

HISTORICAL OVERVIEW OF THE NEVADA STATE CAPITOL AND CAPITOL ANNEX

Capitol Plaza

Abraham Curry arrived in the Nevada Territory in 1858 and purchased land with three other settlers - Francis M. Proctor, John J. Musser, and Proctor's father-in-law, Benjamin F. Green. A town site was surveyed and platted with lots initially divided between the four landholders. Curry reserved a large ten-acre parcel, equivalent to four city blocks, in the center of town for a future capitol building.

The Nevada Territorial Legislature of 1861 designated the town of Carson City to be the permanent seat of government and declared that the parcel reserved by Curry, known as the "Plaza" and bounded by Musser, Fall, Second, and Carson Streets, be dedicated to the use of the State for the erection of public buildings.

Orion Clemens and his younger brother Samuel arrived in Carson City by stage coach in 1861. Samuel Clemens (Mark Twain) describes early Carson City as they found it in his book, [Roughing It](#).

It was a 'wooden' town; its population two thousand souls. The sidewalk was of boards that were more or less loose and inclined to rattle when walked upon. In the middle of town, opposite the stores, was the 'plaza' which is native to all towns beyond the Rocky Mountains - a large, unfenced, level vacancy, with a liberty pole in it, and very useful for a place of public auctions, horse trades, and mass meetings, and likewise for teamsters to camp in. Two other sides of the Plaza were faced by stores, offices, and stables. The rest of Carson City was pretty scattering.

The discovery of the Comstock Lode in nearby Virginia City spurred the development of Carson City as a transportation center. Curry operated the Warm Springs Hotel and established a sandstone quarry on the site. The 1861 Legislature authorized the lease of buildings adjacent to the hotel for use as a prison. In 1864, the State purchased the 20-acre property and sandstone quarry from Curry. The quarry at the Nevada State Prison supplied the sandstone used in the construction of the Capitol and the Capitol Annex as well as many public and private buildings in Carson City. Prisoners were conscripted to extract and cartage sandstone blocks.

Planning for the construction of a capitol building began during the 1869 legislative session. At the time, the Legislature specified that the walls of the building be of stone quarried at the Nevada State Prison.

Nevada State Capitol

An Act to Provide for the erection of a State Capitol at Carson City was approved February 23, 1869 by the Legislature of the State of Nevada. The Act created a State Capitol Fund of \$100,000 and a Board of Capitol Building Commissioners who were tasked with expending funds for the project. Announcements were made for designs to be developed and after reviewing plans from several architects, the Board selected Joseph Gosling of San Francisco. Peter Cavanaugh, Carson City, was chosen as the contractor having submitted the lowest bid and agreed to construct the building according to the plans and specifications for \$84,000 in gold coin. The State was to furnish the stone for building the walls. On April 18, 1870, the first

load of sandstone was delivered to the building site on the Plaza. The capitol cornerstone was laid on June 9, 1870. Construction was completed in time for the 5th Legislative Session to meet in the building in 1871.

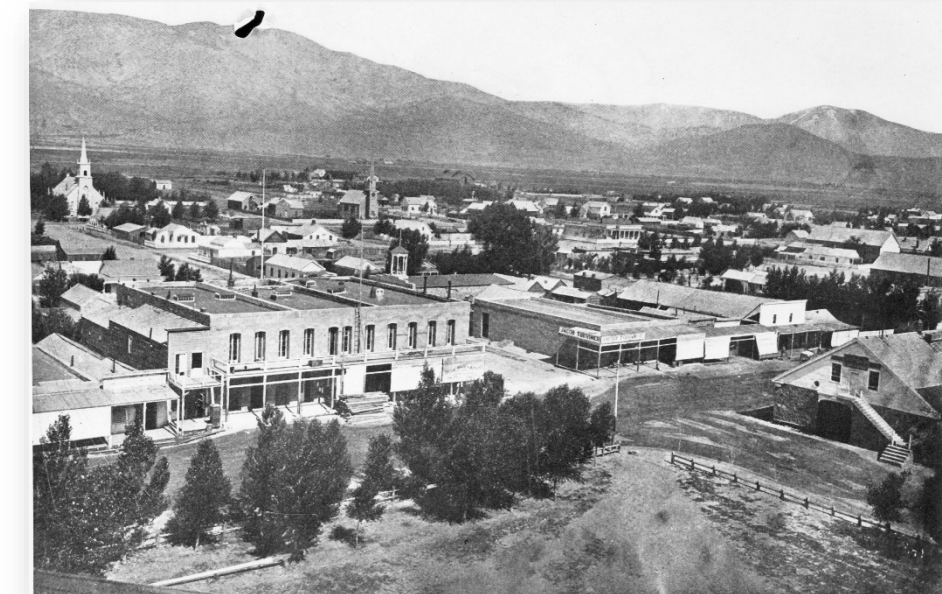
According to information found in the Daily State Register's booklet on the Nevada State Capitol (1871), the State was not able to furnish the stone for construction and agreed to provide Cavanaugh an additional \$6,000 for supplying stone from the Prison Quarry. This additional fee was reported to have not covered the expenses incurred and caused "heavy losses to the contractor." For extra time spent on the foundation and deviations from original plans, the Commissioners provided Cavanaugh with \$9,367 for these changes. The Legislature found that the State failed to comply with its end of the contract and made a second appropriation of \$60,000 to cover legitimate claims for labor and material furnished. Over 115,200 square feet of stone was documented as used in construction of the Capitol as well as 400,000 bricks and 19,500 square feet of metal roofing. In the end the State paid over \$160,000 for the construction of the Capitol Building.

Gosling designed the Capitol Building in the form of a Grecian cross, 148 feet long on the north and south and 98 feet wide on the east and west elevations and employed classical details such as arched windows, cupola, columns, quoins, and dentils. Space was allocated for the Governor, Attorney General, Controller, and Treasurer on the first floor. The second floor held the Assembly and Senate Chambers, Supreme Court, and Library. The interior featured a black walnut staircase, Alaskan marble floor, and wainscoting supplied from Vermont Marble Company of San Francisco, hand painted freeze on the first floor and an elliptic dome centered in the main hall of the second floor.

The elliptic dome was constructed to transmit light to the hall from the cupola and also functioned as a ventilator. The ellipse was 28x25 feet and constructed of curved ribs. Gosling's specifications provided that the elliptic dome be covered with stained and ground cut glass. The dome was covered over sometime after 1915.

In his 1878 *Across the Continent* journal, Frank Leslie recounted his visit to Carson City.

Via the Virginia and Truckee Railroad we reached Carson City at seven o'clock of a Sunday morning. It is a sort of "half-way house" between Reno and Virginia City, and considers itself a fine, thriving, full-grown town – quite an old-established one, having had twenty years' time wherein to improve and beautify, and to run up its population to three thousand five hundred souls. It is not a fair city to look upon – few of these Western centers of young civilization are such; it is only a straggling place set on a flat plain, with the glorious snowy "Sierras" stretching away to the north and south, a shiny rampart behind which the sun goes down in glory.



Developmental History

Construction projects on the Capitol Plaza were predicated by the needs of the State. Requests from State agencies were submitted to the Board of Capitol Commissioners, later the State Public Works Board. Exterior maintenance and interior renovation projects on the Capitol and Annex buildings are recorded in meeting minutes and plan sets. Research findings specific to construction, additions, alterations, and rehabilitation projects identify three phases of development.

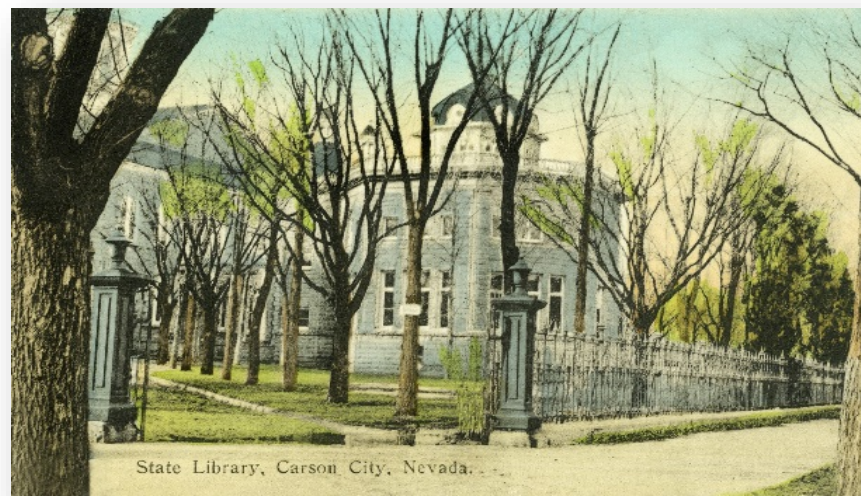
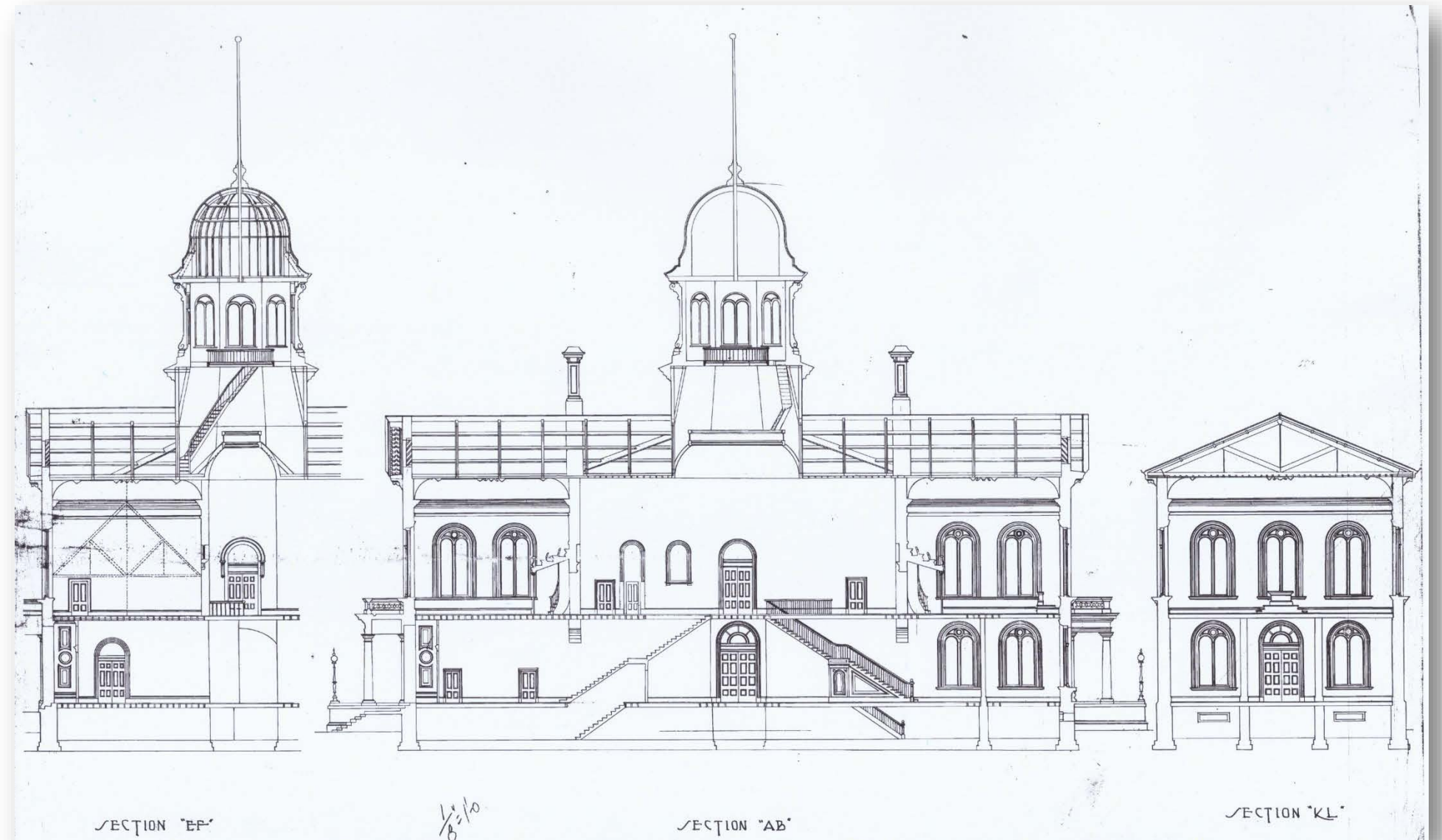
1871 - 1906 Construction

- 1871 - Capitol Building completed.
- 1875 - Iron fence erected, encircles the Plaza.
- 1906 – Capitol Annex built to provide for expanded needs of the State Library.

Joseph Gosling's classical design was selected for the Nevada State Capitol in 1870. Gosling was an early California pioneer who worked as a master builder in San Francisco in the 1850s. Gosling moved to Virginia City in 1863 to practice architecture and opened an office on C Street. By 1865, Gosling was back in San Francisco where he worked as an Architect until his death in 1885.

The Capitol Plaza was essentially a great unimproved expanse of natural vegetation and dust. It was a gathering spot for "loafers", stray animals, and garbage, and so considered an eyesore and health hazard by the more "respectable" community members. Through the efforts of the concerned citizenry, an act was passed by the 1875 legislature for the Improvement of the Capitol Grounds with \$23,000 allocated for the repair of the State Capitol and for a fence to adorn the Plaza.

A bill providing \$40,000 to construct an "Annex" to the Capitol to house the State Library was authorized in 1905 by the state legislature. The annexed building was to conform stylistically to the symmetry and classical details of the Capitol Building. The construction of the Annex required the removal of the one-story porch on the east facade of the Capitol Building. The Annex was completed in 1906 by Burke Brothers of Reno whose design called for an octagonal building.



1914 Additions and Alterations

- State contracts with Frederic DeLongchamps for construction of an addition on the Nevada State Capitol.
- Exterior alterations are made to the Capitol: wood balustrade added at the roof level, new entrance doors replace Gosling's earlier design, and interior changes.

By 1913 the State government had outgrown the Capitol, the Legislature authorized \$60,000 for the construction of two wings at the north and south ends. A architecturally sympathetic addition was completed in 1914 by Frederic DeLongchamps. The wings provided larger chambers on the second floor for the Senate and Assembly and additional agency office space on the first floor. Similar in construction to the Capitol, the foundation wall was detailed to be 3'-3" with an 18" brick interior wall and 3" furring for plaster. DeLongchamps added a row of three arched windows with a shared sill on the east and west walls of the wing addition, at the second-floor level. Galvanized iron cresting was to be placed on the gable above the entrance on the east elevation. The contractor C.G. Sellman of Reno was the low bidder at \$41,420 for the project.

Frederic J. DeLongchamps (1882-1969) graduated from the University of Nevada in 1904 with a degree in mining engineering. DeLongchamps entered the Architectural profession with no extensive formal training. From 1909 to 1938, DeLongchamps maintained his own firm and became one of Nevada's most prolific Architects designing both public and private buildings. DeLongchamps was appointed Nevada State Architect in 1919 and was the only person to hold the position that was abolished in 1926. During this time, he designed many state buildings. In 1939, George O' Brien joined DeLongchamps in partnership in Reno, and Hewitt Wells added his name to the association in 1962.

1937 - 1980 Improvements

- 1937 - The first interior remodel of the Annex occurred after the Nevada State Library vacated the building.
- 1940 - DeLongchamps plan set indicates additional wings with penthouses to be added on building creating an I-shape plan; plans never implemented and the addition was not realized.
- 1948 - Elevator installation in the Capitol; DeLongchamps and O' Brien, Architects.
- Ca. 1955 - Nevada State Public Works Board presents plan to modernize Capitol Complex and demolish State Capitol building.
- 1959 - Nevada State Assembly passes resolution to restore and preserve Old Capitol.
- 1959 - Annex first floor renovated during an Acoustical Treatment project.
- 1969 - Legislature vacates the Capitol, moving into a separate building to the south.
- 1969 – Annex measured drawings of the second floor show seven rooms running the perimeter for office space.
- 1978 – Capitol Building receives \$6,000,000 for improvement project centered on seismic and fire safety.

- October 30, 1979 – State Public Works Board members tour Capitol building to review rehabilitation project.
- 1979 - A glass ceiling at the rotunda on the second floor was noted as existing at the time of the Annex Remodeling project (CIP 79-G01, Ed Parsons, architect); ceiling was removed as part of the 2005 project.

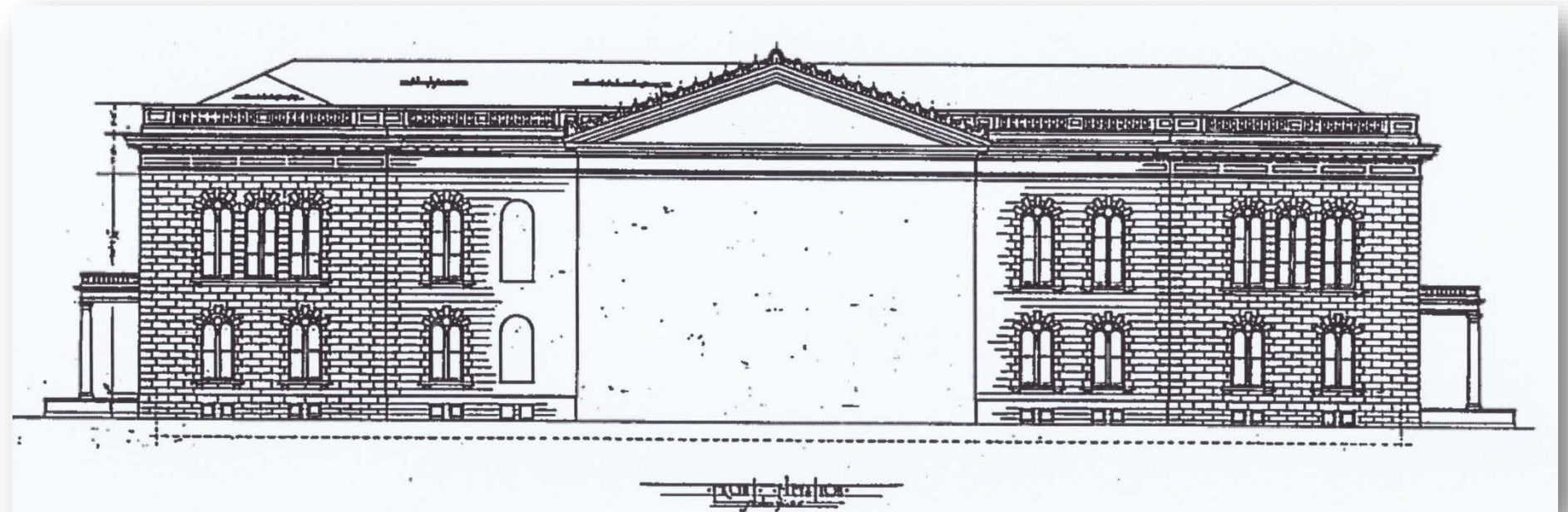
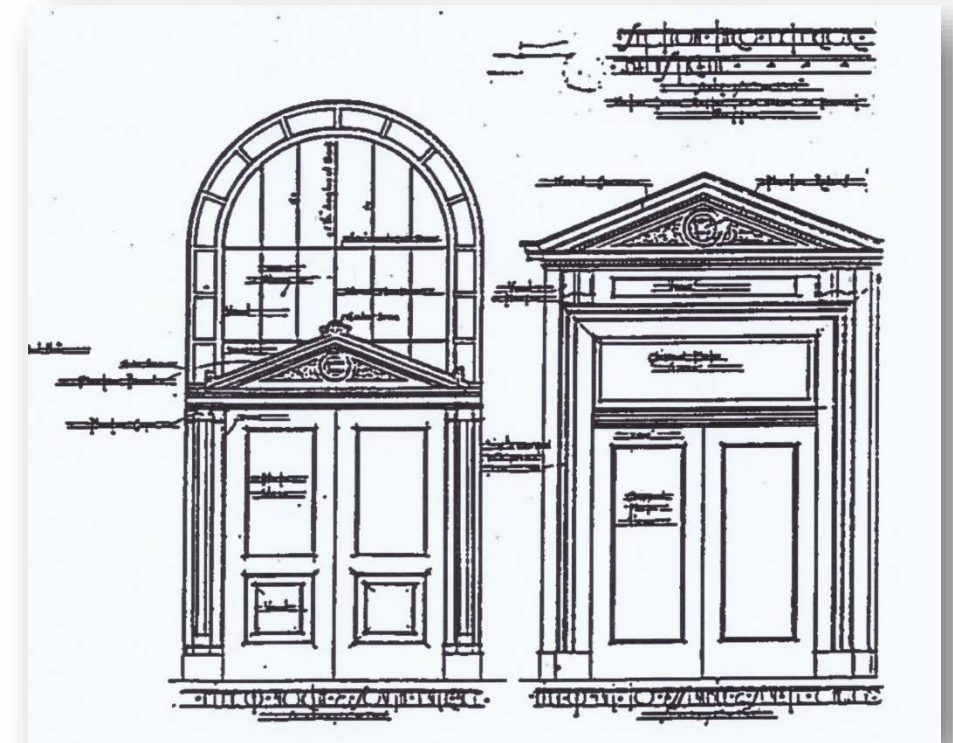
Significance

The Capitol and the Annex buildings were listed on the National Register of Historic Places in 1975. The buildings retain sufficient integrity to convey significance.

The nomination provides the following narrative on the Capitol:

Considering the remoteness of the territory at the time of initial design and construction of the state capitol, this structure displays outstanding qualities of regionalism, or territorialism. The overall design concept is a territorial adaption of a renaissance edifice with strong Italianate characteristics. Heavily rusticated quoins and window surrounds, together with strongly classical trim detailing identify the capitol with the popular renaissance revival of that period.

The architectural expression of the facades is strongly masculine, with handsome, well-scaled sandstone masonry units. With its elegant proportions, the capitol nevertheless displays an air of robust history.



Capitol Reconstruction

The 1973 Session of the Legislature directed that a study be undertaken and reports prepared by three engineers to determine the stabilization work need at the Capitol and the Annex. A letter dated November 13, 1974, written by J. Clark Gribben, PE to Joseph Littlefield, PE, Nevada State Public Works Board, details the findings of the testing program undertaken on the Capitol from two excavations of the exterior walls in the 1870 main building and in the 1914 addition. The project report (#73-8) confirmed that the walls on the Capitol were not structurally sound and advised that the walls could be reconstructed in place.

J. Clark Gribben's report noted:

- Walls are structurally unsound because of loose un-bonded characteristic of the core and inside face stone are not well sized or properly bedded in mortar.
- Remove loose materials and replace them with a reinforced concrete section poured directly against the existing masonry.
- After the wall has been reinforced in this manner, the mortar joints on the exterior surface would be removed and the masonry repointed.
- As part of the work a new foundation would be constructed.
- End result would be that the building would be encompassed by a bearing and shear wall capable of supporting all vertical and seismic loads.

Foundation work allowed for more usable space in the basement of the building. As the wall thickness was decreased, it produced more usable space on the interior. After the testing report was completed and submitted, Gribben was awarded the contract for project work and engaged the services of Edward Parsons along with Ferrari and Vhay. Parsons provides a first-person accounting of project activities in an oral history conducted at UNR in 1981; portions of his recollections of Job #671 are found in the References chapter of this report.

During the major rehabilitation in the 1970s, the building was deconstructed, many of its internal components removed and placed in storage for re-use. The walls were seismically strengthened with the sandstone face stones remaining intact. The building was then reconstructed using fiberglass components that replaced earlier wood details; dome and windows were replicated. The State sold original building components including wood windows, radiators, and sandstone blocks.

In addition to the stabilization work, the project called for significant features to be salvaged and re-used. This included the doors, marble, twin staircases, and hand-painted frieze on oil cloth that was rolled off the walls and later re-installed. The State Archive has a very detailed photographic record that was taken before project work began to record existing conditions, and during project work, and then after. These photographs and Gribben's plan set allowed the project team to understand the changes made during the rehabilitation project.



Capitol Annex

By 1899, the State Library had outgrown its designated space on the second floor of the Capitol Building and had expanded to the room formerly occupied by the clerk of the Supreme Court. Library staff had begun to use the dome as storage for thousands of books. In 1904, concern was expressed that the weight of the books was causing “serious structural problems” for the Capitol. A bill providing \$40,000 to construct an annex to house the State Library was authorized in 1905 by the state legislature.

The Board of Capitol Commissioners had earlier selected a site to the east of the Capitol Building. The minutes of their June 27, 1905 meeting note that over 100 citizens of Carson City had signed a petition requesting that the new library “be placed on the main street so that it might beautify the city”. Nonetheless, the octagonal shaped Annex was built in the designated location in 1906 using sandstone quarried from the Nevada State Prison. The contract was awarded to Burke Brothers of Reno, with the Project Architect listed as Morrill J. Curtis. Ron James, former Nevada SHPO, notes that the Annex was “built to take the place of the privy located to the east of the Capitol Building and “had been affectionately known as the little capitol out back”. The Annex is attached to the Capitol building on the west wall by a bridge that is open on the main level and covered above.

The eight-sided Annex sits two stories above a high basement constructed of masonry with a low pitched hipped roof. The building is crowned with a large wood framed dome topped with a cupola. A wooden balustrade was originally constructed at the perimeter of the roof and later removed when the roof was covered with wood shingles, ca. 1940. The building exhibits classical details to complement the design of the Capitol.

The Nevada State Library was located in the Annex from 1906 to 1936. When the State Library vacated the building in 1937, the first major interior space remodel for new agency use was implemented. Detailed by Swinburne, Architect with Nevada Department of Transportation, the Annex was remodeled to provide space for a number of state agencies. Subsequent improvements to the interior space occurred between 1959 and 1979, culminating in the last major capital project in 2005. During the 1978-1979 rehabilitation project, the bridge was removed and reconstructed primarily clad in fiberglass and its height increased to house HVAC equipment above the ceiling and ADA access was provided.

In 1979, Parson was selected to redesign space in the Annex for the State Controller. Project work included new floor in the basement, stairs, bathrooms on each floor, carpet, paint, and re-roof for under \$400,000. Parsons noted that: *There was a beautiful dome, skylight effect; light coming from the dome into the second floor gave a nice atmosphere to it, but over the course of the years, it has been sealed off because of the heat problem or the ventilating, or cooling problem. All three. We were trying to restore that, but we had to give that up because, again, the funds.*

The rotunda was opened up during the 2005 stabilization and renovation project; Oxoby Architecture restored the finishes in the Guinn Room.

The Annex is described in the 1972 HABS Report as follows:

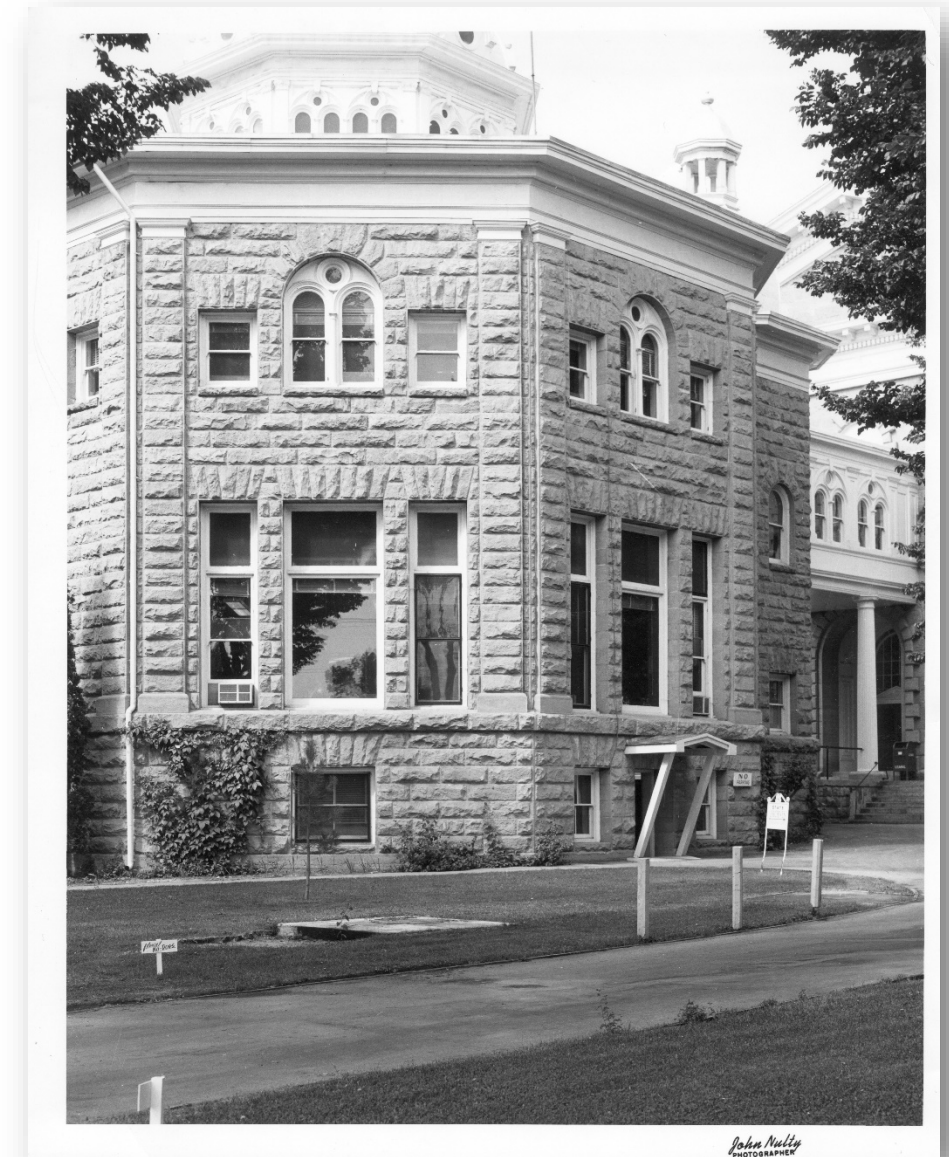
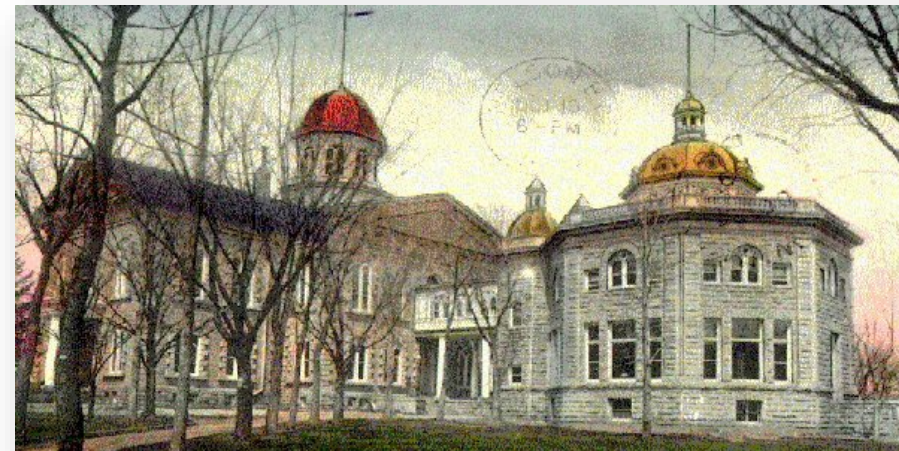
Walls are rock-faced sandstone ashlar, the only drafted edges being at corners of the building, and at openings. The corners of the octagonal part of

the building are marked by two rock-faced pilasters having sheet-metal, Doric capitals.

The entrance doorway, centered on the west side, is rectangular, the head consisting of a flat arch. There are double doors with a transom. A similar entrance on the east front is approached by thirteen granite steps between cheek walls.

On each side of the basement there is a single rectangular window: flat arched. At the first story there are three windows on each side which are closely spaced. The central one is larger than the others. They have a transom and flat arches. At the second story each side contains a group of three windows, of which the central one is semicircular arched. The smaller windows flanking it are flat arched, their heads being at the spring line of the central opening. The central opening is divided by wooden tracery into two windows and a circular light is in the tympanum.

The cornice is a three-part entablature of sheet metal, painted white. The roof is pyramidal in shape, of low pitch, and carries a large cupola and is covered with sheet metal.



EXISTING CONDITIONS AND OBSERVATIONS

This section of the report addresses the existing conditions of the State Capitol and Capitol Annex related to the Scope of Work as defined in the Preface. Deficiencies, deterioration, and failures of historic fabric and replacement materials are noted below by individual categories. More comprehensive locations and details of existing conditions are located in the Schematic Design Drawings of the Appendix.

The A/E team conducted the condition assessment on the Capitol and the Annex equipped with plans, clipboards, man lift, and cameras to document each exterior section and identify problem areas. Detailed drawings of each section of the buildings were developed by the Architect and used in the field to capture deficiencies, deterioration, and material failure. A lift operated by the Contractor provided opportunities to review material close-up, specifically known areas of concerns at the cornice level and with gutters and downspouts.

During field investigations, the specific condition of the exterior building materials was recorded, photographed, and particularly problematic areas were documented. The severity of problems is generally tied to location, but similar issues can be found on each elevation of the Capitol and each of the eight facets of the Capitol Annex.

Masonry and Mortar Investigation Relative to the Nevada State Capitol and Capitol Annex

The exterior renovations for this project include cleaning of the exterior sandstone masonry and repointing of the sandstone masonry mortar joints where necessary to help mitigate deterioration and maintain a watertight exterior. As a part of this work the design team researched documents on preservation and restoration of historic masonry as well as historical records and archives of the existing building. The sandstone masonry exterior was also observed from a man lift over the week of April 30, 2018 to better assess the condition of the sandstone masonry and identify mortar joints where repointing will be recommended.

Sandstone is a sedimentary rock composed of sand-size grains of mineral, rock, or organic material. It also contains a cementing material that binds the sand grains together and may contain a matrix of silt- or clay-size particles that occupy the spaces between the sand grains. Sandstone is one of the most common types of sedimentary rock and is found in sedimentary basins throughout the world. It is often mined for use as a construction material or as a raw material used in manufacturing. Sandstone is very porous and water will penetrate it easily. Water damages the stone by spalling or flaking off pieces of sandstone. Freeze/thaw cycles contribute to the deterioration by causing portions of the top layer to break off. Typically, fractures in the stones can be attributed to damage due to water penetration and the freeze/thaw cycle.

The sandstone block veneer at the State Capitol and the Capitol Annex date to the period construction (1870 and 1906) and addition of wings (1914) on the State Capitol. The sandstone block came from the stone quarry at the Nevada State Prison and are ashlar dressed, featuring rectangular pieces, with tooled edges. Sandstone was used for the walls, quoins, sills, water tables, caps, window trim, and door trim. A lime mortar was used between

the stones on both buildings. The sandstone blocks used on the main Capitol Building were worked to a dimpled but fairly flat with a level exterior profile, while the blocks used on the Annex are more irregular and rounded, protruding outward from the mortar joints.



Capitol Building masonry versus Annex Building masonry

In the 1870 Specifications for the construction of the State Capitol, the Architect Joseph Gosling indicated: “the cut stone will be set in the best manner, and the joints well pointed with Rosendale cement”. In the 1913 specifications for the State Capitol wings, Frederick DeLongchamps called for a lime mortar consisting of “one part lime of approved brand to five (5) parts of clean sharp sand” and that “all joints to be raked and then pointed with cement mortar 1 to 1-1/2 proportions and the face of joint to be striped with white lead and oil to match present work.” Historic mortar on the State Capitol was tested for lead during field investigations and it came back positive for lead (see Appendix).



The dark gray mortar (vertical joint) is a repair while the light, thin line of mortar is the oxidation from the original white lead tuck-pointing. This particular grout joint on the Capitol Building tested positive for lead, thus confirming the use of white lead oxide.

Evidence of the historic lead stripping was observed on the State Capitol and the Capitol Annex. The lining out of mortar joints, also known as tuck-pointing, provides a uniform appearance to the stonework and protects and extends the useful life of the soft and porous mortar.

During the 1978-1979 rehabilitation project at the State Capitol, the sandstone masonry forming the exterior veneer of the building were stabilized in place with concrete and rebar. A 1975 engineering report by J. Clark Gribben called for a complete repointing of the stone masonry after work had been completed. Evidence in the field suggests that there was limited repointing done as part of the rehabilitation project.



Shotcrete and rebar applied to the backside of the sandstone masonry veneer, 1978-1979 rehabilitation project.

Moderate weathering was noted at areas that have been exposed to landscape irrigation while only minor weathering was noted at higher masonry surfaces. Surfaces with southern exposure generally appear to suffer more from the effects of weathering, most likely due to the fact that temperature swings and associated freeze-thaw effects are greatest at southern exposures. Soiling was most noticeable at lower surfaces near landscaping and staining was most noticeable at higher surfaces where gutters appear to be leaking. Cracking in the sandstone masonry was fairly minor at vertical surfaces while cracking in horizontal surfaces like window sill blocks ranged from minor to moderate or even severe in some locations.

Mortar joints were reviewed at all exterior locations to identify joints that require repointing. The following criteria was used to identify joints to be repointed: existing mortar joints eroded 1/3” or more from the face of the masonry, visibly cracked, or separated from the masonry units. Mortar joints generally appeared to be weathering well. Erosion was generally minimal with the more identifiable concerns being visible cracking and/or separation of the mortar from the masonry. Joints identified for repointed were generally isolated lengths or areas with a fairly random distribution throughout wall surfaces. Exceptions to this random distribution are southern exposures and at lower areas such as stairs where landscape irrigation has been in contact with the walls. Mortar joints at the southern walls of the Annex in particular

appeared to be in the worst condition project-wide. The joints at this location have southern exposure but the mortar joints themselves are also thicker and built-up, protruding outward somewhat due to the sandstone blocks with somewhat rounded surfaces that also protrude outward from the joints.

There is also evidence of prior joint repointing efforts at various locations throughout the exterior. The repointed joints can be identified by mortar of a different color, consistency, and hardness that varies from the original mortar. The original mortar can be identified because it is somewhat softer and tan in color as opposed to the harder and gray colored joints that have previously been repaired or repointed. The original joints are also identifiable because they were striped with a mixture of white lead oxide and oil and in some locations this striping, while faint, can still be seen. This method of striping joints is a historic practice done for Architectural effect to help give a more regular appearance to irregularly shaped masonry materials such as the sandstone blocks.

Additional observations of the sandstone masonry include:

- Clay deposits visible in sandstone.
- Limited episodes of patching and repointing observed throughout.
- Flagging around windows and doors with some patching at entrance to State Capitol.
- Virginia Creeper (landscape vine) embedded in mortar and cracks in stone.
- Keystones dropped at Annex basement level windows.
- Cracks on sandstone caps around light posts apparent.
- Corners missing at capstones adjacent to the entry stairs to the State Capitol.

Fiberglass Investigation Relative to the Nevada State Capitol and Capitol Annex

Fiberglass was introduced to the Capitol during the 1978-1979 restoration project. It was dominantly used as cladding for the soffits, fascia, entablature, and cornice that surround the Capitol. It was also used on some of the column capitols and bases, window frames, as well as the exterior cladding for the bridge between the Capitol and Capitol Annex. Furthermore, the roof top balustrades and Capitol dome are all fabricated of fiberglass. The Capitol Annex does not have any fiberglass cladding or detailing.



The use of fiberglass from the entablature to the roof balustrades.

It was during the 1978-1979 project that it was determined to replace exterior wood components at the Capitol with fiberglass material. As Ed Parsons, architect on the project explains, the fiberglass components were “clones” of the originals. The material color was chosen to blend with the application of the white trim paint. Ed Parsons states, “So the casual observer would think he was looking at a wooden-frame building with wood trim. Now, nothing will ever have to be painted and it’ll stay that way until the building is torn down, if ever. We don’t know how long that plastic will last, but I know it’ll last a hundred years, and, that’ll be good enough.” (Parsons 1981).

Clark Gribben plan set for CIP #75-13 (1975), details locations where Fiber Reinforced Plastic (FRP) was used, i.e. balustrade, pilasters, cornice, entablature, dome, windows and bridge between Capitol and Annex. Fiber reinforced plastic is a composite material made of a polymer matrix reinforced with fibers. The fibers are usually glass (in fiberglass), carbon (in carbon-fiber-reinforced polymer), aramid, or basalt. The polymer is usually an epoxy, vinyl, or polyester thermosetting plastic. The fiberglass manufacturer for the State Capitol is unknown; the specifications manual and shop drawings for the 1978-1979 project were not located. However, the drawings found indicated that the FRP installation was to be by the FRP manufacturer.

During the field investigations and observations it was observed that the exiting fiberglass is in relatively good condition. It is approximately 1/4” to 3/8” thick with a coating of paint on the exterior. It is attached to wood blocking using a variety of fasteners (drywall screws, truss head screws, and flat head screws) and various sizes, the wood blocking is attached to a steel sub-structure which in turn is attached to the building. In some cases the wood blocking is fabricated of 2x4 studs, or plywood, or the combination of both. Given the appearance of some of the blocking (some blocking coated in concrete) it is assumed that scraps from the construction site were used for the blocking. This blocking not only acts as a substrate to attach the fiberglass but also a means to shim the fiberglass as necessary. It was also observed that the fiberglass was fairly flexible, when pushed, pulled or



Fiberglass sub-structure at entablature: plywood attached to built-up 2x4s attached to a metal structure. Notice the concrete staining on the 2x4 and the plywood is also concrete stained as if it were a form board.

removed and re-installed, it did not crack or fail or perform in a negative manner. Overall, the fiberglass is in relatively good condition.

FRP typically comes in sections ranging from 2 feet to 16 feet in length and requires limited maintenance because it will not corrode, stain, or fade. The sections of FRP at the Capitol Building vary in length. Weep holes may be provided along the bottom to allow water that enters behind the FRP to escape; weep holes are not evident at the Capitol Building.

It was also observed that there were some areas on the Capitol Building where the fiberglass has cracked or has torn, mainly at the balustrade. It was also observed that the paint on the fiberglass has severely cracked and worn away in some places. In fact, the majority of the paint on the fiberglass was cracked and failing. It was also observed that the fiberglass balustrade and fiberglass windows had numerous fasteners and fastener holes for attaching rope lighting, Christmas lights, and other items (possibly banners). Some of the balustrades also had missing pieces at the junction of the roof and base of the balustrade. It was also observed that many of the fasteners holding the fiberglass to the building have backed out of the fiberglass and in some places the fasteners were missing all together. Furthermore, the majority of sealant at each joint in the fiberglass construction has failed to some degree. Some sealant is completely missing while other sealant is still and tact, but cracking and pulling apart. Another notable observation was the amount of staining on the fiberglass. It appears that water has entered the fiberglass system from above and exited on the face of the fiberglass causing very visible surface staining of a brown color.



Cracking paint on the fiberglass substrate.



Large tear in fiberglass balustrade at horizontal and vertical edge.



Missing base piece of balustrade. Potential nesting place for birds and vermin.



Rope lighting fastened to the top of the balustrade.



louvers which include metal support framing and wood support framing in the masonry openings.

It was noted during investigation that the majority of the windows have not been painted since the 1978 - 1979 restoration project.

Observations of the windows and window frames show severe wear of the paint, and in many locations the paint is completely missing, thus exposing the wood and causing deterioration in the form of cracking, splintering, and decay. The fiberglass portions of the window frames seem to be in relatively good condition with only the paint cracking and peeling away. However, as noted previously some of the wood and fiberglass frames had numerous fasteners and fastener holes for attaching Christmas lights and other items.



Eye hook inserted into fiberglass frame for hanging of Christmas lights. Also notice the deteriorated wood frame of the window versus the fiberglass frame of the window.



Worn away paint on the fiberglass panels.

Given the amount of holes, cracks, failing sealant, and missing pieces associated with the fiberglass cladding it is relatively easy for water to infiltrate the fiberglass, enter the building, and cause damage. At the larger holes or missing pieces it is easy for vermin and birds to create nests and cause additional damage to the building.

Window and Door Investigation Relative to the Nevada State Capitol and Capitol Annex

The windows of the Capitol were all replaced during the 1978 - 1979 restoration project. Windows frames were reconstructed using the combination of wood and fiberglass and were fabricated to match the original windows of the Capitol and insulated glazing units were used for the glazing panes. The windows and doors of the Capitol Annex appear to be of period construction, but basement level windows have been reinforced with steel and wood. Some of these windows have been replaced with mechanical



Typical condition at wood and fiberglass windows. Paint has worn away at wood window sills, note the fiberglass is in good condition with only cracking and peeling of paint.



Staining on the fiberglass entablature, a sign of water intrusion from above.

Given the existing conditions of the windows with missing and deteriorating paint, the wood will continue to crack, splinter, and decay, eventually falling into a state disrepair and be in need of replacement.

The wood doors are in good condition with minor signs of wear. The doors are stained rather than painted, thus showing off the natural wood grain and contrasting with the white ornamentation surrounding the doors. Door hardware has been added, changed, and maintained over the years.

The existing doors on the Capitol were removed and then reinstalled. The hardware was also removed and reused and some hardware appears to date to 1914. In 1870, Gosling had specified 3" thick doors hung with large strap hinges and an ornamental pattern for all four entrance doors. The doors and lights above were replaced as part of the 1914 DeLongchamps addition.

Conversations with the maintenance personnel suggest that it may be time to update the door hardware once again for security and maintenance reasons. It was observed that the door on the southeast of the south wing was damaged due to water infiltration and showed signs of previous repairs.

Most doors are inset from the exterior face of the building and somewhat protected from the rain and snow. The wood doors all appear to be in good condition with the exception of the door noted previously.



Typical wood stained doors contrast with the white ornamentation surrounding doors.

Copper Gutter Investigation Relative to the Nevada State Capitol and Capitol Annex

The copper gutters were also a part of the 1978-1979 restoration project. During research and investigations it was found that the copper gutters were not included in the original Capitol Building construction or the addition by DeLongchamps, who specified, "tin with an IX thickness for all gutters, spouts, and valleys," but were introduced as a part of the 1978 - 1979 restoration project. The original gutters of the Capitol Building were specified as 4" galvanized iron leaders installed to convey the water from the roof to ground. It was also discovered during research and investigations that the gutters must have been problematic allowing water to penetrate the building. This conclusion is due to the finding that repairs have been attempted numerous times over the years. Subsequent repair and recoating projects are documented with two gutter repairs projects using tin occurring in 1969 (U-310 21-2) and in 1975 (75-13) prior to the large-scale rehabilitation project. A gutter system is only present on the State Capitol and not on the Capitol Annex.

It was observed that the copper gutters have a typical brown patina for the dry desert climate of Nevada and Carson City. Some seams and fasteners have separated and come apart allowing water to infiltrate the eaves, soffits, and building. Sealants used at the joints in the copper gutter have also failed. It was also observed that some of the gutters were filled with debris (leaves, dirt, and other organic materials). Provisions for expansion and contraction of the copper gutters was not found in the field or on the construction drawings. Without provisions for expansion and contraction it makes sense that the gutter seams and fasteners have pulled apart and separated. Furthermore, conversation with maintenance personnel brought to our attention that the process of cleaning the gutters often requires foot traffic in the gutter system. It is highly unlikely that the gutter system was designed for the loading of foot traffic, thus this activity would contribute to the separation of joints and fasteners.



Typical copper gutter at the roof eave of the Capitol Building with brown patina which is most common in a dry desert environment.



Copper gutter coming apart at the seam, allowing water to penetrate the roof eave.

With the gutters coming apart at the seams and allowing water to enter the cornice, it can be concluded that this could be the source for the brown staining of the fiberglass entablature. This could also be the source for other water staining and water intrusion noted by Buildings and Grounds on the interior of the building.



Copper gutter filled with dirt and debris.

Plant Intrusion Investigation Relative to the Nevada State Capitol and Capitol Annex

Plants such as creeping vines (Virginia Creeper) have made their way on to the sandstone veneer of the State Capitol and Capitol Annex. At the Capitol Annex the vines dominate each façade and extend from the ground level to the roof eaves. These vines have attached to the sandstone masonry and have penetrated some of the metal soffit and eave cladding, pulling apart the cladding and creating openings for water intrusion. They have also penetrated mortar joints and other openings in the building, creating more opportunity for water to enter the building and degrade the veneer and cladding. This intrusion at the sandstone masonry has caused some mortar joints to come loose.



Vine growth on the Capitol Annex.

At the Capitol Building the vines are less dominate but are still present on some facades. These vines pose the same problems as on the Capitol Annex.



Vine growth on the Capitol Building.



Other Field Investigations and Observations

Other notable problems during field investigations and observations include the following:

- Roof penetrations without proper flashing and sealing.
- Rodent infestation (squirrels) digging at the foundation level and crawling on the building.
- Irrigation water spraying on sandstone masonry and windows. Wet stone found at foundation level on both buildings and at entrance stairs.
- Eye hooks and other fasteners used for rope lighting, Christmas lights, and banners.
- Numerous wasp nests.
- Salt damage and staining is apparent on sandstone due to use of ice melt.
- Staining on sandstone from metal stairs and metal anchors.
- Water at foundation level; infiltration in basement of Capitol Building on east and north walls and at northeast stairwell.