chimney. The same concrete skirt also wraps the chimney foundation.

The south wall is also constructed of white painted brick laid in a common bond pattern. Two rectangular openings with metal casement windows are positioned so the top of the opening is flush with the ceiling. The openings measure 3'-0" wide by 2'-3" tall.

The west wall is of same construction as the south wall. An opening with same dimensions as the south wall, is positioned approximately 3" off the north wall.

c. Room 2 – Storage

Room 2 is used for bike storage and also houses the elevator and elevator mechanical room. The room measures approximately 24'-3" in the east-west direction and 26'-9" in the north-south direction with the elevator and mechanical room occupying the southwest quadrant of the space. The ceiling measures 7'-5" above finish floor. The room is bisected by a post and beam system similar to Room 1 and also has a concrete skirt that wraps the perimeter of the space.

The floor is gray-painted concrete and the ceiling is plaster. Electrical conduit and plumbing pipe traverse the ceiling.

The north wall has two casement windows of same size and configuration as those found in Room 1. The top of the window opening is flush with the ceiling.

The east and west walls are composed of the previously described concrete skirt wall below with a brick wall above.

The east wall is reinforced concrete and is shared with the west stairwell. One door is position at the east end of this wall. Bisecting the east wall is the exterior wall to the elevator.

d. Room 6 – Janitors Room

The Janitors Room is rectangular in plan measuring 11'-10" in the east-west direction and 15'-11" in the north-south direction with a ceiling height of 7'-3". The floors are concrete and the ceiling is plaster. Extensive piping covers the ceiling. Unlike Rooms 1 and 2, the Janitors Room does not have a concrete skirt around the perimeter wall. Rather, the exposed stone appears to be heavily grouted or possibly coated with concrete giving the wall a rough unfinished look.

The north wall is constructed of the above mentioned stone foundation with rough concrete cover and is capped with a brick wall. Set into the brick wall are two awning style, wood windows. The head of the windows are flush with the ceiling.

The east wall is wood framed construction with a thick plaster coat of uneven application. A handful of pipes pierce through the upper quarter of this wall.

The south wall is constructed of brick and contains one door. The jamb of the door sits up against the east wall. Dividing the wall is a wood partition which once provided privacy for a toilet stall. The toilet is no longer extant, but an unpainted square of brick wall and sewer connection on the floor is visible. It appears as though the toilet was recently removed as a toilet paper holder with toilet paper is still present.

The west wall is of same construction as the north wall. A wood partition wall, positioned approximately 4'-0" from the south wall, once closed off a toilet stall. South of the partition wall, is a wall-mounted sink. West of the partition wall is a utility sink. West of the utility sink is a counter which wraps around to the north wall.

e. Room 9 – Fraternity Room

The Fraternity Room is rectangular in plan and measures approximately 32'-5" in the east-west direction and 15'-11" in the north-south direction. The ceiling height measures 7'-1" from finish floor to underside of the suspended ceiling. The room is carpeted, all four walls have a wood baseboard and wood chair rail. Below the chair rail is painted royal blue while the wall above the chair rail is painted baby blue. A suspended ceiling with set-in 2x4 acoustical tiles covers three-quarters of the ceiling while the remaining quarter is a drop ceiling. The drop ceiling houses supply air ducts and four recessed can lights. The suspended ceiling portion of the room is lit by 2x4 fluorescent lighting inlaid into the ceiling grid.

The north wall is wood-framed construction and contains the one opening into the room. The jamb of the opening sits approximately 2" off the east wall.

The east and west walls are also wood-framed construction. A flat-screen TV is mounted center on both walls. North of the west mounted TV is an empty recessed wood bookshelf containing no shelves. The dimensions of the bookcase are approximately 3'-0" square and 1'-0" in depth.

The south wall has the words "Lincoln Hall" and a drawing of a wolf head painted on the wall. West of the artwork is a return air vent.

f. Room 10 – Laundry Room

The Laundry Room measures 35'-6" in the east-west direction and 15'-11" in the north-south direction and has an acoustical grid ceiling height of 7'-6". The north wall has a pronounced 1'-0" jog into the space. The flooring is vinyl composite tile laid in a checkered pattern. A portion of the floor approximately 8'-0" long by 3'-0" deep steps up 4"-5" and is used as a platform for the washing machines. All walls

are painted white and have a rubber baseboard. The ceiling is bisected by a large dryer vent that spans the short direction of the room. Six surface-mounted fluorescent light fixtures are present on the ceiling. Less piping traverses the Laundry Room ceiling than other basement rooms.

Three washing machines and three drying machines are located along the north wall. As mentioned before, the washing machines are elevated on a concrete slab.

Visible on the east wall is the foundation for the east fireplace. Wrapping the lower half of this wall is a concrete skirt. The upper half is constructed of white-painted brick laid in a common bond pattern. The concrete skirt wraps the southeast corner of the room and continues along the south wall.

The south wall contains two arch-top vent openings. Both vent openings are constructed with one course of rowlock brick forming a segmental arch. At present, from the spring point up, the opening has been infilled with brick. The easternmost vent opening is currently being used to vent the dryers. The westernmost opening is boarded over with plywood and painted white to match the adjacent wall.

The west wall is wood framed construction and has two vending machines.

A 4x4 wood beam is anchored high up on the east and west walls and was likely, at one time, used as a clothes line.

g. Room 8 – Receiving Room

The Receiving Room is a small room, similar in size to the Janitors Room and is located off the northeast corner of the basement corridor. The room measures 12'-9" in the east-west direction and 15'-11" in the north-south direction. The ceiling height measures approximately 6'-8" above finish floor, but the head clearance is significantly reduced due to the mechanical, electrical and fire suppression pipes overhead. The floor is unpainted scored concrete. The room is illuminated by a single light bulb.

The lower half of the north wall is exposed stone that has been painted white. The upper half of the wall is brick laid in a common bond pattern. Every seventh course is a header course. The west end of this wall features double doors that were installed in 1952. A 3'-4" concrete curb spans the opening of the doors.

The east wall is of same construction as the north wall. Approximately 18"-24" north of the south wall are the markings of a brick infilled opening. The opening is approximately 3'-0" wide and is topped with a segmental arch constructed of two courses of rowlock brick.

The south wall is constructed of brick laid in a common bond pattern. Centered on the wall is wood door with hollow metal frame. East of the door is a wall-mounted utility box.

The west wall is of same construction as the south wall. One door is located at the south end of the wall. The boiler room is accessed by this door.

h. Room 7 – Boiler Room

The Boiler Room is accessed from the main corridor via the Receiving Room. In 1952, the room was excavated to a depth 5'-0" below the basement elevation. The room measures approximately 43'-2" in the east-west direction and 15'-11" in the north-south direction. The ceiling height measures about 12'-0" above finish floor. A concrete floor with multiple floor drains was installed in 1952. The ceiling appears to be lined with a reflective vapor barrier. Refer to the Mechanical Observations section of this report for further explanation of the systems in place.

The north wall assembly is composed of a concrete retaining wall capped with the typical exterior brick wall found throughout the basement level. High positioned and centrally located on the north wall is a large opening to the exterior. Connected to the opening is an exhaust vent and duct. Further west on the same wall is another exterior opening with metal louvers that provide fresh air to the room.

The east wall is constructed of concrete up to the basement floor elevation and then continues with brick. Along the east wall is a flight of concrete stairs and door used to access the room. At the bottom landing of the stairs are two electrical panels.

The south wall is constructed in the same manner as the east wall. Visible also from the Basement Corridor are three brick infilled openings. Mounted to the wall is a bank of power switches and fire alarm panels.

The west wall is also constructed in the same manner as the east wall with a concrete retaining wall up to the basement finish floor and then continues with brick.

i. Room 13 – Fire Alarm Room

Room 13 is divided into three compartments; 13, 13A and 13B. Room 13 houses a fire riser, Room 13A contains switch panels for White Pine Hall and Lincoln Hall and lastly, Room 13B contains a sump pit. Dividing Room 13 from Rooms 13A and 13B is a post and beam system where a wood framed wall was constructed in between the posts to divide the rooms. Between Room 13A and 13B is another wood framed wall with a framed opening to allow access between the two rooms. At the center of Room 13 is a raised concrete slab installed for mounting the fire pump supporting the sprinkler system in the building with the fire riser located against the west wall. A sump pit is 3'-0" square by approximately 5'-0" deep and is located in the southeast corner of Room 13B. Of all the basement rooms, these three rooms have the lowest ceiling height measuring approximately 6'-8". The original post to boulder footing foundation is visible in these rooms, alluding the ceiling height is close to its original height. All three rooms have a concrete floor.

The north walls of Room 13 and 13A are exposed stone foundation at the lower third of the wall and brick laid in a common bond pattern for the upper two-thirds of the wall. Both the stone foundation and brick have been painted white.

The east walls of Room 13A and 13B and the west wall of Room 13 have the same appearance as the north wall.

The south wall is constructed of reinforced board form concrete and is a common wall to Room 13B and 13. The west end of the south wall jogs into the room by approximately 3'-0", 4'-6" from the west wall. The jogged wall is constructed of CMU block. In this CMU wall is a wood door with hollow metal frame, which serves as the Rooms' only entrance.

j. **Room 11 – Storage**

According to the Biennial Report of 1934-1936, a cement floor was laid in this room and a partition was constructed to provide a needed room for general storage purposes. At present, Room 11 contains a data drop and storage. The room measures 24'-3" in the east-west direction and 26'-4" in the north-south direction. The northwest corner has an angled CMU block wall that houses the door to the room. Dividing the room is the same post and beam system found in Room 1 and 2. As mentioned in the 1934-1936 Biennial Report, there is evidence of a partition wall constructed between the posts dividing the room.

The west portion of the north wall is composed of CMU block, whereas the east side of the north wall is reinforced board form concrete. Present in front of the concrete wall are built-in storage cabinets.

The east wall has the same appearance as the east wall of Room 13A and 13B with exposed stone foundation for the lower third of the wall and brick for the upper two-thirds of the wall. Installed adjacent to the built-in storage cabinets is a former basement vent opening infilled with a wood casement window.

The south wall has the same construction as the east wall, with exception the stone foundation has been coated with plaster. Two basement vent openings are present on the east wall; one centrally positioned on each side of the dividing post and beam system. Both vent openings have been infilled with wood casement windows.

The west wall is of same construction as the south wall. Mounted over the brick portion of the wall is a large piece of plywood which holds data drops for Lincoln Hall. The north end of the west wall is the foundation for the east chimney.

2. First Floor

The first floor serves as the main floor for occupants to enter and exit the building. The main entrance is centrally positioned on the south façade of the building. All interior walls of the first floor are wood framed with exception to the stairwells, which are reinforced concrete and the two inner legs of the buildings “H” shape, which are brick.

Common spaces within the first floor are the Entry (C102), a Corridor (C100, C101 and C104), the Reading Room (103), the Pool Room (107), the Stairwells (S101 and S102), the elevator and the Men’s and Women’s Restroom (R100 and R101, respectively). All other spaces are dorm rooms and storage closets and are considered private. Unfortunately, during our site visit, we were unable to access any first floor dorm rooms, but current and historic floor plans of the building, provided by the University, were used for reference. For purposes of this report, the dorm room architectural assessment will be compiled based on these floor plans and other recorded documentation.

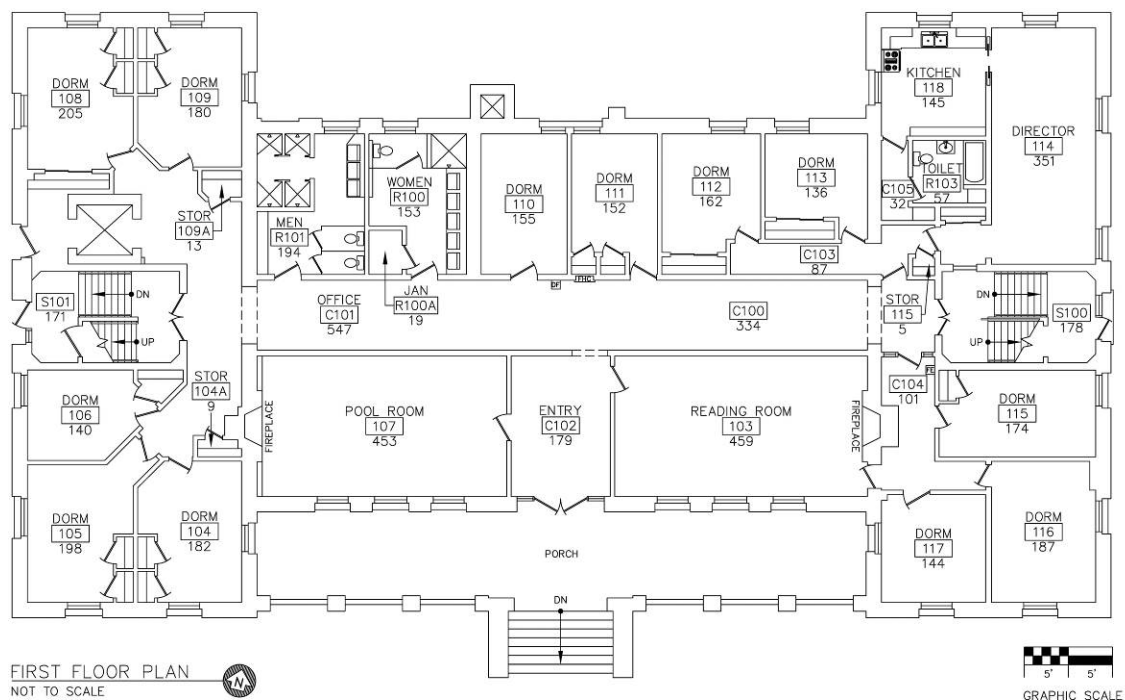


Figure 2: Lincoln Hall first floor plan. Drawing Source: University of Reno, Nevada revised by TSK Architects, May 2015.

It is known that very little interior historic fabric remains of the first floor. The east wing has been reconfigured at least three times; first in 1934-1936, second in 1952 and the third time was sometime between 1952 and present. The only portion of wall that may be original to 1896 is the wall dividing Room 118/ R103 and Room 114 and the wall dividing Room 117 and Room 116. All other walls appear to have been reconfigured.

The center portion of the first floor Corridor (C100 & C101) has also been heavily altered. North of the corridor, across from the Lobby, was originally the main stairwell for Lincoln Hall. In 1952, the central stairwell was infilled with a dorm room to the east and a telephone room to the west. Since 1952, the telephone room has been converted into a dorm room.

The west wing of Lincoln Hall appears to be partially intact, but experienced modifications when the west stairwell and elevator were installed in 1952 and c. 1990s, respectively. Again, the only segments of wall that appear to be original from 1896 are the wall separating Room 108 and Room 109, the angled wall between Room 109 and the hallway and the walls comprising Rooms 104 and 105. The closets in Rooms 104 and 105 appear, in plan view, to match the historic 1896 location. Refer to Figure 75 for a wall history of Lincoln Hall's First Floor.

a. C102 – Entry

The Entry is centrally positioned along the south side of the building. The room measures 11'-3" in the east-west direction, 15'-11" in the north-south direction and has a ceiling height of 10'-1". In 1989, the room was redecorated with new moldings, flooring, wallpaper and chandelier. All four corners of this room have been boxed out except for the northwest corner.

The north wall has one cased opening measuring approximately 4'-6" wide. The upper corners of the opening have non-historic decorative corbels. The upper portion of the wall has a soffit which houses a side throw fire sprinkler pipe. An original 1896 first floor plan calls for a plaster arch between the Entry and Corridor.

The east wall has one 6-panel door which opens into the Reading Room (103). The original opening to this room shows as double doors opening toward the Reading Room, centrally positioned on the wall.

The entire length of the south wall comprises the front door assembly consisting of double doors flanked by sidelights with a segmental arch transom spanning the sidelights and double door.

The west wall has one 6-panel door that matches the east wall door. However, this door opens into the Pool Room (107). The opening for this door is roughly in the historic 1896 double door opening location. South of the door is a fire cabinet with date noted as 1938. The cabinet houses fire detection dials for each floor of the building, including the basement and attic. A label on the bottom of the box indicates the unit was installed by Pacific Fire Extinguishers, San Francisco, Cal. Below the fire cabinet is a wall radiator.

b. Room 103 – Reading Room

The Reading Room has had many names as noted on past construction drawings sets. In 1896, it was known as a Parlor. The Artemisia Yearbook from 1919 also refers to the room as a Parlor and shows the room with an upright Kingsbury piano. In 1952 it was a Library and then a Lounge in 1957. From 1968-1989 it was referred to as the East Lounge and finally a Reading Room in 1997 thru present day. The 1921-1922 Biennial Report stated the East parlor was often used as a meeting place for committees and clubs. Based on past drawing records, the room does not appear to have changed in shape. The Reading Room measures 28'-8" in the east-west direction and 15'-11" in the north-south direction with a ceiling height of 10'-3 1/2".

One photo dating from the 1919 Artemisia Yearbook shows the east wall of the Reading Room. No records of interior work to this room prior to 1919 have been identified, so it can be speculated the finishes could be from 1896. Character-defining features visible in this room include a baseboard and chair rail and contrasting paint scheme on each side of the chair rail. The south end of the fireplace mantel is visible. The cropping of the photo omits the ceiling, but it would have not been uncommon for the top of the wall to have a picture rail. To the right of the frame (south end of the east wall) is a 5-paneled door with trim and rosettes at the top corners. This door historically would have provided access to the Masters' Rooms. At present the opening is extant, but the door and trim have been replaced. The door now services Corridor 104.

Similar to the Entry, the Reading Room was fully refinished in 1989. Improvements, which are still present today, included new carpeting, new baseboard, chair rail and crown molding, new wallpaper and a new paint scheme. All doors were replaced with 6-paneled doors with replica mortise locks. A metal and glass chandelier was installed centered on the ceiling. The fire place hearth, surround and mantel were also replaced at this time with a black granite hearth, a wood and granite surround and a wood mantel.

Extant character defining features for this room are limited to the room's overall dimensions, the three windows along the south wall and the door opening location on the east wall. Character defining features for the fireplace include its location, the opening size and its cast iron andirons.

Only the east, south and west walls of the Reading Room have features worth mentioning. Centrally positioned on the east wall is the fireplace. North of the fireplace is a built-in book shelf. South of the fireplace is a door into Corridor 104. The south wall contains three historic double hung windows. Below the first and third window is a radiator. Each window is fitted with wood-slatted mini blinds. Of note about the windows, is that the interior opening is squared off while from the exterior, the window has a Roman arch. This allows for the lower sash to open fully without being restricted by the arch. Between the east and middle window, the wall has been boxed out. In addition, the ceiling has a soffit along the south wall. This wall does not have the same wall treatments as the other three walls.

The west wall has one 5-paneled door positioned at the north end of the wall.

c. **Room 107 – Pool Room**

The Pool Room is nearly a mirror image of the Reading Room with a few exceptions. The Pool Room is approximately 4" shorter in the east-west direction than the Reading Room. The room has a different color scheme, and rather than the door from the Entry being to one side, the door is centered on the wall. The fireplace is identical to the Reading Room with exception to having built-in bookshelves to each side of the fireplace, rather than just one side and a door on the opposite side. A single chandelier with four luminaires hangs centered on the ceiling.

d. **C100 & C101 – Corridor**

The first floor corridor creates the hyphen of Lincoln Hall's "H" shape floor plan. The overall dimension measure 69'-3" in the east-west direction and 7'-11" in the north-south direction. The ceiling measures 10'-2" above finish floor. Similar to the Reading Room and Pool Room, none of the finishes in the corridor are original. New carpeting, baseboard, picture rail, wall paper and crown molding were introduced in 1989. New doors and door frames were also installed at this time. Three round ceiling mounted fixtures illuminate the corridor.

The north wall of the corridor has four doors; the two westernmost doors enter to the Men's and Women's Restroom while two easternmost doors open to dorm rooms. Only the second door opening from the west appears to be in its original 1896 location. Between the two middle doors is a drinking fountain and fire hose cabinet. Each end of the corridor is constructed of brick wall and has features an arched opening. The segmental arched openings are centered on the wall and measure 6'-8 ³/₄" wide with a spring point of 7'-5". The overall height of the arch is 9'-2". All edges of the east arch are rounded, whereas the west arch has rounded edges up to the spring point and then is squared off for duration of the curve. The north and south walls are wood frame construction. The south wall has one cased opening into the Entry and has a soffit, which houses fire sprinkler piping.

Character defining features for the Corridor include the overall dimensions of the space and the segmental arched openings at each end.

3. Second Floor & Third Floor

No drawings prior to 1952 were identified for the second or third floors of Lincoln Hall. However, the 1952 second floor demo plan closely resembles the 1896 first floor plan of Lincoln Hall, with exception to the southeast corner of the building being used as Dorm Rooms instead of Master's Rooms.

Similar to the First Floor, no interior finishes were identified to be original to the 1896 design. However, possible historic fabric may lie with the wardrobes. Refer to Dorm Room Wardrobes for full description of the feature. The finishes present at the writing of this report were installed between 1952 and 1989. It can be speculated interior walls are roughly in their original locations; however additional site investigation would need to be performed. Known historic features include the segmental arches at each end of the Corridors.

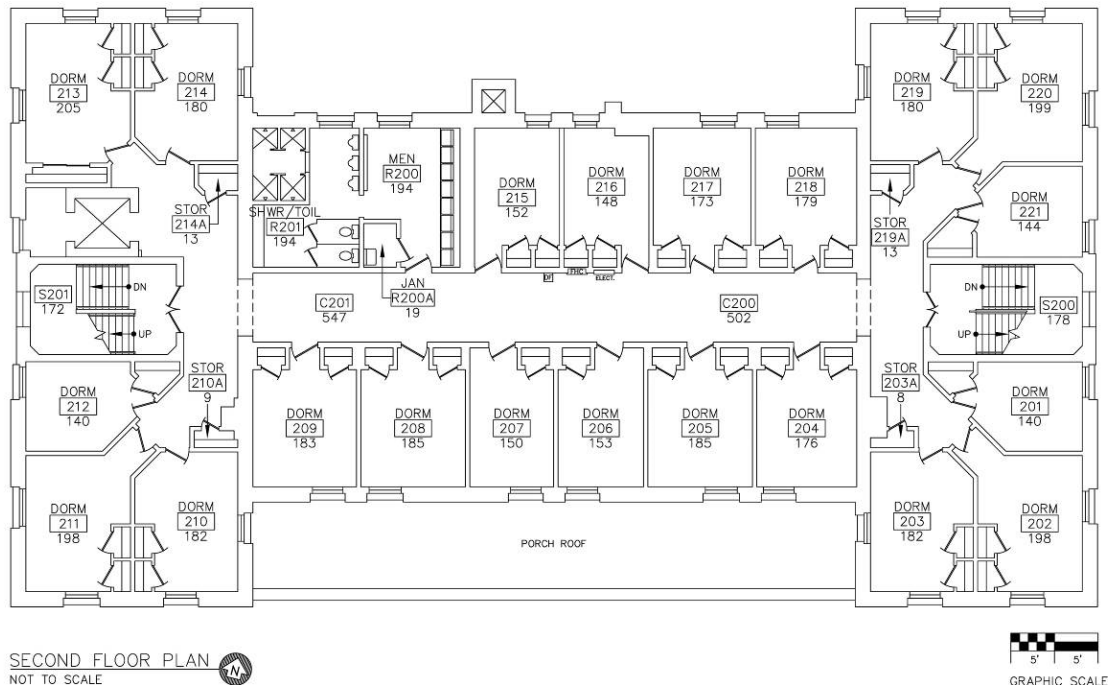


Figure 3: Lincoln Hall second floor plan. Drawing Source: University of Nevada, Reno revised by TSK Architects, May 2015.

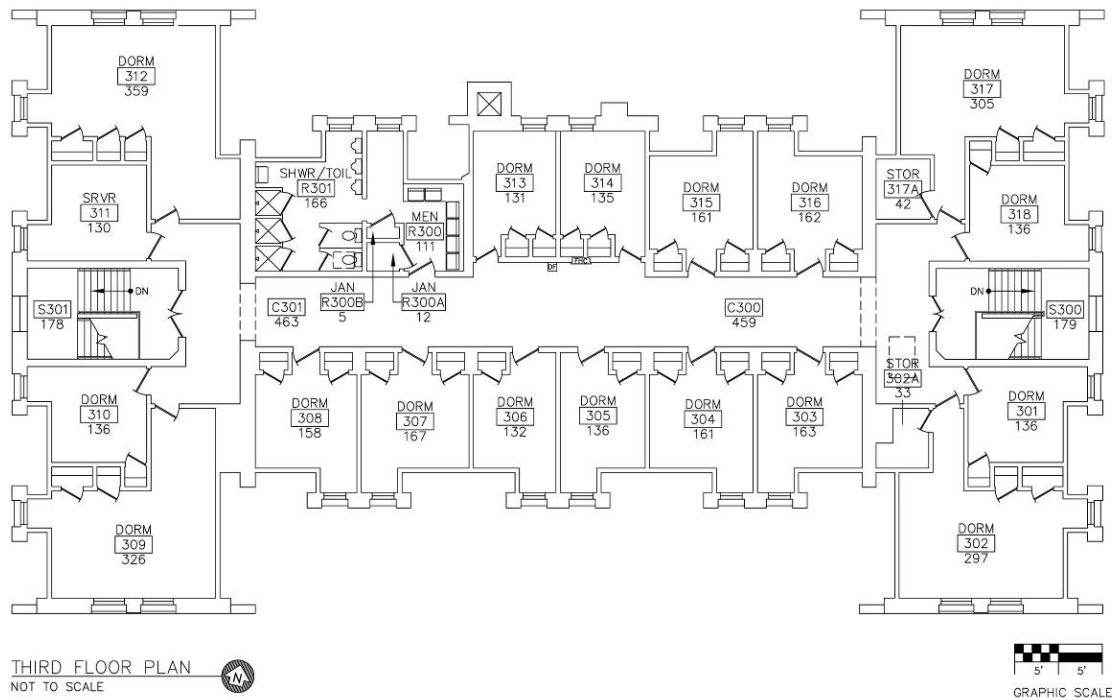


Figure 4: Lincoln Hall third floor plan. Drawing Source: University of Nevada, Reno revised by TSK Architects, May 2015.

a. C200 & C201 – Corridor

The second floor Corridor has the same overall dimensions as the first floor Corridor, with exception to the ceiling height measuring 9'-2". The ceiling is plaster and the space is illuminated by five surface mounted fluorescent lighting fixtures.

The north and south wall have non-historic baseboard and crown molding. The north wall has five doors; the middle two door openings not being original because this is where the original 1896 stairwell was once located. Between the second and third doors from the west is a drinking fountain and fire cabinet.

The east and west ends of the Corridor have segmental arch openings similar to the First Floor. The openings measure 6'-8" wide and have a spring point of 6'-2". The overall height measures 8'-1". The west arch has rounded edges whereas the east arch has rounded edges up to the spring point and then squares off for the duration of the curve.

The south wall has six doors that open into Dorm Rooms. The door openings appear to be in the same locations as doors on the 1952 drawings set.

b. C300 & C301 – Corridor

The Third Floor Corridor is narrower than the other Corridors and has the lowest ceiling height measuring 9'-0". The Corridor measures 69'-3" in the east-west

direction and varies in width. The north and south walls of the Corridor do not stack with the walls below, except for where the former central stairwell was placed. At the former stairwell, the north wall jogs approximately 1'-0" to align with the Corridor wall below. At this point, the width of the Corridor measures approximately 5'-4 3/4" whereas the remainder of the Corridor measures 4'-4 3/4".

Along the north wall, one door into the restroom is located west of the wall jog and two doors into Dorm Rooms are located west of the wall jog. Scarring is visible in the baseboard where a second door was located to access the Shower/Toilet side of the restroom (R301). Where the central stair was once located, are now two Dorm Rooms (313 and 314). A drinking fountain and fire hose sits between the doors into these two rooms.

The east and west walls have Roman arched openings. The width of the arch matches the width of the corridor at 4'-4 3/4". The spring point sits at 5'-9" and the overall height is 8'-2 3/4". The thickness of these walls is 1" less than the walls below, measuring out at 1'-3". Similar to the arches at lower levels, the edges at the west arch are rounded, whereas the edges on the east arch are rounded up to the spring point and then squared off for the duration of the curve.

4. Dorm Rooms

During the site visit we were able to gain access to three Dorm Rooms; Room 214 at the northwest corner of the second floor, Room 301 at the east end of the third floor and Room 312 at the northwest corner of the third floor. A typical Dorm Room has a wardrobe unit consisting of two closets stacked above two drawers, an entry door, at least one window, and a radiant heater, although Room 301 only had one closet due to the space constraints of the room. The rooms are either furnished for one or two occupants. Floors are carpeted and a rubber baseboard runs the perimeter of the room. As observed in room 214, a molding runs along the south wall and also vertically down the wall in the southeast corner of the room.

5. Dorm Room Wardrobes

Historic fabric may lie with the wardrobes. The 1952 drawing set calls for alterations to existing wardrobes (refer to [Figure 5](#)). The two drawers are shown as existing, whereas the door above calls for a new 1-3/8" thick 3-paneled door. No hardware is specified in the 1952 plan set, however, the hardware present today could easily date to 1952 or earlier. The hardware for the drawers is two bin pulls for each drawer and the door handles for the closet are bronze. There are two hinges per closet door which are the five knuckle type with flat-topped pins.

Paint samples were taken from the closet door panel and closet door jamb of Room 312 and analyzed to determine if either surface was original to 1896. The door panel, as expected, was found to contain no historic paint layers, however the door trim contained 14 layers confirming the authenticity of the door trim and location of the closet. Refer to the Appendix E for the Paint Analysis Report.

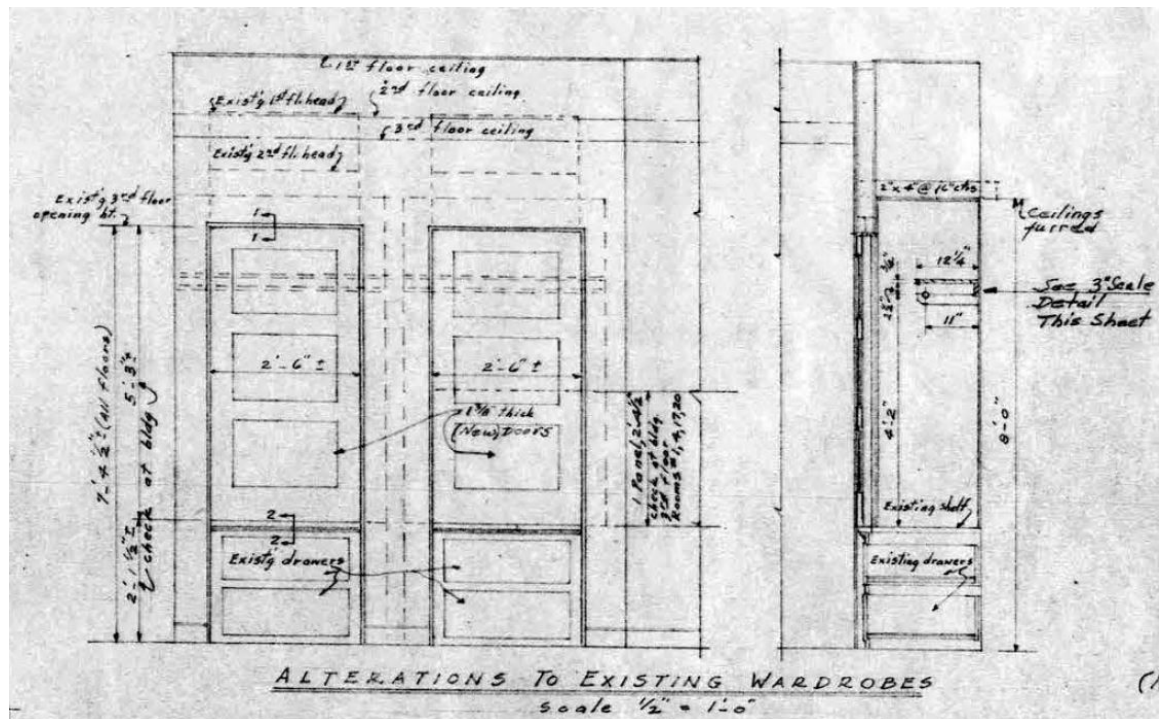


Figure 5: Alterations to Existing Wardrobes. Lincoln Hall – New Stairs and Interior Alterations, Sheet A-7, January 2, 1952.

6. Restrooms

Restrooms for Lincoln Hall are located at the northwest corner of each Corridor, except in the Basement where no facilities are present. A secondary bathroom is also located on the First Floor within the Director's area of Lincoln Hall (R103). The original configuration for the Corridor Restroom was configured differently than now. As shown on the original 1896 First Floor Plan of Lincoln Hall, the west side of the Restroom (R101, R201 and R301) has always been used as a toilet and bathing room. The east side of the Restroom (R100, R200 and R300) were originally Dorm Rooms. Lavatories were not necessary in the Corridor Restroom because individual washbasins were originally installed in each dorm room. By 1952, the individual washbasins had been removed from the Dorm Rooms and the Dorm Room adjacent to the Corridor Restroom was converted into a room with lavatories. All three Corridor Restrooms have undergone multiple remodels. No historic fabric was identified for these rooms.

7. Stairs & Railings

S1, S100, S200 and S300 refer to the east stairwell, whereas S2, S101, S201 and S301 refer to the west stairwell. The two reinforced concrete enclosed stairwell assemblies were constructed in 1952 as part of an extensive remodel to Lincoln Hall. The stairwells are a mirror image of one another when folded along an invisible line running north and south. They serve as a means of egress for the building by connecting all four floors and outlets to grade at a landing between the basement and first floor. They do not provide an accessible means of egress.

The number of risers and treads vary per flight of stairs depending on floor-to-floor heights. The basement to first floor height measures 8'-3". The first flight of stairs from basement level to landing has five risers and four treads and from landing to first floor, there are nine risers and eight treads. From first floor to landing there are 10 risers and nine treads and then another ten risers and nine treads from landing to second floor creating a total floor-to-floor height of 11'-8". The floor-to-floor height for the second floor decreases by 1'-0" resulting in eight risers and seven treads from second floor to landing and 10 risers and nine treads from the landing to third floor. All riser heights and tread depths are consistent at 7" and 10", respectively. The nosing of each tread has a slight curvature and overhangs the tread below by 1" creating a slightly slanted riser. The top edge of each tread has an inlaid traction strip that has been painted to match stair assembly.

A railing is present on both sides of each flight of stairs; however the current design does not comply with current building codes. Depending on the extent of work proposed for Lincoln Hall, the railing design may need to be brought up to current code. The railing height falls short of the required 34"-38" railing height, measuring only 33" from nosing to top of rail. The railing on the inside switchback of the stair assembly is placed on top of a low wall and also does not meet code. All railings also lack a 12" extension on each end of the rail.

8. Elevator

The elevator, notated as EL001, EL002 and EL003 on the floor plans is a traction type elevator. It services the Basement, First and Second Floor as well as a half level between the basement and first floor where there is at-grade access. A small elevator waiting room is situated between the building's exterior wall and the elevator just north of the west stairwell. The elevator mechanical room is located in the basement.

I. Structural

The structural evaluation was prepared by Melvyn Green, SE of Melvyn Green & Associates.

1. Overview

Lincoln Hall is a three story and basement, "H" shaped structure, with a center rectangular section and a rectangular wing at each end. The building was originally constructed in 1896.

The overall dimensions of the building are 124 feet 8 inches east to west and 69 feet 1 inch north to south. The center stem portion of the building is 45 feet in length. There is a portico on the south elevation that is approximately 11 feet long and 45 feet wide.

The building has been a dormitory since the initial construction. It consists of sleeping rooms, two day rooms on the first floor and similar lounge, laundry, and mechanical space in the basement. On the interior there is a double loaded center corridor that runs the length of the building from east to west.

The major alteration program in 1952 revised the exit system by adding stairs at each end of the corridor, constructing a boiler room in the basement along with a laundry, and some revisions to the dormitory room spaces. This construction is described later in this report.

An interior elevator, extending from the basement to the second floor was subsequently added.

2. Building Structural Description

a. General

Lincoln Hall is an unreinforced masonry brick and stone structure. It is a three story structure with a basement level about three and one-half feet below grade. It has a steep roof with a small attic above the central corridor of the building.

This report describes the details of structural systems, and an assessment of the structural condition. It identifies the problems and potential issues with the building, determining the cause of the observed deterioration, and provides some concepts of possible mitigation measures.

b. Foundation

The lower, or basement level, is approximately 3 feet 6 inches below grade. This level has stone exterior walls and a concrete slab on grade. The foundation depth below the slab is not clear but noted in the specifications as 6 inches below the bottom of the concrete slab. The stone foundation walls extend to grade with brick above.

The foundation walls are specified to consist of granite boulders mortared in place. The mortar mix is specified to be one part cement to eight parts lime. The foundation extends under all exterior walls. The foundation is approximately 4 feet in width from ground line down.

Posts in the basement support the first floor. The posts bear on a 16 inch by 16 inch stone footing with a flat place, either a plate or mortar, on top to receive the post.

The interior bearing walls at the basement level flank each side of the corridor and consist of one brick wall (south side) and one wood frame bearing wall (north side). The brick wall is 9 inches thick. As part of the 1952 alterations, some areas at the northeast corner of the basement have a concrete masonry unit (CMU) wall constructed.

In 1934-1936, the west wing of the basement was excavated to full depth and a concrete slab on grade constructed. This created a room about 20 feet by 60 feet that could be used by students for meetings and informal gatherings. New concrete footings, wood posts, and wood beams were installed to support the first floor.

In 1952 portions of the basement were excavated for the installation of new boiler equipment. The floor on the north side, central section was lowered 5 feet 0 inches. The new walls were of reinforced concrete construction. The foundation is 2 feet 7 inches in width

and fourteen inches thick. The new basement wall is about 21 inches thick matching the brick wall above. Some of the basement walls were incased in concrete.

c. First Floor Framing

The first level framing consists of 2 inch by 12 inch wood joists at 16 inches on center. The joists span from the exterior brick walls to interior bearing walls and to a post and beam system in the wings and where there is mechanical and heating equipment.

The brick walls are attached to the floor system with $\frac{3}{4}$ inch diameter iron rods. The rods are 2 feet 6 inches long and installed about 6 feet on center. The rods are turned down into the brick work. A plate at the other end is nailed to the wood work.

The post and beam system consist of 8 inch by 8 inch wood posts. Girders are 8 inch by 10 inch members. Girders are “halved” at ends and at angle supports.

There is 3 inch by 8 inch diagonal wood braces installed to brace the beams.

Wood bearing wall studs extend alongside the floor joists and bear on a basement girder or, if it is a stud wall below, the studs bear directly on the stud below.

d. Second and Third Floor Framing

The second level framing is similar to that of the first level with 2 inch by 12 inch floor joists at 16 inches on center spanning to interior walls. The walls typically line up with walls below. There are some portions of the third floor corridor wall that does not line up with the wall below.

Similar to the first floor, the brick walls are attached to the floor system with $\frac{3}{4}$ inch diameter iron rods. The rods are 2 feet 6 inches long and installed about 6 feet on center. The rods are turned down into the brick work. A plate at the other end is nailed to the wood work.

Floor sheathing on second and third floors uses a system specifying as “deafening.” This consists of a subfloor layer of 1 inch by 6 inch straight boards. Using $\frac{7}{8}$ inch by $\frac{7}{8}$ inch stripping placed 3 feet on center as deafening grounds, the space is flooded with a layer of mortar. The stripping is removed after the mortar has set and the space where the stripping was removed is filled with mortar. The finish flooring is Oregon pine that is blind nailed through the deadening layer and into the subfloor with 3 inch finishing nails spaced 16 inches on center.

e. Portico Floor

Portico floor joists are 2 inch by 10 inch boards spaced 16 inches on center. These are sloped 2 inches to provide drainage.

The portico floor joists are supported on a post and beam system. Posts bear on stone foundations. The east foundation wall of the portico is brick bearing on stone. Decking consists of 1 inch by 3 inch #2 local pine.

f. Roof Framing

The ceiling of the third floor consists of 2 inch by 12 inch joists.

Roof rafters consist of 2 inch by 8 inch boards spaced 24 inches on center. Solid 1 inch by 10 inch straight sheathing boards is on top of the rafters. There is a hip roof over the central corridor with gable dormers. Smaller hip roof sections occur at the dormers and gables.

Roof rafter spans are reduced by the installation of a wood extension of the bearing walls. This consists of a small truss that spans from 6 feet to 8 feet. It consists of a double 2 x 6 placed perpendicular to the rafters. The 2 x 6 bears on a 4 inch by 4 inch post. Diagonal braces extend out at 45 degrees from the base of the post to the double 2 x 6 beam. The post itself is supported on a continuous 2 x 4 horizontal plate placed over the ceiling joists.

The building's exterior walls terminate approximately 24" above the third floor except where they extend above the second floor ceiling line to create a gable or dormer.

g. Portico Roof

The roof rafters of the portico are 2 inch by 10 inch boards placed 2 feet 0 inches on center. The roof rafters are built-up to provide a 4 inch slope for drainage. The ceiling in the portico is level.

Lumber grades for the structure tend to be #1 Mountain Pine for framing lumber. Sheathing and subfloor is #2 local Pine. Finish flooring is "selected vertical grained, well-seasoned Oregon Pine."

h. Walls – Exterior

The exterior walls are constructed of brick above grade. The wall assembly is 21 inches thick up to the first floor line, the water table, and are approximately 17 inches thick for the remainder of the wall height. The walls contain 24 inch wide vertical shafts where the brick assembly consists of a two wythe section on the exterior surface. At the intersection of the wings and the center portion of the building, the brick wall extends through the structure with an arch over the corridor. Walls of gables are 13 inches thick with anchor ties as described later.

The brick wall assembly consists of a two wythe section on the exterior surface. There is a 4 inch air space and a single interior wythe. This results in a total width of approximately 17 inches. The wall is specified to be well bonded but it is unclear whether it is the exterior double wythe wall that is bonded or all wythes.

Floor to floor story heights are:

- Basement to first floor line – original areas: 8 feet 10 inches
- First floor line to second floor line: 11 feet 8 inches
- Second floor line to third floor: 10 feet 8 inches
- Third floor to third floor ceiling line: 8 feet 11 ½ inches. The third floor ceiling height varies due to dormers and the roof slope.

Brick lintels are arched over windows and doors but also have $\frac{1}{4}$ inch thick plate that matches the wall thickness (1 ft. 4 inches). Openings were retrofitted with metal plates in 1927-1928 according to the 1927-1928 URN Biennial Report. Whether this was structural or not is unclear. In the original construction, a total of 61 iron lintel plates varying in length from 2 feet 9 inches to 4 feet 9 inches are called for in the specifications.

i. Parapets and Gables

There are large gables at the southeast and southwest elevation near of the wings. Similar gables occur at the northeast and northwest corners of the wings. There is an additional gable in the center of the north wall.

The gables extend above the roof line creating an additional parapet above the roof. Gables typically have stone coping along the top surface.

Dormers occur on all elevations. Dormers are similar to gables but generally lower in height. Dormers are not anchored to the roof framing structure.

Similar to the anchors at the floor, gables and other projections are braced with iron anchors from the brickwork to the roof framing. These are $\frac{3}{4}$ inch diameter rods 2 feet 6 inches in length. They are built into the brick wall with a $\frac{1}{4}$ inch plate washer and fastened to the wood with two large nails. These rods are bent at the end at the wood and placed in a hole drilled into the rafter.

j. Chimneys

There are two chimneys, not operational. Chimneys are braced with two 2 inch by 2 inch angle iron, four total for the project. The bracing was not visible. Portions of the chimneys fell in the 1914 earthquake and were reconstructed.

There is a brick boiler flue enclosure, constructed as part of the 1952 alterations, on the north side of the building.

k. Cupola

There is a tall cupola at the center of the building at the ridge. The height is estimated at 15 feet plus the weather vane at its top. The cupola is probably wood frame since there are not bearing walls below it. It is not readily accessible.

l. Exit Stairways

The building exit system was revised in 1952 as part of the major building mechanical and fire safety upgrade. Stairways, enclosed in concrete walls, were added at the east and west side as an extension of the corridors. Interior alterations to the rooms adjacent to the stairways were made as part of this work. Typically the alterations involved non-bearing walls but did revise some dormitory rooms.

The stair shafts are reinforced concrete for their full height.

The original stairwell was centrally placed in the corridor. It connected all levels. When the new concrete stairwells were constructed in 1952, the central stairway was framed in and

new dorm rooms constructed on the upper two floors. A telephone room was constructed on the first floor.

m. Interior Elevator

A small interior traction elevator, serving the basement through the second floor was added later. This required constructing floor openings, heading around the opening, and revising some interior partitions. The shaft penetrates the third floor for the top of the shaft (cab over-ride).

n. Parapet at Portico

There is a low parapet on the south facing wall of the portico. The parapet height appears to be about 18 inches. The parapet is 13 inches thick.

o. Walls – Interior

Interior walls are of wood stud construction consisting of wood studs 2 inches by 4 inches in size and spaced 16 inches on center.

p. Building Entry Stairs

The main entry stairs on the south side of the building are granite. It is presumed that the stairs are supported on foundations that extend below the frost line. The mortar where the stairs bear on each other and between stone has worn away. This needs repointing and repair.

J. Mechanical & Plumbing

The mechanical and plumbing evaluation was prepared by TJ Dobson, Project Manager of CR Engineering.

1. Scope of Study

This study is for the existing heating, ventilation, air conditioning (HVAC), and plumbing systems in the Lincoln Hall Building at the University of Nevada, Reno. The purpose of this study is to review the condition and operation of the existing systems and outline replacement of systems for the renovated building. With this review, specific requirements related to the historic aspects of the building need to be addressed.

With a full understanding of the historical preservation and the renovation of the building, options will be presented that will provide the most reliable, economic, and user-friendly HVAC and plumbing systems.

2. Mechanical Historic Study

Lincoln Hall originally had two mechanical systems that heated the building. The first system was two (2) main wood fire places located in Rooms 103 and 107. Evidence of three (3) wood fire places could be found at basement level. While there are two main chimneys

that serve the fire places in Room 103 and 107, the use of the fireplaces today is not feasible. The second system was a wood fired boiler located in the basement. 58 floor mounted radiators were connected to the boiler piping system and located in each room. The heating systems were not designed to have an automatic sequence and required manual operation by the occupants.

As noted in the University of Nevada, Reno Biennial Report for 1896, the mechanical system of Lincoln Hall was described as follows: “The building is heated with hot water, using a Furman heater and Bundy or Perfection direct-indirect radiators, all of which we find to be first-class. The ventilation of the building is perfect, each room having an open plaster ventilator in the wall connecting with a flue, leading to the cupola on top of the building. There is also a fresh air duct at each radiator so that the cold air on coming in has to pass through it and is thereby heated before entering the room.”

The building also had a natural ventilation system to cool the building during warmer months. Manually operated brick vents and two main ventilation shafts can be found in the building. The natural ventilation design utilizes the concept called “stack effect” to ventilate and cool the building. Because of the temperature difference, the air inside the building is either more or less dense than the air outside. If there is an opening high in the building and another low in the building, a natural flow will be caused. If the air in the building is warmer than the outside, this warmer air will flow out of the top opening, being replaced with cooler air from outside. If the air inside is cooler than that outside, the cooler air will flow out of the low opening, being replaced with warmer air from outside. Today, the exterior brick vents have either been removed or blanked off and the ventilation shafts are sealed off. However, some of the decorative metal grates to these ventilation shafts remain in place.

Other modifications:

1905-1906 - “Deficiencies - It was absolutely necessary to put a new furnace in Manzanita Hall, where there has always been more or less suffering from cold during the winter months. And also a new furnace in Lincoln Hall, where the same conditions of suffering have prevailed and where it has always been impossible to heat the rooms farthest removed from the furnace.”

Two chimneys at Lincoln Hall were leveled due to a high intensity earthquake.⁶⁰ According to the Biennial Report of the Board of Regent of the State University of Nevada \$269.00 was spent on “Earthquake damage” in 1913-1914.

1917-1918 - “University Finances – Lincoln Hall, the men's dormitory, is in imperative need of a completely new system of heating pipes. The old pipes are very small. They were fitted for steam-heating and will not properly operate with the present hot-water plant.”

c. 1920 - The east chimney received a metal cap and flue pipe; doubling its’ overall height.

⁶⁰dePolo, Craig M. and Garside, Terri M. “The November 21, 1910 Tonopah Junction Earthquake, and the February 18, 1914 and April 24, 1914 Reno Earthquakes.” Nevada Bureau of Mines and Geology, University of Nevada, Reno. March 2006. <<http://earthquake.usgs.gov/research/external/reports/04HQGR0114.pdf>>.

1923-1924 - "Plant Improvements – In addition to ordinary necessary repairs, the driveways to the front and rear of Lincoln Hall were improved... and reinforcing pumps were added in the dormitories to better their heating system."

c. 1932 - The west chimney was fitted for a metal cap and flue pipe to match the east chimney.

1952 – The steam boiler plant was upgraded and heating convectors were replaced throughout the building.

3. Plumbing Historic Study

Lincoln Hall plumbing fixtures included stationary wash bowls in each room and slop sinks, water closets, urinals, and porcelain bath tubs in designated wash rooms on the first, second and third levels of the building. Cold water was supplied to all fixtures. Hot water was generated by a wood fired boiler in the basement and hot water piping was provided to the slop sink and bath tubs. Hot and cold water distribution piping was made of galvanized iron. Waste and drain piping cast iron, hub and spigot, with lead and rope oakum seal.

Other modifications:

Summer 1933 - "Improvements in Lincoln Hall – "Repairs, were made with the aid of special Federal unemployment relief funds. Chief among the improvements was the following: 60 new beds, 120 new chairs, new water closets and seats in all toilets, 75 washable mattress covers, 58 mattresses completely renovated, study tables recovered and varnished, and complete renovation of all sections of the Hall, except the Master's quarters."

1952 – The kitchenette in Room 118 was renovated.

1968 – Remodel shower and toilet rooms.

4. Mechanical Observations

Heating Plant Basement

The hot water heating boiler plant is located in a mechanical room (Room 7) at the basement level of the building. The heat plant consists of the following:

- 5,000,000 BTUH copper finned tube non-condensing hot water boiler
- Hot water pumps for Lincoln Hall
- Hot water pumps for White Pine
- Domestic hot water generator and pump
- High temperature hot water to low temperature hot water heat exchanger.
- Air compressor for pneumatic controls
- HVAC control panel for DDC/pneumatic HVAC controls.
- Boiler room exit with emergency stop button for the boiler.

The hot water heating plant serves hot water to the convectors located on all floors and the domestic hot water generator for Lincoln Hall. It also serves hot water to White Pine. The

high temperature to low temperature hot water heat exchanger is currently turned off. High temperature hot water to this heat exchanger is provided by the Central Heat Plant for the campus. Refer to [Figure 6](#) for illustrations of existing heating hot water plant equipment.



Figure 6: Hot water plant equipment – Room 7

The heat plant is controlled by a digital control system with some existing pneumatic controls. The air compressor in the mechanical room provides air to any pneumatic controls used in the building. Refer to [Figure 7](#) for heating hot water plant controls.

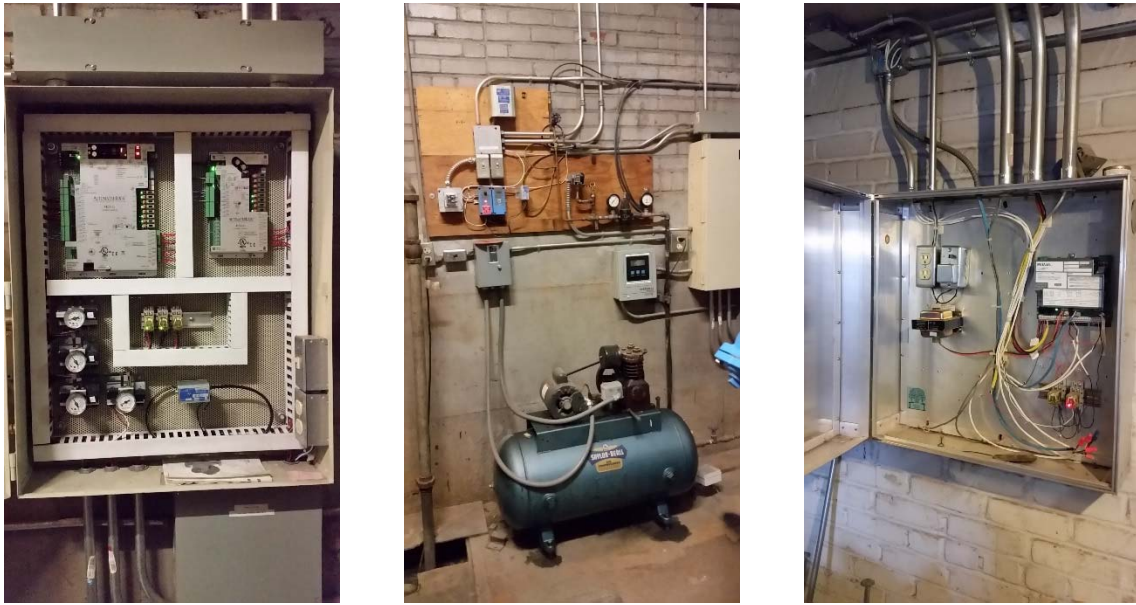


Figure 7: Hot water plant controls – Room 7

Basement Level

Finned tube radiators can be found in some storage areas while in other areas, there is no means of heating or cooling. General exhaust fans and dryer exhaust serves the laundry room and laundry equipment. The elevator equipment room is not conditioned. The main electrical switchgear room is conditioned by an exhaust fan that is not operational.

Figure 8 shows the exhaust fans mounted on the front of building that serve the basement area general exhaust requirements.



Figure 8: Basement Area General Exhaust Fans – South Side of Building.

1st, 2nd, and 3rd Floor

The three main floors of the building area heated by wall convectors typically located below windows and in stairwells. These locations would be the same location the original convectors were placed. Individual room thermostats control the wall convectors serving the living spaces. The stairwell and common area convectors and are manually controlled by radiator control valves. See Figure 9 below for typical convector installation.

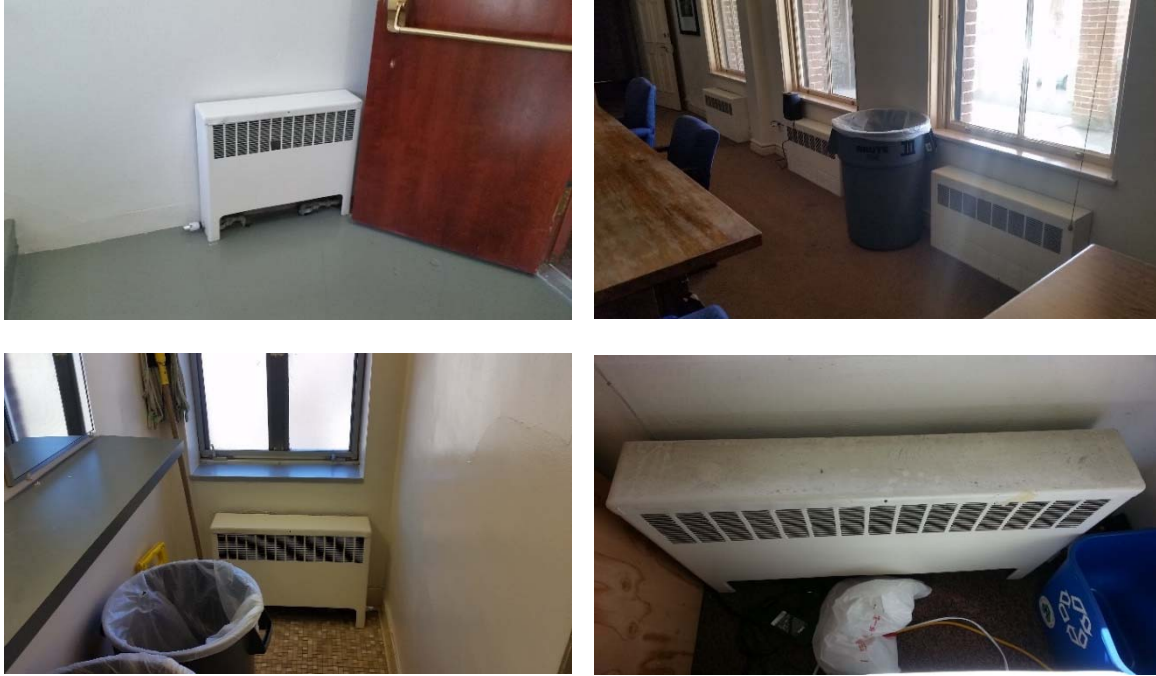


Figure 9: Typical Convector Installation - Typical

General exhaust fans serve the restrooms on each level of the building. The fans are mounted on the rear of the building. See [Figure 10](#) below for typical restroom exhaust fan installations.



Figure 10: Restroom Exhaust Fans – North side of Building

There is no means of cooling in the building. The general ventilation for the individual spaces and occupants is provided by operable windows.

5. Plumbing Observations

Sewer Waste and Vent Piping

Existing sewer piping throughout the building is old cast-iron piping. It is assumed that some of the piping is original to the building and some is newer when plumbing improvements were made to the building. Based on the age of the pipe, it is anticipated that piping is in need of replacement due to corrosion. It is also known that approximately 160 feet outside the building, the main sewer piping continually clogs and needs to be cleaned out on a routine basis by UNR staff. An alternate route for the main waste piping existing the building will alleviate this problem. Based on the age of the pipe and the extent of the building renovation, all the waste and vent piping in the building will require replacement. Refer to [Figure 11](#) for typical sewer waste piping found in the building.



Figure 11: Building Waste Piping – Room 6

Water Piping

Some of the newer domestic hot and cold water piping is copper. However, there is still galvanized iron piping in the building. Because of the mixed piping type and the extent of the building renovation, all the water piping in the building will require replacement. The main water piping enters the basement level in the mechanical room. Two backflow preventers are located within the building. Refer to [Figure 12](#) for domestic water piping found in the building.



Figure 12: Domestic Water Piping – Room 7

Domestic Hot Water Heating

A domestic hot water generator and water heater are located at the basement level in the mechanical room. The electrical water heater and the domestic hot water storage tank are connected together to provide hot water to the entire building. Circulation pumps recirculate hot water to the plumbing fixtures throughout the building. The electric water heater is not seismically strapped. The storage tank and hot water generator have reached the end of their useful life. The electric water heater could be re-used for the renovated building. Refer to [Figure 13](#) for the water heater installation.

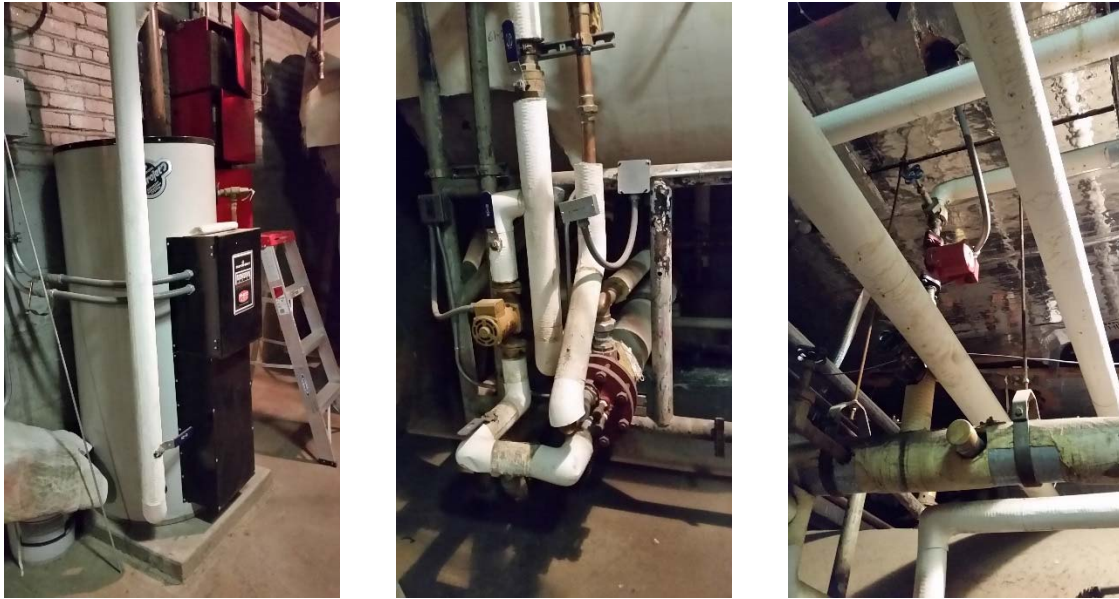


Figure 13: Domestic Water Heating – Room 7

Plumbing Fixtures

The lavatories, sinks, showers, and water closets throughout the building appear to be upgraded sometime in the 1980s. All of the plumbing fixtures in the building should be removed due to the extensive building renovation and the age of the fixtures. Refer to [Figure 14](#) for typical plumbing fixtures found in the building.





Figure 14: Plumbing Fixtures - Typical

Natural Gas Piping

The main natural gas piping service entrance is on the east side of the building. The gas meter is located at this entrance. A seismic gas valve is not installed on the main piping entering the building. The exterior piping is rusting and needs to be coated with a protective coating. The piping routes from the meter location into the boiler room. This gas service also appears to fuel a natural gas fired generator located to the north of the building. Refer to [Figure 15](#) and [Figure 16](#) for typical gas piping found in the building.



Figure 15: Natural Gas Piping – East Side of Building



Figure 16: Natural Gas Piping – Generator and Boiler Room

K. Electrical

The electrical evaluation was prepared by James Solaro, Electrical and Fire Protection Engineer and Craig Soule, Project Manager.

1. History of Electrical Changes and Improvements

The original building was built in 1896. At this time it was described to have “all the modern conveniences” implying that because the first electric street lamps were installed in the city of Reno several years before this construction, therefore, this building was designed with electrical power plugs as well as electric lighting. The specifications for the original construction call out electrical receptacles, electrical light fixtures, as well as a bell system to be installed that could be electrically rung from the front entrance or the master’s room. The building was lighted throughout by incandescent fixtures.⁶¹

There was a record of the University installing gas lamps around 1897 due to a long term outage of electricity in the Reno area.⁶²

The Biennial Report of 1909-1910 states:

“Buildings and Grounds – Lincoln Hall, the boys’ dormitory, is in good condition, but as it has been constructed for a number of years, is in need of some repairs and improvements. Last year we took occasion to call the attention of the Board or Regents to the importance of **rewiring some of the older buildings** and providing for **fire-escapes**, particularly in the case of Stewart Hall. We again emphasize the importance of these matters.” By 1912, a fire escape was installed on the east façade serving all three levels.

During December, 1923, the library and reading-room were redecorated and indirect lighting fixtures installed.⁶³

1934-1935 - 1) Linoleum replaced in hallways and on stairways; (2) floors repainted in all rooms; (3) each room equipped with a metal wastebasket; **(4) complete and extensive renovation of the Master's apartment**; (5) cement floor laid in southeast area of basement, and partition constructed to provide a needed room for general storage purposes; **(6) basement under the west wing of the Hall excavated to full depth and floored with cement**. This has made available a large room (approximately 20 x 60 feet) which the

⁶¹ “Biennial Report of the Board of Regents of the State University of Nevada.” University of Nevada. Board of Regents, 1896, page 34.

⁶² “UCCSN Board of Regents’ Meeting Minutes, April 8-9, 1897.” University of Nevada. Board of Regents, 1897, Volume OC pages 116-131.

⁶³ “Biennial Report of the Board of Regents of the State University of Nevada.” University of Nevada. Board of Regents, 1923-1924, page 63.

students in residence use for meetings, informal social functions, and as a general recreation room.⁶⁴

The next large remodel took place in 1952. This remodel basically gutted the interior, specifically as it applies to electrical, this is not at all surprising considering that in this era, none of the original wiring or electrical system would still be in compliance with the current electrical code.

There have been multiple remodels since that time, including several to specifically address fire alarm and suppression system updates as well as telephone and data update including installation of data drops in numerous rooms as well as wireless access points spread throughout the building. There has also been a major reworking of the electrical system including the wiring of the service entrance as well as the distribution panels feeding the individual fuse panels on each floor. These distribution panels were updated with modern dead-front panel boards as well as modern circuit breakers most likely to service a new mechanical system upgrade as well as to allow for connection to the campus wide distribution system.

2. Lighting

The light fixtures within the building are mostly vintage, 1990 linear acrylic wrapped fluorescent fixtures fed from surface raceways, as shown in [Figure 18](#). In other areas such as the restrooms, there are acrylic wrapped linear fluorescent fixtures that are surface mounted but have no surface raceway extending from them.



Figure 17: Typical dormitory lighting, originally one light was installed, but a surface raceway was used to install additional lighting in the space.



Figure 18: 3rd floor dormitory surface mounted light fixture with modern CFL lamp. Surface raceway used to service fire alarm device.

In other areas, such as the third floor dorm rooms, older fixtures are still in place, like surface mounted bowl type lamp holders as shown in [Figure 17](#).

⁶⁴ "Biennial Report of the Board of Regents of the State University of Nevada." University of Nevada. Board of Regents, 1934-1936, page 62.

These are most likely from the last large remodel, but are more likely to be what was in style at the time of construction. There are similar bowl type fixtures in some of the main corridor and lobby areas as well. The only lighting within the building that is more representative of the original lighting is the chandelier in the main entry way shown in [Figure 19](#). This style of light was close to the popular lighting design of the late 1800's and early 1900's, but none of the light fixtures are original fixtures.



Figure 19: Chandelier in the main lobby, older style with modern CFL Lamps.



Figure 20: Typical building mounted exterior light with surface mounted raceway shown on the right side of the fixture.

The light fixtures outside of the building are all modern wall packs. There is one additional surface mounted light under the canopy covering the ADA accessible building entrance. All other outdoor fixtures are common wall packs with surface mounted metal conduit providing the path for circuiting. An example of these fixtures is shown in [Figure 20](#).



Figure 21: Typical lighting snap switch shown on the right with old pushbutton switch cover plate shown on the left.

The lighting control system for the building consists of a time-clock system for the outdoor lights and individual wall switches for the remainder of the indoor lighting.

Throughout the interior of the structure there are mostly snap switches common to any home from the last $\frac{3}{4}$ century. There are references to push button switches being used in the initial design and construction of the building, but these were all replaced with modern switches as late as the 1952 remodel. There are still faceplates and positions for the snap switches as shown in [Figure 21](#), but these are not in service anymore and the pushbutton switch itself has been removed. The faceplate and junction box behind is all that remains.

3. Power Distribution

The service to the building is of newer construction. There is a large transformer in the basement in the far north east side of the building that brings power from the University switch located just to the north on the east side of the building. This transformer services the needs of Lincoln Hall as well as White Pine Hall. The main circuit breakers for both residence halls are in the basement area along with the transformer. This main switch for Lincoln Hall is a modern dead front panel board with a modern circuit breaker.

All feeders and distribution panels other than the last power branch circuit panel on each floor has been updated to be modern dead front panel boards with modern circuit breakers. There is one fuse panel on each floor including the basement that are all fed from panel A located in the mechanical room in the basement. Panel A also feeds all the mechanical equipment as well as all the outdoor lighting. The branch circuit panels that are located on each floor are fused panels with snap switches. These panels have a snap switch as well as a screw in fuse for each branch circuit they feed and are stacked on top of each other on the north side of the main corridor on each floor.

Branch circuiting and receptacles or connections to equipment were mostly updated. Most receptacles are modern 3-prong 120 volt rated duplex receptacles. There are additional equipment receptacles in the laundry room in the basement. There are also numerous layers of surface mounted raceway throughout the building. It is unknown how much of this is in use or abandoned.

4. Data/Signal

Since inception of the building, the requirements of data and signal service within a dormitory have greatly increased since the 1950's. The entrance for all phone and data service is in the basement in the most south eastern room. Each room has a data port installed in a surface mounted box serviced by surface mounted raceway. There are also (2) wireless access points mounted at each end of the main corridor on each floor. There is also a rack mounted switch in the far north western end of the 3rd floor to provide additional data drops.

L. Fire Alarm & Suppression

The fire alarm and suppression evaluation was prepared by James Solaro, PE, Electrical and Fire Protection Engineer.

1. History of Fire Changes and Improvements

No records identified indicate Lincoln Hall was ever designed with any type of fire alarm or fire suppression system. However, records as early as 1909 mention the need for an improved egress system in case of a fire. The following is a history of those records.

The Biennial Report of 1909-1910 states:

“Buildings and Grounds – Lincoln Hall, the boys’ dormitory, is in good condition, but as it has been constructed for a number of years, is in need of some repairs and improvements. Last year we took occasion to call the attention of the Board or Regents to the importance of rewiring some of the older buildings and providing for **fire-escapes**, particularly in the case of Stewart Hall. We again emphasize the importance of these matters.”

By 1912, a fire escape was installed on the east façade serving all three levels.

The Biennial Report of 1934-1935 makes a request to the Board of Regents for fire escapes to be installed at Lincoln Hall.

During the Second World War, Lincoln Hall was occupied by the Army Air Force continuously from February 26, 1943 to May 30, 1944. A fire which destroyed the old Army Barracks north of Lincoln Hall in August 1942 seriously threatened and damaged the dormitory. Several fires on the roof were extinguished by the Reno Fire Department and the men of the University Maintenance Crew. The searing heat from the flames broke all the window glass on the north side of the building, and all the paint work had to be renewed. The Army also insisted upon, and paid for, a fire alarm system—the first ever installed in the dormitory. Linoleum floor covering was provided in Manzanita Hall and Lincoln Hall, reducing the wear and tear on the hardwood floors.”⁶⁵

Historic photographs dating to 1912 and 1920 show the presence of a fire escape on the east and west façade, respectively.⁶⁶ Refer to [Figure 22](#) and [Figure 23](#).

There have been multiple remodels since that time, including several to specifically address fire alarm and suppression system updates as well as telephone and data update including installation of data drops in numerous rooms as well as wireless access points spread throughout the building.

⁶⁵ “Biennial Report of the Board of Regents of the State University of Nevada.” University of Nevada. Board of Regents, 1942-1944, page 100.

⁶⁶ University of Nevada, Reno Special Collections & University Archives, P1498-1, dated 1943-1952.



Figure 22: West façade fire escape, circa 1920.
Image Source: UNRA-P3150.



Figure 23: East façade fire escape, 1912. Image
Source: UNRA-P229-1.

2. Fire Alarm System

The existing operational fire alarm system meets the Uniform Fire Code which it was installed under. This system utilizes heat and smoke detectors throughout the building along with manual pull stations at the exits.

Flow switches on the fire suppression system and fire pump are monitored by the fire alarm system for alarm.

The existing fire alarm detection devices are connected to a Notifier System 5000 fire alarm system.

Once activation occurs, the existing fire alarm system notifies the occupants through both audible and visual notification. Along with occupant notification, the system has a dialer which notifies the local responding agency of the alarm.

3. Fire Suppression System

The existing fire suppression system consists of fire sprinklers throughout the building, along with a vertical standpipe in the stairwell(s).

The existing fire suppression system is a hydraulic system which is designed around nine (9) sprinklers in the attic. The demand of the system is 243-GPM with a residual pressure of 88-psi.

The system is fed from the Universities water system to a riser located in the basement of the building (room 13). This room houses a fire pump which contains a 5" pump rated at 500-GPM and 500-PSI.

V. EXISTING CONDITION ASSESSMENT

In the conditions assessment portion of the report, each part of the building is examined with respect to its existing condition. The conditions assessment is intended to identify the locations, types and extent of deterioration and to help determine appropriate rehabilitation treatments for each building component.

A. Civil

The civil condition assessment was prepared by Frank A. Bidart, P.E. of Odyssey Engineering Incorporated.

1. Pedestrian Access

Sidewalks are in poor condition, cracking due to age and buckling under pressure of tree roots.

2. Water Service

The existing domestic water service is adequate for Lincoln Hall's new use as offices.

3. Sanitary Sewer Service

The university has stated that the existing lateral becomes blocked quite often about 160 feet from the existing building.

4. Storm Drainage

Sidewalks and impervious hardscape surfaces currently abutting Lincoln Hall are not sufficiently sloped to drain storm water away from the building. This can cause damage to the buildings foundation and exterior walls at grade. Downspout integrated into the south façade porch columns currently outlet approximately 4'-0" above grade. The 4'-0" drop of water has been causing splash back on the adjacent wall. Noticeable mortar deterioration is visible in this area.

5. Electric, Gas and Communication

It is anticipated that other disciplines will look at these utilities.

B. Landscape

In general, the existing landscaping at Lincoln Hall is in good condition, but looks dated.

The two White Birch trees at the southwest side of the main entry are in good condition with no evidence of top die-back due to birch borer, which is prevalent in this area. Below the Birch is some Blue Nest Spruce, one of which is dead. All other existing landscaping is in good condition.

C. Architectural - Exterior

1. Foundation

Mortar deterioration has caused noticeable damage to the basement foundation. Areas of more severe mortar loss can be observed on the north wall of Room 13. Some foundation walls, as seen from the interior, have had a concrete skirt applied to them or have been plastered over. The condition beneath these applications is unknown.

2. Walls

Mortar loss from the exterior of the building is less prevalent due to the fact the exterior of the building has been repointed on at least two occasions; 1927-1928 and 1989. However, the west façade shows isolated instances of mortar loss typically below the water course. The dormers on the east façade also show signs of mortar loss.

Efflorescence is present on all facades. This is a condition where moisture evaporates from the masonry unit and deposits soluble salts on the surface. Deposits on the surface of the brick are relatively harmless. However, efflorescence can also occur below the surface and is referred to as subflorescence. Brick deterioration on interior walls can be attributed to either subflorescence, being painted or both conditions.

The majority of the interior brick basement walls have been painted white. It is not recommended that brick walls in damp locations be painted for the paint can lead to brick deterioration. The coldest and thus dampest rooms of Lincoln Hall, Rooms 2, 6, 13, 13A and 13B on the north side of the building show signs of moisture damage. As a result of brick being painted, signs of moisture infiltration are visible between the brick and paint, making the paint bubble and the brick beneath friable. In some cases, the entire face of the brick has sluffed off. As mentioned above, this damage could also be a result of subflorescence. In this case, salt crystallization within a masonry unit creates pressure that can cause parts of the outer surface to spall or delaminate. If the mortar or paint does not permit moisture or moisture vapor to migrate out of the wall and evaporate, the result will be damage to the masonry units.⁶⁷ Specific walls in the basement that are experiencing this phenomenon are the west wall of Room 6, the east wall of Room 13B, the north and west walls of Room 13 and the north and east walls of Room 13A.

⁶⁷ Mack, Robert C and Speweik, John P., "Repointing Mortar Joints in Historic Masonry Buildings." National Park Service Preservation Brief #2.

Soiling and mildew growth tend to be present where gutters and drainpipes are not properly working. Specific instances include the east wall of the porch and on the west façade.

Stepped brick corbels are missing on the north façade, west of the larger, newer brick mechanical stack. This is where in 1952 the west fire escape was relocated to the north façade. The bricks were likely removed at this time. Additional stepped corbels are also missing on the east and west façades where a third downspout once connected to the gutter. In 1952, that downspout was removed because it otherwise would have overlapped with the new stairwell windows.

Two types of cracking are visible in the brickwork. Vertical cold joint cracks are visible where windows and doors were infilled. One instance of this can be seen on the north façade where the basement doors were installed in 1952. Vertical settlement/ stress cracks can be traced from grade through water course joints and continuing to the belt course. Additional cracks are visible at the ends of the jack arches and the sills of the second floor windows. These settlement/ stress cracks are not only visible traversing the mortar head joints, but have also sheared through multiple courses of brick. The majority of all cracking is visible on the north façade.

A mysterious, though harmless, condition lies at the east and west façade. At the exterior doors, set into the jamb, are two notches in the brickwork. The purpose of these notches is unknown.

3. Roof Assembly

Roof access was not available during the site visit. Therefore, all roof condition observations were made from ground level or from adjacent buildings.

The composite asphalt shingle roof is in good condition. Records indicate a new roof was installed in 1989; however it appears as though the current roof was installed in more recent years.

The gutters, leader heads and downspouts are in fair condition. The leader heads and downspouts located on the east and west walls of the porch appear to not be functioning properly. The surrounding brick wall has been noticeably repointed and fungi growth is present at the mortar joints. These condition issues are due either to a failed downspout, failed weatherproofing at the porch roofline or a combination of both. Further investigation is required to determine the cause of damage.

In 1927-1928, the building was entirely fitted with new copper drains and down spouts. In 1989, all gutter joints, splices and downspout connections received new solder. At present day, the gutters and downspouts appear in fair condition.

4. Cupola

Roof access was not available during the site visit. Therefore, all cupola condition observations were made from ground level or from adjacent buildings.

The cupola appears to be in good condition. Records indicate in 1989 that the cupola as well as the cupola roof was stripped and repainted. Birds appear to use the weather vane to perch and as a result, the larger bulb and roof of the cupola are littered with white bird droppings.

5. Stairs & Railings

The south entry stairs are in fair condition. Some of the mortar between the granite steps has been lost, resulting in a few of the steps to noticeably move when pressure is exerted.

The basement stairs on the north façade of Lincoln Hall are in good condition.

The wood railing spanning between the south façade arch top openings is in fair to poor condition. Paint is spalling and separation of the railing is visible. In places, the end of the railing appears to have not been sealed. Rot is visible near the ends of the rail where water has infiltrated. The skirt board below the railing is in similar condition.

6. Fenestration

a. Doors

The south, east and west entrances to the building are in good working condition and have been well maintained.

The north entrance to the basement is in fair condition. These double doors were installed in 1952 when Lincoln Hall underwent an extensive remodel. The east door is missing the deadbolt and the west door has a metal cover plate where there appears to have been hardware at some point in time. The doors have been secured in place from the interior with a padlock.

b. Windows

The double hung windows are in good condition. All appear to be in good working condition and no broken glass was observed.

Windows of fair condition are those found in the basement. Most of these windows are not original to 1896 and show signs of fatigue. The panes of glass are mismatched and the hardware is rusted.

All stone lintels and arch tops appear to be in good condition.

There is a variety of wire glass used in the basement window openings. Wireglass is used as a security measure in lieu of any code requirement.

c. Openings

Vent openings on the west wing of the Lincoln Hall have been enlarged to 3'-0" wide by 2'-3" tall and fitted with a metal casement window. All vent openings are missing their original woven metal mesh screens visible in historic photographs.

All arch top basement vent openings on the south façade are in good condition. No signs of mortar loss or fatigue are present.

D. Architectural – Interior

1. Basement

Overall the basement rooms are in fair condition. Rooms that are used more regularly such as the Corridor, Room 2, Room 9 and Room 10 are better maintained than less inhabited spaces. Noticeable condition issues include missing acoustical ceiling tiles in Room 1, bubbling paint along the north exterior wall and deteriorating mortar at the stone foundation in Rooms 13 and 13A.

2. First Floor

There was limited access to first floor rooms at the time of our site visit. No dorm room interiors were observed on the first floor. Rooms observed include C100, C101, C102, C104, Rooms 103 and 107, R100, R101, S100, S101 and E101.

Interior finish carpentry is in good condition. Some of the dorm room door panels are scuffed and the veneer is visibly peeling along the Corridor doors. The only hardware observed missing was the knob and lock at the door between Room 103 and C104. The carpet in all observed rooms was heavily worn and needs replacing.

3. Second & Third Floor

The existing conditions of the second and third floors are similar to the first floor. Access to dorms at these levels was limited, leaving only the Corridor, Stairwells, and Restrooms open for observation.

The Corridor was in good condition. All finish carpentry and doors have been well maintained. Like the first floor, the carpet needs replacement.

4. Dorm Rooms

The few Dorm Rooms viewed showed signs of wear. The carpet has reached the end of its life and the wardrobes need maintenance. Overall, the Dorm Rooms are well kept.

5. Restrooms

All restrooms are well kept and are in good working condition. A number of plastic laminate vanities have some peeling plastic laminate.

6. Stairs & Railings

All interior stairs are in good condition. Some of the railings at the east and west stairwell are loose. There is a multitude of railing types on each of these exit stairs.

7. Elevator

The elevator is in working condition.

E. Structural

The structural condition assessment was prepared by Melvyn Green, SE of Melvyn Green & Associates.

1. Overview

In general the building is well maintained and in good condition.

2. Observed Deterioration and Causes

Water and moisture are the main forces deteriorating elements on the building. Due to rain and freeze-thaw effects, and snow against the building, mortar has washed out from the joints between both stones and bricks on all elevations.

Patterns of deterioration vary from elevation to elevation and specific materials but typically occur near the base. This may be caused by landscape watering, broken gutters and leaders, as well as water washing down the wall.

This is most observable at the northeast corner of the building. The water also leaks down below washing out the mortar between the basement rock walls. This may be observed at the northwest corner of the building. The roof water disposal system needs to have the water directed away from the building. All drain lines should be tight with no leaks.

Specific observations are:

Main Entry Stairs

The main entry stairs are granite material. The mortar that the treads bear on has washed away from weather. The mortar in the joints between the granite blocks has also worn. As a result the stairs “rock” and create a hazard for falling or slipping, especially when icy. This needs to be repaired.

Foundation/Underfloor Beams -

The beams supporting the first floor have been notched for wiring and other changes. In future work there should be no notching of beams without specific engineering evaluation.

Brick buildings often have vertical vents or shafts in the walls. The effect of these on the structure is that there are more void spaces in the wall. Typically these have little, if any, structural effect, and except where some damage has been observed, may be

ignored. However they must be considered as part of the seismic evaluation and retrofit.

3. Seismic Needs

The structure is in a high seismic zone. It is also an unreinforced masonry building. Buildings of this type of construction have had damage or have even collapsed, in past earthquakes. They have been the leading cause of earthquake fatalities worldwide for centuries.

Seismic retrofit of buildings of this type of construction has been going on in Nevada and surrounding states such as California, Utah, Oregon and Washington for the past several decades. The typical work includes:

4. Seismic Strengthening of Parapet, Gables, and Chimneys

Parapets and gables that extend above the roof will rock during an earthquake. They typically collapse outward. At Lincoln Hall, the several large parapets and gables are in high traffic areas and directly above the main entrance. These could collapse as people run out of the building in an earthquake, either falling upon them or blocking the exit. Gables adjacent to walkways could fall upon people outside the building.

Chimneys often topple in small to moderate earthquakes. They behave as a parapet and often have mortar loss at the roof line because of the large quantity of water that flows down the roof. Chimneys with a height to width ratio exceeding 1 to 1.5, on the narrowest side, should be braced back to the roof.

The two chimneys were originally specified to be braced. No bracing was observed and it is possible that when the chimneys were rebuilt to a reduced height after the 1914 earthquake, the bracing was left off.

5. Wall Anchorage

Walls are not attached to the floor or roof. They fall outward in an earthquake often resulting in the floor partially collapsing. Noted earlier is the fact that the walls were anchored at the floors and roof. However the anchors installed in the original construction have been usually found to be relatively weak. Further, to justify the use of these existing anchors, will require physical testing. Previous retrofit work has found that the cost of testing the anchors is more than the cost of neglecting them for structural anchorage purposes.

6. Wall Stability

Walls may buckle if their height to thickness (h/t) ratio exceeds certain levels. This will have to be determined in the structural analysis. The wall construction with the vent space between the wythes creates an unusual condition that will require special analysis.

7. Diaphragm Capacity

The floor and roof diaphragms brace the walls. They need to have sufficient strength to take the loads from the mass of the wall. The manner in which the floors are constructed with the deafening layer may require additional nailing to make sure the finish and sub-floor work as a unit. The roof, which consists of straight board sheathing, may require a layer of plywood under the roof covering.

Diaphragm strength is determined by the loads and the permitted deflection. If a diaphragm is too strong, more energy is imparted to the building requiring greater strength in other features noted above. If it is too weak it may deflect excessively pushing out the walls. The object is to develop a diaphragm that balances the two extremes.

8. In-Plane Shear Capacity

As the building's mass moves, the forces within the plane of the wall will try to shear the wall. This may be observed as diagonal cracks in photos of buildings taken after an earthquake. As the mass of the building increases on the lower levels, the shear increases. This building has a large percentage of wall openings (windows) which further reduces the strength of the wall. The shear on the several levels needs to be calculated and kept within acceptable limits. If a wall has adequate in-plane shear capacity no improvement is necessary. If the shear capacity is exceeded then the wall will require strengthening.

9. Drags and Collectors

At re-entrant corners of the building there is a tendency to twist and crack. Placing steel straps to collect and "drag" loads into the diaphragm reduces or eliminates this.

F. Mechanical & Plumbing

The mechanical and plumbing condition assessment was prepared by TJ Dobson, Project Manager of CR Engineering.

The mechanical system has reached the end of its useful life. The systems have also impacted the historic appearance of the building and should be removed. The boiler in the basement is inefficient when compared to current code requirements and the boiler room does not meet current code requirements for egress. The high temperature hot water serving the building should be re-used for any heating retrofit proposed so the existing central heat plant infrastructure can be used.

Based on the age of the plumbing system and the extent of the building renovation, all the domestic water, waste and vent piping, and plumbing fixtures in the building will require replacement.

G. Electrical

The electrical condition assessment was prepared by Craig Soule, Electrical Engineer.

The current condition of the electrical system in Lincoln Hall at the University of Nevada Reno is in need of updating to meet current codes, but shows no major signs of problems or specific fire or electrocution hazards.

There may be some fixtures that may be from the 1952 remodel as well as some of the faceplates, but the large majority of the interior lighting is circa 1990.

H. Fire Alarm & Suppression

The fire alarm and suppression condition assessment was prepared by James Solaro, PE, Electrical Engineer and Fire Protection Engineer.

The existing Notifier System 5000 alarm system is operational and is adequate for use in the renovation of the building.

The existing fire suppression system can be modified to support the needs of the building renovation.

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VI. MAINTENANCE REQUIREMENTS

Maintenance is an ongoing continuous process with historic structures. The four elements of Planned Maintenance are: Housekeeping, Integrated Pest Management, Routine Maintenance, and Cyclical Maintenance. The on-site maintenance staff, in their daily housekeeping duties, is the primary line of defense to identify maintenance issues before they become maintenance problems. Maintenance staff should be thoroughly trained in the identification of potential problems such as moisture intrusion, pest infestation, and organic growth. Routine Maintenance items occur on less than a year schedule and are regular assigned duties typically performed by in-house staff. Routine Maintenance includes such items as cleaning gutters, landscape maintenance, lubricating hardware, and inspecting fire extinguishing equipment. Cyclical Maintenance is tied to the life cycles of materials and assemblies, a defined task or major budgeted expense. Cyclical Maintenance includes roofing, painting, repointing mortar, repaving parking surfaces, and mechanical equipment replacement. The most important aspect of the process is recognizing that deferred maintenance is not an option for historic resources.

A. Historic Structures Maintenance General Guidelines

The following is excerpted from General Services Administration, Historic Preservation Technical Procedures.

The principal aim of any work must be to halt the process of deterioration and stabilize the item's condition. Repair is a second option, which becomes necessary only where preservation is not sufficient to ensure mid- to long-term survival. Repair should always be based on the fundamental principle of "minimal disturbance." The following are good practices that arise from this principle:

1. Retention of as much existing material as possible; repairing and consolidating rather than renewing.
2. The use of additional material or structure to reinforce, strengthen, prop, tie, and/or support existing material or structure.
3. The use of reversible processes wherever possible.
4. The use of traditional materials and techniques. New work should be distinguishable to the trained eye, on close inspection, from the old.
5. The item should be recorded before, during, and after the work.

No smoking will be allowed by personnel performing work on or about Historic Structures.

- University of Nevada, Reno approval is required for any change, addition, or removal of historic structural fabric or historic property.
- University of Nevada, Reno should be notified of any visible change in the integrity of the material or component whether environmental, such as biological attack, ultraviolet degradation, freeze, thaw, etc., or structural defects, such as cracks, movement, or distortion.

- Architectural features will be repaired rather than replaced wherever possible. Repair or replacement of missing features will be based on accurate duplications rather than on conjectural designs.
- Work which requires existing features to be removed, cleaned, and reused shall be accomplished without damage to the material itself, to adjacent materials, or the substrate.
- Existing features removed from the building which are to be reinstalled shall be carefully labeled and stored within the building in a place where they will not be damaged or obstruct other work.
- New or replacement materials/features will be permanently marked in an unobtrusive manner to distinguish them from original fabric. The manner of identification and location of these marks shall be recorded in permanent building records.
- Identify the historic importance of the material or feature. The item's merit, in terms of age, uniqueness of design, materials, size, technological development, association with persons or events, exceptional workmanship, or design qualities, must be understood before decisions regarding repair, maintenance, and preservation can be made.
- When cleaning, avoid over-cleaning. Aim for achieving 85% clean. Most damage occurs when attempting to clean the last 15%.
 1. Do not use acids or flame tools to strip paint from stone, as it will damage the surface.
 2. Do not use steel or metal spatulas or tools to scrape stone because of the likelihood of scratching, chipping, gouging, or otherwise marring the surface.

B. General Treatment of a Masonry Resource

Masonry, particularly in temperate and cold climates, has several inherent problems that can affect the mortar and overall structure of a wall. The direst threat to masonry structures is the presence of water. Water is not only erosive, but it can cause severe problems when trapped in mortar joints and cavity walls. If the water freezes and expands, this can cause cracking and delamination. This can cause the wall to sag or, in extreme cases, it may cause the complete collapse of the structure.

Subefflorescence can also harm a masonry building. This is when salt crystallization within a masonry unit creates pressure that can cause parts of the outer surface to spall off or delaminate. If the mortar does not permit moisture vapor to migrate out of the wall and evaporate, the results will be damage to the masonry units. Subefflorescence can result with improper repointing and painting of a brick surface.

Plant growth may also lead to weakness. Any sign of growth on the walls should be removed immediately. If the structure has been neglected and vegetation has already taken hold, it “should be removed carefully so that their root systems will not dislodge masonry material.” This also applies to plants that may have root systems near the structure’s foundation. These root systems may become invasive or they may simply trap moisture near the base of the structure.

The addition of foreign materials plays a large part in restoring and stabilizing a structure. Materials traditionally used for decoration, window frames, roofs, and even floors can be the most difficult aspect to reconcile. These materials are often used, though, for added features and they must be dealt with.

There are steps that can be taken to mitigate some of these problems. Like any preservation project, it is important to recognize and understand the materials one is working with. It is essential that every effort be made to match new materials to the existing ones. Addition of metals, wood, and even paint may seriously harm existing structures. Moreover, simply removing and repairing the effects of a problem does not guarantee a solution to the problem itself. In fact, most problems are caused by more than one factor and it will do no good to make repairs until the true cause is discovered.

With this in mind, it is important to note that not all cracks in masonry bricks are cause for alarm. Once an investigation has determined the source of the cracks, decisions can be made on their significance. If the cracks have revealed an underlying problem, they should be dealt with first.

The foremost protection of any masonry resource is a well-built and maintained roof covering. This protects the walls from direct exposure to water and it keeps puddles from forming near the base of the structure. Well-placed and properly maintained roof drains are integral to evading moisture collection near the base of the resource. Drainpipes should always extend far enough past the outer wall so that the end of the line is clear of the foundation. Care has to be taken when re-roofing a building, though, because a roof that is too heavy may cause more damage than good.

The process of preservation is not complete once the restoration is over. It is important to establish regular maintenance schedules. Interior and exterior inspections should be implemented in order to track changes in the masonry. Monitoring the masonry structure is instrumental in fending off any further decay. In light of this, small problems should be dealt with immediately.

And lastly, a specialist should complete all aspects of repair.

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VII. PROPOSED WORK

A. Historic Preservation Objectives– Rehabilitation

The treatment approach selected for Lincoln Hall was rehabilitation. According to the Secretary of the Interior's Standard, Rehabilitation is defined as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." Selection criterion was based on the clients' proposed use and desired outcome for the building. The intended use of the structure is academic offices. The new use is very compatible with its present use as a dormitory and should not pose a threat to the historic nature of the building. Proposed exterior work includes but is not limited to seismically retrofitting the building, routine maintenance such as repointing and possibly returning modified elements back to their historic appearance. The extent of interior work is unknown at this time.

Any proposed work is expected to follow the 10 guidelines set forth by the Secretary of the Interior's Standards for Rehabilitation:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

B. Requirements for Work

1. Life Safety

2012 International Building Code
 2012 International Mechanical Code
 2012 Uniform Building Code
 2012 Uniform Plumbing

2012 International Fire Code
 2012 International Existing Building Code
 UNR Standards

2. Fire Protection

2012 International Fire Code

3. Energy

2009 International Conservation Energy Conservation Code
 UNR Standards

4. Hazardous Materials Abatement

NRS 459.400

5. Disabled Accessibility

ADAAG (Nevada Revised Statutes, Title 28, Chapter 338.180)

C. Materials Conservation

1. Paint Analysis

Paint analysis reveals what paint colors are original to the building and helps identify chronology of additions or alterations to the structure. It can also show whether decorative paint patterns exist and to what extent any specialty surfaces or features are present that require materials conservation. Paint analysis was undertaken by Kirsten Moffitt, Conservator and Paint Analyst.

A total of 17 paint samples were taken by Ione R. Stiegler, FAIA of IS Architecture; ten interior and seven exterior. The samples were primarily extracted from the interior and

exterior of the north wall of the porch, with exception of two samples from the wardrobe of Room 312.

Three samples were taken from the front door sidelights and in-fill panels (exterior-side). Areas targeted were the baseboard, panel and a mid-rail. All contained complete stratigraphies with the same paint evidence. Approximately 14 paint generations were identified on the doors. The original paint color for the baseboard, panel and rail was a dark greenish-brown (Sherwin Williams 7041, Van Dyke Brown). The front door jamb (exterior-side) was painted a light gray (Benjamin Moore 2140-50 Gray Horse).

Four samples were taken from the windows (exterior-side) facing the porch. Areas targeted were the east center window jamb, and the sash, and the west center window jamb and sash. Of these four, only east center window jamb contained the best, most complete evidence and was used to represent the window trim. Approximately 11 paint generations were observed on the windows, suggesting they were painted less frequently than the doors. The original paint color for the windows (exterior-side) was the same as the front door (Benjamin Moore 2140-50 Gray Horse).

Two samples were taken from the Pool Room, from the window sash and window jamb. The window jamb sample was incomplete and missing the earliest paints, but sash sample contained a complete stratigraphy. Approximately 24 total paint generations were identified in the Pool Room. Two samples were also taken from Reading Room from the middle window jamb and sash. Approximately 18 paint generations were identified in this room, suggesting it was painted less frequently than the Pool Room. The original paint color for the Pool Room and Reading Room windows is brown (Benjamin Moore 2097-10 Toasted Brown).

Four samples were taken from the Lobby; all were from the entry door surrounds and trim which was the only remaining historic woodwork in the space. The door leafs are not historic. Samples were taken from the sidelight baseboard, the sidelight panel, rail, and the head jamb. The sidelight panel sample appeared to contain a complete stratigraphy. Approximately 14 total paint generations were identified in the Lobby entry door. The original paint color for the Lobby entry sidelight panel was dark beige (Benjamin Moore 2165-40 Dark Beige). The original paint color for the sidelight baseboard was orange-brown (Benjamin Moore 2161-20 Tawny).

Two samples were taken from Room 312, targeting the door stile and the door jamb. These were the only areas that appeared to contain original woodwork. The door stile sample did not contain any historic paint evidence. The door jamb sample appears to contain the complete finish history. Approximately 14 total paint generations were identified in room 312. The earliest finish appears to be more complex than in the other spaces. This finish consists of a yellow-ochre base coat and a very thin red-brown wash of color. A close examination of the uncast sample under the stereomicroscope determined that this was a paint layer- in fact, the same red-brown paint used on the first floor in rooms 107 and 103. The original paint color the door jamb was a yellow ochre color (Benjamin Moore 2153-20 Corduroy).

The complete finish history for Lincoln Hall can be found in Appendix E.

2. Mortar Analysis

The purpose of mortar analysis is to identify the historic mortar mix for the brick and stone and then assess whether the mix would be suitable for repointing areas showing signs of mortar loss.

Original specifications from 1896 address what type of mortar should be used. The specifications call for all bricks to be “laid in soft tempered mortar consisting of best quality lime clean sharp sand and water in proper proportions made up at least one week before it is used.” However, “when tempered for use there is to be one part of Portland cement mixed with eight parts of lime mortar. The mortar for the outside face of brick work is to be colored red with Prince’s metallic powder, or oxide of iron. Cement also to be used in outside mortar.” Other brick elements using cement mortar is the arches over the portico and the fireplaces.

The 1895 specifications for stonework call for all stonework “to be set and pointed with cement mortar.” Refer to Appendix C: 1895 Specifications for Lincoln Hall.

Mortar analysis was performed by AMR Labs. Their report and findings can be found in Appendix D. During the sampling process, the mortar from the exterior of the building was observed to be in good condition. This is likely due to the fact Lincoln Hall has been repointed at two known instances. Mortar samples were taken from interior basement walls showing the greatest amount of deterioration. One stone mortar sample was taken on the north wall of Room 13 and one brick mortar sample was taken from the east wall of Room 13B. The mortar in these locations was in a highly friable state and in some areas resembled a sand consistency.

In the case of Lincoln Hall, mortar analysis for the brick revealed the presence of 1 part lime, 2.25-3 parts sand and no Portland cement. The lack of Portland cement gives the mortar a very low compressive strength of roughly 75 psi. This is common to turn-of-the-century masonry structures. Mortar analysis for the stone mortar revealed traces of Portland cement. The present mortar match would be Type K which also has a relatively low strength of 75 psi. Type K has the highest lime content of mixes that contain Portland cement. Further recommendations are addressed in the Proposed Work section of this report.

3. Brick Cleaning

Of particular concern to any historic masonry building is the best method for cleaning soiled surfaces. Incompatible chemical cleaners can adversely affect the historic appearance of masonry. Cleaning of masonry should not be performed until the cause of soiling and proper treatment is identified.

D. Conservation Recommendations

Following a general discussion of the conditions found, specific conservation recommendations are provided and categorized by priority for exterior and interior conditions. Recommendations are assigned a priority level according to the following system:

Level One – Imperative: The treatment of character defining features, which pose a threat to the structural integrity of the building and to the life safety of building occupants or are subject to American with Disabilities Act requirements; i.e. roof, entry stairs, porch railing, elevator. It is recommended Level One work be carried out with projected scope of work.

Level two – Recommended: The treatment of character defining features where work under the current scope is already proposed; i.e. the porch ceiling, first floor corridor layout, finish carpentry, paint schemes. These work recommendations can be carried out as the project budget allows. Any features not carried out in this construction campaign can be executed at a later date.

Level Three – Desirable: The treatment of character defining features in areas where work under the current scope is not proposed; i.e. fresh air grille vents, basement vent openings. These desirable work items can be carried out as funds are available; i.e. grants, donors, future construction projects, etc.

The recommendations presented are not intended to be exhaustive and should be considered as general indicators of the full scope of work required for the restoration of the building. Except for immediate recommendations involving life-safety issues, no work on the building should be undertaken without the preparation of complete drawings and specifications for the proposed work. All areas of the building were not examined in detail. Areas where work will be deferred should be inspected annually to determine if there has been an increase in degradation warranting a change in status to Level One or Two.

The priority system used in this analysis reflects an appreciation of the unavoidable acceleration of the deterioration process over time. Eventually, all materials reach a “point-of-no-return” after which it may become impossible or financially prohibitive to rehabilitate or restore them. Material degradation often exhibits a cascade effect, whereby deterioration of one material can lead to the accelerated deterioration and loss of other materials as well.

Note should be taken that Level Three conditions should not be ignored because failure to address these issues over time can result in their escalation to a Level One status.

The following treatment recommendations were prepared collaboratively by IS Architecture, Melvyn Green & Associates, CR Engineering and JP Engineering.

Civil

The civil recommendations were prepared by Frank A. Bidart, P.E. of Odyssey Engineering Incorporated.

1. Pedestrian Access

Level One – Imperative:

Pedestrian access for Lincoln Hall will continue as it exists with primary access being from the buildings southerly entrance.

Existing concrete sidewalks are old and most probably should be replaced with the construction of the project to eliminate tripping hazards. The current ongoing construction and any improvements to Lincoln Hall would most probably worsen the existing sidewalks current condition. There are areas around the building that should be looked at to help perpetuate storm water away from the structure. There are areas that don't have very good drainage with the worst being the building's northeast corner. Should sidewalk improvements be a part of this project, it is advised that grading of these walkways be in such a direction as to direct water away from the existing structure.

Level Two – Recommended: None.

Level Three – Desirable:

It is recommended the new sidewalk design match the sidewalk design first installed circa 1911. This includes score line locations and size, concrete color and surface texture. Refer to Appendix A: Photographs for historic photographs showing the c.1907 boardwalk and c.1911 sidewalk design.

Historically a wooden board walk was used to link Lincoln Hall to other buildings on campus. If so desired, the new design of the boardwalk could be likened to the Berlin Wall, where a strip of contrasting material is inlayed into a larger paved area. The strip of contrasting material would emulate the original path of the boardwalk. Material choices for the inlayed strip could be inlayed wood planks or stamped concrete that looks like wood. It is recommended the contrasting strip be as close as possible in width and location to the original design.



Figure 24: Example of how c.1907 boardwalk connecting campus buildings could be incorporated into design of new sidewalks along the south façade of Lincoln Hall. Image Source: Google Images.



Figure 25: Historic photograph of Lincoln Hall showing wooden boardwalk that once connected Lincoln Hall to the Dining Hall. Image Source: UNRA-P1831-1, circa 1907.



Figure 26: View northeast along south façade of Lincoln Hall showing sidewalk scoring and overall design. Image Source: UNRA-P1997-49-364, circa 1911.

2. Water Service

Level One – Imperative:

The Truckee Meadows Water Authority will provide water service for the project. The existing water system at the site is owned and maintained by UNR.

UNR will most probably not be required to provide water rights if Lincoln Hall is converted to offices. The proposed office use should use substantially less water as compared to living quarters. An inventory of existing number of dorm rooms and fixture units should be taken in order to negotiate with Truckee Meadows Water Authority for a possible water rights credit. That credit can be used for other projects.

It is not anticipated that a larger domestic service would be necessary. The contemplated office demand is less than the existing living quarter use.

It is anticipated that the renovation will require a fire service for the building. Firewater service will be provided with a double detector check valve backflow preventer. The double check backflow preventer is anticipated to be installed in the existing building. Any required fire hydrants will be connected directly to the UNR water system.

Level Two – Recommended: None.

Level Three – Desirable: None.

3. Sanitary Sewer Service

The University has stated that the existing lateral becomes blocked quite often about 160 feet from the existing building.

Level One – Imperative:

The existing sewer lateral size should be more than adequate for the existing use.

The continual blockage of the sewer should be explored during the renovation to see if it can be fixed.

Level Two – Recommended: None.

Level Three – Desirable: None.

4. Storm Drainage

Downspouts built into the south façade porch columns outlet approximately 4'-0" from grade and the splash back has caused noticeable mortar deterioration to the adjacent wall.

Level One – Imperative:

New sidewalks and hardscape should be sloped to drain storm water away from Lincoln Hall. Connection of existing roof drains should be looked at to connect them underground to existing storm drainage systems. This would further help direct water away from the existing structure.

Level Two – Recommended: None.

Level Three – Desirable: None.

5. Electric, Gas and Communication

It is anticipated that other disciplines will look at these utilities.

Landscape and Irrigation

The landscaping recommendations were prepared by Dale Doerr, A.S.L.A, Manager, Landscape Architect of Lumos & Associates.

1. Landscaping

Level One – Imperative: None.

It is recommended that UNR remove all the Junipers, since they give the landscaping a dated look, are flammable and catch tree leaves in their branches. The English Ivy and Virginia Creeper on the north side should also be removed for upcoming brick work restoration. The Ivy can crack the mortar between the bricks and is hard to control once established on the building face. On the ground Ivy will cover shrubs within the planter.

Level Two: Recommended: None.

Level Three: Desirable:

All dead or dying plants should be removed, along with any “volunteer” plants. The Pin Oak trees and Birch should remain, since they are in good condition. The Oak trees will need to be trimmed over time, since the trees are planted too close to the building. The Pin Oak natural form is long drooping branches, which require a good deal of room to grow.

Along the south side of the building new plants should include 3 feet tall or less size shrubs, with ornamental grasses and perennials along the front of the border and around the main entry. The perennials will add color to the green landscape, accent the historical character of the building, and blend into the planting scheme at the SAC building next door. The planting scheme should be symmetrical, to accent the Lincoln Hall building style. The historical photos show 3 trees and shrubs on either side of the south main entry. Plant height should not extend beyond the concrete band between basement and first floor. Large plantings would hide the building’s details and increase the potential for security issues. Site furnishings, such as benches, trash receptacles and bike racks would make the outside area more useable and extend the front porch into the campus for socialization of the office staff.

At the north side of Lincoln Hall the existing planter should be extended outwards to become incorporated into the future courtyard of White Pine Residence Hall. New stairs and a ramp will be incorporated into the final design for the elevator relocation option, with a connection to the White Pine Residence Hall courtyard. Benches and a bike rack in this area will make the north side much more user friendly. The existing utility boxes should be screened with shrubs to soften the overall look – it is recognized that access needs to be maintained to these units. The north side looks and feels like the back side of a building, especially since it does not have the articulation of the south side. Adding trees and smaller shrubs in a more formal and symmetrical pattern is recommended. The trees should be more of a medium size (less than 30 feet tall) and planted at least 12 feet away from the

building so that they do not need trimming. The trees will give some privacy to the residents while accenting Lincoln Hall's character.

The west side planting is predicated on the existing walkway being moved away from the building face and an exterior planter added for window privacy. Ideally, the planter would be 8-10 ft. wide. The building elevation here is not very attractive at the pedestrian level and could benefit from some upright trees for afternoon shade and lower shrub plantings with perennials.

At the east side the building elevation is very visible from the new student achievement center and should be planted to match the west side. An 8-10 foot wide planter will provide separation from pedestrian traffic. Planter mulch throughout should match the existing rock cobble. The cobble is large enough to be uncomfortable to walk on, which will reduce pedestrian "short cutting" and plant trampling.

2. Plant Types

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

Some of the recommended plants are the same as those proposed at the SAC next door and plants found on other areas of the campus. Plants include both "old fashioned" types, like lilac, along with newer styles, such as ornamental grasses in combination with perennials.

Medium Size and Upright Growing

1. Fastigate English Oak
2. European Hornbeam
3. Small Leaf Linden
4. Japanese Tree Lilac
5. Star Magnolia

Small to Medium Shrubs and Ornamental Grasses

1. Feather Reed Grass
2. Switch Grass
3. Dwarf Mugo Pine
4. English Laurel
5. Dwarf Butterfly Bush
6. Dwarf Lilac
7. Forsythia
8. 'Drift' Shrub Roses
9. English Boxwood

10. Japanese Holly
11. Dwarf Oregon Grape
12. Red Barberry

Perennials

1. Shasta Daisy
2. Black-eyed Susan
3. Aster – Spring and Fall flowering
4. Tickseed
5. Coneflower
6. Daylily

Architectural – Exterior

1. Roof

Overall, the roofing material appears to be in good condition. However, flashing appears to be fatigued and in need of replacement. Valley flashing is a galvanized material and as observed from afar, appears to be rusting. Flashing at dormer windows is in poor condition.

Level One – Imperative:

Though there were no signs of water damage from a leaky roof, a roofing contractor should be consulted to inspect the current condition of the roof and project a life expectancy for the existing roof.

Flashing that is rusting or fatigued should be replaced with copper flashing. Copper flashing does not rust and outlasts other flashing materials. Due to the potential for deterioration caused by galvanic action when different metals are in contact with each other; there is a high likelihood that all of the flashings will need to be replaced at the same time. Copper is also an excellent replacement choice since the gutters and downspouts are copper there will be a good continuity of material and less chance for an inadvertent deterioration due to galvanic actions.

Level Two – Recommended: None.

Level Three – Desirable: None.



Figure 27: View southwest of roof. Note that valley flashing at right of frame appears to be rusting. Image Source: IS Architecture, March 2015.

2. Cupola

The cupola as observed appears to be in fair condition. Birds perch on the weather vane and defecate on the roof of the cupola. The cupola was not accessible for close inspection.

Level One – Imperative: It is highly advisable the cupola be closely inspected for rust, broken soldered joints, other structural or material deterioration. Opportunities for inspection during either a roof inspection or construction should be scheduled. Results of the inspection should provide conservation recommendations.

The roof of the cupola should be cleaned of bird droppings as part of scheduled maintenance for Lincoln Hall. The roof is constructed of painted galvanized iron. The use of abrasive cleaners should be avoided. The cupola should be repainted after inspection and repairs

Level Two – Recommended: None.

Level Three – Desirable: None.



Figure 28: Cupola as it appeared c. 1896.
Image Source: UNRA-P1831-1.



Figure 29: Cupola as it appeared in March 2015.
Image Source: IS Architecture.

3. Porch Roof

“A weather-tight roof is basic in the preservation of a structure, regardless of its age, size or design. A system that allows a building to work as a shelter, the roof sheds the rain, shades from the sun, and buffers the weather.”⁶⁸

The existing roof over the porch appears to have failed and is causing significant water damage to the porch area below. The ceiling of the porch is heavily warped and select areas on the south, east and west walls are growing algae in the mortar joints. Records show the last roof installed on the porch was in 1989.

Damage to the porch ceiling and walls may also be attributed to malfunctioning drains or a combination of both.

The porch roof will likely need to be removed in its entirety to provide necessary seismic work to the building.

Level One – Imperative:

The roof of the porch has reached the end of its functioning life. Prior to replacing the roofing material, it is recommended the existing roof framing be inspected by a professional structural engineer or roofing contractor to determine if the framing is adequate to remain. During the inspection, the source of failure should be identified and mitigated.

It is recommended the roof of the porch be replaced with a single ply roofing material such as PVC, TPO or EPDM. The lifespan for these products ranges from 22-30 years. Due to the accessibility of the roof by residents, it is critical a walking surface be applied to the roof in its entirety.

All work shall be carried out by a professional roofing contractor. Upon completion, it is recommended a flood test (or equal) be performed to test the integrity of the roof.

Level Two – Recommended: None.

Level Three – Desirable: None.

⁶⁸ Sweeter, Sarah M. “Roofing for Historic Buildings.” The Preservation of Historic Architecture. The Department of the Interior. 2004. pg. 41.



Figure 30: View east porch roof from Room 210. Image Source: UNRA-P3376124, c.1945.



Figure 31 and Figure 32: West and east walls of porch showing water damage to brick wall. Image Source: IS Architecture, March 2015.

4. Porch Roof Drainage

There are two copper drains; one at each end of the porch roof. The drains are connected to copper leader heads which, in turn, are connected to a copper drain pipe. The drain pipe parallels the east and west walls and then turns south, penetrates through the last brick column of the porch and then extends approximately 6" beyond the south face of the brick column. From the end of the drainpipe, there is approximately a 4'-0" drop to grade. Mortar loss is visible adjacent to the 4'-0" drop where the drain outlets.

The porch drainage assembly appears in good condition, however, water damage and algae growth is visible on the brick wall behind both drainpipes. This damage is either a result of roofing failure, leader head failure, drainpipe failure or a combination thereof.

Level One – Imperative:

Proper drainage is essential for any building. All porch drains should be inspected and tested for proper functioning. It is recommended any areas showing sign of failure be repaired in place. If a drain, leader head or drainpipe is beyond repair, only then shall it be replaced in-kind to match the historic in appearance, size, proportion and material.

It is also recommended the ends of the drainpipe, which outlet from the south wall, be fitted with an extension. The recommended route for the extension is to parallel the exterior wall and then angle away from the building just before grade. The horizontal portion, sloped to drain, should extend at least 3'-0" to 4'-0" away from the building. The horizontal portion can be in the form of a concrete channel as present on the north façade or of the same material as the drainpipe. This will help prevent splash back and allow water to be directed away from the building.

Level Two – Recommended:

It is highly advisable all soiled brick and mortar within the porch area be cleaned using the gentlest means possible and non-abrasive methods. The general nature and source of dirt or soiling material must be identified. "Masonry cleaning methods generally are divided into three major groups: water, chemical, and abrasive. Water methods soften the dirt or soiling material and rinse the deposits from the masonry surface. Chemical cleaners react with dirt, soiling material or paint to effect their removal, after which the cleaning effluent is rinsed off the masonry surface with water. Abrasive methods include blasting with grit and the use of grinders and sanding discs, all of which mechanically remove the dirt, soiling material or paint (and, usually, some of the masonry surface)".⁶⁹ Due to the obstructive nature of abrasive cleaning techniques, they are never recommended for a historic building. Cleaning should take place after the cause of soiling has been identified and mitigated.

Level Three – Desirable: None.

⁶⁹ Mack, Robert C. and Grimmer, Anne E. "Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings." Preservation Brief #1. National Park Service, U.S. Department of the Interior.



Figure 33: East wall of porch showing route of existing drainpipe, leader head and downspout. Note water damage to brick wall. **Figure 34:** Downspout outlet for the porch's east drainpipe. Image Source: IS Architecture, March 2015.



Figure 35: Detail view of downspout outlet. The west side of the porch has the same configuration. Image Source: IS Architecture, March 2015.

5. Porch Ceiling

The current appearance of the porch ceiling no longer reflects the historic 1896 design. Up until c. 1989, the ceiling had box beams spanning the width of the porch which terminated into a continuous wood skirt board. Above the box beams was a wood ceiling. The entire ceiling assembly was painted a light color. In addition, historic photographs show a frosted globe pendant hanging centered from the porch ceiling. Following 1989, the box beams were removed, a new skirt board was installed and the wood ceiling was replaced with wider boards.

At present, the ceiling and skirt board show signs of water damage.

Level One – Imperative: None.

Level Two – Recommended:

It is recommended the ceiling of the porch be replaced to match the historic only after identifying and mitigating the source of water infiltration. The porch ceiling assembly includes the wood ceiling, box beams and skirt board. The reconstruction of these features shall match the historic appearance, size, quantity and spacing. Based on a photo from the 1989 construction drawings set entitled “Re-Roof and Exterior Improvements,” the ceiling historically had approximately 18 box beams and 36 ceiling boards.⁷⁰ It is recommended the ceiling assembly is painted a light color to match the historic appearance. Based on historic photographs, it appears the ceiling may have been painted the same color as the transom sash above the entry door; possibly a light gray.

It is also recommended a replica globe pendant be installed to match as closely as possible to the historic lighting fixture.

Refer to the images below and Appendix A: Photographs to recreate the ceiling assembly.

Level Three – Desirable: None.



Figure 36: Historic photograph of men standing on south steps of Lincoln Hall. Visible is the original porch ceiling design and globe pendant. Image Source: UNRA-P59-1, c. 1907.

⁷⁰ Exact quantity of box beams and ceiling boards to be verified by Architect of Record.

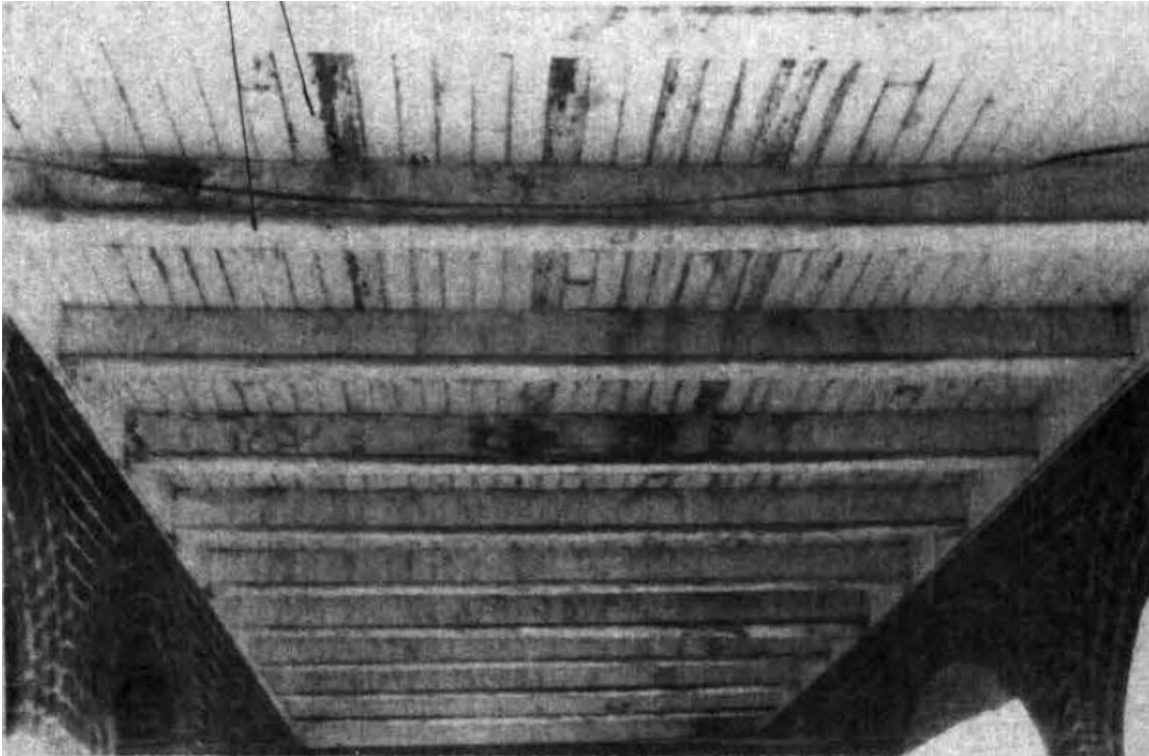


Figure 37: Photograph taken for inclusion in the 1989 “Lincoln Hall Reroof and Misc. Exterior Improvements.” The ceiling appears to be original from 1896. The 1989 drawing set called for “Existing paint to be removed off decking and box beams by hand scraping and hand sanding. Broken, cracked or badly warped box beam boards to be removed and replaced with matching material. All box beam boards to be re-nailed and all holes and joints to be caulked flush. Entire wood ceiling area shall be repainted.” Image Source: UNR Special Collections, February 24, 1989.



Figure 38: Porch ceiling as it appears today. Note: box beams are missing and ceiling boards have been replaced. No historic material remains. Image Source: IS Architecture, March 2015.

6. Porch Floor

The porch floor is constructed of a central concrete slab at the entry, flanked by potentially original T&G wood slat flooring on each side. The concrete slab is not original. The wood flooring spans the width of the porch and is sloped to drain. The wood floor boards terminate into a wood bullnose on the south/ open side of the porch. Below the bullnose is a skirt board, which spans between the brick columns. The raw ends of the bullnose and skirt board show signs of rot and paint is spalling from both features. The area of wood floor beneath the drainpipes and the length of floor board closest to the south edge of the porch are in the poorest condition. Some floor boards are warped due to improper drainage. All floor boards are painted a light gray color. Much of the paint is spalling.

Level One – Imperative:

For safety purposes, it is recommended floor boards that are buckled or warped be sanded to within an allowable tolerance. If sanding will result in exposing the tongue and groove joinery, then the entire floor board shall be replaced in-kind to match the historic. Repainting the entire floor should be considered.

Level Two – Recommended: None.

Level Three – Desirable:

The repair of damaged wood floor boards, bullnose and skirt board should be considered. All repairs should be first attempted in place; without removing the feature. Rot Doctor is a wood treatment and preservation product that is recommended for the repair of damaged wood elements. If the floor boards, bullnose or skirt board is beyond repair, then they can be replaced in-kind to match the existing appearance, size, proportion and material.

Following any repairs to floor boards, bullnose and skirt board, prepping and repainting the features should be considered. Prepping would entail removing spalling paint. It is not recommended the floor be sanded or chemically stripped as these methods are abrasive and result in loss of historic material and paint history.

If project scheduling and budget permit, the removal of the concrete slab should be considered. An appropriate replacement would wood floor boards that match the historic in appearance, size, joinery and material.



Figure 39: Porch floor as it appears today. Note warped floor boards along brick wall. Image Source: IS Architecture, March 2015.

7. Porch Railing Assembly

The porch railing appears to be original from 1896 and is in fair condition. No identified records indicate the railing was ever replaced. Condition issues include dry rot and spalling paint.

Level One – Imperative:

For life safety purposes, the repair and maintenance of the porch railing is imperative. It is recommended all repairs to the railing be made in place. Rot Doctor is a wood treatment and preservation product recommended for the repair of damaged wood elements. If the railing is beyond repair, only then should the damaged areas be replaced in-kind to match the historic in appearance, size, proportion and material.

Following repairs to the railing assembly, the feature shall be prepped and repainted. Prepping entails removing spalling paint. It is not recommended the railing assembly be sanded or chemically stripped as these methods are abrasive and result in loss of historic material and paint history.

Level Two – Recommended: None.

Level Three – Desirable: None.



Figure 40 (left): c.1907 photograph showing railing assembly. Image Source: UNRA-P59-1. **Figure 41 (above):** Typical railing assembly as it appeared in March 2015. Image Source: IS Architecture, March 2015.

8. Stepped Brick Corbels

At the roofline are three courses of corbelled brickwork, with every other course of brick jogged vertically by three rows of brick. A section of stepped brick corbels is missing on the north façade, west of the larger, newer brick mechanical stack. This is where in 1952 the west fire escape was relocated to the north façade. The bricks were likely removed at this time. Additional stepped corbels are also missing on the east and west façades where a third downspout once connected to the gutter. In 1952, the downspout was removed because it otherwise would have overlapped with the new stairwell windows.

Level One – Imperative:

It is imperative that all stepped brick corbels be inspected to assure they are secured in place, especially in areas where the bricks were intentionally removed; i.e. north, east and west façade. If the corbels are found to be loose, it is critical they be secured in place and repointed.

Level Two – Recommended:

It is recommended missing stepped brick corbels be replaced in-kind to match adjacent corbelling. The new brick should match the historic in size, shape and as closely as possible, material. Mortar used for repointing should be of the same mix recommended in this report for repointing other brick features.

Level Three – Desirable: None.



Figure 42 (left): Brick corbels on the north façade were removed when in 1952 a fire escape was installed. **Figure 43 (right):** Detail view of the east façade showing missing brick corbels. In this case, a downspout was installed at an unknown date and removed in 1952. Image Source: IS Architecture, March 2015.

9. Fresh Air Vent Decorative Grilles

Fresh air vents once functioned to allow outside fresh air to enter a room. They were typically placed under windows. Within each room, below the window would have been a radiator for heating the space. In the winter, when temperatures outside were cold, air would enter the room through the vent and pass through the radiator, which in turn would heat the air. Every room with an exterior wall and window had a fresh air vent. From the exterior, the vents would be covered by a decorative cast iron grille. In some instances, where the decorative cast iron grilles are missing, many of the fresh air vents have been infilled with brick or wood blocking. Extant grilles are in poor condition, showing signs of rust.

During our site visit, five decorative grilles were observed being stored in the west fireplace firebox. University staff was notified and a request was made for the grilles to be stored in a more secure location.

Level One – Imperative:

It can be speculated that if five grilles are being stored in the fireplace, that they, at some point, fell off the building or were possibly removed because they posed a hazard for pedestrians below. It is imperative all extant decorative grilles are inspected to insure they are securely fastened to the building. It is recommended grilles which are loose or are missing screws be reattached using masonry screws.

For vent openings missing their grilles and are open holes, consideration should be taken to either temporarily close off the opening or to reattach salvaged grilles to prevent wildlife from nesting.

Level Two – Recommended: None.

Level Three – Desirable:

Cleaning the decorative grilles is recommended to ensure their longevity. All grilles should be removed from the building, cleaned, painted and then replaced. Cast and wrought iron elements may be gently sandblasted or abrasively cleaned using a wire brush to remove layers of paint, rust or corrosion. To prevent further corrosion, the iron must be immediately repainted. Before reapplying the grilles, any debris shall be removed from the vent holes.

It is recommended the five removed decorative grilles be reattached starting on the south façade, then the west, east and lastly the north façade.

Reconstruction of vent openings that have been infilled and recreation of missing decorative grilles is desirable. The openings shall match the historic in size, proportions and overall appearance. The decorative grilles shall be of cast iron to match the historic material. Infilled vent holes can be located by noticeable scarring and discoloration of brick typically under windows. Refer to Appendix A: Photographs and Appendix B: Drawings for locations of historic fresh air grille vents. Refer to Appendix B: Drawings for a detailed drawing of the decorative grille vents.



Figure 44: Overview of various condition issues related to the decorative grille vents on the north façade of Lincoln Hall. Upper left grille appears to be loose. The upper right grille is missing, but the opening is intact. Two decorative grille vent openings below the windows have been in-filled with brick. Image Source: IS Architecture, March 2015.



Figure 45: Detail view of removed decorative grille. Image Source: IS Architecture, March 2015.

10. Basement Vent Openings

Historically, all basement vent openings were arch-topped and were inlaid with woven metal screen. As the basement took on different uses, some vent openings were enlarged and converted to windows while others were infilled with various window types of various materials. The basement vent opening directly east of the south entry stairs has been subtly altered by raising the arch-top opening to accommodate for a conduit pipe to enter the building. The vent openings at the west wing have been enlarged, resulting in a loss of their segmental arch-top opening and overall historic appearance. Other vent openings have been infilled with mechanical vents. The vent openings at the west wing that were fitted for French metal casements are in fair condition. The vent openings infilled with wood casement windows are in poor condition.

Level One – Imperative: None.

Level Two – Recommended:

The mechanical engineer is recommending all existing mechanical systems be removed from the building and be entirely replaced with new mechanical systems. It is recommended all existing mechanical vents penetrating basement openings be removed and that vent openings not be reused for the venting of future mechanical systems. Consult a mechanical engineer for alternative locations of mechanical vents, if they need to be reinstalled.

Level Three – Desirable:

It is desirable that the basement vent opening directly east of the south entry stairs be reconfigured to reflect the historic design. This will require lowering the arch-top down by approximately one course. All brick shall be salvaged and reused if feasible. New brick shall match the historic in size, shape and material. Mortar shall be compatible with and match in color and texture of the historic mortar.

In basement rooms that do not require temperature regulation, the removal of infill windows should be considered. It is recommended woven metal mesh matching the historic design be installed into the original openings. Refer to figures below for an up close image of the original woven mesh material. Copper or stainless steel hardware cloth is an acceptable alternative.

Most infill wood casement windows are set flush to the interior wall. The historic metal woven mesh was designed to sit between the second and third wythe of brick from the exterior of the building. With wood casement windows left in place, reinstallation of woven metal mesh is desirable. This approach would only be feasible for basement vent openings that retain their historic shape. All other modified windows shall be left as-is so as to not create a false sense of history.

Lastly, it is desirable that the basement vent openings on the west side of Lincoln Hall which have been enlarged be scaled down to match the original design in size, shape and material. Woven metal mesh shall be installed to reflect the historic appearance of the feature.



Figure 46 (left): Detail view of historic woven metal mesh at basement vent openings. Image Source: UNRA-P59-1, c.1907. **Figure 47 (top right):** Typical enlarged vent opening at west side of Lincoln Hall. **Figure 48 (middle right):** Vent openings on the south façade which have been modified. **Figure 49 (bottom right):** Vent opening on the north façade showing gap between wythes where woven metal mesh was once present. Image Source: IS Architecture, March 2015.

11. Gutters, Leader Heads and Downspouts

The original galvanized iron leader heads and downspouts were replaced with copper equivalents in 1927-1928.⁷¹ At present, the drainage assembly appears to be in fair condition. Damage to the south gutter is visible where a metal pole is leaning against the gutter.

One leader head and downspout was removed from the east and west façade in 1952 when the interior stairs were relocated to the east and west ends of the building. However, these downspouts were installed at an unknown date and are not original to the 1896 design.

The condition of the gutter, leader head and downspout at the west inside-corner of the north façade is unknown due to an overgrowth of ivy plant.

Level One – Imperative:

The drainage assembly should be tested to ensure it is in proper working order. Considering there have been many repairs to the existing gutters, leader heads and downspouts, an inspection for galvanic action between dissimilar materials should be performed and remediated. Try to avoid any unnecessary drilling that will affect the surrounding historic fabric.

Remove ivy from around the west inside-corner of the north façade to expose the gutter, leader head and downspout. Inspect condition of drainage assembly and repair as necessary. In addition, on south façade, remove pole and repair damaged gutter as necessary.

Level Two – Recommended: None.

Level Three – Desirable: None.



Figure 50 (left): West interior corner of north façade showing ivy growth over existing drainage assembly.

Figure 51 (right): Detail view of west façade showing past downspout location. Image Source: IS Architecture, March 2015.

⁷¹ "Specifications of Dormitory for the University of Nevada at Reno, Nevada." April 1895.

12. Brick and Mortar Cleaning

Efflorescence and soiling was observed on all facades of Lincoln Hall.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

It is desirable that all soiled brick and mortar be cleaned using the gentlest means possible and non-abrasive methods. The general nature and source of dirt or soiling material must be identified. “Masonry cleaning methods generally are divided into three major groups: water, chemical, and abrasive. Due to the obstructive nature of abrasive cleaning techniques, they are never recommended for a historic building. Cleaning should take place after the cause of moisture infiltration has been identified and mitigated.

Dried up algae may be removed using a soft bristled brush.



Figure 52: View of east façade showing brick experiencing efflorescence. Image Source: IS Architecture, March 2015.

13. Mortar Repointing

Select areas of the building are experiencing mortar loss. There have been two known repointing undertakings performed at Lincoln Hall. The first was in 1927-1928, the second in 1989. The extent of surface area that was repointed is unknown. Physical evidence shows signs of more than two repointing efforts.

Level One – Imperative:

Repointing is critical for the survival of any masonry building. A mortar with high lime content and low percentage of Portland cement is recommended. Typically, the best mortar mix is one that closely matches the historic mortar. Historic mortars typically have a low strength. The low strength compliments the relative low compressive strength of the historic brick. Historic brick cannot tolerate mortar that is harder than the brick. If the mortar is too hard it can squeeze the brick and cause the brick to crack, spall and disintegrate. Due to the fact the historic mortar has a low strength; this has caused accelerated deterioration, which is why Lincoln Hall needed to be repointed only 30 years into its life. If a matching low strength mortar is used for repointing, it may not be sufficient to withstand time and result in the same condition issues as are being experienced now. To strike a careful balance between the weathering of the mortar and the needs of the historic brick, it is recommended the new mortar for repointing contain a small amount of Portland cement. The new ratio should be 1 part cement to 10-12 parts sand to $\frac{1}{4}$ - $\frac{1}{2}$ parts lime. Though slightly a different mixture, the new mortar should still match the historic in color and appearance. How the joints were struck should be observed and imitated. As for material properties, the following criteria should be adhered to. The Portland cement should be used with a soft lime-based mortar, comply to ASTM C 150, and contain no more than 0.6% alkali to help avoid efflorescence. The lime should be a high calcium lime, meet ASTM C 207 standards, and be Type S or SA. Water must be clean and free from acids, alkalis, or other dissolved organic material. And lastly, it is preferred the sand be rounded or natural instead of granulated and comply with ASTM C 144. This will create a more historic looking mortar, be a better visual match, and give the mortar more plasticity.⁷²

Scaffolding is required to not only access hard to reach areas but when a drop cloth is applied to the framing, this provides the necessary shade to ensure a slow drying time. Repointing select areas of the building necessitates routing out the joint a depth of 2 - 2½ times the width of the joint. Loose mortar beyond the depth should also be removed.⁷³ If mortar loss is occurring from both sides of the wall, then mortar should be routed from both sides (not at the same time).

Mortar analysis was performed on samples only taken from the interior side of the brick wall. It is recommended past repointing efforts performed to the exterior of Lincoln Hall be laboratory analyzed for Portland cement content. If it is found the

⁷² Mack, Robert C. & Speweik, John P. "Repointing Mortar Joints in Historic Masonry Buildings." The Preservation of Historic Architecture. The Department of the Interior. 2004.

⁷³ Mack, Robert C. & Speweik, John P. "Repointing Mortar Joints in Historic Masonry Buildings." The Preservation of Historic Architecture. The Department of the Interior. 2004.

mortar contains more Portland cement than what is recommended in this report for repointing (1 part cement to 10-12 parts sand to 1/4-1/2 parts lime), then the entire building should be repointed. This will prevent future deterioration of the brick.

If it is found that mortar used for past repointing efforts contains acceptable traces of Portland cement, then only select areas experiencing mortar loss need to be repointed.

Repointing should occur after all structural work has been completed.

Level Two – Recommended: None.

Level Three – Desirable: None.



Figure 53: Detail view of east façade showing mortar loss at dormer. Image Source: IS Architecture, March 2015.



Figure 54: Detail view of west façade showing mortar loss at basement level. Image Source: IS Architecture, March 2015.

14. Entry Stairs

The mortar in the joints between the granite blocks has worn away. As a result the stairs “rock” and create a hazard for falling or slipping, especially when icy.

Level One – Imperative:

For safety purposes, the granite slabs should be stabilized to prevent users from possible injury. It is recommended the granite slabs be set in a new bed of mortar. This may require removing the slabs from their existing location. If slabs are removed, they shall be numbered, photo documented and reassembled exactly how they were found.

Level Two – Recommended: None.

Level Three – Desirable: None.

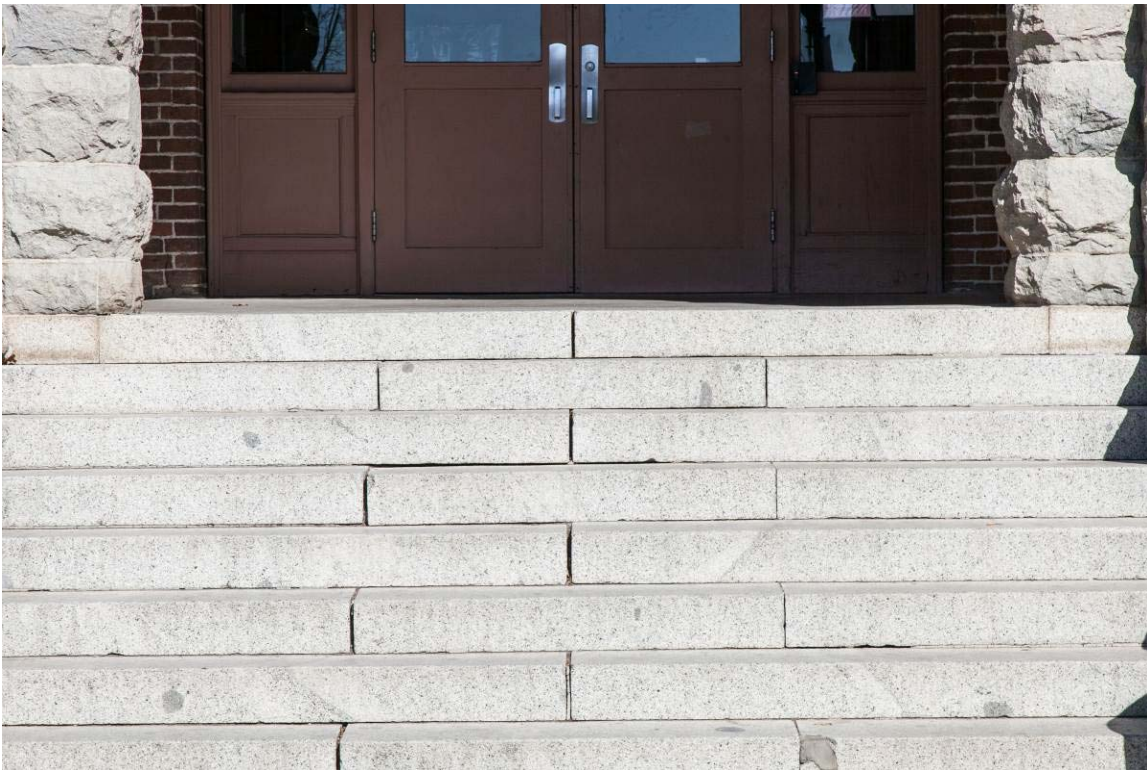


Figure 55: Detail view of south entry steps. Some of the granite steps have become wobbly due to mortar loss. Image Source: IS Architecture, March 2015.

15. Missing Wood Stairs & Entry Doors on North Façade

The north façade stairs spanning from grade to the first floor were removed in 1952 when Lincoln Hall was extensively remodeled. The door opening was infilled with a window. The original segmental arch opening and granite door sill were retained.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

The reconstruction of the north façade wood stairs and entry is desirable, though not required. This would result in entry points from all four sides of the building. The deciding factor for reconstructing this character-defining feature will likely be based on programmatic requirements and available funding.

The double door opening measured 6'-6" wide. The original granite threshold was reused as a sill when in 1952 the doorway was removed and a window was installed in its place. The granite threshold shall be reused in reconstructing the doorway. The exact thickness of the door on the 1896 first floor plan is illegible; however the doors were drawn to be double acting.

Enough photographic evidence is available to reconstruct the missing features to match the historic appearance. Some features of the stair assembly will vary from the historic design due to the fact reconstruction of historic elements are considered new construction and must comply with current building codes. Some of these features will include riser height and tread depth, nosing profile, railing height, railing configuration and balustrade spacing. The reconstructed stairs should match the historic as closely as possible. Refer to the images below for reconstructing the north entry steps and door.

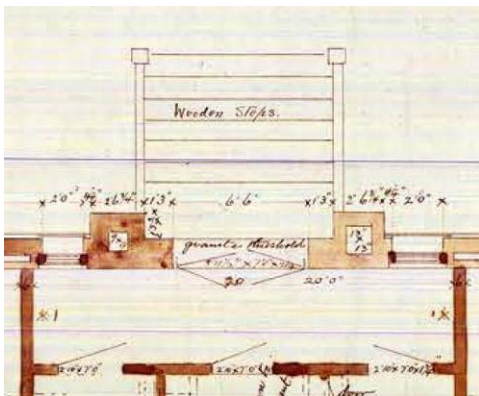


Figure 56: 1896 first floor plan view of north entry. Image Source: UNRA MAD40-1-1.



Figure 57: View southeast showing north façade of Lincoln Hall. Image Taken: 1900. Image Source: UNRA-P254-2.



Figure 58: Image of student standing at north entry steps. Image Source: UNR Special Collections, 1919 Artemisia Yearbook.



Figure 59: Collage of images from the 1919 Artemisia Yearbook with students posing in front of the north entry steps. Image Source: UNR Special Collections.

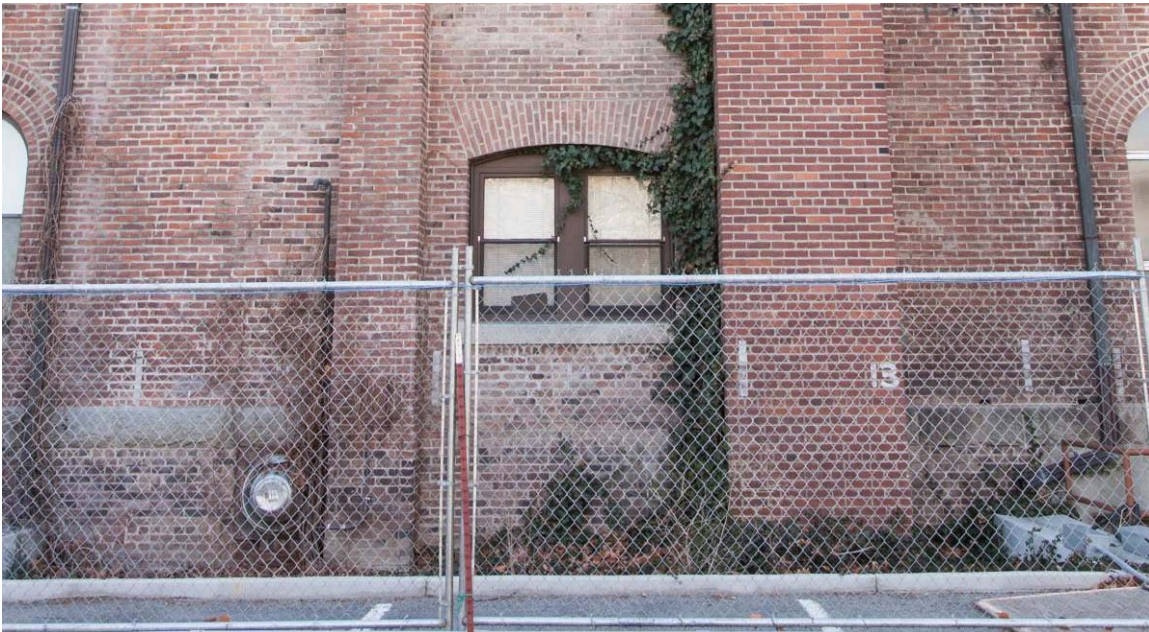


Figure 60: View south of north façade where a window has now replaced the original north entry. All that remains is the segmental arch and the granite threshold (now the window sill). The original opening width has also been retained. Image Source: IS Architecture, March 2015.

16. Extant Wood Windows

The majority of historic wood windows are extant and in good condition.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

There are no immediate issues with the historic wood windows. They are in good working order. It is recommended weather stripping replacement and a sash pulley inspection is included in routine maintenance of Lincoln Hall.



Figure 61: Overview of east facade showing typical historic first, second and third floor windows. Note: door and windows above are not original to Lincoln Hall. Image Source: IS Architecture, March 2015.

17. Modified and Missing Windows on the North Façade

The north façade has undergone many changes that have adversely impacted the resource; primarily the infill or alteration of windows. In 1952, two small windows stacked one on top the other on the first and second floor were infilled when a large brick stack was constructed. Two other windows just east of the smaller brick stack were infilled sometime after 1999.⁷⁴ Also, in 1952, the two windows in Room 118 were replaced with casement windows and the four windows between the brick stacks were also replaced. The aforementioned windows that were replaced were either shifted upward, as was the case between the brick stacks, or were shortened in height by elevating the sill, as was the case in Room 118.

In 1968, the original 1896 double hung windows were removed from all three public restrooms (6 windows total) and replaced with aluminum casements. Sometime between 1952 and 1968, the westernmost window of the first and second level restrooms was infilled with brick and exhaust fans were installed to project out the exterior of the building.

Level One – Imperative: None.

Level Two – Required:

Consult a mechanical engineer to determine if the exhaust vents can be removed or rerouted through the roof.

Level Three – Desirable:

As budget and scope of work permit, it would be desirable to remove all aluminum windows and replace them with wood double hung windows to match the historic in size, overall appearance, operation and material. Character-defining features that are to be reconstructed include the light pattern, the mullion profile, the round brick mold, sash size, mid-rail size, interior trim and interior sill. Interior hardware should match existing hardware found on adjacent windows.

Consult a structural engineer to determine the feasibility of reopening the infilled restroom windows and the four windows on each side of the brick stacks. If feasible, the windows are to be reconstructed to match the historic per specifications listed above. The intent of reconstructing this feature is to make the exterior of Lincoln Hall more closely reflect its historic appearance.

Lastly, sills of windows that have been adjusted in elevation should be modified to reflect their historic elevation. In the case of Room 118, the windows shall be reconstructed per the specifications listed above. Thou not required, the intent of reconstructing this feature is to make the exterior of Lincoln Hall more closely reflect its historic appearance.

⁷⁴ "Lincoln Hall Auxiliary Plan" University of Nevada, Reno Special Collections. Dated: April 12, 1999.

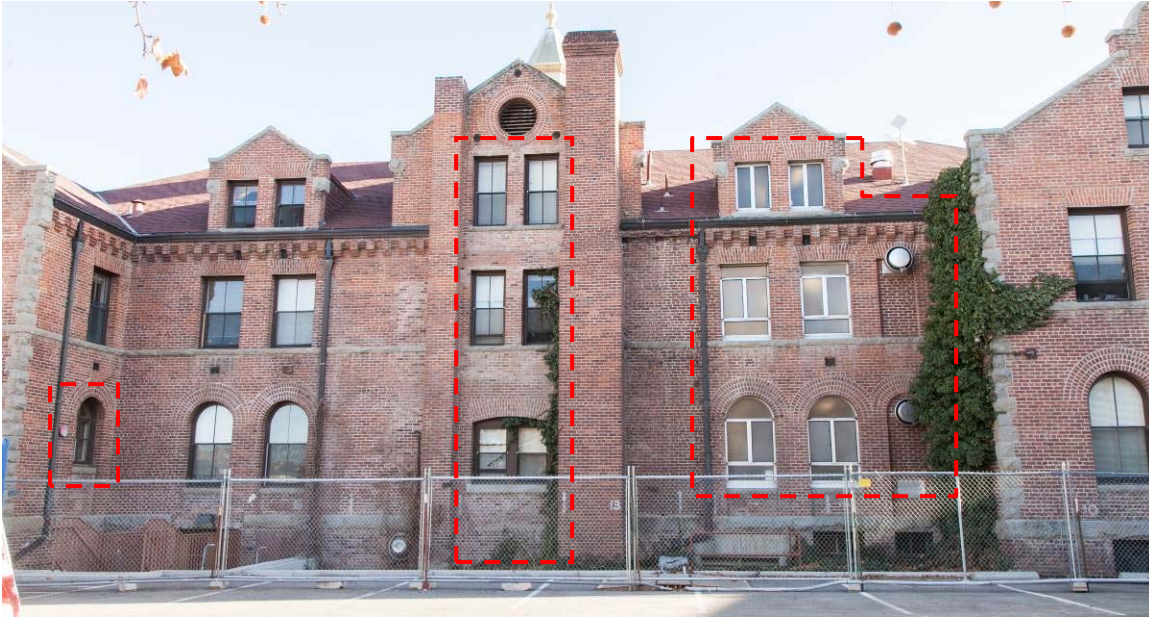


Figure 62: North façade of Lincoln Hall with arrows indicating missing or altered windows. Image Source: IS Architecture, March 2015.

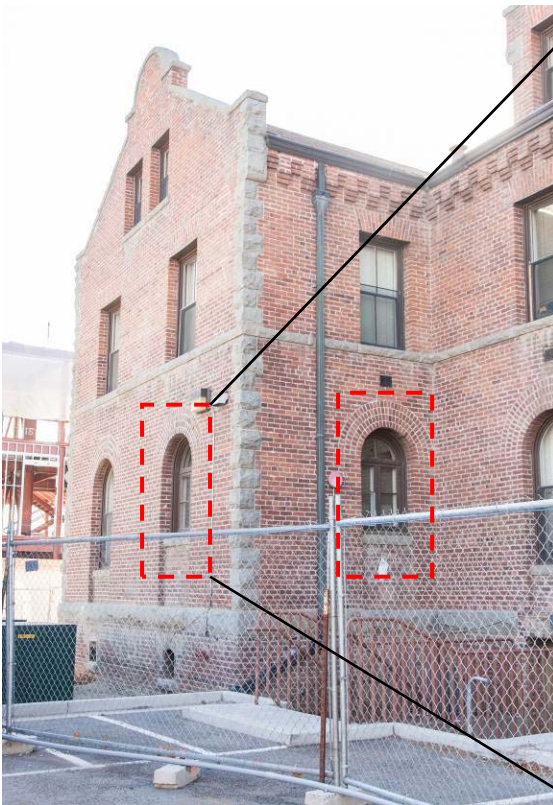


Figure 63: East interior corner of north façade with dashed outlines showing windows of Room 118 that have been altered. Image Source: IS Architecture, March 2015.

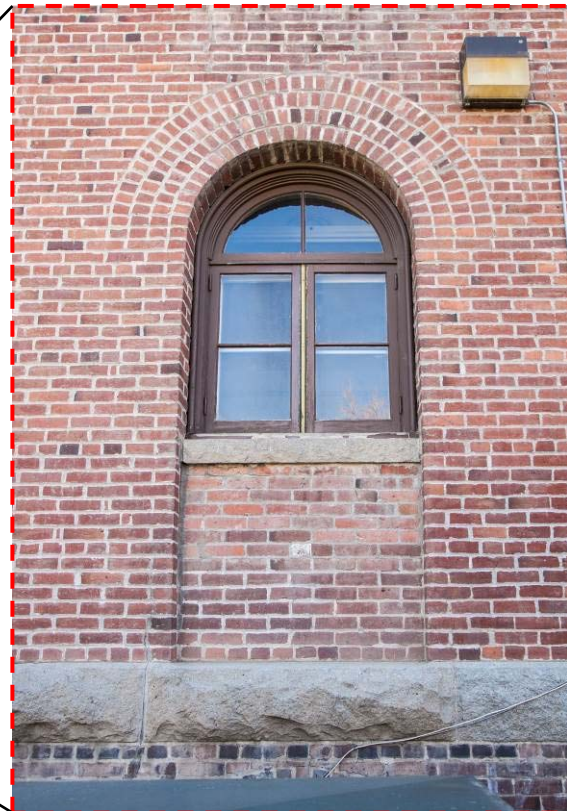


Figure 64: Detail view of Figure 63. Image Source: IS Architecture, March 2015.

18. Window Coverings

Space requirements of future building occupants may require window coverings to block UV exposure to interior spaces.

At present, two windows on the west façade are blacked out from the interior with a blue material. These rooms are currently occupied by the elevator shaft.

Level One – Imperative:

Window films are not recommended to be used to block UV exposure. Films adversely affect the visual appearance of historic resources and are not recommended to be used on historic windows. Exterior shades are also not advisable for similar reasons.

Appropriate window coverings include interior shades or internally or externally applied and removable storm windows.⁷⁵

Level Two – Recommended: None.

Level Three – Desirable:

Remove the blue material from the west façade windows. If it needs to be replaced, do so to match other window shading devices found in Lincoln Hall.



Figure 65: View east of west facade. Note the detracting blue material hung in the windows. Image Source: IS Architecture, March 2015.

⁷⁵ Storm windows can help improve the energy conservation of historic buildings, but can also impede necessary egress from a room. It is recommended applicable building codes for egress requirements be researched prior to implementation of storm windows.

19. Non-Historic Brick Stack at North Facade

Historically, there were two stacks of equal size on the north façade of Lincoln Hall. In 1952, the west stack was removed and a larger and taller brick stack was constructed. At present, the east stack is shorter than its historic appearance. When the stack was shortened is unknown.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

Consult a mechanical engineer to determine whether the non-historic west stack is currently being used. If the west stack is no longer needed, then it shall be removed. In its place, a new stack shall be reconstructed to match the historic east stack in height, size, shape and material. The intent of reconstructing this feature is to make the exterior of Lincoln Hall more closely reflect its historic appearance.

Consult a structural engineer who specializes in historic masonry to determine the feasibility of extending the height of both stacks to reflect their historic design. If feasible, the new brick shall match the historic in size, shape and material. Historic photographs show the tops of the stacks having one course of brick overhanging the exterior face of the stack. The overhang appears to be 2"-3".



Figure 66: View of north facade c. 1900 showing the brick stacks of equal height. Image Source: UNRA-P254-2.



Figure 67: View of north facade showing newer brick mechanical stack in the background and shortened historic brick stack in the foreground. Image Source: IS Architecture, March 2015.

20. Light Shafts

The original 1896 design of the structure included one light shaft at the end of each corridor. The shaft was also provided to vent interior spaces which were poorly ventilated. It was constructed of brick and spanned all three levels. Approximately 3'-0" of the shaft was visible from the north façade projecting out of the roof. The light shafts were removed in 1952 at which time interior spaces were reconfigured and the opening in the roof patched.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

Though not required, it is desirable to reconstruct missing light shafts so that the chimneys are visible from the exterior. It is not necessary for the light shaft to be used as that, nor does its appearance from the interior need to match the historic. One possible use would be a vertical chase for utilities. The intent of reconstructing this feature is to make the exterior of Lincoln Hall more closely reflect its historic appearance.

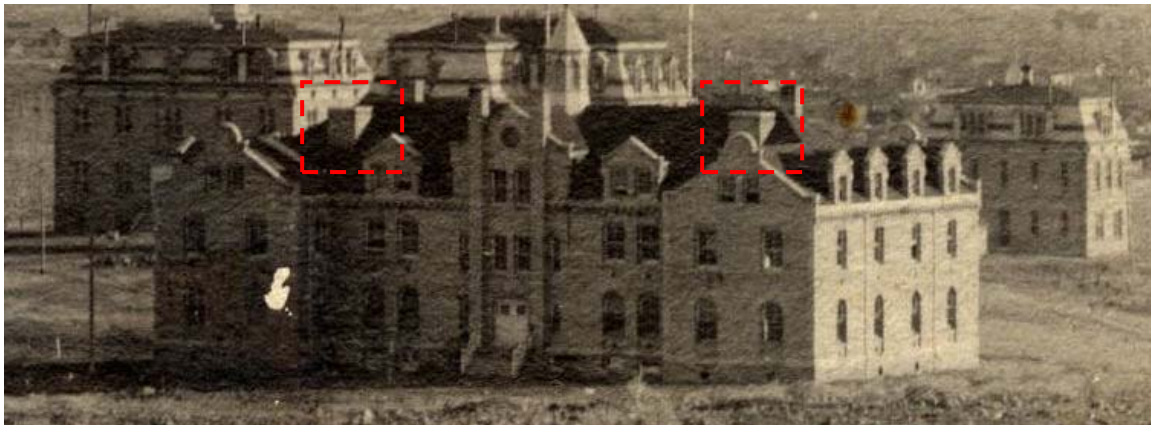


Figure 68: View of the north side of Lincoln Hall with dashed outlines showing original light shafts. Image Source: UNRA-P254-2, 1900.

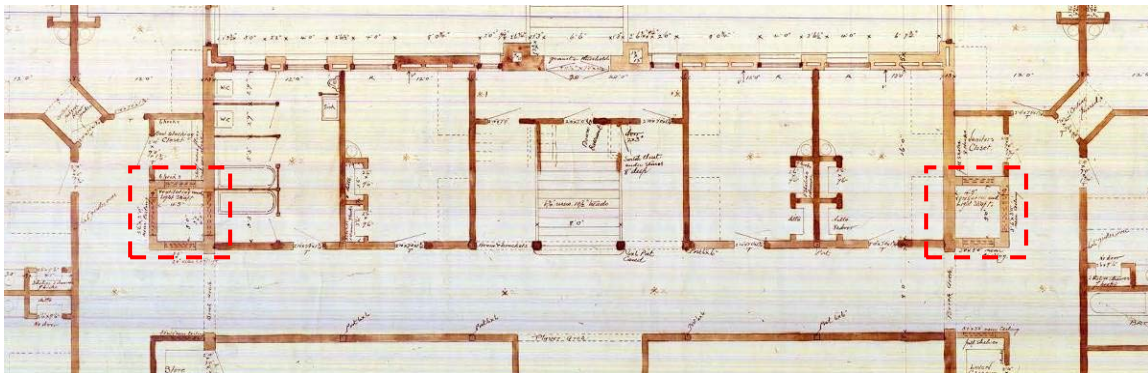


Figure 69: Enlarged view of 1896 first floor plan with dashed outlines showing location of light shafts. Image Source: UNR MAD40-1-1, 1896.

21. Chimneys

There are two fireplace chimneys at Lincoln Hall. The chimneys were historically twice the height of what they are today. In 1914, the chimneys toppled during an earthquake. They were rebuilt only to half their original height, likely for fear they would topple again in another tremor.

Level One – Imperative:

Consult a structural engineer who specializes in historic masonry to determine if the chimneys are structurally sound. Consult a mason to inspect the chimneys for mortar loss and repoint as necessary following recommendations outlined in the

Level Two – Recommended: None.

Level Three – Desirable:

Consult a structural engineer to determine the feasibility of extending the chimneys to their historic height. If feasible, the new portion of chimney shall match the historic in size, height, material and overall appearance. The intent of reconstructing this feature is to make the exterior of Lincoln Hall more closely reflect its historic appearance.



Figure 70: South façade of Lincoln Hall c. 1896 showing original height of chimneys. Image Source: UNRA-P232-01.



Figure 71: View west over roof line showing chimneys as they appeared in March 2015. Image Source: IS Architecture.

22. Wildlife

There are currently many fresh air vent openings that are missing their decorative grilles. This leaves the opening and the 4” wall cavity between the inner and outer brick wall susceptible to wildlife nesting.

Level One – Imperative:

All openings should be sealed to prevent wildlife from entering the building. Nesting and feces can cause much damage to any structure. The preferred method for sealing the vent opening is to use fallen grilles and reconstructed grilles that match the historic in size, material and patterning.

Level Two – Recommended: None.

Level Three – Desirable:

If it is not feasible to reconstruct new grilles at this time, the vent openings shall be mothballed with a wood block (or equal) for future grille installation.



Figure 72: Detail view of decorative grille vent opening on west facade. The grille has become loose and wildlife appears to be nesting in the wall cavity. Image Source: IS Architecture, March 2015.

23. Exterior Paint Scheme

Paint analysis of exterior and interior finishes was performed to determine the original paint scheme for Lincoln Hall.

Level One – Imperative: None.

Level Two – Required: None.

Level Three – Desirable:

Though not required, it is highly recommended exterior wood features of Lincoln Hall be returned to their original paint color. Refer to Appendix E: Paint Analysis for current paint swatches that match the historic colors used at Lincoln Hall.⁷⁶



Figure 73: Historic photograph, c.1907 with men sitting on south entry steps of Lincoln Hall. Paint analysis revealed the exterior window trim was painted gray (Benjamin Moore 2140-50 “Gray Horse”) and the exterior door trim was painted with the same gray as well as a greenish-brown (Sherwin Williams 4041 “Van Dyke Brown”).

⁷⁶ Due to printing and computer monitor color distortion, these swatches are not accurate representations. Please refer to the actual color swatches for reference.

Interior

1. Interior Walls

The interior of Lincoln Hall has undergone many renovations making it difficult to visualize which interior features are original and which are not. To better understand the authenticity of interior features, particularly wall locations, a color-coded wall history for each level of the building was generated using past construction document floor plans. The study revealed the overall spatial layout of the interior was mostly intact, but previous construction efforts have left original walls segmented. Below is a wall history for each level of Lincoln Hall.

Level One – Imperative: None.

Level Two – Recommended:

Retention of historic walls should be considered in proposed and future design work.

Level Three – Desirable: None.

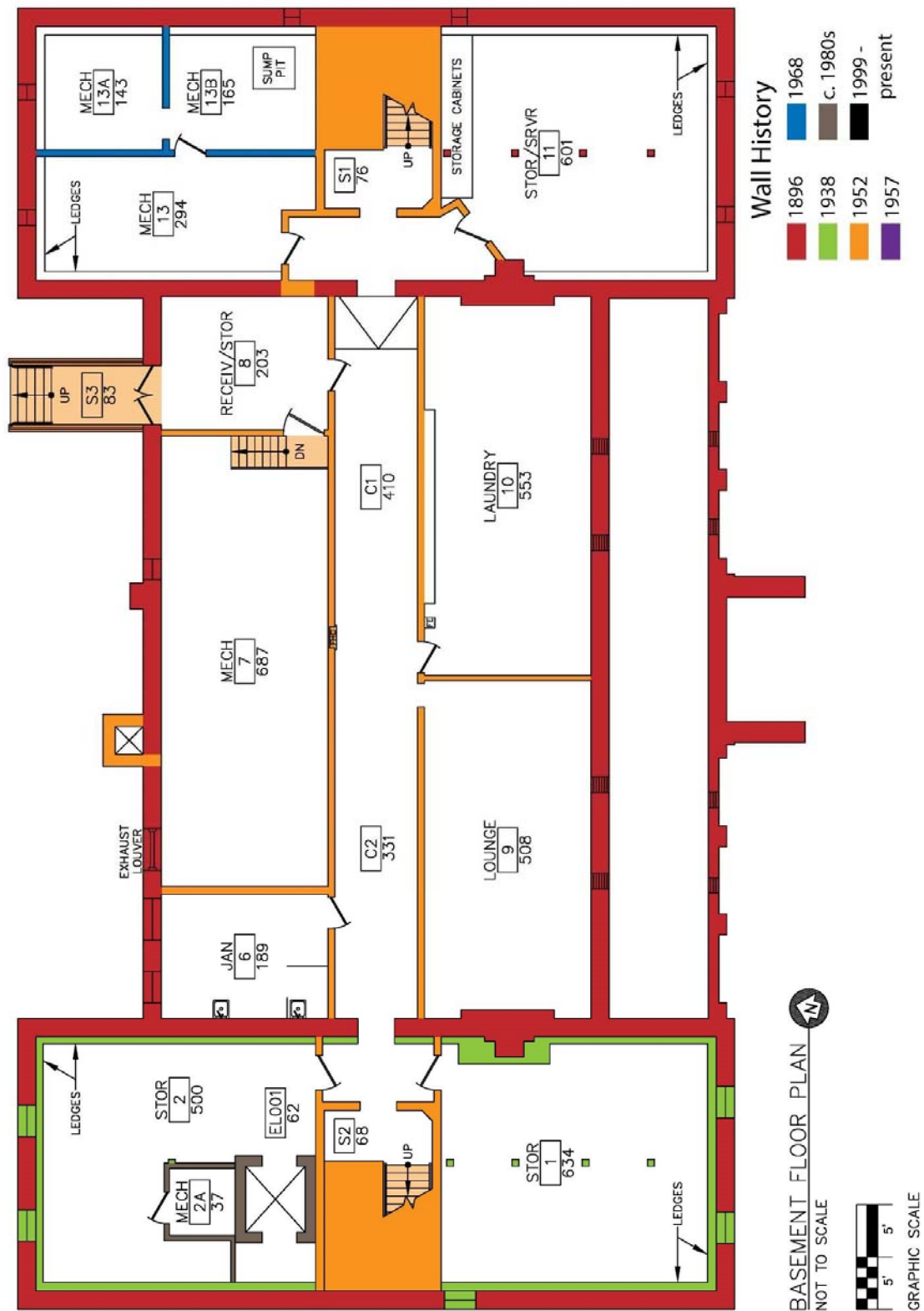


Figure 74: Basement Floor Plan Wall History. Source: IS Architecture, May 2015.



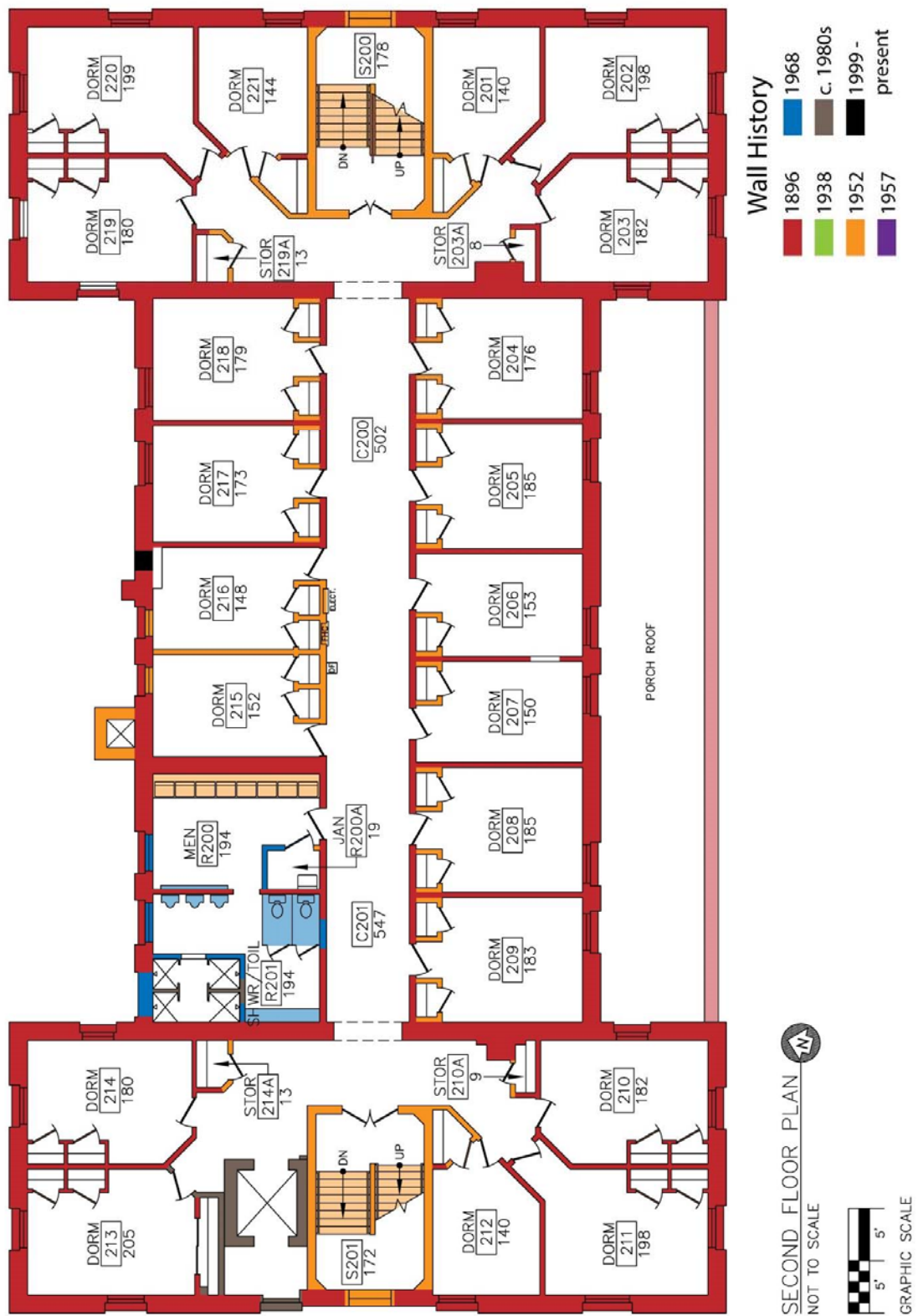


Figure 76: Second Floor Plan Wall History. Source: IS Architecture, May 2015.

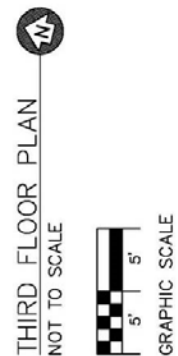


Figure 77: Third Floor Plan Wall History. Source: IS Architecture, May 2015.

2. Entry

Historically there was a segmental arched opening between the first floor Lobby and Corridor. The opening is noted as a plaster arch on the original 1896 first floor plan of Lincoln Hall. The arch appears to have been removed in 1957 when construction documents for the remodel of the lobby call for “existing plaster arch to be removed.” Refer to Appendix B: Drawings – Improvements to Lincoln Hall, sheet 1, elevation B of Lobby or refer to image [below](#).

The Lobby has also lost its historic relationship to the Pool Room and Reading Room. Both rooms are now accessed by a single door, whereas historically they were accessed by double doors with overhead transoms, centered on the wall.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

It is highly recommended the plaster arch between the first floor Lobby and Corridor be reconstructed to match the arch profile as drawn in the 1957 construction drawings for “Improvements to Lincoln Hall.” The thickness of the reconstructed arch shall match the thickness of the south corridor wall; approximately 8” thick. The north face of the arch shall sit flush with the south wall of the Corridor.

The openings into the Pool Room and Reading Room shall be reconstructed in their historic location; a 6'-0” x 7'-0” double door opening centered on the wall.

It is recommended the Lobby be remodeled to reflect the original 1896 appearance. This includes:

- It would be highly desirable for the openings into the Pool Room and Reading Room be reconstructed to match the historic location and appearance. Based on the historic 1896 first floor plan, the door opening measured 6'-0” x 7'-0”, the doors swung into the adjoining rooms and they were 1-3/4” thick. The sash of the transom was 1-1/2” thick, was hung on pivots and furnished with a transom rod. The height of the transom is unknown. No historic photos were identified showing the historic appearance of these doors; however a photograph taken c. 1919 in the Reading Room (then Parlor) shows the door leading into the former Masters Room. The appearance of the 5-panel door matches the description for doors in the original 1895 specifications for Lincoln Hall: All window and door openings throughout first, second and third stories are to be neatly cased with 7/8” x 4” plain casings with rounded corners. Turned blocks at top and 1-1/8” plinths at bottom. Doors throughout are to be hung with bronzed iron butts and furnished with real bronze locks and trimmings. Refer to Appendix C: 1895 Specifications for Lincoln Hall.

- It would be highly desirable for all finish carpentry to match the original 1895 specifications. Baseboards in all rooms and halls, 1" x 8" with rounded corners. Chair Rails in all rooms and halls, 4" x 5/8" with rounded corners. Picture Rail in all rooms and halls. Wainscoting, 4 feet high in all halls and stairway of 5/8" x 4" pine, matched and finished with V-joints, cap and base.
- And lastly, it would be desirable for the front entry doors and transom be painted to match the historic paint color. Refer to Appendix E: Paint Analysis. Paint color for other finish carpentry shall be period appropriate and complementary to the historic color of the entry door assembly.

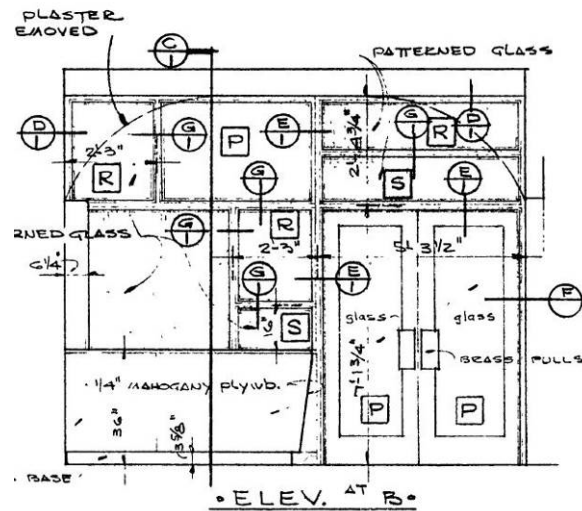
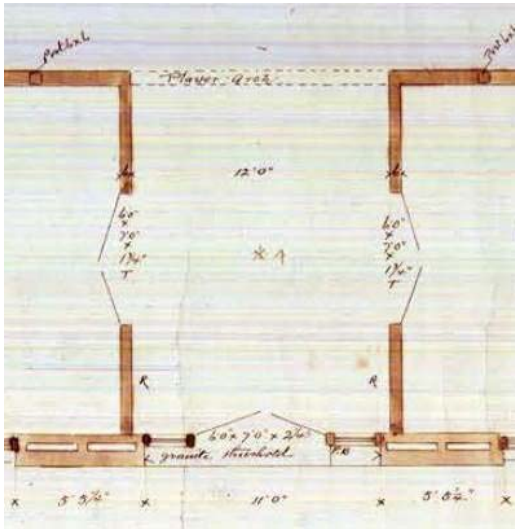


Figure 78: 1896 floor plan of Entry area. Image Source: UNR MAD40-1-1. **Figure 79:** Interior elevation from 1957 construction drawing set calling for "line of exist. plaster arch to be removed." Image Source: UNR Special Collections, "Improvements to Lincoln Hall", 1957.



Figure 80: Interior view east of Reading Room (then Parlor). Note: finish carpentry was consistent throughout the first, second and third floors of the building. Image Source: 1919 Artemisia Yearbook, UNR Special Collections.

3. Pool Room & Reading Room

The Pool Room, historically called the Reading Room and the Reading Room, historically called the Parlor, retain their historic shape, window locations and fireplace location, but has lost its overall finished aesthetic and interconnection relationship with the Entry (C102).

Historically, the Pool Room had two door openings. The primary opening was the entrance to the room from the Entry (C102). This opening was a pair of double doors with transoms overhead. The other door was on the west wall of the room, north of the fireplace. This door opened into a storage closet and at present, has been replaced with bookshelves.

The Reading Room currently has two door openings. Similar to the Pool Room the primary entrance is from the Entry (C102) and it too has been reconfigured. The other door opens into Corridor 104.

The overall appearance of the rooms has undergone many remodels. The last remodel in 1989 and current appearance of the rooms, gave the space a high Victorian feel with wood baseboards, chair rails and crown molding as well as ornate wallpaper and chandelier. The appearance of the fireplace assemblies has also become far removed from their original appearance.

Level One – Imperative: None.

Level Two – Recommended:

Level Three – Desirable:

It is recommended the openings into Entry (C102) be reconstructed in their historic locations; a 6'-0" x 7'-0" double door opening with overhead transom centered on the wall.

It is recommended the Pool Room and Reading Room be remodeled to reflect their original 1896 appearance. This includes:

- It is highly desirable for the opening into the Pool Room and Reading Room to be reconstructed to match the historic location and appearance. Based on the historic 1896 first floor plan, the door openings measured 6'-0" x 7'-0", the doors swung into the room and they were 1-3/4" thick. The sash of the transom was 1-1/2" thick, was hung on pivots and furnished with a transom rod. The height of the transom is unknown. No historic photos were identified showing the historic appearance of these doors; however a photograph taken c. 1919 in the Reading Room (then Parlor) shows the door leading into the former Masters Room. The appearance of the 5-panel door matches the description for doors in the original 1895 specifications for Lincoln Hall: All window and door openings throughout first, second and third stories are to be neatly cased with 7/8" x 4" plain casings with rounded corners. Turned blocks at top and 1-1/8" plinths at bottom. Doors

throughout are to be hung with bronzed iron butts and furnished with real bronze locks and trimmings.

- It is highly desirable all finish carpentry match the original 1895 specifications and historic photograph taken c. 1919. Baseboards in all rooms and halls, 1" x 8" with rounded corners. Chair Rails in all rooms and halls, 4" x 5/8" with rounded corners. Picture Rail in all rooms and halls.
- It is highly desirable the overall appearance of the fireplace assembly be reconstructed to match the 1896 appearance. Per the 1895 specifications: "Put up mantel shelves over the two fire places of pine, 2-1/2" x 12" with heavy moldings all as per details." No details were identified; however a corner of the mantel appears in the c. 1919 photograph taken in the Reading Room (then Parlor). "Fronts of the fireplaces to be of sand stone. Hearth of 12" x 12" fire clay tiles laid on trimmer arch of brick and cement. Ash pits under fireplaces with 10" x 12" iron door set in each. Bottom of ash pits to be paved with bricks."
- It is desirable for the paint color below the chair rail to contrast from that above the chair rail as shown in the c. 1919 photograph. All other finish carpentry shall be period appropriate.

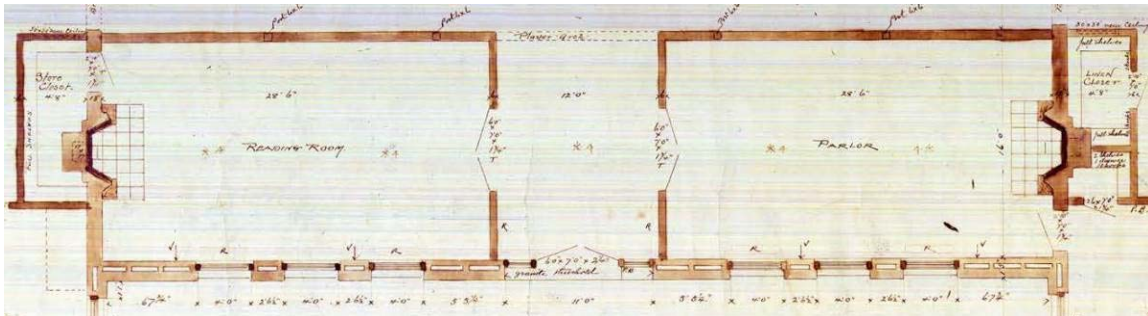


Figure 81: 1896 floor plan showing Pool Room (then Reading Room) and Reading Room (then Parlor). Note the scoring pattern for the fireplace hearths. Image Source: UNR MAD40-1-1.

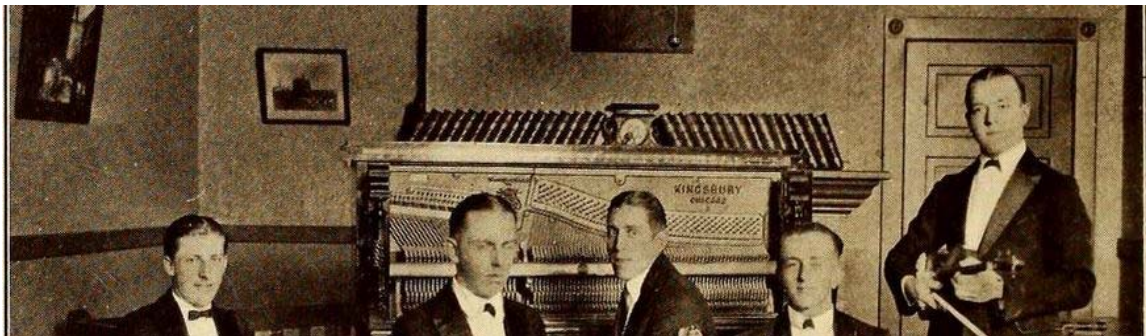


Figure 82: 1919 photograph taken in the Reading Room (then Parlor). Interior finish carpentry in the Reading Room would have been the same in the Pool Room. Note the corner of the fireplace mantel peeking out behind the piano. Also note the 5-panel door, door trim, chair rail and paint scheme. Image Source: 1919 Artemisia Yearbook, UNR Special Collections.

4. Corridors

The overall appearance of the first, second and third floor Corridors has noticeably changed. The stripped down appearance of the spaces is far removed from how it was originally designed to appear.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

The arch at each end of all Corridors is a character defining feature its retention is highly recommended.

Though not required, it is desirable to return missing finish carpentry to the first, second and third floor Corridors. Per the 1895 specifications for Lincoln Hall, the Corridors (formerly referred to as Halls) call for the following treatments:

- Baseboards in all rooms and halls, 1" x 8" with rounded corners. Chair Rails in all rooms and halls, 4" x 5/8" with rounded corners. Picture Rail in all rooms and halls. Wainscoting, 4 feet high in all halls and stairway of 5/8" x 4" pine, matched and finished with V-joints, cap and base.
- Paint color for finish carpentry shall be period appropriate and complementary to the historic color of the entry door assembly.



Figure 83: Interior finish carpentry in the Corridors would have been very similar to the Reading Room (then Parlor) with exception to 4'-0" high wainscot below the picture rail. Image Source: 1919 Artemisia Yearbook, UNR Special Collections.

5. Corridor to Dorm Room Relationship

The adjacency relationship between the east end of the first floor Corridor and dorm rooms 112 and 113 has been lost. In 1952, a separate hallway (C103), parallel to Corridor 100, was created to access the two dorm rooms. At this time the historic openings to the dorm rooms were infilled.

Level One – Imperative: None.

Level Two – Recommended:

It is recommended the historic adjacency relationship between the first floor Corridor (C100) and dorm rooms 112 and 113 be restored. This will require removing Corridor 103 as well as removing the rooms' linear non-historic closets. It is preferred that the door openings be reconstructed in their historic location and match the appearance of extant Corridor doors.

Level Three – Desirable:

Though not required, it would be highly desirable to reconstruct all corridor doors to match the historic door specifications for Lincoln Hall. Doors shall measure 2'-10" wide, 7'-0" tall and 1-3/4" thick and have an overhead transom. The sash of the transom shall measure 1-1/2" thick, hung on pivots and furnished with a transom rod. The doors are to be of 5 panels, hung with bronzed iron butts and furnished with real bronze locks and trimmings. The door casings shall be neatly cased with 7/8" x 4" plain casings with rounded corners; turned blocks at top and 1-1/8" plinths at bottom.

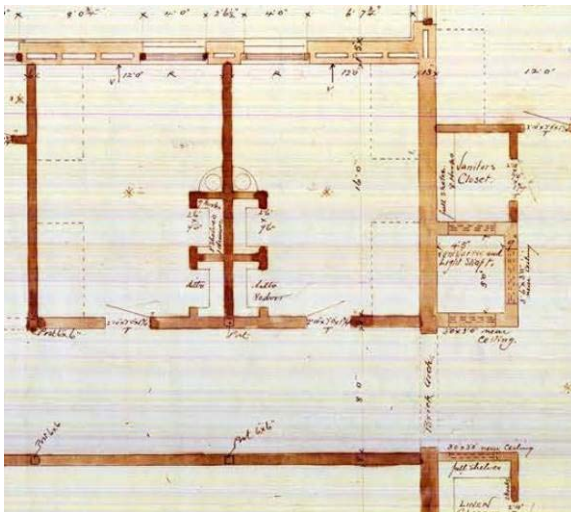


Figure 84: 1896 floor plan showing Room 112 and 113 opening directly to Corridor 100. Image Source: UNR MAD40-1-1.

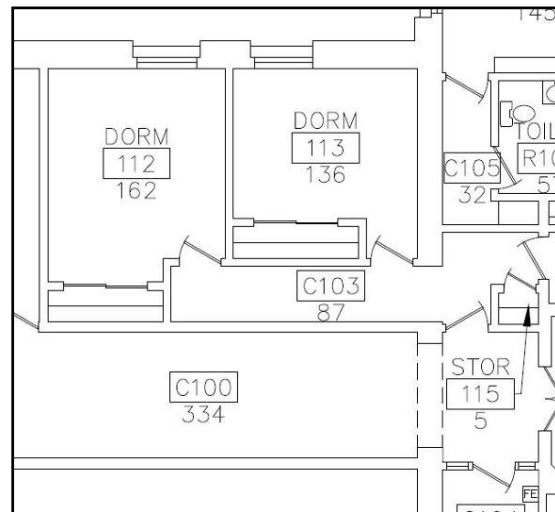


Figure 85: 2015 floor plan showing Room 112 and 113 opening into Corridor 103. Image Source: UNR, revised by TSK Architects.

6. **Flooring**

There have been many mentions of work performed to the floors of Lincoln Hall in past construction document sets. However, the removal of the original Oregon pine floors was not indicated, rather notes such as “1/2” magnesite on existing flooring” or “asphalt tile on sanded existing floor” were called for.

Level One – Imperative: None.

Level Two – Recommended:

Remove all existing carpet and other layers of flooring material to determine whether the original Oregon Pine floors are in place. The carpet is in poor condition, so its removal is warranted anyway. If the original floors are in place, it is recommended a professional hardware flooring restoration company be consulted to determine the feasibility of salvaging the historic flooring. There are three options for replacement of flooring in order of preference.

Option 1:

Weave in new floor boards that match the existing in wood species, size and joinery. Refinish the floors upon completion.

Option 2:

Remove historic floor boards from areas of lesser use such as the dorm rooms or storage areas. Weave these salvaged boards into the common areas (i.e. Entry, Corridors, Reading Room and Pool Room) with localized damage. Then patch the voids of the lesser used areas with plywood and install carpet.

Option 3:

Remove all carpet throughout building and replace with new carpet.

Level Three – Desirable:

If the original Oregon pine floors are not salvageable or are not extant, it is desirable to return all floors back to their original flooring material; seasoned Oregon pine. If providing new flooring for all rooms is not feasible then installing hardwood floors in only the common spaces is acceptable. This includes the Entry (C102), all Corridors, the Reading Room (103) and the Pool Room (107). Per the 1895 specifications: “Floors throughout the building to be selected vertical grained, well-seasoned Oregon Pine, neatly laid and blind nailed every 16” with 3” wire finishing nails...Butt joints to be top nailed at both edges, and all uneven places dressed off.” Refer to Appendix C: 1895 Specifications for Lincoln Hall.

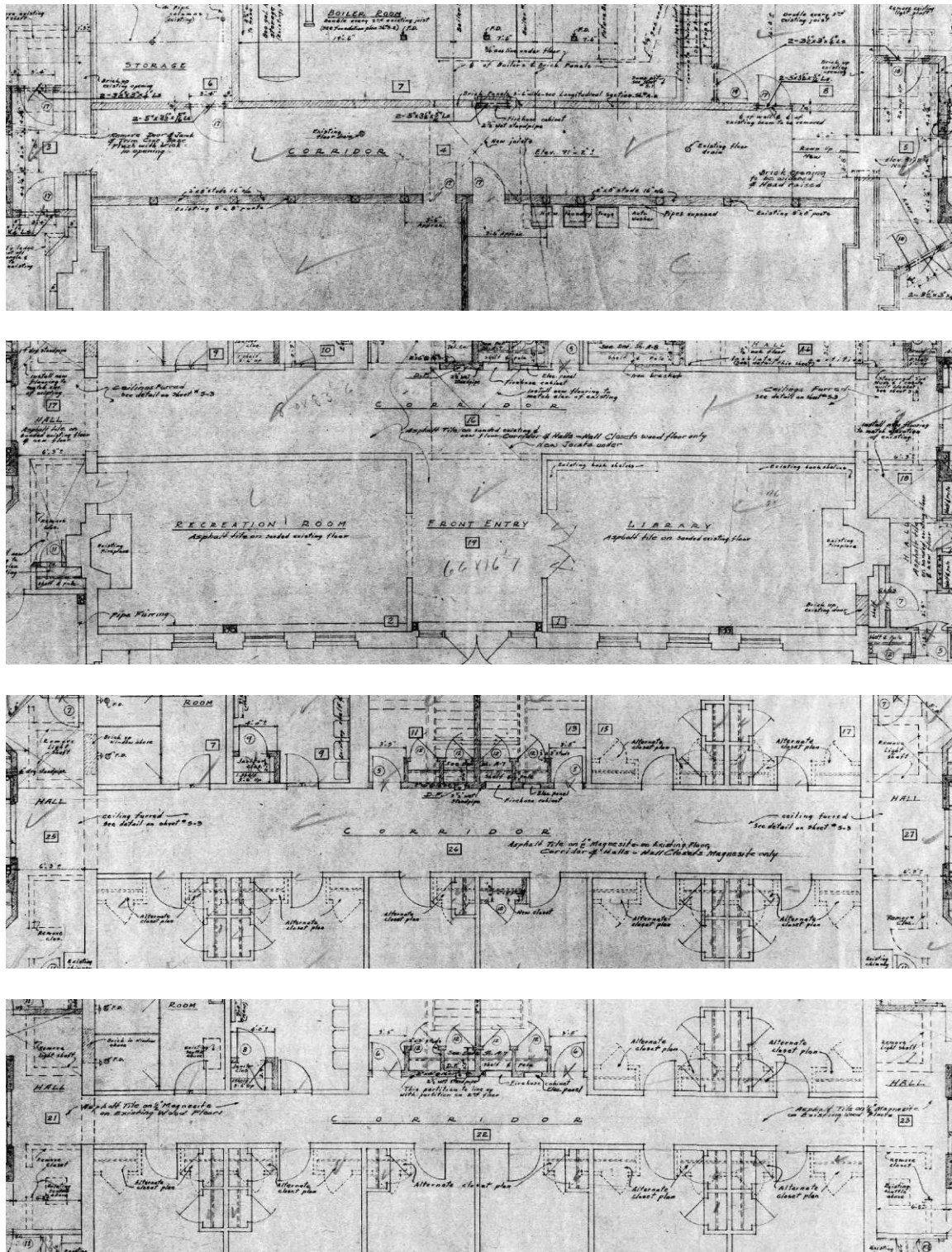


Figure 86: 1952 basement, first, second and third floor plan noting finish floor treatment. In 1952, the basement Corridor was concrete, the first floor Corridor, Pool Room and Reading Room calls for “asphalt tile on sanded existing wood floor,” the second floor Corridor calls for “asphalt tile on $\frac{1}{2}$ ” magnesite on existing floor” and the third floor Corridor calls for the same treatment as the

second floor. Image Source: UNR Special Collections, “New Stairs and Interior Alterations”, January 2, 1952.

7. Finish Carpentry

Only finish carpentry at exterior windows, the front entry door side lights and select wardrobe features was identified as being original to the 1896 design. Refer to individual room headings within in this section of the report for recommendations related to finish carpentry.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

It is highly desirable rooms other than the Entry, Corridors, Pool Room and Reading Room have finish carpentry installed per the 1895 specifications for Lincoln Hall. All finish carpentry shall be milled from seasoned yellow pine. Baseboards in all rooms shall be 1” x 8” with rounded corners. Chair Rails in all rooms shall be 4” x 5/8” with rounded corners. Picture Rail shall be installed in all rooms. A historic photograph from the 1919 Artemisia Yearbook taken within a dorm room shows the chair rail. The portion of wall above the chair rail appears to be painted a light color whereas the portion of wall below the chair rail is painted a dark color. Refer to image below, also found in Appendix A: Photographs.

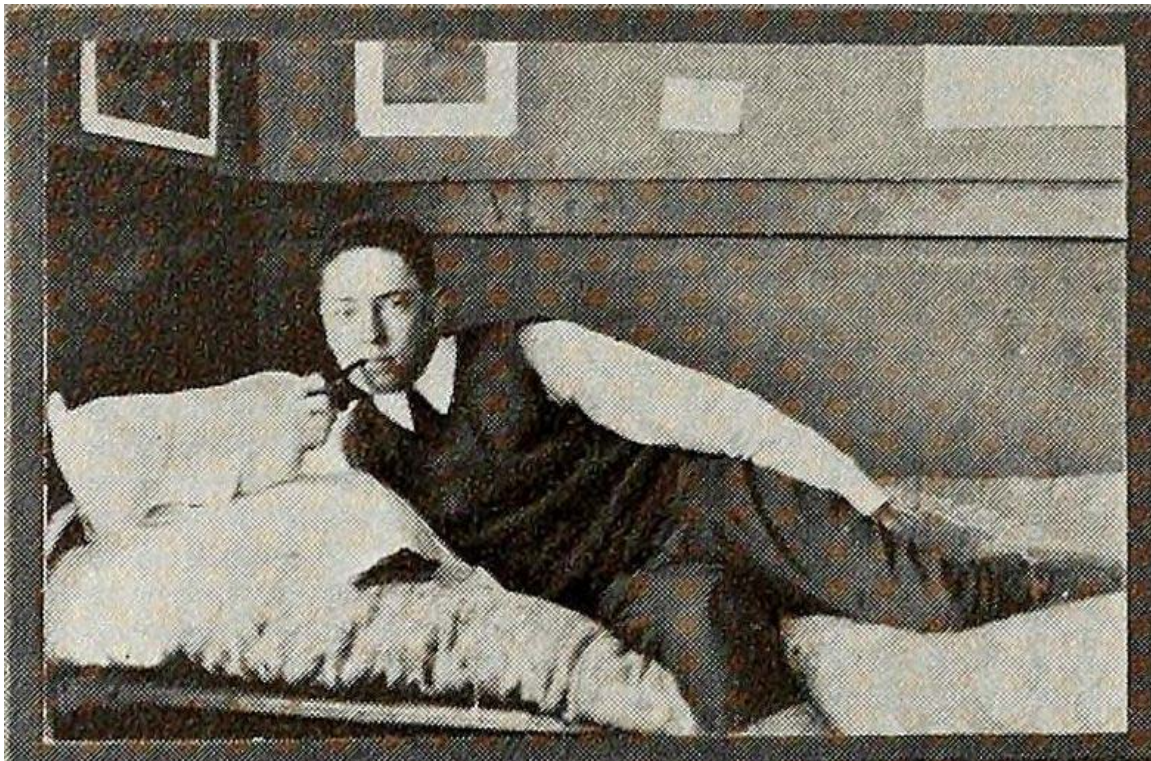


Figure 87: Photograph taken of Lincoln Hall resident in his dorm room. Note chair rail and paint scheme. Image Source: 1921 Artemisia Yearbook, UNR Special Collections.

8. Wardrobes

Paint samples were extracted from the middle wardrobe of Room 312. The 1952 construction document set for “New Stairs and Interior Alterations of Lincoln Hall” called for all wardrobe doors to be replaced. Paint analysis confirmed that the wardrobe door was not original; however, it did reveal that the jamb of the door was original. Most wardrobes are no longer in their original locations. Wardrobes in their original locations include Rooms 104, 105, 108, 109, 202, 203, 210, 211, 213, 214, 219, 220, and 302, the two westernmost wardrobes of Rooms 309 and 312 and lastly, 317.

Level One – Imperative: None.

Level Two – Recommended:

Wardrobes are a character-defining feature to Lincoln Hall. It is recommended wardrobes in their original location, as listed above, remain in place.

It is recommended any repairs be done in place and that any hardware missing be replaced in kind to match what is currently there.

Level Three – Desirable:

Though not required, it is desirable for wardrobes that have been removed or relocated to be reconstructed in their original location. The location of the first floor wardrobes shall match the 1896 first floor plan. The location of the second and third floor wardrobes shall match the existing walls of the 1952 construction document set for “New Stairs and Interior Alterations of Lincoln Hall.” The design of the reconstructed wardrobes shall match the extant historic wardrobes. Refer to the list above for Rooms with extant historic wardrobes. Extant historic wardrobe hardware shall be removed of paint using non-abrasive methods.

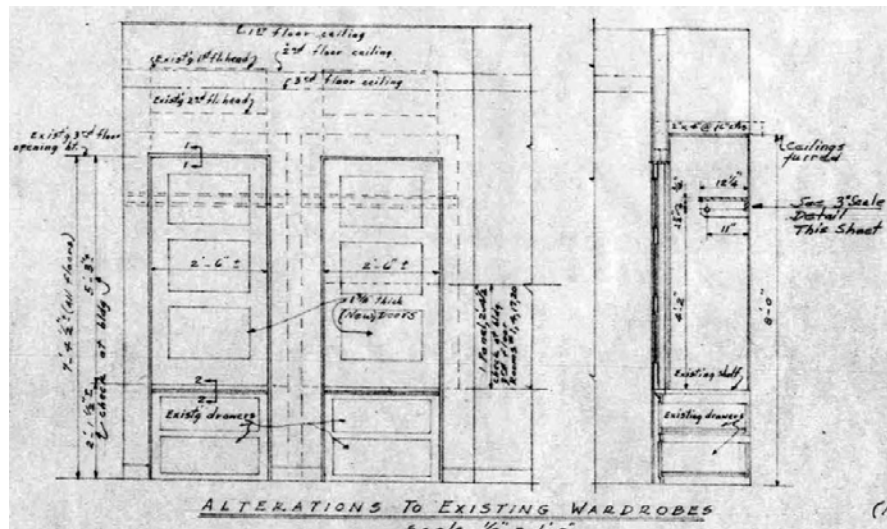


Figure 88 (left): Middle wardrobe of Room 312. Image Source: IS Architecture, March 2015. **Figure 89 (top):** Typical interior elevation showing “Alterations to Existing Wardrobes” from the 1952 “New Stairs and Interior Alterations” construction set. Image Source: UNR Special Collections.

9. Interior Paint Scheme

Paint analysis of exterior and interior finishes was performed to determine the original paint scheme for Lincoln Hall.

Level One – Imperative: None.

Level Two – Recommended: None.

Level Three – Desirable:

Though not required, it is highly recommended interior wood features of Lincoln Hall be returned to their original paint color. Refer to Appendix E: Paint Analysis for current paint swatches that match the historic colors used at Lincoln Hall.⁷⁷ Rooms that did not receive paint analysis shall be painted in period appropriate colors that complement the known identified interior colors.

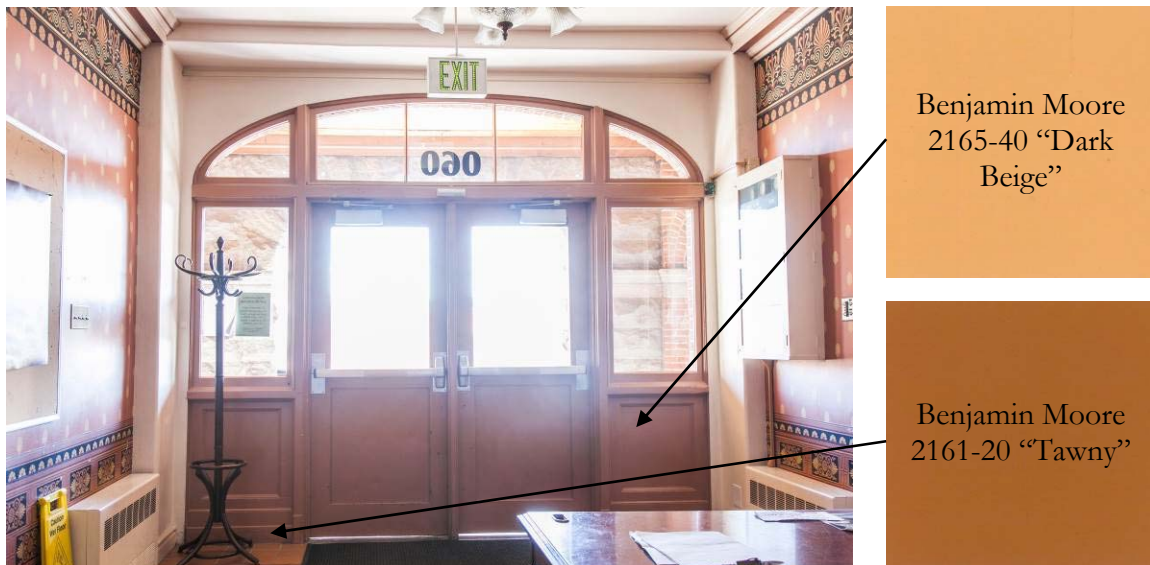


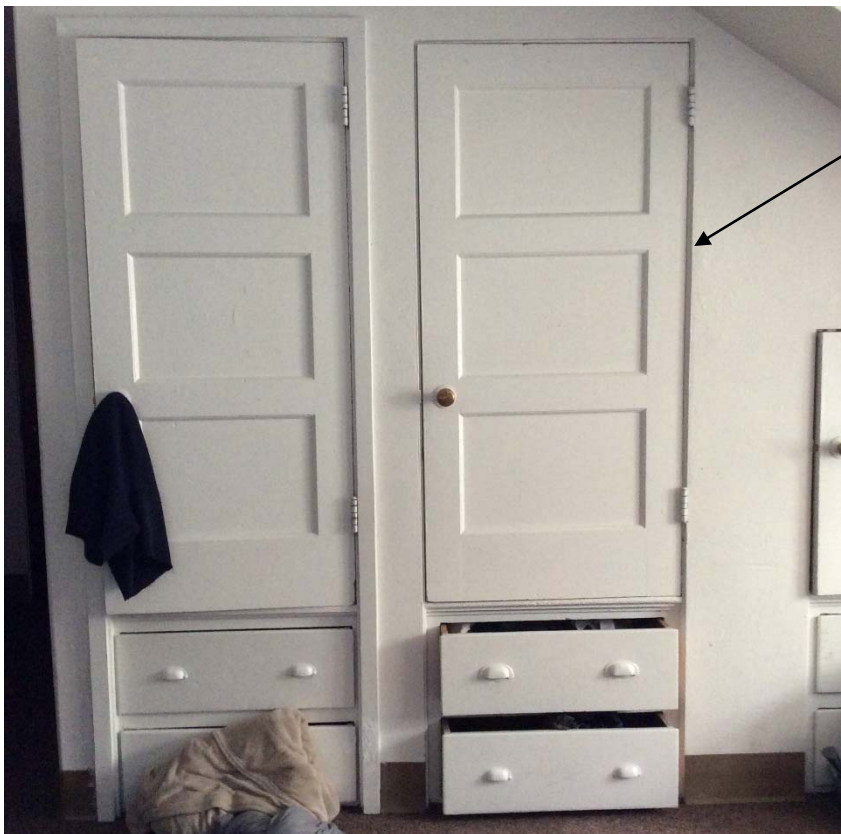
Figure 90: South wall of Entry. Paint analysis revealed the interior woodwork consisted of peach-beige (glossy) side panels (Benjamin Moore 2165-40 “Dark Beige”) and orange-brown baseboards (Benjamin Moore 2161-20 “Tawny”). Image Source: IS Architecture, March 2015.

⁷⁷ Due to printing and computer monitor color distortion, these swatches are not accurate representations. Please refer to the actual color swatches for reference.



Benjamin Moore
2097-10 "Toasted
Brown"

Figure 91: View southeast of Pool Room. Paint analysis revealed the interior window trim in the Reading Room (103) and Pool Room (107) was painted a red-brown (glossy) (Benjamin Moore 2097-10 "Toasted Brown"). Image Source: IS Architecture, March 2015.



Benjamin Moore
2153-20
"Corduroy"

Benjamin Moore
2097-10 "Toasted
Brown"

Figure 92: Photo elevation of Room 312 wardrobes. The wardrobe at the left of the frame was constructed in 1952 and is not historic. The jamb of the middle wardrobe is where the paint sample was taken and was found to be original. Paint analysis was inconclusive. The door jamb was painted with a yellow ochre paint, over which a very thin layer of red-brown paint was applied (the same red-brown used in rooms 103 and 107). Image Source: IS Architecture, March 2015.

10. Elevator

The extant elevator only services the basement, the first floor and second floor. The buildings change of use from a Dormitory to Faculty offices will require the elevator to also service the third floor.

Level One – Imperative:

Three locations were explored for relocating the elevator.⁷⁸ This item is listed as Level One – Imperative due to both the requirements of the Americans with Disability Act and the possible adverse historic impacts to the resource, if improperly sited. Listed from most desirable, to least desirable, below are the three options explored.

Option 1 (Most Desirable):

Relocate the elevator to the center of the building:

- The center of Corridor was historically where the main staircase was located. By relocating the elevator to this area, little to no historic fabric will be lost.
- An elevator shaft at the center of the building will provide additional and necessary shear for the building.
- The elevator will be able to service all four floors of Lincoln Hall. If a hydraulic elevator is used, then the overrun may be able to be concealed within the attic space above Lincoln Hall.
- The current location of the elevator is blocking the use of two historic windows. By moving the elevator, this will free up use of the windows.
- The original north entrance could be reconstructed and serve as an additional entrance into the building.

Option 2 (Less Desirable):

Relocate the elevator to the north side of the Lincoln Hall, so that the elevator is fully outside the building, either semi-attached or freestanding and attached via walkways.

- To conform to the Secretary of the Interior's Standards for Rehabilitation, the elevator shaft shall be constructed of a material that can be easily distinguished as not historic. This can be achieved by using a glass or wood framed enclosure. It is not recommended the structure be fully built using brick that matches Lincoln Hall.
- Any portion of the elevator that will touch the building, whether it is the walkway or the shaft enclosure, shall be removable reversible. The intent of this is so if, in the future, the assembly is removed, no adverse effect will occur to the resource.

Option 3 (Least Desirable):

Replace elevator using existing location.

- Option 3 is least desirable because the overrun of the elevator will result in an adverse impact to the resource. The overrun will not only adversely affect the

⁷⁸ In addition, an ADA survey will need to be conducted to determine the feasibility of access to the building.

dormer above, but will likely disfigure the dormer, a character-defining feature, beyond what is acceptable per the Secretary of the Interior's Standards for Rehabilitation.

Level Two – Recommended: None.

Level Three – Desirable: None.

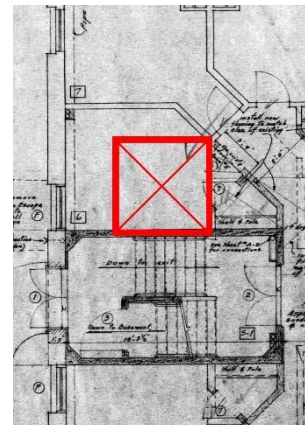
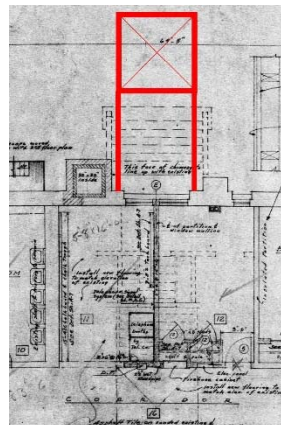
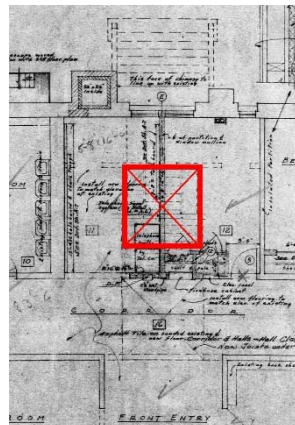
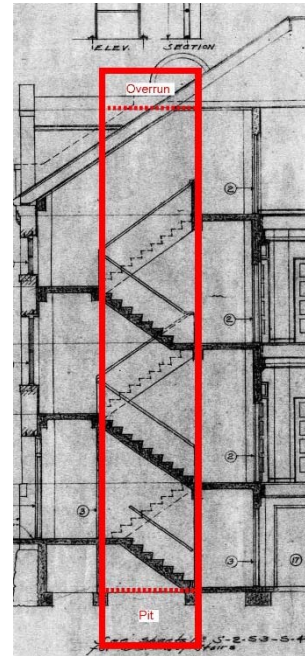
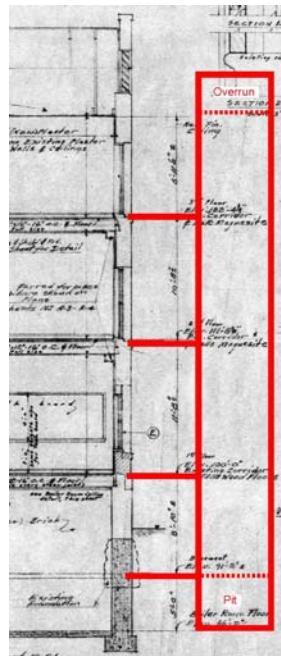
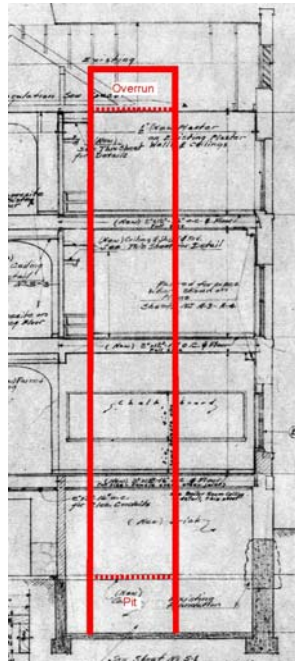


Figure 93: Option 1 elevator location.

Figure 94: Option 2 elevation location.

Figure 95: Option 3 elevation location.

Structural

The structural conservation recommendations were prepared by Melvyn Green, SE of Melvyn Green & Associates.

1. Seismic Strengthening of Parapets, Gables and Chimneys

Parapet, Gables, and Chimneys require bracing to prevent collapse during a seismic episode. At present, it does not appear any of these features are braced.

Level One – Imperative:

Retrofit is accomplished by bracing the parapets and gables on the interior back to the structure.

Level Two – Recommended: None.

Level Three – Desirable: None.

2. Wall Anchorage

At present, walls are not properly attached to the floor or roof. In the event of an earthquake, non-anchored walls tend to fall outward often resulting in the floor partially collapsing.

Level One – Imperative:

Retrofit includes anchoring, physically attaching the walls at each floor and at the roof. Wall anchorage may consist of through bolts with a steel plate on the exterior, or an epoxy adhered anchor bolt that is drilled, at a 22.5 degree angle, into the wall to bond the several wythes together. A specific analysis will be necessary to determine whether the bolt goes through the wall's interior vent space. In either case the bolt is connected to a steel connector bolted to the wood framing.

Level Two – Recommended: None.

Level Three – Desirable: None.

3. Wall Stability

The exterior wall construction has a 4" vent space between wythes, which has shown to require additional strengthening in buildings of similar construction. The 4" vent space also creates a vertical chase for which fire can move from one floor to the next.

Level One – Imperative:

During the writing of this report, a small hole through an existing radiator opening was cut to examine the interior construction of the exterior wall assembly. It was found the exterior walls are adequate and do not need strengthening. However, to

prevent fire from moving through the cavity, it is recommended a continuous metal fire block is internally placed within the exterior wall at each floor level.

Level Two – Recommended: None.

Level Three – Desirable: None.

4. Diaphragm Capacity

The original 1895 specifications for Lincoln Hall call for a layer of deafening mortar to be placed between 7/8" x 7/8" beveled strips, set 3'-0" apart. The exact condition and application of this deafening mortar is unknown and therefore needs additional investigation.

Level One – Imperative:

It is recommended a small non-descript area of floor board is removed to reveal the deafening mortar. This will give a general idea of how the feature was applied as well as its current condition. The manner in which the floors are constructed with the deafening layer may require additional nailing to make sure the finish and sub-floor work as a unit.

At present, the recommended approach for the ceiling retrofit is as follows: remove the plaster and nail the plywood sheathing to the bottom of the floor framing. All blocking, anchor bolts, straps and other connectors would be concealed within the floor cavity.

The roof, which consists of straight board sheathing, may require a layer of plywood under the roof covering.

Level Two – Recommended: None.

Level Three – Desirable: None.

5. In-Place Shear Capacity

At present, Lincoln Hall lacks sufficient in-place shear capacity. This is largely due to a large percentage of wall openings (windows). Various methods are used to remediate this issue.

Level One – Imperative:

Strengthening may take several options including:

Infilling selected windows to improve the wall's strength. While this would be impossible in the sleeping rooms, it may be possible on the first floor where the forces are greatest.

Strengthening the wall by injection of cement slurry into the center vent space and adding reinforcing steel.

Installing new shear walls or converting existing walls to shear walls may be another option. New construction, such as a relocated elevator shaft could serve as a shear wall.

Constructing a shotcrete wall on the interior side of some walls on the first and second levels is another option. Shotcrete is reinforced concrete which is sprayed on an existing wall. The Nevada State Capitol building was strengthened using this method.

Level Two – Recommended: None.

Level Three – Desirable: None.

6. Drags and Collectors

The Corridor section of Lincoln Hall creates re-entrant corners which have a tendency to twist and crack.

Level One – Imperative:

To reduce re-entrant corners from twisting and cracking, steel straps can be placed at the corners to collect and “drag” loads into the diaphragm. As part of the retrofit work, straps (drags), usually steel, need to be placed at such points.

Level Two – Recommended: None.

Level Three – Desirable: None.

Mechanical and Plumbing

The mechanical and plumbing recommendations were prepared by TJ Dobson, Project Manager of CR Engineering.

1. Mechanical

The mechanical system has reached the end of its useful life. The systems have also impacted the historic appearance of the building and should be removed. The boiler in the basement is inefficient when compared to current code requirements and the boiler room does not meet current code requirements for egress. The high temperature hot water serving the building should be re-used for any heating retrofit proposed so the existing central heat plant infrastructure can be used.

Level One – Imperative:

Codes and Standards

The following are codes and standards that will be used for the mechanical and plumbing systems renovation:

- IBC – 2012 International Building Code
- UMC – 2012 Uniform Mechanical Code
- UPC – 2012 Uniform Plumbing Code
- IFC – 2012 International Fire Code
- IECC – 2009 International Energy Conservation Code
- ANSI – American National Standards Institute
- ASHRAE Standards and Handbooks
- ASME – American Society of Mechanical Engineers
- ASPE Data Books
- NEC – National Electrical Code
- Nevada State Regulatory Agencies
- NFPA – National Fire Protection Association
- NUSIG – National Uniform Seismic Installation Guide
- SMACNA – Sheet Metal and Air Conditioning Contractors National Association
- SMACNA Duct Construction Standards
- UL – Underwriters Laboratory
- Current UNR Design and Construction Standards

General Requirements

1. The mechanical system will be designed per the 2012 Uniform Mechanical Code and applicable UNR adopted standards.
2. Energy/Fuel Sources/Utilities

Utilities required for the mechanical system are domestic water, campus high temperature hot water, campus chilled water, and electrical power.

3. Equipment Access & Space Requirements

Equipment located in the mechanical rooms will be provided with the required clearance for service or repair.

Mechanical System Recommendation

1. Fan Coil Units

The building would be served by hot and chilled water fan coil units. The units would include MERV 8 filtration, heating coil, cooling coil, and supply fan with EC motor. The proposed fan coils would be located in mechanical closets. Ductwork would be routed along the perimeter of the room and a soffit would encase the ductwork.

Electrical and data rooms will be served by DX cooling only fan coil units. The fan coil would be connected to an outdoor condensing unit.

2. Exhaust System

Restroom and janitor closets will be exhausted individually with ceiling exhaust fans and ducted to the side wall of the building exterior.

3. Cooling Chilled Water

Chilled water would be provided by the campus chilled water loop. Base mounted chilled water pumps would be located in the basement of the building. Chilled water piping will be distributed throughout the building to each fan coil unit.

4. Heating Hot Water

High temperature hot water is routed into the building. A high temperature hot water to low temperature hot water heat exchanger will be used for building heat. Base mounted hot water building pumps will be located in the basement of the building. Heating hot water piping will be distributed throughout the building to each fan coil unit.

5. Building Control System

The control system will be a Direct Digital Control (DDC) System. Individual zone sensors with $\pm 4^{\circ}\text{F}$ adjustment will provide signals to the electronically actuated terminal units. A central control panel will communicate with a PC type computer terminal to monitor and set temperatures throughout the building.

Level Two – Recommended: None.

Level Three – Desirable: None.

2. Plumbing

Based on the age of the plumbing system and the extent of the building renovation, all the domestic water, waste and vent piping, and plumbing fixtures in the building will require replacement.

Codes and Standards

IBC – 2012 International Building Code
UMC – 2012 Uniform Mechanical Code
UPC – 2012 Uniform Plumbing Code
IFC – 2012 International Fire Code
IECC – 2009 International Energy Conservation Code
ANSI – American National Standards Institute
ASHRAE Standards and Handbooks
ASME – American Society of Mechanical Engineers
ASPE Data Books
NEC – National Electrical Code
Nevada State Regulatory Agencies
NFPA – National Fire Protection Association
NUSIG – National Uniform Seismic Installation Guide
SMACNA – Sheet Metal and Air Conditioning Contractors National Association
SMACNA Duct Construction Standards
UL – Underwriters Laboratory

General Requirements

1. Energy/Fuel Sources/Utilities
Utilities required for plumbing systems are natural gas, domestic water, sewer, and electrical power.
2. Design Conditions and Loads
The main domestic service pipe size into the building is estimated at 2-inches.
3. Plumbing Piping Systems
Domestic cold water will be provided by an existing source into the building. The existing backflow prevention will be used. New piping from this location is required throughout the building. Type 'L' copper piping will be used above and below grade for domestic cold and hot water.
4. Equipment Access & Space Requirements
Equipment located in the mechanical rooms will be provided with the required clearance for service or repair.
5. Plumbing Equipment
An electric domestic water heater will be provided to serve the entire facility. A 50 gallon water heater is anticipated. New domestic hot water piping will be required

throughout the building. Hot water will be supplied to the various areas at the following temperatures:

Restrooms, Break room, and Lavatories	100-110°F
Mop Basin, and Utility Sinks	110-120°F

Plumbing System Recommendation

1. Design Conditions and Loads

The plumbing system will be designed per the 2012 Uniform Plumbing Code and applicable Washoe County standards.

The main waste lateral size for the facility will be 4”.

2. Plumbing Fixtures

All plumbing fixtures will be commercial grade. Toilet fixtures will be constructed of vitreous china. Floor sinks will be enameled cast iron. Mop sinks shall be made of acrylic. Faucets will be chrome plated brass. Flush valves and lavatory faucets will have battery powered sensors for hands free operation and water conservation in common areas.

3. Plumbing Piping Systems

Sanitary sewer system will be provided to serve waste from the toilet rooms, sinks, etc. Waste will be stubbed out of the building for connection to site utilities. No-hub cast iron piping will be used above and below grade.

The main waste piping connection should be located on the Southside of the building. An alternate route for the main sanitary sewer should be proposed. This will eliminate the issue with the existing waste system and will also connect a future residence hall to the west of Lincoln Hall.

4. Natural Gas Piping Systems

With the boiler removed, the only equipment requiring natural gas is the generator located outside to the north of the building. The service meter can decrease in size or an alternate gas service to the generator can be provided. If the service meter is replaced, a seismic gas valve will be required.

Level Two – Recommended: None.

Level Three – Desirable: None.

Electrical

The lighting, power distribution and data/signal recommendations were prepared by Craig Soule, Project Manager with JP Engineering.

1. Lighting

Level One – Imperative:

Our recommendation for immediate work relating to lighting in the building would be to re-lamp and clean all fixtures throughout the interior. We also recommend replacement of all exterior wall-mounted lighting with new, smaller LED outdoor area lights.

Level Two – Recommended:

All snap switches currently used throughout the building will be replaced with wall mounted occupancy sensors to lessen the energy usage throughout the building.

Level Three – Desirable:

Our recommendation for desirable modifications would include more of the building is reverted to timeframe specific fixtures and that more discrete lamps are used throughout such as chandeliers and open lamp holders.

2. Power Distribution

Level One – Imperative:

Priority repairs will include the removal of all unused surface mounted raceway as well as ensuring proper fire sealing on all penetrations throughout. The fuse panels that are in place throughout the building were installed new in the 1950's and therefore would be recommended to replace with more updated distribution equipment.

The University representative has recommended that along with other projects proposed for surrounding structures, that the power distribution back to the main service switch be replaced and relocated. This would include removal of all service entrance equipment into the building including all main entrance switches, transformers and panels. The new service transformer would be placed outside the building, and all incoming service equipment would be replaced with new.

Level Two – Recommended: None.

Level Three – Desirable:

All electrical and data receptacles that could be rerouted or placed in new recessed boxes to eliminate the large number of surface mounted boxes would be ideal as an additional repair. An alteration to this plan would be to include all electrical receptacles currently installed in surface mounted raceway be replaced with new, lower profile raceway that would be less obtrusive.

3. Data/Signal

Level One – Imperative:

The data center on the basement floor needs to be updated to UNR standard, at least in the racking and cable management. The building will also be retrofitted with a new data service from the Jot Travis building.

Level Two – Recommended: None.

Level Three – Desirable:

The data center on the third floor and the data center in the basement floor would preferably have a room built around them or moved to a location that can have a small room built around them built to the UNR design and construction standards. This room in each area would have dedicated air conditioning, plywood on the walls and have updated racking, termination equipment as well as server equipment.

Fire Alarm and Suppression

The fire alarm and suppression recommendations were prepared by James Solaro, PE, Electrical and Fire Protection Engineer of JP Engineering.

1. Fire Alarm & Suppression

Level One – Imperative:

The existing fire alarm and suppression systems are adequate and do not require updates based on out dated or damaged equipment. However, based on a change in occupancy, the systems will need to be modified to meet the requirements of the International Fire Code.

Level Two – Recommended: None.

Level Three – Desirable: None.

Post Construction

The National Parks Service Preservation Brief 43 recommends:

“It is highly recommended that a post project record of all work performed later be added as a supplement to the historic structure report. This record may consist of annotated drawings, photographs, and other documentation of the work performed. Site personnel may help coordinate this supplement or record if the principal author of the report is not involved in the later construction phase. Some organizations and government agencies consider the post project record to be a third part of a historic structure report and not just a supplement. When physical evidence is discovered during the course of the construction work or when new documentary evidence is discovered as research continues after completion of the

report, this also should be recorded and incorporated into the historic structure report or in an appendix to the report. An important goal of the historic structure report process is to maintain the report as an active and working document, both to facilitate the use of information compiled in the report and to permit the report to readily accommodate new information as it becomes available.”

In addition, it is recommended a maintenance and operation plan be drafted for Lincoln Hall by a historic preservation architect in collaboration with the University of Nevada, Reno. The plan should include the four elements of planned maintenance which are: housekeeping, integrated pest management, routine maintenance and cyclical maintenance.

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Site Visits

March 4, 2015

March 5, 2015

May 27, 2015 – presentation of HSR to UNR.

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