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CASA DE ADOBE

REPORT UPDATE & REPORT

PREPARED FOR

The City of Los Angeles

PREPARED BY

GRUEN ASSOCIATES

ARCHITECTURE PLANNING INTERIORS

Casa De Adobe Report Update and Report
Prepared on behalf of The City of Los Angeles

DRAFT 1.3 - 5/31/13

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1.0 EXECUTIVE SUMMARY

1.1 Purpose of Report

The Casa de Adobe is one of Los Angeles' oldest cultural destinations. Constructed in 1918, Casa de Adobe was built using traditional adobe construction techniques and in the one-story hacienda-style typical of 19th Century California. The intent behind the Casa de Adobe was to provide a working replica of life on a rancho, and as an early cultural institution in Los Angeles, fell to under the protective operations of the Southwest Museum in 1929. Originally situated on a main thoroughfare connecting Route 66 to Downtown Los Angeles, Casa de Adobe was a popular tourist attraction and event space throughout much of the 20th Century. In 1992, the Southwest Museum Board decided to limit public access to only special events and programs due to financial difficulties and low visitation. After the 2003 merger between The Southwest Museum and The Gene Autry Western Heritage Museum, the Casa de Adobe's artifact collection was relocated to a storage facility near Griffith Park for conservation and exhibition by the resulting Autry National Center. To date, the Casa de Adobe is mostly closed to the public and remains an under utilized Los Angeles landmark.

This study of the Casa de Adobe was prepared at the request of The City of Los Angeles and seeks to verify the existing condition of the Casa de Adobe by first reviewing the "Casa de Adobe Historic Structure Report", prepared in 2006 by Heritage Architecture and Planning after The Southwest Museum merged with the Gene Autry Western Heritage Museum to become the Autry National Center. The purpose of that report was to analyze the historic significance of Casa de Adobe, evaluate the existing conditions of the site, building, and systems, and provide rehabilitation and restoration options based on those findings.

By first reviewing and familiarizing ourselves with the findings of the 2006 "Casa de Adobe Historic Structure Report", this report serves to evaluate the accuracy of the information presented in the existing document, comment on any perceived inaccuracies, and provide missing information or perspectives as necessary to provide a well-rounded, current analysis of the condition of the Casa de Adobe.

1.2 Methodology

This report was prepared based on the findings of the "Casa de Adobe Historic Structure Report", prepared in 2006 by Heritage Planning & Architecture, and observations from the site visits on March 19, 2013 and April 9, 2013.

1.3 Overview of Findings

Overall, the 2006 Casa de Adobe Historic Structure Report prepared by Heritage Architecture & Planning fails to provide a comprehensive summary of the existing condition of Casa de Adobe and its building components, and lacks detail especially in regards the condition of the adobe structure, seismic retrofit requirements, and recommended rehabilitation options for the building and site. Many section of the report require either further commenting or additional information and study in order to provide an accurate evaluation of the Casa's current state. This report also did not include cost estimates for any rehabilitation that may be required. The report does, however, provide an excellent historic context for the Casa de Adobe and clearly articulates the early intentions, development, and history of the Casa de Adobe over its lifetime. Based on site observation and on our review of the 2006 Historic Structure Report, we have determined that the Casa de Adobe can be rehabilitated to a state where it can once again serve as a working replica of a 19th Century California rancho home, the purpose for which it was originally intended. Based on likely rehabilitation treatments and knowledge of other successful adobe projects of similar size, the our estimated bottom line total cost for rehabilitation of the Casa de Adobe would be $5.14 million. Key findings and comments are summarized below, by specialization, and provided in full detail in the subsequent sections of this report.

Historic Resources

The 2006 "Casa de Adobe Historic Structure Report" provides an excellent historical context for the development and early thinking behind the design and construction of the Casa. Beyond detailing the history of the Casa, however, the report is largely deficient with many areas that have missing or underdeveloped information. Sections meant to specify the Established Period of Significance, Character-Defining Features, and use of California Historical Building Codes lack justification. As a result, the proposed rehabilitation treatments lack specificity of scope.

Architectural

While the 2006 Casa de Adobe Historic Structure Report is successful in its detailed account of the Casa de Adobe's historic significance, most of the non-historic portions of the report are overly ambiguous and avoid providing concrete recommendations for mediating many of existing problems throughout the buildings. Overall, a detailed evaluation of the building's elements will be required before specific recommendations can be made for rehabilitation. Aside from rehabilitating the physical state of the building itself, much can also be done to improve the overall landscaping and curb appeal of the site, to create a stronger programmatic link to the Southwest Museum, and to forge a deeper connection to the surrounding neighborhood along Figueroa Street.

Structural

As detailed in the 2006 Historic Structure Report, the structural and seismic performance concerns of the existing adobe and roof structure are provided without any evaluation of the structural performance and conditions. While this report will provide a more thorough analysis of the current structural condition of the Casa based on site observations, detailed seismic and structural review, analysis, or study of the existing structure is recommended to determine specific seismic and structural strengthening requirements. Based observations by adobe specialist Mel Green, Casa de Adobe will likely require seismic retrofitting to the adobe walls and roof, which may include the removal of the existing roof, new plywood, minor repairs, wall anchors, etc. There should be no need for new foundations, to which only some localized repair may be required.

Civil

There are no Civil related to items to evaluate the accuracy of within the 2006 Casa de Adobe Historic Structure Report" Concerns in the report based on accessibility (ADA), site features, drainage or utilities are either from an Architectural perspective, or an MEP perspective, of which, a Civil evaluation based on accuracy would not be accurate. The Rehabilitation Study also makes no mention of storm water management and is vague in its sanitary sewer recommendations. As such, the subsequent Civil section of this report documents existing conditions from a Civil perspective to identify and propose solutions to concerns that are civil related. Based on site observations, minor site work will likely be required to improve site drainage, facilitate ADA compliance, and ensure compliant sewer/storm drain connections. A soils/hydrology report is also highly recommended.

Mechanical/Electrical/Plumbing

The 2006 "Casa De Adobe Historic Structure Report" did not sufficiently address the condition of Mechanical, Electrical, or Plumbing systems within the Casa. General comments based on our observations are provided in the subsequent MEP section of this report to identify and propose solutions to building systems-related concerns. Final MEP costs are highly dependent on the eventual use of the Casa's interior spaces. As such, the MEP portion of the cost estimate may be low depending on what scope is ultimately necessary for cooling, archival temperature control, etc.

Environmental

Based on the general nature of the rehabilitation options presented in the 2006 Casa de Adobe Historic Structure Report, restoring the Casa de Adobe to its original grandeur would require significant building restoration effort including fabricating significant missing architectural features, recapturing the appearance of the property at one

particular period of its history, and removing later additions. Based on the historical significance of and proposed modifications to the Casa de Adobe, the proposed project would likely qualify for a Class 31 (Historical Resources Restoration/Rehabilitation) Categorical Exemption. Class 31 Categorical Exemptions are limited to maintenance, repairs, stabilization, rehabilitation, conservation or reconstruction of historical resources in a manner consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties. However, because the treatments recommended in the Historic Structure Report are broad in nature and generally not justified by any detailed analysis or evaluation, any proposed project that deviate from what is presented in the 2006 as a result of further investigation would require further environmental evaluation.

1.4 Contributors

Gruen Associates, with Michael Enomoto, FAIA, as project principal, assembled and coordinated a team of consultants with the specific experience and expertise require for this evaluation. They include:

- Gruen Associates | *Architecture and Landscape Architecture*
- Architectural Resources Group, Inc. | *Historic Preservation*
- John A. Martin & Associates, Inc. | *Structural*
- VCA Engineers, Inc. | *Civil*
- Innovative Engineering Group, Inc. | *Mechanical/Electrical/Plumbing*
- Terry A. Hayes Associates, Inc. | *Environmental*
- Faithful & Gould | *Cost Estimator*
- Mel Green and Associates | *Adobe Consultant*

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2.0 HISTORY OF THE CASA DE ADOBE

Casa de Adobe is authentically constructed replica of a 19th century Spanish California rancho home, built with a adobe bricks mixed and formed from earth dug at the construction site. Conceived by members of The Hispanic Society of California, Henry W. O'Melveny and Mrs. Randolph Huntington, the Casa de Adobe was intended to be a working monument to Spanish-colonial life; providing those of Hispanic heritage in Los Angeles an opportunity to reclaim part of their identity and educating others about the culture, lifestyle, and architecture of those living in California before the spread of Anglo-American culture in the late 19th century. Traditionally designed, built, and landscaped, the Casa de Adobe was also furnished with a collection of antiques and artifacts, many donated by decedents from Old "Spanish" clans of Southern California.

The Casa de Adobe was purchased by the Southwest Museum in 1925, and while it has a rich history as a popular tourist destination and event venue, its physical separation from the Southwest Museum campus has led to a public disassociation of the two as one entity, resulting in the Casa de Adobe's inability to maintain funding. Since the 1970's, the Southwest Museum has debated the merit and practicality of using the Casa de Adobe as a gallery space to establish a stronger tie between the two entities. In 1992, however, the Southwest Museum Board decided to limit public access to only special events and programs, citing financial difficulties and low visitation. After the merger of the Southwest Museum and the Autry Western Heritage Museum in 2003, the Casa de Adobe's artifact collection was moved to the Autry National Center Library near Griffith Park for conservation and storage.

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3.0 HISTORIC RESOURCE ASSESSMENT

This 2006 "Casa de Adobe Historic Structure Report" provides a very good historical context for the development and early thinking behind the design and construction of the Casa. However, the more detailed development of the report has a number of deficiencies and areas of missing or underdeveloped information, as described below:

1. Establishment of Period of Significance: This is established as 1914-1960, with no real justification for the end date other than 50 years old. The period of Significance could use further discussion and is important for preservation treatment.
2. Evaluation and outline of Character-Defining Features: This is not very clearly written, with more categories than necessary. A clarified list of character defining features would be very helpful.
3. Use of California Historical Building Code (CHBC) and general approach to code compliance: There is no real evaluation of code issues. (And there is no proposed building use to base the code study on). This needs to be developed.
4. Accessibility proposals: The property has significant accessibility issues. Further study and discussion is necessary.
5. Interpretation of the Secretary of the Interior's Standards: The treatment proposed is rehabilitation. However, there is no real discussion of the scope of work necessary to justify this treatment. Rehabilitation might be appropriate, or a preservation treatment might be appropriate. Needs further discussion.
6. Approach to the repair and conservation of historic materials: There is no comprehensive condition assessment or documentation of existing materials and proposed treatments. This needs further development.
7. Seismic analysis and strengthening recommendations: There is not a seismic evaluation of the building, nor is there any clarity about what the existing construction details are. Repair and strengthening work conducted in 1998 after the Northridge earthquake is mentioned but not evaluated or documented. Need to include and review documents produced at that time, then develop a comprehensive evaluation and plan for any additional strengthening required.
8. HVAC/electrical/fire protection systems replacement: There is no discussion about the artifacts which have been removed, whether they will be reinstalled, and if so what are their temperature and humidity requirements. Security needs, lighting needs, etc. This needs further evaluation and development.
9. Site: There is no discussion about site issues and landscape. This needs to be developed.
10. Cost: The estimate is a good budget number to work with as the scope is currently defined. The overall construction budget of $3.8 million seems reasonable based on other adobe projects.
11. Programmatic Development: The development of a rehabilitation program for the building needs to be based on a program and use strategy for the building and grounds. This use proposal is not discussed in the report, and needs to be outlined to form a basis for all of the work that may need to be done. Also for further discussion is how and can the Adobe work with the main museum as a single facility.

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4.0 ARCHITECTURAL ASSESSMENT

This section summarizes the consultant team's analysis of the existing "Casa de Adobe Historic Structure Report "(2006) based on internal review as well as site visits conducted on March 19, 2013 and April 9, 2013. Organized according to specialty, each of the following sections will document any discrepancies between existing conditions and what is reported in the in the existing Report and provide additional recommendations or points for consideration as necessary.

4.1 Architectural Quality of Space and Programming

Overall, the Casa de Adobe Historic Structure Report (2006) successfully illustrates the rich historical context behind the design and development of the Casa. However, much of the non-historic portion of the report is overly ambiguous and avoids providing concrete recommendations for mediating the Casa's many problems. Based on our review of the study and site visits on March 19, 2013 and April 9, 2013, our comments regarding non-historic architectural aspects of the building are as follows:

1. The report implies that the historic building materials are at risk of deterioration, but provides no concrete assessment or documentation of their current state, nor specifically proposed treatments.
2. There is no discussion of the general condition of the site and overall landscape issues. This should be developed.
3. It is implied that formal structural, soils, and seismic analysis need to be conducted in and around Casa de Adobe in order to develop a comprehensive evaluation and plan for any mitigation that may be required.
4. It's unclear, programmatically, what use Casa de Adobe will serve. The HSR implies that the Casa may be ill-suited to house artifacts. If the intention is for the Casa to become a functioning gallery/display space, it remains unclear whether the Casa's collection will be returned to the building.
5. The Casa's most significant problem, programmatically, is its physical separation from the Southwest Museum. This has been emphasized, recently, by the installation of the Gold Line Light rail which runs between the two sites. This separation, historically, has proven problematic for the operational viability of the Casa. Efforts should be made to improve the symbolic association of these two buildings to one another.
6. The Casa occupies a prominent lot along Figueroa, but landscaping on the site is in an accelerated state of disrepair. Efforts should be made to improve the Casa's curb appeal in order to reassert its significance along Figueroa Street. Connections to the park across Figueroa could also be emphasized to further connection the Casa to the surrounding neighborhood and amenities.

4.2 Structural Assessment

The purpose of the structural rehabilitation study is to review and update the available previous studies, verify the general nature and quality of the existing structures, verify the general structural framing, and provide comments concerning the structural integrity of the buildings. Previous available reports were reviewed and a site visit was made to observe the general condition of the structural portions of the existing buildings. The structural review did not include a structural analysis or calculations and did not include a detailed evaluation of the structural drawings or design. The structural observation was general in nature and included only the accessible and visible exterior and interior primary structural systems.

The structures were observed on March 18, 2013, for visible signs of distress due to structural inadequacies or deterioration. Every portion and each structural member were not observed due to limited access. The accessible exterior surfaces of the perimeter walls, roof areas, and interior spaces were observed. Not all portions of the

interior and exterior of the structure were observed due to limited accessibility and finishes covering the structures.

The description of the building structures is based on the previous available reports and our observations. The existing building structural drawings were not made available.

Non-structural items, such as mechanical, plumbing, electrical systems, roofing, finish work, etc., were not observed or reviewed by our office. However, non-structural elements that appeared to warrant attention are presented in this report.

4.2.1 Overview of Structural Findings

The Case de Adobe consists of a single structure built in 1918. See photos 4.28 for an aerial view of the Casa de Adobe. The following is a brief description of each of the building structures.

The Case de Adobe consists of one level above grade. The foundation system is assumed to consist of the adobe bricks on grade without concrete foundations. The first floor is a concrete slab-on-grade. The roof consists of wood sheathing and beams supported by adobe walls. The lateral force resisting system consists of the exterior and interior unreinforced load bearing adobe shear walls in both the longitudinal and transverse directions. The wood sheathing at the roof level act as horizontal diaphragms.

The following various previous reports concerning the design and condition of the structures have been prepared and provided.

- "Casa de Adobe Historic Structure Report" dated July 28, 2006 by Heritage Architecture & Planning.

A review of the structural portions of the "Casa de Adobe Historic Structure Report" dated July 28, 2006 indicates the following:

1. We generally agree with the findings in the structural portions of the "Casa de Adobe Historic Structure Report". The following and section III, Observations and Recommendations, of this report provide updated and additional information for the structural portions of the subject "Casa de Adobe Historic Structure Report".
2. General structural and seismic performance concerns of the existing adobe and roof structure are provided. A detailed existing structural condition survey was not previously performed or presented in the report. A detailed seismic and structural review, analysis, and study of the existing structure was not previously performed or presented in the report. A structural condition survey, detailed seismic and structural review, analysis, and study of the existing structure are recommended in the "Casa de Adobe Historic Structure Report" to determine the required repairs, seismic, and structural strengthening.
3. The general condition of the existing clay tile, roof structure, adobe, and wood framing is provided. A detailed investigation and testing of the structural materials are recommended to determine the structural repair and seismic condition and strengthening requirements.
4. The report indicates a seismic retrofit should be conducted in compliance with Los Angeles Division 88 ordinance and the roof tile at the main building should be removed and replaced in order to provide plywood sheathing on the roof as part of the seismic retrofit work.
5. A FEMA document is referenced in first paragraph on page VI-3 is referenced but was not made available; this document should be obtained and reviewed.

4.2.2 Structural Observations and Recommendations

The Southwest Museum and the Casa de Adobe structures were observed on March 18, 2013. The building

structures for the Southwest Museum appear to be in fair to good condition. The building structure for the Casa de Adobe appears to be in poor to fair condition. A review of the available previous reports, our observation, and our experience with historical structures indicate the following concerning the existing structure and their condition:

- The adobe walls appear to be supported on grade without concrete foundations which may be cause for concern for the seismic performance of the walls. The use of adobe for load bearing or shear walls is not allowed by the current code because the seismic performance has historically been inadequate unless seismically strengthened. The adobe should be tested for compressive and shear strength and a seismic analysis should be performed of the adobe shear walls.
- The straight sheathing supported by wood beams and the wood lattice in the roofs are not allowed by the current code because the seismic performance has historically been inadequate unless seismically strengthened.

A limited observation on portions of the structures of the existing structural framing was performed. The observation was limited due to restricted access and the finishes covering the structure. The building structure for the Casa de Adobe appears to be in poor to fair condition which is primarily due to the lack of proper protection and maintenance with the adobe, roofing, roof clay tile, wood framing, and the exposed roof wood outriggers. Observation of the structures resulted in the following issues and recommendations:

1. The overall building site is shown in photo 4.1.
2. The south entrance is shown in photo 4.2.
3. In various areas of interior and exterior walls, the plaster has deteriorated causing the adobe bricks to be exposed as shown in photo 4.3 of a portion of the south wall. The adequacy of the plaster and exposed adobe should be investigated to determine required repairs or replacements.
4. In various areas of the roof, the wood outriggers are deteriorated as shown in photos 4.3, 4.4, and 4.9. The adequacy of the wood outriggers should be investigated to determine required repairs or replacement.
5. The existing roof may leak water as evidenced by the plastic protection shown in photo 4.5. The adequacy of the roofing should be investigated to determine required repairs or replacement.
6. A portion of the west wall is shown in photos 4.6 and 4.7.
7. A portion of the north wall is shown in photo 4.8.

Figure 4.1: Casa de Adobe
SOURCE: John A. Martin & Associates, Inc.

Figure 4.2: South Entrance
SOURCE: John A. Martin & Associates, Inc.

Figure 4.3: Deteriorated South Wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.4: Deteriorated Wood Outriggers
SOURCE: John A. Martin & Associates, Inc.

Figure 4.5: Plastic protection at south end of west wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.6: West wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.7: West Wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.8: North Wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.9: Close-up of deteriorated wood outrigger
SOURCE: John A. Martin & Associates, Inc.

Figure 4.10: Deteriorated wood canopy roof supports
SOURCE: John A. Martin & Associates, Inc.

Figure 4.11: Close-up of supports per Fig 4.10
SOURCE: John A. Martin & Associates, Inc.

Figure 4.12: Broken plaster and clay tiles at east wall
SOURCE: John A. Martin & Associates, Inc.

Figure 4.13: Interior wall with plaster removed
SOURCE: John A. Martin & Associates, Inc.

Figure 4.14: Interior wall with plaster removed
SOURCE: John A. Martin & Associates, Inc.

8. The courtyard canopy roof framing has minimal structural supports with evidence of wood and clay tile deterioration as shown in photos 4.10 and 4.11. The wood framing for the canopy appears to require removal and replacement with adequate structural framing which will require the clay tile to be removed and replaced. The adequacy of the wood framing and clay tile should be investigated to validate the above structural framing replacement.
9. In various areas, of the roof, the clay tile is loose, deteriorated or broken as shown in photo 39 indicating the clay tiles require new anchorage and some clay tiles require replacement. The adequacy of the clay tile and anchorage should be investigated to determine required repairs or replacement.
10. In various areas of the interior and exterior walls, the plaster has deteriorated causing the adobe to be exposed as shown in photos 4.12, 4.13, and 4.14. The adequacy of the clay tile should be investigated to determine required repairs or replacement.

4.2.3 Adobe Assessment (Mel Green and Associates)

The 2006 Casa de Adobe Historic Structure Report, as prepared by Heritage Architecture & Planning, does not provide much great detail in regards to the condition of the adobe structure or treatment recommendations, but does encourage minimum intervention. To date, it appears that the Casa de Adobe has not received seismic retrofitting, but cracks caused by seismic activity have been patched. The building may have a cement plaster coating, but a preferred option would be an adobe plaster. Adobe plaster, while more authentic to the building, comes at a high maintenance cost to the city. The existing cement plaster coating could remain with some very minor modifications. Figure 4.15 shows example details Mel Green and Associates have used to rehabilitate other adobe buildings. While these drawings will need to adjusted to the specific conditions of the Casa de Adobe, they provide good illustration of what kind of intervention may be necessary to secure the roof and adobe.

4.2.4 Structural Conclusions

The existing primary structure for the Casa de Adobe appears to have performed relatively well and is in poor to fair condition where the poor condition is due to the lack of proper protection and maintenance with the adobe, roofing, roof clay tile, wood framing, and the exposed roof wood outriggers.

The condition of the support and anchorage of the Casa de Adobe roof clay tile indicates anchorage of the tile is required and some clay tiles require replacement.

Some Casa de Adobe roof wood outriggers require repair or placement.

Some of the adobe has been exposed and unprotected and may require repairs or replacement.

Structural improvements for the Casa de Adobe may be required in accordance with the Los Angeles Division 88 ordinance which may require the roof clay tile to be removed and replaced with new anchorage in order to provide plywood sheathing on the roof as part of the seismic retrofit work.

In reviewing the Cost Estimate by Faithful and Gould (see Section 7), the proposed budget appears valid from a structural standpoint.

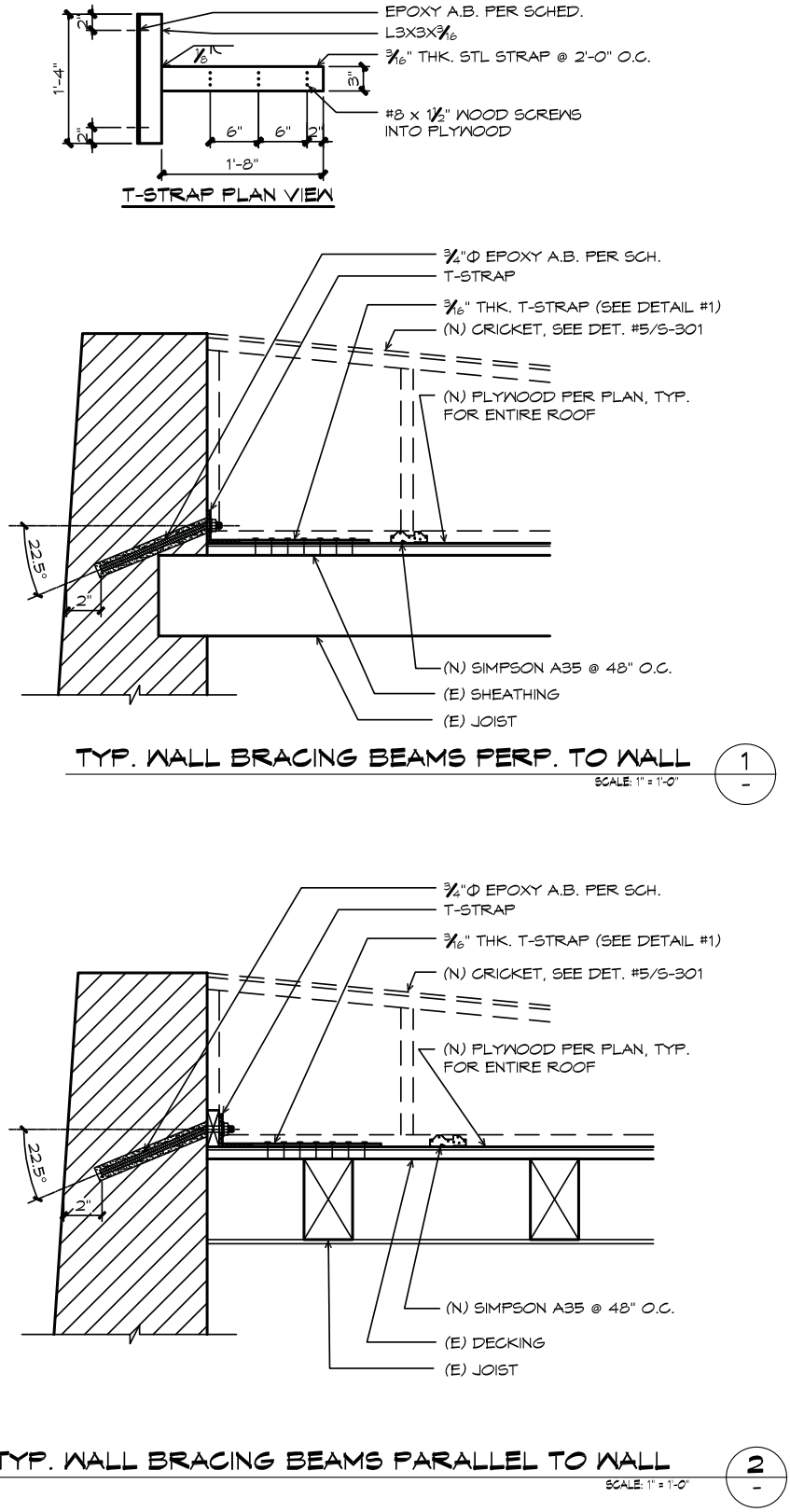

Figure 4.15: Example adobe bracing details
SOURCE: Mel Green and Associates, Inc.

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5.0 INFRASTRUCTURE ASSESSMENT

This section summarizes the consultant team's analysis of the existing Casa de Adobe Historic Structure Report (2006) based on internal review as well as site visits conducted on March 19, 2013 and April 9, 2013. Organized according to specialty, each of the following sections will document any discrepancies between existing conditions and what is reported in the in the 2006 Historic Structure Report and provide additional recommendations or points for consideration as necessary.

5.1 Civil and Underground Wet Utilities Assessment

Intent and purpose of this report is to provide additional information from a Civil Engineering perspective to the already existing Casa De Adobe: Historic Structure Report dated July 28, 2006. This perspective evaluates new insight on the condition of the museum's existing drainage, site features, Americans with Disabilities Act requirements, and underground wet utilities. Additionally, this report analyzes, and suggests edits of, the recommendations provided in Section VI: Recommendations of the 2006 report, specifically, in regards to Part B page 2; Part C, Item 2 page 4; and Part D, Item "g" page 8.

The Casa de Adobe Museum is bounded by Woodside Drive to the west, Figueroa Street to the east, and neighbors private property on both the north and south edges of the site within Highland Park in the City of Los Angeles. Description of the site will be of the interior courtyard, the exterior site features surrounding the main building, and existing site wet utilities.

5.1.1 Interior Courtyard

At the time when the museum was built, the courtyard was full of landscape and at some point in the museum history the landscape was removed and replaced with square pavers. The original fountain within the courtyard has since been replaced and landscape features have also been redeveloped over the span of the museum history.

Existing Site Features

On site the Casa de Adobe Museum is a square building with a central open air courtyard. A water fountain is at the central focal point of the courtyard surrounded by square pavers, and covered a walkway coming off the building. Landscape pockets align the corners of the courtyard with connecting walkways at the midpoints for accessibility between the courtyard and main building. Figures 5.1 and 5.2 illustrate the courtyard.

Figure 5.1: Courtyard with fountain focal point
SOURCE: VCA Engineers, Inc.

Figure 5.2: Landscape pocket
SOURCE: VCA Engineers, Inc.

Existing Site Grading
Grades within the courtyard flow from the northwesterly edge to the southwesterly edge. Slope from northwest to southwest seem to be consistent except for minor paving uplift, for example, at the northerly corner of the courtyard where grades are jagged. Figure 5.3 illustrates damaged pavers. The northeast, northwest, and southwest covered walkways also follow the grades of the courtyard so that they slope from northwest to southwest.

Within the southeastern portion of the covered walkway the grades reverse to meet the southwesterly edge of the courtyard. This action creates a low area for drainage, away from the building itself, within the southwesterly edge of the courtyard.

Figure 5.3: Unevenness of pavers and damage throughout
SOURCE: VCA Engineers, Inc.

Cross slope of the courtyard seems to comply with accessibility requirements, but accessibility to the courtyard still remains an issue as the only accessible path to the courtyard is by a ramp that exceeds maximum accessibility requirements.

5.1.2 Exterior Surrounding the Main Building

This section will provide a description of existing site features surrounding the main building within the property.

Existing Site Features
At the main entrance to the site along Figueroa Street is a multi-tiered staircase which connects the existing parkway directly adjacent to Figueroa Street and the parkway directly adjacent to the property. From the parkway directly adjacent to the property is a wrought iron fence and gate. At the gate is a walkway of pavers, perpendicular to the gate, which gives access to the staircase leading to the main entry of the main building. Figures 5.4, 5.5, and 5.6 show the walkways at the southeast edge of the property. Near the main entry of the main building are perpendicular lateral exterior walkways which wrap around the main building leading to the back of the property near Woodside Drive. This exterior area is slightly landscaped at the eastern and northern corner with bushes and a few trees, while the southern corner, southwestern edge, and western corner contain a varied landscape of trees, grass, ferns and bushes.

At the southwestern edge of the property, near the southern corner, is a short free standing wall extending from the adjacent property to the outside edge of the exterior walkway running along the existing main building. Along this exterior walkway moving from the southern corner to the western corner of the existing building the walkway is interrupted by a porch cover coming off the face of the main building at its western corner. Within this portion of the property contains the densest portion of landscape and garden features and a wall separating the southwest edge of the property from the back portion of the property. Figures 5.7, and 5.8 depict the landscape garden area at the southwest edge of the property.

Along the northeast edge of the property enables pedestrian movement by means of a walkway which leads to the back portion of the property along the northwest property. Along the walkway is an above ground storm drainage system visible from Figueroa Street until it wraps around the main building at its northern corner. At the northwest edge of the property is the above ground drainage system, walkway, asphalt paving extending from Woodside Drive to the drainage system adjoining the building; being approximately ten feet at its narrowest along Woodside and thirty feet at its widest along the drainage system.

Figure 5.4
SOURCE: VCA Engineers, Inc.

Figure 5.5
SOURCE: VCA Engineers, Inc.

Figure 5.6
SOURCE: VCA Engineers, Inc.

Figure 5.7
SOURCE: VCA Engineers, Inc.

Existing Site Grading

Grades at the southeastern edge of the property are sensible and slope in the natural direction of northwest to southeast. Grades along the northeastern and southwestern portions of the property have slopes that follow the natural direction of the site, but are slightly steeper than the slope at the southeastern edge. The northern corner of the property contains a landscape pocket between the property line and the surface drainage system, this area is the steepest within the site. The asphalt paving at the northwest edge of the property is also has steep grades towards the face of the building.

Cross slopes of certain areas of the walkway seem to exceed maximum accessibility requirements. No accessible route is available to the main entrance of the building without having to go on to the site from the rear entry.

5.1.3 Existing Site Wet Utilities

Utility research and site investigation determined the location of pertinent wet utilities servicing the site.

Existing Storm Drainage

About the exterior of the Casa de Adobe Museum has an existing surface drainage pattern that conveys water from the Woodside Drive to Figueroa Street. The start of the surface drainage pattern starts midway of the main building face along the northwest where there exists a ridge in the surface drainage channel diverting the storm water runoff in two different directions. Both directions of the channel route the water around the building towards Figueroa Street.

The channel running along the northeast continues as surface flow where it remains visible until it meets the wrought iron fence at the eastern corner of the property near Figueroa Street; at this corner the channel is hidden from sight by vegetation, and is highly deposited with sediment. Near the northern corner of the main building where the channel wraps around the main building exists a crossing between the walkway and channel. At this junction, the channel flattens out at the joining condition with the walkway, storm water then slightly ponds until it begins to be diverted down the walkway and down the channel. The storm water that crosses the walkway is conveyed once again in a channel. Figures 5.9, and 5.10 illustrate the open channel along the northeast edge of the property, and Figure 5.11 illustrates the sediment buildup within the channel at the end by the wrought iron fence. Downstream of the channel and walkway crossing is a square structure that takes the shape of a catch basin, it is open with no grate, which is presumed to have previously served as a drywell. At the termination of the channel near the wrought iron fence there is no indication that the storm water is introduced into the public right of way through parkway drains or hard tap connections to storm drain main lines within the abounding roads.

Figure 5.8
SOURCE: VCA Engineers, Inc.

Figure 5.9
SOURCE: VCA Engineers, Inc.

At the western corner of the main building is the location at which the portion of the channel flowing southwest at the northwest edge of the property is transferred from open channel flow to pipe flow. After this point the pipe is no longer visible and it is presumed that the storm water is cross connected to the on site sanitary sewer system. At the southern corner of the property is a wall separating the front yard from a garden area along the southwest edge of the property. At the face of this wall is the start of a storm water channel and ends with heavy sediment deposit at the wrought iron fence, spanning the entire width of the southeast edge of the property. But it is not determined if the channels were previously one continuous system, if these channels are two separate systems, or if these two systems were connected in some manner.

Figure 5.10
SOURCE: VCA Engineers, Inc.

Figure 5.11
SOURCE: VCA Engineers, Inc.

Figure 5.12
SOURCE: VCA Engineers, Inc.

Figure 5.13
SOURCE: VCA Engineers, Inc.

Figure 5.14
SOURCE: VCA Engineers, Inc.

Storm water drainage within the main building courtyard is possible through three catch basins located at the east and south corners within the courtyard with a third midway between the specified two corners. The grading scheme, as discussed in section B 1.2, creates the action needed for collection of storm water at these three locations. Within the eastern corner of the covered walkway, halfway between the building face and opening, exists a floor drain that was possibly installed to relieve stagnant storm water within the walkway. Figures 5.12, 5.13 and 5.14 show the catch basins at the swale area at the southeast edge of the courtyard. It is not determined how the storm water from within the courtyard is conveyed across the property line, but it is presumed that the storm water system within the courtyard is cross-connected with the on site sanitary sewer line.

5.1.4 Existing Sanitary Sewer System

Per City of Los Angeles Bureau of Engineering Central District Sewer Wye Map, see Figure 5.15, it is determined that the Casa de Adobe Museum has an existing house connection to the existing sewer main line along Figueroa Street. It is also determined that the house connection is active to serve the needs of the museum caretaker.

Without having the as-built information for the on site sanitary sewer system, it is determined from field investigation that the sewer system runs parallel to the southwest building face and meets the house connection at the property line where indicated on the Sewer Wye Map. This was the conclusion due to an exposed joint near midway the southwestern building face showing the vitrified clay pipe. The exposed portion of the pipe also shown a collapsed portion of the pipe. No other indication of on site sanitary sewer lines was discovered.

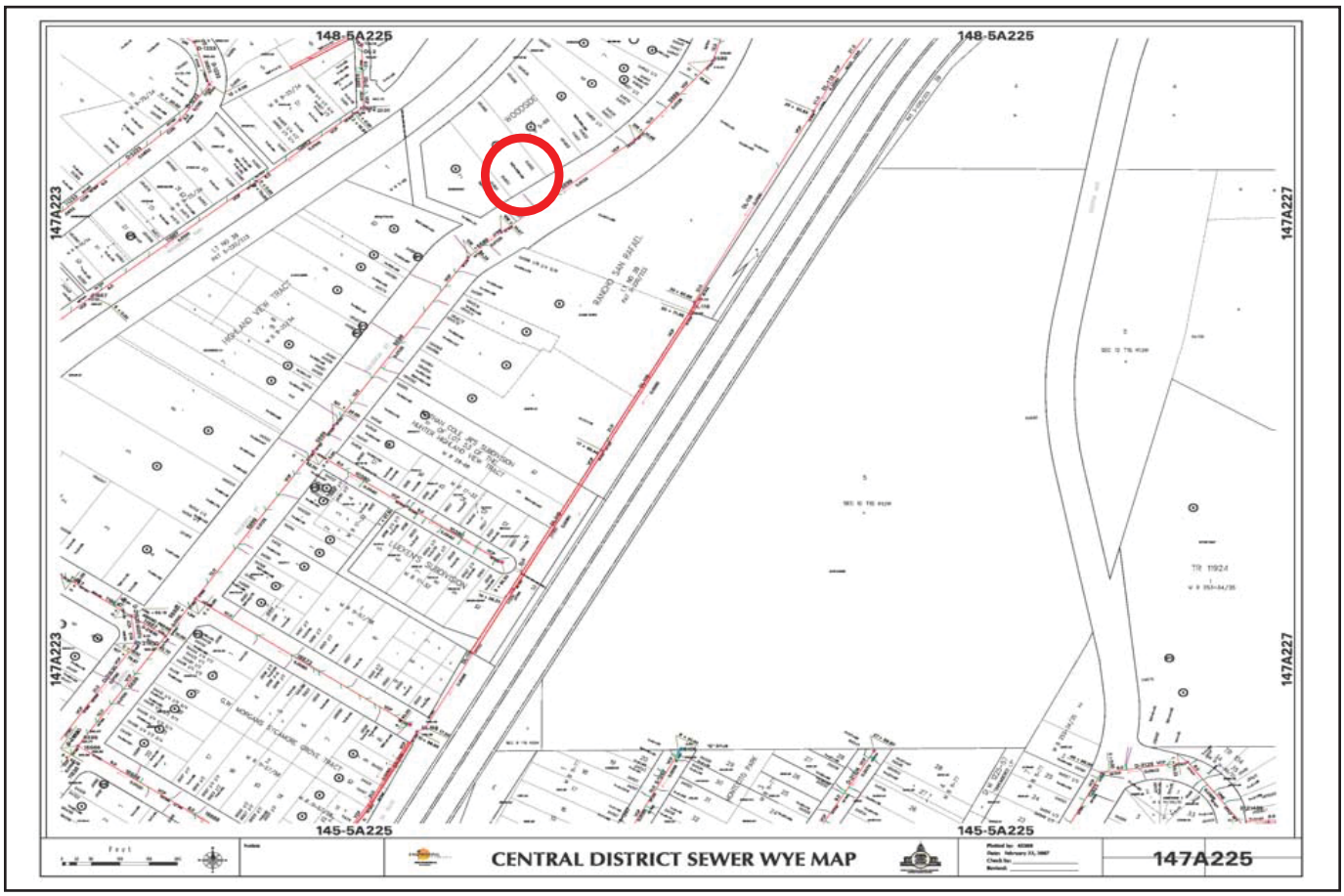

Figure 5.15: Sewer Wye Map. Casa De Adobe is within the red circle
SOURCE: VCA Engineers, Inc.

5.1.5 Existing Potable Water

Per Los Angeles Department of Water and Power water distribution maps, see Figure 5.16 for water map, it is determined that the Casa de Adobe Museum has an active metered connection near midway along the Figueroa Street property line. This connection to the main line services the demand of the museum, but it is not determined if the same connection is utilized for irrigation purposes.

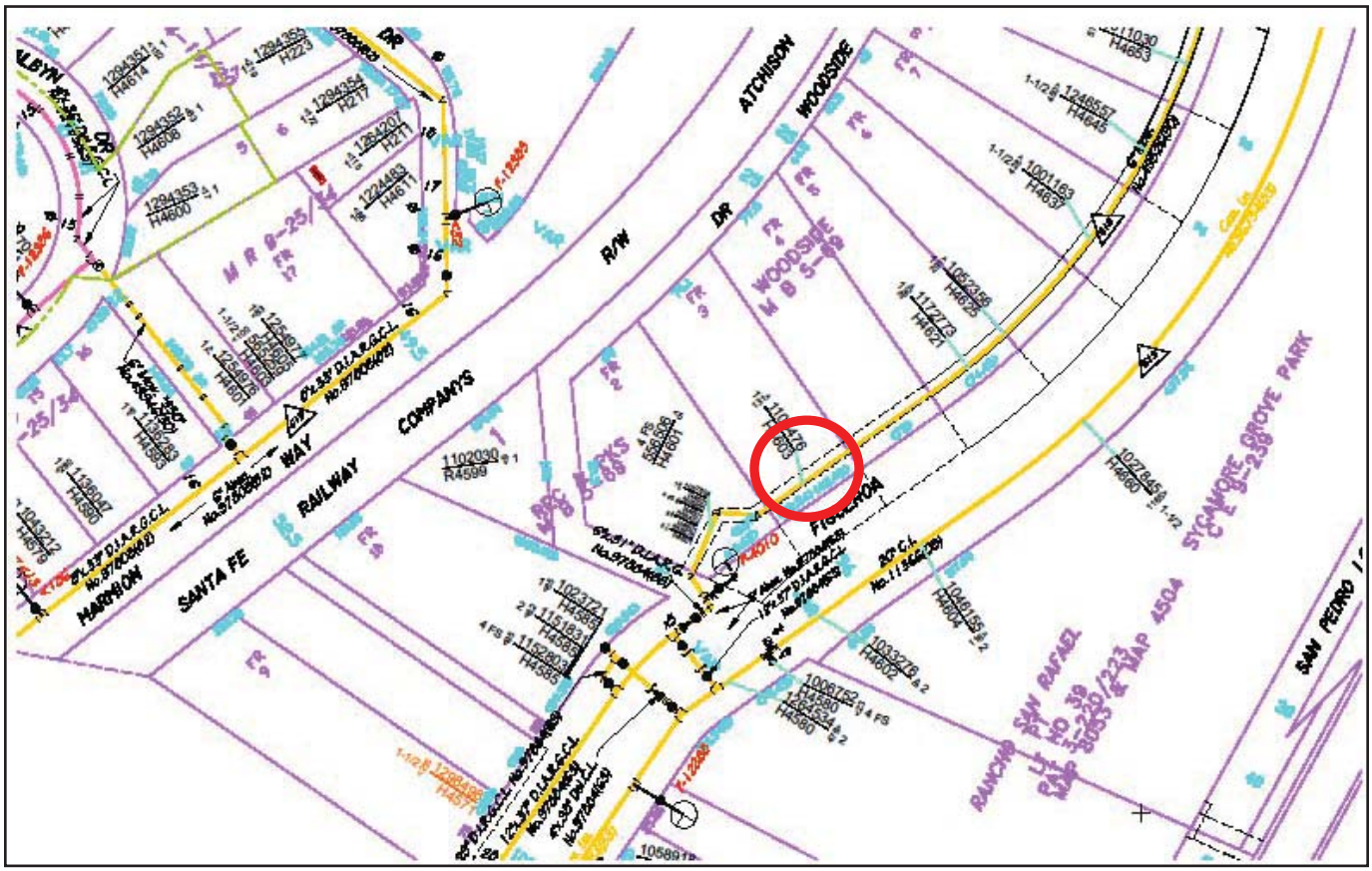

Figure 5.16: LADWP Map. Casa de Adobe site is within the red circle
SOURCE: VCA Engineers, Inc.

5.1.6 Recommendations

After review of existing site conditions VCA concludes and recommends the following:

- New grades for the courtyard area that will recreate the existing swale action further away from the interior southeast face of the existing building. Compacted base should also be provided to reduce the loosening of pavers.
- New grades for non-compliant walkways surrounding the main building at the exterior within the property.
- Provide accessibility from the public right-of-way to on site the property. Existing conditions do not allow for accessible path of travel from public right-of-way to on site on Figueroa Street, access is available through stairs.
- Underground investigation of existing site utilities is necessary to determine non-compliant cross connection(s) of storm drainage into sanitary sewer.
- The work stated under the Recommendations Section contained within Section VI, Part B: Schedule of Implementation of Work Program, Item 3: Long Term Work (3-5 years), Accessibility improvements, is

accurate but needs to be edited so that the Accessibility improvements will be completed under Item 1: Immediate Work/Urgent (Within 6 months). This change in schedule is very important to implement to allow ease of access on and about the museum grounds outside the building envelope. Under this same item, it is important to note that recommendations such as, "Improve site drainage", "Geotechnical (soils) report or reconnaissance survey at a minimum", and "Hydrologic testing report" also be edited to be shown in the schedule portion noted as 1. Immediate Work/Urgent (Within 6 months). It is important to reflect this change in order to improve site drainage—existing conditions have storm water runoff crossing a path of travel, an ADA issue—a comprehensive hydrological report must be conducted before site drainage can be improved, and in order to conduct a comprehensive site drainage report an accurate Geotechnical (soils) report must be provided prior to design analysis.

- Within Section VI, Part C: General Recommendations, Item 2: Americans with Disabilities Act, it is agreed that ADA requirements should be met, but additional verbiage should be included to state, "Grades within all paths of travel shall be ADA compliant so as cross-slopes shall be within 2% maximum, 4.8% directional slope maximum without handrails for an extent of fifty feet (providing required handrails and level landings where necessary for directional slopes exceeding 4.8% maximum). Existing grades within the path of travel should also be analyzed, and redeveloped to a minimum as needed, to allow for proper drainage (1% minimum slope for asphaltic concrete pavement, and 0.5% minimum slope for concrete pavement)."
- Within Section VI, Part D: Building Assessment and Recommendations, Item "g": Site, it is agreed with the recommendation that "[all] exterior site drainage systems should be cleared of all debris on a regular basis," and that "a soils and hydrology report is recommended," but it is also imperative that a proper drainage system be implemented on the site of the museum to alleviate any storm water crossing a designated path of travel. It is also important to note, to provide a comprehensive storm drainage system, which is compliant with the City of Los Angeles Low Impact Development required Best Management Practices, a detailed hydrology report addressing the hydrology conditions of the site be developed. Further, in order to provide a detailed hydrology report, it is necessary that a soils report be provided to include soil types, percolation rates and other relevant soils data be presented prior to the commencement of any storm water utility design (please refer to recommendation item 5 of this report.)

5.2 Mechanical, Electrical, and Plumbing (MEP) Assessment

The purpose of this report is to assess the condition of the existing; mechanical, electrical and plumbing (MEP) systems and provide recommendations to; upgrade, repair or replace existing MEP components or systems. This report is based on our field investigation conducted on March 19th ,2013 and April 9th, 2013, with additional input from the previous reports prepared by the Sullivan Partnership, and Nikolakopulos & Associates. Basically, we agree with the Sullivan and Nikolakopulos reports that most mechanical system and all electrical systems need to be replaced.

5.2.1 Mechanical Observation and Findings

- All rooms other than the innkeepers apartment are not air conditioned and are to remain as is. The plumbing systems have had modifications since the original buildout and require addition updates to meet current standards and codes.
- The Domestic water piping appeared to be partly galvanized steel pipe and copper pipe. Since most of the piping was installed underneath the buildings or underground we were unable to determine how much of the piping had been converted to copper. It was apparent that the original galvanized pipe feeding the restrooms were brought thru the walls and have been abandoned with newer copper piping coming up thru the floors.
- One visible hose bibs was been fed from a copper pipe protruding from the building crawl space and an additional one was found in a flower bed.

- None of the sewer piping was noticeable.
- The men's toilet room did not have hot water at the lavatory while the women's did. However the valve was shut off on the women's hot water line.
- Neither toilet room met handicap requirements for access, for fixture heights or plumbing requirements.

5.2.2 Electrical Observations and Findings

The purpose of this report is to describe and assess the existing building electrical systems, their condition, integrity, safety, and suitability for continued use. Electrical system recommendations compatible with the proposals for rehabilitation of the Casa Adobe building and infrastructure follow. All systems have been analyzed/proposed with the goal of meeting current museum performance standards. All photos cited are from the Electrical Infrastructure Assessment section of the "Southwest Museum Rehabilitation Study" (2004).

Methodology and Limitations
Our observations, subsequent analysis and recommendations are based on field surveys, discussions with staff members and A/E team consultants. The basis for this report stems primarily from field inspections and visual observations conducted at the premises and past electrical reports performed by others. Access was afforded by Staff to all pertinent areas of the facility. Though primary information was limited by visual access, additional information was gleaned from discussions of past and ongoing electrical issues with Staff and maintenance personnel.

Applicable Codes
Though the original electrical system was installed in compliance with prevailing codes at that time, much of the subsequent work was not; for example, many of the original panels were removed and replaced with smaller modern panel boards mounted in the original cavity, and have line voltage splicing occurring within the cavity. Also, modern circuit breakers were connected to existing wiring with failing cloth-type insulation. Finally, many of the branch circuits are fed by distribution gear with overcurrent protection devices that can no longer safely interrupt the available fault duty. Any new electrical work requiring permitting (e.g., adding branch circuits) will be subject to prevailing codes (listed below):

- City of Los Angeles Electrical Code, 2011
- California Electrical Code, 2010
- National Electrical Code, 2008
- California Building Code, 2010
- Uniform Building Code, 2009
- California Energy Commission Standards, 2010

Attempts at compliance with the aforementioned codes will most likely trigger total replacement of the electrical system. Furthermore, renovation of any major portion of the lighting system will also trigger compliance of the whole building lighting and control system with current Title-24 energy standards.

Electrical Service and Distribution
The building is served from an overhead line coming from a D.W.P. utility pole located on Woodside Dr. The building service consists of one feeds 100 amp feed at 240 volt, 1ø-3w service located outside the building. Though still functional, it is recommended to replace to accommodate the new circuits needed.

Power Systems and Equipment
There are a dozen branch circuit panels located throughout the building. They are very small, ranging in size from four to twenty-four circuits, and most are full, with little or no breaker space available. Furthermore, they are

very crowded, and many have circuits that are still feeding cloth-covered wiring. This insulation is old and very brittle, and tends to disintegrate when disturbed, leaving exposed conductors. (See photo 5.17)

Some panels also have residential-type split circuit breakers, which are not rated for commercial use. Some also have dimmers and switches located inside, with line voltage splices and exposed conductors. A few of the panels are still the original type with open blade disconnect switches that have exposed bussing and terminations. Though beautiful, these are a big safety concern, and not permitted by Code.

Figure 5.17:Exterior power conduit exposed to moisture
SOURCE: Levin & Associates, 2003

5.2.3 Lighting, Egress and Control Systems Observations and Findings

General

The lighting system in general is old, inconsistent, and not energy efficient. It is not in compliance with Title-24 energy standards with regards to energy usage and lighting control. While some areas are adequately illuminated, many are not. According to maintenance personnel, there are several lights that go out regularly.

5.2.4 Recommendations

Mechanical

Restrooms :

- The Domestic water piping needs to be traced out to determine how much is galvanized steel pipe versus copper pipe and priced to replace any galvanized sections.
- Vacuum breakers are to be added to all hose bibs per current codes.
- All sewer piping shall be checked by surveying the lines with a camera to determine their condition and make needed repairs or replacements after assessing the survey.
- Per the California Plumbing Code hot water is required for public rest rooms and a temperature limiting device is required conforming to ASSE 1070 standards.
- Neither toilet room met handicap requirements for access, for fixture heights or plumbing requirements.
- Ventilation is required for the bathrooms and can be achieved by adding small thru the wall exhaust fans for the exhaust and 14”x4” louvers high above the doors out of line of sight from the courtyard.

Electrical

Electrical Service

The existing service is in poor condition, and is inadequate for the necessary upgrades to the building. As it is no longer Code-compliant, circuits cannot be added. In addition, the total service currently provides less than 9.5 watts/SF, which is insufficient for a modern museum facility. A new upgraded service will be required to provide the necessary 16 watts/SF for proper museum function. The existing service board will be changed out to a new 200 amp switchboard, located in an accessible location for meter reading.

This service board will be fed from an existing pole-mounted, D.W.P. transformer located on Woodside Dr. just south of the main entrance. The service will be a 120/240 volt, 3ø-4w delta system.

Electrical Distribution

Distribution would occur from this 200 amp 120/240 volt, 3ø-4w service board.

Power Systems and Equipment

As viewed, the installation generally is in poor shape, inadequate, and/or not Code-compliant. Thus, the entire distribution system will need to be replaced to ensure the safety and integrity of the whole electrical system, as well as adequately provide for the current and future needs of the Museum. Furthermore, at this time, any addition to the circuitry would trigger total compliance, as the components do not meet current Code.

New branch circuit panels should be located throughout the building in locations determined by load, and accessibility of the feeder conduit. Attic and other crawl spaces will be utilized to facilitate runs as much as possible.

Lighting, Egress and Control Systems

Interior Lighting

The entire building will be provided with more effective, better looking, energy-efficient luminaries, aimed at providing functional, welcoming illumination, and dramatic enhancement of the architecture, without detracting from the illuminated displays. Historic fixtures should be retained wherever possible, but will be reworked as necessary to make use of more energy-efficient lamps.

Displays

Display case lighting is not included in the scope of this report. It is generally to be avoided due to potential heat and light damage to artifacts. When unavoidable, only fiber optic systems or, for less sensitive materials, high-color rendering, dimmable T-5 lamps with UV filters may be used.

Site/Exterior Parking

Site and Exterior lighting will be installed to enhance the grounds, highlight the landscaping, and provide safe pathway marking and illumination levels to meet current safety standards, while mitigating off-site glare.

Emergency Egress

New LED edge-lit exit signs will be installed throughout, and emergency power will be provided by a central inverter system that is located in the electrical room, and is automatically controlled and exercised. This would allow any of the lighting fixtures to be used for egress, simplifying installation and wiring, eliminating the need for dedicated fixtures (i.e., “bug eyes”, etc.), while better providing the Code-required one foot candle minimum illumination along all paths of egress to a public way.

Lighting Control

Centralized lighting control will be installed to increase functionality and aesthetic value throughout the building. New, centrally controlled lighting will also augment safety by facilitating ingress and egress and preventing trip hazards. Wireless relay modules are available to extend such a system in areas that are difficult to wire.

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6.0 ENVIRONMENTAL ASSESSMENT

The purpose of this report is to determine if the actions related to the restoration of the Casa de Adobe are subject to the California Environmental Quality Act (CEQA) (1970), and if so, to identify the appropriate level of required environmental documentation. The purpose of preparing environmental documents, as defined in Section 15121 (a) of the State Guidelines for the implementation of the CEQA California Code of Regulations (CCR), Title 14, Division 6, Chapter 3 "Guidelines," is to "inform public agency decision-makers and the public generally of the potential significant environmental effects of a project, identify possible ways to minimize the significant effect and describe reasonable alternatives to the project." CEQA defines a project as anything that would result in a physical change in the environment, any action directly taken by a public agency or uses public funding, or any action where a public agency is issuing a permit, lease, or other forms of entitlement (Section 15378). It is understood that restoration efforts at Casa de Adobe would likely use public funds at the discretion of the City of Los Angeles Bureau of Engineering. Therefore, the restoration of Casa de Adobe constitutes a "project" as defined by CEQA

The Casa de Adobe was built in 1918 as a museum or interpretive site of life on a rancho. Constructed by José Velazquez, a "masterhand in the construction of adobe", Casa de Adobe is a replica of a 19th century Spanish California rancho with a traditional one-story adobe hacienda with an inner and outer courtyard plan. The Casa de Adobe is listed as City of Los Angeles Historic Cultural Monument #493.

To restore the Case de Adobe to its original grandeur, building restoration efforts would include fabricating significant missing architectural features, recapturing the appearance of the property at one particular period of its history, and removing later additions.

The proposed work plan for the Casa de Adobe (project) includes the following:

- Re-roofing: New underlayment and replacement of broken and missing roof tile
- Seismic Strengthening per the City of Los Angeles Division 88, Seismic Ordinance
- Stabilization and repair of the kitchen
- Geotechnical (soils) report or reconnaissance survey at a minimum
- Hydrological testing report
- Improve site drainage
- Complete plaster repair
- General maintenance
- Landscape clearing and maintenance
- Removal of non-historic features such as light fixtures and ramps that do not comply with the American's with Disabilities Act
- Adaptive reuse plans and improvements
- Accessibility improvements

As described above, projects within California are subject to CEQA which requires governmental agencies to inform decision-makers and the public about the potential environmental impacts of proposed projects (including those seeking discretionary action or uses public funds such as this project), and to reduce those environmental impacts to the extent feasible. However, CEQA Guidelines include both Statutory and Categorical Exclusions, whereby projects that meet certain criteria are exempt from CEQA and going through the environmental review process.

Based on the historical significance of and proposed modifications to the Casa de Adobe, the proposed project would likely qualify for a Class 31 (Historical Resources Restoration/Rehabilitation) Categorical Exemption. Class 31 Categorical Exemptions are limited to maintenance, repairs, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of historical resources in a manner consistent with the Secretary of Interior's *Standards for the Treatment of Historic Properties (The Standards)*. *The Standards* include general information about appropriate treatments for historic properties and were designed to enhance the understanding of basic preservation principles.

The Standards and their accompanying Guidelines describe four different options for treatment (preservation, rehabilitation, restoration, and reconstruction) and list recommended techniques for exterior and interior work consistent with each option. One treatment (preservation, rehabilitation, restoration, or reconstruction) is usually selected and followed throughout the course of a project to avoid inappropriate combinations of work, such as restoring a building's appearance to an earlier time in history while simultaneously constructing a new addition. The rehabilitation treatment option for the Casa de Adobe seems to be the most appropriate. "Rehabilitation" is defined by the National Park Service as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values." Given that the proposed project seeks to restore Casa de Adobe to its original purpose, a functional museum, the rehabilitation standards seem to be the most appropriate treatment for the Casa de Adobe.

The Standards for rehabilitation are as follows:

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships;
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided;
- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken;
- Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved;
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence;
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used;
- Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment; and
- New additions and adjacent or related new construction will be undertaken in such a manner that, if

removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Since rehabilitation under *The Standards* allows repairs or alteration of a historic resource and the proposed project would restore Casa de Adobe to a functional museum by making repairs and alterations that would not damage or destroy the Casa de Adobe's historic character, the proposed project should meet the requirements for a Class 31 Categorical Exemption. Therefore, it would be appropriate to prepare a Class 31 Categorical Exemption for the proposed project.

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7.0 COST ANALYSIS

This opinion of probably budget cost has been prepared to reflect the anticipated rough order of magnitude (ROM) construction cost for the Casa de Adobe Rehabilitation project.

This Document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other works not covered in the drawings and programs as stated in this document. The unit rates reflected herein have been obtained from historical records. All unit rates relevant to subcontractor works include the subcontractors' overheads and profit.

Scope of the Project
The Casa de Adobe Rehabilitation Project consists of the restoration and repair of the existing Casa de Adobe, including site development works.

Documentations
Faithful+Gould received the rehabilitation study report from Gruen Associates on May 3, 2013.

Design Contingency
A design contingency has been included in this estimate. This is to allow for work not yet known and developed at this time.

Escalation
The project is scheduled for 18 months construction. The estimate includes the allowance for labor and material cost inflation to the mid-point of construction.

Soft Costs
Design, engineering and consultant fees
Project Construction Management Fee
Plan check, building permit fees
Testing and inspection
Construction contingency (for Change orders during construction)
FF&E inclusive of system furniture
Loose furniture and equipment

Exclusions
Legal and accounting fees
Hazardous material mitigation
Lead and asbestos removal (except at Torrance Tower)
Removal of unforeseen underground obstructions
Relocation of existing artworks/artifacts
Relocation of existing owner's furniture, furnishings and equipment

Items that may affect the cost estimate
Modifications to the scope of work included in this estimate
Unforeseen sub-surface conditions
Special phasing requirements
Restrictive technical specifications or excessive contract conditions
Non-competitive bid/market situations
Bids delayed beyond the projected schedule

Recommendation of Cost Control

Faithful+Gould recommends that the owner, architect and engineers carefully review this section including line item descriptions, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and markups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the Bidding phase.

Requests for modifications of any apparent errors or omissions to this document must be made to Faithful+Gould within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

Opinion of Probable Cost

This opinion has been based on a competition open bid situation with a recommended 5 - 7 reputable bids from general contractors and a minimum of 3 bidders for all items of sub-contracted work. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Faithful+Gould has no control over the cost of labor, materials, or equipment, or over the contractor's method of determining prices, or over competitive bidding or market conditions, the opinion of probable construction cost provided for herein is made on the basis of professional experience and qualifications. The opinion represents Faithful+Gould's best judgment as a professional construction consultant familiar with the construction industry. However, Faithful+Gould cannot and does not guarantee that proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

Overview and Summary

This is a new estimated Budget Cost not previously covered in the prior Heritage Architecture & Planning report with a bottom line total of $5.14 Million. It is based on the findings and recommendations per the Structural/ Environmental report (seismic strengthening and other items - see page 4-2 to 4-6), Mechanical, Electrical and Civil Engineer's reports (refer to p. 5-1 to 5-11) issued in May 2013.

AREA TABULATION

GROSS FLOOR AREA	Total (SF) Option A	Option B
A. Southwest Museum and Braun Library	**38,203**	**42,627**
B. Casa De Adobe *	**5,925**	**5,925**
Enclosed Area	4,800	4,800
Unenclosed (50% of Canopy Area)	1,125	1,125
Overall Total Gross Floor Area (A+B+C)	**44,128**	**48,552**

Note : * Casa de Adobe area is based on approximate assessment from Google map (existing plans not yet available)

GRAND SUMMARY - OPTION A + CASA de ADOBE

Descriptions	SOUTHWEST MUSEUM - OPTION A			CASA de ADOBE			TOTAL	
	Escalated to Y2013			Y2013				
		Total ($)	38,203 SF		Total ($)	5,925 SF	Total ($)	44,128 SF
1 Foundations		118,157	3.09		205,500	34.68	323,657	7.33
2 Vertical Structure		128,627	3.37		-	-	128,627	2.91
3 Floor and Roof Structure		487,585	12.76		102,000	17.22	589,585	13.36
4 Exterior Cladding		2,028,116	53.09		266,775	45.03	2,294,891	52.01
5 Roofing , Waterproofing and Skylights		411,307	10.77		159,401	26.90	570,707	12.93
Sub-Total Shell		***3,173,792***	***83.08***		***733,676***	***123.83***	***3,907,468***	***88.55***
6 Interior Partitions, Doors and Glazing		372,419	9.75		24,500	4.14	396,919	8.99
7 Floor, Wall and Ceiling Finishes		1,123,208	29.40		454,500	76.71	1,577,708	35.75
Sub-Total Interior Construction		***1,495,627***	***39.15***		***479,000***	***80.84***	***1,974,627***	***44.75***
8 Function, Equipment and Specialties		396,350	10.37		21,000	3.54	417,350	9.46
9 Stairs and Vertical Transportation		441,220	11.55		7,000	1.18	448,220	10.16
Sub-Total Vertical Transportation		***837,570***	***21.92***		***28,000***	***4.73***	***865,570***	***19.61***
10 Plumbing		556,298	14.56		32,044	5.41	588,342	13.33
11 Heating, Ventilating & Air Conditioning		2,335,188	61.13		20,736	3.50	2,355,924	53.39
12 Fire Protection Systems		257,254	6.73		35,250	5.95	292,504	6.63
13 Electrical Lighting, Power and Communications		2,175,984	56.96		154,675	26.11	2,330,659	52.82
Sub-Total Mechanical and Electrical Systems		***5,324,724***	***139.38***		***242,705***	***40.96***	***5,567,429***	***126.17***
SUB-TOTAL Building		***10,831,713***	***283.53***		***1,483,381***	***250.36***	***12,315,093***	***279.08***
17a Existing Conditions		427,221	11.18		269,599	45.50	696,820	15.79
17b Site Work						-		
17b.1 Site Preparation		146,575	3.84		140,000	23.63	286,575	6.49
17b.2 Site Improvement		945,258	24.74		363,273	61.31	1,308,530	29.65
17b.3 Site Utilities		512,113	13.41		208,000	35.11	720,113	16.32
SUB-TOTAL Building and Site works		***12,862,878***	***336.70***		***2,464,253***	***415.91***	***15,327,131***	***347.33***
General Conditions	*15%*	1,929,432	50.50	*15%*	369,638	62.39	2,299,070	52.10
Contractor's Overhead and Profit Fee	*8%*	1,183,385	30.98	*8%*	226,711	38.26	1,410,096	31.95
PLANNED CONSTRUCTION COST		***15,975,695***	***418.18***		***3,060,602***	***516.56***	***19,036,297***	***431.39***
Design Contingencies	*20%*	3,195,139	83.64	*20%*	612,120	103.31	3,807,259	86.28
Escalation to Mid-point of Construction	*6%*	1,150,250	30.11	*6%*	220,363	37.19	1,370,613	31.06
RECOMMENDED BUDGET		**20,321,084**	**531.92**		**3,893,085**	**657.06**	**24,214,169**	**548.73**
Project Soft Costs	*32%*	6,502,747	170.22	*32%*	1,245,787	210.26	7,748,534	175.59
TOTAL PROJECT COST		**26,823,831**	**702.14**		**5,138,873**	**867.32**	**31,962,703**	**724.32**

GRAND SUMMARY - OPTION B + CASA de ADOBE

Descriptions	SOUTHWEST MUSEUM - OPTION B		CASA de ADOBE		TOTAL	
	Escalated to Y2013		Y2013			
	Total ($)	42,627 SF	Total ($)	5,925 SF	Total ($)	48,552 SF
1 Foundations	387,376	9.09	205,500	34.68	592,876	12.21
2 Vertical Structure	441,220	10.35	-	-	441,220	9.09
3 Floor and Roof Structure	635,656	14.91	102,000	17.22	737,656	15.19
4 Exterior Cladding	2,116,360	49.65	266,775	45.03	2,383,135	49.08
5 Roofing , Waterproofing and Skylights	861,501	20.21	159,401	26.90	1,020,901	21.03
Sub-Total Shell	***4,442,112***	***104.21***	***733,676***	***123.83***	***5,175,788***	***106.60***
6 Interior Partitions, Doors and Glazing	454,681	10.67	24,500	4.14	479,181	9.87
7 Floor, Wall and Ceiling Finishes	1,242,861	29.16	454,500	76.71	1,697,361	34.96
Sub-Total Interior Construction	***1,697,541***	***39.82***	***479,000***	***80.84***	***2,176,541***	***44.83***
8 Function, Equipment and Specialties	649,117	15.23	21,000	3.54	670,117	13.80
9 Stairs and Vertical Transportation	710,439	16.67	7,000	1.18	717,439	14.78
Sub-Total Vertical Transportation	***1,359,555***	***31.89***	***28,000***	***4.73***	***1,387,555***	***28.58***
10 Plumbing	683,894	16.04	32,044	5.41	715,938	14.75
11 Heating, Ventilating & Air Conditioning	2,733,333	64.12	20,736	3.50	2,754,069	56.72
12 Fire Protection Systems	287,167	6.74	35,250	5.95	322,417	6.64
13 Electrical Lighting, Power and Communications	2,490,813	58.43	154,675	26.11	2,645,488	54.49
Sub-Total Mechanical and Electrical Systems	***6,195,206***	***145.34***	***242,705.00***	***40.96***	***6,437,911***	***132.60***
SUB-TOTAL Building	***13,694,415***	***321.26***	***1,483,381***	***250.36***	***15,177,795***	***312.61***
17a Existing Conditions	599,222	14.06	269,599	45.50	868,821	17.89
17b Site Work				-		
17b.1 Site Preparation	513,012	12.03	140,000	23.63	653,012	13.45
17b.2 Site Improvement	2,023,629	47.47	363,273	61.31	2,386,901	49.16
17b.3 Site Utilities	570,224	13.38	208,000	35.11	778,224	16.03
SUB-TOTAL Building and Siteworks	***17,400,501***	***408.20***	***2,464,253***	***415.91***	***19,864,753***	***409.14***
General Conditions *15%*	2,610,075	61.23	*15%* 369,638	62.39	2,979,713	61.37
Contractor's Overhead and Profit Fee *8%*	1,600,846	37.55	*8%* 226,711	38.26	1,827,557	37.64
PLANNED CONSTRUCTION COST	***21,611,422***	***506.99***	***3,060,602***	***516.56***	***24,672,023***	***508.16***
Design Contingencies *20%*	4,322,284	101.40	*20%* 612,120	103.31	4,934,405	101.63
Escalation to Mid-point of Construction *6%*	1,556,022	36.50	*6%* 220,363	37.19	1,776,386	36.59
RECOMMENDED BUDGET	**27,489,728**	**644.89**	**3,893,085**	**657.06**	**31,382,814**	**646.38**
Project Soft Costs *32%*	8,796,713	206.36	*32%* 1,245,787	210.26	10,042,500	206.84
TOTAL PROJECT COST	**36,286,441**	**851.25**	**5,138,873**	**867.32**	**41,425,314**	**853.22**

SUMMARY - CASA de ADOBE

Descriptions		***CASA de ADOBE***	
		Y2013	
		Total ($)	***5,925 SF***
1 Foundations		205,500	34.68
2 Vertical Structure		-	-
3 Floor and Roof Structure		102,000	17.22
4 Exterior Cladding		266,775	45.03
5 Roofing , Waterproofing and Skylights		159,401	26.90
Sub-Total Shell		***733,676***	***123.83***
6 Interior Partitions, Doors and Glazing		24,500	4.14
7 Floor, Wall and Ceiling Finishes		454,500	76.71
Sub-Total Interior Construction		***479,000***	***80.84***
8 Function, Equipment and Specialties		21,000	3.54
9 Stairs and Vertical Transportation		7,000	1.18
Sub-Total Vertical Transportation		***28,000***	***4.73***
10 Plumbing		32,044	5.41
11 Heating, Ventilating & Air Conditioning		20,736	3.50
12 Fire Protection Systems		35,250	5.95
13 Electrical Lighting, Power and Communications		154,675	26.11
Sub-Total Mechanical and Electrical Systems		***242,705***	***40.96***
SUB-TOTAL Building		***1,483,381***	***500.72***
17a Existing Conditions		269,599	45.50
17b Site Work			
17b.1 Site Preparation		140,000	23.63
17b.2 Site Improvement		363,273	61.31
17b.3 Site Utilities		208,000	35.11
SUB-TOTAL Building and Siteworks		***2,464,253***	***415.91***
General Conditions	*15%*	369,638	62.39
Contractor's Overhead and Profit Fee	*8%*	226,711	38.26
PLANNED CONSTRUCTION COST		***3,060,602***	***516.56***
Design Contingencies	*20%*	612,120	103.31
Escalation to Mid-point of Construction	*6%*	220,363	37.19
RECOMMENDED BUDGET		**3,893,085**	**657**
Project Soft Costs	*32%*	1,245,787	210.26
TOTAL PROJECT COST		**5,138,873**	**867.32**

DETAILED ESTIMATE : Casa De Adobe

Description	Qty	Unit	Rate	Total
1 FOUNDATIONS				
Standard Foundation				
Seismic strengthening to support adobe walls without concrete foundation	1	LS	200,000.00	200,000
Patch and repair (e) slab on grade	1	LS	2,000.00	2,000
Expansion joint, allowance	1	LS	3,500.00	3,500
TOTAL FOUNDATIONS				**205,500**
3 FLOOR AND ROOF STRUCTURE				
Roof Construction				
Seismic strengthening of roof wood beams	1	LS	100,000.00	100,000
Expansion joint, allowance	1	LS	2,000.00	2,000
TOTAL FLOOR AND ROOF STRUCTURE				**102,000**
4 EXTERIOR CLADDING				
Exterior wall construction				
Repair or replace plaster and paint to exterior wall	7,480	SF	30.00	224,400
Patch, preparation and repaint to canopy soffits, allowance	2,318	SF	2.00	4,635
Repair existing exterior entrance doors, double leaf	2	EA	2,000.00	4,000
Repair/replace exterior windows, allow	1	LS	30,000.00	30,000
Caulking and sealant	7,480	SF	0.50	3,740
TOTAL EXTERIOR CLADDING				**266,775**
5 ROOFING, WATERPROOFING AND SKYLIGHTS				
Roof Coverings				
Inspect, repair, replace existing roof tiles , allow 40% of roof area (assume matching roof materials available)	3,116	SF	18.00	56,095
Repair existing roof , allow remaining 60% of roof area	4,675	SF	10.00	46,746
Replace existing wood roof outriggers, allow	1	LS	10,000.00	10,000
New roof underlayment (incl. roof bd covering & insulation)	7,791	SF	4.50	35,060
Caulking and sealant	1	LS	4,500.00	4,500
Miscellaneous roof accessories, allow	1	LS	5,000.00	5,000
Pipe and duct penetration, allowance	1	LS	2,000.00	2,000
TOTAL ROOFING, WATERPROOFING AND SKYLIGHTS				**159,401**

DETAILED ESTIMATE : Casa De Adobe

Description	*Qty*	*Unit*	*Rate*	*Total*
6 INTERIOR PARTITIONS, DOORS AND GLAZING				
New partition, allowance	1	LS	8,000.00	8,000
New doors at restroom, allow	2	EA	2,500.00	5,000
Repair of existing wood windows	1	LS	10,000.00	10,000
Caulking and sealant	1	LS	1,500.00	1,500
TOTAL INTERIOR PARTITIONS, DOORS AND GLAZING				**24,500**
7 FLOOR, WALL AND CEILING FINISHES				
Repair/replace part of existing floor finish, allow	7,050	SF	10.00	70,500
Plaster and paint finish to existing internal walls, allow	11,044	SF	30.00	331,320
Repair and finish existing ceiling, allow	5,040	SF	4.50	22,680
Replace existing ceiling wood supports, allow	1	LS	20,000.00	20,000
Miscellaneous repair of existing internal finishes	1	LS	10,000.00	10,000
TOTAL FLOOR, WALL AND CEILING FINISHES				**454,500**
8 FUNCTION EQUIPMENT AND SPECIALTIES				
Specialties				
Toilet partitions and accessories, allowance	1	LS	9,000.00	9,000
Code signage, allow	1	LS	2,000.00	2,000
Building signage, allow	1	LS	5,000.00	5,000
Miscellaneous specialties, allow	1	LS	5,000.00	5,000
TOTAL FUNCTION EQUIPMENT AND SPECIALTIES				**21,000**
9 STAIRS AND VERTICAL TRANSPORTATION				
Repair existing stairs and ramps	1	LS	7,000.00	7,000
TOTAL STAIRS AND VERTICAL TRANSPORTATION				**7,000**

DETAILED ESTIMATE : Casa De Adobe

Description	Qty	Unit	Rate	Total
10 PLUMBING				
Common Work Results for Plumbing				
Plumbing system layout, sleeving and inserting	4,800	SF	0.10	480
Plumbing systems test and inspection	4,800	SF	0.05	240
Plumbing systems seismic control	4,800	SF	0.10	480
Plumbing systems fire stop penetrations	4,800	SF	0.06	288
Plumbing system tag and identify	4,800	SF	0.02	96
Plumbing systems clean-up and dispose of debris	4,800	SF	0.15	720
Plumbing Demolition				
Remove existing plumbing fixtures	4,800	SF	0.10	480
Remove sanitary sewer & vent piping, cut and cap, at removed fixtures	4,800	SF	0.40	1,920
Remove domestic hot and cold water piping, cut and cap, at demo fixtu	4,800	SF	0.20	960
Plumbing Fixtures				
New plumbing fixtures to meet handicap requirements incl rough in				
Water closet	2	EA	3,200	6,400
Sink wall mounted	2	EA	1,990	3,980
Hand dryer	2	EA	1,600	3,200
Instant water heater	2	EA	600	1,200
Domestic water piping supply and distribution at fixtures w/fittings	1	LS	4,000	4,000
Sanitary Sewer and Vent Piping	1	LS	4,000	4,000
Connect to existing SS pipe	1	LS	3,000	3,000
Condensate drain	1	LS	600	600
TOTAL PLUMBING				**32,044**
11 HEATING, VENTILATION AND AIR CONDITIONING				
Common Work Results for HVAC				
Seismic control	4,800	SF	0.05	240
Fire stop penetrations	4,800	SF	0.10	480
Testing and commissioning, allow	4,800	SF	0.12	576
Miscellaneous HVAC works, allow	4,800	SF	0.20	960
Demolition				
Selective demolition	4,800	SF	0.20	960
New Work				
AC unit for caretaker area (assumed 1600 SF)	4,800	SF	0.95	4,560
New wall exhaust fans at bathrooms	4,800	SF	0.20	960

DETAILED ESTIMATE : Casa De Adobe

Description	Qty	Unit	Rate	Total
Air supply and return ducting	4,800	SF	2.20	10,560
Air supply and return diffuser and grilles	4,800	SF	0.25	1,200
Thermostats and controls	4,800	SF	0.05	240
TOTAL HEATING, VENTILATION AND AIR CONDITIONING				**20,736**
12 FIRE PROTECTION				
Fire Protection				
Fire sprinkler systems, allow (if required by code)	7,050	SF	5.00	35,250
TOTAL FIRE PROTECTION				**35,250**
13 ELECTRICAL LIGHTING, POWER AND COMMUNICATIONS				
Selective Demolition				
Remove existing service board	1	EA	620.00	620
Remove existing electrical distribution system	7,050	SF	0.85	5,993
Miscellaneous electrical demolition	7,050	SF	0.20	1,410
Protect existing electrical systems	7,050	SF	0.25	1,763
Electrical Service & Distribution				
New 200amp switchboard 120/240 volt, 3 dia.-4w delta system	1	EA	5,300.00	5,300
Transformer, disconnect, starters	7,050	SF	0.95	6,698
Feeders	7,050	SF	0.65	4,583
Grounding	7,050	SF	0.55	3,878
Temporary supply	7,050	SF	0.45	3,173
Interior Lighting & Power				
New energy efficient lighting fixtures, allow	7,050	SF	2.90	20,445
New LED edge-lit exit signs	7,050	SF	0.25	1,763
Display case lighting, dimmable T-5 lamps with UV filer, allow	7,050	SF	0.50	3,525
Install new centralized lighting control	7,050	SF	1.10	7,755
Lighting conduit and conductor	7,050	SF	2.30	16,215
Power outlets	7,050	SF	0.40	2,820
Power outlets conduit and conductor	7,050	SF	3.10	21,855
Special Electrical Systems				
Fire alarm system	7,050	SF	4.60	32,430
Voice and Data	7,050	SF	0.90	6,345
Security and access (3 doors)	7,050	SF	1.15	8,108
TOTAL ELECTRICAL LIGHTING, POWER AND COMMUNICATIONS				**154,675**

DETAILED ESTIMATE : Casa De Adobe

Description	Qty	Unit	Rate	Total
17a EXISTING CONDITIONS				
Selective Demolition				
Patch, clean and prepare existing external wall for new plaster	7,480	SF	9.60	71,808
Patch, clean and prepare existing internal wall for new plaster	11,044	SF	8.50	93,874
Patch and repair existing flooring of canopy	2,250	SF	3.50	7,875
Stabilization and repair of existing kitchen	1	LS	12,000.00	12,000
Remove existing toilet partition, floor and ceiling finish	1	LS	2,000.00	2,000
Remove existing worn out roofing tiles	3,116	SF	3.80	11,842
Remove existing railing at entrance	1	LS	200.00	200
Protect existing building and temporary work, allow	1	LS	20,000.00	20,000
Miscellaneous demolition, allow	1	LS	35,000.00	35,000
Miscellaneous patch and repair, allow	1	LS	15,000.00	15,000
TOTAL EXISTING CONDITIONS				**269,599**
17b SITE WORK				
17b.1 - Site Preparation				
Building Demolition and removal				
Remove or patch/repair existing paving at courtyard	2,500	SF	12.00	30,000
Miscellaneous site demolition, allowance	1	LS	110,000.00	110,000
Sub total 17b.1 - Site Preparation				**140,000**
17b. 2 - Site Improvement				
Earthwork				
Site clearing and preparation	11,350	SF	0.50	5,675
Rough grading	11,350	SF	0.45	5,108
Finish grading	11,350	SF	0.40	4,540
Paving and walks				
New pavers incl. base at courtyard, allow	2,500	SF	13.50	33,750
New concrete pavement and sidewalk, allow	1	LS	31,500.00	31,500
Parking stall and striping, allow	1	LS	4,000.00	4,000
Protect existing concrete paving and sidewalk, allowance	1	LS	2,500.00	2,500
Walls, structure, fence and gates, allow	1	LS	150,000.00	150,000
Landscaping and irrigation, allow	6,350	SF	12.00	76,200
Miscellaneous site improvement, allow	1	LS	50,000.00	50,000
Sub total 17b. 2 - Site Improvement				**363,273**

DETAILED ESTIMATE : Casa De Adobe

Description	*Qty*	*Unit*	*Rate*	*Total*
17b.3 - Site Utilities				
Site Electrical				
Remove non-historic light fixtures	1	LS	1,250.00	1,250
New site lighting to enhance grounds and highlight landscaping	1	AL	60,000.00	60,000
Primary Service upgrade (duct bank)	100	LF	110.00	11,000
Incoming communication (duct bank assumed 150 LF)	150	LF	60.00	9,000
Storm Drainage				
Storm Water Piping PVC (assumed length or move to site work)	400	LF	75.00	30,000
Sanitary Sewer				
Replace/repair existing sewer pipes PVC (assumed length)	100	LF	80.00	8,000
Gas Line (Meter and PRV by utility Co)				
Gas supply and Distribution (assumed length)	200	LF	55.00	11,000
Domestic Water (Underground line include				
Domestic water pipe replace and connect to existing (assumed length)	150	LF	85.00	12,750
Domestic water valve box and BFP	1	LS	3,000.00	3,000
Water fountain upgrade (feature w/pump and filtration system)	1	LS	40,000.00	40,000
Fire Water				
Fire hydrant	1	EA	4,500.00	4,500
Fire water line DI	150	LF	90.00	13,500
Connect fire water line to existing	1	LS	4,000.00	4,000
Sub total 17b.3 - Site Utilities				**208,000**