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Historic Structure Assessment

Executive Summary

The Heller Property consists of four remaining primary buildings associated with Larry and Dorothy Heller, locally important in the mid-twentieth century arts and social history of Colorado Springs, located on a 35-acre tract just north of the campus of the University of Colorado at Colorado Springs (UCCS). The primary buildings are the Main House, the Guest House/Greenhouse/Foundry, the Gallery and a Barn/Stable. These buildings were constructed over the period of 1935 through 1982. The four buildings are in fair to poor structural condition, and two of the site’s original historic structures have been recently demolished. Although in considerable disrepair and suffering some significant exterior alterations, the remaining buildings still retain significant elements of their historic integrity, with many of the materials, details, finishes and other historic fabric intact.

The property and buildings were in continuous use by the Hellers from their construction until Larry’s death in 1983, then by Dorothy until she moved from the property in 1996. The property was given to UCCS by Dorothy Heller for use in support of the humanities and fine arts, with the stated desire that its natural beauty and tranquility be preserved. The Heller Center for Arts and Humanities has been established to further these goals, and to guide the rehabilitation and preservation of the property and buildings for use by future generations. After ownership was transferred to UCCS, the site was occupied by a caretaker, then by the Director of the Heller Center from 2002 to 2005, but has not been occupied since 2005.

For these reasons, the Heller Property buildings and site are excellent candidates worthy of historic preservation and continued public use to further the desires of the Heller estate, the University of Colorado at Colorado Springs and the greater historic preservation community. Concurrent with this HSA, the University is proceeding with a master planning process for the entire Heller Property, with historic preservation of the buildings and site as its centerpiece.

This report is based upon field observations and field measurements made on October 1 and 2, 2008, but without the benefit of excavation or selective demolition to verify some of the structural assumptions. The following is a summary of results based upon our research, field observation and assessment of the structure:

Landmark Status: The Heller Property is not currently listed in the State or National Register of Historic Places. The City of Colorado Springs’ local historic designation process actually involves a preservation zoning overlay rather than an honorary designation of an individual property. The review criteria applied by the City is very much like that for the National Register.

An historical research and eligibility review has been performed by Ron Sladek of Tatanka Historical Associates, concurrent with this HSA, to determine whether, and at what level, the property or individual buildings may be eligible for historic designation. This research revealed that while Larry Heller was an acclaimed local artist, he and his work are not well known outside of the Colorado Springs area, making a nomination based upon National Register Criterion B, the property’s affiliation with a significant historical figure unlikely. And while the architecture of the original buildings was a good example of the Pueblo Revival style, it is the opinion of Colorado Historical Society (CHS) staff that the property is not currently eligible for nomination to either the National or State Registers under Criterion C, related to the embodiment of a particular architectural style, due to the loss of architectural integrity of the Main and Guest Houses, and the demolition of the Studio, the building most closely linked to Larry’s artwork. However, if UCCS elects to pursue a restoration and/or rehabilitation project on one or both of these buildings using appropriate historic preservation techniques, the CHS encourages UCCS to have the property reevaluated for eligibility to the State Register at the completion of this work.

History: The Heller Property and its buildings represent the significant contributions of Larry and Dorothy Heller to the mid-twentieth century arts and social history of Colorado Springs.
Historic Structure Assessment

Architectural Significance: A large collection of historical photographs testify to the dramatic Pueblo Revival style architecture of the original buildings built on the Heller Property. The buildings have changed in floor plan over their history, with various additions constructed by the Hellers over a span of several decades. The Main House has been altered considerably on the exterior with the addition of gabled and hipped roofs over several sections of the house and the enclosure of several exterior porticos, and the Guest House/ Greenhouse/Foundry to a lesser degree, all leading to a loss of architectural integrity. Two large accessory buildings that were part of the original 3-building Main House complex have been demolished. The interiors of all of the buildings retain a high level of their historic integrity, materials and details.

Use: The buildings on the Heller Property were continuously occupied by Larry and Dorothy Heller for residential, foundry and art studio uses since their construction beginning in 1926, through Larry’s death in 1983 and until Dorothy moved from the property in 1996. The property was donated to the University of Colorado at Colorado Springs in 1996 and was occupied by a caretaker, then by the Director of the Heller Center from 2002 until 2005. The buildings and site have been unoccupied since 2005.

Proposed Program: The gift of the property by Dorothy Heller to the University carries several stipulations and restrictions as to the uses and intensity of public access permitted on the property. The purpose of these covenants is to ensure the continued use of the property and buildings, while preserving its natural and tranquil setting. Uses that were contemplated in the gift include art studios, classes, retreats, conferences, meetings, exhibits and use as a chancellor’s residence. These uses are to specifically further the University’s endeavors in the fields of the humanities and fine arts. Specific restricted uses include dormitories and residence halls. New construction on the property is limited to 25% of the total existing building area at the time of the gift, including basements but excluding the Barn.

A site master planning project is underway concurrently with the development of this HSA to guide UCCS in determining the uses and level of intensity that is most appropriate for the ongoing use of the Heller Property. A master planning workshop and design charrette was held in November 2008 to discuss and determine the most appropriate uses for the restored and redeveloped property. These uses include artist-in-residence and scholar-in-residence programs, studio space for visual and performing arts, outdoor classrooms, and low-intensity conferences, retreats, receptions and other social events that will not adversely impact the site and its delicate ecosystems. Reconstruction of the missing Studio and Garage/Shop buildings was also recommended.

Condition Assessment: The buildings on the Heller Property are in fair to poor structural and architectural condition. Much of the original, character-defining exterior and interior materials, details and finishes remain intact, but are in fair to poor condition.

- Site: The site remains much like it did when the Hellers lived on the property, although showing signs of neglect and deferred maintenance. The site is primarily undeveloped, retaining its natural setting and expansive views, with only gravel surfaced drives, minimal sidewalks and other site improvements. The landforms on the 35-acre site remain naturalistic, with little intrusion from the existing buildings. Both native and non-native trees and other landscaping materials are alive but overgrown, with considerable pruning and selective removal needed. Eradication of invasive non-native species is also recommended.

A new looped fire main is required to serve the historic group of existing buildings, as well as connection of the buildings to the public sanitary sewer system. Improvements to the existing gravel driveway and parking area to allow emergency access to the site are also required for the proposed adaptive reuse of the property.

- Foundations: The stone rubble, brick masonry and concrete foundations are generally structurally sound, but exhibit damage and deterioration from shallow foundation construction,
insufficient frost protection, and moisture penetration from the earth-sheltered nature of some of the walls. These issues require further investigation, then structural repair or replacement.

- **Building Structural System:** The earliest construction on the property is the rammed earth structure of the original portion of the Guest House. The Main House and later additions to each are load-bearing concrete or cinder block masonry with peeled pole framed roofs. The floors are a combination of cast-in-place concrete slabs and light wood framing over shallow crawlspaces.

The buildings are generally structurally sound, although structural repairs are needed to stabilize the masonry walls in conjunction with the required foundation repairs. The concrete floor slab in the east addition to the Guest House is severely deteriorated, requiring removal, stabilization of the subsoil and replacement of the floor slab.

- **Building Envelope – Exterior Walls:** The exterior walls of the Main and Guest House/Greenhouse/Foundry are stucco over unreinforced concrete or cinder block masonry. These are in fair to poor condition, exhibiting structural cracking and ongoing deterioration from weather exposure, shallow foundations and the earth-sheltered construction of the north building walls, requiring further investigation and structural repairs or replacement.

The cast-in-place concrete walls of the Gallery building are in good condition, with only minor repairs needed where hardboard siding is in contact with the grade.

- **Building Envelope – Roofing and Waterproofing:** The original flat roofing is a traditional asphaltic built-up roofing, with evidence of significant leaking. Several areas of the Main and Guest Houses were subsequently covered by sloped, wood framed roof structures with asphalt shingles. The design intent of the restoration and rehabilitation of the Heller Property is to return the exteriors of the primary buildings to their circa-1948 appearance, which will require the demolition of the sloped roof over-framing, and installation of new single-ply roofing membranes and rigid board insulation systems.

- **Windows and Doors:** The original steel sash and wood windows are substantially intact and should be retained, but exhibit deterioration requiring repair. The few original exterior doors that remain are in fair condition, requiring only minor refurbishing. All original door and window hardware should be retained.

Many original interior doors are missing, and the openings do not meet current code requirements for head clearances. The openings may not require reconstruction if some of these areas have only limited public use.

The non-original porch and portico enclosures should be reopened to their original appearance, including replacement of the missing exterior windows and doors that were removed when these enclosures were built.

- **Interior Finishes:** Most of the original interior finishes of all four buildings are intact and in fair condition, requiring only repairs and refinishing. These finishes and other interior historic fabric should be retained in any rehabilitation or adaptive reuse design. Original railings, light fixtures and other features of the Main House and Guest House that have been removed and stored by UCCS should be cleaned and reinstalled.

- **Mechanical Systems:** A new steam boiler and insulated boiler piping system are required for the Main House, utilizing the original and some new radiators. Domestic water and gas piping
systems will also require replacing. Connection to the public sanitary sewer system is recommended for the proposed public adaptive reuse of the Main and Guest Houses. A fire sprinkler system may be required for the buildings, but a final determination of this has not been made.

- **Electrical Systems:** Existing power capacity is adequate for the historic use of the property, but may be inadequate for the proposed adaptive reuse. The existing transformer and main electrical distribution equipment is recommended to be upgraded from 25kVA to 100kVA, increasing electrical capacity to the primary buildings to 400 Amps. Studios and other areas needing higher capacities or 3-phase power are proposed to be located in a new building elsewhere on the property. A new 200 Amp load center is required for the Main House, as well as new power distribution for both houses.

New period-appropriate lighting is recommended for the exterior and interior public spaces. New emergency lighting and lighted exit signage should also be added. New fire alarm and security systems are recommended, but may not be required by applicable building codes for the size or proposed uses of the buildings.

- **Hazardous Materials:** UCCS performed an asbestos abatement project in 2006, removing asbestos materials in boiler and radiator piping, roofing felts and floor tile. Lead-based paint is suspected on the exterior and interior of the buildings, and further testing is recommended.

- **Building Code Compliance:** Only minor code-related issues have been identified under the buildings’ current uses. Some of the proposed adaptive reuses may dictate additional improvements related to code compliance.

Significant infrastructure improvements will likely be required for fire and emergency access, and fire protection systems.

- **Accessibility Compliance:** None of the buildings on the Heller Property site are currently handicapped accessible, with the limited exception of the Gallery. The original Main House and Guest House/Greenhouse/Foundry each have numerous level changes within the buildings, reflecting their terraced construction into the natural terrain. The site has areas of considerable grade transitions, but also areas where the natural grades are gradual enough to accommodate handicapped accessibility between the existing buildings without significant impact on the natural appearance of the property. Any public use the University makes of the individual structures will necessitate some accessibility upgrades to each building. New fully accessible restrooms are planned to be provided within the reconstructed Studio building, allowing fewer intrusive improvements to be required within each building.

- **Existing Materials Analysis:** Specific materials analysis, such as a stucco mix analysis and lead-based paint testing, should be undertaken during the design phase of any preservation treatment.

**Funding:** The project is proposed for completion in multiple phases, including stabilization and restoration of the exteriors, rehabilitation and adaptive reuse of the interiors, and reconstruction of the missing buildings. While the University is prepared to raise and invest significant funds in the restoration, rehabilitation or reconstruction of the buildings, they may also seek future grant assistance from the State Historical Fund of the CHS, if the property can be designated at some time in the future.
1.0 Introduction

1.1 Research Background/Participants

The purpose of this project is to provide an Historic Structure Assessment (HSA) of the 35-acre Heller Property, including its four primary remaining buildings. All future rehabilitation and preservation work should consider the recommendations of this HSA report. This assessment has been completed using procedures and methods established by the Colorado Historical Society (CHS), State Historical Fund (SHF), consistent with the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

This document provides an examination of the buildings and includes a status or rating of each of its physical features and elements. An itemized course of action needed to correct any deficiencies has been created. From this work, the initial preservation strategies and priorities for stabilization and rehabilitation of the structure have been developed.

Ultimately, this HSA report is intended to assist the University of Colorado at Colorado Springs in the development of a comprehensive Master Plan for preservation of the buildings and site, and to guide any future development on the property. The HSA findings are provided to direct any future design and preparation of construction documents, and to consider the future welfare of the structures, as well as issues relevant to ongoing maintenance.

This Historic Structure Assessment was completed by Aller•Lingle•Massey Architects P.C. after an initial on-site consultation with Anne McCleave, SHF historic preservation specialist, Perrin Cunningham, Director of the Heller Center, and Gary Reynolds, Director of UCCS Facilities Services. The initial consultation was followed by the collection of information regarding existing site and building conditions. Research on the Heller Property was conducted by Ron Sladek, Tatanka Historical Associates, Inc., using information from University archives and a variety of other historical resources included in the Technical Literature References section at the end of this report.

Support in assessing the existing conditions and writing the report was provided by Eric Moe, P.E., structural engineer; Abrahamson Engineering, mechanical engineers; and Electrical Systems Consultants, electrical engineers. Representatives of all four firms visited the site and completed thorough inspections of all building systems on October 1 and 2, 2008, collecting field measurements and digital photographs of historic elements and relevant character-defining materials and features. The weather on October 1 and 2 was clear to partly cloudy, with temperatures ranging from 60-70°.

This assessment was partially funded by a State Historical Fund grant award from the Colorado Historical Society, together with a cash match provided by the University of Colorado at Colorado Springs. The SHF grant also funded the historical research, eligibility and nomination review and the site master planning, previously mentioned.
1.2 Vicinity Map

Legal Description

The Heller Property is comprised of three adjacent parcels in Section 20, Township 13 South, Range 66 West of the 6th Principal Meridian, County of El Paso, State of Colorado. These parcels are # 63200-00-002, 63200-00-003 and 63200-00-047. The property is now within the city limits of the City of Colorado Springs, Colorado.
1.3 **Assessment Criteria**

After evaluation in the field, each feature and element has been assessed to determine the appropriate course of action based upon its significance or importance to the property and its existing condition. Recommendations included in this report are based upon the Secretary of the Interior’s *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, as follows:

**Preservation**
Preservation places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building’s continuum over time, through successive occupancies and the respectful changes and alterations that are made.

**Rehabilitation**
Rehabilitation emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it assumes that the property has suffered more deterioration prior to work. Rehabilitation allows for an efficient contemporary use through alterations and additions.

Both Preservation and Rehabilitation standards focus attention on the preservation of those materials, features, finishes, spaces and spatial relationships that, together, give a property its historic character.

**Restoration**
Restoration focuses on the retention of materials from the most significant time in a property’s history, while permitting the removal of materials from other periods.

**Reconstruction**
Reconstruction establishes limited opportunities to “recreate” a non-surviving site landscape, building, or missing feature or element in new materials.

The Secretary of the Interior’s *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* notes in its introduction that in Rehabilitation, “historic building materials and character-defining features are protected and maintained as they are in the treatment Preservation; however, an assumption is made prior to work that existing historical fabric has become damaged or deteriorated over time and, as a result, more repair and replacement may be required”. In giving this latitude, the Guidelines for Rehabilitation includes the following hierarchical methodology:

1. **Identify, Retain and Preserve Historic Materials and Features**
   Similar to Preservation, it is essential that during any rehabilitation that recommendations “identify the form and detailing of those architectural materials and features that are important in defining the building’s historic character and which must be retained in order to preserve the character”.

2. **Protect and Maintain Historic Materials and Features**
   After identifying those materials and features that “are important and must be retained in the process of Rehabilitation work”, their protection (i.e., “generally involves the least degree of intervention”) and maintenance is addressed.
3. **Repair Historic Materials and Features**
   When the physical condition of “character-defining materials and features warrant additional work”, repair is the next recommendation.

4. **Replace Deteriorated Historic Materials and Features**
   Rehabilitation guidance is provided for replacing features because the level of deterioration or damage precludes repair. While replacement of extensively deteriorated character-defining features may be considered, removal should not be recommended if the material or feature “could reasonably be repaired and thus preserved”.

5. **Design for the Replacement of Missing Historic Features**
   If an entire feature is missing, one that has important architectural significance, then the Rehabilitation guidelines allow for its replacement when adequate historical documentation allows the replaced or new design to take into account the “size, scale and materials of the historic building, and most importantly differentiated so that a false historical appearance is not created”.

6. **Alterations/Additions for the New Use**
   Continued use of a structure often requires alterations, additions and/or adaptive reuse. In these cases, the Rehabilitation guidelines provide that new additions should be avoided and considered “only after it is determined that those needs cannot be met by altering secondary” features or spaces. If required, then additions and alterations should be “clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged or destroyed”.

2.0 **History and Use**

2.1 **Construction History and Architectural Significance**

The Heller Center property is located in Township 13 South, Range 66 West, Section 20, on the northern edge of the developed City of Colorado Springs. Nestled in a broad, sloped valley below Eagle Rock, the property is bordered to the east and north by the high ridge of Austin Bluffs. By the early 1930s, the quiet, pristine site was mostly occupied by open shortgrass prairie frequented by wildlife including eagles, prairie dogs and coyotes. Many of the trees, and certainly the sagebrush that covers much of the property today, were not present during the site’s most important historic period from the 1930s through the 1950s. Although located a short distance from Colorado Springs and the Denver Highway, the property felt removed from the modern, developed world and its problems. To the west was a panoramic view of Pike’s Peak and the surrounding mountains, complete with daily displays of multi-colored sunsets. (Refer to photos # S01-04)

In 1935 and 1936, local artist Larry Heller, together with friend and fellow artist Laurence Field, acquired the property in three tracts of land. They set to work immediately in the spring of 1935, when they installed a water system on the property. This consisted of a well, a cistern located on a rise below Eagle Rock, and a pump and associated piping. They then began to construct the first of two homes they planned to erect for themselves on the property. This effort, they hoped, would provide them with a fine place to live and create art, while at the same time launching the formation of what they envisioned would become an art colony north of the city.

Heller had recently visited New Mexico and evidently returned with an interest in the Pueblo Revival style of architecture. His initial plan for the land north of Colorado Springs was to construct small, adobe-style buildings built of rammed earth, featuring battered walls, flat roofs, and front courtyards with entry gates and adobe walls. The homes were each conceived to be just large enough to house a single person, with a living room, bedroom, kitchenette and bath. Although the initial design changed somewhat, that summer Heller and Field successfully erected the building known today as the Guest House. Although small, the home held both living quarters and a studio space. It was soon expanded to the east with another room. Behind the home to the northwest was a detached garage. Heller and Field completed all of the physical labor necessary to construct the home, with some assistance provided by friends.

Construction halted for the winter after the first home was finished. Heller returned to his work in the spring of 1936, when he erected what became the larger main house on the property. Today this building is known as the Main, or Heller, House. Again he employed the Pueblo Revival style, which was popular during the period from around 1905 to 1940. Buildings of this style were characterized by stuccoed walls meant to imitate an adobe appearance, flat roofs with low parapet walls, battered walls, projecting roof rafters known as vigas, rounded corners, and straight-headed windows. This building, with a footprint measuring approximately 30’ x 70’, exhibited all of these elements and was an excellent example of the Pueblo Revival style. (Refer to historic photo # H01)

In 1937 Heller constructed an Art Studio on the grounds directly south of the Main House. This building and a wood-framed stable with fenced corral were situated on slightly lower terraces, with the stable demolished and replaced with a Garage/Shop building sometime before 1948 (Refer to historic photos # H10, H11 and H13). These buildings matched the Pueblo Revival style of the Main House, and from a distance, and especially from the south,
the buildings appeared to be one as they stepped down the slope of the site. Heller surrounded each of the homes with a series of low, terraced stone walls, along with post-and-rail fencing.

The buildings have undergone numerous changes in configuration and appearance over the years, many accomplished by the Hellers themselves. The original garage of the Main House, seen in the circa 1936 historic photo # H01 from the southeast, was converted to a larger dining room very early in the house’s history. Another early change, evident by the circa 1948 historic photo #H05, was that the original, projecting viga beams were cut flush with the walls. Sometime in the early to mid-1960s, it appears that the Hellers were having trouble with their flat roofs, which were evidently leaking. To address this problem, they chose to install a combination of hipped and gabled over-framed roofs with eaves on the Main House, Guest House, and Studio. This change radically altered the Pueblo Revival appearance of the buildings.

During the early 1970s, Larry constructed a cinder block metalworking foundry adjacent to the northwest corner of the Guest House. The exact age of the Greenhouse is not known; however, it clearly pre-dates the construction of the Foundry yet was not original to the home.

Additional changes were made to the Main House and Guest House during the 1960s or 1970s, primarily to their facades. This involved the building out of a central enclosed porch and closure of the south-facing open porches or porticos in the western portion of the home. These changes combined to result in significant alterations to the original 1930s buildings.

While various elements of the Pueblo Revival style of architecture can still be found there today, overall the buildings no longer represent this distinctive style with any degree of integrity. In their original form, they would have been significant representatives of the style from the height of its period of popularity. However, that is no longer the case. The diminished integrity of the property was only harmed further with the 2005 demolition of the Studio and Garage/Shop adjacent to the Main House.

The remaining buildings on the property are the small Barn or Stable for horses, which may date back to the 1950s, along with the Gallery, which the Hellers constructed in 1982 to house Larry’s artwork and his MG race car. Neither of these was constructed in the Pueblo Revival style of the original buildings.

2.2 Proposed Program

The Heller Property consists of four primary historic buildings, the 1936-1940s Main House, the 1935-1940s Guest House/Greenhouse/Foundry, the 1982 Gallery and a Barn/Stable constructed in the 1950s, plus a small pump house located northwest of the Guest House. Two other original structures, a Studio and a Garage/Shop, built in the late 1930s to the south of the Main House, were demolished in 2005.

The buildings on the Heller Property are generally in fair to poor architectural and structural condition. While much of the interior character defining materials, details and historic fabric remain intact, the exteriors have been altered significantly from their original Pueblo Revival appearance and detailing. Additionally, after nearly 80 years of use and exposure to the elements, the buildings are suffering from deficiencies that require stabilization and appropriate historic preservation treatments.
Before this study was completed, it was clear that some of the property’s integrity had been compromised by the demolition of contributing structures and through inappropriate alterations to some of the buildings, completed decades ago by the Hellers themselves. The goal of this study was therefore to identify specific problems and prepare a detailed plan for the restoration or rehabilitation of the remaining buildings on this important historic landmark property, as well as to consider the reconstruction of missing structures if adequate photographic or physical evidence of their construction is available. UCCS has historical photographs and some measured drawings of these buildings.

The four primary buildings on the Heller Property were continuously occupied by the Hellers as their personal residence and art studio, foundry and galleries from their construction until Larry’s death in 1983, then by Dorothy until she moved from the property in 1996. The University acquired the 35-acre tract and its buildings through a gift from Dorothy Heller in 1996 prior to her death. The uses and any potential improvements to the property are controlled by covenants written at the time of the gift, with the intention of preserving the tranquil and natural setting of the property for the enjoyment of future generations. Specifically, the purpose of these covenants is to ensure the continued use of the property and buildings “in such manner as to preserve its beauty and tranquility and as a natural open space or park free from disruptive vehicular traffic or thoroughfare...” Uses that were contemplated in the gift include art studios, classes, retreats, conferences, meetings, exhibits and use as a chancellor’s residence. These uses are to specifically further the University’s endeavors in the fields of the humanities and fine arts. Specific restricted uses include dormitories and residence halls.

New construction on the property is limited to 25% of the total existing building area at the time of the gift, including basements but excluding the Barn/Stable.

The area of the buildings on the Heller Property at the time of the gift totaled approximately 9,102 sq. ft., excluding the Barn/Stable. Using the 25% allowable increase in building area, the total square footage of structures permitted by the gift is 11,377 sq. ft. The remaining buildings occupy approximately 5,852 sq. ft. of enclosed space, including the basement of the Main House. Based upon the limitations of the gift, new construction will be limited to approximately 5,525 sq. ft. of new space.

If the missing Studio and Garage/Shop are reconstructed, they will use approximately 2,513 sq. ft. of this allowance, leaving only 3,012 sq. ft. for other new structures. If new buildings are proposed for the Heller Center (other than reconstruction of the missing historic buildings), it is recommended that they be built away from the historic group of original Heller buildings.

Adaptive Reuse

The Heller Center for Arts and Humanities was established to further the goals of the University in the areas of visual and performing arts, and to honor the wishes of Dorothy Heller in maintaining the property’s historic integrity and natural beauty. The Center will provide a venue where the disciplines within the arts and humanities can come together and collaborate in varying ways.

A site master planning project is underway concurrently with the development of this HSA to guide UCCS in determining the uses and level of intensity that is most appropriate for the ongoing use of the Heller Property. A master planning workshop and design charrette was held November 12-13, 2008, on campus to discuss and determine the most appropriate
uses for the restored and redeveloped property. The workshop was attended by the Director and staff of the Heller Center, UCCS students, faculty, administrators, Colorado Springs area artists, and neighbors and friends of Larry and Dorothy Heller. Participants agreed that the guiding principles of the master plan should be to maintain the historic integrity of the property and to honor the wishes of Dorothy Heller through preservation of the site. At the conclusion of the workshop, the most appropriate uses were identified as:

- Artist-in-residence and scholar-in-residence programs
- Studio space for visual and performing arts
- Outdoor classrooms
- Low-intensity conferences, retreats, receptions and other social events that will not adversely impact the site and its delicate ecosystems

Historical archives, a research library, a small catering kitchen and the preservation and display of Larry Heller’s artwork are also contemplated for the site, possibly within one of the reconstructed buildings. University needs will be given the highest priority, but collaboration with the local school district and the Colorado Springs community will also be pursued.

The maximum capacity of the property was determined to be 100 people, protecting the ecosystems, natural beauty and historic resources of the site.

Preservation Treatments

The intent of the historic preservation efforts outlined in the HSA will be to restore the exterior of the Heller Property buildings to their appearance in the late 1940s, while allowing the later Greenhouse addition and Gallery building to remain, and rehabilitating the interiors for their planned adaptive reuses. The historic photograph taken in circa 1948 by Bill Riley, a neighbor and professional photographer, should be the guiding document to guide the restoration of the buildings’ exteriors. Based upon this photograph, reconstruction of the two missing structures should also be contemplated, as described above. (Refer to historic photo # H05)

All planning and rehabilitation will be undertaken to protect the historic resources, with sensitivity to the buildings’ historic materials, design and appearance. Future work will be accomplished in such a way that the buildings’ historic fabric and integrity are protected. Any new structures allowed by the gift (except for the reconstruction of missing structures) should not infringe upon the historic setting of the primary buildings, and be sited in such a way as to preserve the historical views on and off of the property.

This report provides a detailed picture of the current condition of the Heller Property, addressing particular areas and elements of concern for each building and the site as a whole. While some of the buildings' deficiencies are related to age and use, most are the result of exposure to the elements and neglect. In addition to describing these conditions, the Historic Structure Assessment provides recommendations for rehabilitation or restoration along with associated priorities and costs. This is done with the goal of providing in-depth analysis that will guide rehabilitation efforts through the use of appropriate historic preservation methods.
While the Heller Center and the University of Colorado at Colorado Springs are prepared to raise and invest funds in the rehabilitation and restoration of this property, they may also pursue future grant assistance from the State Historical Fund of the Colorado Historical Society, if the property can be designated at some time in the future.
3.0 **Structure Condition Assessment**

The existing conditions of the Heller Property, as well as its site elements were evaluated using the following criteria. The terms have been taken from the SHF *Annotated Scope of Work*.

A feature or element is evaluated in **Good Condition** when:
- the element is intact, structurally sound and performing its intended purpose;
- there are few or no cosmetic imperfections;
- the element needs no repair and only minor or routine maintenance.

A feature or element is evaluated in **Fair Condition** when:
- there are early signs of wear, failure or deterioration, though the element is generally structurally sound and performing its intended purpose;
- there is failure of a subcomponent of the element;
- replacement of up to 25% of the element or replacement of a defective subcomponent is required.

A feature or element is evaluated in **Poor Condition** when:
- the element is no longer performing its intended purpose;
- the element is missing;
- deterioration or damage affects more than 25% of the element and cannot be adjusted or repaired;
- the element shows signs of imminent failure or breakdown
- the element requires major repair or replacement.

The descriptions, condition assessments and recommendations for the Heller Property will be separated for the four primary buildings, with comprehensive evaluations of the overall site, grading and landscaping.

3.1 **Site**

The site of the 35-acre Heller Property is nestled in a broad, sloped valley below Eagle Rock, bordered to the east and north by the high ridge of Austin Bluffs. The property currently has no direct public street frontage, but is accessed from a shared gravel driveway, located near the east end of Eagle Rock Road. The 12’ wide, one lane driveway enters the property near its southeast corner, then extends into the center of the site, passing a small gravel-surfaced parking area, the Barn/Stable and across the south side of the Gallery building to the Main House. Another gravel driveway splits off to the west of the Barn and terminates north of the Gallery, but originally extended around the northeast side of the Guest House to the Foundry. There are no sidewalks or other pedestrian improvements along the driveway from Eagle Rock Road to the central portion of the site. The alignment of an original road constructed and used by the Hellers, known as the “Ranch Road”, is still visible in several locations, although it has been abandoned for more than 10 years. The roadbed has substantially healed itself, having grown over with native grasses. (Refer to photos # S01-08, S11, S16 and S17)

A new primary access road from the west has recently been constructed from Nevada Avenue across University property, skirting the southern edge of the Heller Property and connecting to the existing gravel driveway just north of the floodplain. This road is 22’ wide, following the general alignment of an existing 2-track maintenance road built with
the new sanitary sewer line, and is constructed of asphalt millings removed during the reconstruction of Nevada Avenue. This road was permitted by the language of the gift, and was designed by the University to be as narrow as allowed by the City of Colorado Springs Fire Department and as least intrusive on the natural landscape as possible. This road will replace the existing gravel driveway as the primary public access to the Heller Property, although the existing driveway will remain as a secondary emergency access. (Refer to photos # S01-03, S14, and S15)

Existing concrete sidewalks on the site are limited to areas in the immediate vicinity of the individual buildings. The Main House has a 2'-4" wide sidewalk leading from the driveway to the southeast exterior door into the east bedroom, with a concrete stoop at the door lined with stone. Concrete stoops are also located to the south of the living and dining rooms, part of the terraced patios that existed to the south of the Main House. The Guest House/ Greenhouse/ Foundry has a 5' x 6' concrete stoop at the main south entry door, and a 2'-0" wide concrete sidewalk adjacent to the enclosed porch. The Gallery has a 3'-6" wide sidewalk adjacent to the south wall, leading to a full width concrete stoop at the recessed entry doors with a concrete handicapped access ramp down to the gravel driveway. The east wall is lined with a 1'-6" wide sidewalk, widening to a 4' x 8' concrete stoop at the east doors.

A number of "social" trails have been established across the site, connecting to and from the adjacent publicly owned University Park open space tract and leading to Eagle Rock.

One of Larry Heller’s life-sized bronze horse sculptures, “Pancho”, is installed in the central open area of the property, between the Main House and the Guest House. (Refer to photos # S09, S10 and S12) Steel pipe clothesline poles are among the few remaining site features that remain. (Refer to photo # S13)

The gravesite of both Larry and Dorothy Heller is located on the property, located to the north of the primary buildings on a knoll south of the base of Eagle Rock. The grave is marked with a simple stone marker with a bronze plaque. (Refer to photo # S18)

**Condition:** Fair. The covenants of the Heller gift restrict the type and intensity of vehicular access to and across the Heller Property. Based upon this, the grade and construction of the existing gravel driveway would appear to be adequate for the intensity of uses either planned or allowable for the property. The gravel surfacing material is appropriate for both the historic character of the site and the level of use anticipated.

The established “social” trails are adversely impacting the sensitive soils and ecosystems on the property.

**Recommendations:** Some reconfiguration and the resulting regrading of the gravel driveway and parking area should be anticipated as the site is rehabilitated and redeveloped. In general, the site area devoted to parking should be limited to the 12 to 16 spaces in the current parking area, and a small, new handicapped accessible parking area to the north of the Gallery.

Consideration should be given to the use of recycled asphalt or other semi-impermeable surfacing for the parking area to reduce dust generation, but still maintain the naturalistic setting and character of the site. A concrete apron will be required at any new handicapped parking spaces built in the new parking areas.
Construction of new concrete sidewalks should be limited to those areas where necessary for primary building accesses and handicapped circulation. Other trails or pathways between buildings, or as desired as a part of new programmatic needs for the property should be constructed of more soft-surface materials, and remain unobtrusive in the natural landscape. These soft-surface trails will help limit access to appropriate areas of the property and discourage access from environmentally sensitive areas.

The various “social” trails should be consolidated through this process, with one improved trail constructed to Eagle Rock and connecting to the adjacent open space to protect the fragile ecosystems. Areas of disturbance should be reestablished with native landscape materials.

New improvements should protect the existing view sheds on and off of the property, particularly to Eagle Rock to the north and the Pikes Peak/Garden of the Gods area to the west.

Grading and Drainage

The site has considerable slope, with the natural grade flowing from the north to the southwest, south and southeast, with as much as 110’ of slope across the site. The terrain is typical of that found in many Colorado foothills areas, with native rock outcroppings dotting the landscape. (Refer to photos # S01-04, S11, S16 and S17.)

The original Main House and Guest House/Greenhouse/Foundry buildings, as well as the 1982 Gallery, are all earth-sheltered structures, constructed into the slope of the site on the north and west sides to appear more natural in the landscape. The natural grade on the higher north and west sides of these buildings ranges from 2'-0” above the floor line at the Main House and Guest House to almost 4'-6” at the Gallery. The grade flows around these structures on the west and east sides, and away from the exposed south elevation to the south, but is not well directed away from the north sides of the buildings. The south side of the main house is built up over a series of terraced stone retaining walls, described under Retaining Walls and Fencing below. Other than these terraced walls, the manmade improvements were well sited in the landscape with little natural disturbance or landform changes. The buildings are sited well away from each other, so there are no man-made drainage problems created between structures.

Condition: Fair. The earth-sheltered construction of these buildings, coupled with the inadequate diversion of water around the buildings along their north sides, has resulted in moisture penetration and damage along the base of these walls. There are no natural swales or other grading improvements to divert water around the north sides of these buildings. The grade behind the Barn/Stable, while not an earth-sheltered structure, is also built up by almost 12”, without adequate drainage away from the structure. Also refer to Section 3.4, Building Envelope - Exterior Walls. (Refer to photos # MH009, MH011, MH012, GH005, GH006, G003, G004, G006, B003 and B004)

The geology of the Heller Property has been described in a soils investigation report as Trovessila-Rock Outcrop Complex, with soils susceptible to high erosion.

Recommendations: Regrading is required to construct drainage swales to direct stormwater runoff around the north and northwest sides of these buildings.
Consideration should be given to recycled asphalt or other semi-impermeable surfacing for the driveways and parking area. A concrete apron should be constructed at a new handicapped parking space.

Due to the high erosion potential of the soils, minimal site disturbance is recommended for any grading modifications, or construction of new trails or parking improvements.

If site improvements for grading and drainage are constructed, the Contractor should be made aware of the potential for archaeological resources on the site. If historical or archaeological resources are encountered during excavation or construction, the Contractor shall stop work and notify the owner and the Office of Archaeology and Historic Preservation, Colorado Historical Society.

**Site Utilities**

Single-phase power service enters the property from the southwest, extending underground from an overhead power transmission line along the west property line to a new pad-mounted transformer, located to the northwest of the Main House. (Refer to photo # S29) Telephone and cable television service also enters the site underground and are terminated at pedestals near the transformer. Refer to Section 3.9, Electrical Systems, of this report for power distribution within the site.

Domestic water service was originally provided to the two residential buildings from a well located in the pump house north of the Guest House/Greenhouse/Foundry. The concrete lip of the original water cistern remains to the north of the Hellers’ gravesite. Water service is now provided from the City of Colorado Springs municipal service, although the exact line size and location(s) is unknown. The topographic survey shows a line entering the site from the west, terminating to the southwest of the Main House. A water meter is also located in a pit near the gated entry along the existing driveway from Eagle Rock Road, with a curb stop valve, with extension high above grade, located southeast of the Main House. A fire hydrant is located at the intersection of this driveway and Eagle Rock Road. Refer to Section 3.8, Mechanical Systems, of this report for domestic water distribution within the site. It is believed that an underground water cistern exists to the south of the Gallery, but no physical evidence was apparent.

There is no evidence of connections to a municipal sanitary sewer service into the site, although a new sanitary sewer main was installed along the southern property line in 2005. There are underground septic tanks and leach fields located to the west of the Main House and southeast of the Guest House, and it is assumed that both houses are still connected to these systems. A modern portable toilet enclosure is placed on the property to the north of the Gallery. Again, refer to Section 3.8 for sanitary sewer distribution within the site.

There is natural gas service to the property, but all meters and distribution equipment have been removed. It appears a gas meter serving the entire property was located in the vicinity of one of the two demolished buildings. The gas service line has been cut somewhere between the gas main along the south property line and this location, and the gas service line has also been cut at the Main House, disconnecting the service. Pipe unions have been opened to disconnect the gas service into the Guest House and Greenhouse. Refer to Section 3.8.

A site irrigation system was installed by Larry Heller, with both hard-piped and flexible pipe laying on the surface of the ground or shallowly buried, extending out from the pump house.
Condition: Fair to poor. Water service to the Main House is disconnected, so it is difficult to assess whether it is fully functional at this time.

Likewise, since the water service is not operational, it cannot be determined whether the sanitary system is functional at this time, although there is no evidence that it is not.

It is not clearly evident where the gas piping from the utility line stops and the service line(s) to the individual buildings begins, or the routing of these lines between the buildings.

The operational condition of the site irrigation system could not be verified during our field assessment. It is believed that the original cistern has been infilled and is no longer functional.

Recommendations: At least some of the domestic water distribution system will need to be reconstructed. Utility locates will need to be performed during the design phase of any restoration or rehabilitation work to determine the extent of the service lines that remain, and their locations. Pot holing may also be warranted to determine whether the service lines are intact, or have been broken or disturbed by the demolitions of the Studio and Garage/Shop buildings.

It is assumed that any adaptive reuse of the Heller Property buildings will require the connection of the buildings to the City sanitary sewer system. It is unlikely that any higher intensity of public use could continue to utilize the existing septic systems, regardless of their condition.

The natural gas service lines will need to be reconstructed to serve the two houses, and possibly the Gallery and Barn/Stable if heat is added to these buildings.

A new 8” fire line will be required to the property from existing fire mains in Eagle Rock Road or Wild Rose Lane. This may be permitted to be a dead-end service line from one of these locations, but may be required to be looped between these existing mains if the topography, water pressure or required fire flows dictate. One fire hydrant will be required within 250’ of all primary buildings, in accordance with City of Colorado Springs Utilities and Fire Department requirements. Refer to Section 4.2 for additional information.

If trenching for new site utility work is performed, the Contractor should be made aware of the potential for archaeological resources on the site. If historical or archaeological resources are encountered during excavation or construction, the Contractor shall stop work and notify the owner and the Office of Archaeology and Historic Preservation, Colorado Historical Society.

Retaining Walls and Fencing

The perimeter of the Heller Property is fenced with 3- and 4-strand barbed wire fencing, 3’-0” high. A 5’-0” high pipe rail gate secures the property at the gravel entry drive, hung on 6x6 square wood gate posts.
In addition to the earth-sheltered structure of the Main House described above, the exposed south side of the house has been terraced into the landscape with a series of stone retaining walls and remnants of the demolished foundation walls of the missing Garage/Shop and Studio buildings. These retaining walls are constructed of native degraded granite and sandstone rubble in a variety of sizes, loosely laid with rough mortar joints. The remnants of the foundation walls are of similar construction, but backed with 8” x 8” x 16” concrete block masonry. The upper terraced wall, located south of the living room, is pierced by a run of stairs constructed of native stone. (Refer to photos # S05, S19-21, and S24-28)

An intact section of wrought iron fencing, designed and fabricated by Larry Heller, exists in the stone wall southeast of the Main House. Remnants of wrought iron gate hooks remain in the stone walls and concrete stoop in this same wall at the termination of the gravel driveway. (Refer to photos # S22 and S23)

Retaining walls of the same native stone were used on the east and southwest sides of the Gallery to provide access to the earth-sheltered building. (Refer to photos # G001, G002 and G005)

The Barn/Stable is enclosed on the south by a small, three-rail fenced corral, 5'-0” high, constructed of square and round wood posts, horizontal wood rails and chicken wire enclosing the bottom portion of the fence from the center rail to the ground. The square posts are modern 6x6 pressure-treated wood posts, and the round posts are 6” diameter wood poles, primarily located on the west end of the corral. The heights of these posts vary, with many of them extending considerably higher than the top of the fence, and appear to have been whatever lengths were available. The three horizontal rails are 1x5 full dimension pressure-treated lumber. The corral was originally enclosed on the south by a 5-rail horizontal pipe rail gate, which has been removed from its pivot hinges and now leans against the fence. Another gate accesses the corral from the east, constructed of pipe on the perimeter, one intermediate vertical pipe support and woven wire fabric. (Refer to photos # B005-009, B027 and B029)

**Condition:** Fair to good. The perimeter fence appears to be in good condition, although we did not walk the entire perimeter of the property on the day of the field assessment. The main gate is also in good, operable condition.

The corral fence and gates are in good condition, although their construction does not match the quality of the other structures on the Heller Property. The gate could be rehung and the corral could again be used to stable animals if desired.

**Recommendations:** Direction coming out of the master planning process suggested that the property should remain fenced to control access to and from the adjacent University Park open space to the east and other undeveloped parcels. A new gated access will be needed to control vehicular access into the property from the west at the new access road.

Historic photographs of the site show wood pole or rail fences existed in locations around the property. (Refer to historic photos # H02, H06 and H10-14) Sections of these fences should be reintroduced to restrict access to environmentally sensitive areas of the site, i.e. along the western edge of the existing gravel driveway to restrict access coming from the University Park open space into the ecologically sensitive meadow.
Construction of a limited amount of new stone terraced retaining walls is suggested by the site master plan, to control vehicular access, stabilize erosion, protect the lawn areas between the buildings and help limit the size of events that can occur on the property. Naturalistic materials should be used for these walls and other new improvements. Likewise, limited reconstruction of the foundation walls of the missing Studio and Garage/Shop buildings is required to stabilize the slope south of the Main House, and recreate the original terraced outdoor spaces suggested in the master plan. An exterior handicapped lift is needed if the reconstructed Studio will house accessible restrooms. Also refer to Section 4.4.

Landscaping

The 35-acre Heller Property is predominantly landscaped in native grasses, trees and other plants common to the site's semi-arid, but biologically diverse, setting. The more immediate site around the four primary buildings displays a large variety of native and non-native trees, shrubs and other plant species. A formal U-shaped windbreak of Ponderosa Pine frames the original rear yard area of the Main House. Other native materials include stands of Gambel Oak, Pinon and Ponderosa Pine, cottonwoods, willows, cedars, junipers, Skunkbrush, Mountain Mahogany, Alpine Current, Three Leaf Sumac and various species of native grasses. Non-native materials include Douglas Spruce, Russian Olive, Ash, Linden and apple trees, a large variety of deciduous shrubs including lilac, sumac, Virginia Creeper and flowering bulbs such as iris and poppies. Invasive species, such as New Mexican Locust have spread over parts of the property, including thickets north and east of the Guest House. (Refer to photos # S01-11, S16, S17 and S20)

Worn areas of non-native turf grass exist between the four primary buildings and to the south of the Main House. These areas were originally planted by the Hellers and irrigated with well water, piped from the pump house in shallow piping. (Refer to photos # S09 and S10) The area immediately north and northwest of the structures includes large quantities of Yucca and Prickly Pear Cactus, a sign that the land has been overgrazed by livestock in the past.

Historic photographs and other documents indicate that there were originally areas of formal gardens around the primary buildings, created by Dorothy Heller. Anecdotal evidence also exists that there was a putting green atop the leach field west of the Main House, and a tee box on the upper terrace, southwest of the living room, but no physical evidence of these remain. (Refer to historic photos # H04, H06 and H15-33)

An in-ground, kidney shaped fishpond is located immediately to the southwest of the Greenhouse. It is lined with a modern single-ply EPDM pond liner, held in place with native stone rubble and pieces of flagstone around 3/4 of its perimeter. There are two small sections of built-up 2x4 cedar deck spanning the southwest corner of the pond as bridges. (Refer to photo # GH033)

Three ornamental, precast concrete garden benches are placed outside the south entrance to the Gallery. They are fabricated with the bench tops separate from the legs, and measure 1'-8" wide x 4'-8" long. (Refer to photos # G001 and G002)

Condition: Fair to good. Non-native turf grasses around the main house are badly worn and show signs of the irrigation system no longer being operational. Native grasses appear to be doing much better, including growing in and healing the areas of site disturbance for the underground electrical and the original ranch road mentioned previously.
The majority of native trees and shrubs on the property appear healthy, although there are a number of dead trees and dead limbs on otherwise healthy trees. Some of the non-native trees are showing signs of drought shock due to the loss of irrigation, and may not survive. Certain areas of the property are overgrown with a particular species of trees or shrubs, such as the Gambel Oak around the Barn/Stable and lilacs north of the Guest House/Greenhouse/Foundry. The Gambel Oaks north of the Barn/Stable are almost 90% dead, and the lilacs are so densely overgrown that access to the walls of the building is very difficult.

Invasive, non-native species, such as New Mexican Locust, have become established in several areas of the property, particularly north of the Guest House.

The fishpond has become filled with dirt and weeds. A lot of the rock lining the pond edges has fallen into the pond, and there are several places where the EPDM liner has been torn.

The ornamental benches are in fair condition, but are inappropriate for the historical and architectural period of the Heller buildings.

**Recommendations:** This HSA report will provide general comments concerning our observations of the landscaping. We recommend that a qualified arborist inventory the entire landscape and provide UCCS with a recommendation report on what trees, shrubs and other species should be retained on the site, and to what extent non-native species should be removed. Any dead trees should be cut and removed from the site, and their trunks and roots grubbed out. Dead branches should be carefully pruned. Overgrown clusters of trees and shrubs, such as the Gambel Oak near the Barn and the lilacs near the Guest House, should be thinned and pruned to enhance the health of these plants.

The non-native, invasive species of plants should be eradicated from the property to prevent the eventual crowding out of native species.

Trees and shrubs that are located immediately adjacent to the foundations of the Main and Guest Houses will require removal to implement the excavation, inspection, evaluation and structural repair or modification of these foundations, as recommended in Section 3.2 of this report.

New landscape plantings designed as a part of the restoration and rehabilitation of the property should be indigenous, native materials, except for the small, formal garden areas developed by the Hellers. Restoration of these formal garden areas of the site in and around the houses is recommended. This is discussed in more detail in the master plan document created as a part of the site master planning process occurring simultaneously with this HSA. The pond outside of the Greenhouse should also be cleaned and restored to operational condition, with a new EPDM liner installed.

Additional discussion is needed to determine whether areas of irrigated turf grass should be reintroduced, or more environmentally sustainable solutions should be pursued, such as organic gardening.

Any new landscaping introduced to the site should protect the existing view sheds on and off of the property, particularly to Eagle Rock to the north and the Pikes Peak/Garden of the Gods area to the west.

**Accessory Structures**
A small masonry pump house structure was constructed over the well, at a date that is unknown. It is built of 8” x 8” x 16” exposed and unpainted concrete block masonry with a flat roof built of 2x6 exposed wood rafters, sheathed with plywood and roofed with rolled asphalt roofing. Fascias are 1x12 painted wood with 1/2” painted plywood soffits and 1” drip flashings along the roof overhangs. The floor is an unfinished concrete slab over a brick masonry foundation (where exposed to view on the exterior). The single door is 2’-6” wide x 5’-8” high wood door, built of plank-type construction in a 2x wood buck frame and 1x1 stops, with a surface-mounted pull handle and padlock hasp on the exterior face. (Refer to photos # PH001-004 and PH009)

The interior of the pump house is unfinished. All equipment has been removed, except for a well expansion tank, a submersible pump, a raised pump stand, a pressure control switch and some miscellaneous unions and valves. Pieces of a variety of irrigation piping remains around the pump house, including both rigid galvanized metal and coiled plastic pipe. (Refer to photos # PH005-008)

A large trash roll-off is on site, but no trash enclosure structure of any kind exists.

**Condition:** Poor. The pump house is in fair structural condition, but the roofing has blown off over approximately 50% of the area and is badly deteriorated. There are several holes completely penetrating the sheathing, allowing moisture in through the roof. (Refer to photo # PH003)

The interior of the unfinished pump house is in fair condition, but is cluttered with debris. A large shrub has grown up in front of the door and limits access into the pump house. The irrigation piping that is visible in the building is badly rusted, and the equipment also had signs of rust.

**Recommendations:** The roofing and plywood roof sheathing should be removed and replaced with new plywood roof sheathing and a new single-ply roof membrane. The door should be replaced with a new wood door in kind, including new hardware. The shrub should be removed from in front of the door and the interior should be cleaned up, removing all debris.

The galvanized piping, well tank, submersible pump and other equipment should be replaced if the well is to be returned to service for irrigating the property.

A new trash and recyclables enclosure should be constructed to serve the Heller Center, built of natural materials in style compatible with the restored historic buildings.

**Signage**

There is no signage on the site, except for a small painted sign at the entrance drive reading "HELLER CENTER".
3.2 Foundations

Perimeter Foundation Drainage

No evidence of an underground perimeter foundation drain is present around any of the earth-sheltered buildings, and due to the age and construction of the original buildings, it is doubtful that a foundation perimeter drain was constructed. The site surface generally slopes from north to south and southeast with no natural or manmade improvements to prevent or discourage the presence of moisture next to the buildings. Water runoff from above the structures drains directly toward the building foundations, without swales, concrete aprons, splash pans or sufficient backfill slope to prevent moisture next to the foundations. The surrounding grounds appear to have landscape irrigation for shrubs and plantings, but are not currently operable. It appears that the turf grass lawn areas surrounding the structures were minimally irrigated.

Main House

The grade drops approximately 12” to 20” from the north elevation to the south elevation. The highest backfill elevation exists at the mudroom along the north side of the house. The resulting slope keeps runoff from ponding adjacent to the foundation; however, it appears to continually erode the soil and backfill next to the foundation. The entrances have small concrete slabs at the doors and no large plantings exist adjacent to the building.

The over-framed hipped roof has no gutters and runoff drains directly off the roof adjacent to the foundation, with no concrete splashblocks or downspouts to carry water away. Prior to the placement of the hipped roof over-framing, the flat roof would have drained via clay scuppers that cantilevered from the house.

Condition: Poor.

Recommendations: To improve drainage and to prevent further erosion and exposure of the foundation, the grade around the building should be improved. The grading should allow runoff from the roof and adjacent backfill to slope away a sufficient distance to prevent moisture build up next to the structure. Native grasses should be planted to stabilize the new slope and to prevent soil buildup and backsplash against the stucco or stone masonry/concrete foundation. Also refer to Section 3.1 of this report.

Guest House/Greenhouse/Foundry

The Guest House was built into the adjacent slope with an approximate elevation change of 2-1/2’ from the north elevation to the south elevation. Runoff from the north elevation must drain to the east side of the structure. Significant debris, including tree branches, leaves and scrap building material, hold excessive moisture next to the foundation preventing sufficient drainage away from the foundation.

The Greenhouse was also built into the natural slope of the terrain. It appears that moisture collects on the north elevation being held near the foundation with minimal slope to deter the presence of runoff. The over-framed hipped roof on the Foundry has no gutters and runoff drains directly off the roof adjacent to the foundation, with no concrete splashblocks to direct runoff away from the foundation. Prior to the placement of the hipped roof over-framing, the flat roof would have drained via clay scuppers that cantilevered from the building on the north elevation.
Historic Structure Assessment

**Condition:** Poor.

**Recommendations:** To improve drainage and to minimize the presence of moisture next to the structure, the slope of the grade around the building should be improved. Debris should be removed from around the structure to prevent damming of any runoff. Native grasses should be planted to stabilize the new slope.

Regrading around the Greenhouse and Foundry should allow runoff from the roof and adjacent slope to drain away from the structure without build-up or ponding. Native grasses should be planted to stabilize the new slope and to prevent soil build-up and backsplash against the building structure or stucco.

**Gallery**

The Gallery was also built into the slope with only the south elevation completely exposed and the east elevation partially exposed. Again, no significant grading was completed to divert runoff away from the building foundation. Runoff flows from the adjacent slope to the north face of the structure and then to the east and west elevations. A slight slope around the building seems to prevent ponding, but signs of erosion and debris build-up are present due to the lack of proper drainage. Along the east side of the building the slope is steeper to provide for the door opening, thus significant erosion has occurred, placing even more runoff next to the building foundation. On the west elevation the slope is much more gradual and, as a result, soil and debris have built-up next to the building’s walls.

**Condition:** Poor.

**Recommendations:** Regrading should be performed to allow runoff from the roof and adjacent slope to properly drain away from the structure without ponding or erosion. Native grasses should be planted to stabilize the new slope and to prevent soil buildup and backsplash against the building or siding.

**Barn/ Stable**

The Barn structure was built on a more gentle slope; however, some of the same conditions with soil build-up and debris have occurred due to improper drainage and backfill conditions. Soil build-up along the north elevation has rotted out vertical wood siding and a piece of corrugated metal siding has been placed up against the wall to prevent additional soil and runoff from infiltrating the structure. Tree branches and other debris are also piled up against the west elevation trapping moisture and preventing runoff from properly draining away for the structure.

**Condition:** Poor.

**Recommendations:** To improve drainage and to minimize the presence of moisture next to the structure, the slope of the grade around the barn should be improved. The grade should prevent runoff from depositing debris and soil near the already moisture-sensitive wood structure. Native grasses should be planted to stabilize the new slope.
Foundation Systems

The following structural observations are made without the benefit of selective demolition or excavation adjacent to the foundations to expose concealed structural conditions.

Main House

The Main House appears to have been built over time, with sections utilizing different types of materials and construction techniques throughout the house. The house has a basement under the main living room on the southwest corner, constructed of rough stone rubble masonry. These stones vary in size and range from 3” in diameter to stone sections that are over 14” long and up to 14” tall. The thickness of the wall varies and could not be verified at each location, however appears to be between 12” to 14” thick at the head of the wall, with the foundations averaging 4” to 6” thicker than the walls above. Two crawlspaces exist at each corner on the south elevation of the basement; the extensions following the two “build-outs” from the living room above. (Refer to photos # MH028, MH029, MH031, MH141-148 and MH150)

The balance of the house appears to have been built on a shallow cast-in-place concrete foundation, with a combination of concrete and concrete block masonry stem walls. In some areas along the exterior and interior elevations, the bottom of the footing is exposed. The depth of the foundations could not be verified at each location; however, some footings appear to be less than 24” below the original grade.

Condition: Fair to poor. Generally the stone foundation of the original central structure and basement appear to be sound. No large cracks or loose material was observed. The foundation structure does show localized signs of settlement on the southwest corner of the stone foundation. Reasons for this could include soil movement, or insufficient frost depth due to the partial wall height at this corner of the basement.

The condition of the structure supported by the shallow foundations, however, is in poorer condition. Current building codes normally require the depth of foundations in this area to be a minimum of 30’ to prevent frost damage and the resulting cycles of settlement and heaving. As noted above, many of the observed foundations are shallower than this minimum.

Cracking in the exterior masonry walls generally indicate signs of foundation problems. Large cracks in the masonry are present on the north wall of the central bedroom (next to the kitchen) and the master bedroom. It appears that movement in the foundation between the east bedroom and kitchen has caused the masonry below the large bedroom window to shift or crack. In addition, significant movement in the north elevation foundation of the master bedroom has caused large diagonal cracks around the corners of the structure and around a now-infilled window at the master bedroom closet. In the remainder of the house, the concrete and concrete block masonry foundations are generally in good shape and show minimal signs of spalling or deterioration.

Recommendations: Settlement or movement in the foundations could have occurred after construction if the house was built in stages and the foundations were not properly reinforced, or due to the lack of adequate depth and frost protection. In either case, further investigation is recommended to expose the foundations in these areas to determine the exact cause of the problem, including the stone foundation at the southwest corner crawlspace areas below the living room and the concrete foundation walls along the north elevation.

Foundation replacement or structural modifications may then be required once the extent of
damage is known, including structural reinforcement of the concrete masonry walls and repointing of the joints to keep moisture out of the walls.

In addition, if the proper foundation frost depth protection for the shallow foundations cannot be achieved, an insulated or “shallow foundation” design should be considered to insulate the exterior load bearing walls and protect the structure from the intermittent cycles of heaving and settlement.

Prior to backfilling of the new or repaired/reconstructed foundations, the below-grade portions of the earth-sheltered building walls should be coated with a waterproofing membrane to prevent future moisture penetration.

**Guest House/Greenhouse/Foundry**

The foundations for the Guest House are not exposed and could not be viewed. It is believed that the original construction consisted of rammed earthen walls above and below grade, with no apparent transition to a different construction below grade. However, at the additions where the walls are constructed of concrete masonry, it is likely the foundation is a combination of concrete and concrete masonry (CMU) construction.

The foundation for the Greenhouse and Foundry appears to have been built from concrete masonry blocks that presumably bear on a continuous concrete footing.

**Condition:** Fair to poor. A large diagonal crack in the concrete block masonry exists at the east elevation in the addition to the Guest House, likely due to movement in the foundation; however, the exact cause of the crack is not known and further investigation is recommended.

The foundations of the Greenhouse and Foundry do not show any signs of settlement or deterioration.

**Recommendations:** Further investigation is recommended to expose the foundations in these areas to determine the exact cause of the problem, including the foundations along the east elevation.

Foundation replacement or structural modifications may then be required once the extent of damage is known, including structural reinforcement of the concrete masonry walls and repointing of the joints to keep moisture out of the walls.

Prior to backfilling of the new or repaired/reconstructed foundations, the below-grade portions of the earth-sheltered building walls should be coated with a waterproofing membrane to prevent future moisture penetration.

**Gallery**

Concrete cast-in-place foundation walls form the retaining and gravity-resisting structure for this building. The walls are 8” thick and presumably bear on concrete footings.

**Condition:** Good. The concrete walls show no sign of cracking or settlement.

**Recommendations:** While this building does not exhibit the deterioration from water penetration through the walls as the Main and Guest Houses, it would be prudent to consider applying the same waterproofing membrane to the walls at the time the excavation is done to improve the drainage around the building. This will be more limited
than the for the two houses, since the excavation does not need to extend to the footings of the Gallery to investigate structural issues.

**Barn/Stable**

There are no apparent foundations supporting the wood pole construction of the Barn.

**Condition:** Not applicable.

**Recommendations:** None for its current use.

**Backfill**

Refer to Section 3.1, Grading and Drainage, above. Current geotechnical standards generally specify a minimum of 6" slopes away from the building within the first 10’ of grade adjacent to the foundations. Regrading would be necessary to improve the drainage away from the foundations while protecting the lower portions of stone masonry, concrete block masonry, siding and stucco materials adjacent to the ground.

**Condition:** Poor.

**Recommendations:** Regrading of the adjacent backfill should be completed to meet geotechnical requirements/recommendations. Underground drainage should be considered in order to prevent moisture and water infiltration.

### 3.3 Building Structural System

The following structural observations are made without the benefit of selective demolition or excavation adjacent to the foundations to expose concealed structural conditions.

**Main House**

All of the structures on the Heller Property were hand-built by Larry Heller. At least one historic photograph shows the building under construction. (Refer to historic photos # H01)

The Main House is constructed of unreinforced concrete or cinder masonry blocks. A combination of built-up wood and solid log headers provide structural support for the roof framing above the windows and doors. The original exposed flat roof framing is constructed of peeled wood logs and tongue-and-groove wood decking, but varies slightly from room to room in size and type of materials, the direction of the framing, and bearing elevations and the resultant slope of the structure. Brick masonry is also used throughout the house and can be found at infill wall locations along the foundation perimeter, the upper half of the interior load bearing basement wall and to form the chimneys.

As described in Section 2.1, Construction History, the house was constructed in phases, which is evident in the structure by the use of different materials and construction techniques between rooms and different parts of the building. While conventional construction techniques have been followed, the overall construction is makeshift and likely occurred due to the materials and labor available to the homeowner at the time of construction.

The concrete or cinder block masonry walls appear to be unreinforced due to the crack patterns in the walls and around openings due to the localized foundation settlement discussed
previously. (Refer to photos # MH011-014) The walls vary in height and thickness due to the Pueblo Revival style of architecture, structural requirements, and plumbing systems; however, it is believed that 8” x 8” x 16” concrete masonry units have been used throughout the home.

The first floor framing over the basement consists of heavy timber construction with logs up to 10” in diameter, spaced approximately 24” to 30” o. c. A concrete topping placed over this floor construction has settled or crept with the wood over time. (Refer to photo # MH080)

The floors of most of the remainder of the house are constructed of 2x8 joists at approximately 16” o.c. with 1x6 tongue-and-groove wood sheathing. The central bedroom adjacent to the kitchen has an additional layer of 1x finished Fir floor sheathing. Concrete slab-on-grade construction exists at the kitchen, the north mudroom and at the large central dining room directly to the south. (Refer to photos # MH108 and MH109)

The original roof structure is typically constructed of peeled pole logs ranging from 6” in diameter over the kitchen nook, spaced at approximately 24” inches o. c., to 12” in diameter at 36” o. c. in the living room. The logs are sheathed with 1” tongue-and-groove wood decking. The exposed sheathing varies in finish and width between different rooms: in the kitchen and bedrooms, the sheathing is 3” wide with a rough sawn appearance, and in the dining room it is 6” wide with a smooth finish. It could not be determined if an additional layer of sheathing was placed over the tongue-and-groove decking to provide another substrate for the original flat roofing material. (Refer to photos # MH063, MH064, MH066 and MH081)

In the living room, a stucco finish using steel lath and concrete mortar has been placed over the bottom of the sheathing. It could not be determined what type of sheathing was used in this area; however, it is likely that tongue-and-groove sheathing was used here as well. (Refer to photo # MH082)

Gabled and hipped wood roof over-framing has been placed over the living room and parts of the building that are stepped up the slope from the living room, including the kitchen and the east bedroom. The gabled roof construction has rafters with collar ties, bearing on a framed knee wall at the interior bearing line to transition between different original parapet heights. It appears that minimal structural changes were made to the original flat roof framing when this over-framing was installed. (Refer to photos # S05, MH001, MH003-014, and MH151-154)

Condition: Fair to poor. Much of the floor construction, including sheathing and joists, has been cut out or severely damaged as a result of the asbestos removal project completed in anticipation of demolition. (Refer to photos # MH063, MH069, MH097, MH108, MH109, MH111, MH112, MH119, MH130 and MH139)

Moisture damage is evident throughout the house, and roof leaks were likely the reason that the Hellers added the sloped roof framing over certain sections of the original flat roofs. Generally, maintaining old built-up asphalatic flat roof membranes presented problems, and over time many flat roofs were covered over with sloped roofs. Structural damage does not appear to have occurred due to the water penetration. (Refer to photos # MH108, MH132 and MH136)

Cracks in the stucco and masonry walls are described above in Section 3.2, Foundations, of this report.

The timber framing below the living room appears to be capable of carrying the concrete topping and collateral loads; however, the concrete thickness could not be determined, and therefore the overall structural capacity of the timber construction could not be verified. A
thorough investigation should be completed to determine if the timber framing has been overloaded and requires repair. (Refer to photos # MH079-084)

**Recommendations:** Sections of wood floor framing that have been cut and removed will need to be reconstructed to infill the missing sections. The concrete topping over the living room will need to be removed to correct any structural problems in the timber framing and to determine if a new flat concrete topping can be placed over the existing structure without further reinforcing of the timber structure.

At the time of this report, it is assumed that the over-framed gable and hipped roof structures will be removed to restore the Main House to its original appearance. Adequate physical and photographic documentation exists to guide this restoration. It is likely that some structural repairs or modifications will need to be made to the original parapet walls and the flat roof structure when these roofs are removed.

Cracked concrete block masonry walls should be repaired once the cause of foundation settlement is determined and corrected, as recommended in Section 3.2.

**Guest House/Greenhouse/Foundry**

The original portion of the Guest House is constructed of rammed earth. The battered walls vary in thickness from the base of the wall to the roof, but average 12” thick. The walls flare out at the base, and the stucco surfaces are more uneven and modulating than in the later Main House, indicative of the more random, uneven structural backup wall material. Log headers were placed as headers, with 8” rammed earth walls built above the openings. Additions have been constructed on the east and north sides of the original house, built of 8” concrete masonry construction. These walls are assumed to be unreinforced, due to signs of movement and cracking patterns that are evident. The entire house was constructed with a concrete slab-on-grade floor. (Refer to photos # S06, GH007, GH009-011 and GH030)

Similar to the Main House, the flat roof framing varies from room to room, including the size and type of materials, the direction of the framing, and bearing elevations and the resultant slope of the structure. The roof structure is typically constructed of peeled pole logs ranging from 4” in diameter in the kitchen at 20” o. c. to logs up to 8” in diameter at 30” o. c. over the living room addition. The logs are sheathed with 1x5 beveled tongue-and-groove wood decking in the original rammed earth structure, and 1x8 tongue-and-groove wood decking in the living room addition. It could not be determined if an additional layer of sheathing was placed over the tongue-and-groove sheathing to provide another substrate for the original flat roofing material. (Refer to photos # GH079-082, GH085, GH094-098, GH100 and GH101)

The Greenhouse structure is framed from simple wood framing and concrete block masonry walls. A built-up wood ridge member spans the entire length of the Greenhouse with 2” square wood roof purlins at 16” o. c. supporting the translucent panels and plywood sheathing. The lateral load and earth-retaining structure of the Greenhouse is provided by concrete masonry blocks that are built up at the corners of the Greenhouse and along the north elevation. The north concrete block masonry wall also forms the south wall of the attached Foundry. (Refer to photos # GH001, GH002, GH008, GH014, GH015, GH017, GH019-021 and GH065)
The Foundry is constructed with 8" x 8" x 16" masonry blocks on all four sides with an overhead garage door on the east elevation. The roof is framed with 6" diameter peeled pole logs at 30" o.c., spanning north to south, covered by 1" plywood roof sheathing. Over-framed wood trusses now support a new hipped roof over the existing framing, similar to the modifications made to sections of the Main House. (Refer to photos # GH075-078)

**Condition**: Fair to poor. Overall the original rammed earth structure of the Guest House appears to be in good condition, with minimal cracking over windows and doors. The concrete block masonry walls are in poorer condition, where movement in the foundation has caused significant cracking, including a large diagonal crack on the east elevation. The concrete slab-on-grade floor in the east addition also exhibits severe cracking and displacement, with cracks up to 3/4" wide and adjacent edges of the concrete measuring up to 3/4" out of plane. (Refer to photos # GH094-099)

Moisture penetration has led to the considerable deterioration of this building. Water damage is seen currently on the southeast elevation of the structure where water and mold is present over the walls and wood beams. In addition, the header over the exterior kitchen door shows significant signs of water and mold damage. The walls have brown water stains and the roof sheathing is covered in mold. Further damage will continue to the structure if this problem is not corrected immediately. (Refer to photos # GH100-102 and GH105)

The Greenhouse structure is very light and would not typically support the same snow loads expected on the roof of the adjacent Guest House construction; however, this is consistent with most greenhouse structures. Since the Greenhouse is typically heated in the winter (when occupied) with minimal insulation, the heat loss through the glazed roof panels keeps snow from building up on the structure. These light wood framing members are, however, severely weathered. (Refer to photos # GH014 and GH015)

**Recommendations**: Cracked concrete block masonry walls should be repaired once the cause of foundation settlement is determined and corrected, as recommended in Section 3.2. The masonry joints should be repaired and remedial reinforcing added as required. The concrete slab-on-grade floor within the east addition should be removed and replaced, with any needed stabilization or compaction of the subgrade completed prior to pouring the new floor.

The roof structure of the east addition should be repaired to eliminate any moisture penetration problems, in conjunction with the new roofing membrane recommended in Section 3.5 of this report. The existing wood log framing and decking should be cleaned, inspected and repaired to remove any weakened or deteriorated structural member.

The missing glazed roof and wall panels of the Greenhouse should be replaced in order to prevent continued damage to the existing structure. If the building is not going to be heated in the winter months, the structure will need to be reinforced to carry the snow loads.

Again, it is assumed that the over-framed hipped roof structure over the Foundry will be removed to restore the building to its original appearance. It is likely that some structural repairs or modifications will need to be made to the original parapet walls and the flat roof structure when this roof is removed.

**Gallery**

The flat roofed and gabled Gallery is structurally framed with a combination of wood and steel. The 8" concrete foundation walls support both the lateral soil pressure imposed on the earth-sheltered construction and the gravity loads from the lower flat roof. Four interior peeled pole
wood columns, up to 12” in diameter, support the raised, gabled clerestory. The columns appear to have been recycled from telephone posts. Welded steel tube frames form bents to support the wood and steel plate ridge beam that spans east to west across the length of the clerestory. 4” x 6” wood purlins at 30’ o.c. support the wood roof sheathing. (Refer to photos # G007 and G014)

**Condition:** Good. The roof structure appears to be in good condition with no signs of deterioration or damage.

**Recommendations:** None.

**Barn/Stable**

The Barn can best be described as conventional “pole” barn construction. Vertical log posts, embedded into the ground, support the roof structure with horizontal wind girts framing between the vertical posts. The main roof structure consists of 2x8 wood rafters at 16” o.c. covered with corrugated metal roofing. Horizontal 2x8 wind girts are spaced at 36” o.c., providing support for the exterior sheathing and intermediate wall framing. The exterior walls are framed with horizontal 2x6s at the top, perimeter roof edge and bottom, and 4x4 or 4” diameter poles at two intermediate points of the walls. Exterior wall sheathing consists of 1x8 wood siding on the south and east elevations and 1x4 tongue-and-groove siding on the north and west elevations. Lateral support is provided by both the exterior sheathing and the embedded poles, cantilevered from the ground. (Refer to photos # B017-023)

**Condition:** Fair. The building is structurally sound for its historical use as an agricultural outbuilding. Typically, these types of buildings are not constructed to meet the same structural loading requirements as are buildings for human occupation.

Due to the grading problems discussed in Section 3.1 of this report, much of the sheathing along the bottom of the walls has water damage or has rotted away and is now missing.

**Recommendations:** Minor repairs should be made to damaged or deteriorated members.

### 3.4 Building Envelope - Exterior Walls

**Main House**

The circa 1936 Main House was originally constructed in a Pueblo Revival style of stuccoed walls, flat roofs, exposed timber headers and projecting wood vigas, mimicking the style of the earlier Guest House. All exterior walls are constructed of stucco over unreinforced, load-bearing concrete block or cinder masonry over stone rubble, brick masonry or concrete foundations. The walls of the Main House are not battered as they are in the original Guest House. The raised parapet walls that remain have flat stucco cap surfaces over the concrete block masonry. (Refer to historic photos # H01 and H02, and photos # MH001-014) As described in earlier sections of this report, the house was constructed in several stages, with varying construction materials, details and quality of construction evident in each. The reasons for some details, like the clearly distinguishable toothing of the concrete block masonry walls on the east and west walls of the living room, is unknown. (Refer to historic photos # H01, H02, H04, H06 and H29, and photos # MH030, MH081 and MH096)

Exposed hewn heavy timber members are used for headers over all of the original window
and door openings, except in the basement. These headers are approximately 5-1/2" high and typically bear 7" into the masonry walls at each end. Some of these headers are clearly recycled fence posts or similar materials, exhibiting numerous strap marks, nail holes and other evidence of a prior use. The basement windows are framed into the stone rubble foundation walls, supported by unfinished steel angle lintels. (Refer to photos # MH035-040 and MH043)

The exposed wood vigas are wood poles, some cut flush with the wall surface and some projecting out a few inches. Most are unfinished, but several have been painted over in white to match the stucco. (Refer to photos # MH007, MH009, MH013, MH020, MH026 and MH053) Historic photographs of the building circa 1937 clearly show that the vigas originally projected from the walls by up to 3′, but all have now been cut back significantly. (Refer to historic photos # H01, H02, H04, H06, H17 and H19) Later photographs show that the vigas had been cut back early in the history of the house. (Refer to historic photos # H12 and H25)

Four original chimneys remain, two grouped together on the east side of the living room, one on the west wall of the master bedroom, and one on the north wall of the east bedroom. All are brick masonry construction, partially covered in stucco, and all are lined with clay flues. The central and east chimneys are capped by cement concrete washes, with the clay flue extending above the brick on only one of them. All of these chimney flues are not capped and remain open to the elements. The west chimney has been capped by 2" thick concrete masonry “soap” units. (Refer to photos # MH004, MH007, MH013, MH047, MH050, MH054-057, MH059 and MH060)

Several original exterior porches or porticos have been enclosed with wood framed glazed walls and sliding aluminum doors. These enclosures are constructed of stick-framed wood with painted 3/4” x 4-1/2” vertical and 3/4” x 3-1/4” horizontal wood trims over painted plywood kick panels. Window panels have painted 3/4” x 5-1/2” wood header trims and 2x wood sills. (Refer to photos # MH001, MH018, MH088, MH090, MH129, MH166 and MH167)

As described above in Section 3.3, sections of the original flat roof have been over-framed with gabled and hipped wood roof structures, as well as areas of the original flat roofs extended over the original parapet walls with eaves, fascias and soffits. The gabled ends are sheathed in unfinished plywood sheets, with 14” x 20” rectangular sheet metal louvered vents. A 21” wide x 49” high plywood attic access panel exists in the large east-facing gable end, hung on three strap hinges and secured with a gate or cabinet lock. (Refer to photos # MH001-014, MH047 and MH061)

Condition: Fair to poor. The stuccoed masonry walls exhibit varying degrees of structural movement and deterioration, based on the concrete block masonry being unreinforced and the substandard frost protection depths of the majority of the foundations. Severe cracking is evident at window and door openings and other points of natural weakness in the walls, generally running diagonally from these openings. (Refer to photos # MH009, MH011-014, MH019-021, MH025, MH026 and MH035)

Poor roof drainage has contributed to the severe deterioration of some of the walls and parapets, with water stains running down the face of the stucco. The original raised and stepped parapet walls, as shown in the historic photographs of circa 1937, have been cut down or otherwise modified by the construction of the flat roof extensions. (Refer to historic photos # H01-09)

The majority of the wood infill framing at the porch and portico enclosures is weathered
but remain structurally intact. The design, materials, details and quality of construction are inferior to the original materials and character of the house.

**Recommendations:** The masonry walls should be repaired, after investigation and stabilization of the foundations as recommended in Sections 3.2 and 3.3. Sections of damaged stucco will need to be removed to expose the underlying masonry in order to properly repair and repoint the joints. Then the stucco will need to be replaced with appropriate metal lath, fiberglass reinforcing mesh or other bonding materials.

The stucco on the tops of the exposed parapets should be removed and replaced to provide adequate slope on the top surface of the walls. This remedial work is preferable to capping the walls with a metal parapet cap flashing, which might adversely affect the architectural character of the house.

If the historic preservation treatment is to restore the exterior of the house to its appearance during its period of significance, the enclosed porches and porticoes should be reopened, removing the wood enclosures and repairing any damaged stucco where attachments had been made. If it is decided that the enclosures should remain, the wood kickboard panels, trim, corner board trims and casings should be scraped, sanded, prepped and repainted. Loose nails should be driven tight and missing nails replaced. Deteriorated wood trim boards should be replaced where the deterioration has progressed beyond repair, predominantly along the base of the walls above the foundations.

Likewise, the extensions of the flat roofs, with their fascias and soffits, should be removed and the raised stucco parapets repaired or reconstructed.

Consideration should be given to restoration of the altered wood vigas and other original details, guided by the significant historic photographic documentation. These could be reintroduced by removing all pieces of deteriorated wood poles, drilling dowels into the existing, original members and adding new poles with epoxy to the dowels.

If the existing fireplaces are not to be used, the existing chimneys should be capped to prevent the entrance of water and wildlife.

**Guest House/Greenhouse/Foundry**

The construction of the original portion of the circa 1935 Guest House predated the Main House by one or two years, and established the architectural style, character and construction details for the buildings that would follow. It was originally constructed in a Pueblo Revival style of stuccoed walls, flat roofs, exposed timber headers and projecting wood vigas. The exterior walls of the original Guest House are constructed of stucco over slightly-battened, unreinforced rammed earth, extending below grade as the foundation construction, as described in Section 3.1. The walls of the attached chimney are also battered, with sinuous curved stucco surfaces accenting the architecture of the original construction. The raised parapet walls that remain have flat stucco cap surfaces. The addition to the east and north sides was constructed with concrete or cinder block masonry walls over shallow concrete foundations, similar to the Main House. (Refer to photos # GH001, GH002, GH006, GH007 and GH009-011)

As described in earlier sections of this report, the house was constructed in several stages, with varying construction materials, details and quality of construction evident in each. In areas where there is stucco damage, the composition of the stucco can be observed. It appears to be a two-coat system, with a finish coat over a layer of fiber mesh reinforcing
over a brown or scratch coat. (Refer to photos # GH013 and GH102)

Exposed heavy timber poles are used for headers over all of the original window and door openings. These headers are approximately 5-1/2" high and typically bear 7" into the masonry walls at each end, except at the overhead door into the Foundry, where the hewn timber header extends 12" into the concrete block masonry on each end.

The exposed vigas are wood poles, some cut flush with the wall surface and some projecting a few inches, similar to the Main House. The vigas on the south elevation of the original house have not been painted. (Refer to photos # GH007, GH010 and GH011)

Three original chimneys remain, one on the south side of the original house, one in the northeast corner of the living room and one on the northwest corner of the Foundry. All are brick masonry construction covered in stucco and all are lined with clay flues. The Foundry chimney is cantilevered from the north wall. The chimneys are capped by cement concrete washes, with the clay flue extending above the brick on only one of them. The chimneys are not capped and remain open to the elements. (Refer to photos # S06 and GH001, GH006, GH007, GH009, GH013, GH031, GH055, GH061 and GH066) The original south chimney of the Guest House has a cast iron ash clean out door, stamped “Majestic”. (Refer to photo # GH026)

The original exterior porch or portico on the southeast side of the Guest House addition has been enclosed with wood framed glazed walls and sliding aluminum doors, matching the Main House. These enclosures are constructed of stick-framed wood with painted 3/4" x 4-1/2" vertical and 3/4" x 3-1/4" horizontal wood trims over painted plywood kick panels. Window panels have painted 3/4" x 5-1/2" wood header trims and 2x wood sills. (Refer to photos # GH011, GH023 and GH103)

As described above in Section 3.3, the original flat roof of the Foundry has been overframed with a hipped wood roof structure. (Refer to photos # S06 and GH004)

The glazed walls and roof of the Greenhouse are described and assessed in Section 3.5 below. The exterior walls of the Greenhouse below the light wood frame glazed walls are constructed of 8" x 8" x 16" concrete block masonry as a retaining wall, not finished with stucco as are the other exterior walls. Concrete block piers rise from the retaining wall to support a steel angle and the light wood lattice structure above. A low retaining wall curves out from the easternmost pier to enclose a small, raised planting area in front of the Greenhouse, terminating near the fishpond described in Section 3.1. The low wall is constructed of stucco over cast-in-place concrete with a flat top. (Refer to photos # GH002, GH008, GH014, GH017-021, GH033 and GH034)

**Condition:** Fair to poor. Overgrown and invasive shrubs make it difficult to access, photograph and assess all areas of the north and west walls of this building. However, the stuccoed masonry walls exhibit varying degrees of structural movement and deterioration, based on the concrete block masonry being unreinforced and the substandard frost protection depths of the majority of the foundations. Severe cracking is evident at window and door openings and other points of natural weakness in the walls, generally running diagonally from these openings. (Refer to photos # GH013, GH027, GH030, GH042, GH045 and GH050)

Notably, the exterior walls of the original rammed earth structure are in better condition, with stucco cracks primarily running between the wood vigas. (Refer to photos # GH007, GH009 and GH025)
Poor roof drainage has contributed to the severe deterioration of some of the walls and parapets, with water stains running down the face of the stucco, and particularly around the chimney at the Foundry, where pieces of stucco have fallen away and exposed the brick structure beneath. Parts of the original raised and stepped parapet walls have been cut down or modified, similar to the Main House. Where they remain intact, the horizontal stucco surfaces are badly deteriorated. (Refer to photo # GH024)

The majority of the wood infill framing at the porch and portico enclosures is weathered but remain structurally intact. The design, materials, details and quality of construction are inferior to the original materials and character of the house.

The curved concrete retaining wall has several large cracks that have developed to relieve pressure from behind the wall. Some of these cracks are diagonal, but some are perfectly vertical. The top surface of the wall was constructed dead flat, causing deterioration of the stucco from the collection of rain and snow. There does not appear to be any waterproofing or drainage construction behind the wall. (Refer to photo # GH034)

Recommendations: The masonry walls should be repaired, after investigation and stabilization of the foundations as recommended in Sections 3.2 and 3.3. Sections of damaged stucco will need to be removed to expose the underlying masonry in order to properly repair and repoint the joints. Then the stucco will need to be replaced with appropriate metal lath, fiberglass reinforcing mesh or other bonding materials.

The stucco on the tops of the exposed parapets should be removed and replaced to provide adequate slope on the top surface of the walls. This remedial work is preferable to capping the walls with a metal parapet cap flashing, which might adversely affect the architectural character of the house.

If the historic preservation treatment is to restore the exterior of the house to its appearance during its period of significance, the enclosed porch or portico should be reopened, removing the wood enclosures and repairing any damaged stucco where attachments had been made. If it is decided that the enclosures should remain, the wood kickboard panels, trim, corner board trims and casings should be scraped, sanded, prepped and repainted. Loose nails should be driven tight and missing nails replaced. Deteriorated wood trim boards should be replaced where the deterioration has progressed beyond repair, predominantly along the base of the walls above the foundations.

Likewise, the extensions of the flat roofs, with their fascias and soffits, should be removed and the raised stucco parapets repaired or reconstructed.

Shrubs and landscaping materials should be removed from behind the concrete retaining wall at the Greenhouse, and the backfill excavated to expose the rear side of the wall. Waterproofing materials should be installed and the area then backfilled and compacted. Consideration should be given to installing some form of drainage tile behind the wall to remove excess water in the future. The cracks in the stucco should be repaired and the top of the wall reformed to provide positive drainage off of the top.

If the existing fireplaces are not to be used, the existing chimneys should be capped to prevent the entrance of water and wildlife.

Gallery
The exterior walls of the Gallery are cast-in-place concrete which enclose a single room space. The walls act as retaining walls on the earth-sheltered north, west and part of the east sides of the building. The exposed parts of all four facades have been clad in 4’ wide sheets of painted hardboard siding, in a reverse board and batten pattern and rough sawn texture. Panel edges are trimmed with 3/4” x 3-1/2” painted hardboard corner trims and window/door casings. Joints in the corner trims and casings are simple butt joints. (Refer to photos # G001-006)

**Condition**: Good to fair. The hardboard siding extends below grade on the rear, north side of the building, but it could not be determined how far. This may not have been originally built in this condition, but the siding should be terminated a minimum of 6” above the soil. (Refer to photos # G003 and G006)

The exterior sills on the two south windows are framed flat, without adequate slope for drainage. While the joints of some window and door casings have loosened and opened up slightly, the balance of the hardboard siding and trims appear to be in good condition.

**Recommendations**: The north elevation should be excavated to expose the extent to which the siding extends below the existing grade, then the grade or siding should be modified as needed to maintain the minimum 6” separation.

The exterior window sills should be reframed to provide positive drainage.

**Barn/Stable**

The Barn/Stable is a conventional pole structure, as described in Section 3.3, with four corner posts of peeled pole logs and light wood frame wall construction. The poles are 8” to 10” in diameter, with one square hewn 5-1/2” post at the midpoint of each of the walls. The walls are framed with 2x6s, as described in Section 3.3, and sheathed in a variety of materials. The south and east walls are sheathed in vertical 1x8 wood plank siding, butting to a horizontal 1x6 header trim at the roof. The north and west walls are sheathed in vertical 1x4 wood planks, with the west wall further covered with galvanized, corrugated metal. There are no battens covering the joints in the plank siding, and no corner or base trims. (Refer to photos # B001-012)

**Condition**: Fair. Both the exterior and interior of the Barn are exposed to the elements, since there is no door on the large, south-facing opening. The lack of battens makes the walls only semi-weatherproof, with light coming through the vertical joints between siding boards. The plane of the siding also exhibits considerable lack of plumbness, where the siding waves and bows along the length of the wall. This is not uncommon in this type of agricultural construction.

The exterior wood siding is not finished, and exhibits considerable weathering and deterioration, with the more severe conditions along the bottom of the walls where it has been exposed to splash back from rain and snow draining off of the roof, and exposure to horses. The siding has cracked and split in many locations, with the lower sections of the south, east and north walls showing the most extreme damage. Here many boards are broken or missing, possibly kicked out by horses. The grade has also washed out or been scraped out by animals, leaving a 12” deep hole at the northeast corner of the building. (Refer to photos # B006 and B011-016)

There is considerable debris behind the Barn/Stable: wheelbarrows, rusted barrels, scraps of lumber, corrugated metal siding and bales of hay. (Refer to photo # B012)
Recommendations: No immediate repairs or replacement of exterior materials are required or warranted at this time for the historical use of the building. However, UCCS has indicated that the Barn may be converted for use as a maintenance and storage building for the Heller Center property. If this adaptive reuse is pursued, new siding, roofing, insulation, doors, windows and other materials may be required to make the building weatherproof and suitable for this use.

The debris should be cleaned up from around and behind the building.

3.5 Building Envelope - Roofing and Waterproofing

Main House

The original roof of the Main House drains with the structure, sloping with the peeled pole log framing joists, to the roof edges. The current roofing material is a traditional asphaltic built-up roof with lava rock ballast. The roof edges are lined with unfinished galvanized gravel stop flashings, with the runoff collected along the eaves in continuous unfinished galvanized sheet metal gutters. There are no downspouts or splashblocks, with water running out of the open ends of the gutters. (Refer to photos # MH047-053, MH056-058 and MH061) Historic photographs of the building from the period before 1955 show a number of clay pipe scuppers that drained the various flat-roofed areas. These have now been cut and removed, or possibly covered and enclosed within the later wood framed roof construction.

As described earlier, some sections of the original flat roofs have been covered with newer gabled and hipped wood roof structures, now roofed only with lapped roofing felts. These felts overlap the rake ends of the gables and are nailed in place with no fascia. This roofing appears to be a rudimentary attempt to protect the wood structures, exposed when more conventional asphalt shingles and roofing felts were removed as part of the asbestos abatement project. The eave ends have a 1x wood fascia board. (Refer to photos # MH047-059 and MH061)

As described in Section 3.4 above, the existing overhanging flat roof eave extensions are not original to the house. Overhanging soffits on the newer over-framed gabled and hipped roofs on the original house are 16’ wide and constructed of 1x8 tongue-and-groove wood plank, with beveled edges and an intermediate v-groove. One section of overhanging soffit on the north elevation and another on the 48” deep southeast corner are constructed of plywood. (Refer to photos # MH010-015 and MH018-020)

Condition: Fair to poor. The original flat roof areas are in fair condition, with some evidence of ponded water. While the gravel stop flashings here do not create the same ponded water conditions as seen at the Gallery, there are no cut-outs or scuppers to direct water through the flashings, and no interior roof drains. The lack of downspouts also contributes to the poor drainage away from the house’s foundations.

The rolled roofing materials on the hipped roofs are in very poor condition, with whole sections torn and loose, and many areas missing completely. The exposed plywood roof sheathing is heavily weathered due to this exposure. The exposed 1x wood fascias are also severely deteriorated, with some sections broken or rotted.

Soffits and fascias are in fair to poor condition. Most are intact, but have varying degrees
of deterioration due to weather exposure and the lack of maintenance. What stained finish there was has now bleached away, leaving the wood exposed to the weather. There is no soffit ventilation. (Refer to photos # MH022-026)

**Recommendations:** At the time of this report, it is assumed that the over-framed gable and hipped roof structures will be removed to restore the Main House to its original appearance. Adequate physical and photographic documentation exists to guide this restoration. The original flat roof materials should be removed down to the original wood decking, and a new single-ply roof membrane roof system installed over new rigid board roof insulation to enhance the energy efficiency of the house. Tapered insulation should be used to create crickets around obstructions, and to generally direct water to the roof edge. The galvanized gravel stop flashing should be modified or replaced to permit proper drainage of water off of the roofs.

Consideration should be given to restoration of the missing clay pipe scuppers and other original details, guided by the significant historic photographic documentation. If not, then downspouts or other means to direct roof water away from the foundations will be required.

Deteriorated wood fascias, soffits and other trims will not need to be repaired or replaced, assuming the over-framed roof structures, with their boxed soffits and fascias, are removed. The original raised parapet walls should then be repaired or reconstructed.

The exposed chimney flues should be flashed and capped, or if no longer required, filled with sand or other material to prevent continued infiltration of moisture, dirt and debris.

**Guest House/Greenhouse/Foundry**

The roof of the original Guest House is identical to the Main House in type and materials. It drains with the structure, sloping with the peeled pole log joists to the roof edges. The current roofing material is a traditional asphaltic built-up roof with lava rock ballast. The roof edges are lined with unfinished galvanized gravel stop flashings in two pieces, overlapping each other with exposed surface nail heads. Parts of this assembly have drip flashings, and others do not. The roof appears to drain to the north, but there are no breaks or cutouts in the flashings to allow for the water to get off of the roof. There are no gutters, downspouts or splashblocks. (Refer to photos # GH055-068)

The alcove extending south from the original house is drained by a broken clay pipe scupper projecting through the parapet wall. The small west alcove has been reroofed in a modern, white single-ply TPO membrane, with metal termination bars at the raised stucco parapet walls, and is drained by a galvanized pipe protruding through the wall. (Refer to photos # GH011, GH025 and GH066)
As described earlier, the original flat roof of the Foundry building has been covered with a newer hipped wood roof structure, now roofed only with lapped roofing felts. These felts overlap the rake ends of the gables and are nailed in place with no fascia. Like the Main House, this roofing appears to be a rudimentary attempt to protect the wood structures, exposed when more conventional asphalt shingles and roofing felts were removed as part of the asbestos abatement project. The eave ends have a 1x wood fascia board. (Refer to photo # GH057)

As described in Section 3.4 above, the existing overhanging flat roof eave extensions are not original to the house. These overhanging soffits on the original Guest House and Foundry are 16” wide. These are constructed of plywood, which appear to have originally been stained. Fascias are simple 1x6 painted wood, with butt joints. (Refer to photos # GH024, GH027, GH029, GH031, GH032, GH067 and GH068)

The glazed south and west walls and the sloped southern roof of the Greenhouse are framed in very light 2x2 wood lattice at 16” o.c. The sloped northern section of the roof from the ridge down to the Foundry roof is sheathed in plywood, with sections left out for operable ventilation units. The southern eave of the sloped roof frames into a continuous 2” x 3” steel angle spanning between the concrete block pilasters. The wood lattice members are attached to the flat 2” side of the angle on the sloped roof, and the interior of the angle on the vertical wall. The light wood lattice is reinforced with continuous galvanized strap steel reinforcing members spanning horizontally at approximately 2/3 of the span up from the base of the wall. This member is supported by a series of galvanized pipe posts and angles that support the entire structure.

Most of the glazing is now missing, removed by UCCS as a safety concern, but a small amount of the original fiberglass glazing remains at the top of the south-facing slope of the roof. Some putty remains on the exterior faces of the lattice, indicating that the structure was glazed to the exterior. (Refer to photos # GH008, GH014-021, GH057-059, GH065 and GH069-071)

The gable end of the Greenhouse on the east end has been framed on top of the original flat roof of the Guest House. Exposed 2x wood gable end framing sits atop four 2x pressure-treated sill plates, with the wall sheathed on the exterior with unfinished waferboard. The wall is not insulated or finished on the interior side. The fascia, soffit and galvanized flashing of the original flat roof of the Guest House remain intact and exposed in this area. (Refer to photos # GH064 and GH070)

The ventilators in the Greenhouse roof are two symmetrically placed panels of three lites each, operated by pulleys connected to a rigid pipe system attached to the hinged panels. A chain operator hangs from the pulleys at the east end of the Greenhouse, now disconnected, that would have manually opened and closed the two operable roof panels. (Refer to photos # GH070, GH114 and GH115)

**Condition:** Fair to poor. The original flat roof areas are in fair condition, with some evidence of ponded water. While the gravel stop flashings here do not create the same ponded water conditions as seen at the Gallery, there are no cutouts or scuppers to direct water through the flashings, and no interior roof drains. The lack of downspouts also contributes to the poor drainage away from the house’s foundations.

The rolled roofing materials on the hipped roof are in very poor condition, with whole sections torn and loose, and many areas missing completely. The exposed plywood roof sheathing is heavily weathered due to this exposure. The exposed 1x wood fascias are also
severely deteriorated, with some sections broken or rotted. (Refer to photos # GH031 and GH032)

Soffits and fascias are in fair to poor condition. Most are intact, but have varying degrees of deterioration due to weather exposure and the lack of maintenance. What stained finish there was has now bleached away, leaving the wood exposed to the weather. There is no soffit ventilation.

The light wood lattice framing of the Greenhouse, while substantially intact, is heavily weathered. As mentioned above, most of the original fiberglass glazing is now missing, and what little remains is cracked, broken or severely deteriorated. The original manually operated ventilation system is not operational. (Refer to photos # GH044, GH047 and GH048)

Recommendations: At the time of this report, it is assumed that the over-framed gable and hipped roof structure at the Foundry will be removed to restore the building to its original appearance. Adequate physical and photographic documentation exists to guide this restoration. The original flat roof materials should be removed down to the original wood decking, and a new single-ply roof membrane roof system installed over new rigid board roof insulation to enhance the energy efficiency of the house. Tapered insulation should be used to create crickets around obstructions, and to generally direct water to the roof edge. The galvanized gravel stop flashing should be modified or replaced to permit proper drainage of water off of the roofs.

Most of the deteriorated wood fascias, soffits and other trims will not need to be repaired or replaced, assuming the over-framed roof structures, with their boxed soffits and fascias, are removed. Some miscellaneous fascias and trims within the Greenhouse will be retained, and therefore, should be repaired or replaced in-kind. The original raised parapet walls of the original portions of the Guest House and Foundry should then be repaired or reconstructed.

The exposed chimney flues should be flashed and capped, or if no longer required, filled with sand or other material to prevent continued infiltration of moisture, dirt and debris.

The master plan recommends that the Greenhouse be restored as a functional, operating botanical greenhouse. In light of this, the structural framing members should be repaired or replaced, and reinforced as recommended in Section 3.3, and new structural plastic or fiberglass panels be installed in the roof and walls of the structure, using remnants of the original glazing as a guide. The original ridge ventilators should be refurbished and restored to operational condition.

Gallery

The roof of the Gallery drains with the structure, sloping from the raised central clerestory to the roof edges on the perimeter. The roofing material is the same traditional asphaltic built-up roof with lava rock ballast as found on the Main House. The roof edges are lined with unfinished galvanized gravel stop flashings. There are no gutters or downspouts, with water merely spilling over the edge of the flashings. (Refer to photos # G003-006) The raised clerestory is roofed in traditional 3-tab asphalt or fiberglass shingles.
Fascias are constructed of 1x painted wood, plus a 1x2 wood trim applied at the rake ends of the gabled clerestory. The roof edge is terminated at the fascias with a 5’ high painted sheet metal gravel stop. The transition from the window frames of the raised clerestory are flashed to the built-up roof with unfinished galvanized sheet metal counterflashings. The eaves and rake ends of the gabled clerestory do not have metal drip flashings or gutters.

Overhanging soffits on the flat roofed areas of the building are 12” wide and constructed of painted hardboard with a rough-sawn texture and 8” score pattern. The hardboard soffit panels are mitered at the external corners and trimmed at the vertical walls with a 3/4” x 1-1/2” painted wood trim. The soffits at the raised clerestory are also 12” wide, but constructed of painted plywood. Neither type of soffit is vented, and there is no roof ventilation of any kind.

**Condition:** Fair to poor. The original flat roof areas are in fair condition, with some evidence of ponded water. The profile of the galvanized metal gravel stops is such that water must pond to the approx. 1” height of the flashing lip before it can overflow. There are no cut-outs or scuppers to direct water through the flashings, and no interior roof drains.

The shingle roofing on the raised clerestory is in fair condition, and replacement is not warranted at this time.

Soffits and fascias are also in fair condition. The hardboard soffits have split and opened up at some of the seams, and have sagged in several locations. The wood fascias have cupped and the joints have opened up in several locations.

**Recommendations:** The original flat roof materials should be removed down to the original wood decking, and a new single-ply roof membrane roof system installed over new rigid board roof insulation to enhance the energy efficiency of the building. Tapered insulation should be used to create crickets around obstructions, and to generally direct water to the roof edge, if necessary. The galvanized gravel stop flashing should be modified or replaced to permit proper drainage of water off of the roof.

Deteriorated fascias, soffits and other trims should be repaired or replaced with in-kind materials and repainted.

**Barn/Stable**

The Barn/Stable is roofed in unfinished galvanized, agricultural-style corrugated metal roofing, with exposed fasteners. There are no edge flashings, gutters or downspouts. (Refer to photos #B001-006, B010, B012, B014 and B016)

**Condition:** Fair to poor. The original metal roof is in fair condition, but many of the exposed screws have worked themselves out or are missing. The roofing panels have gaps and open seams in several locations, allowing light and moisture to penetrate the interior of the building.

**Recommendations:** If the building is to continue to be used for its current purpose, the existing metal roofing may suffice for the next several years. Some roofing panels should be replaced, and missing screws should be replaced and others reattached.

If the University wants to convert the Barn into more of a storage use, the roofing should
be replaced with a new galvanized, corrugated metal roofing with a profile to match the existing, installed over new roof sheathing and roofing felts.

3.6 **Windows and Doors**

**Main House Windows**

The primary, original window type in the Main House is multi-paned, painted steel sash, with single pane 1/4” clear glass puttied in place on the exterior of the sash. Some units are full outswinging, casement style windows, and some are partial casements with fixed sections on the sides and tops of the operable units. Two single windows on the east and north facades are 6-lite, 2 over 3 with two smaller 4-lite, 2 over 2 windows in the north wall of the kitchen and bathroom, now both opening onto the enclosed mud room. Another 4-lite operable window is located on the south facade of the east bedroom. Two 2-lite, 1 over 2 fixed units are located in the east wall of the dining room, and in the south wall of the southwest alcove projecting from the living room. (Refer to photos # MH001, MH004, MH006, MH010, MH016, MH037, MH038, MH100, MH108, MH164, MH165, MH168-170 and MH172)

A large 24-lite steel sash window exists in the north wall of the kitchen eating area, composed of a pair of 6-lite, 2 over 3 outswinging casements flanked by two 6-lite, 2 over 3 fixed sidelite units. An identical 24-lite steel sash window has been installed in the north wall of the mud room enclosure. It is unlikely that this window is original to the mud room construction, since all other windows in these 1960s enclosures are simpler, single pane fixed lites, and may have been relocated from another part of the house when this remodeling was undertaken. One larger 30-lite window is on the north facade of the central bedroom/study, built up of a pair of 8-lite, 2 over 4 casements surrounded by fixed transom and side lites. (Refer to photos # MH008, MH009, MH012, MH035, MH036, MH041, MH097 and MH118)

The basement contains two windows, one on the east facade and one on the west, opening into window wells constructed of brick and stone rubble masonry. Both windows are original 3-lite horizontal steel sash inward-tilting hoppers. The eastern window originally opened to the exterior, but now opens into the enclosed porch. (Refer to photos # MH029, MH068 and MH148)

These original steel sash windows retain their original hardware, including pivot hinges at the top and bottom of each outswinging sash and crank operators, believed to have been designed and forged by Larry Heller. Interior screens have been removed from most of the windows. (Refer to photos # MH044, MH045, MH171-173 and MH179-184)

One large original window in the west wall of the living room has been removed and the opening fitted with a non-original single sheet of clear glass in an aluminum frame. An original window in the north wall of the master bedroom has been removed and the opening infilled. (Refer to photos # MH019, MH079 and MH131)

Fixed sidelite units of the newer porch enclosures are discussed with the sliding aluminum doors below. The original door and window openings remain within the house, including the exposed wood headers. The original opening in the south wall of the dining room is supported by a 7” deep x 6-1/2” wide built-up wood beam, consisting of four 2x members lagged together. The original opening in the south wall of the living room is now cased with rough-sawn wood jambs and header trims and a formed concrete sill. (Refer to
Neither the windows nor doors have interior casing trims. The windows feature rounded plaster returns at the jambs and the doors have rounded plaster returns to the wood door frames. While most window sills are plastered, some are lined with brick. The rough-sawn wood timber headers are exposed on the interior as well as the exterior. (Refer to photos # MH170-174)

**Condition:** Good to fair. The original steel sash windows are in good condition, but it could not be determined whether they all remain operational. The large, single pane window in the west wall of the living room, while not original, is in fair condition. Many of the panes of glass in the steel sashes have been broken. Window putty is generally in poor condition.

Other original windows, typical of those shown in the historical photographs, were removed when the porch and portico enclosures were constructed. The general wall openings remain, but the stucco has been touched up where the frames were removed. (Refer to historic photos # H02, H04, H05 and H25)

**Recommendations:** All original steel sash windows and hardware should be retained, repaired where necessary to make them operational, then scraped, prepped and repainted. Replacement interior screens should be installed on all of the operable units, using the remaining original screens as a template. Broken or missing glass panes should be replaced, and the balance of the windows reputtyed.

If the porch and portico enclosures are removed, the original window openings should be fitted with new replica steel sash windows, using historical photographs to guide the design and sash configurations, and the remaining original windows for dimensions of sash and frame components, hardware and general fabrication details.

Similarly, the non-original single pane window in the west elevation of the living room should be replaced with a new replica steel sash window.

Consideration should be given to reopening the original window in the north wall of the master bedroom, using the existing main level windows in the rear facade as a guide.

**Main House Exterior Doors**

Only one door in the Main House appears to be original: a 3'-3" x 6'-8" high built-up slab door in the south facade of the east bedroom. This 2-panel, rail and stile door is clad on the exterior face with stained 5-1/4" wide, beveled wood planks. The door has 5-knuckle hinges with ball finials and a gate-type latch in a dark rust or bronze finish. A newer deadbolt has been installed in an aluminum finish. A modern aluminum storm door has been fitted to the exterior of this door frame, in a clear anodized finish. (Refer to photos # MH010, MH016 and MH185-188)

Most other original doors have been removed, both exterior and interior. The wood framed porch or portico enclosures have modern, residential quality aluminum sliding doors in a clear anodized aluminum finish. The primary sliding door into the dining room is 8'-0" wide x 6'-8" high, while the door in the south wall of the master bedroom is 6'-0" wide x 6'-8" high. Both of these doors have sliding screens mounted to the exterior of the doors. The fixed sidelites and transoms in these enclosures are single panes of 1/4" clear glass, installed in site-built, 3/4" x 1" wood stops on both the interior and exterior. The single
door in the rear mud room is a non-original, 8'-11" x 6'-2" high hollow core door with a rough-sawn wood veneer, fitted with residential quality Kwikset hardware in an antique brass finish. (Refer to photos # MH001, MH008, MH018, MH064, MH082, MH088 and MH129)

Another original door frame, 3'-10" x 6'-8" high, remains in the eastern alcove on the south facade of the living room, but the door has been removed. The space now accesses the enclosed porch. (Refer to photo # MH090)

**Condition:** Good from an historic point of view, since the one original exterior door is in good condition, with many of its character-defining details and hardware intact. The aluminum sliding glass doors, while not original to the period of significance, are in good and operable condition. Sections of the fixed sidelites have been broken by vandalism, and are now covered by sheets of unpainted plywood. The hollow core door into the mud room, currently used as the primary locked entrance into the house, is in fair condition, but is a non-standard height which does not meet current building code requirements for head clearance.

Historic photograph # H01 clearly shows that the south openings of dining room were originally fitted with some type of swinging or tilting overhead garage doors. Other original doors, typical of those shown in the historic photographs, were removed when the porch and portico enclosures were constructed. The general wall openings remain, but the stucco has been touched up where the frames were removed. (Refer to historic photos # H01 and H25)

**Recommendations:** The one original exterior door should be retained, cleaned and the hardware adjusted for proper operation. This door can be used to guide the design and fabrication of new replacement doors, if adequate photographic documentation exists to verify that this style of door was used throughout the house. If not, then compatible wood doors in a style sympathetic to the interior should be installed.

If the porch and portico enclosures are removed and the spaces reopened to their original appearance, the missing wood doors should be replicated, using the one remaining original door and the historical photos as a guide to their general style and fabrication.

**Main House Interior Doors**

As described above, most of the original interior doors have now been removed. The door separating the two basement rooms is of the same construction and detailing, and has the same type of hardware, as the one remaining, original exterior door. This 2'-9" x 5'-6" high door has a brand on the wood planking: two diagonal lines forming a gable roof over a lower case script "H" in two strokes. (Refer to photo # MH146)

There is evidence in the remaining doorframes of the original doors, as well as where hinges and other hardware items existed. Doors to the small bathroom and closet opening off of the east bedroom, now both removed, were 2'-0" x 6'-0" high. Each doorframe has applied 1x2 wood stops and have nail holes where each door was hung with two hinges. Likewise, the original door opening into the kitchen from the dining room, measuring 2'-5" x 5'-9" high, has indications of two small screen door hinges and a latch, opening outward toward the dining room. This opening is framed now by only 2x4 wood bucks, with no evidence of a traditional door frame. A wood doorframe remains between the living room and the master bedroom, with hinge marks on the buck to the interior side but no hardware indications at all on the exterior side. Likewise, hinge and latch marks remain in the door frame between the central bedroom and the master bath/dressing area,
indicating that a door once existed in this location. (Refer to photo # MH109)

A 3’-7 1/2” wide x 5’-9” high sliding glass shower door remains between the master bedroom and the in-floor tub in the master bedroom. The pocket door into the master bathroom from the dressing area has a 2’-4” x 6’-7” high opening, using the same glass shower door panel as the sliding pocket door. (Refer to photos # MH121, MH122 and MH128)

**Condition:** Poor from an historic point of view, since few interior doors remain. The original interior basement door is in good condition, with the hardware intact and substantially operable, but it can’t be determined that this is necessarily indicative of the design and construction of the other missing interior doors.

While interior door frames remain that could be easily fitted with new wood doors to replicate the originals, many are of non-standard, non-code compliant heights and probably cannot be used if public access is required into some of these rooms. The original opening between the kitchen and dining room is unusually low, and there is evidence in the sequencing of construction (door bucks extending below the floor slab) that the kitchen floor may have been raised at some point.

**Recommendations:** Many of the original door openings will need to be enlarged to meet current building code requirements for height, at a minimum in any areas of the house that will be accessible to the public. These doors should be designed and fabricated in a style sympathetic to the historic character of the interior, but should not replicate the one existing original door in the basement, since it cannot be verified that this door is indicative of the style of the missing interior doors. The substandard door sizes into the small bathroom and closet off of the east bedroom can probably remain if they remain private in use.

**Guest House/Greenhouse/Foundry Windows**

The primary, original window type in the Guest House is also multi-paned windows, with single pane 1/4” clear glass, but with true divided lite wood frames and sashes. The projecting alcove on the south facade of the original Guest House contains three original windows, only one of which (on the south) is still intact. It is an outswinging 4-lite, 2 over 2 true divided lite wood window, with original cabinet-style locking hardware in an antique brass finish. The other two windows are assumed to have been the same, but only remnants remain to verify this assumption. The western window has been removed and the opening fitted with a single piece of clear glass, but the original latching hardware remains to indicate that the original window was an operable unit. This cannot be verified for the eastern window, since no hardware remains. All three of these windows were set in simple, exposed 2x wood buck frames, and all three have been covered over to the exterior with plywood for security. (Refer to photos # GH007, GH009, GH011, GH037, GH043, GH080, GH082, GH120 and GH121)

The north wall of the original Guest House contains a pair of 4-lite, 2 over 2 true divided lite wood outswinging casement windows. They match the construction of the other original windows with 1x interior wood stops and 2x exposed wood buck frames. These windows are no longer operable, having been covered to the exterior with a single piece of glass, held in place with 1x wood stops nailed into the original window frames. (Refer to photos # GH079, GH105 and GH118)

The original portion of the Guest House also contains two stained glass windows, originally in exterior walls. One measures 9” wide x 11-1/2” high and is located in the west wall of
the internal bathroom. The other is 19-1/2" wide x 25" high and is located in the north wall of the same room. Both are fixed in the stucco walls with simple 1x wood stops, and have the same exposed timber headers as the other windows. The pieces of stained glass in these windows are secured in lead caming, using the same glass types and colors as the interior bathroom door described below. (Refer to photos # GH086, GH119, GH122 and GH123)

The north wall of the Guest House contains one small 4-lite, 2 over 2 true divided lite wood, inswinging hopper window, hinged at the bottom with a throw bolt operator at the top. The window has been reglazed, now with one single piece of glass completely to the exterior of the original sash, fixed in place with 1x2 wood stops over a 2x wood buck. This retrofitted construction has left inadequate slope on the exterior wooden sill. (Refer to photos # GH096, GH127 and GH129) The north wall also contains a 3-panel fixed lite window, composed of three pieces of single clear glass in fixed built-up wood frames with wood stops to the exterior. (Refer to photos # GH040 and GH085)

The alcove in the southeast corner of the Guest House addition contains an original 4-lite, 2 over 2 true divided lite wood, inswinging awning window, hinged at the top with the same throw bolt operator at the base. (Refer to photos # GH100, GH101 and GH128)

The original window in the east wall of the Guest House addition has been removed and replaced with a modern pair of outswinging vinyl casement windows in an almond finish. They have modern crank operators and lever-type locking mechanisms at the meeting stile, and the window opening has been cased with simple painted 1x wood trims on the exterior. (Refer to photos # GH006, GH045, GH053, GH094 and GH095)

The north facade of the Foundry contains four symmetrically placed, fixed wood windows, 2 over 2 in true divided lites. The exposed wood header for these windows extends over the entire length of all four, creating a unique and very nice architectural detail. These windows are framed in simple, unfinished 2x wood bucks. (Refer to photos # GH050, GH075, GH078, GH117 and GH126)

Fixed sidelite units of the newer porch enclosures are discussed with the sliding aluminum doors below.

Neither the windows nor doors have interior casing trims. The windows feature rounded plaster returns at the jambs and the doors have rounded plaster returns to the wood door frames. Except for the rammed earth section of the Guest House, the rough-sawn wood timber or log headers are not exposed on the interior as they are on the exterior.

The east wall of the Greenhouse contains a 3-panel window that was originally on the exterior of the Guest House, matching the exterior window in the north facade described above. The window frames and stops were originally painted, but are now heavily weathered. (Refer to photos # GH085, GH087 and GH109)

Condition: Fair to poor. Some of the original wood windows are intact, but severely weathered and in poor condition. Other windows have been removed and the buck frames fitted with single sheets of clear glass with wood stops. Since many of the openings have been covered with plywood on the exterior, it could not be determined whether they all remain operational. Glass has been broken or is missing in many windowpanes. The westernmost lite in the interior 3-lite window is cracked. Window putty is generally in poor condition.
The exposed sills and jambs of the wood buck frames in the original Guest House windows are severely deteriorated, rotted out to a depth of 2" to 3" in several locations.

The lack of adequate flashings around some of the original windows has led to significant damage to the surrounding materials, particularly the stucco. There is evidence of considerable moisture penetration around the inswinging awning window in the Guest House addition alcove, with rust stains prevalent from the underlying metal lath of the stucco. The retrofitted configuration of the original north window, with no discernible slope on the modified sill, has led to severe deterioration of the stucco, with sections loose and crumbling to the touch. Similarly, the edges of the stucco around the north windows of the Foundry exhibit the same deterioration caused by the lack of adequate flashings. (Refer to photos # GH041, GH042 and GH050-052)

The vinyl windows in the east wall of the Guest House addition, while not original, are in good condition. One of the glass panes has been broken out and is now covered with unfinished waferboard on the exterior.

**Recommendations:** All original wood windows and hardware should be retained, repaired where necessary to make them operational, then scraped, prepped and repainted. Non-original pieces of fixed glass in wood stops should be removed and new operable wood windows installed, using the remaining original windows as the basis for their design and fabrication. Consideration should be given to installing new interior screens on the operable units, since air conditioning will not be added and the only ventilation will be by opening the windows. Broken or missing glass panes should be replaced, and the balance of the windows repotted.

The original stained glass windows should also be retained, and protected during any restoration or rehabilitation work.

Sections of severely deteriorated wood window bucks will require significant repair, if not replacement, before new windows can be installed.

The non-original vinyl windows should be removed and replaced with new operable wood windows, using the remaining original windows and historical documentation as the basis for the design.

If the porch and portico enclosures are removed, the original window openings should be fitted with new replica wood sash windows, using historical photographs to guide the design and sash configurations, and the remaining original windows for dimensions of sash and frame components, hardware and general fabrication details.

**Guest House/Greenhouse/Foundry Exterior Doors**

The original exterior front door in the Guest House is intact: a 2'-11" x 5'-11" high slab door, clad on the exterior and interior faces with stained 5-1/4" wide, beveled wood planks, sandwiched over a 1x rail and stile core for a total thickness of 2'-1/4". The door has a 9-1/2" square window, placed off center, that has been boarded over to the exterior. The glass have either been broken out or removed. The perimeter edges of the door are highlighted by a series of exposed oval-headed bolts, with square nuts over washers to the interior. The door has 5-knuckle hinges with ball finials, and a thumb-operated latch and pull handle on the exterior and gate-type latch to the interior in a dark rust or bronze finish. A surface-mounted deadbolt has been installed, as well as a modern threshold and weatherstripping. Parts of a modern aluminum screen door remain, including hinges, a
spring closer and part of the frame. (Refer to photos # GH009 and GH035)

The wood framed porch or portico enclosure has a modern, residential quality 6'-0" wide x 6'-8" high aluminum sliding door in a clear anodized aluminum finish. This door has a sliding screen mounted to the exterior of the doors. The fixed sidelites and transoms in this enclosure are single panes of 1/4" clear glass, installed in site-built, 3/4" x 1" wood stops on both the interior and exterior, all similar to the Main House construction. (Refer to photos # GH097 (through the French doors) and GH103)

The original south-facing entrance door to the Greenhouse has been removed and the opening covered with plywood to secure the building. What details are visible remain on the interior of the opening. Only 2x4 wood bucks with two 2x2 intermediate vertical members remain, with some remnants of glass to the exterior. Hinge marks are evident along the top rail, but it cannot be determined how the door operated.

A 2'-8" x 5'-4" high wood door with a 3/4 panel lite exits the rear of the Greenhouse, original to the construction of the Greenhouse addition. The window lite is 3 over 3 true divided lite, with single panes of clear glass held in place with wood stops on the interior and putty on the exterior. The door is hung on two original hinges with ball finials, and has a simple gate-type latch on the interior. A wood-framed screen door remains to the interior, but has been removed from its hinges. (Refer to photos # GH036 and GH109)

The Foundry contains a 9'-0" wide x 7'-0' high, 4-section, residential quality wood overhead garage door, with each section divided into two sections horizontally. The door is cased with simple 1x wood trims to the exterior over 2x wood jambs set into the walls. The door has typical operating hardware, including a standard turn crank operator and a pull handle at the base on the outside. The fiberboard door panels are unfinished on the interior, and are suspended by surface-mounted aluminum tracks with ball-bearing wheels and countersprings. The door is manually operated. (Refer to photos # GH012, GH064 and GH076)

Condition: Good to poor. The primary original exterior door is in good condition, with many of its character-defining details and hardware intact. The original door in the back wall of the Greenhouse is heavily weathered and in poor condition, with most of the putty missing at the glass lites.

The aluminum sliding glass doors, while not original to the period of significance, are in good and operable condition. Sections of the fixed sidelites have been broken by vandalism, and are now covered by sheets of unpainted plywood.

The other original doors were removed when the porch and portico enclosure was constructed. The general wall opening remains, but has been infilled with newer, non-original French doors.
The overhead garage door in the Foundry is in fair condition, but is weathered. The door is secured in place, and it could not be verified that it is in operable condition.

**Recommendations:** The one original exterior door should be retained, cleaned and the hardware adjusted for proper operation. This door can be used to guide the design and fabrication of new replacement doors, if adequate photographic documentation exists to verify that this style of door was used throughout the house.

If the porch and portico enclosures are removed and the spaces reopened to their original appearance, the missing wood doors should be replicated, using the one remaining original door and the historical photos as a guide to their general style and fabrication.

The plywood covering the original south door opening to the Greenhouse should be removed and a new door installed in this location, using what physical evidence remains to guide its design and fabrication.

**Guest House/Greenhouse/Foundry Interior Doors**

In contrast to the Main House, many of the original interior doors of the Guest House remain. The 1'-11" x 6'-4" high door connecting the original Guest House (now the kitchen) into the bathroom is constructed similarly to the main exterior entrance door, with beveled planks on both faces, but without the exposed bolts. This door has the same type of surface mounted deadbolt as the main door, suggesting that it may have also been an exterior door at some point, as well as the same 5-knuckle hinges with ball finials. (Refer to photos # GH107, GH110 and GH111) The door connecting this bathroom to the living room in the addition is 2'-6" x 5'-11" high, and is also of matching construction to the main entrance door, except that the beveled planking is only on the outside face, but does have the same oval headed bolts around the perimeter as the exterior door. The interior bathroom face exhibits the exposed rail and stile, diagonal crossbuck construction of these doors. This door has the same offset window as the main door, glazed with stained glass in an outer frame of lead came in the same colors as the two interior windows: white, a variegated lavender, purple and frosted clear in a leaf pattern. (Refer to photos # GH090 and GH106) The existence of this stained glass window suggests that the missing glass lite in the main exterior door was also stained glass, although this is conjecture and requires further investigation or documentation.

Doors leading into the bathroom containing the tub are of two types. The door connecting to the living room is a newer 2'-6" x 6'-8" high flat slab, Birch veneer door with a dark stained finish. It has three modern 5-knuckle Kwikset hinges and a round lockset knob in an antique brass finish. The 2'-6" x 6'-8" high door connecting the bathroom to the workroom is a 10-lite, 2 over 5 rail and stile wood door, also with a dark stained finish. It has two 5-knuckle hinges with ball finials and the same latching hardware as the main entrance door. (Refer to photo # GH088)

The opening between the living room and the enclosed porch or portico is closed with a pair of 2'-6" x 6'-6" high French doors, full true divided lite in a 3 over 5 pattern. While these doors may not be original, they are very old. The active leaf features a small knob on the exterior, a lever style handle on the interior and a skeleton key lock. The doors are hung with two 5-knuckle hinges with ball finials each. Both leaves have surface-mounted throw bolts at the head with chain pulls. (Refer to photos # GH097 and GH098)
The door connecting the workroom and the Greenhouse has been boarded over for security. It is a 2'-8" x 6'-2" high, flush solid-core wood door, with a residential Kwikset lockset in a polished brass finish and aluminum threshold. The wood door frame and 1x wood casings match those of the adjacent fixed windows. (Refer to photo # GH087)

The 2'-6" x 6'-8" high interior door connecting the Greenhouse and Foundry is an original 1-panel rail and stile painted wood door, with a simple flat plywood panel. The door is hung on two non-original gate-type strap hinges, and has a thumb latch pull on the exterior and a simple lever-style latch on the interior. Physical evidence remains to indicate that the door was originally hung on two more conventional, rectangular hinges. (Refer to photos # GH077, GH108 and GH112)

**Condition**: Good to fair. Many of the original interior doors are in good condition, with their original hardware intact and substantially operable. However, similar to the Main House, many are of non-standard, non-code compliant heights and probably cannot be used if public access is required into some of these rooms.

**Recommendations**: The original doors should be retained, if possible. Many of the original door openings may need to be enlarged to meet current building code requirements for height, at a minimum in any areas of the house that will be accessible to the public. But a case could be made that these doors are in private, non-public locations.

The original stained glass door lites and hardware should also be retained. Hardware should be cleaned and adjusted for proper operation.

**Gallery Windows**

The Gallery contains two symmetrically placed fixed windows on the south elevation at the floor level, and a series of fixed and one operable windows ringing the central, raised clerestory. The fixed windows are each single lites built into site-built wood frames. These windows are double glazed clear glass with 1/4” deep clear anodized aluminum spacer bars. (Refer to photos # G001 and G009)

Similarly, the clerestory windows are a series of fixed, single lite units in site-built wood frames. There are five rectangular lites of equal size on each of the north and south sides, and three trapezoidal lites each on the east and west gable ends. The one operable unit is fitted into the center gable unit on the east facade, and is a residential, primed wood outswinging awning window, manually operated. These windows are also double glazed clear glass with 1/4” deep clear anodized aluminum spacer bars. (Refer to photos # G002, G004 and G006-013)

The windows are cased on the interior with the same 3/4” x 3-1/2” hardboard trims as used on the exterior, painted to match the exterior.

**Condition**: Good. The existing windows are all in good condition. It could not be confirmed that the one awning window is operable, but it appears that it is.

**Recommendations**: None, unless additional operable windows for added ventilation is desired.
Gallery Exterior Doors

The Gallery is accessed from two original exterior front doors, symmetrically placed in the south and east building facades. The south door is an 8'-0" wide x 6'-8" high sliding glass door in a bronze anodized finish with clear glass. The east door is a pair of inswinging hollow metal full lite door leaves, 3'-5" x 7'-0" high each with 1-3/4" x 2-1/2" rails, glazed in frosted glass. These doors are hung on three heavy-duty commercial hinges in a chrome finish, but the lockset has been removed. Both doors have clear anodized aluminum thresholds. (Refer to photos # G007, G009, G015, G017 and G018)

Both doors are protected on the exterior with full height, swinging wrought iron or tubular steel gates. The south door has a pair of gates, hinged on the outer jambs and locked at a 1-1/2" square steel center post anchored to steel straps at the soffit and concrete stoop. These gates are fabricated with 3/4" x 3/4" tubular frame and 3/8" square steel bar decorative intermediate members in curvilinear forms, all painted black. The east gates are slightly heavier, using 1" x 1" tubular framing and 3/8" x 1/2" decorative steel bars in circular forms, also painted black.

Condition: Good to fair. The original doors are in good condition, although some of the locking hardware has been removed. The sliding glass doors are not permitted as a required exit by current building codes, but they probably are not required for exiting purposes. Likewise, the inswinging doors on the east are permitted as an approved exit up to an occupant load of 50. Above that number, the doors are required to swing in the direction of exit travel (outward).

Recommendations: The occupant load of the Gallery is estimated to be approximately 43, based on an assembly occupancy classification as a meeting or gathering space. If this is the case, the existing doors on the east will need to replaced with new outswinging doors, or the existing doors modified to convert them to outswinging. If new doors are used, they should be fabricated to replicate the existing original doors. If the existing doors can remain, they should be fitted with new locking hardware.

Gallery Interior Doors

There are no interior doors in the Gallery.

Barn/ Stable Windows

The Barn/ Stable contains only one window, a small sheet of plexiglass in the east wall of the tack room, framed with a simple unfinished 2x wood buck frame. (Refer to photo # B003)

Condition: Fair.

Recommendations: None, for its intended use.

Barn/ Stable Exterior Doors

There are no exterior doors in the Barn/ Stable. The interior of the Barn is accessed by a wide opening in the south exterior wall.
The Barn/Stable has two interior doors, a swinging horse stall gate and a sliding door that accesses the tack room. The stall gate is 3'-9" high x 7'-2" wide, constructed of 1x8 wood end stiles sandwiched around 1x8 horizontal boards as rails and a 1x8 diagonal cross buck member. It is hung on two agricultural type metal strap hinges, 1-1/2" wide x 12" long. (Refer to photos # B017, B018, B022 and B025)

The 4'-0" x 6'-6" high sliding tack room door is typical, rectangular buck-style construction, using a combination of 2x6 and 1x6 wood members. It is sheathed on the exterior face with the same beveled wood planking found on the original doors of the Main and Guest Houses. The door has a simple hook and eye type gate latch on the leading edge and a wood block handle attached to the inside door edge. The door hangs on a continuous barn type door rail that spans the opening. A residential shower curtain and rod have also been fitted over this door opening. (Refer to photo # B017, B018, B024 and B026)

Condition: Fair. The interior stall gate and tack room door are in operating condition.

Recommendations: None, for its intended use.

3.7 Interior Finishes

Main House

The interior of the Main House retains much of its original materials, details and historic fabric, although in damaged and deteriorated condition. Generally, the interior finishes are painted plaster or stucco walls, natural or stained concrete and/or wood plank floors and sloped, stained peeled pole log and wood deck ceilings, which reflect the original Pueblo style of the design and respond to the exterior architectural forms and materials of the house. Specific variations to these materials will be described on a room-by-room basis.

The dining room is set lower than the adjacent living room, kitchen and east bedroom, with an elevated hallway and bridge running along the north wall of the room connecting these other areas. (As described previously, the dining room was originally constructed as a garage, as shown in historic photo # H01) The vertical faces of this raised hallway and the east and west foundations are faced with the same brick and stone rubble foundations as described in Section 3.2 from the floor slab up to the level of the adjacent floor lines. The walls above this level are then painted plaster or stucco. The open side of the hallway was originally protected by an ornamental metal railing fabricated by Larry Heller, but has since been removed and stored by UCCS. The open side of the basement stair uses sections of clay chimney flue for a guardrail, set on end and filled with mortar. The concrete slab floor is unfinished, but there is “ghosted” evidence on the slab where 12” x 12” vinyl tiles were removed as part of the asbestos abatement project. There is no base, other than a single course of 6” x 6” quarry tile on the north wall of the raised hallway. The ceiling is stained, peeled pole rafters with 1x8 wood plank deck, without the V-grooves (Refer to photos # MH063-067, MH069, MH070 and MH072-078)

A “bridge” built up of unfinished wood plank flooring spans the basement stair, accessing the living room from the raised hallway. The small section of half wall on the eastern, open side is capped by a 2” thick, unfinished concrete cap. (Refer to photo # MH163) The railing protecting the rest of this opening has also been removed. The ceiling over the bridge is framed with 2x4s, laid flat, covered by 7-1/2” wide beveled wood deck. (Refer to photos # MH072, MH092 and MH104-107) Most of this ceiling construction is stained, except
for a 16" wide section along the east edge where the unfinished decking suggests that this was originally covered by some other material at the time the balance was stained. (Refer to photo # MH071)

The living room has the same finishes as the dining room, except that the ceiling decking has been covered by a newer coating of painted plaster over expanded metal mesh. The exposed concrete floor slab in the living room is actually a topping over 1x8 tongue-and-groove wood plank decking and log joists that span the basement rooms below. The topping has been scored with joints, and the outer perimeter sections are stained in a dark charcoal or black color. The concrete steps leading into the living room are finished in a variety of materials, including 6" x 6" quarry tile, brick pavers and flagstone. (Refer to photos # MH079-084, MH093 and MH094)

The living room contains a built-in masonry fireplace and chimney, finished with plaster in undulating curved forms similar to the exterior chimney of the Guest House. The fireplace is fronted with a single laid-in 7-1/2" square, hand painted ceramic tile, and has a 6" high raised hearth capped with flagstone. The fire box contains a steel pipe log rack. There is an ash clean out with metal door below the fireplace opening into the dining room. (Refer to photos # MH083 and MH085-087)

The kitchen also has similar finishes to the dining room, except that the north wall of the area where the sink, cabinets and appliances were is covered in a linoleum-type sheet covering in a 4" x 4" tile pattern capped with a 2" high black trim. This wall also has a base of 6" x 6" quarry tile, two courses high. There is evidence where a wall-hung kitchen sink used to exist. A section of wall cabinets remain on the east wall of the kitchen, constructed of wood plank with flush painted plywood doors and large wooden pulls. The concrete floor slab has been scored in the kitchen area to mimic flagstone, while in the eating area to the north the slab is monolithic and stained a red color. The ceiling area directly over the kitchen has been furred down and is now finished in 4' x 8' sheets of a similar linoleum-type product with a ceramic tile pattern. (Refer to photos # MH097-103)

The east bedroom is contained within an addition to the original house, and has remaining sections of a wood-framed floor around the perimeter, over a shallow crawlspace with trenches cut where the original steam piping ran under the floor. The flooring is 3/4" x 3-1/4" tongue-and-groove wood plank over 2x8 wood joists with no subflooring. The ceiling decking matches that found in the dining room, except with beveled joints. The ceiling in this room has been covered with polyethylene sheets. The east bedroom also contains an unadorned, plastered fireplace with a raised hearth faced with brick pavers. The fireplace has a simple bar flue handle, with evidence of a missing decorative cover plate where it pierces the chimney wall. (Refer to photos # MH108-112)

A small closet and bathroom open off of the east bedroom. The closet is lined on the south and west walls with unfinished, exposed concrete block masonry units, laid with mortar only in the bed joints (nothing in the head joints). The north wall is wood framed, with exposed plumbing piping for the adjacent bathroom notched into the framing and installed flush with the finish of the wall. The east wall of the bathroom is also a framed wall, and the ceiling is furred down with painted plywood. The room contains a wall-hung sink and tank toilet, both vitreous china, and a poured concrete shower base over the concrete floor slab. The shower stall has a suspended pipe shower curtain ring. A circa 1960s metal medicine cabinet with sliding, mirrored doors and an integral light bar is surface-mounted over the sink. (Refer to photos # MH113-117)

The central bedroom or study has the same light framed wood floor structure as the east
bedroom, also just some remaining sections along the perimeter of the room. Here the
tongue-and-groove plank flooring is overlaid with 1/4" fiberboard, with the "ghosted"
impressions of 10" x 10" vinyl tile, now removed. The peeled pole logs in the ceiling are
smaller in this room than throughout the balance of the house. The concrete floor has a
variety of material details, such as inlaid ceramic tile and flagstone, similar to the living
room. (Refer to photos # MH118-120)

The master bedroom also has the same light framed wood floor structure as the previously
described rooms, but while there are sections missing from the abatement project, more of
the floor structure remains intact. The adjacent dressing room has a concrete floor slab,
up one riser from the bedroom with a 6" x 6" quarry tile step. The base has been removed
in these rooms, exposing the base of the stucco walls. The intervening wall is constructed
of more modern exposed, integrally-colored concrete block masonry with bullnosed
corners, suggesting that this area was more recently remodeled. Parts of these walls are
also paneled in a newer, blond wood paneling. The ceiling over this wardrobe alcove is
furred down and finished with 9" x 9" wood tiles, including a recessed 12" x 12"
incandescent light fixture with a flat glass lens. A unique detail exists in the southeast
corner of this room, where a concrete ledge "floats" above the underlying framed wood
floor structure. (Refer to photos # MH127-140) The adjoining dressing area is finished in
the same blond wood paneling and wood tile ceiling as the adjacent part of the master
bedroom.

The master bedroom contains a built-in masonry fireplace and chimney, finished with
plaster in undulating curved forms similar to the other fireplaces in the house, but with a
unique corbelled firebox opening. The fireplace sits on a raised hearth faced with ashlar-
coursed ceramic tile. (Refer to photos # MH133 and MH134)

The master bathroom has a concrete slab floor with scored joints, using black and white
grout in the joints to mimic ceramic tile. The interior walls of the room are paneled in full
height, dark walnut paneling, including a wainscot behind the toilet. The ceiling has been
furred down and is finished with the same 4' x 8' sheets of paneling as found in the kitchen,
with aluminum trims at panel joints. The room contains a small built-in vanity with vitreous china sink (aqua green), a vitreous china tank toilet and an in-floor, cast iron tub
with shower riser. The vanity cabinet is built of wood face frames and flush doors in a dark
stain, plastic laminate countertops with no backsplash, and Medieval-styled hardware in a
wrought finish. There is evidence of a surface-mounted mirror and two sconce lights, all of
which are now missing. (Refer to photos # MH121-126)

UCCS has removed and stored many of the original interior features of the house fabricated
by Larry Heller, including metal guardrails and handrails, gates, light fixtures and kitchen
 cabinets. Other original built-in features remain, including a large three-section hardwood
storage cabinet along the north wall of the living room, crafted by Larry Heller in a
Colonial style. It has two chest type cabinets as bookends to a center sliding door storage
cabinet. (Refer to photos # MH079, MH083 and MH084)

The south wall of the central bedroom has a full height, built-in wardrobe and dresser,
constructed of stained pine in plank-type construction. Two asymmetrical vertical
wardrobe cabinets flank a dresser unit and framed mirror. The vertical wardrobes feature
open shelves above and a drawer at the floor, and the dresser has one drawer over an
enclosed cabinet. The wardrobe doors are hung on tin hinges with internal cabinet
latches. (Refer to photo # MH120) The master bedroom dressing area has a similar full-
height, built-in wardrobe and dressing table on the south wall, built of plank-type
construction faced with the same blond wood paneling as the rest of the room. Two
vertical wardrobe cabinets flank a dressing table, with a framed mirror and a recessed light fixture in a dropped soffit. The wardrobe closets are each paired, paneled doors over a single drawer at the floor. (Refer to photo # MH123) The north wall of the master bedroom also contains a built-in wardrobe closet of inferior construction, using mirrored paneling over plywood doors and contact paper lining the interior. (Refer to photo # MH128)

Several original radiators remain from the steam system, including one hung on the east wall of the dining room, the north wall of the kitchen, the north wall of the small bathroom, the west wall of the master bathroom and the north wall of the master bedroom. Sections of exposed steam piping and valves also remain. The radiator in the dining room was originally in two sections, but the northern section has been removed at some time. A custom section of radiator, fabricated by Larry Heller from black steel pipe, remains in the central bedroom, but is no longer connected. (Refer to photos # MH064, MH069, MH082, MH091, MH097, MH108, MH111, MH115, MH118 and MH131)

The interior also exhibits other original details, such as fired ceramic tiles that are inset into steps and other flooring surfaces throughout the house. (Refer to photo # MH105)

The basement is accessed by a winding stone rubble and concrete stair in the northwest corner of the dining room. There is no evidence that there was ever a door at the bottom of the stairs to close off the basement from the dining room above. The stair treads are formed with a concrete wash over the stone rubble. There are no handrails on this stair. The walls of the stairs and the two basement rooms are very rough, grotto-like stone and brick rubble. The floors are very uneven, but it does appear that a concrete floor slab exists throughout the basement. The east room contains two large utility sinks, one on metal-framed legs and the other built into a wood frame with sheet metal work above, as well as remnants of the old boiler piping. The location of the original boiler is evident in the east room. There are two sheet metal flues sleeved through the east foundation wall, probably providing ventilation or makeup air for the boiler. An abandoned water heater, a Maytag brand washing machine and a metal storage cabinet are also in the east room. The west room contains a variety of wooden built-in workbenches and shelving. (Refer to photos # MH065, MH072 and MH141-150)

The later porch and portico enclosures are finished with unpainted plywood on the walls and painted plywood on the ceilings. The exterior walls of the enclosed rear mud room are sheathed with unfinished gypsum wallboard and the plywood ceilings are unfinished. A 22" x 19" attic access panel into the newer hipped roof overframing is located in the mud room ceiling. (Refer to photos # MH067, MH088-090 and MH162)

**Condition:** Fair to poor. Generally, the original interior materials and finishes exhibit about the same level of deterioration related to use and weather exposure as the building’s exterior.

There are several areas of significant cracking of the interior plaster surfaces, transferring through from the underlying concrete block masonry structural walls, due to a combination of the unreinforced nature of the wall construction and the freeze/thaw action of the shallow foundations assessed in Sections 3.2 and 3.3. There is also significant cracking in the basement floor slabs.

Another significant area of concern is from moisture penetration and the resulting damage caused by roof leakage. There are numerous areas of damage to the plaster walls and wood poles and roof decking from the leaking roofs, including along the east wall of the...
dining room, with mold present, and the southeast corner of the master bedroom, where there is excessive peeling paint and deteriorated plaster or stucco. There has also been significant leakage along the north wall of the master bedroom, with evidence of mildew within the wardrobe closet. (Refer to photos # MH064, MH069, MH128 and MH136)

Moisture penetration is also evident along the interior of the earth-sheltered north wall of the house, with mold or mildew growth occurring along the wall from the floor, extending up approximately 16" to 18". It is unlikely that the exterior walls in these earth-sheltered conditions were properly waterproofed. The lack of adequate grading around the north wall of the house, as described in Section 3.1, continues to contribute to this problem.

The areas of wood plank flooring are in very poor condition, with large sections cut out and removed for the abatement of asbestos-wrapped piping below the floors in the east, central and master bedrooms.

The concrete topping in the living room has several large cracks in the center section of the floor, with areas where the topping feels loose as you walk over it. This condition may not represent a severe structural problem, but may be overstressing the timber framing, as discussed in Section 3.3. (Refer to photo # MH080)

Wood paneling and sheet ceiling materials in the master bathroom are all in poor condition. Similar materials in the adjacent bedroom and dressing area are in somewhat better condition. These materials were not removed during the field assessment to determine whether there is deterioration of the underlying plaster or wood deck materials.

The linoleum-type wall covering in the kitchen is not in good condition, and is broken, missing or peeling off in several areas. Similarly, there is evidence of missing floor base on the south wall of the kitchen where a large crack exists. (Refer to photos # MH098 and MH106)

Much of the original kitchen cabinetry, sink and appliances have been removed. Of the remaining upper wall cabinets that do remain, the plywood doors are missing from the two center sections. Likewise, the built-in dresser cabinet in the central bedroom is missing its vanity top. Generally, the construction of the built-in wood cabinets is not of high quality, with the exception of the living room cabinets, but they are probably original to the house and its additions.

The construction quality of the porch and portico enclosures is generally inferior to that of the original construction. It is assumed that these will be demolished as part of the proposed restoration and rehabilitation of the Main House.

**Recommendations**: The guiding principle to be used in the rehabilitation of the interiors is to retain the historic integrity of the original materials, details and historic fabric, while returning the warmth, beauty and charm of the Heller period.

Minor plaster cracks should be repaired and areas of more moisture damage replaced once the recommended structural investigation, necessary reconstruction or repairs, and roof repairs have been made. Larger cracks will require more extensive crack stabilization and preparation prior to repairs, possibly involving removal of sections of the plaster and overlaying of the underlying masonry joints with joint reinforcing. After repairs are completed, the entire interior should then be repainted.

The concrete topping in the living room should be removed and replaced, after further
structural investigation and reinforcement of the timber floor structure (if necessary), as described in Section 3.3.

The basement concrete floor slabs, while badly cracked, probably do not warrant replacement for their intended use.

Areas of wood paneling and dropped ceilings should be removed to verify the condition of the underlying plaster and wood deck materials. The program for these areas of the Main House may dictate that these rooms, particularly the master bathroom, not be retained in their current plan configuration or finishes.

Areas of the wood framed floor joists and plank wood flooring that have been cut and removed will require complete removal and reconstruction in kind.

Original built-in cabinetry and other features should be retained, and missing components replaced in kind, except possibly the master bathroom and adjacent dressing area, if the proposed program calls for this space to be used in a different way. Other built-in details, such as the ceramic tile inlaid into the walls and floors, should be retained and protected during any restoration or rehabilitation work. If possible, the porcelain steel gas range/oven and metal sink cabinet, now stored in the Guest House, should be refurbished and reinstalled in the rehabilitation of the kitchen.

Original railings, light fixtures and other accessories stored by UCCS should be cleaned, tested and reinstalled in their original locations.

**Guest House/Greenhouse/Foundry**

The interior of the Guest House also retains much of its original materials, details and historic fabric, although in damaged and deteriorated condition. Generally, the interior finishes are painted plaster or stucco walls, natural or painted concrete floor slabs and stained, sloped peeled pole log and wood deck ceilings, which reflect the original Pueblo style of the design and respond to the exterior architectural forms and materials of the house. The wood ceilings in the original portion of the Guest House are stained in two distinctly different colors: the logs are darker and the decking is lighter stain. Specific variations to these materials will be described on a room-by-room basis. Ceiling heights within the Guest House are substantially lower than in the Main House, ranging from 6'-10” to 8'-0” high.

Walls are thicker in the original portion of the Guest House, and the interior plaster or stucco surfaces more sweeping and undulating than in the Main House or the later additions to the Guest House. The concrete floor slabs are now primarily exposed, but show evidence of a variety of earlier floor finishes. Part of the floor was originally painted or stained red, similar to the kitchen of the Main House, then covered in vinyl tile. A "ghosted" pattern of the tile remains. An approx. 8 sq. ft. section of ceramic tile remains at the main south door, and some sheet vinyl flooring remains to the west at the kitchen cabinets. There is no base around the room, and no evidence that there ever was a base.

The original main room of the Guest House is now outfitted as a kitchen, although none of the current built-in cabinets or other features are original. Remnants of a cookstove flue remain into the original chimney on the south wall. Modern, residential quality modular cabinets line parts of the east and west walls, fabricated of wood face frames and overlay style veneered wood doors and drawer fronts in a blond birch finish. The cabinet doors are a combination of Colonial style arch-top, raised panel and rectangular raised panel doors,
with Colonial style metal hardware. The corner upper wall cabinet on the west wall had a glazed door panel, but the glass is now missing. Countertops are prefabricated post-formed countertops with integral 4” high backsplashes. The east section of cabinets contains a modern, 2-compartment Kohler cast iron kitchen sink in a white finish. The garbage disposal has been removed. A freestanding Whirlpool electric range and Whirlpool top-mount refrigerator/freezer stand along the west wall, with a water heater in the southeast corner of the room. A freestanding metal pantry cabinet with a label reading “Universal LF&C” stands along the wall. (Refer to photos # GH079-083)

The adjoining bathroom is small and currently contains only a modern pedestal sink and a tank toilet, both of vitreous china. Above the sink are a modern framed mirror and a 3-bulb vanity style, stained oak light fixture. The bathroom has the same sheet vinyl flooring as the kitchen, but in far better condition. There is also no base in this room. (Refer to photos # GH090 and GH091)

The connecting bathtub room has painted plaster walls around the shower/tub, except for the shower head wall that is finished with 6” x 6” ceramic tile with 2” x 6” decorative cap tile. The south wall appears to have been the exterior wall of the original Guest House, with the battered wall flared out at the base and the more uneven surface modulation. Vugas that once projected from this wall have been cut back to within 1” of the wall and the ends have been stained. The flooring is 6” x 8” ceramic tile, with inlaid decorative tiles in a diamond pattern, and the ceiling is furred down and finished in painted plywood. The room contains an enameled cast iron tub in an almond finish, with a shower nozzle and faucets in a chrome finish. The tub appears to be a jetted tub without a molded front panel, now built into the room with a rough plywood panel with a wood grate for ventilation, and trimmed with 1/2” x 1” decorative wood. (Refer to photos # GH088, GH092 and GH093)

The living room has similar finishes to the balance of the house, and the west wall exhibits the same details as in the bathtub room, suggesting that this was originally the exterior wall. The peeled pole rafters are 6” to 8” in diameter, reflecting the longer spans. The wood ceiling deck is flat 1x8s without v-grooves. A “Cozy” brand gas-fired floor stove sits in the northwest corner of the room on a 6’ x 6’ ceramic tile base. The stove has an exposed flue that runs up and through the roof. (Refer to photos # GH094-102)

The living room contains a masonry fireplace built into the northeast corner of the room in a tiered design, with a square opening for the metal firebox and four vents in the sides of the fireplace for ventilation of warm air. The fireplace is built on a 5” high painted concrete hearth. (Refer to photos # GH094 and GH095)

The enclosed porch contains two freestanding appliances that were removed from the kitchen of the Main House. One is a 1930s or 40s-era “Estate” brand porcelain steel gas range/oven, with four burners on one side and a griddle on the other, over a single oven compartment and a utility drawer. The other is a 1940s style metal sink cabinet, with molded-in sink and drainboards over metal drawers and cabinet doors below. The original hardware includes chrome drawer and door pulls in a streamlined design. (Refer to photos # GH103 and GH104)

A workroom connects the original Guest House and the Greenhouse, elevated by three winding steps above the kitchen. These steps are constructed with 2” deep concrete masonry “soap” units as treads, and the surrounding floor has these “soap” units inlaid in the concrete floor slab in a decorative, arrayed pattern. The concrete floor has been painted in a variety of colors over its history, all still evident: the newest layer is sky blue, the
middle layer is tan and the lowest layer is the same red as the adjacent kitchen and living room. The exposed vigas from the original portion of the house have been cut back flush with the wall and are painted within the workroom. (Refer to photos # GH084-089)

The Greenhouse has been largely described as a part of Sections 3.4 and 3.5. The remaining interior finishes are primarily exposed concrete block masonry, unpainted but with a purplish integral color. Most of the floors are dirt, and the floor elevation is approximately 3'-8" lower than the adjacent grade along the west wall. Three steps lead up from the Greenhouse to both the interior door of the Foundry and the exterior door leading out of the Greenhouse to the north. These are constructed of concrete block masonry with 2" thick "soap" units as treads, similar to workroom. The lowest course of the northeast steps continues around the east wall as a decorative band, trimmed with a 2" thick "soap" unit and a concrete slab beyond. The north wall of the Greenhouse below the "soap" course has been laid in an ashlar pattern of split-face concrete block veneer, in a variety of colors including light grey, tan, brown and black. These units have been laid in a stack bond pattern, using a variety of sizes within the consistent 16" stacked unit width. Above this base, the remaining north wall has been finished with stucco up to the plywood sheathing on the gabled roof, trimmed with a wood 1x3. (Refer to photos # GH069-074)

The Foundry is one large, rectangular unfinished room, with exposed cinder block masonry walls, concrete slab floor and peeled pole log roof joists and 1x8 flush wood decking. The walls have been laid with wide mortar joints in a manner where the units are not particularly plumb to each other. The mortar was not tooled and the joints are not very well compacted throughout this building. Mortar was also used to smooth out some of the lack of plumbness in the walls. The concrete floor slab has been poured to drain to a floor drain aligning with the overhead door. The interior is completely unfinished, with no paint on the concrete block walls and no sealer on the concrete slab, except that the log joists and deck have been stained. (Refer to photos # GH075-078)

The Foundry contains two kilns, one built-in and one freestanding. A large brick kiln sits on the floor in the northwest corner, with a flue pipe that runs into the chimney in the north wall. The wall around this flue penetration has been infilled with a 16" width of brick masonry instead of concrete block. The other is a brick-lined kiln built on an elevated steel frame. A variety of other studio workshop items remain, including wooden workbenches, shelving, motors and a pump. (Refer to photos # GH077 and GH078)

Condition: Fair to poor. Generally, the original interior materials and finishes exhibit about the same level of deterioration related to use and weather exposure as the building's exterior.

There are several areas of significant cracking of the interior plaster surfaces, transferring through from the underlying concrete block masonry structural walls, due to a combination of the unreinforced nature of the wall construction and the freeze/thaw action of the shallow foundations assessed in Sections 3.2 and 3.3. This is particularly noticeable on the east wall of the living room addition and the southeast projecting alcove, where large diagonal cracks running from the corner down to the floor suggest that the alcove has sunk or fallen away from the balance of the structure. These cracks range in width from 3/4" to 1", with some up to 1-1/2" wide. Cracks on the east wall run diagonally down and away from the window opening, and around the fireplace, measuring 1/4" to 1/2" in width. The west wall exhibits cracking from the pockets in the wall where the log roof joists bear, with one significant crack that extends the full length of the wall and transfers out into the floor slab. (Refer to photos # GH094-096)
The concrete floor slab of the living room exhibits significant cracking and vertical displacement of the concrete, ranging in depth from 1/8" to 3/4". Most of the cracks have displaced vertically, but in the southeast projecting alcove, the slab has displaced horizontally as well, tipping as much as 3/4" upward and away from the rest of the floor. There is evidence of prior attempts to repair this cracking, with some type of mortar or sealing compound smeared over the floor and forced into the joints. Most of the material within the joints has broken and been removed, but some remains. (Refer to photos # GH096 and GH099)

Another significant area of concern is from moisture penetration and the resulting damage caused by roof leakage. There are numerous areas of damage to the plaster walls and wood log joists and roof decking from the leaking roofs, including along the east wall of the living room, with significant mold present, and along the north wall of the living room, where there is mold, peeling paint and deteriorated plaster or stucco. Another area of significant moisture penetration is around the exposed wood header over the main south door, where the plaster is severely cracked and chipping, and peeling paint, discoloration of the plaster and mold are present. (Refer to photos # GH099-102) These problems appear to be ongoing, and UCCS currently has a large dehumidifier running in the living room 24 hours a day.

Moisture penetration is also evident along the interior of the earth-sheltered north wall of the house, with mold or mildew growth occurring along the wall from the floor, extending up approximately 16” to 18”. In the workroom, the pattern of the concrete block backup material has “telegraphed” through the plaster due to this moisture penetration. It is unlikely that the exterior walls in these earth-sheltered conditions were properly waterproofed. The lack of adequate grading around the north wall of the house, as described in Section 3.1, continues to contribute to this problem. (Refer to photos # GH095 and GH096)

Another area of moisture penetration is from the Greenhouse into the workroom behind the original Guest House, through the wood framed fixed windows and running down the surface of the plaster wall onto the floor.

None of the remaining ceramic tile and sheet vinyl flooring materials in the original portion of the house is original, and most is damaged and should be removed. There is evidence of moisture penetration through the joint between the floor slabs and the walls, particularly in the kitchen and adjoining bathroom, with moisture wicking up into the wall approximately 8”. The painted surfaces of the workroom floor are chipped and badly worn.

The existing kitchen cabinetry and sink, while not original, appear to be in fair condition. While the range, refrigerator and water heater appear to be fairly new, it could not be determined if they are operational. The older porcelain steel gas range/oven and metal sink cabinet appear to be in very good condition, although it is unknown whether the range/oven remains operational.

The construction quality of the porch and portico enclosure is generally inferior to that of the original construction. It is assumed that this will be demolished as part of the proposed restoration and rehabilitation of the Guest House.

The interior of the Greenhouse exhibits varying degrees of deterioration. While the interior has been open to the elements for some time, most of the materials are intended for exterior applications, such as concrete block masonry. And while at first look, the displacement in the concrete block pilasters may appear to be a structural problem, upon
closer investigation it looks as if they were deliberately constructed in this way. The original mortar at these locations is intact, and a cement wash was applied to cap the tops of the block units where the wall steps out. There is no apparent reason for this, unless the alignment of the wall was originally wrong, and was corrected while construction was underway. There has been some minor structural displacement in the easternmost pilaster, with stress from the roof structure cracking the block joints and moving this pilaster slightly east and outward. (Refer to photos # GH017 and GH021)

The Foundry interiors are in better condition. It appears that the log roof joists and wood decking may have been stained to cosmetically conceal the moisture damage that would have prompted the construction of the existing hipped roof over-framing. There is evidence of moisture penetration on the east, south and west walls where the cinder block has been stained by water running down the walls. Minor cracking also exists on the north wall, where cracks run diagonally down from the window openings. The floor drain in the Foundry is filled with dirt and debris, and does not appear to be functional at this time. (Refer to photos # GH075-078)

In addition to the specific preservation and rehabilitation needs of the Guest House, the floor plan configuration does not lend itself to modern residential living for use as an artist-in-residence or scholar-in-residence. Currently the only way to access the living room from the kitchen or adjoining workroom is through one of the bathrooms. And there is currently no dedicated room that is large enough or functions well for a bedroom. The workroom has historically served this purpose on a limited basis, but is small and has no closet. These may be acceptable situations for temporary housing, but are probably not desirable conditions for more long-term housing uses.

Recommendations: Like the Main House, the guiding principle to be used in the rehabilitation of the interiors is to retain the historic integrity of the original materials, details and historic fabric, while returning the warmth, beauty and charm of the Heller period. Also in this house, the features and historic fabric that tell its construction history should be retained and preserved, such as the original battered exterior walls and projecting Vigas that are now in the interior.

Minor plaster cracks should be repaired and areas of more moisture damage replaced once the recommended structural investigation, necessary reconstruction or repairs, and roof repairs have been made. Larger cracks will require more extensive crack stabilization and preparation prior to repairs, possibly involving removal of sections of the plaster and overlaying of the underlying masonry joints with joint reinforcing. After repairs are completed, the entire interior should then be repainted.

The heaved and deteriorated living room floor slabs are in such poor structural condition that repairs are probably not going to be sufficient to stabilize the slabs and level them enough to allow public access. After the foundations and walls have been investigated and repaired, the slabs should be demolished and replaced in kind over compacted subgrade.

Other non-original flooring materials should be removed and the concrete floor slabs repaired and refinished, where total removal and replacement is not warranted.

The non-original kitchen cabinets and countertops should be replaced with components in a design that is more sensitive to the historical context of the house.

Original built-in features, such as the fireplaces, should be retained. Other built-in details, such as the ceramic tile inlaid into the walls and floors, should be retained and protected.
during any restoration or rehabilitation work.

Original light fixtures and other accessories stored by UCCS should be cleaned, tested and reinstalled in their original locations.

The floor drain in the Foundry should be cleaned and tested to make it operational.

**Gallery**

The Gallery is one open, symmetrical room. The outside perimeter walls are painted concrete, with 1x4 painted wood base and 3/4” x 2-1/4” hardboard trim at the soffits. The floor is concrete slab-on-grade, with some exposed aggregate. There are “ghosted” patterns of 12” x 12” vinyl tile on the floor, removed as part of the asbestos abatement, and the concrete has now been sealed. The interior soffits/ceilings along the room perimeter are the same hardboard materials as used on the exterior soffits, with mitered joints at the corners. The plywood and other interior wood ceiling trims have been finished with a solid-body stain. (Refer to photos # G007-010 and G012)

The central, raised clerestory is supported on four peeled pole logs, 10” to 12” diameter x 8’-1” high. They support painted tubular steel gable end frames on quarter round steel plates. The tubular frames are fabricated of 2” x 5” painted tubes forming the gables and a center 2” x 2” painted tube vertical support. The ridge beam connecting the two gable frames is fabricated of two 1/4” painted steel plates sandwiched to each side of a wood member, with exposed lag bolt connectors. The beam is supported at the gable frames on painted, welded steel plate beam seats. (Refer to photos # G010, G011, G013 and G014)

The ceiling of the clerestory is also plywood finished with a solid-body stain. The plywood is trimmed at the tubular steel gable end frames with 1x2 wood. The edges of the clerestory opening is trimmed with a 1x6 lapped over a 1x12, with vertical 1x4 trims aligning with the mullions of the clerestory windows above. These vertical trims are nicely detailed, breaking the 1x12s and extending 1” below the bottom edge of the horizontal 1x12s. The back edge of the clerestory is lined with surface-mounted, 8’-0” long, 1-lamp strip fluorescent light fixtures. (Refer to photos # G008 and G009)

**Condition:** Good. The interior of the Gallery does not exhibit the moisture penetration or deterioration found in the other buildings. The wood ceiling and concrete wall materials show no signs of roof leakage, even though the roof does not adequately drain, as noted in Section 3.5.

The concrete floor slab was poured without adequate control or expansion joints, so there are some shrinkage cracks in the floor. These are primarily cosmetic and do not indicate a structural problem.

**Recommendations:** The interior finishes of the Gallery should be retained in their current condition. Minor mechanical ventilation and electrical upgrades may be desirable, as noted in Sections 3.8 and 3.9.

**Barn/Stable**

The interior of the Barn/Stable is divided into roughly thirds, with the eastern third containing an enclosed tack room in the southeast corner and a gated stall in the northeast corner. The interior of the building is completely unfinished, with the exposed wall and roof framing and exterior sheathing materials exposed from the interior. The building is
not insulated. The floors of the open barn and stall are dirt. (Refer to photos # B017-024)

The tack room is completely sheathed in unfinished plywood, installed both vertically and horizontally, as pieces were available, including the ceiling. The panels are butted together with no joint or corner trims. The floor is also framed up one step and sheathed in plywood.

**Condition:** Fair. The unfinished nature of this building is appropriate for its historical use. The materials are in fair condition, showing the same general weathering and deterioration from exposure to the elements as was described for the exterior walls and roof in Sections 3.4 and 3.5. There is considerable amount of mouse droppings in the tack room.

**Recommendations:** No immediate repairs or replacement of interior materials are required or warranted at this time for the historical use of the building. However, UCCS has indicated that the Barn may be converted for use as a maintenance and storage building for the Heller Center property. If this adaptive reuse is pursued, new siding, roofing, insulation, doors, windows and other materials may be required to make the building weatherproof and suitable for this use.

### 3.8 Mechanical Systems

#### Site Utilities

Refer to Section 3.1 Site above for descriptions, condition assessment and recommendations for site utilities.

**Main House Heating and Ventilation**

The Main House is very close to its original mechanical systems constructed in the 1930s, with additions and modifications over time, although these systems were decommissioned in anticipation of possible demolition. Most of the existing mechanical systems were removed during an asbestos abatement project, including underfloor boiler piping systems.

It appears the house was originally heated by a gas-fired steam boiler located in the east room of the basement, and a 1-pipe, gravity radiator system. Most of the radiators are sectional cast iron type with little ornamentation. One radiator in the small bedroom west of the kitchen appears to be a welded steel tube unit fabricated by Larry Heller. The steam piping was run in the partial basement and within trenches below the floors in the other areas.

Chimney flues, both measuring 6-1/2” x 11”, serve the boiler and water heater, each with separate connections. The chimney extends from the basement through the roof, and was extended by several feet when the sloped roof was added. The chimney is not lined other than with a clay chimney flue. A metal chimney extension is lying on the roof that appears to have fallen down from one of the 6-1/2” x 11” chimneys, probably from the boiler chimney to help the draft in windy conditions. The basement does not appear to have had any heat or ventilation other than the radiant heat provided from the boiler system.

Each main room of the house has a fireplace, which probably provided much of the heating requirements. All of the fireplaces appear to have flue dampers built in. The 6-1/2” x 11” chimney for the living room fireplace was also extended up several feet when the sloped...
roof was added. The 6” x 6” chimney in the master bedroom has a pie-plate cover in the room at approximately 6’ above floor level. It appears that a wood stove was installed in front of the fireplace at some time. (There is a small, old stove in a junk pile near the barn that might have been used in this location.) The 6-1/2” x 11” chimney serving the east bedroom has a 6” diameter metal flue pipe inserted in it, visible from the roof.

Ventilation is only from operable windows and doors. There is no air conditioning in the house.

Condition: Poor. The boiler and most of the steam piping have been removed in preparation for building demolition. Some of the black steel pipe remains in the basement where it does not appear to have ever been insulated. The radiators are still in place, except for one on the west side of the living room and one of two in the dining room in the center of the house. The piping to them was cut where it penetrated the floor.

The original mechanical systems or system locations are easy to view, but will need major renovation to make operable again. The bathrooms do not have any ventilation other than operable windows.

Historically, the stucco construction and thermal mass of the house has performed well in terms of temperature control and comfort without the need for air conditioning.

Recommendations: The Main House could be renovated to reuse the existing steam radiators if it is desired to utilize a system similar to the original. A new gas-fired steam boiler, distribution piping, air vents, etc., would be required. Two cast iron radiators would need to be replaced, but the balance should be retained and reused in the new system. Combustion air will need to be added to the basement to meet current code requirements, unless a sealed combustion, high efficiency type boiler with separated combustion air is used.

Air conditioning with humidification control might be necessary if the Main House is used for display of Larry Heller’s artwork. If air conditioning is desired, a careful analysis would need to be made to determine the best type of system for the intended use. Most likely, small split systems with one system for each room would be used. The house electrical system would probably need to be upgraded to handle the additional electrical loads.

Mechanical ventilation or exhaust for the bathrooms should be provided.
The main chimney section serving the boiler and water heater should be lined with metal flue, depending on the type of units installed. The fireplace flues may need to be lined with metal flue depending on the future use and occupancy. If they are not to be used, they should be blocked off at the top and bottom to keep the building's conditioned air inside and rain/snow outside.

Main House Plumbing

The original house appears to have been plumbed with galvanized steel water pipes, cast iron and galvanized steel waste and vent pipes, and black steel gas pipes. Some very small sections of water piping have been installed in copper. (Refer to photos # MH141-143)

Water originally came from the pump house and well. There is a valved-off and disconnected pipe through the north wall of the east room of the basement that appears to come from the pump house. The water service now enters the house on the south side of the east section of the basement at the southeast corner, coming from the local city water distribution system. There is a curb-stop type shutoff valve down the hill southeast of the house. The 3/4" pipe ties in to the other water piping in the basement. Piping to plumbing fixtures within the house run in the basement and in trenches below the floors. It then turns up in the block walls to the fixtures.

A septic tank and leach field for bathroom and kitchen waste is located west of the house. The waste and vent piping is cast iron and galvanized steel, with some lead pipe at the old lavatory. The pipe has lead and oakum joints on the cast iron piping and threaded joints on the galvanized pipes. The waste piping appears to be tied into the septic system through newer PVC piping outside the house on the north side. A 3" cast iron vent runs up from the east bathroom/kitchen, but terminates under the sloped roof.

The main house contains one full bath, one 3/4 bath and a kitchen. The east bathroom has a built-in shower and a wall-mounted, enamel-coated steel lavatory, which appear to be original to this room. There is also a tank type water closet, dated 1994. (Refer to photos #MH114-117)

The master bathroom appears to be original to this portion of the house, and contains a semi-recessed, enamel-coated steel bathtub, countertop drop-in type enamel-coated steel lavatory, and tank-type vitreous china toilet. The tub appears to be original to this room. It appears that the latest major plumbing remodel was done around 1994, when the new lavatory and toilet were installed. Since new low-flow water closets were being introduced at that time, it appears that it was replaced, but may not have worked well, leading the Owner to swap the east and west water closets, putting the new one in the east bathroom and the old, high-flow unit in the master bathroom. (Refer to photos #MH121 and MH124-126)

The kitchen appears to have had a cabinet-type gas range/oven and cabinet-type sink unit. They have been removed and are presently stored in the Guest House.

There is a stainless steel sink in the basement that appears to have been added some time ago. It appears that it may have originally been used as a photography darkroom sink. More recently it appears to have been used as a laundry tub. Hose bibs by the faucet are connected to a clothes washer. The sink drain is indirect wasted to a floor drain that appears to daylight south of the house, down the hill. The washer drain is hung on the side of the sink and flows into the sink and onto the floor drain.
There is a hose bibb in the center room, coming from the basement, which appears to have been installed before this room was converted into an interior living space. (Refer to photo # MH192)

A Payne gas-fired water heater and small thermal expansion tank are disconnected and abandoned in the basement. The water heater has been knocked over and does not appear to be usable.

**Natural Gas Piping**

The gas service was rerouted to the north side of the house, near the kitchen door. It is currently cut between the underground pipe and the entrance into the house. When it was rerouted, the piping was run exposed along the north entry wall and up into the sloped roof attic area. It then runs exposed down the south kitchen wall and turns into the basement stairway, where it connects into the basement gas piping.

**Fire Sprinkler System**

The building is not protected by an automatic fire sprinkler system.

**Condition:** Fair to poor. The original galvanized water piping has lasted beyond its expected life span. While the plumbing fixtures may be serviceable for their current use, they are disconnected and are not currently operable. The bathrooms are not handicapped accessible.

**Recommendations:** All water piping should be replaced. The existing vent above the kitchen should be extended up through the roof. The gas will need to be rebuilt to serve the house. To clean up the gas piping in the house, it is recommended that the gas pipe be rerouted to the basement, and the newer exposed gas piping in the kitchen be removed.

The existing bathrooms cannot be easily remodeled for handicapped accessibility. New accessible restrooms will need to be constructed within the original house or another building if a more public use is anticipated for the house.

The original kitchen range/oven and sink unit should be salvaged and reinstalled, or replaced if they are too damaged or are not operable.

The septic system appears to be functioning adequately at this time for residential use. It may need to be modified if the use of the facility is changed to a more public use. If this is the case, it is recommended to connect to the City sewer system, which has been extended through the southern edge of the property.

**Guest House/Greenhouse/Foundry Heating and Ventilation**

The Guest House is very close to its original mechanical systems constructed in the 1930s, with additions and modifications over time, although these systems were decommissioned in anticipation of possible demolition.

The Guest House was originally heated by wood-burning fireplaces, one in the original house on the south facade and one in the living room addition in the northeast corner. This fireplace has an inner steel firebox and ventilation grilles to circulate air around the firebox and better heat the room air, and is original to the fireplace. The fireplace in the original portion of the house has been filled in with a stovepipe connection at about 4’
above floor level. A gas-vented room heater has been added to the living room. The flue runs up through the roof, but the heater is not currently connected to the gas or flue. (Refer to photo # GH096)

The Greenhouse is heated by a vented gas room heater. (Refer to photo # GH072) The Foundry addition has a chimney near the northwest corner for a vented gas heater to tie into, but no heater exists at this time. A disconnected wood stove sits in the room, as well as two kilns. (Refer to photo # GH078)

Ventilation for the house is only from operable windows and doors. There is no air conditioning in the building.

**Condition**: Fair to poor. The existing systems appear functional in the living part of the Guest House. The heater in the Greenhouse is exposed to the elements and may or may not be operational. The Foundry appears to only have been heated recently by the kilns. It does not appear that a heater would be required unless the use of this room changes.

The bathrooms do not have any ventilation, since there are no operable windows within these rooms.

**Recommendations**: If the use of the Guest House/Greenhouse/Foundry is proposed to change significantly, major renovation or replacement of the mechanical systems will be necessary. If not, then both heaters should be checked by a service person. If either one is not operational it should be replaced.

If air conditioning is desired, a careful analysis would need to be made to determine the best type of system for the intended use. Most likely, small split systems with one system for each room would be used. The house's electrical system would probably need to be upgraded to handle the additional electrical loads.

Mechanical ventilation or exhaust for the bathrooms should be provided.

The fireplace flue should probably be relined if it is to be used. If it is not to be used, it should be blocked off at the top and bottom to keep the building's conditioned air inside and rain/snow outside.

**Guest House/Greenhouse/Foundry Plumbing**

The extent of original plumbing in the Guest House is difficult to determine due to renovations made over time. There probably was an indoor sink at a minimum, and there may have been a water closet and bathtub, but it is very difficult to determine.

The original Guest House appears to have been plumbed with galvanized steel water pipes. The current water pipes are copper. The gas piping is black steel or galvanized steel.

Water originally came from the pump house and well. There is a disconnected pipe through the east wall of the small workroom between the kitchen and the Greenhouse, behind the toilet room. There is also a galvanized pipe from the pump house into the Greenhouse in the northwest corner that feeds a hose bibb in the Greenhouse area. The water service appears to have been intercepted and connected to the pipe from the City water distribution system.

The waste piping appears to be tied into the septic system through recently installed PVC
piping outside the house, on the southeast side. The waste and vent piping appears to have been cast iron and galvanized steel waste and vent pipes. The 1998 remodel has ABS plastic waste piping visible under the sink. A 2” galvanized vent runs up through the roof above the kitchen sink. Another 4” cast iron vent runs up at the bathroom. There is a floor drain in the Foundry floor that may run to a dry well.

The Guest House contains the equivalent of one full bathroom. The toilet room has a pedestal china lavatory and a vitreous china tank-type toilet dated 1998, when it appears that the current plumbing system was installed. The tub/shower is located in an adjacent room. The bathtub is enamel-coated steel with a 2-handle shower/tub valve setup. (Refer to photos # GH090-093)

The kitchen contains a modern stainless steel countertop-mounted sink. A State 40-gallon, 40 MBH input gas water heater is located in the kitchen. Its flue is tied into the original chimney. (Refer to photo # GH079)

**Natural Gas Piping**

The gas service is routed from the front door into the kitchen area to serve the domestic water heater. Another gas pipe is located on the northwest corner of the Greenhouse, which serves the Greenhouse heater and then runs into the Foundry and out along the north wall to the east room. It then turns in through the wall to the room heater.

**Fire Sprinkler System**

The building is not protected by an automatic fire sprinkler system.

**Condition:** This building is probably functional as it is if the water and gas systems were reconnected and turned on. There may be some minor damage due to it not being used recently. The Greenhouse heater is in place, but has been exposed to the elements for some time and is probably not functional.

The original galvanized water piping at the water service entrance has lasted beyond its expected life span. While the plumbing fixtures may be serviceable for their current use, they are disconnected and are not currently operable. The bathrooms are not handicapped accessible.

**Recommendations:** All water piping at the service entrance should be replaced. It would probably be easier to modify the location of the service entrance if it were replaced. The gas service will need to be reconnected to serve the house.

The existing bathrooms cannot be easily remodeled for handicapped accessibility. New accessible restrooms will need to be constructed within the original house or another building if a more public use is anticipated for the house.

The septic system appears to be functioning adequately at this time for residential use. It may need to be modified if the use of the facility is changed to a more public use. If this is the case, it is recommended to connect to the City sewer system, which has been extended through the southern edge of the property.

**Gallery Heating, Ventilation and Plumbing**

The Gallery was not constructed with any mechanical heating or ventilation system, or any
plumbing systems. One operable awning window in the clerestory can be manually opened to exhaust excess heat by gravity from the upper portion of the space.

Condition: Not applicable.

Recommendations: If the building is to be used more regularly during the year, a modern HVAC system should be added to provide comfort for the occupants. Most likely, a small split system heat pump or furnace with cooling coil system could be used. The building electrical system may need to be upgraded to handle the additional electrical loads.

We do not recommend adding any plumbing to the building unless a natural gas system is needed for a furnace, tied in to the existing piping running to the Guest House.

Restrooms could be constructed to serve the Gallery, but due to the limited space enclosed in the building, they would need to be housed in an addition which would adversely affect the architectural character of the building. We believe that adequate restroom facilities in another structure on the site can accommodate any increased public use of this building.

Barn/Stable Heating, Ventilation and Plumbing

The Barn/Stable was not constructed with any mechanical heating or ventilation systems, or any plumbing system.

Condition: Not applicable.

Recommendations: None.

3.9  Electrical Systems

Service Entrance and Branch Circuit Distribution Equipment

The current electrical system at the site has been installed within the past five years and is compliant with the National Electric Code (NEC) with secondary power derived at a 120/240 Volt, Single Phase, 3-wire pad-mounted transformer located between the two houses, sized at 25kVA. It is fed from an existing overhead transmission line along the west side of the property. The transformer serves a meter (#444699) and padlocked main circuit breaker mounted on a unistrut rack. Power is extended underground to an exterior post-mounted NEMA 3R 12-circuit loadcenter with five future breaker spaces; a 100/2 circuit breaker which feeds an 8-circuit loadcenter in the Guest House; a 30/2 circuit breaker which feeds a 6-circuit loadcenter in the Gallery; a 20/1 breaker feeds a single 20A GFCI duplex with weatherproof cover mounted below the panelboard; and a 20/2 breaker designed as temporary power, which is assumed is not in use at the time of our field observation. (Refer to photo # S29)

A telephone pedestal and a CATV pedestal are located near the power transformer. They are new within the last five years and it is assumed they were terminated when the utility power work was completed, but there is no indication that telephone or cable television has been extended within the existing buildings or site at the time of our field observation.

Condition: Good, for its current rated capacity. The existing electrical system for the site appears to be in good working condition and is sized so that new feeder(s) could be added to accommodate a new service to the Main House and the pump house.
The master planning workshop identified the desire for some 3-phase power to serve new or renovated art studio space. The availability of 3-phase power to the site has not been confirmed at this time, but will be investigated with the local utility provider. Assuming that 3-phase power may not be available any closer than N. Nevada Avenue, this may represent a significant investment by the utility and/or UCCS.

**Recommendations:** None, unless added electrical capacity is required to add air conditioning, or to serve any proposed adaptive reuse of the property and buildings. If significant new electrical loads are added for the potential addition of air conditioning or a catering kitchen, it may be necessary or desirable to upsize the existing transformer to 100kVA capacity (400 Amps).

If 3-phase power is required for new studio or other proposed program enhancements, it is recommended that these occur in a new facility nearer existing 3-phase power, so as to avoid the expense and site disturbance required to underground a new service to the buildings.

While the possible inclusion of wind or solar power was discussed in the master planning workshop, the infrastructure required for these systems may be considered intrusive and not allowed by the language of the Heller estate gift or historic preservation principles.

**Main House**

The Main House currently has no connected electrical service. Its previous electrical service was fed from a pole to the north that is currently still standing, with conduit and a junction box that has been abandoned. Two conductors with ragwire insulation entered the house on the north side underfloor and terminated in a 60 Amp, 120/240V, 1 Phase, 4-circuit Homart loadcenter, manufactured by Sears Roebuck and Company around the late 1940s. The loadcenter is located at the midsection of the stairs leading to the basement. The panel is in place and has four 30 Amp screw based fuses installed. A web of metal clad wiring systems are routed exposed along the basement ceiling, distributing power to general lighting and power circuits throughout the house.

In some locations, duplex 15 Amp ungrounded devices are mounted in flush junction boxes around the house. These indicate that they were the original locations of power and lighting in the house, with wiring concealed within the walls. A variety of additional locations of surface mounted junction boxes and 15 Amp devices are located throughout, indicating where power was added for use around the home over time. Wiring was routed to these additional devices in a variety of surface raceway and/or cord and plug devices. (Refer to photos # MH190, MH191 and MH193) Telephone was in service in the home at some time, but is currently not in use and wiring has been abandoned.

Most of the original lighting has been removed from the house, with a few remaining with no historic value to the home. (Refer to photos # MH189 and MH194) UCCS has removed and stored some of the original lighting fixtures. It is apparent that the yard had lighting mounted on the stone columns, but it no longer exists. (Refer to historic photos # H41-45 and H54-57)

**Condition:** Poor.

**Recommendations:** A new 200 Amp, 120/240 Volt, 1 Phase, 3-wire loadcenter is recommended to be installed in the Main House, with a minimum of 30 branch circuit
spaces in the loadcenter, assuming a future use that is not significantly different than the historic use of the house. A feeder would be required to be routed in underground conduit from the existing exterior loadcenter currently located north of the house, with copper conductors sized for 200 Amps. New branch circuits should be routed in the basement where applicable, and in new surface raceway where accessible on the main level. New luminaries will be required throughout the interior and exterior of the building, unless the existing fixtures are in serviceable condition. The electrical distribution would need to be reconstructed to meet NEC 2008 code with proper use of GFCI and AFCI devices and circuit breakers, as well as smoke detection. New branch circuits would be required to accommodate the addition of air conditioning condensing units and associated furnaces, if so determined to be necessary for the facility.

Telephone and cable TV services are available to be routed from the existing pedestals underground into the house, if desired.

**Guest House/Greenhouse/Foundry**

The Guest House has a modern electrical service that has been installed within the past five years. It has a 120/240 Volt, 1 Phase, 3-wire service to a 8-circuit loadcenter surface mounted in the Foundry area, with a 100/2 main breaker fed underground from the exterior loadcenter noted in the service entrance description. The Guest House loadcenter distributes circuits, including a 50/2 circuit for the kitchen electric range; four 20/1 breakers and two 15/1 breakers serve the general lighting and receptacles within the house. Two circuits are dedicated to the plugmold mounted in the kitchen above the counter area. The plugmold is currently in service to power the stereo system being utilized to distribute to a speaker system temporarily set up throughout the site on the day of our field assessment.

The Guest House has a functioning lighting system, consisting of surface ceiling and wall-mounted fixtures. The lighting fixtures are not original to the building and add no historic integrity to the house. The systems are of a residential grade, all with incandescent lamping. Wiring is routed around the house by surface raceway. (Refer to photo # GH130)

Most of the original lighting has been removed from the house, with a few remaining with no historic value to the home. UCCS has removed and stored some of the original lighting fixtures, including a suspended lamp in the form of a fish that hung over the Greenhouse lily pond. (Refer to historic photos # GH048 and GH058)

**Condition:** The Guest House has a loadcenter in use, and a minimum amount of work would be required to expand this panel if necessary for additional loads in this space.

**Recommendations:** New lighting throughout the Guest House, Greenhouse and Foundry is recommended, and electrical wiring revisions would be needed with the use of surface raceway. GFCI devices in the kitchen, bathroom and entire Greenhouse area are advised. The electrical distribution would need to be reconstructed to meet NEC 2008 code with proper use of GFCI and AFCI devices and circuit breakers, as well as smoke detection.

Telephone and cable TV services are available to be routed from the existing pedestals underground into the Guest House, if desired.

**Gallery**

The Gallery is powered by a 6-circuit Square D Homeline loadcenter flush mounted inside
the building on the west wall, with a 30/2 main breaker fed from underground to the exterior loadcenter noted in the service entrance description. Two 15/1 breakers serve duplex receptacles and the house’s interior lighting system, consisting of 4’-0” single lamp T12 fluorescent strips mounted under the soffit, which functions well for the current use of the space. No exterior lighting exists.

Condition: Good, for its current use.

Recommendations: None, unless the existing lighting is upgraded for new fluorescent technology to improve energy efficiencies.

Telephone and cable TV services are available to be routed from the existing pedestals underground into the Gallery, if desired.

Barn/Stable

The Barn has no existing electrical service.

Condition: Not applicable.

Recommendations: None, unless power and/or lighting is desired in the building. Power could be extended from the Gallery in an underground feeder if determined necessary.

Pump House

The pump house power wiring may have been originally fed from the Main House. Its origination was not discernable at the time of observation, as the circuiting is routed underground. The existing circuit wiring comes up from underground in plastic conduit near the pump house, and enters the pump house in EMT mounted on the exterior of the building on the west side.

Condition: Poor. The exposed wiring is in poor condition from the point it comes from underground and is not properly terminated in a junction box at the point it enters the EMT. The wiring and terminations are a hazard if the power were to be energized.

The electrical equipment mounted on a backboard inside the pump house has reached its end of service life and should be replaced with a new disconnecting means. The existing disconnect is mounted behind the water heater and does not have adequate clearance. The duplex receptacle and the porcelain keyless light fixture appear to be tapped from the disconnect and are not properly grounded. The well pump control panel appears to have also reached its end of service life and it assumed the pump in the pit also is out of service.

Recommendations: A new branch circuit service is necessary for the pump house. A new feeder from the existing main service loadcenter south of the pump house should be routed underground in conduit, then fed to a new disconnecting means on the exterior of the building to serve pump, lighting and general 120V requirements inside.

If water is to be utilized from the pump house, the electrical equipment and associated pump system should be replaced with a complete new system, including new conduit, wiring and devices and disconnecting means.

Exterior Site Lighting
No exterior site lighting remains on the property. There is evidence that some yard lighting existed around the Main House, as described above, but none remains.

**Condition:** Not applicable.

**Recommendations:** If new site lighting is recommended by the master plan, it should be restricted in locations and quantities. The fixture type and mounting height should be sympathetic to the historic character of the site and the buildings.

**Emergency Lighting and Exit Signs**

No emergency exit or battery pack egress lighting exists in any of the buildings, nor would they be required for their historical uses.

**Special Systems**

No fire alarm, sound, security or wireless communications systems exist in any of the buildings, nor would they be required for their historical uses.

**Condition:** Wireless communications onto the property will be challenging, due to the topography of the property and the surrounding area. There is no direct, line-of-sight from any current UCCS cellular facility. The nearest, hard-wired facilities are located in Eagle Rock Road, approximately 1/4 mile away to the south.

**Recommendations:** New lighted emergency exit and battery pack egress lighting should be installed throughout the Main House, the Guest House/Greenhouse/Foundry and the Gallery if more public uses are anticipated.

A new fire alarm is recommended if more public uses are anticipated, although the size and occupancy classification of each building might not trigger this improvement from a building code standpoint. If the Main House or other building is to be used for assembly uses, a full fire alarm system may be required. This would probably require a second telephone line to be run onto the property. Also refer to Section 4.2.

Due to the difficulty in accessing the property with wireless communications, it may be necessary to provide some form of emergency telephone service onto the site.

Consideration should be given to some type of building security system, due to the relative remoteness of the site, including door access systems similar to other on-campus facilities. Consideration should also be given to some type of integrated sound or paging system, if desired.
4.0 Analysis and Compliance

4.1 Hazardous Materials

Inspection and testing for hazardous materials is outside the scope of this assessment. UCCS performed an asbestos abatement project in 2006, which removed asbestos-wrapped boiler and radiator piping within the basement and below the wood floors in the Main House, floor tile and roofing felts from the Main and Guest House/Greenhouse/Foundry, and floor tile from the Gallery.

Due to the age of the original buildings, the exterior stucco and interior plasterwork may contain asbestos as a binder. Lead-based paint is suspected on the exterior and interior stucco, plaster, siding and wood trims.

Suspect materials should be tested for hazardous content prior to removal and should then be disposed of appropriately. If any hazardous materials are subsequently discovered, they may be managed in place if any damage is adequately repaired and the materials are in a location(s) not subject to damage or abuse. Lead-based paint may be encapsulated by new paint, if deemed appropriate by the testing and abatement consultant.

4.2 Building Code Compliance

The buildings have been evaluated relative to the 2006 International Building Code (IBC), adopted and in use by the State of Colorado. Due to the level of stabilization, rehabilitation and improvement anticipated for the project, all buildings may have to be brought up to current building, fire and life safety codes standards. Application of applicable sections of the International Existing Building Code (IEBC) can be used where these requirements allow greater latitude than strict compliance with the IBC, if deemed appropriate by the governing Building Official. The IEBC has not been adopted by the State of Colorado.

Based upon the uses anticipated in the Proposed Program in Section 2.2, the individual buildings of the Heller Property may be classified as either B-Business (educational occupancies above the 12th grade) or A-Assembly (art galleries, community hall, large meeting space, etc.) With the limiting size of the buildings and the low intensity of uses anticipated, it is doubtful that any of the spaces will rise to the occupancy classifications of an assembly use.

Based upon our conceptual level analysis, some building code deficiencies exist in the existing buildings and would need to be addressed as a part of any rehabilitation project, including:

- Many doors and doorways in the Main House and Guest House are deficient in required head clearances.
- The existing basement stairway in the Main House does not meet code requirements for rise and run dimensions, head clearances, handrails, guardrails and general construction details.
- Insulation materials and thermal performance values are deficient in meeting current State of Colorado model energy codes. This may be acceptable, assuming no additional heating or cooling systems are to be added, but additional roof
insulation should be added as a part of the recommended new roof assemblies.

- Mechanical venting and ventilation issues as described in Section 3.8.
- Electrical code issues as described in Section 3.9.

The buildings on the Heller Property have been reviewed by Ron Honn, Environmental Health and Safety Manager for the UCCS Department of Public Safety. Based upon the proposed uses and the anticipated occupancy classifications noted above, Mr. Honn has determined that none of the buildings will be required to install fire detection, alarm and communication systems.

The University also met with the City of Colorado Springs Fire Department in January of 2007 to discuss fire and emergency response to the Heller Property. The fire department acknowledged the unique setting and historic character of the property, but noted that several improvements will be required for the site, primarily related to adequate secondary access and water flow for fire protection. The new primary access road currently under construction will address the first concern. The CSFD has stated that 1,500 gallons per minute of fire flow will be required to the site, plus additional fire hydrants, possibly a 13D fire sprinkler system (depending upon use) and adequate fire truck access to within 150’ of all structures. These parameters will need to be confirmed and complied with in any restoration or rehabilitation design for the Heller Property.

We have followed up with John Miam of the City of Colorado Springs Fire Department and Al Juvera of Colorado Springs Utilities, and they reconﬁrmed these basic assumptions. The matter of adding a fire sprinkler system is still an open subject, but is unlikely due to the size and anticipated maximum occupancy of the Heller Center buildings. Further investigation and possible testing for available water pressure is recommended to determine whether a dead-end service line or a looped fire main will be required to serve a new fire hydrant. Due to the uncertain nature of this improvement, the UCCS Facilities Department has requested that we assume a looped system will be required.

4.3 **Zoning Code Compliance**

The Heller Property is located within the city limits of the City of Colorado Springs. The site is zoned R-Residential, with a Hillside overlay zone. Since the property is owned by the State of Colorado, they are exempt from the City of Colorado Springs’ zoning and land use regulations, including use of the property.

The UCCS campus is zoned SU-Special Use, and the City’s planning department recommends that the Heller Center property be zoned to match this designation. This would be a voluntary rezoning on the part of UCCS.

4.4 **Accessibility Compliance**

None of the primary buildings on the Heller Property are currently handicapped accessible, with the limited exception of the Gallery. Both the Main House and the Guest House/Greenhouse/Foundry are constructed on multiple levels, terraced into the natural landscape. As a private residential property, these buildings were not required to be accessible, and current building codes would not require upgrades for accessibility if there
use remained residential. However, the uses proposed by UCCS for the Heller Center for Arts and Humanities will be more public by nature, which will trigger at least limited accessibility within each of the buildings, and accessibility from parking areas and between buildings on the site. Additionally, UCCS policies governing their facilities may require a greater level of accessibility within the buildings than would normally be required.

Compliance with Chapter 11 of the IBC and general provisions of the Americans with Disabilities Act (ADA) requires that every “program” provided on the site or within a building be accessible to persons with disabilities. This does not mandate access to all areas within a building, if a particular program can be provided within an accessible area of the building or site.

Accessibility can most readily be provided to the dining room of the Main House through the restored exterior door on the south facade. This location is currently at grade, and providing handicapped access in this location will not adversely affect the appearance of the building’s primary facades. All other rooms in the Main House are on different levels than the dining room, and providing access to these rooms would require significant alterations and construction of ramps within the house, adversely impacting the historic integrity of the interiors. If this approach to accessibility is taken, any programs provided in the Main House will need to be accommodated in the dining room.

Likewise, accessibility can most readily be provided to the living room of the Guest House through the restored exterior door on the south facade. This location is currently at grade, and providing handicapped access in this location will not adversely affect the appearance of the building’s primary facades. All other rooms in the Guest House are on different levels or accessed through narrow doorways, and providing access to these rooms would require significant alterations and construction of ramps within the house, adversely impacting the historic integrity of the interiors. If this approach to accessibility is taken, any programs provided in the Guest House will need to be accommodated in the living room. Access can be provided directly into the Greenhouse at grade through the restored south entrance, but not connecting into the Guest House. Handicapped access cannot readily be provided to the Foundry without significant regrading around the west side of the Greenhouse. It is recommended that accessible studio or foundry space be provided within new construction elsewhere on the Heller Property.

Only minor accessibility enhancements will be needed for the Gallery. The configuration of either the east or south doors will need to be modified to provide the required size and clearances for an accessible entrance. This may be easiest to accommodate on the south facade, where the existing sliding glass doors are not permitted for a required egress and could easily be replaced with an accessible swinging door.

The provision of handicapped accessible restrooms is very difficult within either the Main House or the Guest House without significant interior remodeling, which would adversely affect the historic integrity of the interiors. The public uses planned for the Heller Property will require that accessible restrooms be provided. Due to this adverse impact on the existing historic resources, it is recommended that new handicapped accessible restrooms be provided within a new structure, located centrally to all primary buildings. For this reason, we recommend that the restrooms be a part of the planned reconstruction of the missing Studio building. This building can be accessed at an accessible grade from the east, using the natural terraced grading still remaining from the driveway leading to the demolished building. A handicapped lift will need to be installed to provide a more direct handicapped connection from this building to the Main House to the north.
Likewise, if the missing Garage/Shop building is reconstructed for use as historical archives or research library, it will be required to meet current building codes for accessibility. This building location can also be accessed at an accessible grade from the east, using the natural terraced grading remaining from the driveway to this structure.

There are no provisions in the current buildings to assist persons with visual or hearing impairments.

4.5 *Existing Materials Analysis*

No detailed materials analysis has been done as a part of this assessment report or was necessary. However, specific materials analyses should be undertaken during the design phase of the preservation effort to ensure a successful project, to include:

- Mortar analysis for repair and repointing of the original brick and stone rubble masonry.
- Stucco and/or plaster analysis to determine the composition of the existing materials, to allow evaluation of whether replacement and repair materials should be accomplished using in-kind materials.
- Testing and possible abatement for lead-based paints.
5.0 Preservation Plan

5.1 Prioritized Work

As described earlier, the buildings within Heller Property are in fair structural and physical condition, with much of its contributing historic fabric intact.

The following priority levels are provided to demonstrate the severity of existing deterioration and damage of all building and site elements. These ratings also pinpoint which features need immediate attention before further damage occurs.

Critical Deficiency of an element exists where:

- there is advanced deterioration which has resulted in the failure of the building element or will result in the failure of the building element if not corrected within two years, and/or;
- there is accelerated deterioration of adjacent or related building materials as a result of the element’s deficiency, and/or;
- there is a threat to the health and/or safety of the user, and/or;
- there is a failure to meet a legislative (or building code) requirement.

Serious Deficiency of an element exists where:

- there is deterioration which, if not corrected within 2-5 years, will result in the failure of the building element, and/or;
- a threat to the health and/or safety of the user may occur within 2-5 years if the deterioration is not corrected, and/or;
- there is deterioration of adjacent or related building materials and/or systems as a result of the element’s deficiency.

Minor Deficiency of an element exists where:

- standard preventative maintenance practices and building conservation methods have not been followed, and/or;
- there is a reduced life expectancy of affected or related building materials and/or systems, and/or;
- there is a condition with long-term impact beyond five years.

Recommended rehabilitation improvements for the Heller Property are as follows:

Site

- Construction of new looped 8” fire main, with one new fire hydrant.
- Construction of new sanitary sewer service lines from Main House and Guest House to the new public sanitary sewer main along the south property line.
- New electrical branch circuit service to the pump house.
- Rehabilitation of the pump house, including reroofing of the building with single-ply roofing membrane, new edge flashings and a new wood door.
- Installation of new pump equipment and electrical wiring for site irrigation system.
- Minor reconfiguration and resurfacing of the entry driveway and parking area.
- Construction of new trash and recyclables enclosure.
- Removal of dead trees, pruning of dead limbs, thinning of overgrown shrubs and eradication of invasive plant species.
- Reinstallation of the formal garden areas around the Main and Guest Houses, including rehabilitation of the fishpond.
- Reseeding of disturbed turf areas.
- Modifications to the existing site irrigation system.
- Construction of new stone rubble retaining walls and low fencing to protect the fragile site ecosystems.
- Construction of handicapped accessible trails or pathways between and to the four primary buildings from the parking areas.

**Main House**

**Critical Deficiency:**
- Removal of the encroaching shrubs and landscaping adjacent to the north and west exterior building walls and foundations.
- Regrading and construction of drainage swales around the north and west sides of the building to divert water and improve general perimeter drainage around the structure.
- Excavation and structural investigation of building foundations, and remedial stabilization and structural repair work.
- Waterproofing of earth-sheltered walls.
- Preservation of the existing stone rubble and brick masonry foundation walls, including minor repointing of exterior foundation and interior basement walls, and cleaning of masonry work.
- Stabilization and repair of the unreinforced concrete block masonry walls, in conjunction with the foundation investigation noted above.
- Removal of the non-original over-framed gabled and hipped roof structures, and replacement of the original asphaltic built-up roofing with new single-ply roofing membranes over new rigid board roof insulation, and new parapet and edge flashings.
- Repair or reconstruction of damaged raised and stepped parapet walls, including reconstruction of the missing roof scuppers.
- Repair or replacement of sections of exterior stucco and interior plaster, after structural repair of the underlying concrete block masonry walls.
- Replacement of the cut and missing wood floor structural members, including new wood floor joists, blocking, subflooring and strip plank wood finish flooring.
- Removal and replacement of the deteriorated concrete topping on the living room floor.
- Installation of fire sprinkler system, if required.
- Installation of new emergency lighting and supplemental, lighted exit signage.

**Serious Deficiency:**
- Rehabilitation of the original steel sash windows, including sashes, frames and muntins, and replacement of broken or missing glass panes.
- Installation of replacement metal framed interior window screens, where missing.
- Rehabilitation of the original wood doors, including replacing missing glazing and hardware.
- Removal of the non-original porch or portico enclosures, and restoration of the original exterior materials and finishes.
- Reconstruction of missing steel sash windows and exterior doors to their original configuration, with new clear insulated glazing.
- Replacement of the non-original west window with new steel sash window, and reopening of the original north window in the master bedroom.
- Replacement of existing inappropriate exterior doors with new, historically-appropriate wood doors and hardware.
- Installation of new boiler and replacement of boiler piping systems, including rehabilitation of the original radiators.
- Replacement of the domestic water piping system.
- Mechanical and ventilation improvements as recommended in this report.
- Electrical wiring improvements as recommended in this report, including replacement of the loadcenter and service feeders, and rewiring for new loadcenter branch circuit distribution, grounding and GFCI protection.
- New exterior and interior electrical lighting fixtures, switches and devices.
- Installation of new fire alarm and security systems, if required, including running a new second telephone line onto the property.

**Minor Deficiency:**
- Repainting of the building's exterior and interior.
- Installation of new interior wood doors, in a style compatible with, but not replicating, the original basement door.
- Rehabilitation of the kitchen, including new, historically-appropriate cabinetry and countertops, and reinstallation of the salvaged range/oven and prefabricated metal sink cabinet.
- Remodeling of the master bathroom and dressing area of the house to meet the needs of the adaptive reuse program.
- Reinstallation of the original metal railings, light fixtures and other items, removed and stored by UCCS.
- Rehabilitation of the wood vigas.

In addition to the preservation and rehabilitation needs of the buildings, reconstruction of the missing Studio and Garage/Shop buildings are recommended. These buildings will provide the handicapped accessible restrooms and catering kitchen needed to serve the Heller Center complex, without the adverse impact to the historic interiors of the remaining buildings that would be required if these restrooms are provided within the existing structures.

**Guest House/Greenhouse/Foundry**

**Critical Deficiency:**
- Removal of the encroaching shrubs and landscaping adjacent to the north and west exterior building walls and foundations.
- Regrading and construction of drainage swales around the north and west sides of the building to divert water and improve general perimeter drainage around the structure.
- Excavation and structural investigation of building foundations, and remedial stabilization and structural repair work if deemed appropriate and cost effective, in conjunction with the foundation investigation.
- Removal of the non-original over-framed hipped roof structure on the Foundry, and replacement of the original asphaltic built-up roofing with new single-ply roofing membranes over new rigid board roof insulation, and new parapet and edge flashings.
- Repair or reconstruction of damaged raised and stepped parapet walls.
- Replacement of the concrete floor slab in the living room, after structural repair of the perimeter concrete block masonry walls and foundations.
- Repair or replacement of sections of exterior stucco and interior plaster, after structural repair of the underlying concrete block masonry walls.
- Installation of fire sprinkler system, if required.
- Installation of new emergency lighting and supplemental, lighted exit signage.

**Serious Deficiency:**
- Stabilization and repair of the unreinforced concrete block masonry walls, not related to the foundation stabilization noted above.
- Rehabilitation of the existing wood soffits, fascias and trims, including replacement of any members that are too deteriorated for repair.
- Rehabilitation and reglazing of the roof and walls of the Greenhouse, including structural reinforcing and rehabilitation of the operable ridge ventilation system.
- Replacement of the missing south door into the Greenhouse.
- Repair and rehabilitation of the stucco retaining wall to the south of the Greenhouse.
- Rehabilitation of the original wood windows, including sashes, frames and muntins, and replacement of broken or missing glass panes.
- Replacement of the missing true divided lite wood sashes in original wood window frames.
- Repair or replacement of rotted wood window sills.
- Installation of new interior window screens on operable windows.
- Replacement of the non-original vinyl window with a new wood window to match the original windows.
- Rehabilitation of the original wood doors, including replacing missing glazing and hardware.
- Removal of the non-original porch or portico enclosure, and restoration of the original exterior materials and finishes.
- Reconstruction of missing wood windows and exterior doors to their original configuration, with new clear insulated glazing.
- Mechanical, plumbing and ventilation improvements as recommended in this report.
- Electrical wiring improvements as recommended in this report, including rewiring for new branch circuit distribution, grounding and GFCI protection.
- New exterior and interior electrical lighting fixtures, switches and devices.
- Installation of security system, if required.

**Minor Deficiency:**
- Minor repair of other interior finishes and repainting of the building’s exterior and interior.
- Remodeling of the kitchen, including new, historically-appropriate cabinetry and countertops.
- Rehabilitation and reinstallations of the original gas range/oven and metal sink cabinet.
- Remodeling of the bathrooms to meet the needs of the adaptive reuse program.
- Cleaning and testing of the floor drain in the Foundry.
- Reinstallation of the original light fixtures and other items, removed and stored by UCCS.
- Rehabilitation of the wood vigas.

**Gallery**

**Critical Deficiency:**
- Removal of the encroaching shrubs and landscaping adjacent to the north and west exterior building walls and foundations.
- Regrading and construction of drainage swales around the north and west sides of the
building to divert water and improve general perimeter drainage around the structure.
- Replacement of the original asphaltic built-up roofing with new single-ply roofing membranes over new rigid board roof insulation.
- Modify the existing gravel stop flashing at the roof perimeter to allow proper roof drainage.
- Installation of fire sprinkler system, if required.
- Installation of new emergency lighting and supplemental, lighted exit signage.

**Serious Deficiency:**
- Rehabilitation of the existing wood soffits, fascias and trims, including replacement of any members that are too deteriorated for repair.
- Modifications to the exterior hardboard siding where currently below grade.
- Replacement of the exterior hardboard window sills to provide positive drainage.
- Replacement of the original inswinging hollow metal doors, as required for egress.
- New exterior and interior electrical lighting fixtures, switches and devices.
- Installation of new fire alarm and security systems, if required.

**Minor Deficiency:**
- Repainting of the building’s exterior and interior.

**Barn/Stable**

**Critical Deficiency:**
- Removal of the encroaching shrubs and landscaping adjacent to the north and east exterior building walls.
- Regrading and construction of drainage swales around the north side of the building to divert water and improve general perimeter drainage around the structure.
- Installation of fire sprinkler system, if required.
- Installation of new emergency lighting and supplemental, lighted exit signage, if required.

**Serious Deficiency:**
- Rehabilitation of the existing wood siding, fascias and trims, including replacement of any members that are broken, missing or are too deteriorated for repair.
- Rehabilitation of the existing corrugated metal roofing, including replacement of any damaged panels.
- New exterior and interior electrical lighting fixtures, switches and devices.
- Installation of new fire alarm and security systems, if required by the adaptive reuse of this building as a maintenance and storage facility.

**Minor Deficiency:**
- Minor repair of other interior finishes.
- Minor repairs to the corral fencing and rehanging of the gate.

In addition to the preservation and rehabilitation needs of the building, additional improvements may be needed for the adaptive reuse of the building for maintenance and storage uses, including new exterior siding, roofing, insulation, doors, windows and other improvements.

### 5.2 Phasing Plan
Due to the scope of the improvements needed for the Heller Property, this project is proposed for design and construction in multiple phases.

**Phase 1**

Phase 1 will need to address the stabilization of the buildings and prevent the further deterioration of the historic resources, including the structural inspections and analysis recommended in this report. Site infrastructure improvements to serve the Heller Center will be needed as a part of Phase 1 work, including the installation of the fire main and fire hydrant.

Demolition of non-original exterior alterations to the Main and Guest Houses, and installation of new single-ply roofing membranes to weatherproof the buildings, should be part of Phase 1 work. The complete restoration of the exteriors of the Main House and the rehabilitation of the interiors is also proposed as part of Phase 1.

**Phase 2**

Phase 2 work includes the complete restoration of the exteriors of the Guest House/Greenhouse/Foundry and the rehabilitation of the interiors. Reconstruction of the missing Studio and Garage/Shop is proposed for Phase 2, primarily to provide the necessary handicapped accessible restrooms to serve the entire Heller Center complex.

The balance of the site work is recommended to be part of Phase 2 work, including removal of dead trees, pruning and thinning of other trees and shrubs, and the restoration of the formal planting areas around the houses.

**Phase 3**

The minor restoration and rehabilitation of the Gallery and Barn/Stable may be proposed as Phase 3 work.
5.3 *Estimated Construction Costs*

The following estimates of probable construction cost are made without the benefit of any design or engineering related to the prioritized work.

**Site Preservation/Rehabilitation Construction:**

**Phase 1**

- Trench, lay pipe and backfill for new looped 8” fire main: $95,000.00
- Install one (1) new fire hydrant: $3,000.00
- Reconstruct some of domestic water service (Allowance): $10,000.00
- Trench, lay pipe and backfill for new sanitary sewer service (Allowance): $20,000.00
- Site power improvements to upsize service and transformer to 100kVA: $10,000.00
- Install new electrical branch circuit service to pump house: $5,500.00
- Reconstruct natural gas services to both houses (Allowance): $15,000.00
- Install new second telephone line onto the property (if required for fire alarm system): Not included
- Cut and remove dead trees and prune branches (Allowance): $25,000.00
- Cut and remove invasive plant species (Allowance): $10,000.00
- Cut and thin shrubs (Allowance): $5,000.00

**Phase 2**

- Rehabilitate and reroof pump house: $8,500.00
- Install new pump equipment for site irrigation: $2,500.00
- Reconstruct electrical power and lighting system in the pump house: $5,500.00
- Rehabilitation of site irrigation system (Allowance): $10,000.00
- Construct new trash and recyclables enclosure: $15,000.00
- Restore formal planting beds (Allowance): $10,000.00
- Reseed turf areas (Allowance): $10,000.00
- Rehabilitate and resurface parking areas and entry driveway (Allowance): $25,000.00
- Construct handicapped accessible parking slabs: $10,000.00
- Construct soft-surface trails (Allowance): $30,000.00
- Construct gated entrance at west end of new entry driveway: $7,500.00
- Construct low fencing at entry driveway: $2,000.00
- Construct new stone retaining walls and reconstruct foundations of missing studio and garage/shop for terraces (Allowance): $40,000.00
- Install new exterior handicapped lift at terrace south of Main House: $7,500.00

Subtotal Site Preservation/Rehabilitation Construction Cost: $382,000.00
Historic Structure Assessment

General Conditions (15%): $ 57,300.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $ 38,200.00

Total Construction Cost: $ 477,500.00

A/E Design Fees (15%): $ 71,625.00
Reimbursable Expense Allowance: $ 5,000.00
Topographic Surveying: Already completed
Utility locates and pot holing (Allowance): $ 5,000.00
City of Colorado Springs Building Permit/Development and Plant Investment Fees: Not included
Miscellaneous Materials Analysis and Testing Allowance: $ 10,000.00
Archaeological Monitoring: $ 10,000.00
Project Contingency (15%): $ 71,625.00

Total Estimated Site Project Cost*: $ 650,750.00

* Add 6% - 8% per year for construction escalation.
### Main House - Exterior Preservation/Rehabilitation Construction:

#### Phase 1

- Remove encroaching shrubs along foundations: $1,000.00
- Regrade and construct drainage swales: $12,500.00
- Excavation and backfilling/compaction for foundations: $15,000.00
- Structural repair or replacement of foundations (Allowance): $15,000.00
- Waterproofing of earth-sheltered walls: $4,500.00
- Repair and repointing of stone rubble foundations (Allowance): $5,000.00
- Repair of concrete block masonry walls (Allowance): $15,000.00
- Reinforcing and repair of exterior stucco (Allowance): $25,000.00
- Remove overframed roof structures: $10,000.00
- Repair or reconstruct raised parapet walls (Allowance): $15,000.00
- Reroofing with new single-ply membrane and rigid insulation (2,604 sq. ft. x $8.50/sq. ft.): $22,200.00
- Miscellaneous new roof flashings: $7,500.00
- Reconstruct missing roof scuppers (Allowance): $3,500.00
- Rehabilitate windows (12 @ $1,000 ea.): $12,000.00
- Install new interior window screens (10 @ $300 ea.): $3,000.00
- Refurbish and refinish one (1) remaining original exterior door: $500.00
- Demolish porch or portico enclosures: $8,000.00
- Reconstruct south and west windows of living room and master bedroom: $6,500.00
- Replace missing north window in master bedroom: $2,400.00
- Replace missing exterior doors (2 @ $1,900 ea.): $3,800.00
- Reconstruct wood vigas (Allowance): $10,000.00
- Repaint exterior of house: $5,500.00
- Install new exterior light fixtures (Allowance): $3,000.00

**Subtotal Main House Exterior Preservation/Rehabilitation Construction Cost:** $205,900.00

**General Conditions (15%):** $30,885.00

**Contractor Overhead & Profit/Bonds/Insurance (10%):** $20,590.00

**Total Main House Exterior Preservation/Rehabilitation Construction Cost:** $257,375.00
## Main House - Interior Preservation/Rehabilitation Construction:

### Phase 1

- Repair of interior plaster/stucco (Allowance): $15,000.00
- Reconstruct cut and damaged interior wood floor structures: $20,000.00
- Replace concrete topping in living room: $5,000.00
- Replace missing interior doors and hardware (4 @ $800 ea.): $3,200.00
- Repaint interior of house: $5,000.00
- Clean and reseal wood log roof joists and decking: $12,500.00
- Remodeling for adaptive reuse (Allowance): $50,000.00
- Clean and rehabilitate original cabinetry to be salvaged (Allowance): $2,000.00
- Install new kitchen cabinetry (Allowance): $8,000.00
- Reinstall salvaged interior cabinets, railings, light fixtures, etc. (Allowance): $2,500.00
- Reconnect and reroute gas piping: $5,000.00
- Install new boiler and boiler piping: $40,000.00
- Add air conditioning: Not included
- Install new domestic water piping: $10,000.00
- Install bathroom ventilation: $1,400.00
- Line chimney flues: $6,400.00
- Install new toilet fixtures and faucets: $5,000.00
- Install fire sprinkler system: Not included
- Install new 200 Amp electrical load center, emergency lighting, lighted exit signage, fire alarm system and other electrical wiring improvements: $27,000.00
- Install new interior light fixtures (Allowance): $4,000.00

**Subtotal Main House Interior Preservation/Rehabilitation Construction Cost:** $222,000.00

**General Conditions (15%):** $33,300.00

**Contractor Overhead & Profit/Bonds/Insurance (10%):** $22,200.00

**Total Main House Interior Preservation/Rehabilitation Construction Cost:** $277,500.00

**Total Construction Cost:** $534,875.00

**A/E Design Fees (15%):** $80,230.00

**Reimbursable Expense Allowance:** $5,000.00
Environmental Clean-up (mold/mildew) Allowance: $2,500.00
Full Structural Analysis of Foundations (after excavation): $12,000.00
City of Colorado Springs Building Permit/Development Fees: Not applicable
Miscellaneous Materials Analysis and Testing Allowance: $5,000.00
Archaeological Monitoring (if required): $5,000.00
Project Contingency (15%): $80,230.00

Total Main House Estimated Project Cost*: $724,835.00

* Add 6% - 8% per year for construction escalation.
Guest House/Greenhouse/Foundry - Exterior Preservation/Rehabilitation Construction:

Phase 1

- Remove encroaching shrubs along foundations: $2,500.00
- Regrade and construct drainage swales: $12,500.00
- Excavation and backfilling/compaction for foundations: $15,000.00
- Structural repair or replacement of foundations (Allowance): $15,000.00
- Waterproofing of earth-sheltered walls: $3,500.00
- Remove overframed roof structure: $5,000.00
- Reroofing with new single-ply membrane and rigid insulation (1,440 sq. ft. x $8.50 sq. ft.): $12,300.00
- Miscellaneous new roof flashings, scuppers, etc.: $7,500.00

Phase 2

- Repair of concrete block masonry walls (Allowance): $10,000.00
- Reinforcing and repair of exterior stucco (Allowance): $15,000.00
- Repair or reconstruct raised parapet walls (Allowance): $10,000.00
- Rehabilitate wood soffits, fascias and trims: $4,500.00
- Rehabilitate wood windows (15 @ $800 ea.): $12,000.00
- Reglaze broken lite in entry door: $200.00
- Install new interior window screens (15 @ $250 ea.): $3,750.00
- Reinforce, rehabilitate and reglaze Greenhouse walls and roof (Allowance): $28,000.00
- Refurbish and refinish exterior doors: $2,500.00
- Demolish porch or portico enclosure: $4,000.00
- Reconstruct wood vigas: $6,000.00
- Repaint exterior of building: $5,000.00
- Install new exterior light fixtures (Allowance): $2,000.00

Subtotal Exterior Preservation/Rehabilitation Construction Cost: $176,250.00

General Conditions (15%): $26,440.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $17,625.00

Total Exterior Preservation/Rehabilitation Construction Cost: $220,315.00
Guest House/Greenhouse/Foundry - Interior Preservation/Rehabilitation Construction:

Phase 2

• Repair of interior plaster/stucco (Allowance): $15,000.00
• Demolish, compact subgrade and pour new cast-in-place concrete floor slab: $8,500.00
• Repaint interior of building: $4,000.00
• Clean and reseal wood log roof joists and decking: $12,000.00
• Remodeling for adaptive reuse (Allowance): $15,000.00
• Install new kitchen cabinetry (Allowance): $8,000.00
• Reinstall salvaged interior light fixtures, etc. (Allowance): $1,500.00
• Reconnect gas piping: $1,000.00
• Check and repair existing room heaters: $2,000.00
• Add air conditioning: Not included
• Install new domestic water piping: $5,000.00
• Install bathroom ventilation: $1,400.00
• Line chimney flues: $1,000.00
• Install fire sprinkler system: Not included
• Emergency lighting, lighted exit signage and other electrical wiring improvements: $9,000.00
• Install new interior light fixtures (Allowance): $3,000.00

Subtotal Interior Preservation/Rehabilitation Construction Cost: $86,400.00

General Conditions (15%): $12,960.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $8,640.00

Total Interior Preservation/Rehabilitation Construction Cost: $108,000.00

Total Construction Cost: $328,315.00

A/E Design Fees (15%): $49,250.00
Reimbursable Expense Allowance: $5,000.00
Environmental Clean-up (mold/mildew) Allowance: $10,000.00
Full Structural Analysis of Foundations (after excavation): $12,000.00
City of Colorado Springs Building Permit/Development Fees: Not applicable
Miscellaneous Materials Analysis and Testing Allowance: $5,000.00
Archaeological Monitoring (if required): $5,000.00
Project Contingency (15%): $49,250.00

Total Guest House/Greenhouse/Foundry Estimated Project Cost*: $463,815.00

* Add 6% - 8% per year for construction escalation.
Gallery - Exterior Preservation/Rehabilitation Construction:

**Phase 3**
- Remove encroaching shrubs along foundations: $1,000.00
- Regrade and construct drainage swales: $7,500.00
- Excavation and backfilling/compaction for north and west walls: $5,000.00
- Waterproofing of earth-sheltered walls: $1,500.00
- Modify hardboard siding on north and west walls: $2,000.00
- Reroofing with new single-ply membrane with rigid insulation: $7,500.00
- Modify or replace gravel stop flashings (Allowance): $2,500.00
- Rehabilitate wood soffits, fascias and trims: $2,500.00
- Rehabilitate sills of south windows: $600.00
- Replace inswinging east doors for egress: $4,500.00
- Repaint exterior of building: $2,500.00
- Install new exterior light fixtures (Allowance): $1,500.00

**Subtotal Gallery Exterior Preservation/Rehabilitation Construction Cost:** $38,600.00

General Conditions (15%): $5,790.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $3,860.00

**Total Gallery Exterior Preservation/Rehabilitation Construction Cost:** $48,250.00

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Gallery - Interior Preservation/Rehabilitation Construction:

**Phase 3**
- Repaint/stain interior: $2,500.00
- Install fire sprinkler system: Not included
- Emergency lighting, lighted exit signage and other electrical wiring improvements: $3,000.00
- Install new interior light fixtures (Allowance): $3,000.00
- Remodeling for adaptive reuse: Not applicable

**Subtotal Gallery Interior Preservation/Rehabilitation Construction Cost:** $8,500.00

General Conditions (15%): $1,275.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $850.00

**Total Gallery Interior Preservation/Rehabilitation Construction Cost:** $10,625.00
**Total Construction Cost:** $58,875.00

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<td>Project Contingency (15%)</td>
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**Total Gallery Estimated Project Cost***: $84,035.00

* Add 6% - 8% per year for construction escalation.
Barn/Stable - Exterior Preservation/Rehabilitation Construction:

Phase 3

- Remove encroaching shrubs and trees from north and east walls (also see Site): $1,000.00
- Regrade and construct drainage swales: $10,000.00
- Structural repairs and reinforcing: $2,000.00
- Repair and/or replace damaged corrugated metal roofing: $6,000.00
- Rehabilitate and/or replace damaged or missing wood siding (Allowance): $8,000.00
- Rehang corral gate: $500.00
- Install new exterior light fixtures (Allowance): $1,500.00

Subtotal Barn/Stable Exterior Preservation/Rehabilitation Construction Cost: $29,000.00

General Conditions (15%): $4,350.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $2,900.00

Total Barn/Stable Exterior Preservation/Rehabilitation Construction Cost: $36,250.00

Barn/Stable - Interior Preservation/Rehabilitation Construction:

Phase 3

- Install new interior light fixtures (Allowance): $1,000.00
- Install fire sprinkler system: Not included
- Install fire alarm system: Not applicable
- Install emergency lighting and lighted exit signage: Not applicable
- Remodeling for adaptive reuse (Allowance): $25,000.00

Subtotal Barn/Stable Interior Preservation/Rehabilitation Construction Cost: $26,000.00

General Conditions (15%): $3,900.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $2,600.00

Total Barn/Stable Interior Preservation/Rehabilitation Construction Cost: $32,500.00
**Total Construction Cost:** $68,750.00

- **A/E Design Fees (15%):** $10,300.00
- **Reimbursable Expense Allowance:** $2,000.00
- **Environmental Clean-up Allowance:** $1,000.00
- **City of Colorado Springs Building Permit/Development Fees:** Not applicable
- **Hazardous Material Testing and Abatement Allowance:** Not applicable
- **Miscellaneous Materials Analysis and Testing Allowance:** Not applicable
- **Archaeological Monitoring (if required):** $3,000.00
- **Project Contingency (15%):** $10,300.00

**Total Barn/Stable Estimated Project Cost**: $95,350.00

*Add 6% - 8% per year for construction escalation.*
### Historic Structure Assessment

**Reconstruction of Missing Original Structures and New Construction:**

**Phase 2**

- Reconstruction of Studio with handicapped accessible restrooms and catering kitchen (1,980 sq. ft. x $200/sq. ft.): $396,000.00
- Reconstruction of Garage/Shop (540 sq. ft. x $180/sq. ft.): $97,200.00
- Extend water, sanitary sewer and natural gas services to new Studio and Garage/Shop Buildings: $30,000.00
- Extend new secondary electrical service from 100kVa transformer to new Studio and Garage/Shop Buildings: $20,000.00
- Construct new 3,000 sq. ft. Studio/Conference Building with parking near west end of new entry driveway: Not included
- New water, sanitary sewer and natural gas services to the new Studio/Conference Building: Not included
- New 3-phase electrical service to the new Studio/Conference Building (Allowance): $75,000.00
- Grading and access roadway improvements (Allowance): $25,000.00

Subtotal Reconstruction Cost: $643,200.00

General Conditions (15%): $96,480.00
Contractor Overhead & Profit/Bonds/Insurance (10%): $64,320.00

**Total Reconstruction Cost:** $804,000.00

A/E Design Fees (10%): $80,400.00
Reimbursable Expense Allowance: $10,000.00
City of Colorado Springs Building Permit/Development Fees: Not applicable
Hazardous Material Testing and Abatement Allowance: Not applicable
Miscellaneous Materials Analysis and Testing Allowance: $10,000.00
Archaeological Monitoring (if required): $5,000.00
Project Contingency (15%): $120,600.00

**Total Reconstruction Project Cost**: $1,030,000.00

* Add 6% - 8% per year for construction escalation.

**TOTAL PROJECT COST (All Buildings)**: $3,048,785.00
Technical Literature References

Aerial Photograph #447 (30 June 1967), Special Collections, Pike’s Peak Library, Colorado Springs


Colorado Springs Gazette Telegraph
“C. S. Artists to Build Adobe Home on Top of ‘Castle’ Rock, North of City,” 2 June 1935
“Dorothy Heller Honored,” 2 July 1965, p. A4
“Dorothy K. Heller,” (obituary) 28 January 1999, News Section, p. 4
“Dorothy Kemp Heller,” (obituary) 27 January 1999, News Section, p. 2
“Exhibit Reflects Life of Artist,” 17 September 1977, p. 6D
“The Handcraft Fair,” 23 March 1936
“Trinidad Gallery Received Heller’s Work,” 22 November 1986, p. F20
“Woman of the Week,” 22 April 1950

Colorado Springs Independent
“The Great Gatsbys of Yawn Valley,” 12 December 2002, p. 16
“Pop Goes the Cowboy,” 30 September 2004, p. 39

Denver Post
“Bad Girls’ Get Help in Springs,” 8 March 1963

Free Press (Colorado Springs)
“Dorothy Heller Helps Girls in Trouble,” 10 March 1957
“Heller Exhibit Follows Old Master Lines,” 3 January 1950, p. 16
“Heller’s Hats Practical Collection,” 26 February 1950, p. 14
“Police Off Beat,” 2 June 1966, p. 19
“Social Investigator Retires,” 9 May 1965, p. 11

Heller Collection, Starsmore Center for Local History, Colorado Springs Pioneer Museum

“Meet Our Creative Team,” The Weekly Alexander Film Company Animator, 1 July 1960, p. 3

Pittsburgh Sun-Telegraph
“Capable Work by Pupils,” 11 January 1931

Residential Property Appraisal Records for 1150 Eagle Rock Rd. (parcel #63200-00-002), El Paso County Assessor’s Office

Interview with Willard “Bill” Riley, Conducted by Ron Sladek at the University of Colorado at Colorado Springs, 12 October 2008

Rocky Mountain News
“Sad Goodbye After 30 Years,” 2 July 1965, p. 71
“Silk Screens, Water Colors, Oils Included in Fine Exhibition Here of Soldier Art,” 14 May 1944


Tulsa Daily World
“Sculptor Lives in Own World on Mountainside,” 24 October 1937

United States Census, 1910 (records for families of Lawrence Heller & Dorothy Kemp)

Warranty Deeds, Reception #513733 (5/13/33); Reception #557180 (5/9/35); Reception #558524 (6/4/36), El Paso County Clerk & Recorder

Preservation Briefs, U.S. Department of the Interior, National Parks Service, that may apply include:

• Preservation Brief #1, Cleaning and Waterproof Coating of Masonry Buildings
• Preservation Brief #2, Repointing Mortar Joints in Historic Brick Buildings
• Preservation Brief #4, Roofing for Historic Buildings
• Preservation Brief #9, Repair of Historic Wooden Windows
• Preservation Brief #10, Exterior Paint Problems on Historic Woodwork
• Preservation Brief #11, Rehabilitating Historic Storefronts
• Preservation Brief #17, Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
• Preservation Brief #18, Rehabilitating Interiors in Historic Buildings
• Preservation Brief #21, Repairing Historic Flat Plaster - Walls and Ceilings
• Preservation Brief #24, Heating, Ventilating & Cooling Historic Buildings
• Preservation Brief #28, Painting Historic Interiors
• Preservation Brief #32, Making Historic Properties Accessible
Terms and Definitions

Definitions of the following terms used in this Historic Structure Assessment report are provided to assist the readers of this report:

Character-defining feature: A prominent or distinctive aspect, quality or characteristic of an historic property that contributes significantly to its physical character. Structures, elements, objects, vegetation, spatial relationships, views, furnishings and decorative details and materials may be such features.

Element: An element may be an architectural feature, structural component, engineering system or a functional requirement.

In-kind: In the same manner, with the same material, or with something equal in substance creating a similar or identical appearance or effect.

Material: The physical elements that were combined or deposited to form a property. Historic material or historic fabric is that from an historically significant period, as opposed to material used to maintain or restore a property following its historic period(s).

Period of Significance: The general era or length of time when a property was associated with important events, activities or persons.

Preservation: Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features, rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Reconstruction: Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features and detailing of a non-surviving site, landscape, building, structure or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Rehabilitation: 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.

Restoration: Restoration is defined as the act or process of accurately depicting the form, features and character of a property as it appeared at a particular period of time by means of removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.