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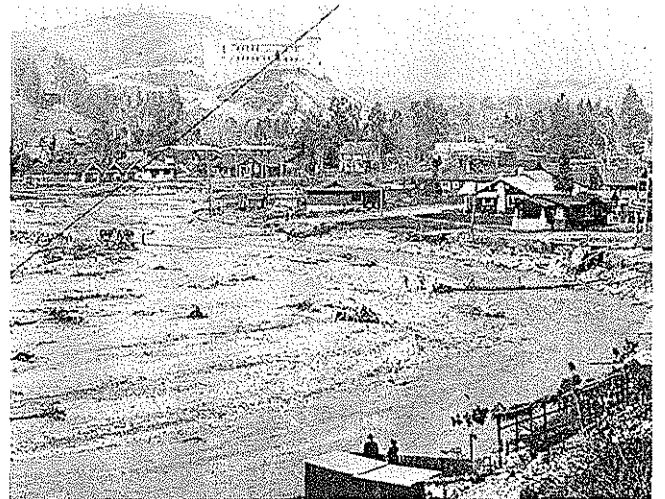
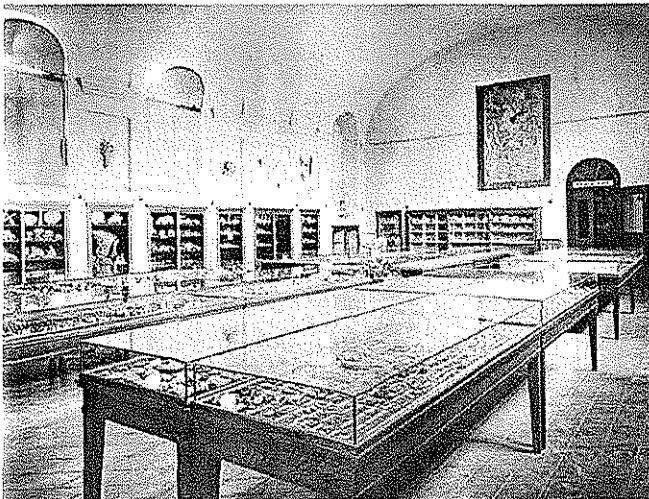
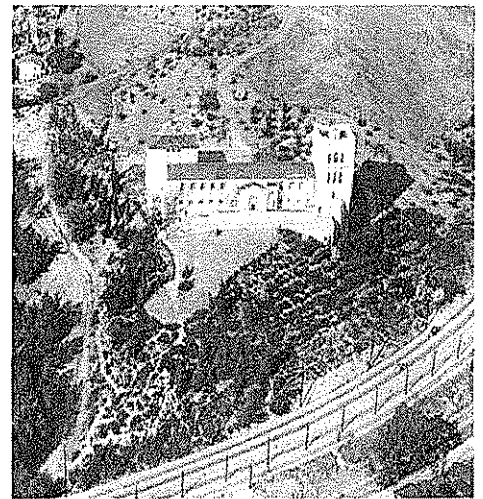
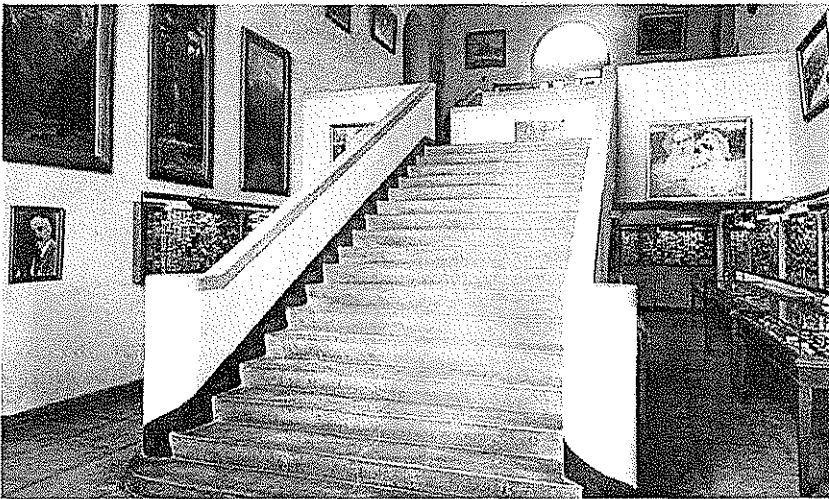
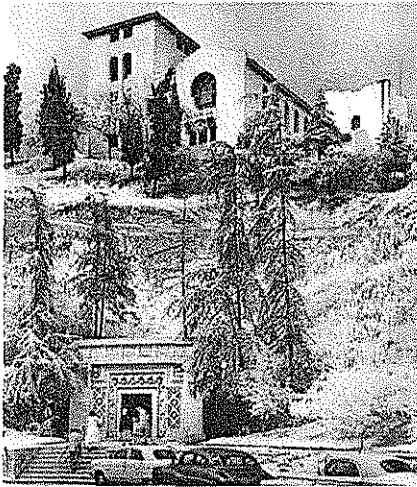
Council File No: 11-0928

Item No.: 3

~~Request~~ Commemorative plaque  
public

# Southwest Museum Rehabilitation Study

Phase I Planning



<b>A LETTER TO THE COMMUNITY</b>	3
<b>EXECUTIVE SUMMARY</b>	8
<b>INTRODUCTION</b>	26
Purpose of Report	
Building Rehabilitation Goals	
Report Structure	
Consultant Team	
<b>HISTORY</b>	34
The Founding of the Southwest Museum	
Design & Construction	
The Caroline Boeing Poole Wing of Basketry	
Braun Research Library	
Directors of The Southwest Museum	
<b>HISTORIC RESOURCE EVALUATION</b>	48
Introduction	
Criteria for Evaluation of Historic Significance	
Historic Designations and Regulatory Jurisdiction	
Determination of Historic Significance	
Summary of Character - Defining features	
<b>ARCHITECTURAL EVALUATION &amp; RECOMMENDATIONS</b>	84
Intent and Scope	
Methodology and Limitations	
Applicable codes	
Findings	
Recommendations	
Option A	
Option B	
<b>INFRASTRUCTURE ASSESSMENT &amp; RECOMMENDATIONS</b>	126
Structural Systems Evaluation	
Mechanical & Plumbing Systems Evaluation	
Electrical Systems Evaluation	
Fire / Life Safety Systems Evaluation	
<b>PROJECT COST ANALYSIS</b>	174
Option A	
Option B	
<b>FINANCIAL ANALYSIS</b>	184
Intent And Scope	
Methodology And Limitations	
Analysis	
<b>APPENDIX</b>	222
Acknowledgements	
Sources	



To the community,

The attached Museum Rehabilitation Study represents a major step in the Autry National Center's attempt to protect and find the best long-term use of the Southwest Museum's structures located in Mount Washington, adjacent to Highland Park.

The Southwest Museum of the American Indian has operated at this site since 1914 despite characteristics of the location that have limited the museum's ability to provide adequate public access to its important collection. For decades numerous attempts were made to invigorate the museum, including efforts to move it to a different site either within Los Angeles or out of the city. In 2003, the Southwest Museum Board determined to keep the collection in Los Angeles for the benefit of Los Angelinos, voting to merge with the Autry Museum of Western Heritage and create the Autry National Center.

Now, as steward of the Southwest Museum, the Autry National Center's prime obligation is to save, protect, and broaden public access both to the museum's historic buildings, as well as to its magnificent collection of Native American and early California material. Immediately following the merger, we commissioned noted preservation architects, Brenda Levin & Associates, to do the first detailed examination of the history of the buildings, their structural capacity, and the potential for their continued use as a traditional museum. To further ensure protection of the buildings, we were successful in having the Southwest Museum listed on the National Register of Historic Places.

Brenda Levin's report lays the groundwork for a thoughtful assessment of the best long-term uses for the Southwest Museum. This initial phase presents two prototype plans and operating models for a museum-only use. Based on the projected operating losses of these two hypothetical models, we do not believe it is economically feasible to operate the site exclusively as a museum. Using "Rehabilitation Study Phase I Planning" as a benchmark, we will hold a public process that will help explore compatible and complementary uses that would allow for the building to be rehabilitated as well as ensure its survival as a public place. The Autry National Center Board is committed to preserving the Southwest Museum site as a key component of the future of the Autry National Center. We look forward to a creative solution for operating this extraordinary site, which would ensure its economic viability and prominence in our city.

I want to thank the Autry National Center Board of Trustees for their leadership in developing a plan to save a Los Angeles landmark. And I want to thank the combined staff of the Autry National Center for the love and care with which they have treated the Southwest buildings and collection. Brenda Levin and her team have performed a generous task in this first of a series of reports on the Southwest. In addition to the efforts and commitment of the Autry National Center, successful long-term sustainability of the Southwest Museum structures at Mount Washington will require the energy, support, and cooperation of the local community as well as of our civic and political leaders. Council members Antonio Villaraigosa, Ed Reyes, and Eric Garcetti have been enormously helpful in advancing the process and in ensuring that all voices are heard. We thank them and eagerly look forward to continuing a strong and collaborative relationship.

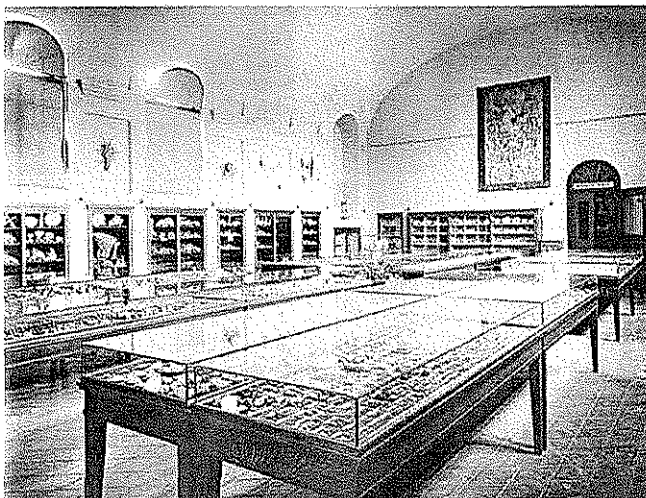
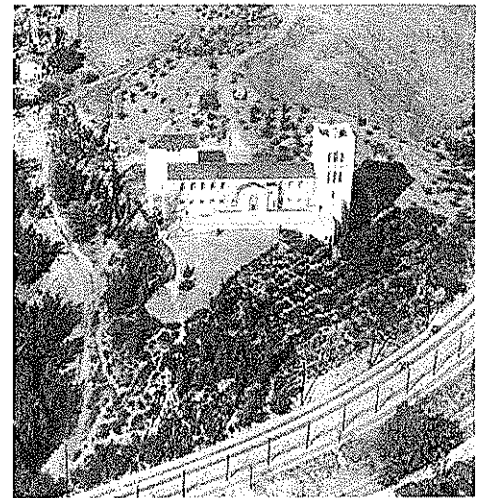
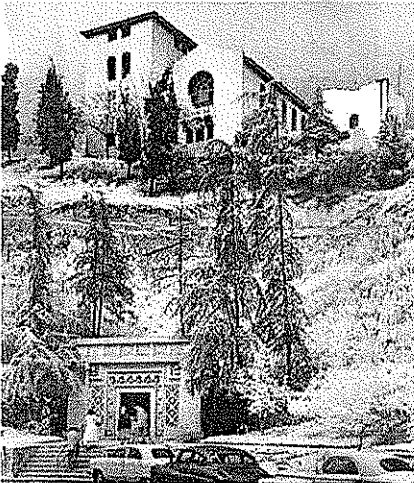
Sincerely,



John L. Gray  
President & CEO, Autry National Center

# Southwest Museum Rehabilitation Study

Phase I Planning



## Executive Summary

Purpose, Methodology, Team

Historic Background & Significance

Architectural Evaluation & Recommendations

Infrastructure Assessment & Recommendations

Project Cost Analysis

Financial Analysis

## EXECUTIVE SUMMARY

**PURPOSE OF REPORT** This study of the Southwest Museum campus was prepared at the request of the Autry National Center, pursuant to the Autry Museum's merger with the Southwest Museum. It attempts to answer three questions:

- What improvements are necessary for the Southwest Museum campus and its historically significant structures to continue in use as a museum?
- What is the anticipated cost of these improvements?
- How will these enhancements to the institution affect its economic viability?

### METHODOLOGY

As the Southwest Museum is a local cultural landmark and is listed in the National Register of Historic Places, federal standards and guidelines for the preservation and protection of historic resources were used to guide this study and the work proposed herein.

Rehabilitation, as defined by the Secretary of the Interior's Standards for the Treatment of Historic Properties, has been chosen as the most appropriate treatment approach for the Southwest Museum. These standards define "rehabilitation" 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".

Based on this definition, Levin & Associates, along with the consultant team, established five rehabilitation goals:

- 1 Update the Southwest Museum's infrastructure with respect to environmental conditioning, lighting, security and materials handling, to meet contemporary museum performance standards
- 2 Rehabilitate the Museum's appearance in keeping with the determined historic period of significance
- 3 Protect the Museum facilities from deterioration by completing all deferred maintenance
- 4 Perform code-required upgrades and safety enhancements.
- 5 Provide facilities and programs to support the state mandated third to fifth grade social studies curriculum.

These rehabilitation goals were revised by Historic Resources Group to insure that they meet the Secretary of the Interior's Standards for the Treatment of Historic Properties. Based on these criteria, the study analyzes the current physical condition of the Museum and makes recommendations regarding necessary improvements.

Two building and site rehabilitation scenarios, Options A & B, have been developed as a basis for estimating capital costs for building rehabilitation, infrastructure and code required upgrades, and operating expenses.

## CONSULTANT TEAM

Levin & Associates, Architects, with Brenda A. Levin, FAIA, as project principal and Susan Di Giulio as Associate, assembled and coordinated a team of consultants with an outstanding track record in rehabilitation projects. They include:

*Kathryn Smith*, HISTORIAN

*Historic Resources Group*, HISTORIC PRESERVATION CONSULTANTS

*Englekirk & Sabol*, STRUCTURAL ENGINEERING

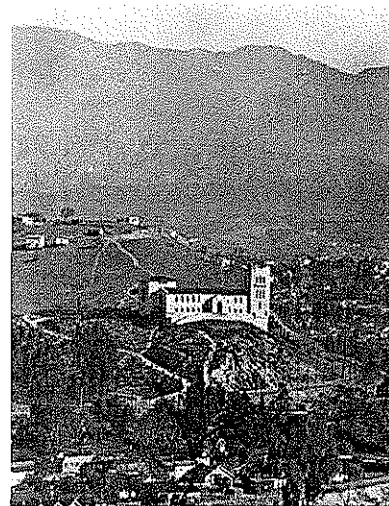
*The Sullivan Partnership*, MECHANICAL / PLUMBING ENGINEERING

*Nikolakopoulos & Associates*, ELECTRICAL ENGINEERING

*Schirmer Engineering*, CODE CONSULTANTS

*Davis Langdon Adamson*, CONSTRUCTION COST ESTIMATING

*Economics Research Associates*, ECONOMIC CONSULTANTS



EX001 - Aerial View c.1930's

## HISTORIC BACKGROUND: DESIGN AND CONSTRUCTION

The Southwest Museum was founded by the Southwest Society under the leadership of journalist and visionary, Charles Fletcher Lummis. Its mission was to be a comprehensive museum covering the history, science, and art of the American Southwest. The original 38-acre site was chosen for its visibility, views and the seclusion it provided. It was, at the time, a convenient location, accessible by the Yellow Car rail line and by auto.

The original architects, Hunt and Burns, worked in close collaboration with Lummis; creating an architectural language reminiscent of the Alhambra in Spain, with suggestions of the mission architecture of early California. Despite its grounding in historic imagery, the reinforced concrete construction of the Museum was modern for its time, as was its infrastructure. The Museum opened in 1914.

The first addition to the campus was the Mayan inspired portal entrance on Museum Drive, leading to the tunnel and elevator. It was planned by then-director Dr. Hector Alliot, working with architects Hunt and Burns, and was completed in 1919.

The next building to be added was the Poole Wing, commissioned by museum director and anthropologist, Frederick Webb Hodge to house The Caroline Boeing Poole Basketry Collection. Esteemed architect Gordon B. Kaufmann designed the reinforced, poured in place concrete structure. It was built from 1940 to 1941.

The latest major addition to the campus was the Braun Research Library. It was commissioned by director Carl Dentzel in 1977 when the research library collection outgrew its space in Torrance Tower. Financed by the Braun family,

it was designed by the C.F. Braun in-house architect, Glenn E. Cook. The library is the only concrete block building on the site. It opened in 1979.

### **HISTORIC SIGNIFICANCE**

The Southwest Museum is recognized as a landmark of significant historic value, having been listed in the National Report of Historic places in March 2004. It has been designated City of Los Angeles Historic-Cultural Monument #283 and is listed in the California Register of Historical Resources. The Southwest Museum has been determined eligible for inclusion in the National Register of Historic Places pending.

The period of significance, for a historic resource is the span of time when the property was associated with important events, activities, or persons, and attained the physical characteristics that convey its historic significance. For the Southwest Museum, this has been defined as 1912-1941. That period saw the design and construction of the Main Museum Building, the entrance tunnel and elevator and the Caroline Boeing Poole Wing of Basketry. Later additions to the site, such as the Braun Library (1979), the parking lot, (1955) and covered walkways, are not considered to be historically significant features of the Southwest Museum.

Historic Resources Group conducted a survey of the Southwest Museum's character-defining features, inventorying architectural features that were constructed during its period of significance as well as alterations that have occurred to each over time. Determination of the historic significance of each space and feature was made according to the following criteria, established by Historic Resources Group specifically for the analysis of the Southwest Museum:

- It is essential to understanding the historic, spatial, or architectural character of the building;
- It was designed in an extraordinary manner or style;
- It was executed with a high degree of craftsmanship or specialized type of workmanship;
- It conveys a function unique to the mission and operations of a museum.

Historic Resources Group's complete survey results are compiled in a database which is found in a separate volume of this report.

Overall, the major structures on the site that were built during the period of significance maintain integrity in their massing and division of interior space. They are historically significant, although many exterior openings, interior and exterior finishes and interior partitions have been altered.

### **ARCHITECTURAL EVALUATION AND PROGRAM OPTIONS**

The Southwest Museum buildings were evaluated for continued museum use by Levin & Associates. Based on existing documentation and site visits, Levin & Associates sought to determine the original construction of the Museum buildings and grounds. This information, along with existing conditions, was compiled into a set of reference drawings sufficiently accurate for recording and communicating the scope of rehabilitation proposed.

### Architectural Evaluation

The most salient architectural feature of the Southwest Museum campus is the bold massing of the Main Museum Building. The long, two story building is split by a double height entry hall to form four galleries. Originally, the interior was bathed in natural light from skylights and windows that have been closed over time.

An off-axis tower anchors each end of the building. To the east is the Caracol Tower, named for the unique spiral stair at its center. The slightly lower Torrance Tower, at the south end, contains a high gallery space ringed by two mezzanines. Both towers present access and egress problems that make them difficult to utilize in conformance with current code without significant impact to the historic significance of the building.

The Main Museum Building as built was only a fraction of the founders' plans. The Poole Gallery and the Braun Library were later added to the campus, but did not follow the original design of the project.

The Poole Wing, completed in 1941, was designed by Gordon Kaufmann as a simple, functional counterpoint to the Hunt and Burns building. It possesses elegant cast concrete details in a basket motif on its exterior. The two-story interior consists of the California Hall above, with almost all of the original display cases intact, and a work and storage area below. This lower area was built as one large space interrupted only by columns and later divided into rooms; it presents great potential for future uses.

The Braun Library, built in 1979, has no historic significance, and its large, clear floor spans on two levels also present great flexibility for re-use.

The steep site provides views, visibility and drama. It also complicates site access with a steep, narrow road not adequate for busses or freight deliveries, limited area for parking, and multiple levels and entries that are difficult for disabled persons to access. The recently opened Gold Line Metro Station on Marmion Way may ameliorate the inadequacy of the parking and bus facilities.

### Program Options

Based on the established Rehabilitation Goals, Levin & Associates, the Autry National Center staff and the report consultant team developed two space allocation programs, resulting in two development schemes. These options were used to establish probable project costs and operating expenses.

Option A will fulfill the stated rehabilitation and program goals. It will emphasize the educational mission of the Southwest Museum and rehabilitation of historically significant spaces and features.

Option B will accomplish all of the above and provide enhanced user facilities and technical capacity to meet higher museum standards for artifact handling. This option features an underground loading dock area, an enlarged Central Plaza built over it, and on-site food service. It assigns additional space for exhibits and expands parking capacity.



EX002 - Pastel & Charcoal Rendering; Hunt & Burns Architects

## **STRUCTURAL ASSESSMENT & RECOMMENDATIONS**

The structural report catalogues observed or known structural weaknesses and damage and evaluates the expected performance of the buildings during a significant earthquake, as measured against life safety criteria. Gravity load systems are also reviewed.

### **Findings**

The historic buildings of the Southwest Museum Campus were found to be fairly sound. Exceptions are insufficient shear wall or other lateral load resistance in the east and south walls at the base of Caracol Tower and rusted reinforcing bars observed in the underside of the Museum Store slab.

The Museum suffered damage during the 1994 Northridge earthquake, as described in Damage Survey Report No. 32839 filed with the Federal Emergency Management Agency. The Caracol Tower endured the most damage, with mostly minor and some significant concrete wall cracks, spalling at the roof beams and slab cracks, which appear not to have compromised the vertical stability of the wall. The seismic event also caused concrete cracks in the Main Museum Building and in the exterior face of the west wall of the Poole Wing. The Torrance Tower may have concrete cracks behind visible cracks to the plaster.

In the Braun Library, the positive wall anchorage between the walls and roof framing was found inadequate.

### **Recommendations**

Recommendations are made to mitigate the described deficiencies. Structural work required to carry out schematic options A & B includes repair and strengthening of the existing structures, new site work, and extensive excavation and subterranean work for Option B.

## **MECHANICAL/PLUMBING ASSESSMENT & RECOMMENDATIONS**

The mechanical/plumbing report analyzes the existing building systems against current museum climate control standards and other public building norms.

### **Findings**

#### **HVAC**

Generally the existing air conditioning systems are not recommended for reuse for the renovated building. The water source heat pump system serving most of the main building cannot provide the consistent temperature and humidity conditions or the higher air filtration standards required for a museum. Most of this equipment is at or beyond the limit of its useful service life, although some equipment in the Braun Library is adequate for a few more years' use. Many locations are problematic because they subject artifacts and documents to potential leaks or are very difficult to access for service. Almost no equipment meets current codes or AQMD standards.

The Southwest Hall, Upper and Lower Entrance Hall, Museum Store, most of the Caracol Tower, the basement of the Torrance Tower and main building and the Stone Room are not air conditioned, heated or mechanically ventilated.

### **Plumbing**

The domestic water piping is galvanized steel. Corrosion has occurred and it is recommended to re-pipe the building with copper. Problems with the site sewer lines have required several repairs.

Presently the building is not sprinklered, but an abandoned standpipe system was at one time connected to the domestic water system to serve 1 1/2" hose connections.

### **Recommendations**

#### **OPTION A**

A four-pipe, chilled water/hot water system is recommended for best control, stability and equipment quality. Due to the difficulty of finding appropriate duct space, multiple fan coil units will be used. They will be fed by a central chilled water plant located to the east of the Poole building and new boiler in the Caracol Basement.

A filtration system comprised of a particulate pre-filter, a "gas-phase" carbon filter and a high efficiency final filter is recommended. De-humidification will be accomplished by sub-cooling the air and then re-heating the air in each fan coil unit. Humidification would be controlled by steam generator electric or gas-fired humidifiers with steam piped to duct vapor distributors.

Mechanical means such as vapor barriers, insulation, caulked and weather stripped windows and entry vestibules should be employed to help stabilize temperature and humidity levels and to conserve energy.

A central digital computer based control system is recommended to monitor and control the air conditioning system.

#### **OPTION B**

Option B will require 20-30% more capacity from the chilled water plant and boiler to condition the new Artifact Storage, Exhibit Preparation, Receiving, Kitchen and Restrooms. Special ventilation provisions will be required for the loading dock areas, and exhaust from the kitchen and restrooms.

### **ELECTRICAL**

This report analysis the existing electrical system and offers recommendations based on code, life safety, collections protection, and the climate and lighting needs of a modern museum.

### **Findings**

The electrical system of the Southwest Museum is out of date and inadequate; providing less than 9.5 watts/sq. ft. rather than the average of 16 watts/sq. ft. required for a modern museum. It also raises many safety concerns.

There are two existing main feeds; an irregular situation, and they are overloaded. The outdated switchboards that they feed cannot interrupt the available fault current. The distribution and branch circuit panels that they serve, in turn, are overcrowded, very old and do not comply with code. By code, no additional circuits can be added to these panels. Un-remedied, this condition would prevent the modernization of the museum infrastructure. Other non-compliant conditions and deteriorated materials are found throughout the system.

The illumination in general is old, inconsistent, and detrimental to the appearance of the building and exhibits. It does not comply with Title-24 energy standards regarding energy-usage and lighting control. Many areas are not adequately lit and intermittent losses of electric power are regular. This is of particular concern at stairs and other exit paths, where emergency lighting and illuminated exit signs are also insufficient and many units are malfunctioning. Exterior fixtures placed to illuminate Caracol Tower are not functioning, losing an important opportunity for museum visibility.

### **Recommendations**

The entire supply and 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. At this time, any addition to the circuitry would trigger total compliance, as the components do not meet current Code.

### **OPTION A**

#### **ELECTRICAL SERVICE**

A new upgraded service is required to provide the necessary needed for proper museum function, including serving the proposed new HVAC load. A new, 2000 amp transformer will be located southwest of Torrance Tower . The number of D.W.P. meters will be reduced to one.

Throughout the facility, non-historic fixtures will be replaced with attractive, efficient new luminaries. Historic fixtures will be adapted to use energy-efficient lamps. Site lighting will be installed to enhance the grounds, highlight the landscaping, and provide safe pathway marking. Caracol Tower will be illuminated. Centralized lighting control will be provided.

#### **EMERGENCY EGRESS**

New exit signs will be installed throughout and emergency power will be provided by a central inverter system; allowing any fixture to be used as an emergency fixture.

### **OPTION B**

In addition to the above improvements, Option B would require an additional new panel for the kitchen, artifact storage and elevator.

### **CODE ANALYSIS**

The code analysis assessed the compliance of the Museum facilities to the nonstructural fire/life safety and accessibility requirements of the Los Angeles

Building Code and the State Historical Building Code. Recommendations were made regarding the improvements likely to be required as part of a major building rehabilitation.

### Findings

Assuming that construction for either Option A or B would commence in January of 2007, the 2004 California Building Code, based on NFPA 5000, and the Los Angeles Building Code (LABC) 2006 Edition, should be in force. As the exact provisions of this code are not yet known, this assessment has been conducted based on the 2002 Edition of the Los Angeles Building Code (LABC) currently in force. Additional codes effecting this project are:

- State Historical Building Code (SHBC) Chapter 34, Division II of LABC 2002 Edition
- NFPA 13, The Installation of Automatic Sprinkler Systems, 1999 Edition
- NFPA 14, Installation of Standpipe, Private Hydrant and Hose Systems, 2000 Edition
- NFPA 72, National Fire Alarm Code, 1999 Edition
- Americans with Disabilities Act Accessibility Guideline (ADAAG), 1990 Edition

The Southwest Museum building occupancies are classified as assembly (major classification), business and some storage. The existing construction materials are consistent with the general descriptions of Type I, Type II, FR or Type II, One-hour construction. However, different construction types have been indicated on various permits for work at the Museum over the last 90 years and the actual construction type is unknown

Regardless of construction type, museum use may continue by code. The State Historic Building Code (SHBC) allows the use or character of occupancy of a historic building to continue, provided such building or property otherwise conforms to all applicable SHBC requirements. This also applies to an historic use that was suspended for any period. SHBC mitigates strict compliance with many code requirements for non-historic buildings.

Within the existing Museum facilities the following fire and life safety code non-compliant conditions will need to be addressed during rehabilitation:

- A three-level, atmospherically interconnected opening in Torrance Tower, coincident with a permitted, over-sized mezzanine condition.
- Inadequate or non-operational exit signs and emergency illumination for means of egress
- The interior spiral stairway serving all levels of the Caracol Tower does not comply with code for multiple reasons and, discounting it as a legal egress leaves all but one floor of Caracol Tower with one or no legal means of egress. In Torrance Tower, the basement and both mezzanines lack a required second means of egress.
- Assuming the removal of the current internal vestibule, Van Nuys Gallery on

Level 2 will have two means of egress but with an inadequate distance separating them.

- There is no building wide fire alarm system in operation
- The existing fire department access road does not appear to comply with current code requirements regarding width.

The existing facility falls short of State and Federal accessibility. There is no internal vertical transportation so that the physically disabled cannot move from one floor to another. There is no accessible path of travel to many public and employee areas within the building and on the grounds. There is insufficient disabled access parking. Restrooms and drinking fountains are not in accessible locations.

#### *Recommendations*

An automatic sprinkler system is recommended throughout the Museum buildings and provided in Options A and B. Although it is not required by code, it would be in the Museum's interest and may be expected to reduce insurance costs. Due to the presence of valuable items inside the museum, recommended options are special water-based extinguishing systems, such as water mist or pre-action system or gaseous fire suppression systems, such as FM200 or Inergen. While the State Historic Building Code does not specifically require standpipes in historic buildings, their inclusion can also mitigate additional code-compliance concerns. Therefore, a combined sprinkler/ Class I standpipe system has been proposed.

As noted in the electrical report, existing exiting signs need to be illuminated and additional ones provided per code. Sufficient egress illumination should be installed throughout the museum.

A state of the art, addressable fire alarm system is required for qualified historic buildings of this occupancy type, per SHBC 8-409.

The following improvements in accessibility have been included in the development of program Options A and B:

- Two clear arrival sequences will be created; from the tunnel/elevator and from the upper parking lot, providing universal access to almost all parts of the building
- Additional elevators and ramps will be provided
- Three new standard accessible parking stalls and one accessible van stall will replace the single, existing, accessible stall
- New accessible restrooms and drinking fountains will be provided on three levels
- Visual alarm devices will be provided for the hearing impaired.

Small areas of the building, separated from the main floors, continue to present accessibility challenges in both proposed schemes. The application of State Historic Building Code provisions, preferred alternatives to standard accessibility requirements and alternative equivalent facilitation provisions will require negotiation with the City of Los Angeles Department of Building and Safety as part of the future development of this project.

## BUILDING PROJECT COST ANALYSIS

Davis Langdon Adamson has prepared detailed cost estimates for both Options A and B, assuming a construction start date in January of 2007 and a construction period of eighteen months. They may be summarized as follows:

	Option A	Option B
Building cost per sq. ft.	\$283.48	\$329.46
Building Total	\$10,830,000.00	\$14,044,000.00
Sitework	\$1,464,000.00	\$3,254,000.00
Construction Subtotal	\$12,294,000.00	\$17,298,000.00
Soft costs	\$3,934,000.00	\$5,535,000.00
<b>Total Project Costs</b>	<b>\$16,228,000.00</b>	<b>\$22,833,000.00</b>

Hard costs or construction costs include all labor and materials costs, utility hook-ups and contractor profits involved in construction. Soft costs include permits, required tests, professional fees (architect, engineers and other consultants), security, audio visual equipment, contractor bonds and insurance and non-specialized interior fixtures, finishes, and equipment. Not included in either hard or soft costs are:

- Costs for handling, moving and conservation of artifacts
- Exhibition design and installation
- Hazardous material abatement or environmental impact mitigation
- Compression of schedule or restrictions on working hours
- Operating expenses

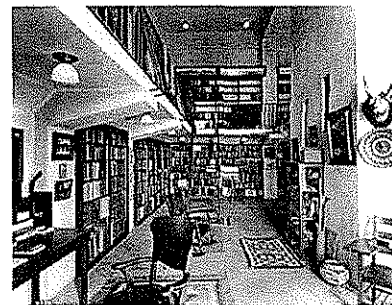
## ECONOMIC ANALYSIS

The economic report evaluates the market and financial implications of the two development options on future Southwest museum performance. Economics Research Associates evaluated the historical performance of the Southwest Museum, the site and building attributes, the available markets, economic performance of comparable museums nationwide, and the operating standards of the Autry. ERA then projected attendance, earned income, and operating expenses for the facility under the two options.

### Results

#### Attendance

The economic analysis indicates that attendance at the Southwest Museum will increase slightly under the Option A program, and considerably under the Option B program. This is due to varying levels of enhanced and expanded exhibitry, programs, events, and marketing as well as increased market awareness of the institution as physical rehabilitation occurs. Current annual attendance at the Southwest is estimated to be approximately 38,000 persons. ERA projects that attendance will increase to 46,000 persons per year in Option A, and 64,000 persons per year in Option B.



EX003 - The Monk Library of Arizoniana, Originally occupied the Caracol Tower

### *Earned Income*

Museums rely on two broad sources of income; earned income from museum operations, and contributed income from various government and private sources. At the Southwest, earned income equals about 35% of the operating budget: within the nationwide average of 30% to 50% of the operating budget.

Future earned income for the two options was evaluated based on increases in attendance, and visitor expenditures on admissions, merchandise, food and beverages, special events, and educational programs. Earned income is expected to increase modestly in Option A primarily as a result of attendance increases, and substantially in Option B due to greater attendance as well as increased visitor expenditures resulting from expanded facilities and programs.

Currently earned income is \$668,000 per year at the Southwest. ERA has projected earned income to expand to \$809,000 per year under Option A, and \$1,311,000 under Option B.

### *Operating Expenses*

Operating expenses were calculated taking into account historic expenses at the Southwest, industry benchmarks, the standards of the Autry Museum, and the repercussions of expanded programs, exhibits, education, curatorial, and other functions under the development options.

Operating Expenses are presently \$1,921,000 per annum at the Southwest. ERA projects that these will expand to \$2,093,000 under Option A, and \$3,488,000 under Option B.

### *Requirement for Contributed Income*

Museums raise funds from government grants, private foundations, individual and family donations, fund raisers, and other sources. This contributed income can represent the majority of income to an institution. Currently the Southwest requires \$1,253,000 in contributed income per year in order to cover their operating budget. As the museum's exhibits and programs expand in the two options, and as the museum transitions to being operated at contemporary museum standards, there will be an additional expansion of the operating budget, and the need to develop contributed income. This is consistent with museum experience nationwide. ERA projects that contributed income of \$1,284,000 will be required under Option A, and \$2,177,000 in Option B.

The projected financial performance of the institution is shown in the table on the next page.

Table V - 5

## ANALYSIS OF SOUTHWEST MUSEUM ALTERNATIVES: CONSOLIDATED STABILIZED YEAR PRO FORMA

Category	Existing	Option A	Option B
Annual Attendance	38,000	46,000	64,000
Gross Square Footage	42,076	42,453	52,092
Exhibit Square Footage	9,804	9,875	12,539
<b>Operating Revenue</b>			
Admission Fees	\$60,300	\$73,700	\$143,640
School Groups Income	\$20,000	\$24,000	\$26,000
Gift Shop	\$396,758	\$448,720	\$644,725
Food Sales	\$0	\$8,050	\$14,400
Membership	\$100,000	\$120,000	\$178,500
Programs / Education	\$0	\$8,000	\$16,000
Special Exhibits	\$1,000	\$1,000	\$32,000
Special Events	\$90,000	\$120,000	\$240,000
Facility Rental	\$0	\$3,000	\$10,000
Casa de Adobe	\$0	\$3,000	\$6,000
<b>Total Operating Revenue</b>	<b>\$668,000</b>	<b>\$809,000</b>	<b>\$1,311,000</b>
<b>Operating Expenses</b>			
Wages and Salaries	\$780,375	\$780,375	\$1,409,250
Employee Benefits	\$179,486	\$179,486	\$324,128
Administrative	\$200,000	\$220,000	\$250,000
Exhibits & Curatorial	\$145,000	\$175,000	\$350,000
Conservation	\$0	\$0	\$40,000
Facilities & Operations	\$230,000	\$230,000	\$325,290
Program & Education	\$70,000	\$80,000	\$105,000
Memberships	\$20,000	\$24,000	\$42,000
Advertising / Public Relations	\$20,000	\$160,000	\$290,000
Museum Store - Cost of Goods Sold	\$257,893	\$224,360	\$322,363
Museum Store - Other	\$18,000	\$20,000	\$30,000
<b>Total Operating Expenses</b>	<b>\$1,921,000</b>	<b>\$2,093,000</b>	<b>\$3,488,000</b>
Net Income (Loss)	(\$1,253,000)	(\$1,284,000)	(\$2,177,000)
Earned Income/Expenses Ratio	34.8%	38.7%	37.6%
Staff as a Percent of Total Expenses	50.0%	45.9%	49.7%
<b>Operating Expenses per SF</b>	<b>\$45.66</b>	<b>\$49.30</b>	<b>\$66.90</b>
<b>Industry Benchmarks</b>			
Low			\$12.00
Average			\$50.00
High			\$283.00
<b>Attendance per Exhibit SF</b>	<b>3.88</b>	<b>4.66</b>	<b>5.10</b>
<b>Industry Benchmarks</b>			
Low			2.83
Average			6.10
High			10.00

## CONCLUSION

The Southwest Museum has great value as an institution, a historically significant building and an emblematic artifact of the formation of Los Angeles in the early twentieth century. The current condition of the museum and its infrastructure, however, does not meet current museum standards. This signifies that the building is not suitable for safely maintaining and displaying the formidable artifact collection. Potential damage from fire, climatic fluctuations, pests and other sources is a present danger. Moreover, the use of unsuitable spaces for densely packed storage leaves the great majority of pieces unavailable for public viewing, and turns unique gallery space such as Torrance Tower into warehouses. The current exhibition spaces are underutilized and poorly lit; the artifacts are not shown in their best light.

In addition, the historic building is in need of some urgent maintenance/preservation procedures in order to prevent deterioration.

The collection will undergo a general conservation effort and much of it be moved to a new, state of the art, open storage facility at the Autry National Center Griffith Park Campus within the next few years. This report has analyzed what would be required to prepare the Southwest for continued museum use, with its envelope and infrastructure meeting museum standards.

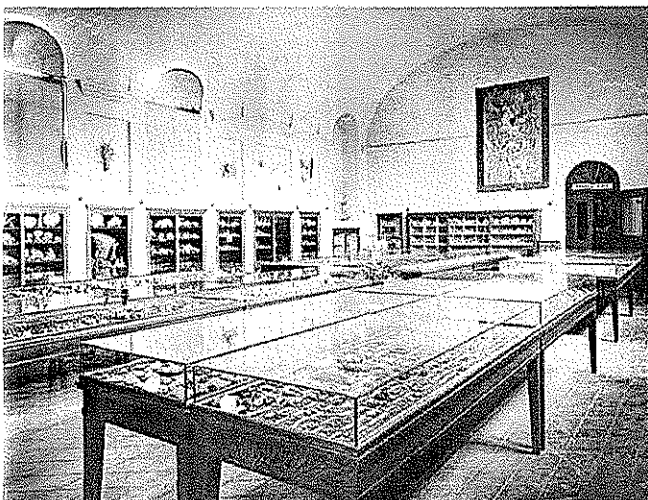
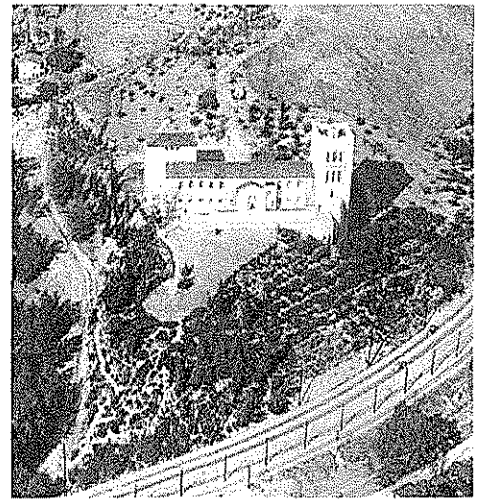
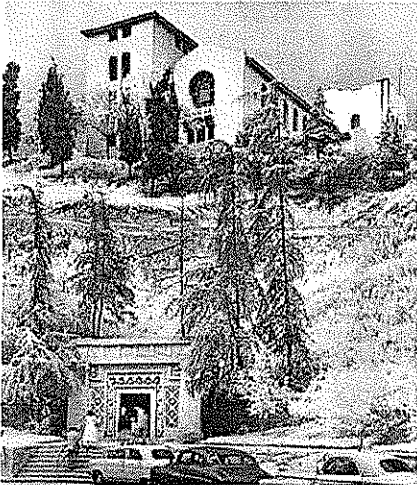
It has been shown by the respective consultants who collaborated on this report that the Southwest Museum building can achieve these standards (Option A), and further, with some additional investment it can provide greatly enhanced service to the community, attract more visitors, and earn more income (Option B). However, the cost for these changes is considerable; both in terms of capital outlay and increased operating expenses. It must be kept in mind that, as a rule, museums do not earn enough to pay their bills; the average income accounting for 30 to 50% of operating expenses. The additional funds are generally made up by gifts and grants. While the financial performance of the Southwest Museum, today, and as projected for Options A and B of this study, falls within the range of earned revenue to operating expenses, the crucial question is whether fundraising and government grants can make up the remainder of operating expenses. Further, is it possible to raise the capital required for the building and infrastructure upgrades?

This study provides the information needed to guide a rehabilitation of the Southwest Museum.



# Southwest Museum Rehabilitation Study

Phase I Planning



## Introduction

Purpose of Report

Building Rehabilitation Goals

Report Structure

Consultant Team

## INTRODUCTION

### PURPOSE OF THE STUDY

This study was prepared at the request of the Autry National Center to better perform their new role as stewards of the Southwest Museum's prestigious collections and historic campus, now that these institutions and their boards have merged. The report team has endeavored to provide the newly-combined Board with the information needed to carry out its mission of protecting the precious cultural patrimony of the Southwest Museum while at the same time broadening public access to both the historic buildings and the world-class collections of Native American and Early California artifacts which they currently house.

This report examines what is required for The Southwest Museum Mount Washington Campus to continue to serve the community and the City of Los Angeles as a museum. It explores physical requirements and conditions as well as sustainable economic strategies.

The report begins by analyzing the historic significance and current condition of the Museum site and buildings. It follows by making recommendations regarding needed improvements. Based on two distinct building and site rehabilitation scenarios, it examines the costs of continued use as a museum; both capital costs for building rehabilitation, infrastructure and code required upgrades, as well as operating expenses. In a concluding financial analysis, these costs are balanced against the revenue which facilities, exhibition, marketing and management improvements may be expected to generate.

This report does not address the re-conceptualization of exhibition focus and presentation in order to appeal to a broader public, although there may a role for such investigations in further studies. Recommendations and budgeting for new displays and furnishings are outside the scope of this project.

### BUILDING REHABILITATION GOALS

According to the definition established by the Department of the Interior, work to update and preserve the Southwest Museum should follow procedures for building *rehabilitation*. (See Historic Resource Evaluation Section pages 40-72.) In order to best maintain the historic buildings and the collections, and based on research findings, the report team and the Museum staff established the following five rehabilitation goals:

The Southwest Museum will be updated to meet contemporary museum performance standards with respect to environmental conditioning, lighting, security and materials handling, specifically:

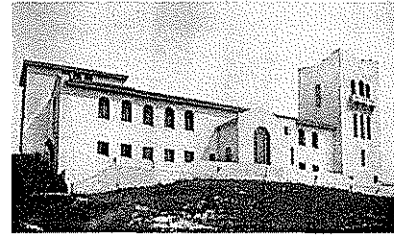
- Stable temperature and relative humidity at levels appropriate to the museum and the artifacts
- A pest free environment
- Controlled natural and artificial lighting, protecting artifacts from UV and excessive overall light
- Complete and separate building perimeter security and collections security
- A protected delivery area with convenient access to all necessary spaces.

The Museum facilities will be rehabilitated to match their documented condition during the Historic Period of significance (1912-1941)

The Museum buildings and grounds will be protected from deterioration by completing all deferred maintenance procedures.

The Museum buildings, site and infrastructure will be upgraded to comply with all applicable codes, as modified by provisions in the Historic Building Code.

The museum will provide facilities and programs to support the state mandated third to fifth grade social studies curriculum.



INo01 - South Façade c.1920

## **REPORT STRUCTURE**

### **Historic Background and Historic Resource Evaluation**

These first two sections of the report examine the Museum's history and the architectural and historic significance of its buildings and site.

### **Architectural Evaluation and Recommendations**

#### *Evaluation*

This first portion of this section assesses the considerable historic and architectural qualities and the potential of the Southwest Museum, as well as deficiencies in the condition of its infrastructure, deferred maintenance and code compliance.

#### *Recommendations*

Based on the rehabilitation goals and two investment/performance scenarios, two building and site rehabilitation options are developed and presented with drawings and detailed descriptions:

Option A will fulfill all the rehabilitation goals. It will emphasize the educational mission of the Southwest Museum, and provide improved access for both disabled and able-bodied visitors. Some existing museum and library spaces will be made available for new uses as collection storage and conservation activities are transferred to a modern, open-storage location at the Griffith Park campus.

Option B will accomplish all of the above, as well as to allocate additional space for exhibits, expand parking capacity, accommodate traveling exhibitions and provide more program and event space. These improvements are expected to attract more visitors and increase earned income and donor support, thereby providing more revenue for the Museum.

### **Infrastructure Assessment and Recommendations**

Within this section, the team's structural, mechanical and electrical engineering and code compliance consultants present their findings, along with recommendations to address deficiencies in these areas. They also outline those infrastructure improvements required to support Rehabilitation Options A and B.

### **Project Cost Analysis**

The project cost analysis presents professional cost estimates for implementing Options A and B.

### **Financial Analysis**

Finally, the Financial Analysis section pairs these costs with consideration of operating costs and potential revenues for each option, to arrive at a performance profile for each.

### **Appendix**

The appendix provides:

- A bibliography
- Lists of resources, photographs and original drawings
- The full-length history of the Museum by Kathryn Smith

### **CONSULTANT TEAM**

Levin & Associates, Architects, with Brenda A. Levin, FAIA, as project principal and Susan Di Giulio as Associate, assembled and coordinated a team of consultants with an outstanding track record in rehabilitation projects. They include:

*Kathryn Smith*, HISTORIAN

*Historic Resources Group*, HISTORIC PRESERVATION CONSULTANTS

*Englekirk & Sabol*, STRUCTURAL ENGINEERING

*The Sullivan Partnership*, MECHANICAL / PLUMBING ENGINEERING

*Nikolakopoulos & Associates*, ELECTRICAL ENGINEERING

*Schirmer Engineering*, CODE CONSULTANTS

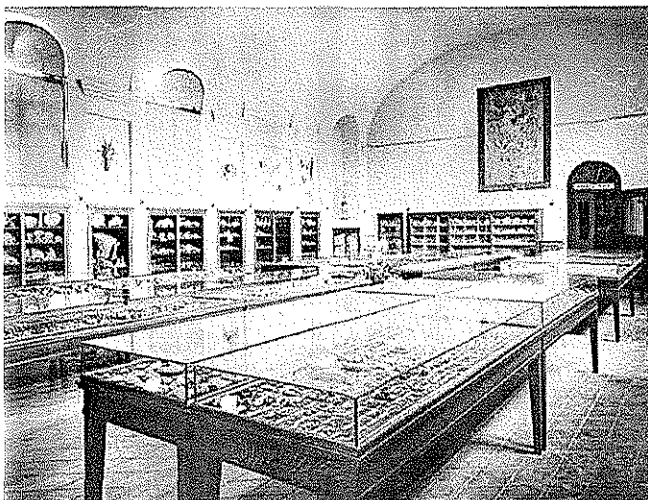
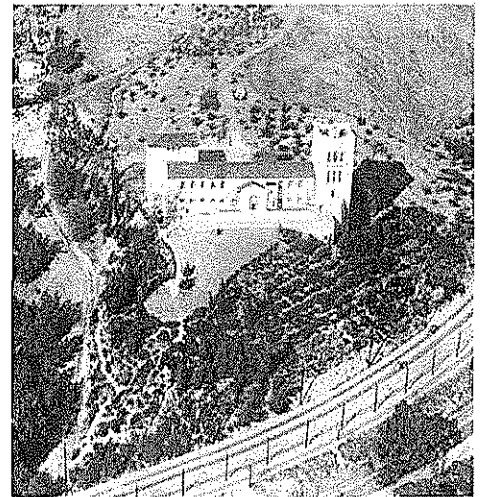
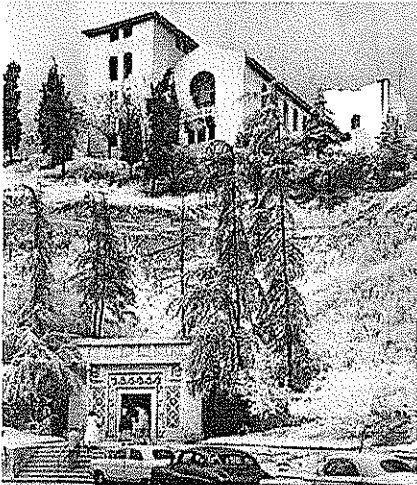
*Davis Langdon Adamson*, CONSTRUCTION COST ESTIMATING

*Economics Research Associates*, ECONOMIC CONSULTANTS



# Southwest Museum Rehabilitation Study

Phase I Planning



## History

The Founding of the Southwest Museum

Design & Construction

The Caroline Boeing Poole Wing of Basketry

Braun Research Library

Directors of The Southwest Museum

## A BRIEF HISTORY OF THE SOUTHWEST MUSEUM

**CONSULTANT** Kathryn Smith, HISTORIAN

**INTENT AND SCOPE** This study sets the history of the Southwest Museum in the context of Los Angeles history as a significant architectural landmark and as the fruit of the labors and dreams of many remarkable individuals.

### METHODOLOGY AND LIMITATIONS

This study was prepared based on written sources, photographs and drawings found in the Braun Library archives of the museum, and in other Los Angeles collections.

### HISTORY

*Mañana flor de sus ayeres* – “Tomorrow is the flower of its yesterdays” is the motto adopted by Charles Lummis for the SWM

#### The Founding of the Southwest Museum

A history of the Southwest Museum must begin with its founder; journalist and visionary, Charles Fletcher Lummis. Offered the job of city editor at the Los Angeles Times in 1884 by Harrison Gray Otis, Lummis took the opportunity to walk to his new post from Ohio. The experience left him with a great passion for the southwestern United States and from his arrival in Los Angeles in February of 1885, Charles Lummis was dedicated to conserving, preserving, and publicizing the early history of the Southwest.

In a sense Lummis’s entire Los Angeles career was a prologue to the founding of the Southwest Museum. Besides his work at the LA Times, Lummis’ edited the *Land of Sunshine* (renamed *Out West* in 1902), founding the Landmarks Club and the Sequoia League (devoted to Indian affairs) and serving as City Librarian. He also traveled, wrote and photographed extensively.

Lummis’s dream of creating a comprehensive museum covering the history, science, and art of the American Southwest first surfaced publicly in the February 1895 issue of *Land of Sunshine*. In 1903, Lummis moved towards concretizing the future museum by founding a Los Angeles chapter of the Archaeological Institute of America, called the Southwest Society. The Society coalesced a group of financial supporters including some of the most prominent and important members of the Los Angeles establishment of the era. These individuals contributed time, money, and, importantly, their collections. This acquisition of artifacts spurred the need for a permanent location. As early as 1904, Lummis and his supporters began raising funds toward the new building. By January 1905, *Out West* magazine announced that \$50,000 had been secured for this purpose.

#### The Site

Meanwhile, Lummis had constructed a home for himself in Arroyo Seco, which he named El Alisal. It became a personal museum where Lummis began to accumulate his own collection of artifacts and research materials. When site selection began in 1905, various locations were considered, some with great financial inducements, but Lummis was adamant that the only choice could



H001 - Charles Lummis in his signature green corduroy jacket

be the hillside property visible from El Alisal, with a commanding view of Arroyo Seco and far beyond. The 38-acre site was located on a transportation line between Pasadena and Los Angeles; accessible by the yellow car line and also by auto along Pasadena Avenue (later renamed Figueroa Street).

The hillside site was important for three major reasons. It provided the seclusion necessary for a more encompassing cultural experience, it provided a magnificent setting for a building integrated with the landscape, and by its elevation provided spectacular views in all directions. This last was of paramount concern to Lummis, who insisted that the Museum site must be one where it was possible "to see and be seen". Indeed, the views from the Arroyo Seco hilltop extended past downtown Los Angeles toward Catalina Island, and in the other direction toward the mountain ranges, including the Cucamonga peaks and farther west, the San Bernardino and San Jacinto ranges. From below, the museum would be visible from a great distance and create immediate recognition for future visitors.

### The Southwest Museum, Scheme I (1906)

The purchase of this site was approved by the Board on September 12 of 1906, but not financed at that time. The firm of Hunt and Eager was engaged to design the museum. Sumner P. Hunt had supported Lummis in his endeavors to restore California's missions and to create an architectural style suitable to southern California.



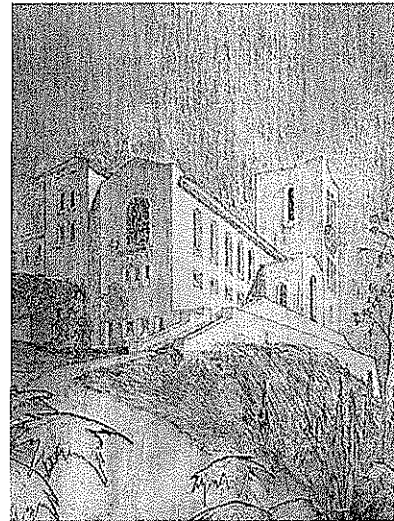
H003 - Watercolor of scheme I, Hunt & Eager Architects 1906

The design of Scheme I for the Southwest Museum was approved by the board in 1906 and published in 1907. There are no surviving original drawings for Scheme I, but it is clear from the one surviving reproduction of a rendering and Lummis's description that his ambitions for the building were unlimited. As he wrote, "The architecture is in general that of the Alhambra of Spain in its outward manifestation, but bent to the requirements and opportunities of California." Unfortunately, Lummis's idealism, unrestrained by pragmatism, was one of the reasons why this first plan was not built.

Scheme I called for a vast structure that would take full advantage of the site. It consisted of a central building with two lateral wings, 100 feet apart and each one 1,200 feet long. The two rows of exhibition halls would have terraced up the hillside with at least six halls crossing at intervals, creating



H002 - The site seen from the 43rd St. bridge, 1907-1910, photo by Charles Lummis



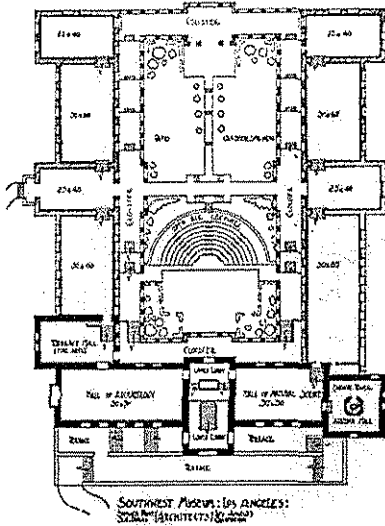
H004 - Scheme II - Pastel & Charcoal Rendering, Hunt & Burns

courtyards. Lummis concluded that the effect “would be even more massive and varied than that of the Alhambra”. Three means of entry were planned: a road, an entrance portal that led to a series of stairs and landings and an inclined railway to be called “Eagle’s Flight”.

The museum was incorporated on December 31, 1907, making it the first museum in Los Angeles. However, the board found it difficult to raise the funds needed to carry through with the purchase of all 38 acres in addition to the construction of the mammoth building. By 1909, \$30,000 had been raised to purchase the initial parcel. As reported in the Eighth Bulletin in 1911, “The front 16.9 acres of the greater parcel was paid for by O’Melveny for \$30,000.” Of these funds, Chairman of the Site and Finance Committee, attorney Henry William O’Melveny personally gave \$1000, raised \$22,000, and lent \$7,000. It had been agreed that the remaining 15 acres would be acquired for \$15,000, payable at \$2,000 per year. Additionally, one of his clients, Mrs. Carrie M. Jones, had agreed to leave \$50,000 in her will for the building fund; but on the terms that this bequest would lapse if the site had not been secured free of debt within five years. When Mrs. Jones died that year, Lummis was forced to move forward or lose her bequest. The deed was received, ultimately, on June 10, 1912.

**Southwest Museum, Scheme II, c. 1910-12**

Between 1909 and 1912, Hunt and Burns, now partner in a new firm, Hunt and Burns, re-designed the building, creating Scheme II. In many features, Scheme II resembled Scheme I and could be considered a scaled-down version. The U-shaped plan was bilaterally symmetrical with a central building and two lateral wings, terracing up several levels, embracing an interior courtyard. The central building was flanked on either side by two towers placed off-axis. A cloistered arcade surrounded the courtyard on four sides. The courtyard was divided in half with an amphitheater on the south serving as the building’s open-air auditorium, and a garden on the north. Lummis called this the “patio plan” which he believed could be extended infinitely up the hillside in increments as needed.



H005 - Scheme II Plan



H006 - Under construction May 1913

The bold exterior forms were nearly completely unadorned. The strong horizontal lines of the central halls alternated rhythmically with the verticals of the towers. The contrast of the light-reflecting, planar walls and the deep shadows of the openings established the building's striking visual identity. The overall composition was reminiscent of Andalusian architecture with suggestions of the mission architecture of early California. Striding its hilltop, the building conveyed the impression of a fortress with the main tower, decidedly Moorish in style, suggesting a medieval battlement.

Due to the lack of original drawings, certain conjecture must be applied to the plan. A path or walkway would have led to the public entrance, a vestibule entered from two sides on the main, southern façade. Inside, a two-story, central entrance lobby and staircase was flanked by two large galleries on the upper floor. Moving north, the two lateral wings consisted of two large galleries alternating with two small galleries in each wing. In total, six large galleries and six smaller galleries were planned. All of the galleries and halls were double-height rooms with barrel vaults, lit with natural daylight. It appears that the lower floors were set aside for storage and offices. The western portion of the lower floor of the central building was designed as a two-bedroom apartment for the curator.

#### Lummis as "Consulting Architect"

It appears that Lummis was responsible for the most distinctive design features of the museum. In a report, he referred to himself as "consulting architect and superintendent of construction". In general, he had a grand vision for the creation of a building that represented both the science and art of architecture. "The patio-plan and the outdoor auditorium are in a class by themselves," he explained, adding, "The great exhibition halls, with barrel vault ceiling, recessed cases, 3-foot walls, indirect lighting, vacuum cleaning, all fire-proof, quake-proof and time-proof, will be a new record in Museums."

Lummis credited his eleven-year old son, Quimu, for suggesting the caracol (spiral) staircase to him. By substituting this spiral staircase for the conventional type of staircase, he argued, a large amount of space would be saved. As a result, the tower would contain floor space and thus have actual rooms. It was a masterful construction in reinforced concrete. He wrote "The great Caracol staircase in the tower, a spiral without a core, is the first in the United States, and rivaled in America only by the world-famous Caracol in the Cathedral of Mexico." Lummis also liked to boast that it rivaled a similar one by Christopher Wren in St. Paul's Cathedral, London.

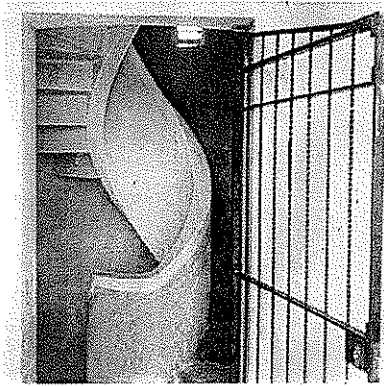
The massing and the exterior of the building, as noted, were inspired by the Alhambra in Spain; especially the Main Tower with its crenelated parapet. In fact, Lummis insisted on the Main Tower even when its only function was to provide monumentality to the composition. Lummis also proposed the barrel-vaulted ceilings of today's Sprague and Plains Halls, and the flying staircases of Torrance Tower; all inspired by Spanish colonial buildings that Lummis had seen in Arequipa, Peru.



H007 - C arcoal tower & south terrace under construction



H008 - Entry hall stair



**H009** - The unique Caracol Tower

All of this must be seen in the light of the fact that for over a year, Lummis was experiencing a bout of temporary blindness; a problem that plagued him off and on during his later years. He stated that he went over the plans with his fingers and did not see the design until the construction was almost finished!

### Construction

Once the deed was received on June 10, 1912 events moved quickly toward construction. The official groundbreaking took place on November 16, 1912. Despite stylistic historic references, the building would be modern building in structure and materials. It was to be built of reinforced concrete with hollow tile for partition walls and a mission tile roof. The exterior was to be finished with a "Cement-Gun" and painted with colored Mellotone. The interior was to be plastered with a sand finish and painted. The central staircase and floors were to be concrete with scored diamond patterns, on the upper floors; square on lower floors. The barrel-vaulted main galleries were to be outfitted with indirect incandescent lighting in the ceiling molds. Recesses in the gallery walls were designed to accommodate rolling display cases fitted with glass doors above and storage drawers below. Every room was to be outfitted with gas, plumbing, and a central vacuum cleaning system.

The bid documents are dated December 4 and 10, 1912. There were five bids for Scheme II that varied from \$93,139 to a high of \$102,000. In order to reduce the price, certain features were revised: tile was eliminated in the bathrooms, doors were changed from oak to Oregon pine, and the Curator's apartment was to be left unfinished. Torrance Tower was bid separately and was paid for by a donation of \$20,000 by J.S. Torrance.



**H010** - Nov 16, 1912 Ground Breaking Ceremony. Lummis is blindfolded

By late January 1913, the price was renegotiated to \$68,639 and the contract was awarded to Christian J. Kubach & Co. The building outline was staked in March 1913. Kubach planned to grade a road up to the site for delivering building materials. The board wanted to use this road later for automobile access to the museum. Lummis believed that it was important to have Kubach grade the front of the hill as well for more visibility. The contracts were signed on May 15, 1913. By June 28, with the ground open, the architects recommended additional foundations due to geological findings, including under the main tower. This added over \$5,000 to the cost.

Thomas H. Wilson and Cheri Falkenstein-Doyle wrote in "Charles Fletcher Lummis and the Origins of the Southwest Museum," that "workmen began pouring concrete on July 9, 1913 and quickly laid the foundation and erected the molds for the walls. Within a month they poured 1,400 tons of concrete for the foundations, and by September they had set both floors of the great halls and three stories of the great tower."

On September 30, 1913, a supplementary contract was issued to Kubach for the additional foundations, building of the front terraces, and the completion

of the Curator's Apartment. This added substantially to the cost (\$33,252). Lummis had also ordered an additional floor and mezzanine to Torrance Tower, and three mezzanines in the Main Tower.

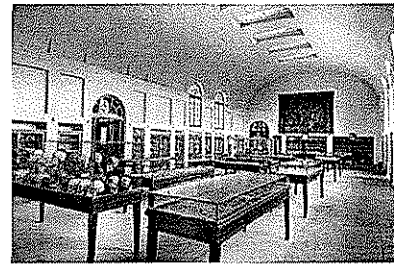
By April 1914, the shell of the building, including the roof, was almost complete and plastering began. The exterior surface was white cement and white silica sand with French ochre to match the stationery of the Alcalde Mayor (a title that denoted Lummis himself). The board chose white cathedral glass, to reduce sun damage to the artifacts, for the windows of Sprague Hall and Plains Hall (Museum One and Two at the time), clear glass in the remainder. The outside window frames were painted a dull bronze-green and the stained, interior finish wood was to match the display cases.

Lummis turned his attention to furnishings. He made drawings for the display cases in the museum and iron doors to the staircase of the Main Tower. He ordered and approved three chandeliers, which he claimed were inspired by an ancient Zuni original, for the entrance lobby. He also continued to push for the completion of the courtyard.

By June 1914, all concrete floors had been laid and wooden doors were being hung. The last items were being installed: iron grill doors, iron staircases and railings in the Main Tower, ironwork and encaustic tiles (also known as Mobile tile, requested by the donor) in Torrance Tower, plumbing fixtures, electric lighting, and tile roofing. Office furniture came from Barker Brothers. Lummis chose the highest floor of the Main Tower as his office. Below him, Dr. Joseph Amasa Munk had agreed to move his library to the sixth floor of the Tower and to donate all the cases and furniture. Dr. Alliot declined to occupy the Curator's Apartment. Lummis believed that there needed to be a resident in the museum and therefore J. E. Simpson was hired for the post of custodian. The apartment was equipped for him and his family and they moved in.

As Phase One was nearing completion and plans were being made to move into the building, the topic of change orders to Kubach became an issue. A statement of June 16, 1914 itemized the total due as \$28,243. The final cost of the building was approximately \$115,000, which was \$65,000 over the \$50,000 building fund.

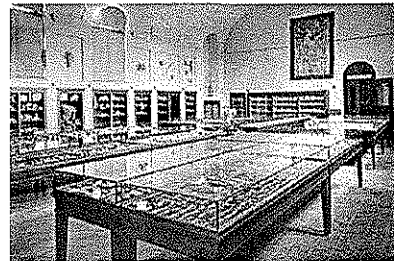
Through all, Lummis held fast in his insistence that funds be raised for Phase Two. In the spring of 1914 he had made an urgent plea to the board that an agreement be reached for the commencement of construction of Phase Two. Lummis designated the first hall and tower of the east wing to be dedicated as Junipera Serra Hall in the hope that Bishop Thomas J. Conaty would donate Serra's relics to the museum if this addition were constructed. In light of the mounting construction debt of the main building, Lummis faced an up-hill struggle to realize this goal. Yet, he believed that a plea could be directed specifically to Catholics and the monies would be forthcoming. This was not to happen.



H011 - Former "Hall of Archaeology," Now Sprague Hall



H012 - Torrance Tower, circa 1920, housing fine arts collection



H013 - One time "Hall of Conchology" Now Plains Hall



H014 - Mayan Portal

### The Southwest Museum Opens

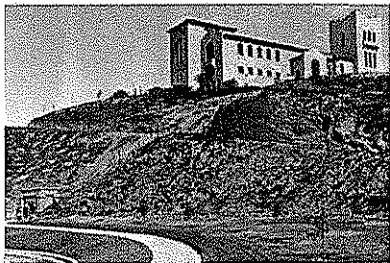
Between June 30 and July 3, 1914 the collections were moved into the building, less than 13 months after the foundations had been poured. On August 1, 1914 the museum opened without ceremony. This can be explained by the fact that it coincided with the beginning of World War I in Europe and also that the indebtedness had dampened the spirits of the directors. Phase One of the general plan was substantially complete and the custom cases and furniture were being installed in some parts, but not most, of the building. With his dream only partially realized, Charles Lummis resigned as Secretary of the Southwest Society in 1915.

### Portal, Elevator, and Dioramas

The halting of construction at Phase One caused some problems with the operation of the museum in the years ahead. The lack of an auditorium has never been fully resolved through the years and first Plains Hall (Museum Two at the time), and later, Sprague Hall served that purpose.

The more serious problem was public access; limited due to the fact that there was no driveway, there was never any parking planned and pedestrians had no convenient means of reaching the building; Primary access being the via the steep Hopi Trail. Even during the construction of Phase I, there had already been some discussion of a tunnel under the railway to connect to Pasadena Avenue (now Figueroa Street). To resolve the problem, a portal entrance scheme was proposed. Dr. Norman Bridge and J.S. Torrance financed it through a \$50,000 contribution.

The new entrance was planned by then-Director Hector Alliot, working with architects Hunt and Burns. It consisted of the hillside portal entrance on Museum Drive, a tunnel (also called a subway) leading to an octagonal waiting room in front of the elevator, and the elevator shaft, bringing visitors up 108' to the lower level entry lobby.



H015 - Portal & Elevator Tower under construction c.1919-1920

The original plan called for elaborate ornamentation throughout. The Mayan theme of portal was derived from Casa de Monjas (The Nunnery) at Chichen-Itza. The elevator grill motif was derived from the great dragon at Quirigua, Guatemala. The octagonal waiting room was to have large sculptured panels on its walls. The largest were two panels of the Tablet of the Sun from the Temple of the Sun at Palenque and the Tablet of the Cross from Temple of Cross, also at Palenque. The tunnel was to be decorated with 50 pilasters alternating with niches, seven on each side. The niches were to contain dioramas of habitat groups illustrating the life, homes, and costumes of Southwestern "aborigines". There is no evidence that any of these ornaments were carried out except the portal, the elevator grill and the habitat group dioramas, which can be seen today.

The major change to the Entrance Hall was the construction of the elevator tower on the east side of the Lower Lobby. This eliminated one of the original entry doors and blocked the window in the men's bathroom. Although this tower was designed to be as inconspicuous as possible, it added a massive, incongruous form to the main elevation.

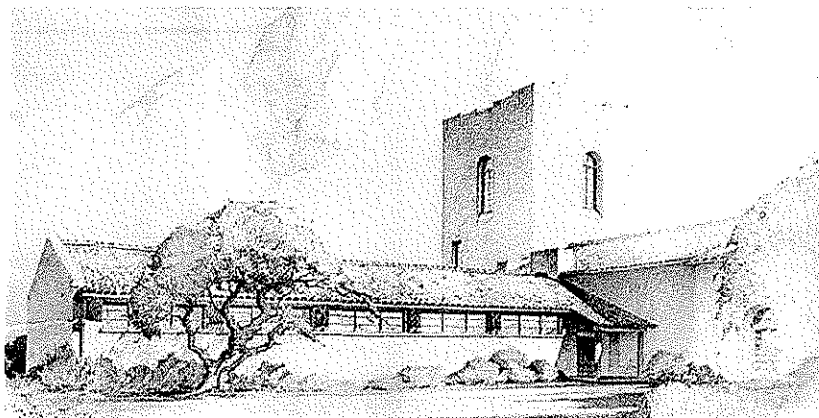
Ground was broken for the tunnel March 15, 1919, and the elevator shortly after. The two shafts met on October 20, 1919. Elevator service began on March 3, 1920.

### **The Caroline Boeing Poole Wing of Basketry**

Anthropologist Frederick Webb Hodge served as the museum director from 1932 - 1955. He focussed great energy on attracting major collections. Perhaps his greatest achievement in this area was acquisition of The Caroline Boeing Poole Basketry Collection.

Discussions with Colonel John Poole about housing the collection began in 1936 and led to the first new building on the site since 1914. The Poole Wing was planned to occupy approximately the same location as the east wing of the Hunt and Burns Scheme II.

Colonel Poole chose architect Gordon B. Kaufmann for the project. The two men had established a professional relationship during the design of the Poole residence. Kaufmann, one of the most important architects working in Los Angeles from 1920 and 30's, was a master of classicist forms and Mediterranean detail (Scripps College, 1930 - 1939 and the Athenaeum at Cal Tech, 1930). Some of his most important work, however, was in the Art Deco style (Hoover Dam, 1931 - 36; the Los Angeles Times Building, 1935).



**Ho16** - Pencil rendering, Poole Wing

The survey of the site was done in October 1937 and preliminary designs were made in 1938. The addition, 36 by 88 feet, was planned as a one-story exhibition hall with a basement below, devoted to the storage of the collection, research and laboratory work. In style, it was sympathetic with, although not an imitation of, the original building. In order to assure a fireproof and insect-proof structure, the materials were reinforced concrete for floors, walls and roof, steel sash windows, and a tile roof matching the older structure. The walls were finished with plaster and unadorned excepting the restrained use of decorative, cast concrete panels in designs derived from patterns on the baskets themselves. These designs and the interior color scheme were chosen by Colonel Poole's second wife, Mrs. John Hudson Poole III.

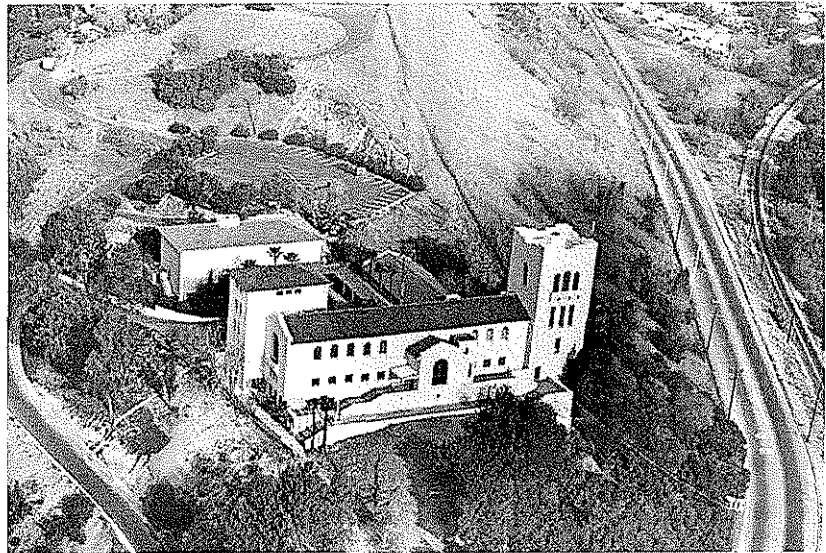
The impact of the new structure on the original museum building was discreet. Kaufmann provided a small lobby between Plains Hall and the new exhibition hall. The visitor could tour the main building and enter directly from Plains Hall, or enter from the courtyard through the eastern doorway under the new portico. The construction altered the north wall of Plains Hall by closing the two western-most windows and cutting an opening for a doorway. The roof structure was also altered to accommodate a stack for ventilating the basement toilet room.

There were five bids on the construction that varied between \$46,274 and \$41,590. The award of contract went to John H. Simpson for a bid of \$41,994. Construction began in June 1940 and continued until April 1941. The final cost, with change orders, was \$43,749.16. The built-in casework and dioramas made by Elizabeth Mason began to be installed in the interior in June of 1940. Sadly, Colonel Poole died on August 31, 1940. Artist Elizabeth Mason completed the dioramas in June 1942; eighteen months behind schedule. The opening preview was October 26, 1942.



H017 - California Hall in upper Poole Wing

The main exhibition hall was rectangular, with clerestory windows on the east and west elevations, interrupted by pilasters with the decorative, cast concrete finish. All four sides of the room contained built-in exhibition cases under a continuous, bull-nosed, concrete shelf. The fronts were of plate glass with simple bronze framing at top and bottom to engage the hidden pivot hinges of the case doors. The bases were redwood. These alternated with thirteen dioramas, illustrating the home life and activities of the principal basket-making tribes from the Aleutian Islands to the Mexican border. The wall cases, alternating with dioramas, jog in and out, creating a symmetrical rhythm of bays. The baskets were displayed on cubical supports of varying sizes, painted turquoise; some arranged in pyramidal groups.



H018 - Aerial photo c.1982

In addition to the wall cases, there were two large, single, floor cases plus four pairs of cases set back-to-back. A bronze light trough hung from the centerline of the acoustical tile ceiling. In addition, indirect fluorescent fixtures illuminated each case. The finished floor of the exhibit hall was Indian-red Kentile. A portrait of Mrs. Poole hung on the south wall.

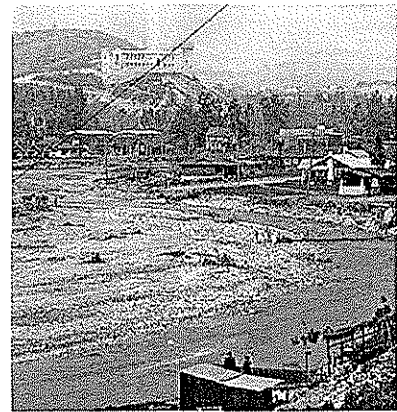
### **Braun Research Library**

During the directorship of Carl Dentzel (1955 - 1980), the Museum's research library collection outgrew its space in Torrance Tower. In 1977, it was announced that, through the generosity of the museum's president, C. Allan Braun, ground was about to be broken for a new library. Braun was part of the family that owned C.F. Braun, an engineering and construction firm established in Monrovia for decades. The new building was sited on the north side of the courtyard and through its placement completed the quadrangle. It was designed by the C.F. Braun's in-house architect, Glenn E. Cook, and constructed through the Braun Company. Two stories in height with an intermediate mezzanine level, it combined reading room, workroom and stacks within one rectangular, volumetric envelope. A metal stack shelving system with an integrated walking deck, level with the mezzanine, effectively created a third level of book storage. The library was constructed of reinforced, concrete block and equipped with HVAC designed to preserve the book and artifact collection. Construction commenced in 1977 and the library moved its collection into the new building in spring 1979.

With the completion of the library, a garden feature consisting of an island of lawn with a fountain jet of water became the focal point of the courtyard. Eriksson, Peters, and Thoms (Landscape Architecture) designed landscaping outside of Torrance Tower and around the Braun Library.

### **DIRECTORS OF THE SOUTHWEST MUSEUM**

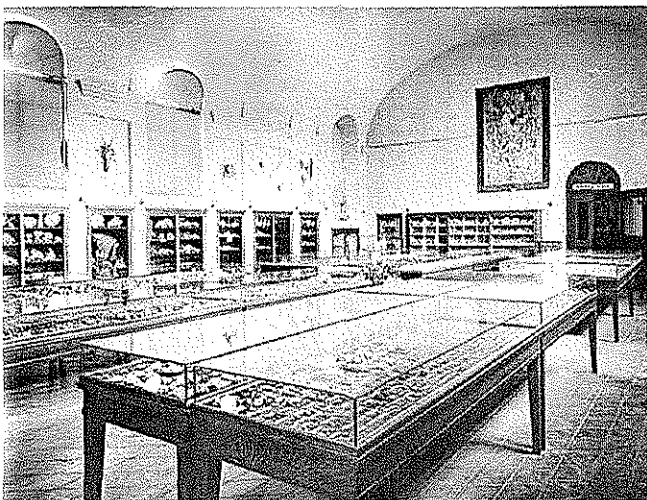
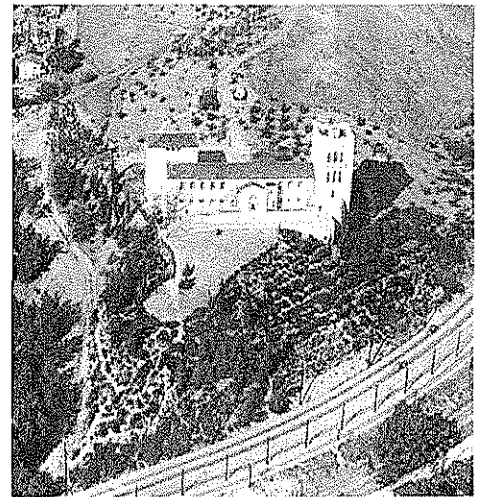
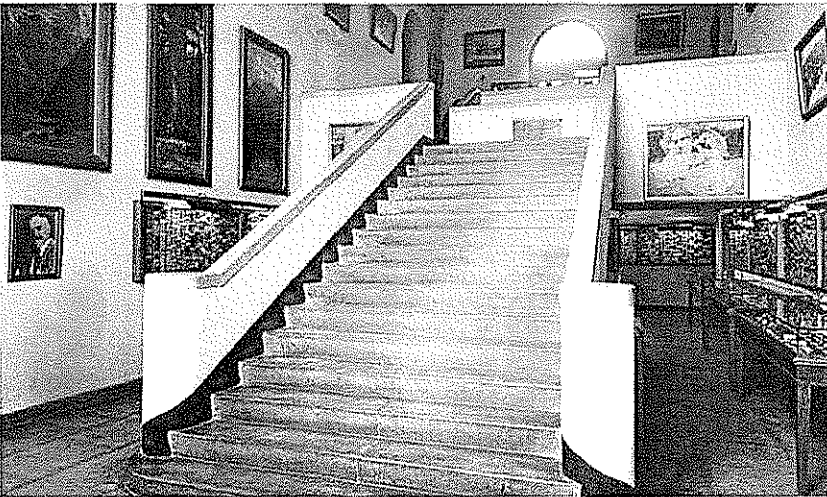
*Frank Palmer* • 1908 - 09  
*Hector Alliot* • 1909 - 19  
*Milbank Johnson* • 1919 - 21  
*Dr. John Comstock* • 1921 - 26  
*Dr. James A.B. Scherer* • 1926 - 31  
*Frederick Webb Hodge* • 1932 - 54  
*Carl S. Dentzel* • 1955 - 80  
*Bruce Bryant* • 1980 - 81  
*Dr. Patrick Houlihan* • 1981 - 87  
*Sterling Huntley* • 1988 - 89  
*Jerry Selmer* • 1989 - 92  
*Thomas H. Wilson* • 1992 - 94  
*Richard Gilman* • 1995  
*Duane King* • 1995 -



**H019** -Construction of the museum, from banks of the Los Angeles River

# Southwest Museum Rehabilitation Study

Phase I Planning



## Historic Resource Evaluation

Introduction

Criteria for Evaluation of Historic Significance

Historic Designations and Regulatory Jurisdiction

Determination of Historic Significance

Summary of Character - Defining Features

## HISTORIC RESOURCE EVALUATION

**CONSULTANT** *Historic Resources Group, LLC*

**PRINCIPALS** *Christy McAvoy, MANAGING PRINCIPAL*  
*Frank Parrello, PRINCIPAL, DIRECTOR OF PLANNING*

### INTRODUCTION

Founded in 1903 by Charles Fletcher Lummis and legally incorporated in 1907, the Southwest Museum was created to preserve knowledge and artifacts of the native people of the American Southwest. The first museum established in Los Angeles and one of the first in the nation to be privately endowed for the study of Native American culture, the Museum continues today to reflect its architectural origins and purpose. The Southwest Museum building, constructed 1912-1914, is also considered to be one of the first major examples in Los Angeles of the transition from Mission Revival to Spanish Colonial Revival architecture.

The mission and architecture of the Museum were both largely conceived by Lummis, while the museum has been led throughout its history by directors knowledgeable in Museum studies as well as in anthropology and archaeology. Many made a significant impact on the types of artifacts collected by the Museum as well as how they were displayed to the public.

The architectural firm of Sumner P. Hunt and Silas R. Burns was responsible for creating the design of the Southwest Museum, collaborating with Lummis on every detail. Both Lummis and Hunt were knowledgeable on Spanish architecture as well as how to incorporate this older tradition into a native Southern California architecture. The result is that the Southwest Museum is a monumental public building that incorporates themes Lummis and architects Hunt and Burns found in Andalusian Spanish, Pre-Columbian Revival, and Spanish Colonial Revival architecture.

Another influential Los Angeles architect, Gordon B. Kaufmann, designed The Caroline Boeing Poole Memorial Wing, a later addition to the Museum, between 1940 and 1941. The Poole Wing was designed with elements depicting the artifacts stored within, allowing this complimentary addition to reflect the Museum's mission of preserving and sharing Southwestern artifacts.

The overall historic significance of the Southwest Museum, which includes both physical materials and historic associations, has been evaluated using several pertinent sets of criteria. First, the criteria established for inclusion in the National Register of Historic Places and for the California Register of Historic Resources (California Register) were studied. The period of significance and its major phases of development were established during research into the Museum's archival collection, building permit information, and other sources. The significance of individual character-defining, architectural features and spaces that comprise the Southwest Museum was determined through an extensive survey of the physical spaces and of the features, and what alterations, if any, they may have sustained.

The period of significance of an historic resource is defined as the length of time when a property was associated with important events, activities, or persons, and attained the physical characteristics that convey its historic significance. That period of significance for the Southwest Museum has been determined to be 1912 - 1941, which encompasses the following major phases of construction:

#### **1912 - 14**

Architects Hunt & Burns finalized the design for Scheme II in 1912. Groundbreaking for the Main Museum Building took place that same year. In 1913, construction commenced and Lummis expanded the project to include mezzanines on each of the top three floors of the Caracol Tower as well as a second mezzanine in the Torrance Tower. The Main Museum Building, which includes the main east-west galleries, two-story Entrance Hall, and the Caracol and Torrance Towers, was completed in 1914.

#### **1919**

The entrance tunnel and elevator, which bring visitors to the Lower Lobby of the Entrance Hall, was added.

#### **1938 - 41**

Preliminary designs for the Caroline Boeing Poole Wing of Basketry were produced in 1938. The building and interior design were by architect Gordon B. Kaufmann. Construction commenced in 1940 and the Wing was completed in 1941.

Between 1919 and the construction of the Poole Wing, no major construction occurred within the Main Museum Building. Changes continued to be made to the landscape of the Museum site and to the Museum's artifact collection and display processes. After the Poole Wing was completed, the construction that occurred at the Museum largely entailed alteration of window and door materials throughout the building; maintenance of the building, including painting the walls and floors, waterproofing of the building's exterior, and replacement of display cases.

In 1979, the Braun Research Library was designed by Glen E. Cook. It houses the premier library in the world on the Indians of the American Southwest but is not a historically significant structure, and therefore is not included in this report.

### **CRITERIA FOR EVALUATION OF HISTORIC SIGNIFICANCE**

The physical characteristics that convey a building's historic significance as defined by The Secretary of the Interior's Standards for the Treatment of Historic Properties are those distinctive materials, features, spaces, spatial relationships, finishes, and construction techniques or examples of craftsmanship constructed within its period of significance. The history of the Southwest Museum also relates to the significant figures who led the Museum throughout its history and who were therefore responsible for both the Museum's buildings and the concept that led its creation and evolution as a Museum over time.

## HISTORIC DESIGNATIONS & REGULATORY JURISDICTION

The Southwest Museum is recognized as a landmark of significant historic value on local, state, and national levels. Historic designations regarding the Museum include:

### City of Los Angeles Historic - Cultural Monuments

Historic-Cultural Monument #283 – Declared August 29, 1984  
Cultural Heritage Commission, City of Los Angeles

“Southwest Museum, 234 Museum Drive, Highland Park. Founded in 1903 by Charles F. Lummis to preserve knowledge and artifacts of the native people of the American Southwest, it is the first museum established in Los Angeles and the oldest privately endowed museum in California devoted to Native American culture. The architectural firm of Sumner P. Hunt and Silas R. Burns was responsible for the design of the original building. The building, constructed between 1912 - 1914, is considered to be one of the first major examples in Los Angeles of the transition from Mission Revival to Spanish Colonial Revival. The lower entrance on Museum Drive, completed in 1920, is a significant example of Pre-Columbian Revival design.”<sup>1</sup>

The City Council designates Historic-Cultural Monuments on recommendation of the Cultural Heritage Commission. Designation recognizes the unique architectural value of certain structures that have retained their original design and materials, and helps to protect their distinctive qualities.

Sec. 22.130 of Article 4 of the City of Los Angeles Administrative Code defines an historic or cultural monument as:

*Any site (including significant trees or other plant life located thereon) building or structure of particular historic or cultural significance to the City of Los Angeles, such as historic structures or sites in which the broad cultural, economic or social history of the nation, State or community is reflected or exemplified, or which are identified with historic personages or with important events in the main currents of national, State or local history or which embody the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period style or method of construction, or a notable work of a master builder, designer, or architect whose individual genius influenced his age.*

### City of Los Angeles Historic Resources Survey

Another local review of the Southwest Museum includes its listing in the June 6, 1990 List of *Potentially Significant Historic Resources for the Northeast Los Angeles District Plan Area* (Appendix B), as:

“234 Museum Drive, Southwest Museum: “3P”: appears potentially eligible for listing in the National Register”

This District Plan considered the Southwest Museum to be an historic resource in the Northeast Los Angeles region reviewed and potentially eligible for listing in the National Register.

<sup>1</sup> The Historic-Cultural Monuments are listed in a publication by the Cultural Heritage Commission distributed by the City of Los Angeles Cultural Affairs Department. The Southwest Museum, Monument #283, is listed in *Historic-Cultural Monuments 1-588*, published in May 1994.

## California Register of Historic Resources

### *State Register of Historic Places*

SOUTHWEST MUSEUM, BUILDING 238

The California Historic Resources Inventory is a directory of properties that have been entered into the Office of Historic Preservation of the State of California's (OHP) Historic Resource Database within requested areas. These consist of properties submitted to OHP in accordance with programs specified by the National Historic Preservation Act or state law. The determinations of significance that are listed therein were made under the regulations appropriate to the program for which they were submitted. The Southwest Museum has been listed in the inventory for several reasons: inclusion in a survey by local and State governments in accordance with OHP's survey standards; and a submittal to OHP for nomination to the National Register of Historic Places.

In the OHP's *Directory of Properties in the Historic Property Data File for Los Angeles County* (State Inventory of Historic Resources), updated on July 2, 2003, the following information is provided regarding the Museum (Page 320):

Address: 234 Museum Drive

Property number: 024694

Ownership Type: "P" (Private)

Construction date: 1912

OHP programs for which this resource was submitted for consideration:

National Register, September 29, 1992, reference number: 19-0068<sup>2</sup>

The Museum was given the National Register Status Code of "2S1", under Criterion B and C, in 1992. Code "2S1" refers to properties determined eligible for separate listing in the National Register by the Keeper of the Register, which are also listed on the California Register of Historic Places. Thus, the Southwest Museum has been determined eligible for inclusion in the National Register by the Keeper. Owner consent for the listing was not obtained at the time.

Two surveys of historic resources that reviewed the Southwest Museum and that are on file with the OHP include:

Historic Resource Survey, 4 / 3 / 1981 (reference number: 0053 - 2162 - 000)

Historic Resource Survey, 9 / 1 / 1976 (reference number: 0053-0122-000)

The Museum was given the status code of "3S" in both surveys. The "3S" code refers to properties that appear eligible for listing as separate properties in the National Register.

The California Register of Historic Resources, established in 1992, is an authoritative guide in California used by state and local agencies, private groups, and citizens to identify the state's historic resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.

<sup>2</sup> Sources that were used to determine the significance of the Museum in the District Plan Study include: LADOP 1989 Survey; TELACU 1981 Survey of 187 Properties (A survey of the Highland Park and Mount Washington areas by the Community Research Group of the East Los Angeles Community Union); Gebhard, David and Robert Winter's text, *Architecture in Los Angeles: A Complete Guide*, Salt Lake City: Peregrine Smith Books, 1985, pp.526; SHPO determination of Southwest Museum as "Unofficially DENR": List compiled in 1989 designating the Museum a "2". A "2" code refers to properties that have not yet undergone the complete review phase necessary to be listed in the Federal Register or to properties with a previous survey on file at the OHP.

The criteria for eligibility for listing in the California Register are derived directly from the National Register Criteria for Significance. An historic resource must be significant at the local, state, or national level under one or more of the following four criteria (The Southwest Museum has met the underlined criteria):

- A It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States
  - B It is associated with the lives of persons important to local, California, or national history.
  - C It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
  - D It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.
- The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:
    - California properties listed in the National Register of Historic Places
    - (Category 1 in the State Inventory of Historic Resources) and those determined eligible for listing in the National Register of Historic Places
    - (Category 2 in the State Inventory of Historic Resources)

California Registered Historic Landmarks from no. 0770 onward

Those California Points of Historic Interest that have been evaluated by the Office of Historic Preservation (OHP) and have been recommended to the State Historic Resources Commission for inclusion in the California Register of Historic Resources

#### **National Register of Historic Places**

The National Register of Historic Places is “an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation’s cultural resources and to indicate what properties should be considered for protection from destruction or impairment.” The National Register is administered by the National Park Service. However, the federal regulations explicitly provide that National Register listing of private property “does not prohibit under federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property.” Listing in the National Register assists in preservation of historic properties through: recognition that a property is of significance to the nation, the state, or the community; consideration in the planning for federal or federally assisted projects; eligibility for federal tax benefits; consideration in the decision to issue a surface coal mining permit; and qualification for federal assistance for historic preservation, when funds are available.

To be listed in the National Register, a resource must possess significance in American history and culture, architecture, or archaeology. Listing in the National Register is primarily honorary and does not in and of itself provide protection of an historic resource. For projects that receive federal funding, the Section 106 clearance process must be completed. State and local laws and regulations may apply to properties listed in the National Register. For example, demolition or inappropriate alteration of National Register eligible structures may be subject to the California Environmental Quality Act.

A property may be listed in the National Register in three categories related to the National Register Criteria for Significance, according to the National Park Service's *National Register Bulletin 15*:

**Associative Value:** Properties significant for their association or linkage to events or persons important in the past.

**Design or Construction Value:** Properties significant as representatives of the man made expression of culture or technology.

**Information Value:** Properties significant for their ability to yield important information about prehistory or history [pertains to archaeological sites].

In order to be listed in the National Register, a property may be documented as significant under any of the above categories. Whereas a number of properties are significant under more than one of the four National Register Criteria for Significance, this is not a requirement for listing.

#### **Listing of The Southwest Museum in the National Registrar** National Register Eligibility of the Southwest Museum

Based on a nomination prepared by the Los Angeles Conservancy, the Southwest Museum was evaluated on September 29, 1992 as individually eligible for nomination to the National Register of Historic Places. After the Southwest Museum was merged with the Autry National Center (formerly the Autry Museum of Western Heritage), the owner requested that the Southwest Museum be listed in the National Register of Historic Places. This formally took place on March 11, 2004.

The Museum was determined to be eligible for separate listing in the Register under National Register Criteria B and C. The nomination proposed that the significance of the Museum is related to its association with Charles Fletcher Lummis and the areas of archaeology and conservation (Criterion B) as well as architecture (Criterion C). The Period of Significance of the Museum is described in the nomination as 1912-1928, reflecting the construction of the Museum in 1912, construction of the tunnel portal in 1920, and the death of Lummis in 1928. Therefore, the nomination describes the Museum's significance in relation to Lummis' programmatic and architectural vision for the Museum.

<sup>3</sup> The reference number for the submitted National Register materials is: 19-0068. The Museum was given a "251" code, referring to properties determined eligible for separate listing in the National Register by the Keeper of the Register, which are also listed on the California Register of Historic Places. This determination is discussed in the California Register of Historic Places' documentation.

The nomination considered the Museum eligible under Criterion B for its association with the life of Charles Fletcher Lummis, determined to be the person most significant to the Museum during the proposed Period of significance. However, current scholarship indicates that the Museum's significance should include those who were influential in the design and construction of the original building in 1912 - 1914 as well as those who continued to shape the Museum's function and architecture.

After Lummis' death a second architectural vision evolved that allowed the first new building to be constructed since 1914. This was the Caroline Boeing Poole Wing of Basketry, designed in 1940 - 1941 by architect Gordon B. Kaufmann, a contemporary of Hunt and Burns. The project was spurred on by the leadership of Museum Director Frederick Webb Hodge and supported by Colonel Poole and his second wife, Mrs. John Hudson Poole. The Pooles shared their interest in growing the Museum's Southwest collection by financing the wing's construction as well as donating their extensive basketry collection to be housed there. Colonel Poole had earlier commissioned Johnson, Coate and Kaufmann for the design of his residence and chose Kaufmann to be the architect of the wing. Mrs. Poole was also influential in the wing's design, sharing her vision for the its basketry-inspired exterior elements as well as for its interior color scheme.

The nomination also considered the Museum eligible under Criterion C, due to the distinctive architectural style of its original building and the fact that it has undergone few modifications since its construction in 1912 - 1914. Two additions made to the original building was described in the nomination, including the addition of an Entrance Tunnel in 1919 - 1920 as well as the Poole Wing in 1940 - 1941. The Tunnel was constructed during the proposed Period of Significance and its design and construction are attributed to the architectural firm of Allison and Allison. Current research in the Southwest Museum archives has shown that while many schemes were proposed for the original construction of the Main Building, including a proposal by Allison and Allison to construct a tunnel portal, the schemes selected for construction of the Main Building and Entrance Tunnel were both prepared by the architectural firm of Hunt and Burns.

The Poole Wing addition was described in the nomination as reflecting both the materials and scale of the original building, but the addition was not made during the proposed Period of Significance and therefore was not considered to be an aspect of the Museum's significance under Criterion C.

No information on the architect of the wing was provided in the nomination. A recent review of the Southwest Museum archives and a survey conducted of the Southwest Museum's spaces and character-defining features, however indicate that the Poole Wing is a significant aspect of the Southwest Museum's architecture, as described above.

The Poole Wing also evokes the original architectural vision for the Museum proposed by Hunt and Burns in their 1910 - 1912 Scheme II design, which consisted of a U-shaped plan that was to be bilaterally symmetrical with a central building, two lateral wings, and terracing that embraced an interior courtyard. Its location is reminiscent of an east wing proposed in the Scheme II plans.

#### **DETERMINATION OF HISTORIC SIGNIFICANCE**

Historic Resources Group has prepared a current review of the Southwest Museum's significance using the National Register Criteria, through a survey of the Museum's spaces and character-defining features as well as through research regarding those responsible for developing the Museum seen today.

The significance of the Southwest Museum evolves from both the architectural visions of those who have shaped it as well as from the historic impacts the Museum's leadership has had on its mission. When the Southwest Museum became one of the first museums founded in Los Angeles, upon its legal incorporation in 1907, a rich history began to develop involving not only the sharing of history itself through research, archival research, and public education involving the sharing of artifacts and exhibits, but also through maintaining a Museum that could best represent the rich history of the Southwest that Charles Fletcher Lummis, the Museum's founder, wanted most to express.

*The Museum is significant under Criterion B due to its association "with the lives of persons significant in our past".* A man of great influence in turn-of-the century Los Angeles, Charles Fletcher Lummis worked first as city editor of the Los Angeles Times (1885 - 1888) and later as city librarian for the Los Angeles Public Library (1905). He dedicated himself to the study of the American Southwest, reflected in positions he held such as the editor of Land of Sunshine (1885 - 1910), advocate for the preservation of California's missions through the organization of the Landmarks Club in 1895, organizer of the Sequoia League, advocate of Indian Affairs, and Secretary of the Southwest Museum from 1908 - 1915.

Lummis' early activities in Los Angeles inspired others to study the Southwest and its peoples, greatly influencing early preservation efforts throughout California. At the same time, his reflections on the Southwest also enabled him to envision an architecture that grew directly from its environment; an architecture that could best share the history of the Southwest both on its exterior and interior.

*The Museum is also significant under Criterion C as a property that embodies "the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master".* The architectural significance of the Southwest Museum is derived from Lummis' study of the Southwest and of architectural styles throughout the world that he felt in particular could best represent the monumental amount of study occurring within the Museum's walls, as well as the value of what was on display. Lummis hired architects

Sumner P. Hunt, FAIA (1865 - 1938) and Silas R. Burns of the firm Hunt and Burns, to collaborate with him on the design of the Museum. Lummis had previously engaged Hunt in his advocacy of preserving the California Missions through the Landmarks Club he founded in 1895. Two years later, in 1897, Hunt was chosen by Lummis to collaborate with him on the design of his home, El Alisal. The home served as Lummis' personal museum, housing his growing collection of artifacts and research materials. Both Lummis and Hunt authored articles regarding Old and New World Spanish architecture as the foundation of a native Southern California architecture. Lummis hoped that Hunt would be able to create a monumental structure with a sense of strength and importance on the hillside site overlooking the Arroyo Seco, having been influenced by the Andalusian Spanish architecture of the Alhambra Palace in Granada, Spain.

Hunt and Burns developed the first design of the Southwest Museum, Scheme I, in 1906, and proposed a second design in 1910 - 1912, Scheme II, which was built 1912 - 1914. Their influence enabled "consulting architect" Lummis' architectural vision to take form.

The Museum contains many elements suggested by Lummis and incorporated by its architects. The Southwest Museum consists of a Main Building with a two-story Entrance Hall, and exhibit halls on two levels to its east and west. The exhibit halls of the upper level of the Museum, Sprague Hall (Sprague Auditorium) and Plains Hall (Plains Hall), have barrel-vaulted ceilings, which Lummis said were inspired from his travels in Arequipa, Peru where he studied Spanish Colonial buildings. Both also have skylights in the ceilings, which once provided the halls with dramatic natural lighting. The original fenestration chosen by Lummis for these halls included large multi-paned windows with lunettes above each. The doors into the upper exhibit halls leading from the Entrance Hall, and those within the exhibit halls leading to more interior spaces of the Museum, were built with panels and also had lunettes above each, reflecting the fenestration.

Two towers are set off-axis from the Main Building and flank its east and west ends. The Caracol (Main) Tower to the east of the Main Building and Torrance Tower to the west provide a monumental, dramatic statement at the hill's edge that Lummis felt was appropriate and necessary in a public building's composition.

The Caracol (Main) Tower, off-axis from the Main Building to the south, consists of seven stories in height and is detailed with a crenelated parapet, suggesting a medieval battlement. Lummis collaborated with Hunt and Burns on the Tower's architecturally distinctive, exterior space, as well as conceived the continuous "caracol" (spiral) staircase within the tower, one of the most architecturally significant features of the Museum. A masterful construction in reinforced concrete, the stair saved a large amount of space within the Tower, which therefore has rooms on each of its levels, and is the only helical staircase in the Americas except in Mexico City. The upper three floors of the Tower each have a mezzanine, designed by Lummis.

The Torrance Tower, five stories in height, also punctuates the Museum's Main Building in a dramatic way, set off-axis towards the north. The large tower is an architecturally strong statement on its exterior and on the interior consists of an open space due to mezzanines above its ground floor. Lummis developed the concept of the mezzanines, one being built in 1914 and the other either built or altered in 1926. A dramatic open staircase, since hidden by the addition of a wall through an alteration, was also constructed in Torrance Tower. Derived from the Spanish Colonial buildings Lummis saw in his travels in Arequipa, Peru, this "flying staircase" has otherwise been little altered.

An architecturally significant lower entrance to the Museum, added in 1919 when the entrance tunnel and elevator from the tunnel to the Museum's Lower Lobby were constructed, is a significant example of Pre-Columbian Revival design. Relief carvings of Columbian symbols cover the entire front (western) façade of the entrance, and the concrete elevation walls of the north and south façades are carved to resemble a battlemented structure.

Much of the architectural significance of the Southwest Museum is also in its construction as a museum, with fireproof, earthquake-proof and insect-proof walls, floors and foundation. Considering both the size of this building and that it was constructed in the pre-war period (1900 - 1914), the choice of reinforced concrete by Lummis and its incorporation by Hunt and Burns are unique.

Three periods of major construction have occurred at the Southwest Museum, including its original construction, the addition of an elevator and entrance tunnel leading to the museum in 1919, and an addition designed by Gordon B. Kaufmann, FAIA (1888 - 1946), built between 1940 and 1941. This addition, the Caroline Boeing Poole Wing of Basketry, exhibits its own significance, as Kaufmann was an important architect of his time, working in classical, modern, and Mediterranean design vocabularies. His exterior design scheme incorporated each of the three visual façades of the wing a concrete basket-weave design, recalling the artifacts stored within.

Despite numerous changes made to content and presentation in each museum exhibition space, the Southwest Museum building has survived virtually intact as the structure Lummis originally conceived. It continues to house not only the growing number of Southwest-related artifacts, which he and other scholars have amassed but, more importantly, the study of this cultural region and its peoples.

### **Integrity of the Southwest Museum**

Integrity is defined as "the ability of a property to convey its significance."

The National Register has seven criteria on which the integrity of an historic property is based: location, setting, design, materials, workmanship, feeling and association. The Southwest Museum has integrity of location, as neither the institution nor its historic structures have not been moved. Its integrity of setting is also not compromised, as its location on top of Museum Hill and within Highland Park, and therefore its historic context is largely preserved.

The design of the Main Building and Poole Wing is intact, as are many of the materials and the workmanship, due to the preservation of many original windows and window openings, doorways, and other materials on the exterior and interior of the building. The alterations to the use and design of the Main Building's spaces do not significantly compromise their overall design or that of the Museum building itself.

The Southwest Museum's integrity of historic feeling and association are remarkably intact due to the monumental nature of its architecture and the preservation of its interior spaces throughout many changes of use. The initial need for the museum's major spaces to be flexible, efficient and easily maintained may have encouraged the preservation of the building, despite changing needs and ever improving museum standards. Therefore, the museum has a strong sense of historic feeling and association, and should be considered intact and significant for the purposes of evaluating integrity.

#### **Applicable Standards and codes**

The application of alternative standards and codes can retain the character and integrity of historic sites while providing equivalent safety and functionality for those facilities.

#### *The Secretary of the Interior's Standards*

Conservation, the preservation and protection of historic objects and sites, is guided in the United States by a set of principles known as the Secretary of the Interior's Standards for the Treatment of Historic Properties. These Standards provide four primary treatments to be used in the protection of cultural resources listed in the National Register of Historic Places. The treatments are

“Preservation,” “Rehabilitation,” “Restoration,” and “Reconstruction.” They are defined as follows:

- *Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property.*
- *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 the removal of features from other periods in its history and reconstruction of missing features from the restoration period.*
- *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 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 historic, cultural, or architectural values.*

The Standards and guidelines are intended as general guidance for any historic preservation project. They are designed to promote responsible preservation practices and to provide philosophical consistency in an approach to the work. As the Southwest Museum has been listed in the National Register of Historic Places, use of the Secretary of the Interior's standards and guidelines is an appropriate consideration in developing an approach to further work at this site. Other considerations such as physical condition, proposed use, and mandated code requirements can be factors in designing a treatment plan.

Choosing the appropriate treatment for the continued protection of the Southwest Museum involved research and data-gathering, analysis of existing conditions, and identification of continued uses. The original, distinctive spaces and features of the Southwest Museum are substantially intact and convey the building's historic significance. Retaining and repairing these spaces and features will preserve the historic integrity of the building while accommodating continued use and evolution as a functional facility. Therefore, "rehabilitation" is the approach recommended for the Southwest Museum.

The Standards for Rehabilitation are as follows:

- *A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristic of the building and its site and environment.*
- *The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.*
- *Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historic development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.*
- *Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.*
- *Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.*
- *Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the replacement shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.*
- *Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.*
- *Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.*

- *New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.*
- *New additions and adjacent or related new construction shall 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.*

**California Environmental Quality Act**

Under the California Environmental Quality Act (CEQA), adopted in 1970 and most recently revised in 1998, the potential impacts of a project on historic resources must be considered. The purpose of CEQA is to evaluate whether a proposed project may have an adverse effect on the environment and, if so, if that effect can be reduced or eliminated by pursuing an alternative course of action or through mitigation measures. The impacts of a project on an historic resource may be considered an environmental impact. Thus, under CEQA, an evaluation of project impacts requires a two-part inquiry: a determination of whether or not the resource is historically significant and a determination of whether the project will result in a “substantial adverse change” in the significance of the resource.

A building is considered historically significant, and therefore an “historic resource” under CEQA, if it meets the criteria for listing in the California Register of Historic Resources. Buildings formally determined eligible for listing in the National Register of Historic Places are automatically listed in the California Register. In determining potential impacts, a “substantial adverse change” means “demolition, destruction, relocation, or alteration of the resource such that the significance of an historic resource would be materially impaired.” The setting of a resource should also be taken into account in that it too may contribute to the significance of the resource, as impairment of the setting could affect the significance of a resource.

CEQA regulations identify the Secretary of the Interior’s Standards as the measure to be used in determinations of whether or not a project or new development or rehabilitation adversely impacts an “historic resource”. Moreover, projects which strictly adhere to the Secretary of the Interior’s Standards may be determined categorically exempt in that they have been determined not to have a significant effect on the environment, thus, exempting it from the provisions of CEQA. However, the categorical exemption is not permitted when a project “may cause a substantial change in the significance of a historic resource.” The applicable review could include a categorical exemption, a negative declaration, or an environmental impact report.

**California Historic Building Code**

As a structure listed in the National Register of Historic Places, the Southwest Museum is a qualified historic building under the terms of the State of California Title 24, Building Standards, Part 8 (the California Historic Building Code, which is a part of the State Building Code). As such, there are alternatives, exceptions, and exemptions available to the owner and local building officials which can assist the owner in meeting health and safety requirements while protecting the historic character and fabric of the buildings under normal local codes.

A thorough review of all of the particular provisions for qualified historic sites with respect to building standards is beyond the scope of this report. This is due to a number of factors: the fact that standards for all “existing buildings” apply to historic buildings as well; that applicable codes allow for the use of alternative standards (e.g., non-adopted alternative codes and standards); and the fact that applicable codes allow for the application of “performance” in lieu of prescriptive standards if the applicant can demonstrate that an existing condition or proposed alternative “performs” in such a way that it meets the requirements of public codes and standards.

This section lists some examples of relevant sections of the California Historic Building Code (hereafter, SHBC). The Southwest Museum is a qualified historic property under this code, and therefore application of this code is mandatory upon request of the owner or applicant to the Los Angeles Department of Building and Safety, Fire Department, Planning Department, and any other agencies that intersect with the jurisdictions covered in the SHBC. This is the alternative code that is most familiar and most often used for local applications. The architects and engineers of any prospective project should also, in the design and detailing phases, examine the detailed provisions of the Los Angeles Building Code for existing and historic buildings as well as the SHBC, and possibly other widely accepted alternative standards such as the “Guidelines for the Rehabilitation of Existing Buildings.”

**Sample Relevant Sections of the California Historic Building Code (SHBC)**

<b>Section</b>	<b>Description</b>
8-218	Definition of Qualified Historic Building or Property
8-402.2	Upgrading to one-hour rated construction and corridors is not required if an automatic fire sprinkler system is provided throughout.
8 - 603.1	Accessible entrances may be established at other than the “main entry.”
8 - 603.4	A separate accessible unisex toilet may be provided in lieu of separate-gender accessible toilets.
8 - 7	Alternative structural regulations: alternative lateral load standards may be applied; confer with a licensed structural engineer.
Table 8 - 8 - A	Allowable values for existing materials: provides structural values for materials and systems that may be archaic or not listed in current normal codes.
8 - 901.5	The building is exempted from compliance with energy conservation standards (e.g., building envelope standards for walls, windows, ceilings, roof, and floors), but not conservation standards for new appliances or equipment.

### **Uniform Code for Building Conservation**

The Southwest Museum also qualifies for application of the Uniform Code for Building Conservation (UCBC) as an “alternative standard” specified in the California Historic Building Code. UCBC is a model code that is written by the International Council of Building Officials (ICBO). ICBO authors the Uniform Building Code and the other model codes that are the basis for local building codes in most of the western United States. There are many alternatives, exceptions, and exemptions available to the owner that assist in meeting health and safety requirements while protecting the historic character and fabric of the buildings under normal codes.

### **Americans With Disabilities Act**

“Title 24”, [The California Building Code, Volume I-Title 24-Part 2], and “ADA”, provide specific guidelines for physical accessibility related to identifying barriers within historic properties. It is important to consider the application of these two public laws to determine which parts of a facility must be accessible, and the specific guidelines for that facility. Both laws are applicable, and where there are inconsistencies, the most stringent guideline should be applied.

#### *ADA Title III*

Under Title III of the ADA, owners of “public accommodations” (theaters, restaurants, retail shops, museums) must make “readily achievable” changes; that is, changes that can be easily accomplished without much expense. This might mean installing a ramp, creating accessible parking, adding grab bars in bathrooms, or modifying door hardware. The requirement to remove barriers when it is “readily achievable” is an ongoing responsibility. When alterations, including restoration and rehabilitation work, are made, specific accessibility requirements are triggered.

#### *Accessibility for Existing Buildings*

Each facility or part of a facility altered by, on behalf of, or for the use of a public entity in a manner that affects or could affect the usability of the facility or part of the facility shall, to the maximum extent feasible, be altered in such a manner that the altered portion of the facility is ready accessible to and usable by individuals with disabilities. These requirements shall apply only to the area of specific alteration, structural repair, or addition and shall include facilities such as a primary entrance to the building or facility and a primary path of travel to the specific area of alteration, structural repair, or addition.

#### *Accessibility Guidelines for Historic Properties*

Recognizing the national interest in preserving historic properties, Congress established alternative requirements for properties that cannot be made accessible without “threatening or destroying” their significance. Historic properties those eligible for listing or listed in the National Register of Historic Places or designated under state or local law. Thus, the Southwest Museum is considered an historic building when applying ADA.

A consultation process is outlined in the ADA's Accessibility Guidelines for owners of historic properties who believe that making specific accessibility modifications would "threaten or destroy" the significance of their property. In these situations, after consulting with persons with disabilities and disability organizations, building owners should contact the State Historic Preservation Officer (SHPO) to determine if the special accessibility provisions for historic properties may be used. Further, if it is determined in consultation with the SHPO that compliance with the minimum requirements would also "threaten or destroy" the significance of the property, alternative methods of access, such as audio-visual programs, may be used.

### **SUMMARY OF CHARACTER-DEFINING FEATURES**

Historic Resources Group's Managing Principal Christy McAvoy, Principal and Director of Planning Frank Parrello, and Associate Preservation Planner Erica Kachmarsky conducted site visits at the Southwest Museum from June-August 2003. These visits allowed for an extensive review of existing character-defining spaces and features as well as a careful examination of the integrity of the exterior and interior fabric of the Museum. Using historic photographs, articles, site plans, and the Annual Reports of the Southwest Museum, the project team inventoried and photographed those architectural features that were constructed during its period of significance, 1912-1941, as well as all alterations that have occurred to each over time.

The results of this survey are presented in a separate volume titled "Character-Defining Features and Alterations Database" as well as in the following Summary of Character-Defining Features of the Southwest Museum.

The following criteria for evaluating historic significance were defined specifically for the analysis of the Southwest Museum's spaces and character-defining features:

#### **SIGNIFICANT**

The area or features have retained substantial integrity from the period of significance and meets at least one of the following criteria:

- *Is essential to understanding the historic, spatial, or architectural character of the building;*
- *Was designed in an extraordinary manner or style;*
- *Was executed with a high degree of craftsmanship or specialized type of workmanship;*
- *Conveys a function unique to the mission and operations of a museum.*

If an area that has been heavily altered contains a significant feature, it may be rated significant rather than not significant. Features that post-date the period of significance that are compatible in style and execution with significant features in the same area are given a rating based on their own status and therefore would be considered not significant.

**NOT SIGNIFICANT**

The area or feature no longer retains integrity from the period of significance. This applies especially to spaces or features that have been completely replaced in an in-kind fashion. Features that are given the significance rating must therefore be the original feature from the period of significance.

**NOT CONSIDERED**

The area or feature was added or constructed after the period of significance. This applies to the Braun Research Library building of the Southwest Museum.

The spaces and features of the Southwest Museum that have been evaluated include:

**Main Museum Building (Hunt and Burns, 1914)**

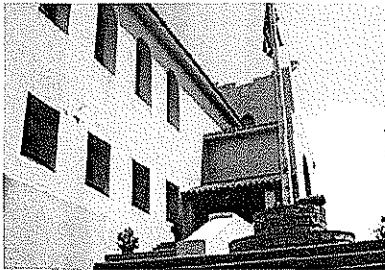
*Exterior*

**OVERALL EVALUATION: SIGNIFICANT**

The exterior elevations of the Main Building and the primary public spaces therein remain largely unchanged since the building's construction in 1914. Built of reinforced concrete, the Main Building is massed with bold unadorned forms consisting of a strong horizontal volume, housing the central, two-story entrance lobby and exhibit halls to its east and west, and the vertical elements of the two towers at either end of the central axis. The Caracol Tower, to the east, extends south of the central axis, whereas Torrance Tower, to the west, extends north.



HR001 - View of museum from parking lot



HR002 - South entrance terrace: West End

The design vocabulary of the exterior of the building is found in the contrast of the light-reflecting planar walls to the deep shadows of the openings, which accentuate each elevation as a main feature of the overall architectural composition. The only applied ornament on the exterior of the Main Building are balconies with a carved relief design located on the east and south elevations of its Caracol Tower and on the west elevation of the Main Building. Although the finish of the Museum has been recoated and therefore altered, original finish that exists is significant, as are these character-defining features that remain on each elevation.

The gable roof of the Main Building is clad in red Mission tile and despite maintenance over the years is significant for both its design as well as original roof materials that remain. Skylights above the Sprague Hall and Plains Hall exhibit halls are located on the east and west ends of the gable roof, and are also significant character-defining features of the roof.

Most visitors originally arrived at the Museum from an entrance on its south elevation, which served as the main entrance of the Museum until a parking lot was built north of the Museum in 1956. The entrance's original doorway and window opening are intact but its materials have been otherwise altered. (See photos HR001, HR002, and HR003)

The current main entrance into the Main Building is on the north elevation and was designed by Gordon B. Kaufmann in 1941 when the Poole Wing addition was constructed. This entrance's interior and exterior doorways, openings,

and portico were built within the period of significance of the Museum. Note that the original arch over the Hunt and Burns north entry was filled in at this time. Metal framed doors and windows were added during the 1977 alterations by Glen Cook, architect of the Braun Research Library. This alteration enclosed the entrance. The materials are not significant.

Many windows of the Main Building are original, although about half have been replaced. The original window materials consist of wood framed multi-light casement windows with lunettes above each. Replacement windows are single-paned and set in aluminum frames. On the north elevation of the Main Building window materials were removed during an alteration in 1938, and the openings were filled in with concrete and coated with exterior finish. While many of the Main Building's window materials have been replaced, window openings on each elevation are significant. (See photos HR004 and HR005)

The Entrance Terrace along the south elevation of the Main Building is significant, as are the original walls and built-in wall drains. The concrete stairs lead to the south entrance of the Museum, west of the Entrance Hall, and to the elevator shaft east of the Entrance Hall. The portico above the south entrance and the tile finish on the landing and benches below it are not significant. (See Photo HR006)

The character-defining features of the exterior of the Main Building include windows along the exhibit halls, within the entrance lobby, and on both towers flanking the Main Building.

#### SIGNIFICANT

Reinforced concrete walls, original exterior finish, gable roof, mission clay tile, skylights over Sprague Hall and Plains Hall, balconies on Caracol Tower (east and south elevations) and west elevation of Main Building, interior and exterior doorways and openings of north entrance, Upper Entrance Vestibule, door and window openings of south entrance, opening pattern of doors and windows, original window materials of the south elevation, Entrance Terrace walls, wall drains, stairs, and ground cover. The original north entry door had a transom arch above it, which was filled in when the Upper Entrance Vestibule was added in 1941.

#### NOT SIGNIFICANT

Re-coated exterior finish, Door and window materials from alteration of north entrance, alterations of south entrance including door and window material, tile at landing and portico above entrance, replacement windows including those changed in 1955.

#### Interior

##### OVERALL EVALUATION: SIGNIFICANT

The interior of the Main Building of the Southwest Museum includes a two-story central entrance lobby. It is flanked to the east and west by two barrel-vaulted exhibit halls on the upper floor and on the lower floor by an exhibit hall to the east and the Museum Store and administration areas to the west.



HR003 - Upper entrance vestibule, added 1941, and walkway canopy c.1977



HR004 - South elevation of main building; original windows at West End



HR005 - South elevation of main building; replacement windows at East End



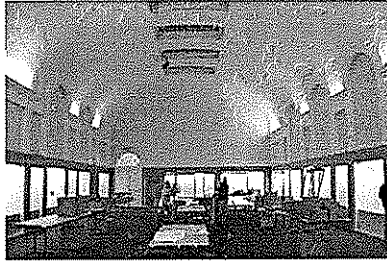
HR006 - South entrance terrace; West End

The following interior spaces of the Museum were inventoried:

**Exhibit Halls**

**OVERALL EVALUATION: SIGNIFICANT**

The exhibit halls of the Southwest Museum are primary public spaces that retain many character-defining features and therefore have a high level of integrity. The upper floor exhibit halls retain similar character-defining features and level of integrity. Fewer significant features were found in exhibit spaces of the lower level of the Museum, which have undergone more extensive alterations.



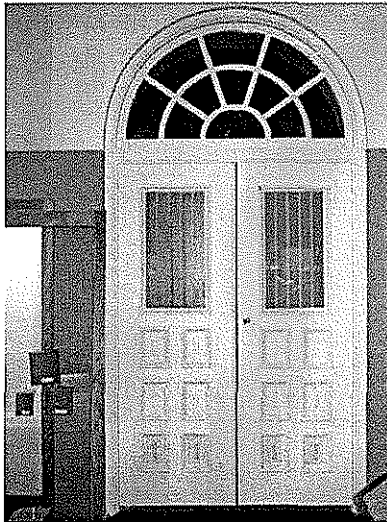
**HR007** - Sprague Hall: current condition

The two exhibit halls of the upper floor flank the central lobby of the Museum and its staircase. These halls, Sprague Auditorium and Museum Plains Hall, are double-height rooms with barrel-vaulted ceilings derived from Spanish Colonial buildings Lummis had seen during his travels in Arequipa, Peru. (See photos HR007 and HR008).



**HR008** - Elevator machine room enclosure in Plains Hall

Both upper floor halls were originally lit with natural light. Skylights set in the center of the barrel-vaulted ceilings were blackened out in a 1938 alteration. There are other significant window openings along the south elevation of both exhibit halls. The original windows of the north and south elevations of the exhibit halls were wood framed, multi-light casement windows with lunettes above them. The south elevation windows of Sprague Hall are original but have been covered from the interior to keep light from entering the space. The south elevation windows of Plains Hall have been replaced with single-paned windows in aluminum frames. The north elevation windows of Sprague Hall have been removed and filled in with concrete. All window openings within the exhibit halls are significant, whereas altered window materials are not significant.



**HR009** - Historic doorway from Torrance Tower into Sprague Hall

Indirect incandescent lighting was originally set in cornice niches along the north and south elevations of the exhibit halls. These niches (or coves) are set into the reinforced concrete walls where they meet the barrel-vaulted ceilings. Although the original lighting was changed to fluorescent fixtures in 1955, the niches are still lit and therefore continue to create their original visual aesthetic. The niches accentuate the rhythm of windows within the exhibit halls, while outlined recesses between the openings mimic the deep reveals of the exterior elevations.

In Sprague Hall on the west elevation an original door and window opening to balcony exists and is significant, but the original materials have been replaced with materials that are not significant. All other doors, with lunettes above, both on the interior of Sprague Hall and Plains Hall as well as between the exhibit halls and the central entrance lobby are original, including their openings and materials. (See photos HR009 and HR010).

The floors of the exhibit halls have been carpeted. Underneath the carpeting, the original scored-concrete flooring of the exhibit halls remains. The original concrete flooring, where present, is significant; the current floor covering is not significant.

The display cases of the exhibit halls have been replaced over the years and are not significant. The recesses in the gallery walls were originally designed to accommodate rolling display cases fitted with glass doors and storage drawers below.

Plains Hall was altered when its southwest corner was converted into an elevator maintenance room. Two walls were added with cornice molding applied that imitates the molding of the original walls of the exhibit hall. These alterations are not significant, whereas the original ceiling niches, molding, and walls are character-defining features of the space.

The Museum's lower floor exhibit spaces have been more extensively altered than those of the upper floor. Directly below Plains Hall is Southwest Hall, which consists of a men's bathroom and exhibit space beyond. This exhibit space has undergone the most alterations of any space within the Museum, including the addition of both full height and shorter walls, carpeting and fluorescent lighting.

The exhibit space within Lower Southwest Hall is connected to Floor 4 of the Caracol Tower (Southwest Hall; upper Southwest Hall), which along with Floor 5 is the only exhibit space within the Tower. These exhibit spaces are described under the Tower's own space category.

#### SIGNIFICANT

Barrel-vaulted ceilings, original walls, ceiling niches, original flooring, door and window openings, original door and window materials, skylights.

#### NOT SIGNIFICANT

Current floor covering; altered door and window materials, walls and molding adding in alterations to Plains Hall, display cases, men's toilet finishes and fixtures.

#### *Entrance Hall*

##### OVERALL EVALUATION: SIGNIFICANT

Connecting both upper exhibit halls to the main entrance of the Museum, the two-story Entrance Hall is a primary public space of the Museum consisting of a lower and upper lobby. Whereas minor alterations have occurred within this space, the original walls, ceiling, window and door openings, and light coves remain. Three lighting fixtures within this space are also original, their design and location having been chosen by Charles Lummis. The floor of the lower lobby has been carpeted, and the floor of the upper lobby has been covered in wood flooring, and yet the original flooring of both spaces may still be present underneath these alterations. A staircase leads from the lower lobby to the upper lobby, and while its finish has been altered and its steps carpeted it retains the significant character-defining features of its original construction and design. (See photos HR011, HR012, and HR013).



HR010 - Historic doorway from Plains Hall to Northwest Hall



HR011 - Main stair (current condition)



HR012 - Main stair

The original entrance into the Museum is located on its south elevation and faces west. This entrance's door and window openings are original, whereas the materials of the doors and windows have been altered and are not significant. Directly across from this entrance is the elevator entrance that leads to the entrance tunnel below the lobby. The elevator was recently replaced, and whereas the original door materials were removed to construct the elevator shaft and entrance in 1919, the door and window pattern remains and is significant.



HR013 - Monumental window & door to terrace at lower lobby

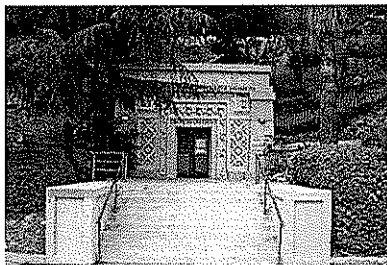
The two-story window that dominates the south end of the entry hall was designed to introduce light into both levels. From the exterior, it is the focal point of the extended volume of the Entrance Hall that pushes out beyond the Main Museum and forms the visual center of the south façade. It is, therefore, a major character defining feature both within the entry hall and for the building as a whole. The window opening is original and significant, whereas the window materials have been replaced and are not significant.

**SIGNIFICANT**

Ceiling, ceiling coves, original walls, door and window openings, door and window materials of upper level leading into exhibit halls, staircase, three Zuni lighting fixtures.

**NOT SIGNIFICANT**

Door and window materials of lower level and of north entrance into Entrance Hall, fluorescent lighting, current floor covering of lower and upper lobby.

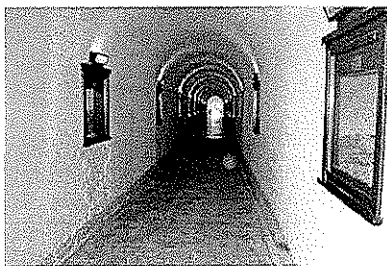


HR014 - Mayan Portal

**Entrance Tunnel**

**OVERALL EVALUATION: SIGNIFICANT**

The Entrance Tunnel of the Southwest Museum was constructed in 1919 to enhance public access to the Museum. Architects Hunt and Burns designed a portal entrance into the tunnel, the tunnel itself (262' or 281' long), an octagonal waiting room where the tunnel meets an elevator leading to the lower lobby of the Entrance Hall, and an elevator shaft (108h') that encloses the elevator.



HR015 - Entrance tunnel

The portal entrance into the Entrance Tunnel is one of the most public and architecturally detailed spaces of the Museum. The Mayan-themed entrance (16'h x 24'w x 12'd) was derived from Casa de Monjas (The Nunnery) at Chichen-Itza. (See photos HR014 and HR015)

Despite many elaborate design schemes considered for the tunnel, however, the entire space was less ornamented when built than originally planned. Instead, niches for the insertion of dioramas or "habitat groups", illustrating the lives of Southwestern peoples, were located along both walls of the interior of the tunnel and became the most character-defining feature of the tunnel's interior. Dioramas were installed into the display niches between 1922 and 1926.

Although a 1959 alteration replaced the original frames and lighting fixtures of the display cases, the niches themselves are original and therefore significant.

The finish of the tunnel's ceiling and walls has been recoated and patched extensively, although original finish may exist with the space and the ceiling and walls themselves are original. Although the entire cement floor was replaced in 1959 and is therefore not significant, its design is similar to the original scored-concrete flooring found elsewhere in the Main Building. Lighting fixtures within the entrance tunnel are not significant, whereas lighting covers near the ceiling are significant. These lighting covers were built to illuminate the tunnel as well as the dioramas below.

The elevator shaft leading to the tunnel was built directly south of the Main Building, at the southeast corner of the Entrance Hall, and can be reached on the exterior by the eastern stairs of the South Entry Terrace. When built in 1919, the elevator shaft covered the original window opening of the men's restroom within Lower Southwest Hall. Plaster patches on the exterior of the shaft can be seen where window openings have since been filled with concrete. (See *Photo HR016*)

#### SIGNIFICANT

Portal Entrance, retaining walls, tunnel, octagonal waiting room, elevator shaft, ceiling, walls, diorama niches, dioramas, light covers, door openings and doors of two storage closets.

#### NOT SIGNIFICANT

Altered finish; floor; elevator; diorama frames; lighting fixtures.

#### Service Areas

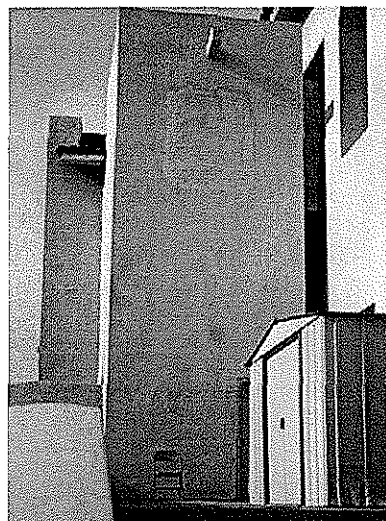
##### OVERALL EVALUATION: NOT SIGNIFICANT

Located on the lower floor of the Main Building, below Sprague Hall, The Museum Store and office area (previously named Storeroom #2 and also Lower Western Hall) originally provided storage space and offices. The western end was designed as a two-bedroom apartment for the curator of the Museum.

Besides the Museum Store, this area currently includes the Curator's Office, Director's Office, Membership Office, Store Office and women's restroom of the Museum. The original use of these administrative areas has been largely retained although many alterations to their interiors have occurred. (See *Photo HR017*).

The extensive alterations to these spaces include the addition of drop ceilings, stripping of columns, new wall finishes, carpeting of all floors, and the addition of a partition wall within the Curator's Office to create a separate Membership Office.

Although fewer significant character-defining features remain in this area than other spaces within the Museum, the original flooring may exist under the carpeting, as seen in the closet of the Curator's Office. Window and door



HR016 - Elevator shaft tower; east side, showing filled-in window opening



HR017 - Museum store

openings, all original doors and hardware, and built-in shelves in the offices are significant features of the space. Many original windows have been replaced with single-paned windows in aluminum frames. The original windows of this area were similar to the extant wood framed, multi-light, casement windows of Lower Southwest Hall.

**SIGNIFICANT**

Original walls; door and window openings; original door materials; built-in shelves.

**NOT SIGNIFICANT**

Altered door and window materials; floor covering; dropped ceilings; partition wall added in Curator's Office; finish on columns of Museum Store, women's toilet finishes and fixtures.

**Main Museum Building; Caracol Tower (Hunt and Burns, 1914)**

*Exterior*

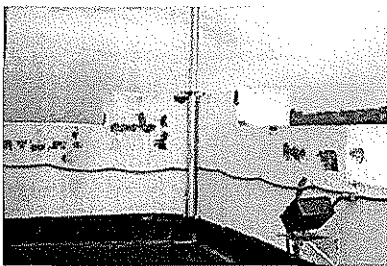
**OVERALL EVALUATION: SIGNIFICANT**

The Caracol Tower is an important element of both the exterior and interior of the Main Building, positioned directly east and south of the Main Building's central axis. The Tower's height, placement and bold design both compliment and set it apart from the horizontal mass of the rest of the Main Building. The crenellated parapet creates the appearance of a medieval battlemented tower. The Caracol Tower reflects the monumental Andalusian architecture of the Alhambra seen by Lummis in Spain while also alluding to the mission architecture of early California. The exterior finish of the Caracol Tower was altered during sandblasting and re-plastering procedures in 1955, 1968, and the 1980s. However, original finish that does remain is significant. (See photos HR018 and HR019).



HR018 - Caracol Tower: south façade

Similar to the Main Building's exterior, the Caracol Tower's windows are also set into deep reveals, punctuating the otherwise smooth and uninterrupted elevations of the Tower. Whereas some windows of the Caracol Tower were replaced with single-paned windows in aluminum frames in 1963, some original windows remain and are similar to those found in the rest of the Main Building, consisting of wood framed, multi-light windows, some with lunettes above.



HR019 - Caracol Tower: Crenellated roof parapet

The balconies extending from the east and south elevations of the seventh floor of the Tower exhibit a design similar to the balcony on the west elevation of the Main Building, with carved relief panels in a zig-zag pattern.

**SIGNIFICANT**

crenellated parapet, original finishes, original door and window openings, original door and window materials, and balconies.

**NOT SIGNIFICANT**

Altered finish, altered door and window materials.

## Interior

### OVERALL EVALUATION: SIGNIFICANT

The Caracol stair at the center of the tower is a helical or spiral staircase without a central vertical support. It was the first built in the United States and, at the time, Lummis claimed that was one of only two in the Americas, including the world-famous helical staircase of Mexico City's Cathedral of Mexico. Constructed of reinforced concrete, the seven-story stair is supported by 12 columns, is 129' high and 35' square, has 8" thick walls, and includes 160 steps. (See photos HR020 and HR021).

There are no landings to the staircase. Originally, lancet window openings for light and air were placed regularly along the stair. These have since been filled in with concrete. An original, round skylight centered above the Caracol remains, despite having had two of its panes of glass replaced. Original lighting fixtures are located in their original positions at regular intervals along the staircase despite having undergone alterations.

Lummis chose the Caracol stair design in part because its construction created usable space on each of the Tower's seven stories. These spaces were originally used as: storage floors (Caracol 1 and Caracol 2), the boiler room (Caracol 3), small exhibition halls Southwest Hall (Caracol 4) and Northwest Coast Hall (Caracol 5), the Munk Library (Caracol 6), and Lummis' office (Caracol 7).

The first two stories of the Caracol Tower (Caracol 1 and 2) retain original features including board-form concrete ceilings, floors and walls. From Caracol 1, a set of wood stairs, not original, lead through an original doorway, with an altered door, into Caracol 2. An exterior doorway was added to Caracol 2 in a 1955 alteration to increase light and ventilation. A window opening and window within the space are original.

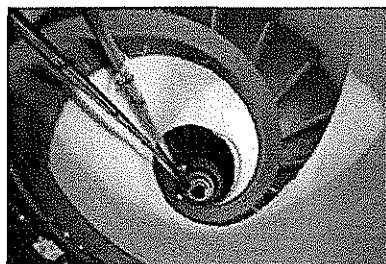
The Boiler Room (Caracol 3) has original doorways and window openings as well as original door and window materials. The ceiling and concrete floor of the space are also significant and have undergone few alterations.

The exhibit spaces of Caracol 4 and Caracol 5 have some similar character-defining features. Both have original doorways leading to the Caracol stair, but the original door materials themselves have been replaced. The doorway and door materials leading into Caracol 5 from Plains Hall, however, are completely original, including the door hardware. Whereas the walls and ceilings of these exhibit spaces are original, excluding applied decoration, the exhibit cases and lighting have been replaced and are therefore not significant. The flooring of these exhibit spaces has been carpeted, and therefore is not significant. (See photo HR022).

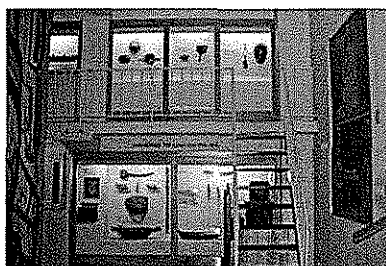
Northwest Hall has a mezzanine consisting of a concrete catwalk running around the northern, eastern and southern outer walls, with wrought iron rails and two, wrought iron stairs. The flooring of the mezzanine is the original scored-concrete, painted a reddish-orange hue. There are non-significant exhibit cases in the walls of the mezzanine level as well.



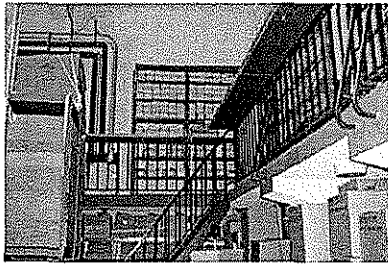
HR020 - Caracol stair with historic lighting fixture



HR021 - Caracol stair looking down



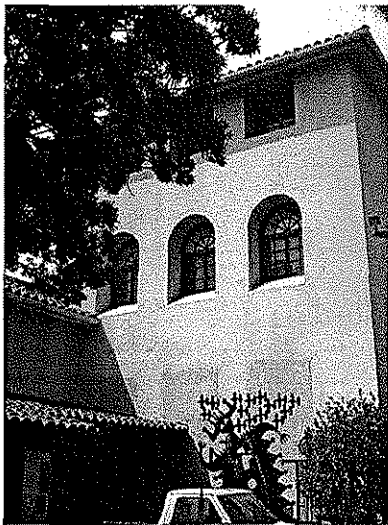
HR022 - Northwest Hall (Caracol 5)



HR023 - Caracol 6; Mezzanine



HR024 - Caracol 7; Mezzanine stair



HR025 - Torrance Tower: Eastside

Caracol 6 and Caracol 7 share similar features despite their different intended functions. Most notable are their mezzanines, which are similar to the mezzanine of Northwest Hall, but run around all four outer walls. In both mezzanines, a wood ledge has been added above the rails and is not significant. (See photos HR023 and HR024).

Both of the upper floors retain their original scored-concrete flooring, also painted a reddish-orange hue. The ceilings and walls of both levels have not been altered, other than earthquake ties added along the upper portions of the walls of Caracol 7, where shelves with artifacts have been placed on the mezzanine. Original lighting fixtures remain on both floors, both on the ceilings and under the mezzanines, despite the replacement of some with newer fixtures.

Many of the windows of Caracol 6 and Caracol 7 are original, wood framed, multi-light casement windows. Some have lunettes above them. Alterations to other windows on these floors include replacement of original materials with single-paned windows in aluminum frames. Some have louvers along their upper portion,

Caracol 7 is the top floor of the Tower and ornamentation is found on its exterior that is not seen on the lower stories. Balconies with carved relief panels span a triple door/window opening on both the east and south elevations. These balconies are constructed and designed with similar panels as that on the west elevation of Sprague Hall. The three balconies on the exterior of the Main Building retain their original features and therefore are significant.

**SIGNIFICANT**

Ceilings, floors, walls, door and window openings into exhibit spaces of Caracol 4 and Caracol 5, of the Boiler Room, between floors of the Caracol, and within Caracol 6 and Caracol 7, original door and window materials, original lighting fixtures, mezzanines, stairs, railings, balconies of Caracol 7.

**NOT SIGNIFICANT**

Altered door and window materials, altered light fixture materials, wood ledge on mezzanine railing, exhibit cases of Caracol 4 and Caracol 5.

**Main Museum Building; Torrance Tower (Hunt and Burns, 1914)**

*Exterior*

**OVERALL EVALUATION: SIGNIFICANT**

Torrance Tower is an important architectural element of the Main Building both for its impact on the exterior massing of the museum, and for its unique interior spaces. While the visual aesthetic of Torrance Tower is simpler than that of the Caracol Tower, both work to balance the overall composition of the Museum, as off-axis, vertical endpoints to the main, horizontal volume. (See photos HR025 and HR026).

Torrance Tower has original windows along its east and north elevation, although windows along the bottom row of the east elevation have been removed and the openings filled in with concrete. The original windows

on these elevations consist of a row of wood framed, multi-light casement windows with lunettes above. The upper row of windows on the east elevation and each window on the north elevation are square, wood framed, multi-light casement windows. Each window is set into a deep reveal, following the aesthetic of the rest of the Museum's fenestration.

Four rows of windows are located on the west elevation of the Tower, with the two middle rows having been set in deep recesses that are two-stories tall. The top two rows of windows are original wood framed, multi-light casement windows, the first row being similar to the upper row of windows of the Tower's east and north elevations, and the second row being of the variety most common throughout the Museum: wood framed, multi-light casement windows with lunettes above. The rest of the windows on the west elevation, however, have been replaced with single-pane windows in aluminum frames.

The public entrance located on the exterior of Torrance Tower is on its east elevation. This doorway is original while its door materials are from a replacement by Glen Cook in 1977. On the interior the shape and size of the original doorway is visible, including the outline of a lunette that once was located above the doorway. The west elevation of the Tower has an original doorway and door that is wood framed and has multiple panes of glass. A metal screen has been placed over the door. (See photo HR027).

**SIGNIFICANT**

Original roof materials, original finish, original door and window openings, original door and window materials.

**NOT SIGNIFICANT**

Altered roof materials; altered finish; altered door and window materials; canopy roof.

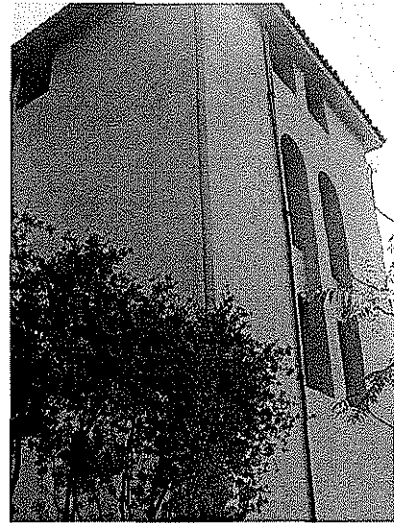
*Interior*

**OVERALL EVALUATION: SIGNIFICANT**

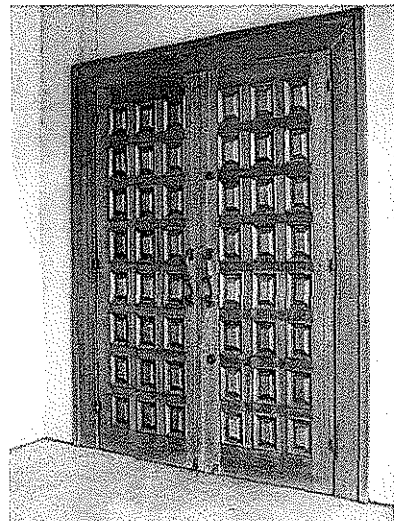
The Torrance Tower consists of five levels, including a basement level with offices and storage, a kitchen/office space on the second level, a ground floor to the northwest of the Sprague Hall exhibit hall, and two mezzanine floors above.

The basement of Torrance Tower is reached by a staircase that retains its original design and materials, other than its steps which have been carpeted. The walls of the stair are solid. The stair leads to a hallway, with a door at the opposite end, and before the door storage and office areas. At the base of the stair and under the stairs themselves, there is an office addition with hollow walls and a doorway. None of the materials of this addition are original. (See Photo HR028).

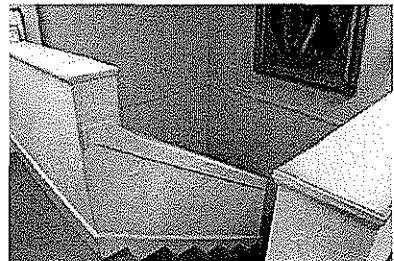
Beyond the office addition and lining the sides of the hallway are original wood closets. An original doorway on the west elevation of the Tower is located at the end of the hallway, although the door itself is from a later alteration and is therefore not significant.



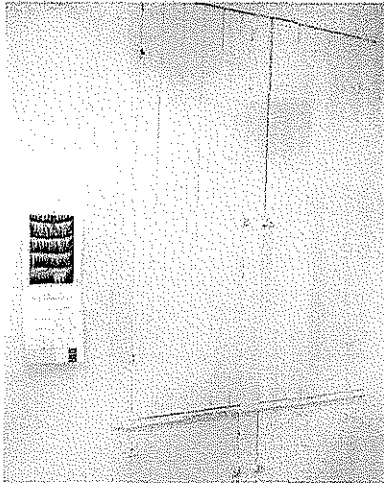
HR026 - Torrance Tower; West side



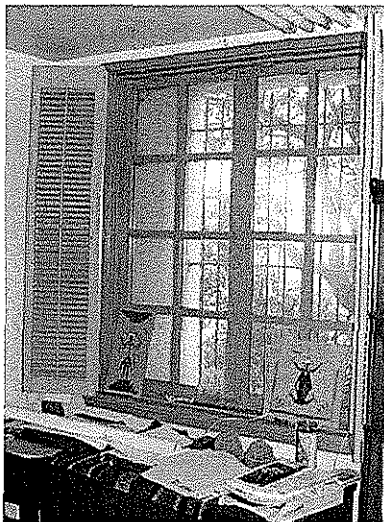
HR027 - Torrance Tower; entrance from patio/loading area



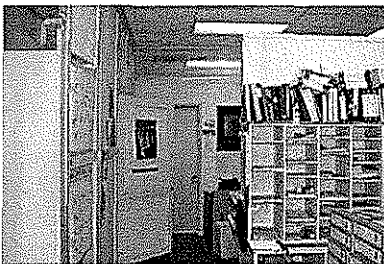
HR028 - Open stair from level one offices to basement



HR029 - Built-in cabinets in office area



HR030 - Basement office; original window



HR031 - Office area in Torrance Tower

On one side of the hallway is a storage area that retains no original features and therefore is not significant. On the other side of the hallway, two offices exist with historic door and window openings and materials, baseboards, and built-in wood cabinets. The windows are rectangular, wood framed, multi-light casement windows. The doors are paneled wood doors and have original hardware. The existing chair rail along portions of the wall of the southern-most office is original. The floors have been covered with resilient tiles but the original scored-concrete flooring may remain below. Parts of the baseboard have been covered with a flexible cove base material. (See photos HR029 and HR030).

Offices and a staff kitchen occupy Level One of the Torrance Tower. This space has been extensively altered, with the addition of drop ceilings, fluorescent lighting, partition walls and closets, and single-paned windows set in aluminum frames. The window openings of the space are original, however, as is a doorway leading from the kitchen/offices to the office area of the Main Building. A staircase located in the corner of the space once led to the north wall of the Van Nuys Gallery. The staircase retains its original construction and materials, although its steps have been carpeted and a partition wall has been placed across the width of the stairs in order to close access to the floor above.

The level of Torrance Tower that is contiguous with Main Building Level 2 is known as Van Nuys Gallery. It has been substantially altered. The greatest alteration is the small vestibule, entered from either the east elevation (exterior) of the Tower or from the interior door located on the north side of Sprague Hall. The vestibule consists of a metal security door placed within a Plexiglass walled enclosure, extending from floor to ceiling. It was added to control the temperature within the space when the upper part of the Tower began to be used for textile storage. (See photos HR031 and HR032).

The original exterior entry doors were replaced when a glass security door was added to the interior and wood doors to the exterior by Glen Cook in 1977. No materials from these alterations are significant, whereas the original doorways of the Tower are significant.

Throughout Van Nuys Hall, a wood floor has been installed similar to that of the Upper Lobby of the Entrance Hall. The original concrete or tile flooring material may be recoverable underneath. Looking up, one sees the first mezzanine and beyond that, a false skylight, built into the handrail of the second mezzanine over 30' above. This false skylight was added in 1981. It conceals mechanical equipment and was built to mimic the original skylight, still existing above Mezzanine 2.

Additional layers have been added to the interior walls of the Tower to masque the many blocked-off openings. Fluorescent lighting was introduced into the space in the 1950's, and movable track lights have been added to the mezzanine floors, which also provide light to the ground floor below. (See photo HR033).

Mezzanines 1 & 2 create a character-defining feature within the Tower, as do the two “flying staircases” that connect them to the floor of Van Nuys Gallery. These elegant stairs were derived from Spanish Colonial buildings that Lummis saw in Arequipa, Peru during his travels. From below, the iron stairs and railings have been largely hidden from view by added gypsum board walls partially encasing them. The steps of the stairs have been carpeted, and yet the original scored-concrete material of each step is seen where the iron railings are set into the concrete. A door is located at the ground floor landing of the stairs leading to Mezzanine 1, and another is at the landing between the two mezzanines. These are not original doors and were added to increase the security of each floor.

Both Mezzanines have original windows. Whereas the rectangular wood framed, multi-light casement windows of Mezzanine 2 can be seen from both the interior and exterior of the Tower, Mezzanine 2’s windows, with lunettes above, have been covered from the interior to keep natural light from entering the space. (See photos HR034 and HR035).

Walls of the mezzanines are original except for the added partition walls along the stairs leading from the landing at the ground floor to the mezzanines above. Rail height walls around the mezzanine opening itself on each floor are original and have only been altered with the addition of a wood railing on Mezzanine 1.

Whereas Mezzanine 1 has been carpeted, Mezzanine 2 retains the original scored-concrete flooring of the Museum, similar to that found within the Caracol Tower.

**SIGNIFICANT**

Original walls, original door and window openings, original window materials, original skylight, stairs leading from Level One to Level Two, iron stairs and railings from Van Nuys Gallery to Mezzanine 1 and from Mezzanine 1 to Mezzanine 2.

**NOT SIGNIFICANT**

Walls added along the staircase and ground floor walls; altered door and window openings and materials; all floor coverings excepting Mezzanine 2; false skylight, other partition walls and low walls added throughout.

**Poole Wing (Kaufmann, 1941)**

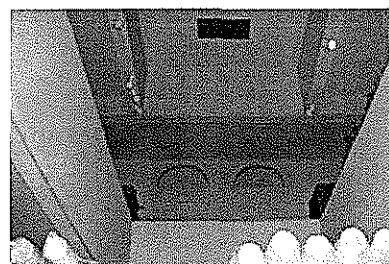
*Exterior*

**OVERALL EVALUATION: SIGNIFICANT**

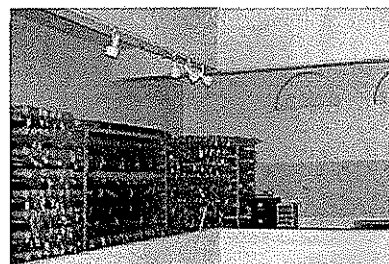
As a primary public space of the Southwest Museum, the Poole Wing, constructed as an addition to the Main Museum Building in 1941 by Gordon B. Kaufmann, exhibits a great amount of detail and high-quality design and materials. In his design for the addition Kaufmann created a new construction that complimented the Main Building without imitating it, quoting similar features such as the exterior stucco finish and red Mission tile-clad, gabled roof. The addition was located in approximately the same location as an “east wing” designed by Hunt and Burns in their Scheme II plans for the Museum that was never built. (See photos HR0036 and HR0037).



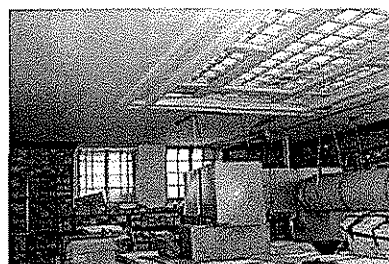
HR032 - Office area; closed off stairway up into Torrance Tower



HR033 - Torrance Tower; Ground floor & mezzanines



HR034 - Torrance Tower: Mezzanine



HR035 - Torrance Tower: false skylight below; historic skylight above



HR036 - Poole Wing: north elevation with cast concrete ornament



HR037 - Poole Wing: ornamental pilasters

The exterior of the Poole Wing remains essentially unchanged, with the exception of the addition of a security door at its southeastern corner and of security tape around each of its windows, which have also been covered from the interior. The east and west elevations of the Poole Wing have similar features that have likewise undergone similar alterations. The windows of the east and west elevations consist of panes of glass divided into three vertical sections by thin steel mullions set into steel sash. Three windows are grouped in a row, with each row separated by decorative cast concrete posts that have a basketry-inspired relief design. The varied basketry designs reflect the artifacts that the Poole Wing was constructed to house. Inside, a false wall has been added above the projecting shelf that covers all of the clerestory windows.

The windowless, north elevation of the Poole Wing greets visitors arriving from the parking lot to the north. The character-defining features of this elevation include the large horizontal panel of cast concrete with a relief design similar to the cast concrete posts between the windows on the lateral elevations, the battered (inclined) ends of the wall and the parapet that extends above the tiled roof beyond.

**SIGNIFICANT**

Exterior finish, roof, window openings and materials, decorative cast concrete, north wall and parapet.

**NOT SIGNIFICANT**

Door opening and materials, alterations to windows (security tape, false front).

*Interior*

**OVERALL EVALUATION: SIGNIFICANT**

The interior of the Poole Wing consists of a lower and upper level. The lower level includes a basketry storage area, staff bathroom, workroom, and a hallway. A stair leads from the lower level to the upper level, which includes a hallway, storage closet and exhibit hall.

Original features found within the lower level of the Poole Wing include original walls, baseboard molding, ceiling, and doorways. Three distinct spaces are within the lower level, and each has both original features as well as those introduced through alterations.

The bathroom of the lower level of the Poole Wing is the most intact of the Museum, and the amount of original features within the bathroom is greater than in any other space on the lower level. These features include a lighting fixture, steel sash window, doorway and door materials, closet door and materials, board-form concrete ceiling, and bathroom fixtures.

The basketry storage area of the lower level has been altered with the addition of a doorway and door materials leading to the storage and conservation work rooms, walls added to divide the space and create displays, and display cases set within the walls. The floor of the space has been carpeted. Original features of this space, however, include its board-form concrete ceiling and original outer walls.

The workroom area of the lower level has undergone alterations including the addition of resilient flooring and plastic laminate countertops. However, the board-form concrete ceiling and concrete walls are original, and the sink was added in the period of significance as part of a film development lab. The doorway into the workroom area is original, but the current door does not appear to be.

An original, steel sash window illuminates the landing of the stairs leading from the lower floor to the upper floor of Poole. The walls of the staircase are curved; a significant design feature followed in the curvature of the ceiling, walls, and baseboard around the stairs. Alterations to the staircase include carpeting of its steps and landing. The applied wood railing resembles that indicated in the Kaufman's drawings, but may not be original.

The upper level of the Poole Wing includes an exhibit hall, storage closet, and hallway. The exhibit hall contains original, character-defining features including a bull-nosed, concrete ledge above the original display cases, original windows (though since covered from the interior), and its ceiling and original walls. Partition walls added to enhance display areas within the hall are not significant, nor is the fire door added at the southeast corner of the hall. (See photos HR038 and HR039).

Originally, a continuous lighting trough ran north to south, suspended from the peak of the ceiling. It has since been replaced with an exposed HVAC duct with track-lighting mounted below. The acoustic ceiling panels, though indicated on Kaufman's drawings, may or may not be original, and therefore, significant.

Doorways leading from the exhibit hall to the hallway and from there into the Main Building are original, and retain most of their original hardware, including bronze door pulls. The framing of the doors into the exhibit hall has been replaced on the interior side, while the exterior frame is original.

Whereas decorative baseboards along the staircase of the lower and upper levels of the Poole Wing are original, less decorative baseboards found in the upper level hallway were added in a later alteration and are not significant.

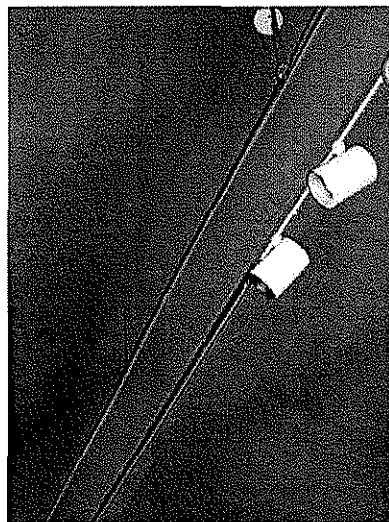
The storage closet in the hallway of the upper level, across from the exhibit hall, has an original wood door with a vent centered on its lower portion. The carpeted flooring of these hallways and stairs is not significant. In the lower hallway, the wall across from the staircase was added to close off an original entrance into the Museum and is not significant.

#### SIGNIFICANT

Original walls; ceilings; original baseboard moldings; original door frames; door openings; original door materials; original window openings and materials; display cases.



HR038 - Poole Wing original display cases in California Hall



HR039 - Poole Wing: original ceiling with added lighting & duct

NOT SIGNIFICANT

Added walls, altered door and door framing materials, added display cases and walls, floor covering, HVAC duct, altered lighting fixtures.

*Braun Research Library (Glen Cook, 1977)*

OVERALL EVALUATION: NOT SIGNIFICANT

Built in 1977 to accommodate the expanding library of the Southwest Museum, the Braun Library post-dates the Museum's period of significance of 1912 -1941 and therefore was not reviewed as part of this inventory of the character-defining features and spaces. It was executed by the engineering and construction firm C.F. Braun Company, and designed by in-house architect Glen E. Cook. The library was built north of the Main Building, forming a quadrangle somewhat like that proposed in Hunt and Burns' Scheme II plans in 1914. Glen Cook also built a landscaped courtyard with a fountain between the library and Main Building, as well as porticos running parallel to each of the Museum buildings. (See Photo HR040).



HR040 - Braun Research Library; north side

*Site Features*

OVERALL EVALUATION: NOT SIGNIFICANT

The scope of the Historic Evaluation & Building Assessment Report did not include the study of the landscaping of the Southwest Museum. However, HRG's inventory was in part based on archival research, which included the review of Annual Reports of the Southwest Museum that often discuss alterations to the landscape surrounding the Museum as well as the built environment and its maintenance. The following summary describes the features inventoried and whether or not they contribute to the significance of the Museum.



HR041 - Historic site lighting fixture

SIGNIFICANT

Lighting fixtures along the steps leading to the Museum buildings from the parking lot appear to have been added to the site during the Poole Wing addition by Gordon B. Kaufmann and therefore are considered significant. A cannon was placed on the Entrance Terrace in the 1930's, and a flag was added nearby in 1966, providing a meeting space for visitors along the Main Building's south elevation. Both are from the Museum's artifact collection. (See photos HR041 and HR042).



HR042 - Cannon & flagpole on south entry terrace

NOT SIGNIFICANT

In 1956 a parking lot was constructed to the north of the Braun Research Library. Steps leading from the parking lot to the Main Museum Building were also added at this time. Neither were constructed during the period of significance of the Museum.

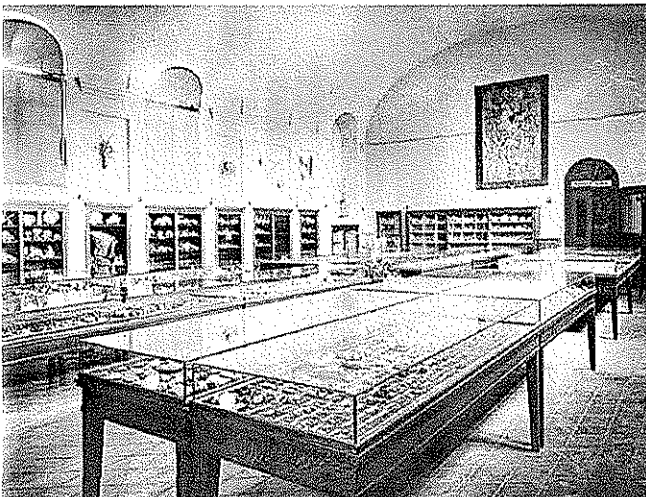
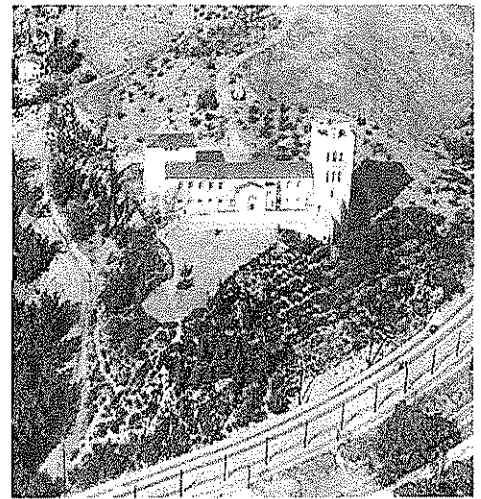
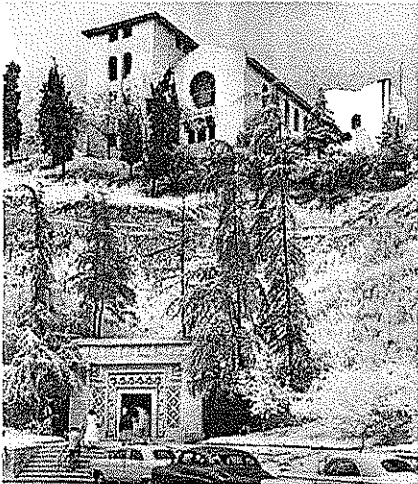
Paving along the Main Museum Building and Torrance Tower was installed in June 1983 to match paving around Braun Research Library. This paving and the roof awnings over entrances on the north elevation of the Main Museum Building and elevations of Torrance Tower were all part of alterations that occurred to the site in 1983 and therefore were also not constructed during the period of significance.

A wood shed located parallel to the east elevation of the Poole Wing was built after the period of significance and therefore is not significant.



# Southwest Museum Rehabilitation Study

Phase I Planning



## Architectural Evaluation & Recommendations

Intent and Scope

Methodology and Limitations

Applicable codes

Findings

Recommendations



## ARCHITECTURAL EVALUATION AND RECOMMENDATIONS

**ARCHITECT** *Levin & Associates, INC.*

**PRINCIPALS** *Brenda A. Levin, FAIA, PRINCIPAL*  
*Susan Di Giulio, ASSOCIATE*

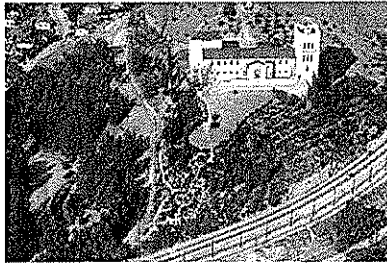
### INTENT AND SCOPE

This study analyzes the architectural qualities, functionality and condition of the buildings and grounds of the Southwest Museum as they are today. Then rehabilitation goals were established and two schemes, based on somewhat different programs, were developed as concepts. These schemes, accompanied by diagrammatic plans, are presented as options for the rehabilitation of the Museum facilities.

### METHODOLOGY AND LIMITATIONS

#### Methodology

The study was begun by assembling an experienced and respected team of consultants. In collaboration with this team, Levin & Associates began an analysis of existing architectural drawings, renderings and historic photographs. The goal of this process was to determine the original construction and infrastructure of the Museum buildings and grounds, the history of all subsequent additions and alterations, and the historic significance of the buildings and site features. Various site visits were performed, accompanied by museum staff, to determine the existing conditions of the facilities



A001 - Aerial photo, February 12, 1942

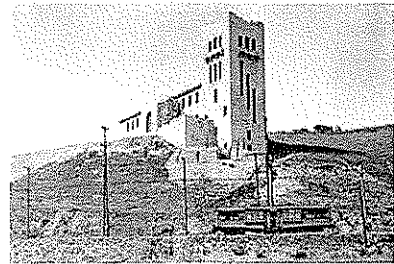
The team required a set of base drawings showing the existing conditions of all buildings, sufficiently accurate for recording and communicating information. Architectural drawings existed for the Braun Library and Poole Wing, but none were available for the Main Museum Building, and the relationship of the buildings on the site was not well documented. Therefore, Levin & Associates produced a set of reference plans, elevations and sections.

These drawings, some of which are included, in a simplified version on the following pages, were created by combining and cross-referencing the available documents and obtaining on-site measurements as needed. Important alterations to the original buildings (especially closure of windows and doors) were indicated.

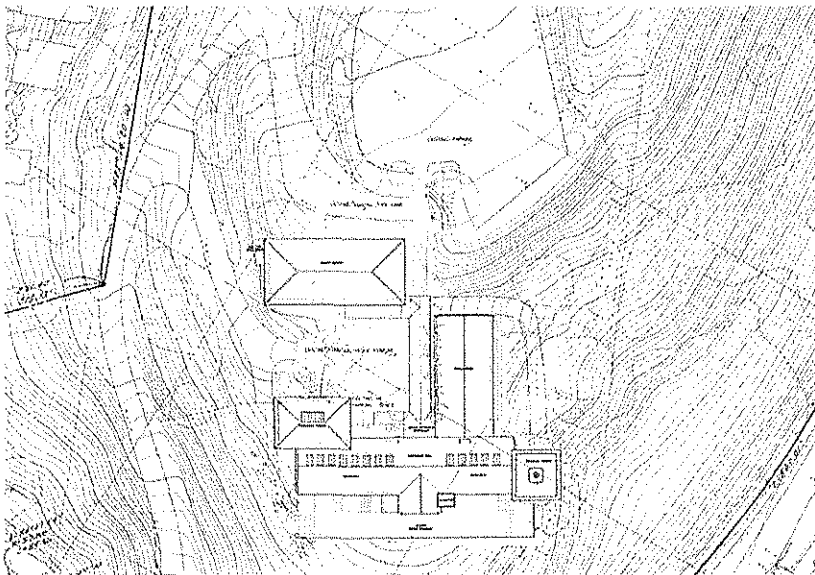
Levin & Associates then developed a set of goals for the rehabilitation of the Museum facilities. Information was obtained and evaluated based on research into current museum standards, meetings with the staff of the Southwest Museum and the Autry National Center, preliminary historic background and significance findings and the observations and opinions of the other consultants on the project.

Again aided and advised by Autry and Southwest staff and the consultant team, Levin & Associates developed this set of goals into two programs, resulting in two schemes. These are the core rehabilitation scheme Option A

and the enhanced rehabilitation scheme Option B, which are delineated in narrative form and drawings in the “recommendations” section of this report. Subsequent report sections by consultants in structural, mechanical, plumbing and electrical engineering, and code compliance, have organized their recommendations to correspond to these two options. A cost estimate was then performed for Options A and B to determine capital improvement costs and project costs. These were used for the economic analysis by ERA.



A002 - View from south east with “Yellow Line” car below, 1920



EXISTING SITE PLAN

### Limitations

- The level of accuracy of the reference and design drawings produced for this study is suitable for programmatic and schematic use only; more extensive measurements and drawings will be needed for any future, more advanced stages of design.
- Design Options A & B have been developed solely for the purpose of expressing graphically the extent of work which the consultant team and the client recommend, and to provide a basis for cost estimates. They do not represent a completed design process and are not intended for construction.
- Exhibition design, lighting and cases have not been included in the scope of this study.

### APPLICABLE CODES

- 2004 California Building Code (CBC)
- Los Angeles Building Code (LABC) 2002 Edition
- State Historic Building Code (SHBC) Chapter 34, Division II of LABC 2002 Edition
- Americans with Disabilities Act Accessibility Guideline (ADAAG), 1990 Edition

## FINDINGS

### Architectural Evaluation

The Southwest Museum opened its doors in 1914, the creation of journalist and crusader for the history and culture of the Southwest, Charles Fletcher Lummis. The imposing, castle-like structure, striding a ridge on the west side of the Arroyo Seco, was conceived of as a general center for learning; dedicated to the history and cultures of the southwest, combining museum exhibitions and research facilities.

### Architectural Features

#### MAIN MUSEUM

(Construction completed 1914, elevator/tunnel added 1919)

The original building, designed by the architectural firm of Hunt and Burns with the active participation of Lummis himself, was inspired by the Alhambra of Granada, Spain as well as the Spanish colonial architecture of the New World. It is a hillside structure with multiple entries at different levels. Technologically a modern building for its time, designed in reinforced concrete, its tie to the historic buildings of the Southwest lies in its bold, austere massing, thick walls and deep openings rather than any effort to imitate the details of Spanish Baroque or Moorish architecture. Ninety years after its construction, the rugged form of the original building is largely unchanged.



A003 - Main stair circa 1925

Its plan is simple: a long, two story building split almost in the middle by a dramatic, double height stair hall. This creates four main halls, two on each level, with offices at one end of the lower level, in an area originally built as a curator's apartment but never used as such.



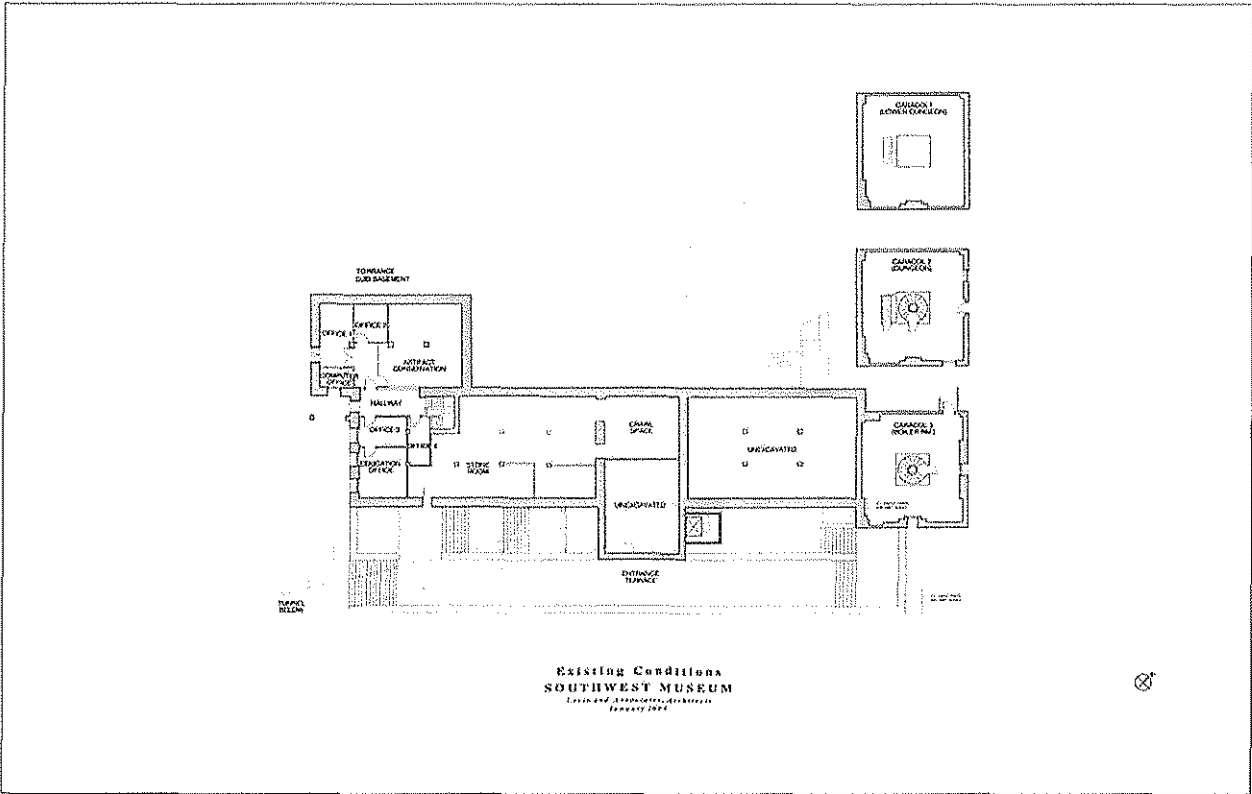
A004 - Former Hall of Archaeology & Ethnology; now Sprague Hall

The two original, upper-level, exhibition halls were originally named Museum One and Two, later being designated Western Barrel Vaulted Hall and Eastern Barrel Vaulted Hall, also Hall of Archaeology and Hall of Natural Sciences, respectively, and are currently known as Sprague Hall and Plains Hall. They were designed with skylights in the vaulted ceilings and rows of windows above the exhibition cases. Over time, these natural light sources have been closed off in a variety of ways.

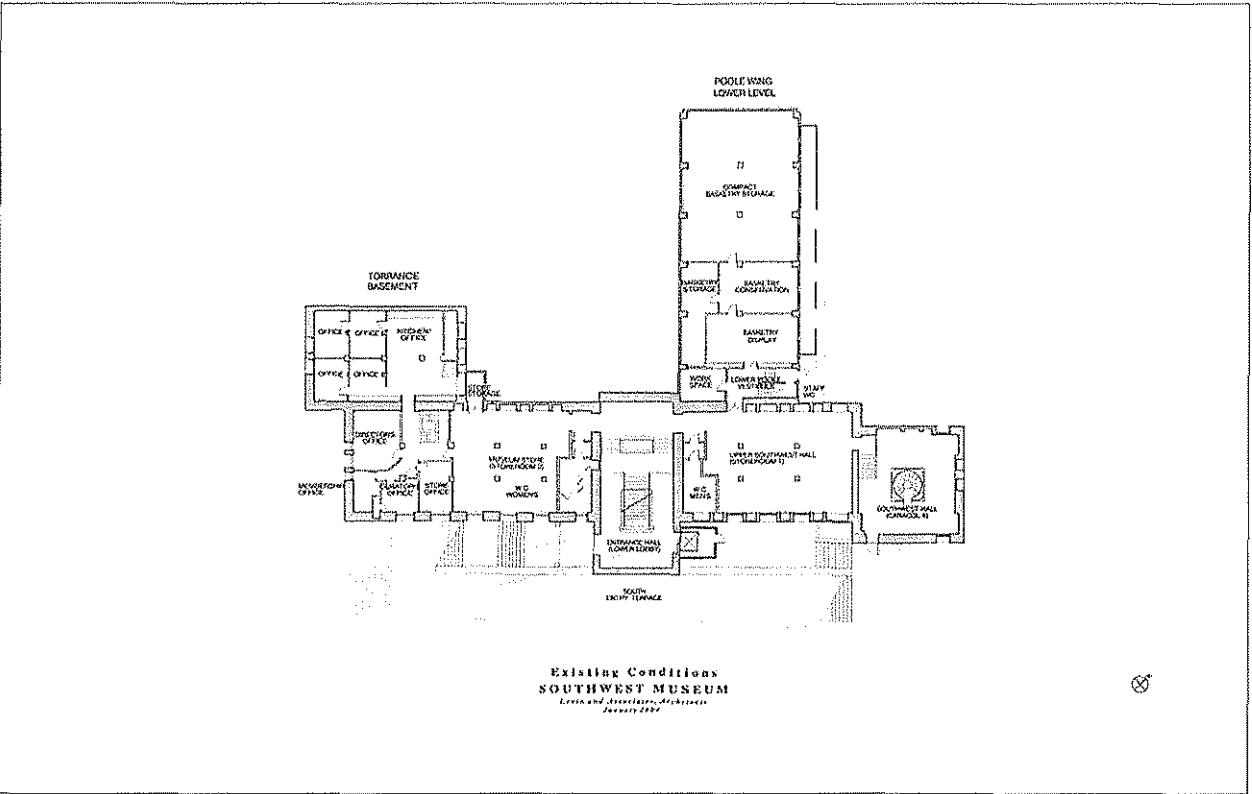
The lower halls were originally designated as Store Room One or Lower Eastern Hall, now Upper Southwest Hall, and Store Room Two or Lower Western Hall, at one time the Member's Room, now the Museum Store. The bank of south facing windows has been closed off in Upper Southwest Hall. Beyond the Museum Store, are the administrative offices.

#### CARACOL TOWER

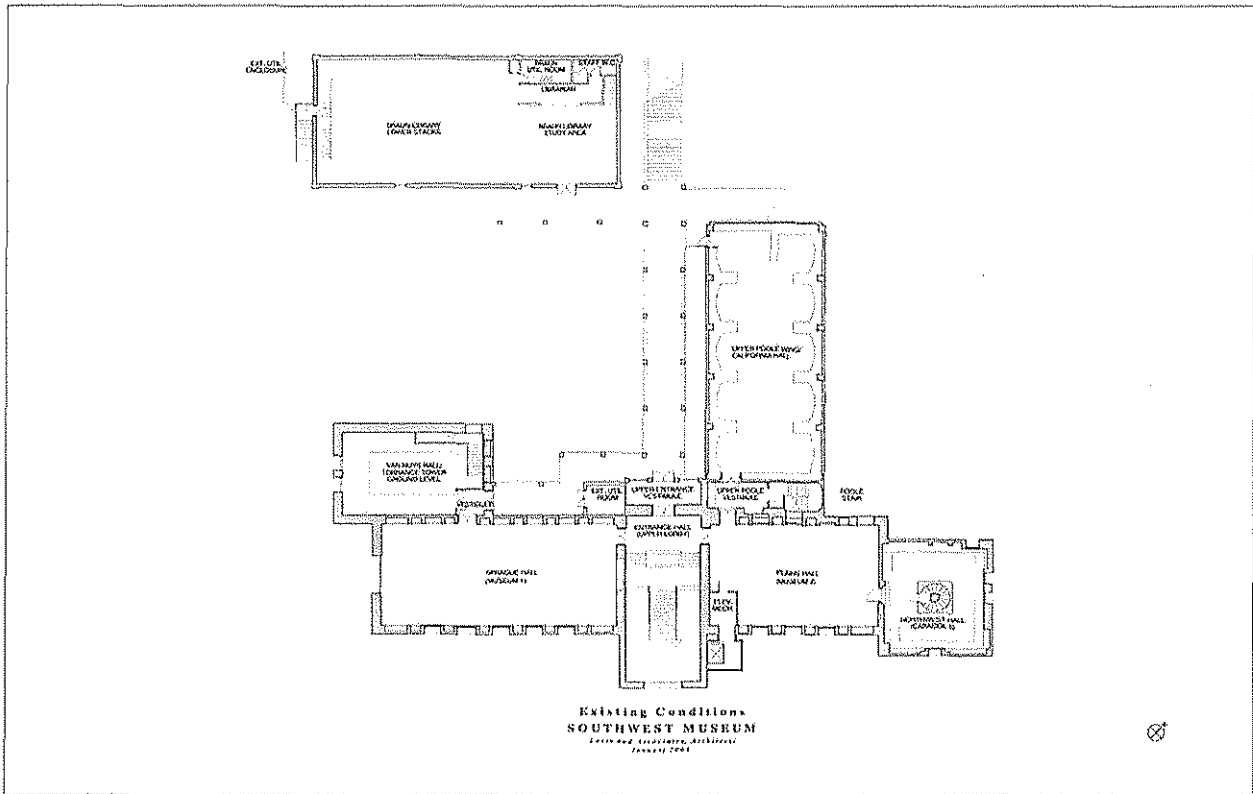
Two towers: Caracol and Torraine, bookend the main building. These towers contain the most interesting architectural spaces in the complex. At the center of the Caracol is a continuous concrete spiral staircase. With no central column, it supports its own and a portion of the tower's weight by the intrinsic strength of its form. Originally, lancet windows punctuated the cylinder all along its height. They have been closed to mitigate fire danger.



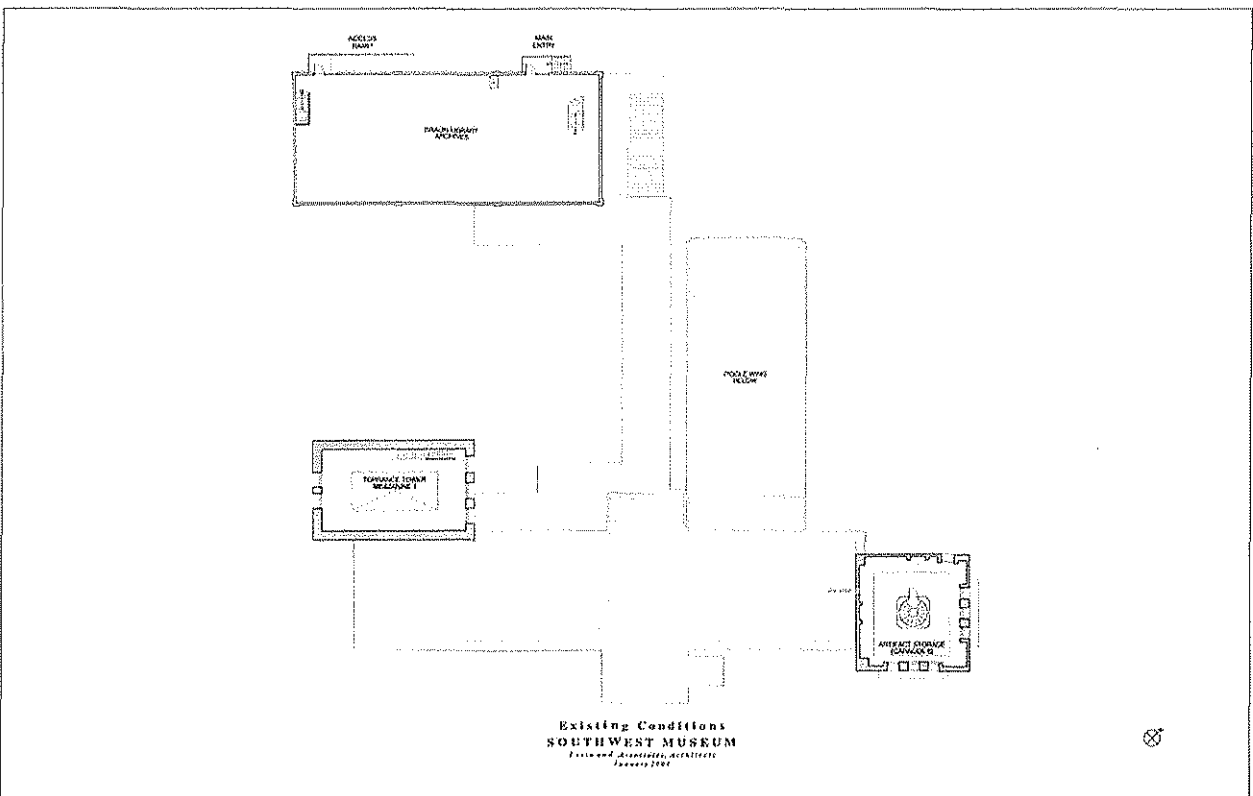
EXISTING BASEMENT



EXISTING FIRST FLOOR

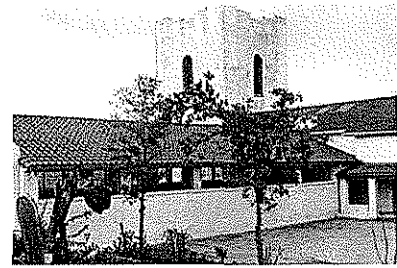


EXISTING SECOND FLOOR



EXISTING THIRD FLOOR

The three uppermost stories of the Caracol are double height. A mezzanine catwalk with concrete brackets and wrought iron railings rings each room, crossing the two story high fenestration. The uppermost, 7th, level was built as Lummis's own office, with balconies opening to expansive views to the North and East. Below that, the 6th level was once the Munk Library. These elegant spaces are both currently used for storage. The Northwest Hall on the 5th level and the Lower Southwest Hall on the 4th are now exhibition spaces, accessed through the eastern exhibition halls. Their fenestration has been closed from the inside. Levels 1-3 are service and storage areas. They also were built with handsome windows and doors; most of which have been covered over and/or replaced with non-significant, unattractive materials.



A005 - Caroline Boeing Poole Wing and north portico by architect Gordon Kaufmann, April 2, 1941

#### TORRANCE TOWER

Torrance Tower was built for general museum use, but the Munk Library collection was moved into it in 1926. Its main and lower levels are contiguous with the rest of the main building, so that disabled access and emergency exiting can be achieved for these levels. The level entered through Sprague Hall (Main Building Level 2) is called the Van Nuys Gallery. It has an overhead height of nearly 40', passing two mezzanines to arrive at a large skylight. The upper mezzanine is currently closed off by a replica of the original skylight above. The mezzanines, reached by a single flight of stairs on each level, afford no location to provide additional stairs and elevators without significant impact to the historic significance of the building, and will therefore need to remain non-public spaces.

#### *Later Additions*

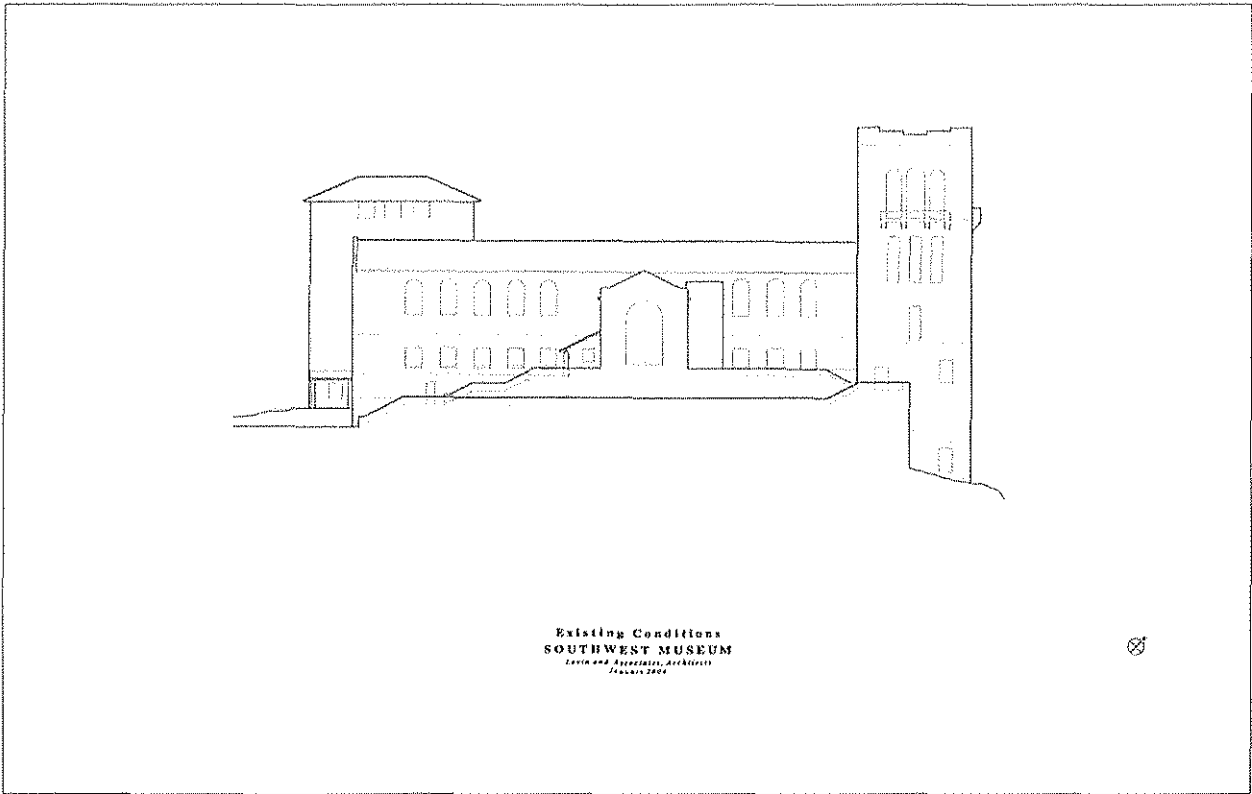
The original museum building was only a fraction of what Lummis, along with Hunt and Burns, had proposed. From the beginning, additions were anticipated and needed. Two buildings were later added to the campus, but did not follow the design of the original project. They were the Poole Gallery, by Gordon Kaufmann, and the Braun Library, by Glenn E. Cook.

#### POOLE WING (CONSTRUCTION COMPLETED IN 1941)

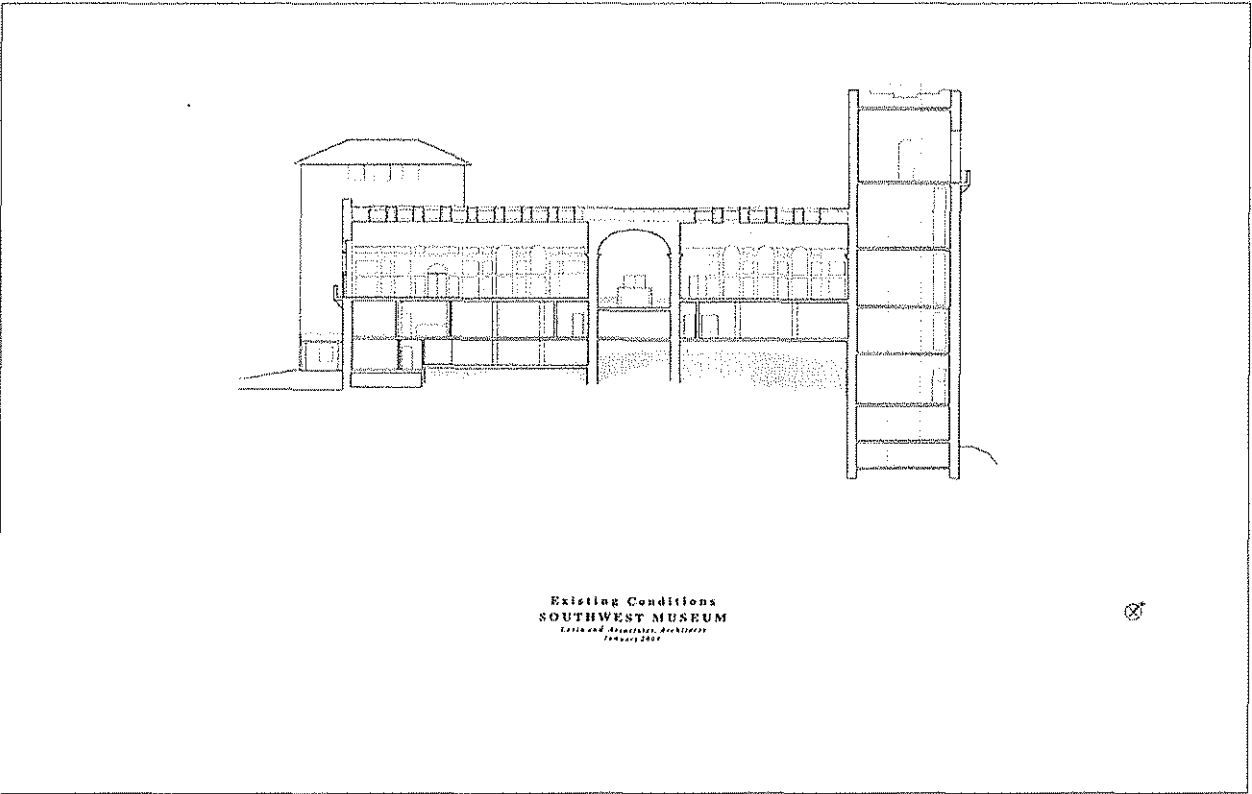
The Poole Wing was built to house a major collection of American Indian basketry. Gordon Kaufmann, a highly respected Los Angeles architect best known for the Times Mirror Building, designed a simple, functional counterpoint to the Hunt and Burns building. The outstanding decorative elements of the building are the concrete pillars cast in basket motifs that interrupt the bands of clerestory windows on the east and west facades of the building, and an ornamental panel of similar design on the north facade.

Poole's two levels are contiguous with the main building. The upper floor, housing California Hall, contains almost all of the original display cases designed by Kaufmann, with their distinctive, continuous, bull-nosed concrete cornice and framed diorama cases. One set of cases was removed to create an emergency exit, and some additional cases and displays have been added.

The curved walls of the staircase leading from California Hall down to the lower level are original; reflecting architectural trends of the time. The lower



EXISTING SOUTH ELEVATION



EXISTING SECTION BB

level itself, built as a large, open, work space, was divided into several rooms in the 1980's, one of which has been filled with rolling, compressed storage units housing a collection of American Indian baskets.

#### THE BRAUN LIBRARY

(Construction completed in 1979)

The Braun Library is built in two stories with a small mezzanine reading area off of the main stair. There is a reading room, librarian's office and restroom on the ground floor, and some workspace on the second floor. The rest of the building is devoted to library stacks. The floor of the mezzanine is contiguous with a walking surface integrated into the metal shelf stacks, but not part of the building structure. There is virtually no natural light; the heavily tinted glass doors and two, small, glass panels being the only exception in the entire reinforced CMU structure. There are no columns and only a few walls in the eastern bay of the lower level, which support a small mezzanine.

The upper level presents an open span of 38' x 90', making the structure extremely flexible for reconfiguration and reuse.

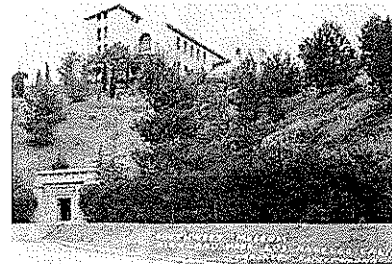
#### Site

The steep site is extremely dramatic, providing excellent visibility of and views from the Museum and grounds. The lack of signage and building illumination has limited popular recognition of the Museum's location.

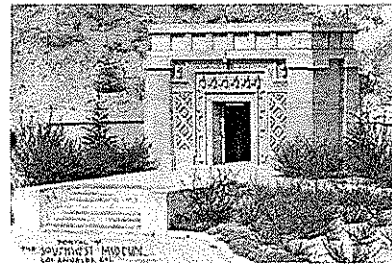
The topography presents vehicular access challenges for visitors and for freight deliveries. The steep, existing road is narrow for two-way traffic and delivery vehicles. It is not suitable for school or tour busses. Currently, busses unload at the Mayan-revival tunnel entry on Museum Road. This entry could be made more efficient by increasing the cab size of existing Elevator 3 in its existing shaft (proposed in Option B).

The current parking lot is undersized, and increasing capacity will involve major grading and/or excavation (proposed in Option B Site Work). A small increase in parking stalls may be possible by minor re-grading and re-striping. A new option for visitors is the recently opened Gold Line Metro Station immediately below the Museum on Marmion Way. Pedestrian visitors can either use the tunnel/elevator access or choose to climb the historic Hopi Trail to the South Entry Porch.

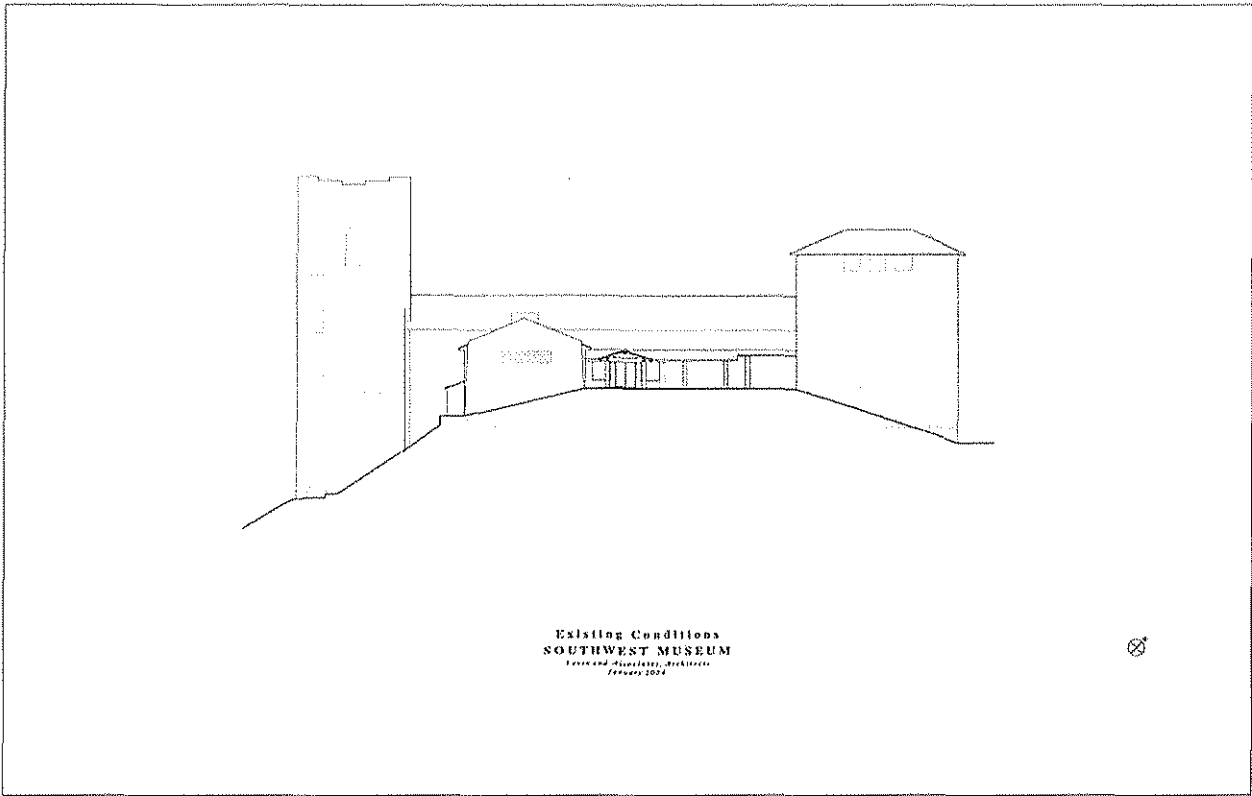
Disabled access is a major site issue. Discounting the towers, the major facilities of the Museum campus are on three building levels, with a few additional staff areas located in the West Basement. The existing Elevator 3 from the tunnel entry accesses only the lower level of the main museum building. It is a gear type, the system needed for the great vertical distance traveled. Extending the elevator to Level Two would require raising the roof of the existing elevator tower above the adjacent museum roof to house the necessary overhead equipment. This approach was not considered in the present study, as the alteration to the historic building profile was judged severe.



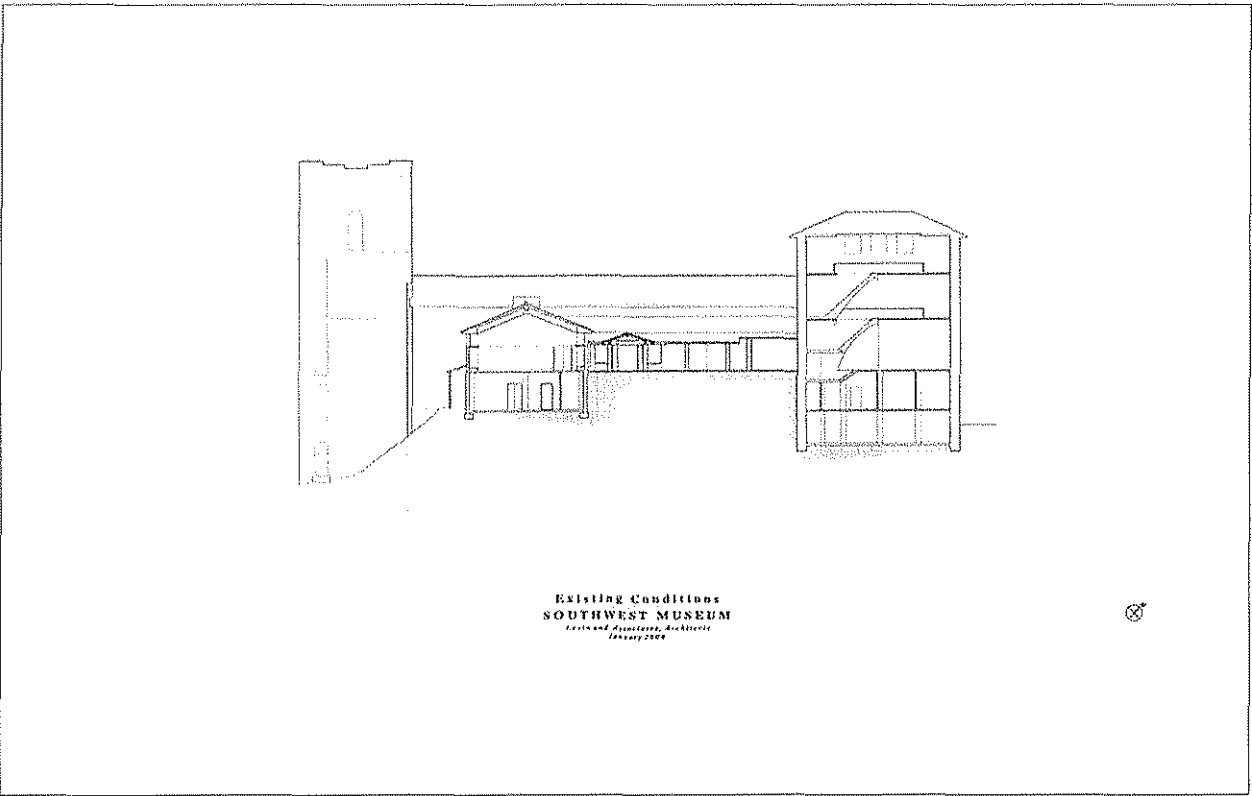
A006 - West façade of museum and Mayan Portal, circa 1930



A007 - Mayan Portal: Detail



EXISTING NORTH ELEVATION



EXISTING SECTION CC

## RECOMMENDATIONS

Levin and Associates' recommendations are based on achievement of the five rehabilitation goals developed by the project team, summarized here from the introduction to this report:

- Bring the Southwest Museum up to contemporary museum performance standards with respect to environmental conditioning, lighting, security and materials handling.
- Rehabilitate the Museum's appearance in keeping with the determined historic period of significance
- Complete all deferred maintenance.
- Perform code-required upgrades and safety enhancements.
- Provide facilities and programs to support the state mandated third to fifth grade social studies curriculum.

In creating the program and schematic designs, Levin & Associates also sought to improve the existing museum in ways that will aid in efficient operation and make for a more enriching and pleasant visitor experience.

## OPTION A

### Programming Considerations

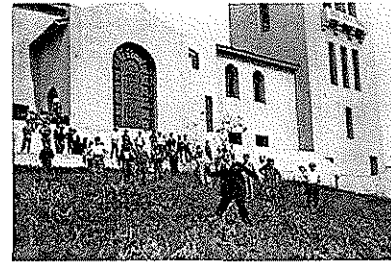
Option A, or the core rehabilitation scheme, focuses on fulfilling the rehabilitation criteria. It will secure the physical integrity of the historic structures on the site and will, as much as is compatible with the other rehabilitation goals, return these buildings to the appearance that they had during the determined period of historic significance. Key to this endeavor is the restoration and re-opening of windows, doors and skylights and the rehabilitation of finishes, above.

As most of the book collection and the artifacts which are currently stored out of public view are to be moved to a modern, climate-controlled, open-storage location at the Griffith Park campus, space will be made available for additional exhibition areas and other functions. In Option A, newly recaptured areas will be used to support the educational mission of the Southwest Museum. Most of the Braun Library building will become an auditorium/ community room and a reading/education area.

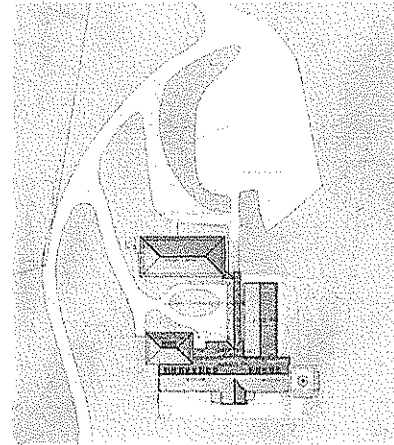
Visitors' facilities in general will be enhanced. The design provides for greatly improved disabled access to most public and staff areas by providing additional elevators, disabled access toilets and ADA compliant parking stalls. A new, more comfortable entrance sequence will be established. All visitors arriving by car will enter a new community gallery space on the upper floor of Braun and proceed by a new elevator or interior stair to the Central Plaza level, from which the rest of the museum facilities can be reached via covered walkways.

### Schematic Plans

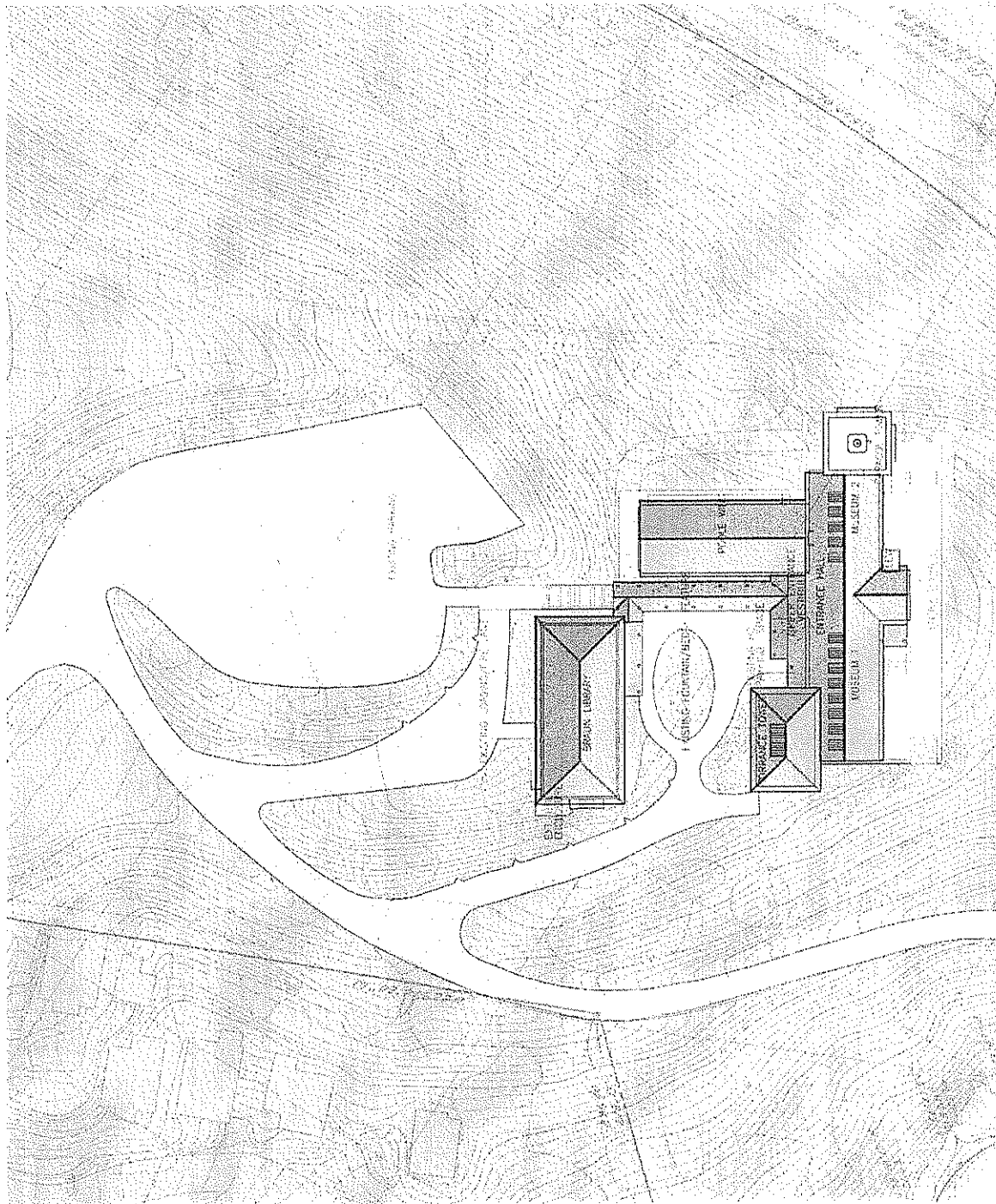
See the following pages



A008 - Saturday Children's program, 1930's.  
Mr. Keith Kenrid throws a boomerang.



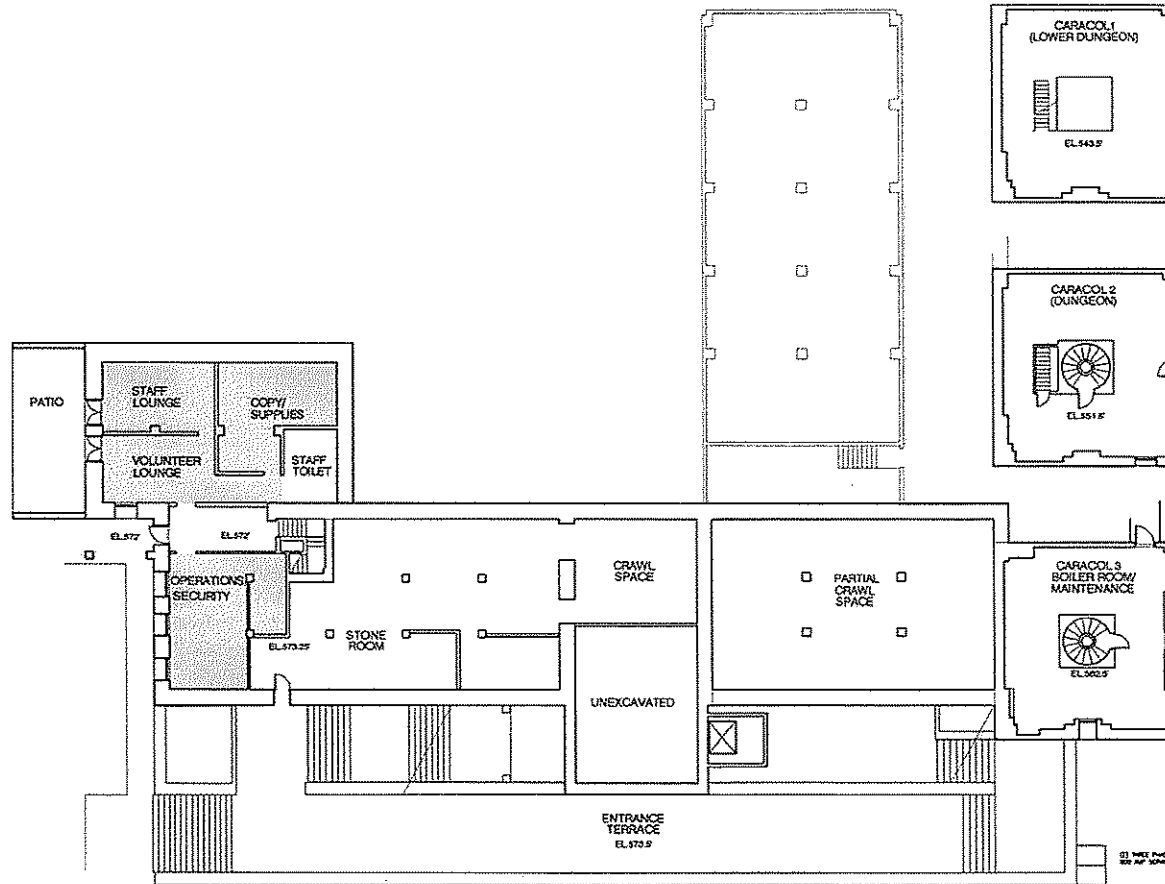
Scheme A Site Plan



**Option A**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
*January 2004*

**SITE PLAN**




KEY	
	EXHIBITION SPACE
	ADMINISTRATION & SUPPORT SPACE
	COMMUNITY SPACES/AMENITIES

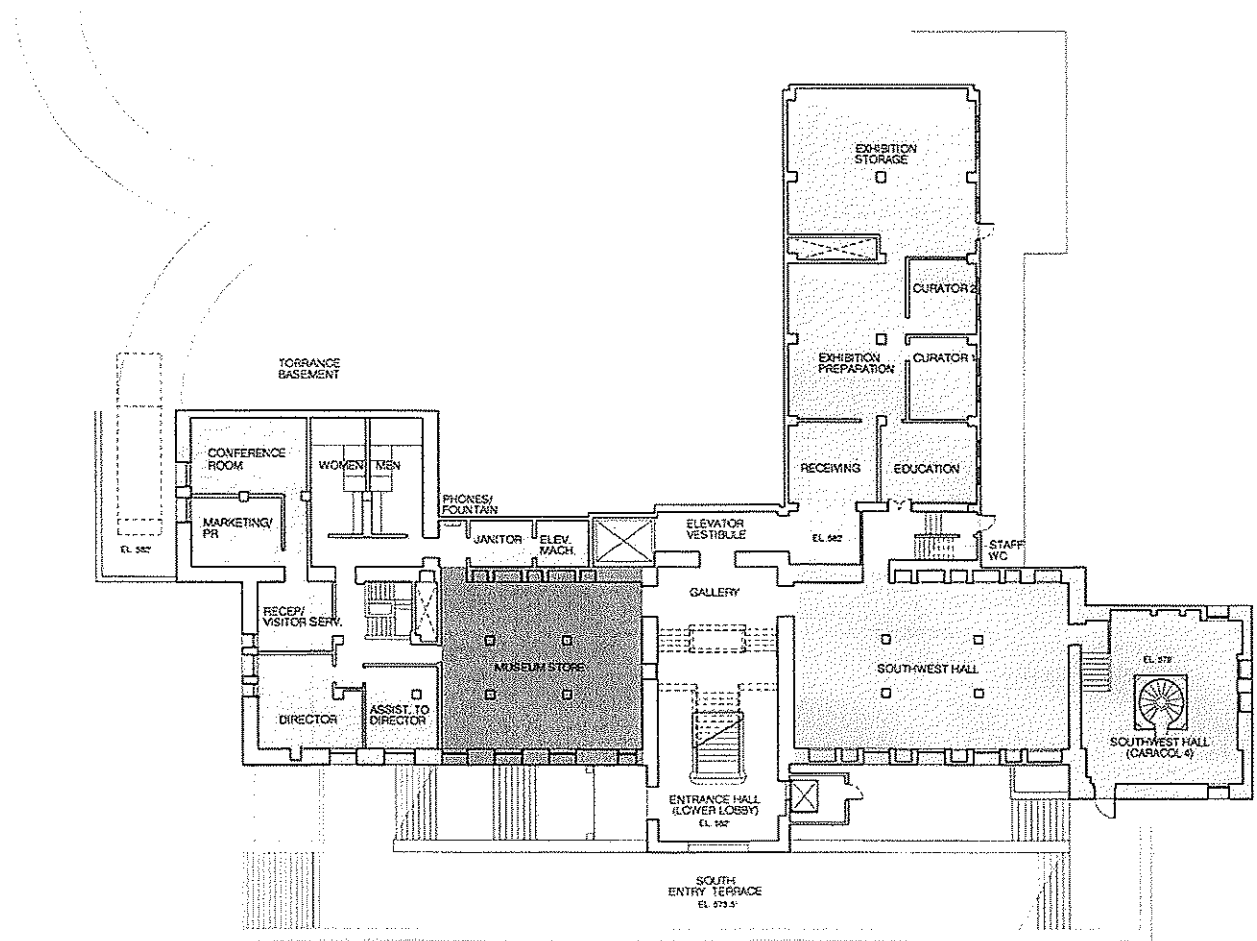


BASEMENT PLAN

**Option A**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
 January 2004



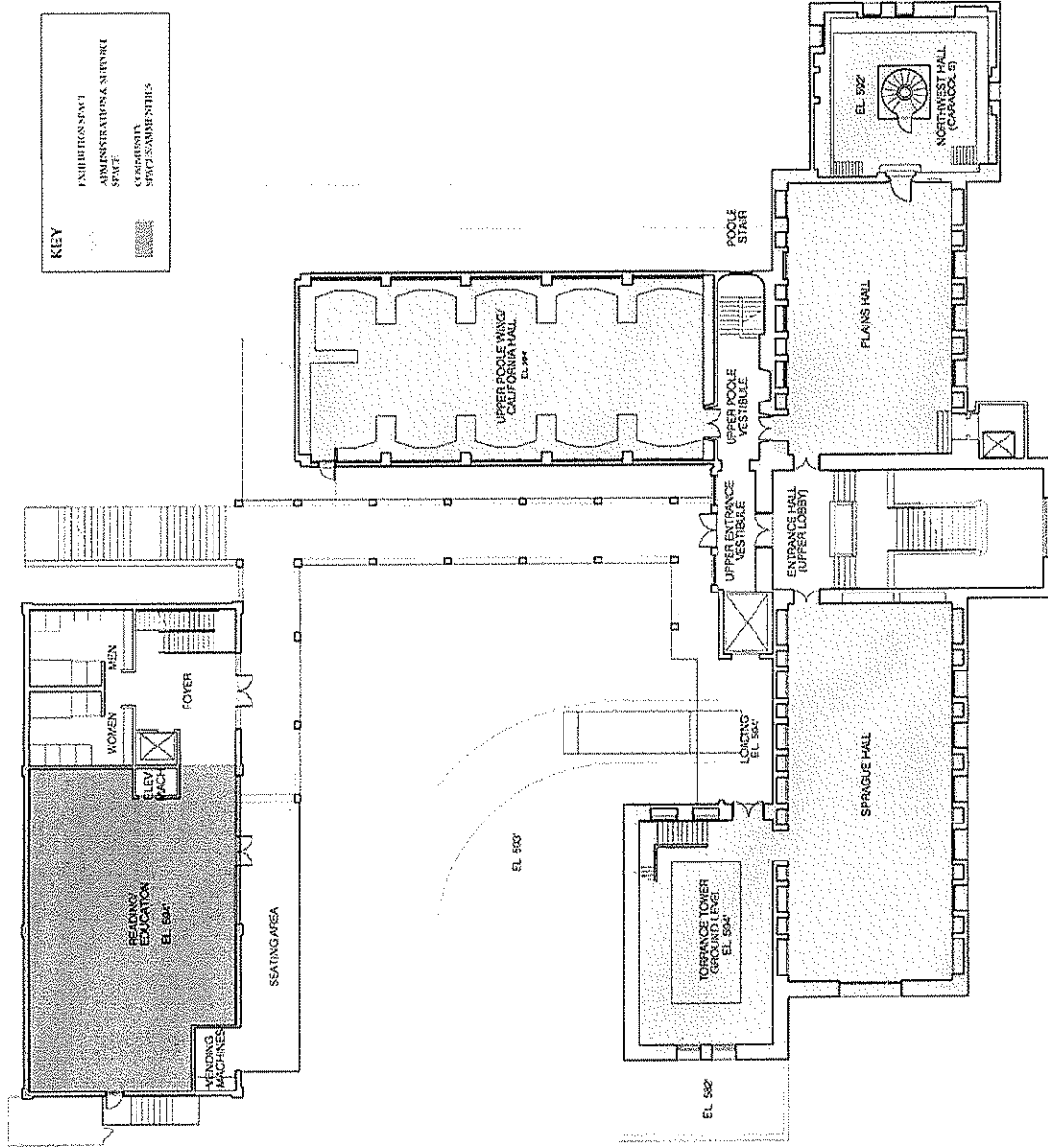
KEY	
	EXHIBITION SPACE
	ADMINISTRATION & SUPPORT SPACE
	COMMONLY USED SPACE: SCHEDULES



LEVEL ONE PLAN

**Option A**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
 January 2004

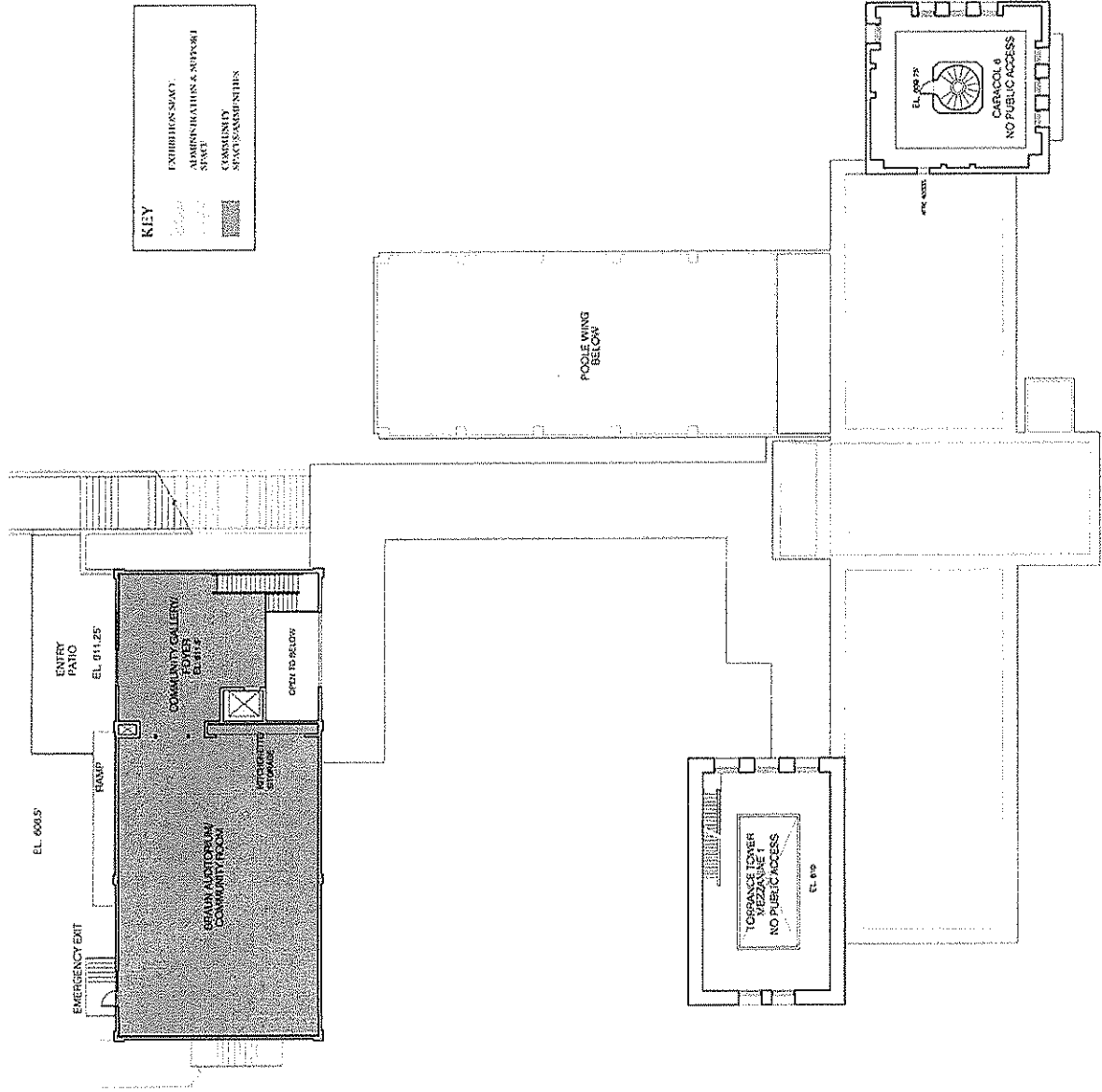




**Option A**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
 January 2004

LEVEL TWO PLAN





Option A  
**SOUTHWEST MUSEUM**  
 Levine & Associates, Architects  
 January 2004

LEVEL 3 PLAN



### **Restoration/Rehabilitation of Exterior Building Finishes**

The restoration procedures for the exterior finishes and openings of the Museum buildings are identical for Option A and Option B, as follows:

#### *Wall Finishes*

The reinforced concrete walls of the main building and the Poole Wing are in very good condition for their age, but the finishes of both are severely damaged in many locations and can no longer protect the buildings. The stucco finish on the reinforced concrete block walls of Braun Library is also beginning to deteriorate. The following repair and rehabilitation procedures are proposed:

- All existing paint, plaster, fiberglass mesh (at tops of walls and parapets), mastic and any loose material will be removed by water blasting and/or other methods.
- Expansion/contraction joints and control joints will be installed where needed to prevent future cracking.
- Cracks will be injection-filled cracks and plaster patched. A skim coat will be applied to all plaster to blend existing texture with new.
- Painted sheet metal coping will be installed at all exposed wall tops (i.e. parapet of Caracol Tower, end walls of Poole and Main Building, etc.).
- At the Poole Wing, restore/conservate cast concrete decorative panels by reattaching incipient spalls w/cementitious grout. Pin if required.
- Apply protective coating (paint, elastomeric or other) to all buildings

#### *Roofs*

##### **CARACOL TOWER ROOF**

The flat deck of Caracol Tower has been re-roofed within the last few years, but will likely need re-roofing again before the completion of either project.

- Screens will be provided for the existing roof drain.
- The roof slopes and drain size will be verified and amended if needed.
- Sheet membrane roofing will be installed over wood blocking, base flashing and counter flashing

##### **CARACOL TOWER BALCONIES**

- Scuppers will be added at each balcony.
- The deck will be sloped to the scuppers and waterproofed; proper flashing and counter flashing will be provided.

##### **OTHER BUILDING ROOFS**

Repair and restore original, clay tile roofs of the Main Building, Torrance Tower and Poole Wing.

### *Doors and Windows*

#### MAIN MUSEUM BUILDING INCLUDING CARACOL AND TORRANCE TOWER

The general intent for Option A and B is to match the original appearance of the doors and windows of the Main Museum Building as they were during the period of historic significance. There is currently a combination of original doors and windows, aluminum frame replacement windows, high quality wood replacement doors, anodized frame glass doors and metal or screen utility doors on site. Some of these have been painted over and/or blocked off from the interior. For each current window/door opening condition the following treatments will be performed.

- Original, wood doors, windows and lunettes, their frames and sills, will be repaired/refinished as needed and restored in place.
- Where glazing has been painted opaque, all paint will be removed, or if not possible without marring the surface, replaced.
- Openings that have been closed from interior/open on exterior will be reopened. Remaining historically significant window/doors will be restored as above. Otherwise, a new window/door will be installed to match that which was in place during the period of historic significance. Surrounding finishes will be restored.
- Where possible, some openings blocked with concrete will be reopened per the plans for each Option. The window/door will be replaced and the opening restored as above.
- All aluminum replacement windows will be removed and replaced with a new window/door to match that which was in place during the period of historic significance.

#### POOLE WING WINDOWS

The original, metal sash windows in the Poole Wing have nearly all been painted from the inside and security tape applied. Some have been blocked off on the interior. They will all be restored similar to the treatment for original windows above.

### **Interior Spaces**

#### *Main Museum Building*

The original Hunt and Burns building is predominantly intact, and requires the removal of recently added surface materials and the reopening of original windows, doors and skylights to return to the condition of its period of historic significance.

#### VESTIBULE, UPPER AND LOWER LOBBY

The north entry vestibule was built at the time of the Poole Wing as an open porch: the anodized frame doors and windows were added later. However, the enclosed vestibule now serves as an airlock to help maintain interior climate

conditions. The windows will be replaced with frame-less glazing panels and the doors, with raised panel wood and glass doors to match the original front entry. The historic doorway to Poole at the east wall will be reopened and restored.

- The shed on the west side of the vestibule will be converted to house a new hydraulic elevator; Elevator 2. This elevator, with openings on the outside for freight and inside the vestibule for passengers, will finally make both levels of the museum accessible to the disabled without needing to leave the building.
- The upper lobby has a wood floor added in the 1980's. This and all public spaces in the Main Museum Building were built with a scored concrete floor which is now covered with wood or carpet. These materials will be removed and the concrete floor restored in this and other public areas. The original floor was painted; not a durable surface treatment for public spaces. Old paint will be removed, and an acid based, penetrating color product will be applied. The surface will be sealed.
- The monumental central stair will be restored by removing its carpet and treating the scored, concrete treads to match the lobby. A 1980's light wood veneer will be stripped from the banisters to reveal the original oak or pine banisters below, which will be refinished to their original dark color.
- At the base of the stair, the lower lobby concrete floor will also be restored. The two story arched window will be replaced by a multi-paned, wood framed composition as appears in photographs from the period of historic significance.
- The existing elevator from the tunnel below, Elevator 3, opens to the lower lobby. New interior finishes will be provided for the cab.
- To comply with current code, fire-rated doors on hold-opens will be provided to the Museum Store and the Elevator 2 Vestibule.
- All finishes and millwork in this area will be restored or replaced to match original as required. Walls and ceilings will be repainted. Ambient lighting will be upgraded to meet current museum standards.

#### UPPER EXHIBITION HALLS: SPRAGUE AND PLAINS

Sprague Hall and Plains Hall were the original major exhibition spaces of the Museum. This project will create a new auditorium/program space in the Braun Library building, freeing Sprague from that function.

- The original scored concrete floors are presently carpeted, and will be restored in the same way as the lobby areas.
- These halls once featured abundant natural light. A row of skylights runs along the apex of their vaulted ceilings. The skylights, which are comprised of two glazed openings each: in the ceiling and in the roof, have been blocked off and the glazing painted black. Openings were made for mechanical ventilation. The filler material, louvers and paint will be removed and the skylights will be restored.

- Casement windows with operable “lunette” transoms ran all along the north and south walls. This fenestration remains visible on the south facade. In Sprague Hall, the original wood windows remain and will be reopened and restored. Glazing will be cleaned of paint or replaced and all disturbed interior finishes restored. In Plains hall, the windows on the south side, besides being painted out and blocked off on the interior, were replaced on the exterior with aluminum sash. These windows will be reopened and restored, and wood sash and glazing provided to match the original.
- The historic openings on the north walls of the halls were filled in with reinforced concrete to accommodate the addition of the Poole Wing and the exterior canopy adjacent to Torrance Tower. One casement window and lunette group on the north wall of Plains hall will be reopened in Option A. Modern UV blocking glazing and/or interior shading devices will be provided at all openings to protect the artifacts within.
- The walls and vaulted ceilings of both halls will be repainted. The concealed, florescent up-lighting above the cases will be updated with energy efficient fixtures and color balanced lamps. The new HVAC system will supply air through a pair of exposed, oval ducts. Additional lighting will be integrated into this system to meet current museum standards.
- Existing historic interior doors in these halls will be preserved. Hardware and swing may be altered to meet emergency exiting requirements per code. All original wood millwork will be conserved throughout. New material will be provided to match existing where necessary.
- The elevator machine room vestibule in Plains Hall will be removed and replaced with a door and steps. The platform at the east end will be removed.

#### LEVEL ONE – MUSEUM STORE AND UPPER SOUTHWEST HALL

These spaces differ from the galleries above them in that they lack high vaulted ceilings and skylights. Buried in the hillside to the north, they have south-facing windows. Public restrooms were built to either side of the lobby.

- The rehabilitation project for these halls includes removing the previously remodeled, non-code compliant restrooms, removing non-significant applied finishes to the walls, drop-in ceilings, a warren of display cases in Southwest Hall, and the existing carpet.
- New carpet will be installed throughout.  
A new, gypsum-board ceiling will be provided throughout these areas, with new, decorative pendant ceiling fixtures and recessed fixtures to achieve current, standard museum illumination levels. HVAC ducts will run above the new ceiling.
- The existing, original casement windows in Southwest Hall will be reopened on the interior side and restored. The aluminum frame windows in the original openings of the Museum Store will be replaced with wood frame windows to match the original.

- All finishes and millwork in these areas will be restored or replaced to match original as required. Walls will be re-surfaced and painted.

#### LEVEL ONE AND WEST BASEMENT OFFICES

This office zone integrates the lowest two levels of Torrance Tower with the western end of the main museum building. It is currently used for offices and a staff/volunteer lunch and workspace on Level One. The education, computer, other offices and a caged area where artifacts are treated are found in the basement. The west end of Level One was built as a curator's apartment but never used as such.

- There is an original, square, concrete stair between the levels that will be preserved in an open hallway.
- Many interior walls in this area were added in various remodels, and there are layers of cabinets, wallpaper and other materials. This non-significant interior construction will be demolished to create more efficient and comfortable office spaces.
- Offices and corridors will get new carpet. The existing suspended ceiling will be replaced with a 2' x 2' fine-line type grid ceiling with integrated lighting and HVAC supply and return. Historically significant doors will be re-hung in the new openings of these offices.
- New, code-compliant public restrooms will be provided to replace those removed.
- In the basement vapor barriers and insulation will prevent moisture and heat/cold infiltration. New carpet will be installed in all offices. A single, ADA compliant staff restroom will be provided.
- The new security/operations office will take the place of the old education offices. The wall separating the two halves of the space will be removed. All other historically significant surfaces and features will be restored.
- Electrical switch-gear will be located in the small, internal room east of the security/operations office.

In the newly created Volunteer Lounge, a historically significant French door will be restored, creating access to a covered patio. To meet exiting requirements, a second opening, with a new French door to match the existing, will be created in the Staff Lounge.

#### THE STONE ROOM

This basement area is currently filled with shelves of stone artifacts; hence its name. It is not separated from the un-excavated area adjacent.

All artifacts and storage will be removed from this area, which will house electrical and HVAC equipment. Measures will be taken to isolate the space from the soil and prevent water infiltration.



A009 - View from the southeast, 1938

#### CARACOL TOWER

This highly significant structure presents challenges for use today. The caracol stair itself is the only connection between levels but as a spiral stair, it cannot be accepted as a means of emergency egress in a museum. Buildings of more than two stories require two means of egress from each level, but the minimal usable floor area of each level and the necessary alteration of the historic structure make the addition of stairs and/or fire escapes difficult to justify at this time. Floors 2, 3 and 4 of the tower have one direct exit to the outside each.

No floor level of the Caracol Tower is contiguous with the rest of the main building, so that providing disabled access to any of the floors of this tower is a challenge. (Refer to Schirmer Engineering's report for additional information on these issues.)

Due to these access and exiting issues, only the 3rd level (also known as the Basement and the Boiler Room) the 4th Level, Lower Southwest Hall, and the 5th level, Northwest Hall, will be fully utilized. The rest of the tower will be sufficiently rehabilitated to maintain its historically significant characteristics intact and match the exterior appearance that it presented during the period of historic significance.

Caracol 3 will continue to be used as a utility space and a general maintenance workshop area. The Dungeon below (Caracol 2) will be partially used for similar functions. The lower Dungeon (Caracol 1) will be unused.

- Subterranean waterproofing will be installed.
- The concrete floors will be cleaned, old paint removed and sealer applied.
- Old equipment, shelving and other non-significant obstructions will be removed.
- All original door and window locations will be re-opened; metal windows, doors and security grills will be replaced with wooden doors and windows to match documented original types. Existing wood windows and exterior doors will be completely restored.
- Code-compliant, steel stud/gypsum board duct shafts and enclosures will be provided for new equipment and ducts. All walls and ceilings will be painted.
- The two uppermost levels of the tower, 6 & 7 will be similarly rehabilitated. These upper levels have original ceiling fixtures that will be restored and re-lamped.

Caracol 4, the Lower Southwest Gallery and Caracol 5, Northwest Hall will continue as exhibition spaces. A video kiosk in an accessible gallery area will provide disabled visitors with equivalent access to the materials.

These two floors will be rehabilitated to resemble their condition during the period of historic significance.

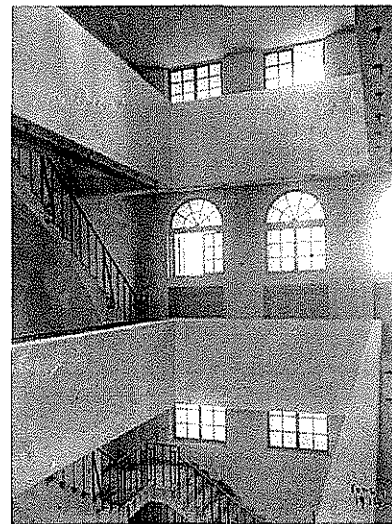
- Existing windows will be re-opened and restored.
- Carpet will be removed and the concrete floors treated as in Plains Hall. The mezzanine handrails in Northwest Hall will be restored.
- New lighting will be provided to meet current museum standards.
- New duct shaft enclosures will be created with walls finished to match existing.
- Walls and ceilings will be resurfaced as needed and painted.

The Caracol stair itself will be cleaned, repainted, and more efficient lamps installed in its historically significant sconce fixtures. Additional luminaries will be provided for safety. The existing conduit and tubing in the center of the stair will be removed. The skylight at the top of the stair will be cleaned, re-glazed and painted.

#### TORRANCE TOWER

The Torrance Tower presents similar code issues as the Caracol, but its main level, known as Van Nuys Gallery, is contiguous with Level Two of the main museum building and the courtyard, allowing disabled access and required emergency egress. Currently underutilized as textile storage, this dramatic space will be reopened as a gallery especially for tall or hanging objects.

- Vintage photos seem to indicate that the wood floor of Torrance Tower, installed in the 1980's, covers scored, concrete flooring, although construction records refer to encaustic tile in this location. In either case, the original flooring will be restored.
- The false skylight at the upper mezzanine, the walls obscuring the elegant stairs and rails and the interior vestibule will be removed and all original window locations will be reopened.
- The original wood windows remaining will be restored. New wood windows to match the historically documented originals will be provided in the other openings.
- Walls and ceilings will be patched and painted. New lighting and concealed HVAC will be provided.
- Per fire safety code, the mezzanines will remain inaccessible to the public; used by the staff only for exhibit installation and maintenance.



A010 - Torrance Tower under construction

*Poole Wing*

## LEVEL TWO – CALIFORNIA HALL

This area will retain its historic function as an exhibition hall, with its original display cases intact.

- All carpet, acoustic ceiling panels, non-historically significant display cases (artificial rocks, etc.) lighting track and fixtures will be removed.
- A new linoleum tile floor will be installed.
- New acoustic ceiling treatment and paint will be applied over the existing concrete ceiling deck. Wall surfaces will be restored and painted.
- The existing, exposed duct will be replaced with a new, oval duct. A lighting trough, similar to that shown in the original architectural drawings, will be installed below it.
- General lighting, including up-lighting fixtures concealed in the soffit above the display cases, will be upgraded/relamped to meet current museum standards.
- The existing historic exhibition cases will be restored.
- The clerestory triplet windows have been painted on the interior and silver security tape has been affixed to them. This glazing will be restored.
- The hallway and stair between the first and second level of Poole will be restored to its period of historic significance, ca. 1941, by restoring the original door opening to the entry vestibule, removing the carpet and restoring the concrete floor. New, more efficient lighting will be provided at existing fixture locations. Walls and ceilings will be painted.

## LEVEL ONE POOLE

As originally designed, the basket storage area was an open room with worktables on each side. Conduit in the-board formed concrete ceiling fed the light fixtures. Natural light came from a row of windows on the east side, which are currently painted out on the interior. This project will convert the space into a Receiving/ Exhibition Preparation/ Storage area including curators' and education offices.

- New vinyl tile will be provided for all floors, Existing partition walls will be removed and new ones constructed.
- Updated lighting will be installed at the existing ceiling locations. The education and curator's offices will have suspended ceilings with integrated lighting and HVAC diffusers.
- The existing windows will be restored with clear glazing.
- A second fire exit will be provided.

### *Braun Library*

The rare books and documents from the Braun library collection will be removed to a climate-controlled, research facility in Griffith Park. The Braun Library building has no historic or architectural significance, but its high ceilings and open plan, uninterrupted by columns, make it an extremely flexible space. As the closest structure to the existing parking lot and new disabled access parking stalls, it lends itself to form part of a new, disabled access entry sequence to the Museum. In this project, the east end of the building becomes a two level access and service core, receiving visitors in a community art gallery on the upper level, with an auditorium/community room to one side. Using stairs or a new hydraulic elevator, visitors proceed to a foyer on the lower floor, and access all other museum spaces from the courtyard. Public restrooms to serve all building areas on this level are located behind the stairs. A Reading / Education room will occupy the rest of the lower floor.

- Existing interior walls, finishes, the mezzanine floor, metal stack units, and existing interior stairways will be demolished.
- New glazed openings with doors in the Foyer/Gallery and Reading/Education areas will let in natural light and views. An entry patio and architectural canopy will be added to the north side of the building.
- The Auditorium/Community Room will be carpeted with a shaped, gypsum board ceiling and recessed lighting. Acoustic wood panels, ceiling and floor treatments will create good listening conditions. Light food and beverage service equipment, projectors, etc. will be concealed in cabinetry.
- The community gallery and foyer below will feature a custom designed linoleum floor and a shaped, gypsum board ceiling with pendant lighting fixtures.
- A dramatic, open stair will link the two levels
- The lower level Reading/Education area will be a comfortable, carpeted space with recessed lighting and ventilation in a gypsum board ceiling.
- Vending machines and a coffee cart will provide light refreshment.

### **New Construction**

#### *Interior Circulation*

A new space will be excavated continuous with Level One of the Main Museum Building. This additional area makes it possible to connect Level One and Two by a new, hydraulic elevator, without disturbing the historically significant building plan. The elevator vestibule opens to the Lower Lobby Gallery area as well as to the Exhibition Receiving/Preparation/Storage area, for safe and efficient handling of artifacts and exhibition materials.

### *Site Work*

The project for the site has the following programmatic goals:

- Create a complete, disabled access path of travel to all major museum areas
- Provide better access for the public to the museum
- Create acceptable conditions for delivery of materials to the museum buildings. Site modifications are designed for a truck of up to 35 feet.

### APPROACH ROAD

The Option A project envisions minor re-grading and paving repairs to the existing roadway. Turning radiuses and slopes will be eased. To accomplish this, new retaining walls will be required in some locations.

### UPPER SITE, PARKING

- The fire lane behind Braun Building will be re-graded and widened to accommodate the four disabled access parking stalls required by code. A ramp to the new entry porch and the new system of elevators will provide access to the site for both disabled and able-bodied visitors.
- The existing parking area will be repaired and re-stripped to accommodate the maximum number of cars.

### COURTYARD / DELIVERY

The courtyard currently serves as: an event space, a loading area, disabled parking (reassigned to the upper site) and an informal meeting area. Its current configuration, obstructions and steep slope make truck deliveries difficult.

- This project will provide a maneuvering platform west of Torrance Tower, enabling trucks to more easily back into the covered loading area.
- The existing fountain and landscaping area will be removed and the courtyard and drive area will be re-graded to achieve a gentler slope. The area will be resurfaced with pavers.
- The paved porch area in front of the current library will be extended as a partially elevated slab the length of the Braun building.
- New planted areas will create an enhanced event environment.

### OTHER SITE AREAS

Landscaping will be restored in all construction areas. Trees will be added at the North Entry Patio and Courtyard Patio, as well as assorted drought-resistant shrubs and ground covers throughout the site.

- The South Entry Terrace and steps will be rehabilitated by replacing broken steps, filling all cracks in the walls and pavement and refinishing the walls.
- Funds are included in the cost of this project for new site signage and site lighting, including exterior wall-wash illumination for Caracol Tower.

## **OPTION B**

### **Program Considerations**

Option B, the enhanced rehabilitation scheme, also fulfills the project rehabilitation criteria. The work in Options A & B is similar, especially regarding exhibition and major public spaces. Option B, however, utilizes the occasion of the work required for the core project as an opportunity to improve the capacity of the Southwest Museum to serve the public.

First, a new entry sequence will make museum visits much more pleasant and practical for all users. The parking area and service drive above the Braun Building will re-graded into one level which will increase parking capacity by 60%. It's upper end will provide direct access to the Entry/Community Gallery of the second floor of Braun, and via a new elevator to the Central Plaza.

Second, conditions will be created making it possible to host traveling exhibitions and collections from other museums, by creating a large, covered, securable loading dock area, from which artifacts can safely be moved in carts to all parts of the museum. This area will improve the conditions for transfer of collections to and from holding areas in the Autry National Center as well. The loading dock area will be excavated where presently an extremely steep slope joins the driveway and the Level Two court yard.

Third, additional exhibition space and an area dedicated to participatory educational programs will be created by moving all artifact handling into the new, subterranean area adjacent to the loading dock.

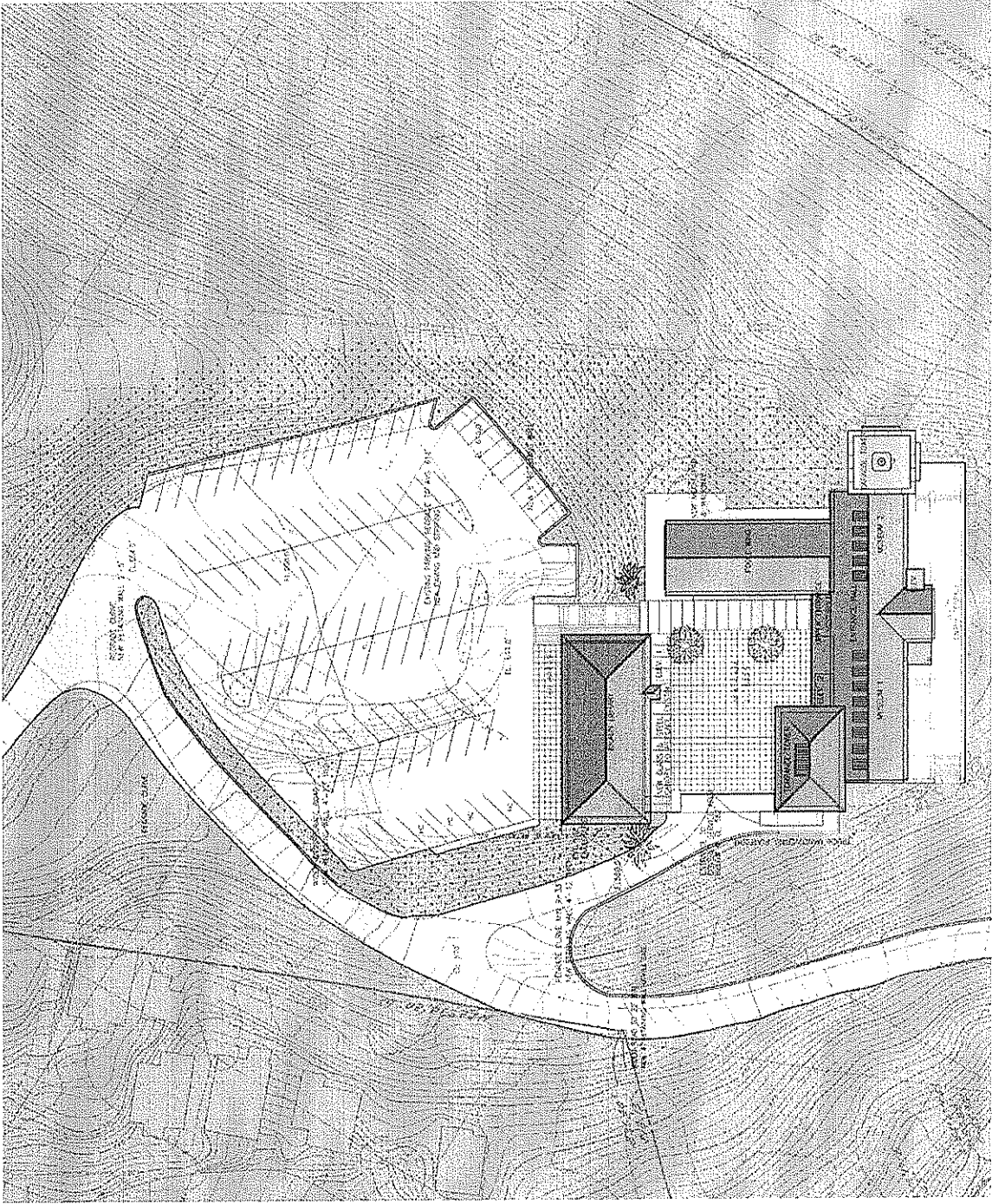
Fourth, a new, enlarged central plaza will be provided, more than doubling the Museum's outdoor event space and serving as a roof for the new loading area. This space will accommodate a performance area, outdoor event space, creative activity space, and a seating area for visitors to pause.

Fifth, a coffee bar serving baked goods and pre-prepared food items will make it possible for visitors to spend more time at the museum. A new commercial kitchen on Level One will make it possible to host large events in the Community Room, on the Central Plaza, or elsewhere.

Finally, the museum gift store will be moved to the lower floor of the Braun Building, visible from the ticketing vestibule, Central Plaza and coffee bar. With this enhanced exposure, it is expected to generate more financial support for the Museum.

### **Schematic Plans**

See the following pages.

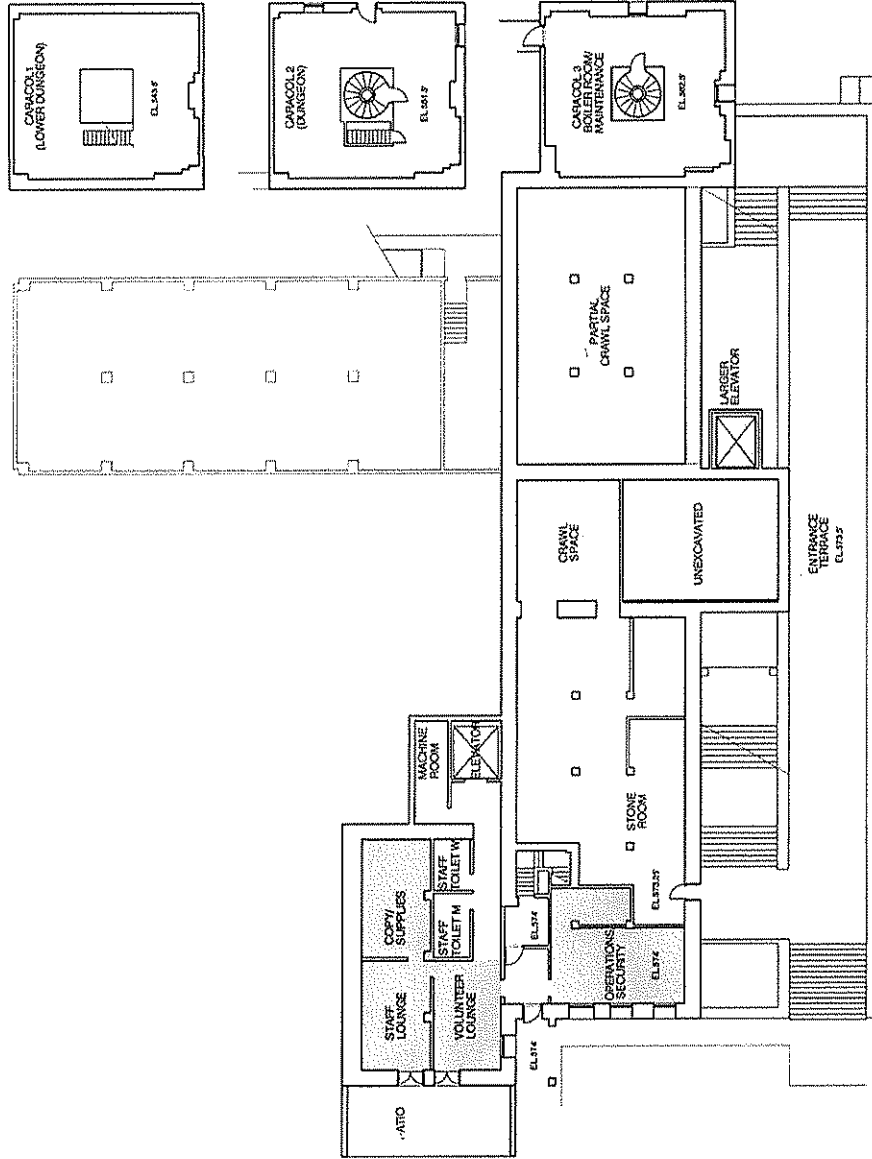


**Option B**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
January 2004

**UPPER SITE AND PARKING**

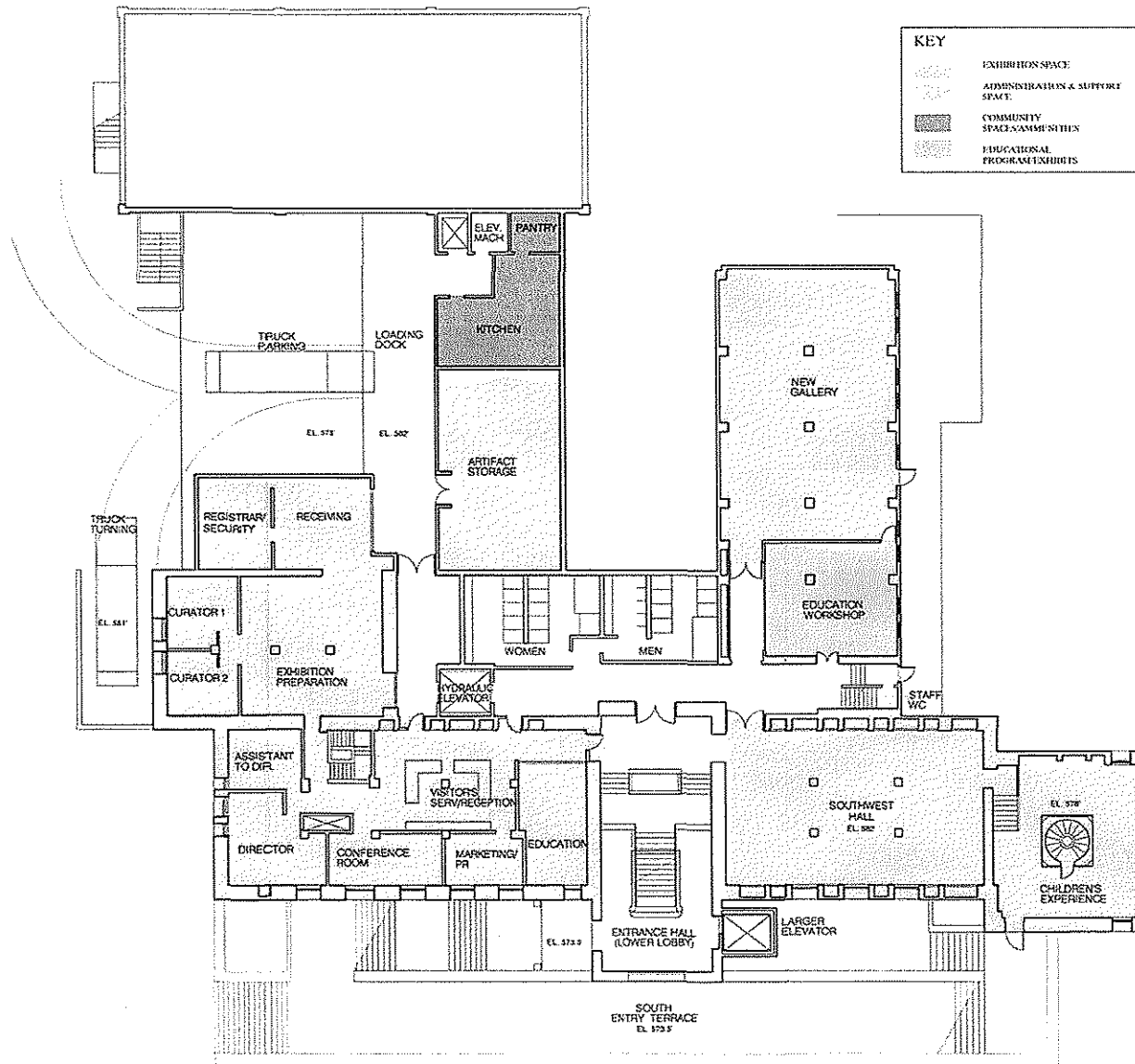
**KEY**

- EXHIBITION SPACE
- ADMINISTRATION & SUPPORT SPACE
- COMMUNITY SPACES/RENTALS



**Option B**  
**SOUTHWEST MUSEUM**  
 Levin and Associates, Architects  
 January 2004

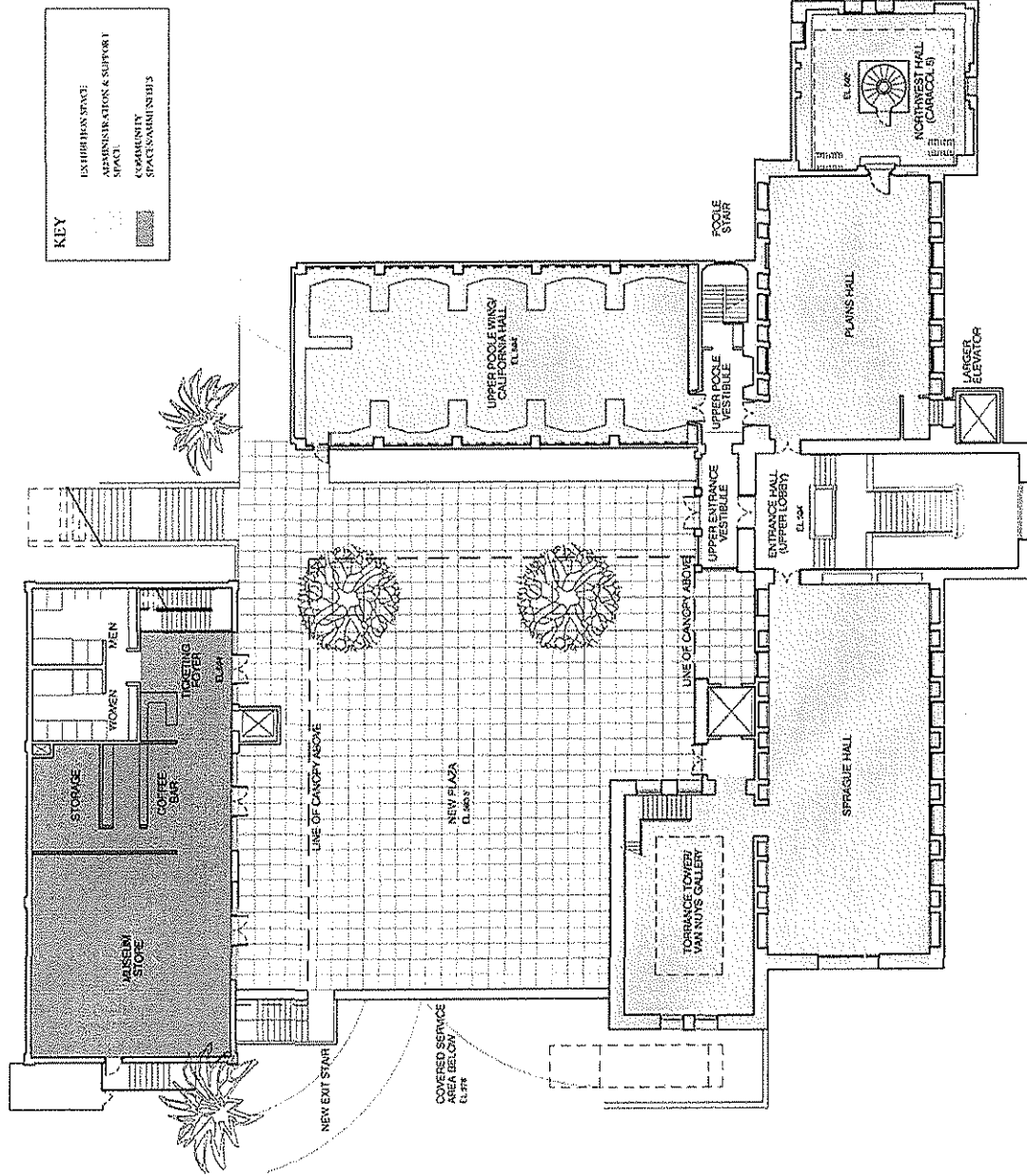
BASEMENT PLAN



LEVEL ONE PLAN

**Option B**  
**SOUTHWEST MUSEUM**  
 Levin and Associates, Architects  
 January 2004





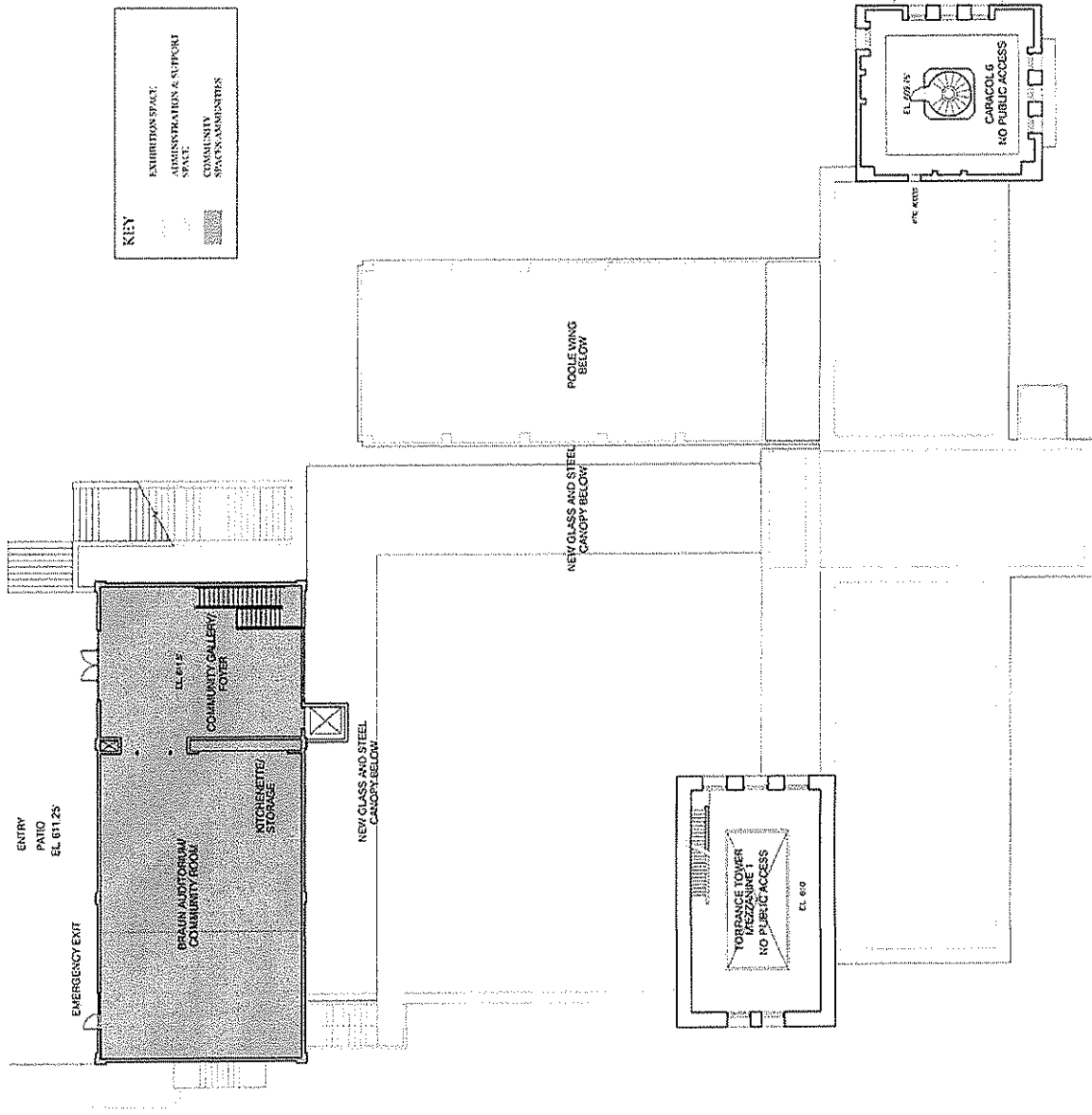
**KEY**

[Stippled pattern]	EXHIBITION SPACE
[Dotted pattern]	ADMINISTRATION & SUPPORT SPACE
[Cross-hatched pattern]	COMMUNITY SPACES/AMPHITHEATERS



**Option B**  
**SOUTHWEST MUSEUM**  
*Levin and Associates, Architects*  
 January, 2004

LEVEL TWO PLAN



Option B  
**SOUTHWEST MUSEUM**  
 Levin and Associates, Architects  
 January 2004

LEVEL THREE PLAN



## Restoration / Rehabilitation of Exterior Building Finishes

### *Wall Finishes*

### *Roofs*

### *Doors and Windows*

The scope of exterior work on the existing buildings is similar to Option A.

## Interior Spaces

### *Main Museum Building*

#### VESTIBULE, UPPER AND LOWER LOBBY

Option B similar to A excepting:

- The utility shed to the west of the vestibule, added in the 1970's, will be removed and a new glazed opening will be created on the west wall of the vestibule.
- The ticket/information booth will be moved to the Braun Building.
- The cab of the existing elevator from the pedestrian tunnel below will be replaced with a larger model, permitting larger groups, such as school classes, to enter at the same time. Some excavation of the subterranean portion of the shaft may be required.

#### UPPER EXHIBITION HALLS: SPRAGUE AND PLAINS

Similar to A except that the elevator machine room vestibule in Plains Hall will be reduced in size and concealed with new exhibit cases.

#### LEVEL ONE – UPPER SOUTHWEST HALL

Similar to A except that the historic concrete floor of this space will be restored.

#### LEVEL ONE ADMINISTRATIVE AREA

The Museum Store will be moved to the Braun Building. The museum's offices will be arranged around an open reception/visitor's service area, creating an administrative suite.

- All non-significant, applied finishes and casework, the suspended ceiling and most existing partition walls will be demolished and the existing women's restroom will be removed
- Significant casework will be restored and original doors re-hung in new openings.
- New carpet will be installed; the historic plaster wall finishes will be restored and painted. A new, 2' x 2' fine line type suspended ceiling with integrated lighting and HVAC diffusers will be provided.
- Ninety-minute, fire-rated doors create a fire separation for this suite from the Lower Lobby, Exhibition Preparation room and Elevator Vestibules.
- Similar to Option A in all other respects

LEVEL ONE EXHIBITION PREPARATION AND CURATOR'S OFFICES

This area is functionally integrated with the Loading Dock/ Receiving/Artifact Storage /Elevator vestibule.

- All existing, non-significant finishes and casework will be removed from this area.
- The carpet will be removed, the concrete floor cleaned and sealed, excepting the curators' offices, which will get new vinyl tile.
- A new suspended ceiling with integrated lighting and HVAC diffusers will be provided throughout.

BASEMENT (WEST END)

All spaces similar to Option A, excepting that Elevator 2 serves the basement as well, and an area will be excavated to accommodate the elevator, machine room and vestibule.

Two ADA compliant staff restrooms will be provided in this project.

THE STONE ROOM

No change

CARACOL TOWER

Similar to Option A, excepting that Caracol 4, the Lower Southwest Hall, will become the Children's Experience area.

TORRANCE TOWER

Similar to Option A, excepting that in this project, Elevator 2 will be located adjacent to Torrance Tower. The Elevator Vestibule will be entered directly from the Van Nuys Gallery of Torrance Tower.

*Pooler Wing*

LEVEL TWO – CALIFORNIA HALL

Identical to Option A

LEVEL ONE POOLE

In Option B, Lower Poole will be converted into new Gallery and Education spaces. All existing partition walls, lighting track and non-historic fixtures, storage shelving and compact storage units will be removed. As in Option A, the existing windows will be restored and all paint removed from the glazing.

- New linoleum tile flooring will be provided in both spaces.
- The walls will be stripped down to the original concrete surface and painted.
- A gypsum board ceiling will be provided, with integrated HVAC and lighting to meet current museum standards.

- A glass wall in the education workshop will let visitors enjoy watching activities in progress.

### *Braun Building*

In Option B, the community gallery/Foyer area of the Braun Building will extend across to Elevator 1, located in a glass enclosure outside of the current building envelope. In this project, Elevator 1 penetrates to the loading dock level below the building. This facilitates delivery of goods, equipment and event catering to the plaza, the Museum Store and the Auditorium/Community Room.

At the base of the stairway, visitors enter the Ticketing Foyer from where the Coffee Bar and Museum Store are clearly visible. Visitors will access the Museum Store and Coffee Bar from the patio storefront or glass doors inside of Braun. The store will have a linoleum tile floor and an acoustic ceiling with integrated lighting and HVAC diffusers. The Coffee Bar, a part of the Store, will serve beverages and pre-prepared food items.

### **New Construction**

The chief area of new construction in this project is the partially subterranean Loading Dock with the receiving, storage and kitchen areas around it, collectively forming the Subterranean Service Plaza. The floor of this area is continuous with Level One of the Main Museum Building. The concrete driving surface of the loading dock is 4' below the floor level. Adjacent to this is the fully excavated area housing the new elevator, public restrooms, corridors and vestibules, also continuous with Level One.

### *Loading Dock*

The loading dock, corridor to the elevator, receiving area and artifact storage will all have sealed concrete floors; the registrar/security office will have vinyl tile, the kitchen and pantry, quarry tile floors and cove base.

### *Subterranean Service Plaza*

- All exterior and subterranean walls will be reinforced, cast in place concrete. Interior walls will be metal stud with gypsum board per code, painted. Insulation, vapor barriers and other techniques will be used to combat humidity and temperature change. Kitchen and pantry walls will have washable wall surfaces and a hard, gypsum board ceiling per code. Lay in ceilings with integrated lighting and HVAC diffusers will be installed in all other interior subterranean service plaza areas.
- Fire rated, solid core, steel doors will be used throughout this secure area, except wide, roll-down metal doors will be used between receiving and the loading dock and between Exhibition Preparation and the elevator corridor.
- Elevator Two has two doors at this level: one side is for moving freight to and from the subterranean service plaza and one for visitor access. The corridor

on the visitor side to the east will be finished to harmonize with the Lower Entrance Hall Gallery: acid tinted, sealed concrete floors, plaster and paint over gypsum board on the walls and ceilings, recessed lighting. These treatments will continue through the corridor between the main building and Poole.

- The new public restrooms adjacent increase the facilities in this building by an additional 150%.
- The enclosure for Elevator 2 and the entry/elevator vestibule adjacent is new construction. There is presently a non-significant, tile-roofed canopy extending from Torrance Tower to the Upper Entrance Vestibule. This will be removed, making it possible to reopen window locations on the north wall of Sprague Hall.

#### *Site Work*

The Option B project for the site has the following programmatic goals:

- Create a complete, disabled access path of travel to all public and staff areas
- Provide better access for the general public to the museum
- Create museum standard conditions for delivery of artifacts and other materials to the museum buildings
- Provide additional parking
- Create a large, outdoor, programmable space for museum events and compatible revenue earning events.

#### APPROACH ROAD

The Option B project will improve the existing road for safer and easier visitor access and make it possible for larger delivery vehicles, such as would be used for traveling exhibits or large events, to access the Museum. This work will include widening the existing roadway towards the hillside to achieve a standard two lane width, partial re-grading and providing some additional structural support. Turning radiuses and slopes will be eased more extensively than for Option A, requiring more and higher retaining walls.

#### PARKING

In order to increase parking capacity, currently deficient, the existing parking lot and existing fire lane behind the Braun Building will be graded together to form a single, enlarged parking lot. It's highest point will be equal and adjacent to the upper level of Braun. Disabled accessible parking will be accommodated here as well.

The extensive retaining walls required to accomplish these changes will have attractive finishes tied into the overall site architecture. The site work and parking lot will be harmonized with the landscape though liberal use of drought resistant plants and new shade trees.

### *Entry Sequence*

A new entry patio will extend the full width of the Braun building, protected from the sun by trees and an architectural canopy. No ramps or stairs will be required to enter the building. Visitors will enter the new Community Gallery/Foyer and proceed by elevator or stairs to the ticketing foyer below. In both schemes A & B, the new auditorium/community room in Braun is accessed directly from parking, and can be used without the museum being open.

### *Central Plaza and Subterranean Service Plaza*

The current substandard conditions for artifact loading, unloading, handling and storage on the museum site place limitations on the Southwest's ability to exchange material and exhibitions with other institutions. The steep and narrow approach to the delivery area, and lack of a receiving zone for ordinary goods and supplies hampers museum functioning well, and the mixture of delivery functions with outdoor event space in the courtyard further limits the scope of activities that the Southwest can offer.

The Option B project resolves these issues by creating a Subterranean Service Plaza, the interior of which is detailed above. Vehicle access will be at approximately the existing grade of the adjacent driveway. This Service Plaza, accessed by both Elevators One and Two, becomes the central supply point for the campus.

### *Central Plaza*

The roof of this area provides the most distinctive feature of Option B, the Central Plaza. The new level area provided more than doubles the usable area for outdoor activities; from performances to major craft shows and workshops to banquets. On a daily basis, this gracious space will be used as a rest area where visitors can enjoy drinks and sandwiches from the coffee bar while admiring the view of the arroyo and downtown LA in the distance. Landscaping will shade and soften the area.

Around the Plaza, the existing canopy will be replaced by architectural elements that better enhance the building design.

South entry porch restoration, other site areas, site lighting, signage. The scope of work in these areas is similar to Option A.

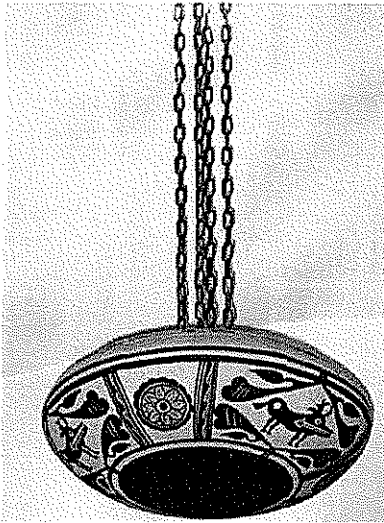
### **ADDITIONAL RECOMMENDED TESTS AND PROCEDURES**

In order to more precisely define the scope of work required for both Options A and B, Levin & Associates recommends that the following tests and procedures be performed:

#### **Tests to be performed on exterior finishes:**

##### *Survey of exterior conditions*

- Analysis of cracking patterns of wall (photos) to identify causes of cracking/movement
- Moisture test



A011 - Ceramic light fixture with Zuni motifs commissioned by Lummis

- Condition of doors and windows -
- Cast concrete deterioration
- Roof condition (several types/locations)

*Inspection openings required – multiple locations*

- Remove paint to inspect plaster condition
- Remove plaster to inspect concrete condition
- Excavate to verify below-grade waterproofing presence and condition
- Remove portion of roof and door flashings to determine assembly/construction
- Take sample of spalled cast concrete to determine cause.

*Laboratory Tests*

- Petrographic examination - core samples through cracked and uncracked concrete, cast concrete and plaster.
- Hazardous materials testing- paint, plaster, sealants
- Cast concrete - absorption
- Material characterization of plaster for replication

*Mock-ups*

- Concrete repair: test grout mixes for injection into cast concrete cracks and spalling.
- Plaster patching
- Skim coat
- Paint: removal methods and materials matching

**Tests to be performed on interior and exterior finishes:**

- Testing for hazardous materials by a licensed testing service.

**Jurisdictional Agency Coordination**

*State Historic Building Code*

Options A and B are based upon the provisions of the SHBC, which permits alternate means of compliance to the LABC. These alternate means of compliance are considered by the Authorities Having Jurisdiction on a case-by-case basis. As such, they should be further reviewed and discussed with the City of Los Angeles Department of Building and Safety as soon as further work is initiated.

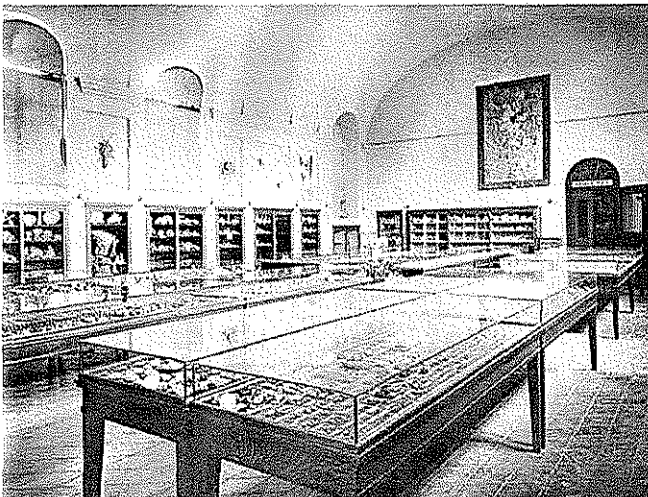
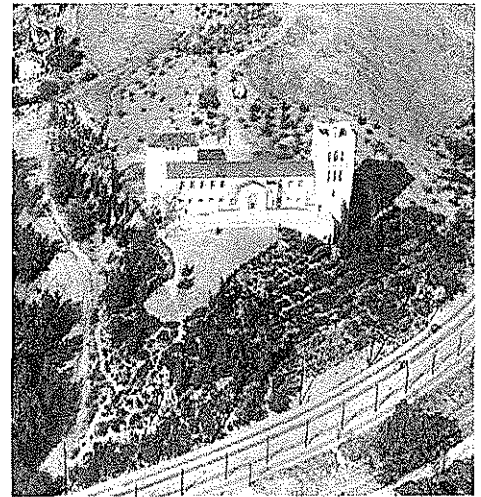
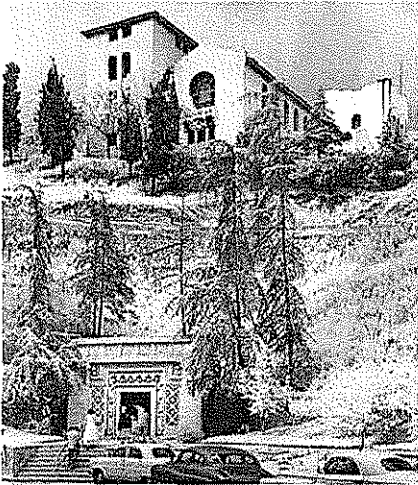
*Fire Department Access*

The City of Los Angeles Fire Department Access and Hydrant Unit should be consulted regarding changes/modifications proposed to the existing fire department access route(s) for Options A and B.



# Southwest Museum Rehabilitation Study

Phase I Planning



## Infrastructure Assessment & Recommendations

Structural Systems Evaluation

Mechanical & Plumbing Systems Evaluation

Electrical Systems Evaluation

Fire / Life Safety Systems Evaluation

## STRUCTURAL SYSTEMS EVALUATIONS EXISTING CONDITIONS AND RECOMMENDATIONS

**CONSULTANT** *Englekirk & Sabol, INC.*

**PRINCIPAL** *William A. Wallace, Jr., S.E.*

### INTENT AND SCOPE

The intent of the structural evaluation is to present an opinion concerning the expected performance of the buildings if subjected to earthquake ground motion of the type anticipated in the southern California area. Using life safety criteria, deficiencies in the lateral force resisting systems will be identified and mitigation measures will be recommended. Gravity load systems are also reviewed. Areas of existing deterioration or damage will be identified and mitigation recommendations provided.

### METHODOLOGY AND LIMITATIONS

Review of the following items:

- Original construction documents provided by Levin & Associates (see Appendix)
- Original construction photographs provided by the Southwest Museum
- Southwest Museum - Caracol Tower Report prepared by John A. Martin & Associates dated September 29, 1996
- Southwest Museum - Caracol Tower Due Diligence Report prepared by M. Goodwin Associates dated December 16, 1996
- Southwest Museum - Main Museum Building Report prepared by Albert C. Martin & Associates dated March 28, 1997
- Damage Survey Report 32839 prepared by the Federal Emergency Management Agency dated June 28, 1997
- Architectural drawings prepared by Levin & Associates dated September 9, 2003 with subsequent revisions
- Conducted escorted site visits during August, September, and October 2003.

It should be recognized that the opinions presented in this evaluation are based on a consensus of expert estimation and cannot, therefore, be guaranteed. The professional opinions presented in this evaluation have been developed using that degree of care and skill ordinarily exercised under similar circumstances, by reputable structural engineers practicing in this locality. No other warranty expressed or implied is made as to the professional opinions expressed in this evaluation.

## REFERENCE CODES

- California Historic Building Code, 2001
- California Code for Building Conservation, 2001
- American Society of Civil Engineers, Seismic Evaluation of Existing Structures (ASCE 31-02), 2002
- City of Los Angeles Building Code 2002
- Chapter No. 95 - Voluntary Earthquake Hazard Reduction in Existing Reinforced Concrete Buildings and Concrete Frame Buildings with Masonry Infills
- Chapter No. 96 - Voluntary Earthquake Hazard Reduction in Existing Reinforced Concrete and Reinforced Masonry Wall Buildings with Flexible Diaphragms

## FINDINGS

### Main Museum Building

The Main Museum Building is a low-rise, reinforced concrete shear wall without moment-resisting frame building. The Main Museum Building has two stories and a full basement. No prints of the original architectural or structural plans for this portion of the Museum facilities were available for review. However, some original construction photographs were available.

Damage Survey Report 32839 identified the Main Museum Building as Area II. Area II had concrete cracks near the new elevator and the Caracol Tower.

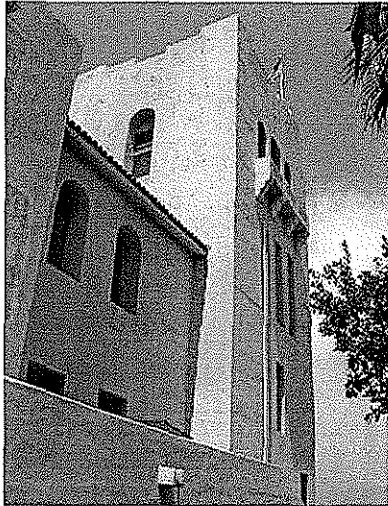
The gravity force resisting systems at the roof and elevated floors are provided by reinforced concrete one-way slabs, beams, girders, columns and bearing walls with pilasters. Some rusted reinforcing bars were observed in the underside of the Museum Store slab (*see photo S001*). These rusted reinforcing bars should be cleaned and protective coating added.

Reinforced concrete spread footings support the columns and pilasters. Reinforced concrete continuous footings support the bearing walls. The Building has concrete slabs on grade. Reinforced concrete walls span vertically between the foundation and the floor above.

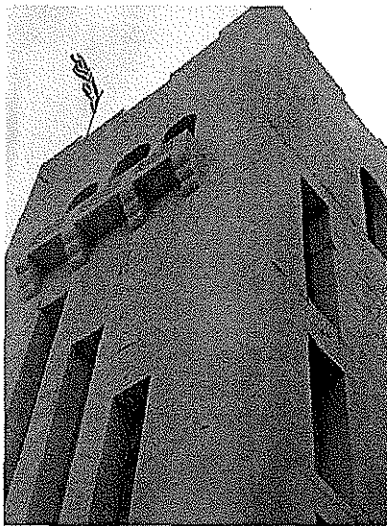
The lateral force resisting system is provided by the stiffness of the exterior and interior reinforced concrete shear walls in both the longitudinal and transverse directions. The concrete slabs at the roof and elevated floors function as load distributing horizontal diaphragms. The transfer of lateral loads from these diaphragms to the walls is accomplished by dowels. The transfer of lateral loads from the walls to the foundation system is also accomplished by dowels.



S001 - Rusted reinforcing bars below museum store



S002 - Main museum & Caracol Tower:  
South Façade



S003 - Caracol Tower - East façade

### Pooler Wing

The Pooler Wing is a low-rise reinforced concrete shear wall without moment-resisting frame building. The Pooler Wing has one story and a full basement. Prints of the original architectural and structural plans were available for review (see Appendix A).

Damage Survey Report 32839 identified the Pooler Wing as Area IV. Area IV had concrete cracks in the exterior face of the west wall.

The gravity force resisting system at the roof is provided by reinforced concrete one-way slabs, beams, girders, and bearing walls with pilasters. The gravity force resisting system at the elevated floor is provided by reinforced concrete two-way slabs, beams, columns, and bearing walls with pilasters.

Reinforced concrete spread footings and belled caissons with grade beams support the columns and bearing walls with pilasters. The Pooler Wing has a 4 1/2 inch thick reinforced concrete slab on grade. Twelve-inch thick reinforced concrete basement walls span vertically between the slab on grade and the floor above.

The lateral force resisting system is provided by the stiffness of the exterior reinforced concrete shear walls in both the longitudinal and transverse directions. The concrete slabs at the roof and elevated floor function as load distributing horizontal diaphragms. The transfer of lateral loads from these diaphragms to the walls is accomplished by dowels. The transfer of lateral loads from the walls to the foundation system is also accomplished by dowels.

### Caracol Tower

The Caracol Tower is a tall reinforced concrete shear wall without moment-resisting frame building. The Caracol Tower has seven stories and a full basement. No prints of the original architectural or structural plans were available for review. However, structural drawings for underpinning (see Appendix A) and some original construction photographs were available for review.

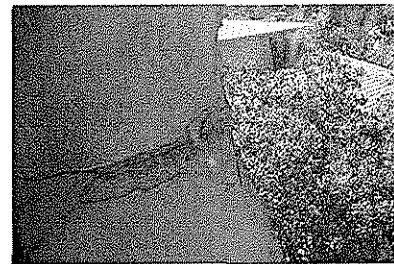
Damage Survey Report 32839 identified the Caracol Tower as Area I. Area I had concrete wall cracks and spalling at the roof beams and slab cracks. The gravity force resisting systems at the roof and elevated floors are provided by reinforced concrete one-way slabs, beams, girders, and bearing walls.

Reinforced concrete underpinning piers support the bearing walls. The Caracol Tower has a concrete slab on grade. Reinforced concrete basement walls span vertically between the slab on grade and the floor above.

The lateral force resisting system is provided by the stiffness of the exterior reinforced concrete shear walls in both the longitudinal and transverse directions. The exterior south and east walls have three-window openings (See photos S002 and S003). All walls were observed to have mostly minor

and some significant cracks. In addition, the north wall was observed to have significant spalls at window jambs (*see photo S004*). These cracks and spalls have not compromised the vertical stability of the wall but should be repaired.

The concrete slabs at the roof and elevated floors function as load distributing horizontal diaphragms. The transfer of lateral loads from these diaphragms to the walls is accomplished by dowels, as is the transfer of lateral loads from the walls to the original foundation system. The transfer of lateral loads from the original foundation system to the underpinning piers is accomplished by friction. It appears the underpinning was provided for vertical load stability purposes only.



S004 - Caracol Tower - crack at window jamb

### **Torrance Tower**

The Torrance Tower is a mid-rise reinforced concrete shear wall without moment-resisting frame building. The Torrance Tower four stories and a full basement. The four stories are made up of a first and second floor level and two mezzanine levels above. No prints of the original architectural or structural plans were available for review. However, structural drawings for underpinning (*see Appendix A*) and some original construction photographs were available for review.

Damage Survey Report 32839 identified the Torrance Tower as Area III. Area III had assumed concrete cracks based on the observed plaster cracks.

The gravity force resisting systems at the roof and elevated floors are provided by reinforced concrete one-way slabs, beams, girders, columns, and bearing walls. Reinforced concrete underpinning footings support the columns and bearing walls. The Torrance Tower has a concrete slab on grade. Reinforced concrete basement walls span vertically between the slab on grade and the floor above.

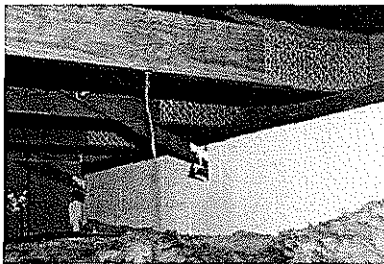
The lateral force resisting system is provided by the stiffness of the exterior reinforced concrete shear walls in both the longitudinal and transverse directions. The concrete slabs at the roof and elevated floors function as load distributing horizontal diaphragms. The transfer of lateral loads from these diaphragms to the walls is accomplished by dowels. The transfer of lateral loads from the walls to the original foundation system is also accomplished by dowels. The transfer of lateral loads from the original foundation system to the underpinning piers is accomplished by friction. It appears the underpinning was provided for vertical load stability purposes only.

### **Braun Library**

The Braun Library is a low-rise reinforced masonry shear wall without moment-resisting frame building. The Braun Library has two stories and a mezzanine. Prints of the original architectural and structural plans were available for review (*See Appendix A*).

The gravity force resisting system at the roof is provided by plywood sheathing, pre-fabricated wood trusses, and exterior reinforced masonry bearing walls. The gravity force resisting system at the elevated floor is provided by pre-cast reinforced concrete double-tee joists with topping slab and reinforced masonry bearing walls.

Reinforced concrete continuous footings support the walls. The Library has a five-inch thick reinforced concrete slab on grade. Twelve-inch thick reinforced masonry basement walls span vertically between the slab on grade and the floor above.



S005 - Braun Library - Connection of roofing diaphragm to wall

The lateral force resisting system is provided by the stiffness of the exterior reinforced masonry shear walls in both the longitudinal and transverse directions. The plywood sheathing at the roof and concrete topping at the elevated floors function as load distributing horizontal diaphragms. The transfer of lateral loads from the roof diaphragm to the walls is accomplished by nailing the sheathing to continuous wood nailers bolted to the tops of the walls. The transfer of lateral loads from the floor diaphragm to the walls is accomplished by dowels. The transfer of lateral loads from the walls to the foundation system is also accomplished by dowels. Positive wall anchorage between the walls and roof framing was detailed on the plans and observed during the site visits (see photos S005 and S006). This connection is not adequate for the expected loads and repair is proposed.



S006 - Braun Library: roof connection detail

Based on a review of construction documents and knowledge gained from the performance of similar buildings in the Northridge earthquake of January 17, 1994, it appears that the Braun Library possesses a characteristic that could lead to undesirable and possible life-threatening behavior during a significant earthquake. This poor seismic behavior is expected because of the quality of the existing positive wall anchorage at the roof level compromises the out-of-plane lateral load paths.

In general, walls support the roof, mezzanine, and floor diaphragms for gravity loads. These diaphragms, in turn, support the walls for out-of-plane (perpendicular to the wall) lateral loads. If the connections between the walls and diaphragms are lost, the walls pull away from the diaphragms and the roof, mezzanine and floor lose support. Once the roof, mezzanine and floor lose support, there is nothing to continue to support the wall against out-of-plane loads. The wall may also lose support. This mode of failure has been noted in nearly every earthquake for masonry buildings without adequate positive wall anchorage between the walls and horizontal diaphragms.

Section D/6 of the Glenn E. Cook drawings shows the typical positive wall anchorage at the roof. As drawn this anchorage has three load path deficiencies that limit its capacity:

- Reliance on the 1/8-inch plate to transfer loads from the wall to the roof truss by compression.
- Reliance on (2) 5/8-inch diameter machine bolts to transfer loads from the plate to the bottom chord of the typical roof truss.
- Reliance on the truss bottom chord, panel point connections, and web members to transfer loads from the truss to the plywood diaphragm. *Photographs S005 and S006* show the as-built deficiencies of the positive wall anchorage along the south wall observed during the site visits.

## **OPTION A - RECOMMENDATIONS**

### **Museum Building**

Repair all concrete wall cracks by epoxy injection, particularly cracks identified by Damage Survey Report 32839 at the existing elevator and Caracol Tower.

Patch all concrete wall spalls with hand-applied repair mortar, particularly damage identified by Damage Survey Report 32839 at the existing elevator and Caracol Tower.

Install new structural steel framing with expansion bolts at proposed openings in walls and floors, particularly the new door in the east wall between the new Elevator Vestibule and Poole Wing Receiving (EL. + 582, Level 1).

Underpin the existing north wall of the Museum Store and the existing columns of the Upper Entrance Vestibule prior to excavation for the Janitor/Elevator Machine/Elevator/Elevator Vestibule. Install new east-west reinforced masonry retaining wall with reinforced concrete footing.

Install new reinforced concrete slab on grade.

Install Loading/Upper Entrance Vestibule gravity force resisting system (EL. + 584). This system shall be a reinforced normal weight concrete topping slab for a house-keeping surface over a metal deck with reinforced light-weight concrete topping and structural steel beams, and reinforced concrete and masonry bearing walls. The lateral force resisting system shall be the existing west wall of the Poole Wing and new reinforced masonry shear walls.

### **Poole Wing**

Repair all concrete wall cracks by epoxy injection particularly cracks identified by Damage Survey Report 32839 at the existing exterior face of the west wall. Patch all concrete wall spalls with hand-applied repair mortar particularly damage identified by Damage Survey Report 32839 at the existing exterior face of the west wall.

Install new structural steel framing at proposed openings in walls and floors with expansion bolts particularly the new door in the west wall between the new Elevator Vestibule and Receiving (EL. + 582).

**Caracol Tower**

Repair all concrete wall cracks by epoxy injection particularly cracks identified by Damage Survey Report 32839 at the interface between the Caracol Tower and the Main Museum Building roof. Patch all concrete wall spalls with hand-applied repair mortar particularly damage identified by Damage Survey Report 32839 at the interface between the Caracol Tower and the Main Museum Building roof. Repair all roof slab cracks and roof beam seat spalls identified by Damage Survey Report 32839.

Install new structural steel framing at proposed openings in walls and floors with expansion bolts.

Based on a review of the Damage Survey Report and knowledge gained from the performance of similar buildings in the Northridge earthquake of January 17, 1994, it appears that the Caracol Tower possesses a characteristic that could lead to undesirable and possible life-threatening behavior during a significant earthquake. This poor seismic behavior is expected because the openings in the east and south walls reduce the length of available shear wall and compromises the in-of-plane lateral load paths (*see photos S002, S003, and S004*).

Install fiber wrap to the east wall window jambs between EL. + 577 and EL. + 652 and to the south wall window jambs between EL. + 609 and EL. + 652. In addition, Shotcrete will be applied to the interior of the existing east wall between the foundation and the floor slab at EL. + 577.

**Torrance Tower**

Remove plaster and repair all concrete wall cracks by epoxy injection and patch all concrete wall spalls with hand-applied repair mortar particularly damage identified by Damage Survey Report 32839.

Install new structural steel framing at proposed openings in walls and floors with expansion bolts. Install fiber wrap to the east wall window jambs.

**Braun Library**

Reinforce existing and/or install new positive wall anchorage at the roof that is capable of transferring compression and tension loads through the bottom chord of the roof trusses to the plywood diaphragm.

Install new structural steel framing at proposed openings in floor with expansion bolts particularly the new Community Gallery/Foyer (EL. + 611.5).

Remove the existing slab on grade as required for new south wall shotcrete, the new elevator pit and the new stair. Install new reinforced shotcrete walls, jambs and headers at the existing twelve-inch masonry south wall for the new Vending Machines, Reading/Education, and Foyer openings (EL. + 594).

Install new reinforced masonry bearing walls with reinforced concrete footings north and south of the new elevator floor opening and north and west of the new stair floor opening to support the existing pre-cast double-tees. Install

new reinforced shotcrete wall or structural steel horizontal strong back at the existing twelve-inch masonry east wall for the new stair opening. Remove existing double-tees for openings.

Install new reinforced shotcrete walls, jambs and headers at the existing eight-inch masonry north and south walls for the new Community Gallery/Foyer openings (EL. + 611.5).

## **Site / New Construction**

### *Driveways*

Expanding the width of the existing Truck Dock driveway must be coordinated with the finish grade elevations for the Truck Maneuvering Platform (EL. + 581), Patio (EL. + 593) and Loading (EL. + 594). The existing reinforced concrete planter wall at the northwest corner of the Torrance Tower must be removed. This existing wall will be replaced with a new constant-height east-west reinforced masonry retaining wall with reinforced concrete footing along the north side of the Truck Maneuvering Platform. In addition, a new variable-height north-south reinforced masonry retaining wall with reinforced concrete footing will be built along the west side of the driveway. The driveway up to the southwest corner of the Library may be asphalt. The driveway between the southwest corner of the Library, Truck Maneuvering Platform, and Patio shall be reinforced concrete.

### *South Entrance Terrace*

Repair cracks by epoxy injection. Finish wall surface with mortar patch to blend with existing conditions. Otherwise, remove and replace existing concrete in sections between existing control joints or new saw cut joints. For areas of extensive cracking or cracks with vertical offsets greater than 1/8-inch remove and replace existing concrete in sections between existing control joints or new saw cut joints.

### *Truck Maneuvering Platform*

Construct new Truck Maneuvering Platform matching driveway finish grade elevation (EL. + 581). Install new structural steel angle ledger to the west wall of the Torrance Tower with expansion bolts. Install new reinforced concrete foundations at the west and south sides of the Platform. The Platform gravity force resisting system shall be a reinforced normal weight concrete topping slab for a driving surface over a metal deck with reinforced light-weight concrete topping and structural steel beams, girders and columns. The Platform lateral force resisting system shall be the existing west wall of the Torrance Tower, the new reinforced masonry retaining wall at the Truck Dock driveway and new structural steel braced frames. Construct new reinforced concrete slab on grade west of Staff/Volunteer Lounges (EL. + 574).

### *Chiller Platform*

Construct new Chiller Platform at the northeast corner of the Poole Wing. Install new structural steel angle ledger to the east wall of the Poole wing with expansion bolts. Install new reinforced concrete foundations at the north, east,

and south sides of the Platform. The Platform gravity force resisting system shall be a reinforced normal weight concrete topping slab for a house-keeping surface over a metal deck with reinforced light-weight concrete topping and structural steel beams and reinforced concrete or masonry bearing walls. The Platform lateral force resisting system shall be the existing east wall of the Poole Wing and new reinforced masonry shear walls.

#### *Transformer Platform*

Construct new transformer platform at the southwest corner of the Torrance Tower. The platform will be a 12" minimum reinforced slab on grade located underneath or adjacent to the new Truck Maneuvering Platform.

### **OPTION B - RECOMMENDATIONS**

#### **Museum Building**

See Option A for concrete crack and spall repair and new structural steel framing at proposed openings scope of work.

Underpin the existing north wall of the Stone Room/Crawl Space prior to excavation for the Elevator Machine/Elevator. This underpinning will also reinforce the existing footings for the additional gravity loads from New Plaza framing. Install new east-west and north-south reinforced masonry retaining walls with reinforced concrete footings. Install new reinforced concrete slab on grade (EL. + 574).

Underpin existing columns of the Upper Entrance Vestibule prior to excavation for the Men's Toilet Room.

Enlarge existing Tunnel Elevator shaft.

Install new east-west and north-south reinforced masonry retaining and bearing walls with reinforced concrete footings. Install new reinforced concrete slabs on grade (EL. + 578 and EL. + 582).

Install Hydraulic Elevator gravity force resisting system (EL. + 582). This system shall be a metal deck with reinforced light-weight concrete topping and structural steel beams and reinforced concrete or masonry bearing walls. The lateral force resisting system shall be the existing east wall of the Torrance Tower, the existing north wall of the Museum Building, and new reinforced masonry shear walls.

#### *Central Plaza*

Install New Plaza/Upper Elevator Vestibule gravity force resisting system (EL. + 574). This system shall be a reinforced normal weight concrete topping slab for a house-keeping surface over a metal deck with reinforced light-weight concrete topping and structural steel beams, girders and columns, and reinforced concrete or masonry bearing walls. Additional steel beams will support the existing concrete columns of the Upper Entrance Vestibule. The lateral force

resisting system shall be the existing west wall of the Poole Wing, the existing north wall of the Main Museum Building, the existing east and north walls of the Torrance Tower, the existing south wall of the Library, and new reinforced masonry shear walls.

#### **Poole Wing**

See Option A for concrete crack and spall repair scope of work.

Install new structural steel framing at proposed openings in walls and floors with expansion bolts particularly the new door in the west wall between the new Men's Toilet and Education Workshop (EL. + 582).

#### **Caracol Tower**

See Option A for scope of work.

#### **Torrance Tower**

See Option A for concrete crack and spall repair scope of work.

Underpin the existing north wall of Torrance Tower prior to excavation for Truck Parking/Loading Dock to reinforce the existing footings for the additional gravity loads from New Plaza framing.

Install new structural steel framing at proposed openings in walls and floors with expansion bolts particularly the new doors in the east wall between the new Women's Staff Toilet Room and Elevator (EL. + 574) and between Exhibition Preparation and Hydraulic Elevator (EL. + 582).

#### **Braun Library**

See Option A for positive wall anchorage, new structural steel framing, new stair, and new Shotcrete scope of work.

There is no new elevator scope of work in Option B because it has been relocated to the New Plaza.

Underpin the entire existing south wall of the Braun Library prior to excavation for the Truck Parking/Loading Dock. This underpinning will also reinforce the existing footings for the additional gravity loads from the New Plaza framing.

#### **Site/New Construction**

##### *Driveways*

Expanding the width of the existing Museum Drive asphalt driveway can be handled with a minimum of new reinforced concrete retaining walls. This driveway can be expanded to proposed twenty-two feet wide by eliminating the existing asphalt sidewalk on the up slope side of the driveway. The expansion will not occur along the down slope side of the driveway.

Expanding the width of the existing Truck Dock driveway must be coordinated with the finish grade elevations for the Truck Parking (EL. + 578) and Truck Maneuvering Platform (EL. + 581). The existing reinforced concrete planter wall at the northwest corner of the Torrance Tower must be removed. This existing wall will be replaced with a new constant-height east-west reinforced masonry retaining wall with reinforced concrete footing along the north side of the truck maneuvering platform. In addition, a new variable-height north-south reinforced masonry retaining wall with reinforced concrete footing will be constructed along the west side of the driveway. The driveway up to the southwest corner of the Library may be asphalt. The driveway between the southwest corner of the Library, Truck Parking, and Truck Maneuvering Platform shall be reinforced concrete.

*South Entrance Terrace*

See Option A for scope of work.

*Truck Maneuvering Platform*

See Option A for scope of work.

*Transformer / Chiller Platform*

See Option A for scope of work.



# MECHANICAL AND PLUMBING SYSTEMS EVALUATION

## EXISTING CONDITIONS AND RECOMMENDATIONS

**CONSULTANT**     *The Sullivan Partnership, INC.*

**PRINCIPAL**     *Mark Alcalde, P.E.*

### INTENT AND SCOPE

The purpose of this evaluation is to determine the condition and adequacy of the mechanical, plumbing and fire suppression systems and make recommendations pertaining to upgrading systems to achieve museum standard climate control and correction of safety related deficiencies.

### METHODOLOGY AND LIMITATIONS

- A A visual examination of the interior, exterior and site to determine the present condition of the systems.
- B Review of available construction documents to determine the original design considerations.
- C Special attention given to life safety systems and building code compliance.
- D Limited photographic documentation of specified work items.

### ENVIRONMENTAL CONTROL TARGET CONDITIONS

The target environmental control conditions for exhibit halls and artifact storage are 70°F indoor temperature  $\pm$  2% and 50% relative humidity  $\pm$  5%. Areas which do not house artifacts such as offices demand less stringent conditions, however these spaces will have temperature and humidity control to act as buffer zones.

### APPLICABLE CODES

The mechanical and plumbing codes that were in effect at the time of installation govern these systems. Certain additions, alterations, or repairs may be made to the mechanical systems without requiring the existing systems to be brought up to code however, new work must meet present codes (Uniform Mechanical Code section 104.1.) AQMD standards apply to the boiler. Under AQMD Rule 1146.1, the boiler will need to be retrofitted or replaced prior to January 1, 2006 to meet low NOX requirements.

### FINDINGS

#### HVAC

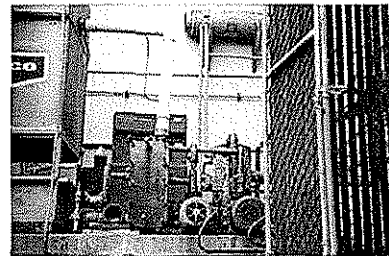
##### Main Museum Building

###### *Upper Level (Sprague and Plains Hall)*

These upper halls are air conditioned by a water source heat pump system. The heat pump units are located in very constricted cavities in the attics above the halls. This system is comprised of 5 water-source heat pumps, which supply cooling and heating to the spaces as needed. Access to the units in the attic is very difficult and does not meet present code, or the code in effect when this equipment was installed, in 1986. The heat pumps at seventeen years old are approaching their average expected service life of nineteen years. A two pipe circulated water system serves as a heat sink during cooling, and a heat source during heating for this equipment.

The central equipment serving this system is located outside on grade adjacent to the Lower Dungeon of the Caracol Tower, (See photo M001).and is comprised as follows:

- Heat rejection is provided by an Evapco cooling tower manufactured in 1986, which appears to be in poor condition.
- The boiler serving this system is a Teledyne Laars 500,000-btu/hr outdoor boiler manufactured in 1995.
- A heat exchanger manufactured by Alfa-Laval creates a closed loop piping system, thus separating the building loop piping from the main plant piping.
- Two pumps are used to circulate water for the system with an additional pump, designed to serve as back-up. It was noted on the day of site inspection the backup pump had been removed for servicing. (See photo M002).



M001 - Main building mechanical equipment south of Caracol Tower



M002 - Back-up pump removed for service

All of the above mentioned main equipment, with the exception of the boiler, appear to be in poor condition and are at the end of their expected service life. This boiler appears to be in fair condition. It will be in non-compliance with Air Quality Management District (AQMD) regulations on January 1, 2006.

The main piping for this system consists of copper condenser water lines routing exposed up the exterior of the south side of the Caracol Tower, then in through the Tower 6th level (See photos M003 and M004) and then runs across the attic of the central structure. There is a concern this piping may leak and, as it runs above exhibits could damage artifacts.



M003 - Piping from condenser; south face of Caracol Tower

#### **Entrance Hall**

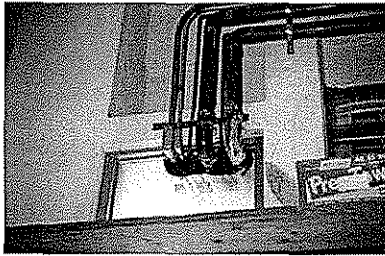
This area has neither heating, cooling nor ventilation.

#### **Level One**

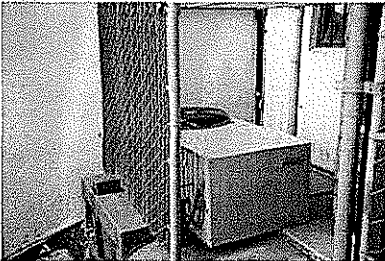
The Southwest Hall, Lower Entrance Hall and Museum Store are not air conditioned, heated or ventilated. The Offices are served by a York, 7-ton, split system heat pump located at this same level in the Torrance Tower (See photo M008). (This equipment is described under the Torrance Tower discussion). The outer Basement offices, which will become Operations/Security, do not have air conditioning and rely on operable windows and a small wall fan for ventilation. The small interior office immediately adjacent to the stair does not have air conditioning and has no means of ventilation. The stone room is an unfinished base-ment/crawl space and does not have air conditioning or ventilation.

#### **Caracol Tower**

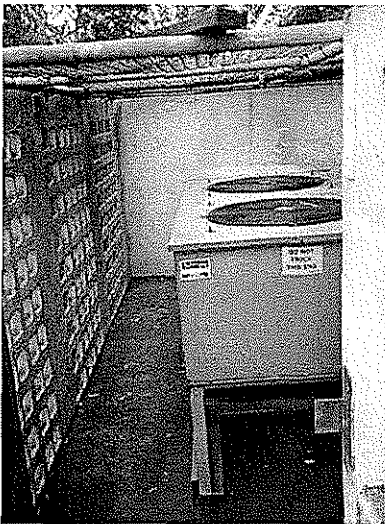
Generally this structure is neither heated or cooled and lacks proper ventilation. The two lowest levels, Lower & Upper Dungeons, were noticeably musty and completely lack ventilation. For the Upper Dungeon, temperature and humidity data was continuously logged for four months from April to August 2003. The data indicates fairly stable temperatures ranging from 68° in April to 72° in August, however humidity ranged widely from 52% RH to 75%. The Time Weighted Preservation Index (TWPI) for this four-month period is indicated at twenty eight years. This TWPI Index, developed in 1995, represents the



**M004** - Condenser piping enters Caracol Tower through window



**M005** - Condenser at Poole Wing



**M006** - Condensing unit serving Braun Library

approximate length of time in years that vulnerable organic materials would last based on the relative humidity (RH) and temperature of a storage space measured over a certain period of time. The base line for determining this time is how many years it would take for an object to deteriorate to the same extent it would if it were stored at moderate room temperature and humidity for fifty years. Typical damage would be noticeable discoloration or embrittlement of material. The TWPI reflects the cumulative observation data for a week's, a month's, or several years of temperature and RH conditions. The longer the measurement period the more accurate the representation.

The third level, formerly a boiler room, is used as a maintenance shop and it was noted during the field investigation that the doors are left open to the outside while the staff is working in order to introduce adequate ventilation to the space. The 4th level has a small window air conditioning unit. The 5th level has a propeller type wall exhaust fan which was added to draw air from the connecting, air-conditioned hall. This fan is very noisy. The 6th and seventh levels rely on operable windows for ventilation.

#### *Torrance Tower*

The main hall is air conditioned by a 10 ton split system air conditioning unit manufactured by York estimated to be approximately twenty years old, well beyond its expected useful service life of fifteen years. The uppermost level is not directly air conditioned, however it benefits from return air being transferred through this space to the fan coil unit located on this level. Level 1 of this tower, which presently houses the Lunch Room and Offices, is air conditioned by a 7-ton York split system air conditioning unit which is the same vintage as the unit serving the upper hall mentioned above. This air conditioning system also serves the adjacent offices behind the shop and serves the collection storage area, "The Cage," located on the floor below. The offices and server room located on the lowest level do not have air conditioning or ventilation, relying on spillage air from "The Cage" for some degree of comfort control and ventilation.

Both of the condensing units serving these towers are located on grade in a screened yard just west of the Torrance Tower. Refrigerant lines route under a walkway and exposed up the side of the building.

#### **Poole Wing**

Air conditioning for the upper level of this wing is provided by a split system, which is comprised of a nominal 4-ton condensing unit located on the East side of the wing (See photo M005) and an indoor fan coil unit located in the attic over the vestibule leading to the exhibit hall. Exposed ducts distribute air to the space. This equipment is approximately nineteen years old and has an expected service life of fifteen years. (See photo M007)

The lower level of this wing is served by a 4 ton split system similar to the upper level air conditioning. The condensing unit for this system is also located on the East side of the wing and the fan coil unit is installed within a closet

next to the basket storage. A duct mounted electric humidifier serves this system. A dust collection blower system located in the shed east of this building serves intake outlets serving the workbench in the workroom. This dust collection system appears to be in good condition. (See photos M005 and M007)

### Braun Library

The library is air conditioned by a 20 ton split air conditioning system comprised of a Carrier air cooled outdoor condensing unit (See photo M006) and a Trane air handling unit located in the attic. The air handling system has a gas-fired duct furnace providing re-heat and a duct humidifier by Auto-Flo. The major equipment appears to be in good condition. The condensing unit is approximately ten years old, not original and the air handling unit is approximately twenty five years old. There was some corrosion noted on the bottom of the duct furnace. (See photo M010). This could be from condensate blowing off the cooling coil, a result of an undersized coil, or as we were informed there was an ongoing roof leaking problem near this equipment which could account for the rusting. The air handling unit is very noisy at the third level and the unit essentially serves three levels using one zone, with the exception of a small reheat coil in a branch duct serving a small area of the Mezzanine. The ducts in the Braun Library should be insulated. According to data logs for the four-month period from April to August 2003, the temperature at the back wall generally ranged from 65° to 76° and humidity ranged from 40% to 60% RH. Data taken at the upper levels was similar however humidity levels were higher. The Time Weighted Preservation Index (TWPI) was indicated to be approximately forty years based on temperature and humidity readings logged during the four months from April to August 2003.

### Plumbing Systems

Domestic water piping observed is galvanized steel and corrosion was noticed at some areas. A 2" domestic service and a 4" irrigation service is fed from a meter located off Crane Blvd. to the North of the Museum. Adequate pressure in excess of 80 psi is available according to the Department of Water and Power test data. An electric water heater, which is not functioning, is located at the storage room in the Poole Wing. Sewer piping noticed is cast iron. We were informed that there have been problems with the site sewer lines, requiring several repairs. Gas is supplied by The Gas Company to a meter located at the west side of the Museum where gas is then distributed to the Museum and the Library. A gas earthquake shutoff valve is installed. (See photos P001 and P002)

### Fire Protection Piping

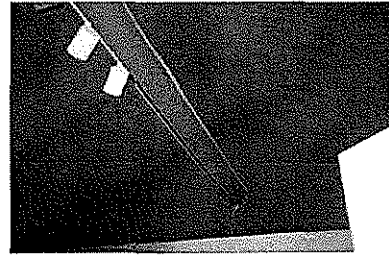
Presently the building is not sprinklered. An abandoned standpipe system connected to the domestic water system serves 1" hose connections.

## RECOMMENDATIONS - OPTION A

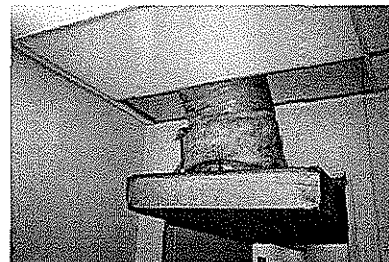
### HVAC

#### General

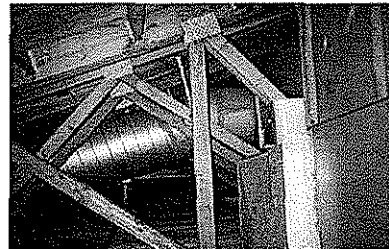
Generally the existing air conditioning systems are not recommended for reuse for the renovated building. The majority of this equipment is beyond



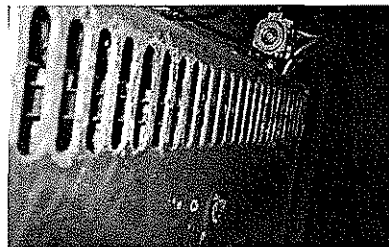
M007 - Exposed ducts in upper Poole Wing



M008 - Duct from Torrance Tower to museum level one



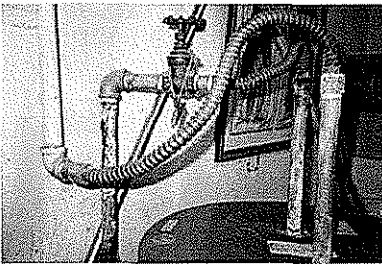
M009 - Uninsulated duct work in Braun Library



M010 - Duct furnace in Braun Library



PO01 - Corroded galvanized steel water pipe



PO02 - Galvanized steel water pipe; signs of corrosion

or has reached its useful service life. Aside from this, there are other issues such as difficult access to equipment for maintenance, as well as the inability of this type of equipment to achieve the close humidity/temperature control and the higher filtration standards appropriate for museums. A four-pipe, chilled water/hot water system is the best from the standpoint of control, stability and quality of equipment. The desired indoor conditions are  $70^{\circ}\text{ F} \pm 2^{\circ}$  and  $50\%$  relative humidity  $\pm 5\%$ . For this project the most difficult challenge, from an air conditioning standpoint, is routing ductwork, except in the Braun Library, which has adequate attic space. This is a common difficulty encountered in retrofitting very old buildings, initially designed using small steam heaters, which required only sufficient building cavity to run small steam pipes. A good strategy for solving this problem is to break the HVAC system into multiple smaller systems in an effort to minimize the size of ductwork, and reduce the occurrences where ducts interfere with main supporting structural members. In some cases the ducts will need to run exposed, as was the solution when air conditioning was added at the Poole Wing.

#### OPTION A

A central chilled water plant located to the east of the Poole building and new boiler in the Caracol Tower Basement are recommended to serve the proposed chilled and hot water pipe loops. These will route to each of the fan coil units distributed throughout the museum. The chiller is roughly estimated at 90 tons and the boiler at 1,000,000 BTU/h. Piping would run below grade entering the Museum at the East end then route through the crawl space, thereby minimizing water piping running in the Museum above artifacts. In some cases the old abandoned steam piping can be removed with the new lines routed in the same space.

The recommended filtration system is a bank comprised of a particulate pre-filter, a "gas-phase" carbon filter and a high efficiency final filter to capture any carbon dust or fine particles. Advances in filtration technology have developed highly efficient, long life filters with very low pressure drops, thus saving fan energy costs.

De-humidification will be accomplished by sub-cooling the air and then reheating the air in each fan coil unit. Humidification would be controlled by steam generator electric or gas-fired humidifiers with steam piped to duct vapor distributors.

We recommend that, where possible, vapor barriers and insulation should be added at the walls, dropped ceilings and under floors over unconditioned spaces, in order to help stabilize temperature and humidity levels and to conserve energy. Vapor barriers are not necessary at roofs without attics, as the roof membrane is a good vapor barrier. Windows should be caulked & weather-stripped and ideally a vestibule or turnstiles should be created at main public entrances to create an air lock zone from the exterior.

A central digital computer based control system is recommended to monitor and control the air conditioning systems.

### *Main Museum Building*

The water source heat pump system serving Sprauge Hall and Plains Hall is approximately seventeen years old. The heat pump units are nearing the end of their service life of nineteen years and, being located in constricted attics, are very difficult to maintain. The access path does not comply with present day codes, or the code in 1986 when this equipment was installed. The cooling tower and pumps serving this system are in poor condition and are in need of replacement. There is no sewer drain installed at the cooling tower area and this prohibits the use of chemicals for water treatment. The boiler is in fair condition.

RECOMMENDATION: Remove this system and serve these areas from the chilled and hot water system described earlier in this report. Fan coil units would be located where they can readily be maintained and oval ducts would be run exposed in the Halls, or if possible, concealed in the wall cavities above the cases. The determination of the location will require more in-depth investigation of the wall conditions.

### *Entrance Hall*

The Entrance Hall presently does not have air conditioning or heating.

RECOMMENDATION: Provide a fan coil unit served by the main chilled & hot water plant in the attic space above the Poole Wing stair. Ductwork would be run in the attic.

### *Upper Southwest Hall*

This hall presently does not have air conditioning or heating.

RECOMMENDATION: Provide a fan coil unit in a closet served by the main chilled & hot water plant. Ductwork would be run concealed above a new ceiling.

### *Museum Store*

The store presently does not have air conditioning or heating.

RECOMMENDATION: Provide a fan coil unit in a closet or suspended above the hall ceiling in the office area. Ductwork would be run above dropped ceilings.

### *Offices*

This area is presently air conditioned by the unit serving adjacent offices and staff area in Level One of Torrance Tower. This equipment is beyond its useful service life.

RECOMMENDATION: This area would be served from a fan coil unit in a closet or suspended in the hallway. Ducts would run above dropped ceilings.

### *Caracol Tower*

This structure does not have heating or air conditioning except for a small window unit on one level. Ventilation is substandard.

RECOMMENDATION: Provide fan coil units and ventilation as described in the following sections and run chilled water and hot water risers in a new vertical pipe chase to serve fan coil units.

*Lower Dungeon and Dungeon*

Presently these two levels are neither heated nor cooled and lack proper ventilation.

RECOMMENDATION: Provide a fan coil unit to serve these two floors which would be located on the Dungeon Level, in a closet. Presently there is a small floor opening in the concrete slab that would need to be slightly enlarged to accommodate two ducts dropping to the Lower Dungeon. Fresh air would be taken through new louvers in existing openings in the exterior wall.

*Third Level (Previously Boiler Room)*

This space is used as a maintenance shop and is under ventilated.

RECOMMENDATION: Provide a ventilation system utilizing existing exterior wall opening. A dust collection system should be considered. A small heater served by the boiler would be provided.

*Fourth Tower Level (Southwest Hall)*

Presently this room does not have adequate cooling or heating.

RECOMMENDATION: Remove the existing window air conditioning unit, seal the wall openings and provide a fan coil unit located on the floor below (boiler room) with new duct risers routed up through the floor. New openings in the floor will be required to run ducts.

*Fifth Tower Level (Northwest Coast Hall)*

This room does not have air conditioning or heating.

RECOMMENDATION: Remove the existing wall fan and seal the wall opening. A new fan coil unit installed on the floor above would serve the space. New openings in the concrete floor above would be required to allow ductwork to pass.

*Sixth Tower Level*

This space is not air-conditioned.

RECOMMENDATION: A fan coil unit either suspended or mounted vertical in a closet would be provided for this space. Outside air could be obtained from existing exterior window openings, by converting a portion of the glass to louvers.

*Seventh Tower Level*

This area is neither heated nor cooled.

RECOMMENDATION: Add a fan coil unit for this space. The unit would be located in a closet within the space.

#### *Torrance Tower*

The split air conditioning system serving what is presently the Textile Storage area is beyond its useful service life and should be removed.

RECOMMENDATION: A new chilled and hot water fan coil unit would be located at the upper level. Outside air would be obtained from the roof. Vertical chilled & hot water risers will be run in existing walls.

#### *Restrooms, Conference and Marketing*

The existing split system serving this zone is beyond its useful service life.

RECOMMENDATION: The existing split system should be removed and replaced with a new fan coil unit. This unit would be suspended above the restrooms with fresh air ducts from the roof.

#### *Lowest Torrance Level*

This area is presently air conditioned by the unit serving the offices and staff area in Level One of Torrance Tower, above. The equipment is beyond its useful service life.

RECOMMENDATION: Provide a fan coil unit located in the basement (presently the Stone Room) to serve the Lounges, Copy and Operating/Security.

#### **Poole Wing**

##### *Upper Level*

This area is presently served by a split system which is beyond its useful service life. The fan coil unit is located in a spacious attic above the stair/vestibule.

RECOMMENDATION: Replace the fan coil unit with a new chilled/hot water unit and reconnect to the existing ductwork. Fresh air make up could be added by installing a small exterior louver on the east wall above the stair. If the stairway is determined to be a fire rated exitway, then the ceiling of this space will need to be upgraded to 2-hour construction to allow for a mechanical space above. Access to this equipment, presently from the ceiling of a janitor's closet, will need to be upgraded to a fire rated hatch.

##### *Lower Level*

The lower level of the Poole Wing is presently served by a split air conditioning system with the indoor fan coil unit located in a closet. This system as described for the upper hall is beyond its service life. The duct collection system serving the work area is in good condition and could be re-used if desired.

RECOMMENDATION: Replace this split system with a new vertical fan coil unit served from the main central plant. This unit would be in a closet within the space or, in order to conserve floor space, located immediately outside with ducts penetrating the wall.

**Braun Library Building**

The existing air handler is at the end of its service life and is very noisy. The existing condensing unit is in good condition and should have another five to ten years of service life.

**RECOMMENDATION:** Replace the air handler with a new unit and re-use the existing condensing unit. The existing ductwork is in good condition and should be re-used to the extent possible. Much of the ductwork needs to be insulated.

***Plumbing Systems***

Water piping in all Museum buildings is galvanized steel. Corrosion was noted.

**RECOMMENDATION:** Re-pipe systems using copper piping.

Waste piping within the building is cast iron and appears to be original from the time of construction.

**RECOMMENDATION:** Sections of the pipe should be removed and inspected for internal corrosion and wall thickness, and a determination made for possible replacement. Site waste piping has reported problems and should be replaced with new PVC waste piping. Manholes should be provided.

***Fire Protection Piping***

As recommended by Schirmer Engineering, code consultants for this study, fire sprinklers & standpipes are not required by code but are extremely desirable for added safety and to mitigate the requirement for more difficult building changes to achieve code compliance. A pre-action (dry type) fire sprinkler system is recommended for areas housing artifacts such as exhibit halls and archive storage. A Los Angeles approved system such as a single interlock Fire Cycle Pre-action System minimizes the potential for accidental water discharge. This system will automatically shut off within a short prescribed time after a fire is extinguished, thus reducing water damage to artifacts and the building. Areas not housing artifacts will be sprinklered by conventional wet systems.

A class I standpipe serving 2" hose connections would be provided. The fire protection system would also include fire department connections at the exterior of the building allowing the fire department to increase volume and pressure to the system.

A new 4" service will need to be brought in to serve the fire sprinkler and standpipe system. This service will be brought from the City Main at Crane Boulevard where pressures are adequate. The water pressure available on Marmion Way is not high enough and would require pumps to provide adequate pressure.

**OPTION B - RECOMMENDATIONS**

Work is in addition to that indicated for Option A.

### *Main System*

The chilled water plant will increase in capacity from roughly 90 tons to 110 tons. The boiler capacity will increase from roughly 1,000,000 BTU/h to 1,300,000 BTU/h.

### *Loading Dock / Service / New Spaces Below Grade*

Ventilation will be required at the loading dock area. This will need to discharge 10 feet above grade or from operable windows.

**RECOMMENDATION:** Provide a suspended fan in the loading dock and integrate a duct shaft as part of the elevator shaft to run discharge ductwork.

The new Artifact Storage, Exhibit Preparation, Receiving and Restrooms would be air conditioned using new fan coil units served by the chilled and hot water systems. Fresh air would need to be ducts; potentially a duct shaft could be routed up through the Library Building. Exhaust from the restrooms could be routed in a new shaft integrated with the new elevator at the Main Building.

### *Kitchen*

Exhaust will be necessary. Assuming that cooking on an open range is performed, a grease type exhaust system will be provided. This would be comprised of a welded heavy gauge hood and duct served by a fan at the roof, the discharge of which would be 24" above adjacent parts of the building within 10 feet. Makeup air for the kitchen could be obtained near grade and be evaporatively cooled. A duct shaft and roof area could be integrated with the new elevator shaft at the Library. Access to this roof would be required.

### *Other*

Other areas within the existing Museum while differing in floor layout under this option would, from a mechanical standpoint, be treated similarly to Option A.

## ELECTRICAL SYSTEMS EVALUATION

EXISTING CONDITIONS AND RECOMMENDATIONS

**CONSULTANT** *Nikolakopoulos & Associates*

**PRINCIPAL** *Matthias Nikolakopoulos, P. E.*

### INTENT AND SCOPE

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 museum building and infrastructure follow. All systems have been analyzed/proposed with the goal of meeting current museum performance standards.

### 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 to a lesser extent, available electrical drawings, utility statements, and past electrical reports performed by others.

Access was afforded by Staff to all pertinent areas of the facility, within which further investigations were conducted and documented, e.g., electrical panels opened, dead fronts removed, and crawl spaces explored to gain as complete and detailed information as possible. 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* • 2002  
*California Electrical Code* • 2001  
*National Electrical Code* • 1999  
*California Building Code* • 2001  
*Uniform Building Code* • 1997  
*California Energy Commission Standards* • 2001

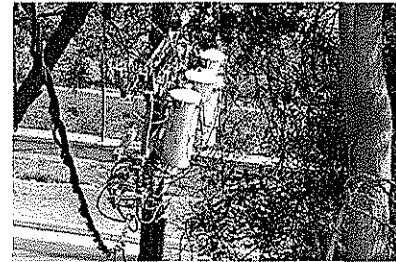
Attempts at compliance with the aforementioned codes will most likely trigger total replacement of the electrical system. Furthermore, renovation of any major portion of the lighting system will also trigger compliance of the whole building lighting and control system with current Title-24 energy standards.

## FINDINGS

### Electrical Service and Distribution

#### *Caracol Tower Three (Exterior)*

The building is served from an overhead line coming from a D.W.P. utility pole located on Marmion Way. (See photo E001) The building service consists of two feeds:



E001 - DWP utility pole on Marmion Way

- An 800 amp feed at 240 volt, 3 $\phi$ -3w delta service located outside the Caracol Tower (D.W.P. meter #PMS222 - 3957), and a 400 amp feed at 120/240 volt, 1 $\phi$ -3w service located inside the Boiler Room (D.W.P. meter #M19 - 15382).
- The 800 amp 3-phase service feeds a NEMA-3r overhead pull section, meter, and distribution sections located outside just east of the Caracol Tower on the ground level. Though still functional, it is filled to capacity. It feeds the elevator, subpanels, a large transformer, and a 400-amp subfeed to another switchboard located adjacent. This subfeed board is an old service board converted to distribution, and feeds a 225 amp feeder to the southwest, and a 300 amp feeder for the Library Building.

#### *Caracol Tower Three (Boiler Room)*

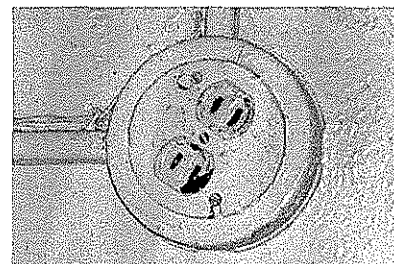
The 800 amp single-phase service feeds an overhead pull section, meter, and distribution sections located on the south wall of the Boiler Room on the 3rd level of the Caracol Tower. This board feeds subpanels for the Poole Wing addition, and for the exhibit areas. It is a very old switch and fuse board, which has no more space available, and contains a glass-fused integral branch circuit panel. It does not meet current codes, as it can no longer interrupt the available fault current. Also, some of the switchboard feeds are jumpered off the bus (thus offering no overcurrent protection), and one of its disconnect switches has a set of mismatched fuses. All of these are safety concerns. (See photo E002)



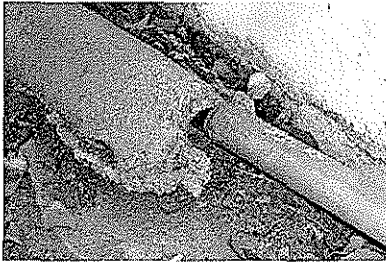
E002 - Boiler room fuse panel

### Power Systems and Equipment

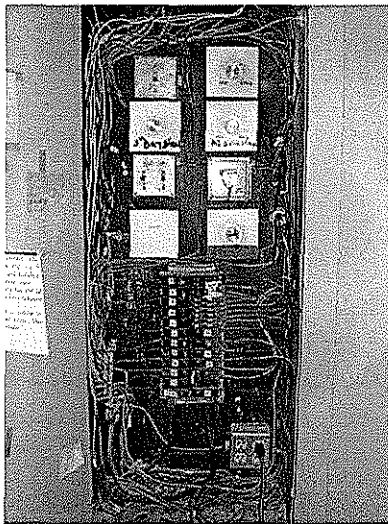
There are a dozen branch circuit panels located throughout the building. They are very small, ranging in size from four to twenty-four circuits, and most are full, with little or no breaker space available. Furthermore, they are very crowded, and many have circuits that are still feeding cloth-covered wiring. This insulation is old and very brittle, and tends to disintegrate when disturbed, leaving exposed conductors. (See photo E004) 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.



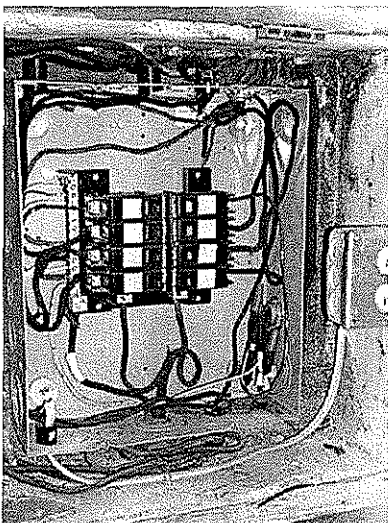
E003 - Ungrounded outlet, office area



**E004** - Exterior power conduit exposed to moisture



**E005** - Sprague Hall panel showing multiple code violations



**E007** - Torrance Tower panel showing multiple code violations

#### *Sprague Hall*

There is a 24-circuit panel mounted near the entry; it has no breaker space available and is fed by old, cloth-covered wiring. Five of its circuit breakers are the residential-grade, split type; further, it has several dimmers, switches and a receptacle mounted within the dead front. This is not permitted by Code. The area smoke detectors are hanging from the ceiling and may be disconnected. (See photos E005)

#### *Torrance Tower*

There is one small eight-circuit panel located adjacent to the entry vestibule, with no breaker space available and old, exposed wiring within. In the attic, there are HVAC unit disconnects located in inaccessible crawl spaces, with unsupported j-boxes and exposed wiring. On Level Four there is also exposed wiring, and a receptacle outlet providing permanent power for an exhaust fan and light fixture. (See photos E007, E008, and E009)

#### *Office Areas*

In the upper office area, there is one small eight-circuit panel located adjacent to the entryway, with no breaker space available and very crowded wiring within. In the lower office areas, there is a twenty-one-circuit panel located adjacent to the northwest entry, with one breaker space available. Though newer, it is using residential-grade, split circuit breakers, with a very crowded wiring compartment. There is also exposed wiring in the hallway, and one office has a receptacle outlet with burn marks on it. (See photos E010, E011, E012, and E013)

#### *Caracol Tower*

There is a sixteen-circuit panel located on Level Four which is the original open blade switch and fuse type with exposed connections and a marble dead front. There is another similar panel located on Level Three as well as a newer twelve-circuit panel mounted adjacent to it with one breaker space. In the Boiler Room, there is a small four-circuit glass fuse panel that is fully located within the switchboard; another, newer, twelve-circuit panel is mounted adjacent to it with four breaker spaces available. The 150K VA transformer in the corner is not secured to the floor. Conduit runs unsupported through center of Caracoal Tower. (See photos E014 and E015)

#### *Plains Hall*

There is a twenty-eight-circuit panel located in the northeast corner. Though it has six spaces available, it is the original open blade switch and fuse type-with exposed connections and a marble dead front. Since this is no longer permitted by code, it cannot have anything added to it. (See Photo E016)

#### *Upper Poole Vestibule*

There is a thirty-circuit panel located on the northwest wall. It has eleven spaces available, but it also has loose and exposed wiring inside.

### Southwest Hall

There is a twenty four circuit panel located in the northeast corner. The panel has four spaces available, but was installed within the larger cavity originally for an older panel. As such, there is line voltage wiring without conduit within this cavity, including wiring for a switch box. This is not permitted by code. (See Photo E017 and E018)

### Braun Library

The Library is served by a 300 amp 240 volt, 3 $\phi$ -3w board (fed from the Caracol Tower). It feeds HVAC equipment, and one 125 amp panel, via a 45K VA transformer.

## Lighting, Egress and Control Systems

### General

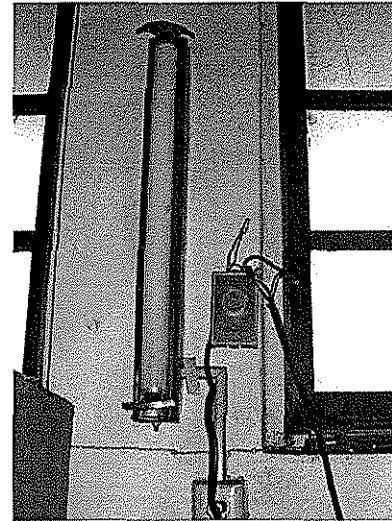
The lighting system in general is old, inconsistent, and not energy efficient. It is not in compliance with Title-24 energy standards with regards to energy-usage and lighting control. While some areas are adequately illuminated, many are not. According to maintenance personnel, there are several lights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

The biggest area of concern, however, is in the lack of adequate lighting over stairways. There are many stairways that have very inadequate lighting and no emergency lighting. There are also several areas that require illuminated exit signs – but have none. In areas that do have emergency lighting, it is generally provided by a single “bug eye” unit, insufficient to fully illuminate the space (given the full height displays, etc.) or meet the Title-24 requirement of one foot candle minimum. (See Photo E019)

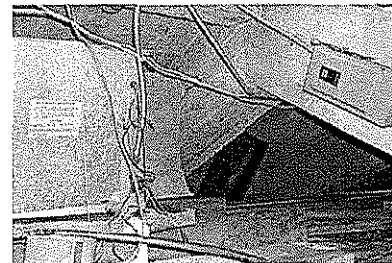
The exhibit areas are illuminated with various incandescent, LV halogen, and fluorescent fixtures. The fluorescent use a mixed combination of warm and cool temperature lamps, leading to different colors on the walls and displays. Some display cases are lit with old technology T-5 fixtures, some with T-12 lamps and fixture types range from bare lamp, to screened, to fully indirect, to luminous ceiling. Other display cases are lit with non-UV-filtered, bare, MR-16 lamps. (See photos E020, E021, and E022)

The bathrooms are illuminated with dated, energy-inefficient 2' x 4' fluorescent fixtures. The retail store has fluorescent display fixtures that are permanently wired to a receptacle. (See Photo E023)

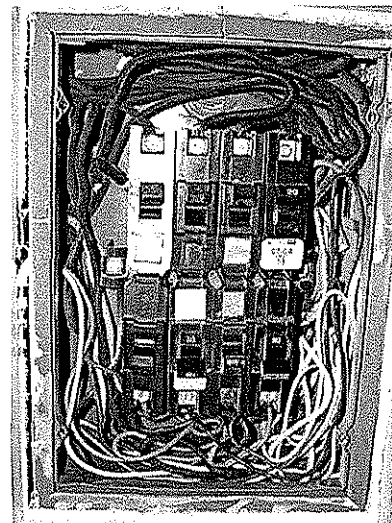
None of the areas throughout the museum have the requisite double-switching, and several areas are switched at the panels by non-switching duty circuit breakers. Not only is this inconvenient, it can be a safety concern. Finally, there is no central, intelligent lighting control system to facilitate ingress and egress, and building functionality; nor any method to meet the Title-24 requirement of automatic lighting shutoff on each floor. (See Photo E024)



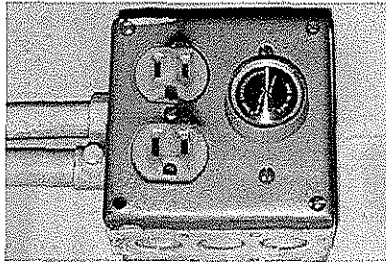
E008 - Torrance Tower, illegal wiring for exhaust fan



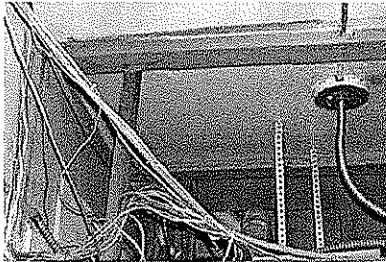
E009 - Main Building attic, illegal wiring conditions



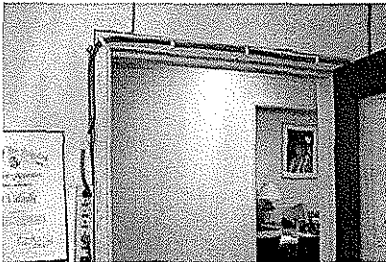
E010 - Administration area panel showing multiple code violations



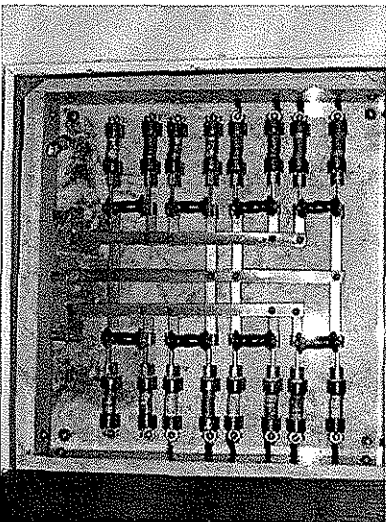
**E011** - Administration area; receptacle showing burn marks



**E012** - Administration area; exposed, illegal wiring condition



**E013** - Administration area; extension cord used for permanent wiring



**E014** - Caracol Tower marble panel showing multiple code violations

### *Main Museum Building Sprague Hall*

Illumination in this room is accomplished by indirect fluorescent cove lighting. The lamps are not consistent in color temperature – ranging from warm to cool; thus the walls also vary in color. The display cases are illuminated with individual fluorescent fixtures, wired with exposed Romex conductors. (See photos E025 and E026)

### *Torrance Tower*

There is no light in the entrance vestibule. The stairway has no emergency light and no illuminated exit signs. The upper mezzanine has insufficient light for the tasks at hand.

### *Office Areas*

Most of the offices are over lit – especially with respect to Title-24 standards, using 2' x 4' fluorescent fixtures with (4) non-energy saving standard T-12 lamps. Some are even lit with bare incandescent lamps and/or fixtures; none have the requisite double-switching dictated by Title-24. (See photos E026 and E027)

### *Caracol Tower*

In the Caracol Tower, the upper levels are typically illuminated with historic incandescent fixtures only, with no light (and no emergency light) over the mezzanine stairways at many of the levels. The core stairway is illuminated solely by historic, bare lamp, incandescent fixtures, with no emergency light and no exit signs. There are existing fixtures to illuminate the exterior, but all are in a state of disrepair. (See photos E028, E029, and E030)

## **Option A - RECOMMENDATIONS**

### **Electrical Service**

The existing service boards are in poor condition, and are inadequate for the necessary upgrades to the building (under any scheme of proposed upgrade or expansion). As they are no longer Code-compliant, the switchboards and panels cannot be added to with additional circuitry. 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, including serving the proposed new 224KW HVAC load. The existing two service boards will be changed out to a new single 2000 amp switchboard, located in an accessible location for meter reading in the lower Office level area – immediately adjacent to the Stone Room.

This service board will be fed from a new pad-mounted, D.W.P. transformer located outdoors, just south of the Torrance Tower, below the new cantilevered service truck platform. The transformer will be served from the existing D.W.P. utility pole located four pole spans south of the current pole on Marmion Way, via a 4" riser and primary conduit paralleling up the right hand side of the driveway. The service will be a 120/208 volt, 3Ø-4w delta-wye system, which is more economical to wire and operate than the current system. The number of D.W.P. meters will be reduced to one.

## Electrical Distribution

Distribution would occur from this 2000 amp 120/208 volt, 3 $\phi$ -4w service board in the lower Office area, and go up to the upper Office areas, new bathrooms and elevator machine room, Sprague Hall and Torrance Tower. The Stone Room and adjacent crawl spaces will provide feeder access for a secondary distribution board in the Caracol Tower Boiler Room.

This new 800 amp 120/208 volt, 3 $\phi$ -4w switchboard would replace the existing 400 amp single phase board in the Boiler Room, and pick up its existing load to remain. The existing 800 amp and 400 amp three phase boards located outside Caracol Tower should be removed, and any feeders to remain extended into the Boiler Room, to be served by the new 800 amp switchboard. Together, these two new boards will provide plenty of distribution on both ends of the building.

## Power Systems and Equipment

As viewed, the panels generally are in poor shape, inadequate, and/or not Code-compliant. Many of the conductors have failing cloth insulation. Due to age, the conduits feeding those existing panels are most likely also suspect, especially those concealed underground or in concrete. 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, starting in areas to replace existing panels, but ultimately 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.

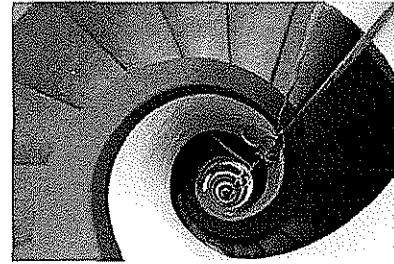
Feeders will be provided for new unit equipment, such as the elevator, as well as sufficient new panel capacity for reworked office areas (on both levels), new bathrooms, and the Poole Wing. The Braun Library will get a new distribution panel fed from the main service board, with sufficient additional capacity for new functionality (per the Option), as well as for new site, courtyard, and parking lot lighting.

Using the Stone Room and adjacent crawl spaces will provide access for new feeder and conduit runs over to Southwest, Plains and Poole Halls, and to an 800 amp 208 volt, 3 $\phi$ -3w motor control center located in proximity to the new HVAC units outside of Poole Hall.

## Lighting, Egress and Control Systems

### Entrance Hall

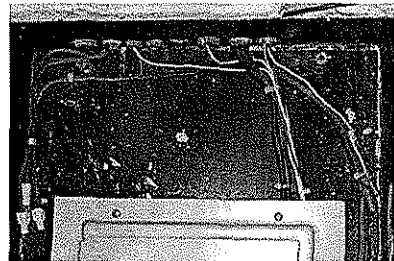
Entrance and common areas will be provided with more effective, better looking, energy-efficient luminaries, aimed at providing functional, welcoming illumination, and dramatic enhancement of the architecture, without detracting from the illuminated displays. Historic fixtures should be retained wherever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



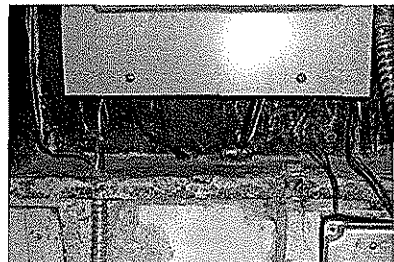
E015 - Caracol Tower stair - exposed, unsupported conduit



E016 - Plains Hall- marble panel showing multiple code violations



E017 - Upper Southwest Hall panel showing multiple code violations



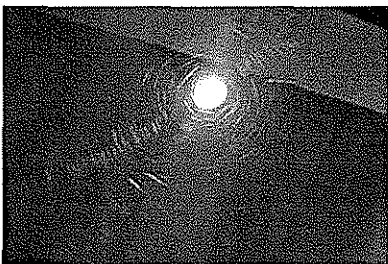
E018 - Bottom of Upper Southwest Hall panel showing illegal switch in panel cavity



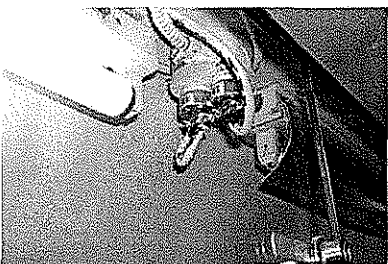
E019 - Administration area exit lacking proper illumination and signage.



E020 - Inconsistent display case lighting typical throughout



E021 - Unprotected bare display case lighting emitting UV rays; typical throughout



E022 - Inconsistent display case lighting typical throughout

### *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.

### *Office Areas*

Office, utility, bathroom and other areas will be illuminated with double-switched, spec-grade, low glare fixtures using energy-efficient T-8 and/or compact fluorescent lamps and electronic ballasts.

### *Site / Parking*

Site lighting will be installed to enhance the grounds, highlight the landscaping, and provide safe pathway marking. Additionally, Caracol Tower will be illuminated using HPS flood lamps to bring out its natural color. Parking lot lighting will be upgraded to utilize true cut-off fixtures with house side shielding, providing illumination levels to meet current safety standards, while mitigating off-site glare.

### *Emergency Egress*

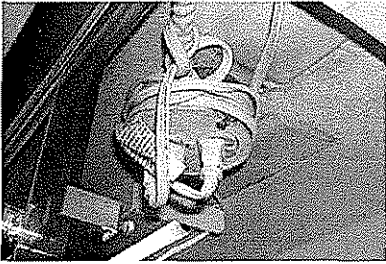
New LED edge-lit exit signs will be installed throughout, and emergency power will be provided by a central inverter system that is located in the electrical room, and is automatically controlled and exercised. This would allow any of the lighting fixtures to be used for egress, simplifying installation 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*

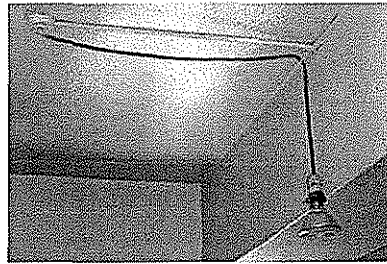
Centralized lighting control will be installed to increase functionality and aesthetic value throughout the building. New, centrally controlled lighting will also augment safety by facilitating ingress and egress and preventing trip hazards. Wireless relay modules are available to extend such a system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

### **OPTION B**

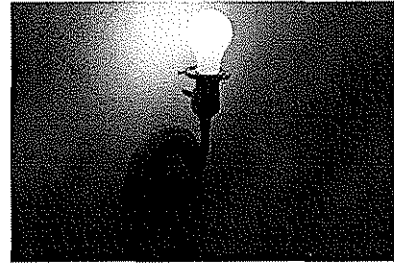
In addition to the above, Option B would require an additional new panel for the kitchen, artifact storage and elevator.



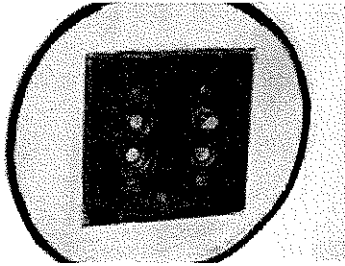
**E023** - Extension cord used for permanent wiring in display case



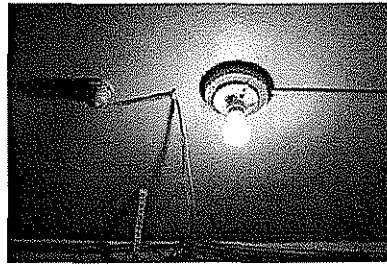
**E026** - Inefficient, out of date lighting in offices



**E029** - Historic wall fixture typical in Caracol stair



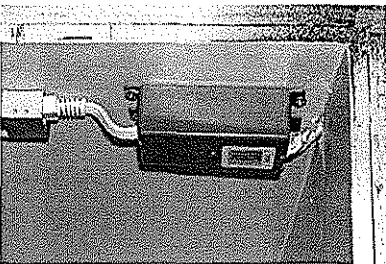
**E024** - Outdated push button switch in Caracol tower



**E027** - Inefficient, out of date lighting in offices



**E030** - De-activated exterior flood light at Caracol Tower



**E025** - Exposed junction box and Romex connectors in display case



**E028** - Historic ceiling fixture typical in Caracol 6 & 7

## **FIRE/LIFE SAFETY SYSTEMS EVALUATION** EXISTING CONDITIONS AND RECOMMENDATIONS

**CONSULTANT**    *Schirmer Engineering Corporation*

**PRINCIPALS**    *John E. Younghusband, P.E.*  
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*Tuk Vorapani, E.I.T.*  
PROJECT CONSULTANT

### **INTENT AND SCOPE**

The intent of this evaluation is to assess the existing level of code compliance within the Museum and Library relative to the nonstructural fire/life safety and accessibility requirements of the regular code (2002 Los Angeles Building Code) and the State Historical Building Code. Approaches are recommended to upgrade existing non-conforming building elements to comply with the level of fire/life safety and accessibility intended by the building and fire codes and Federal accessibility guidelines. Where compliance with the regular codes may be difficult or unfeasible to achieve due to existing building constraints or historic significance, alternative solutions have been recommended in order to provide a reasonable level of safety to occupants and access to persons with disabilities.

### **METHODOLOGY AND LIMITATIONS**

This evaluation is based on the results of a visual site survey conducted on September 04, 2003, reviews of existing permit documentation (e.g., permit applications, requests for modification letters, etc.) and reviews of the proposed program documents. A review of the proposed program schematic drawings was conducted to assess the impact of the renovations on the means of egress system and determining the occupancy classification of the building. Destructive testing of building assemblies for purposes of establishing existing fire-resistive ratings was not conducted nor is destructive testing considered necessary based on the SHBC requirements.

### **APPLICABLE CODES**

The Building Standards Commission for the State of California has recently adopted NFPA 5000 for the 2004 California Building Code. Based on the amendment process, it is anticipated that the 2004 LABC will come into effect in the fall of 2005. It is assumed that the rehabilitation project will be permitted after this time and will be subject to the new code. The details of the new code are not yet available, but it is not expected to be more restrictive than the current code. Therefore, this assessment has been conducted based on the 2002 Edition of the Los Angeles Building Code (LABC) currently in force.

- Los Angeles Building Code (LABC) 2006 Edition (will be in force when project commences)
- State Historical Building Code (SHBC) Chapter 34, Division II of LABC 2002 Edition

- NFPA 13, The Installation of Automatic Sprinkler Systems, 1999 Edition
- NFPA 14, Installation of Standpipe, Private Hydrant and Hose Systems, 2000 Edition
- NFPA 72, National Fire Alarm Code, 1999 Edition
- Americans with Disabilities Act Accessibility Guideline (ADAAG), 1990 Edition

## **FINDINGS**

### **5.1 Use and Occupancy**

The Southwest Museum project, hereinafter referred to as “the project”, is generally classified as assembly and business occupancies (with the assembly classification considered a major classification). Occupancy classification per LABC is as follows:

Group A - 2.1: Assembly spaces with maximum capacity more than 300 persons

Group A - 3: Assembly spaces with capacity more than 50, less than 300 persons

Group B: Office/administrative spaces

Group S-1: Storage of moderate hazard commodities

### **5.2 Construction Type & Fire-Resistive Construction**

Based on a visual site survey, it appears that the project is constructed of poured-in-place concrete. The existing construction materials and methods are consistent with the general descriptions of Type I, Type II, FR or Type II, One-hour construction. However, based on our visual observations and review of the existing permit documents, the actual construction type is un-known. The exterior walls and openings are permitted to be non-rated because a distance of at least 40 feet between the project and adjacent property lines is maintained. The permit history, however, indicates the project was at one time as Type IIIA and subsequently all or part was converted to Type V construction in March 1992. The reason for the change in construction type remains undetermined.

Additionally, based on the permit history and the fact that the project was derated to Type V construction, the maximum allowable floor area of the project related to the permitted construction type is exceeded.

### **5.3 Interior Wall & Ceiling Finishes**

Existing materials used on interior wall and ceiling finishes appear to be code compliant. It should be noted that any existing non conforming materials are required to be treated with an approved fire retardant. This issue will be further discussed in Section 6.3.

**5.4 Fire Department Access**

The existing fire department access road does not appear to comply with current code requirements regarding width. Structural strength of the fire department access to support the imposed loads of fire apparatus was not evaluated.

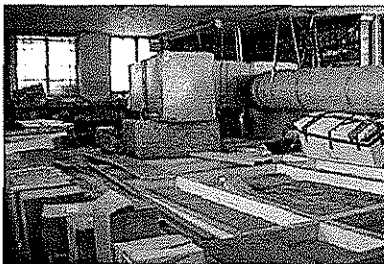
**5.5 Floor Openings**

The existing four-level atmospherically interconnected opening through the Torrance Tower does not comply with the current code in that the openings interconnect more than two contiguous stories. Recommendations will be further discussed in Section 6.5.

**5.6 Mezzanines**

*Torrance Tower*

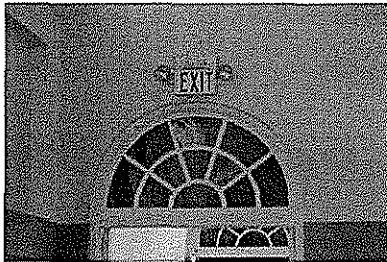
The upper level mezzanine, with an approximate area of 680 square feet exceeds the maximum allowable area of 500 square feet permitted by code. It is our understanding that a request to allow the mezzanine of a size larger than the area permitted by code was previously submitted and approved. (See Photo LS001)



LS001 - Torrance Tower - Upper Mezzanine

**5.7 Means of Egress Identification and illumination**

In several locations throughout the project, exit signs are not illuminated. (See Photo LS002). All exit signs are required to be illuminated at all times. Exit signs may be internally or externally illuminated.



LS002 - Typical non-illuminated exit sign

Additionally, existing means of egress illumination does not appear to comply with the current code requirements (not less than 1 foot-candle at the floor level during any time that a building or portion of a building is occupied).

**5.8 Means of Egress System**

*Caracol Tower*

Exiting from the top floors of the Caracol Tower is provided by a single interior spiral stairway. Based on the current code, a minimum of two exit access/exits is required on stories other than the first story. The spiral stairway also discharges into a room before reaching the exterior of the building. All required exits should discharge directly to the exterior or a protected exit passageway leading to the exterior. Furthermore, the current code restricts the use of spiral stairways to residential uses only. Any change in use within the Caracol Tower will likely necessitate two (2) code compliant exit stairways.

The interior spiral stairway serving all levels of the Caracol Tower does not comply with requirements for landings, handrails, exit illumination, or discharge to a public way. In addition, the bottom of the stair is used for storage of combustible materials.

*Torrance Tower*

The existing basement within the Torrance Tower, which currently contains office use, is provided with one means of egress only. Based on the current code, a minimum of two means of egress are required.

Assuming the removal of the current internal vestibule, Van Nuys Gallery on Level 2 is provided with two means of egress as required. However, the separation distance between the two provided exit doors is inadequate (i.e., less than half the diagonal distance of the room).

### 5.9 High-Rise Requirements

The Caracol Tower, which is the tallest portion of the Project, is a five-story structure plus two basement levels, approximately 86 feet in height. The height from the lowest level of fire department access to the top occupied story is approximately 62 feet. Therefore the Tower is not classified as a high-rise building and consequently not required to comply with the high-rise requirements.

### 5.10 Automatic Fire Extinguishing System

#### 5.10.1 Automatic Sprinkler System

The project is not provided with an automatic sprinkler system. It is our understanding that it is proposed to install a new automatic sprinkler system throughout the Project.

#### 5.10.2 Standpipe System

The Project is not provided with a standpipe system.

#### 5.10.3 Fire Extinguishers

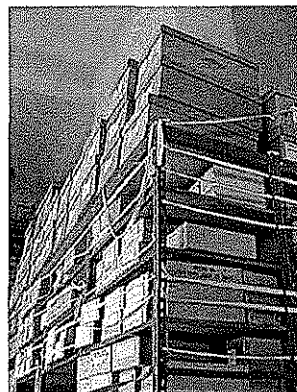
Halon fire extinguishers are provided at each entrance door into the spiral stair in the Caracol Tower. Last maintenance was performed in November of 2002. All fire extinguishers appear to be operational.

#### 5.10.4 High-Piled Storage

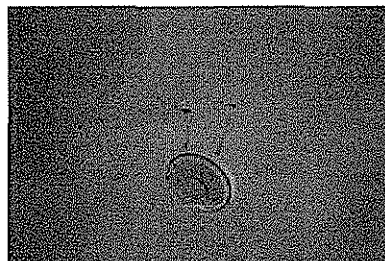
It was observed that several of the shelve storage racks within the project (e.g. Caracol Tower) are in excess of 12 feet in height (See Photo LS003) and are considered high-piled storage. Conventional sprinklers are designed to protect storage below 12 feet. Should such storage continue, more stringent sprinkler protection will be required.

### 5.11 Fire Alarm System

The project is provided with an outdated fire alarm system. Smoke detectors in several locations are improperly installed (See Photo LS004). SENSISCAN 1000 ADEMCO 694 EN Digital Communication by Fire-Lite Alarms Inc. (See Photo LS005) for a fire alarm system is provided at the main entrance on the second floor. The existing spacing and locations of smoke/heat detectors and manual pull stations are inadequate based on the current fire alarm design requirements. Furthermore, visual and audible alarm notification appliances were not observed during the site survey conducted.



LS003 - High-piled storage in Caracol Tower



LS004 - Improperly installed smoke detector



LS005 - Fire detection/communication equipment



LS006 - Single, accessible stall;  
non-compliant

### 5.12 Accessibility

In general, the existing project is not compliant with either State or Federal accessibility guidelines. Specifically, the path of travel to public occupiable areas, such as the museum spaces, or employee areas are not accessible due to lack of code compliant parking stalls (*See Photo LS006*), accessible route of travel from the parking stalls, ramps, vertical transportation inside the museum, restrooms, signage, visual warning devices, drinking fountains, etc.

Additionally, an accessible path of travel is not provided to:

- Offices in the basement
- Offices, exhibits and Museum Store on Level 1; Except for persons arriving from the tunnel entrance below.
- The upper level and mezzanines of the Braun Library.
- The Northwest Hall on Level 2

## RECOMMENDATIONS

### 6.1 Use and Occupancy

Per SHBC 8 - 302.1, the use or character of occupancy of a qualified historic building or property, or portion thereof, is permitted to continue in use regardless of any period of time in which it may have remained unoccupied or in other uses, provided such building or property otherwise conforms to all applicable requirements of the SHBC.

### 6.2 Construction Type & Fire-Resistive Construction

SHBC 8 - 302.1 allows the use or character of occupancy of a historic building to continue in use, provided such building or property otherwise conforms to all applicable requirements of the SHBC requirements.

According to SHBC 8 - 302.2, the use or character of the occupancy of a historic building may be changed from its historic use or character provided the building conforms to the requirements applicable to the new use or character of occupancy. Such change in occupancy should not mandate conformance with new construction requirements as set forth in regular code, provided the new use or character does not create a fire hazard or other condition detrimental to the safety of occupants or of firefighting personnel. Therefore, the existing building construction type may remain.

In addition, upgrading an existing qualified historic building or property to one-hour fire-resistive construction and one-hour fire-resistive corridors is not required when an approved automatic fire sprinkler system is provided throughout per SHBC 8 - 402.2.

According to SHBC 8 - 302.4, the maximum floor area for historic buildings provided with an automatic fire sprinkler system may be unlimited without fire resistive area separation wall. If an automatic sprinkler system is not installed, a destructive test will be necessary to determine the rating of existing floors and walls.

### **6.3 Interior Wall & Ceiling Finishes**

If, as proposed, an automatic fire sprinkler system will be provided throughout the project, existing non-conforming interior finishes need not be fire retardant treated.

### **6.4 Fire Department Access**

The SHBC does not specifically address requirements for fire department access in qualified historic buildings. The City of Los Angeles Fire Department Access and Hydrant Unit should be consulted if any changes/modifications are proposed to the existing fire department access route(s) for either Option A or Option B.

### **6.5 Floor Openings**

Floor openings that atmospherically interconnect more than two (2) stories are required to be enclosed by fire-resistive construction. As proposed for Options A and B, the Torrance Tower will have three levels, two of which are mezzanines, atmospherically interconnected by an unenclosed stairway. The SHBC 8-407 permits an alternate means of compliance to the vertical shaft enclosure requirements of the LABC, provided the building is protected by an automatic sprinkler system. This alternate means of compliance may be considered by the Authorities Having Jurisdiction on a case-by-case basis. As such, this issue should be further reviewed and discussed with the City of Los Angeles Department of Building and Safety.

### **6.6 Mezzanines**

A copy of the approved permit dated March 10, 1981, indicates that the second (upper) mezzanine of the Torrance Tower has been permitted to contain approximately 680 square feet in lieu of the maximum allowed 500 square feet, provided that there is no public access to the floor immediately above the mezzanine.

### **6.7 Means of Egress Identification and Illumination**

As required by regular code, exit signs need to be illuminated at all times. All existing exit signs that are presently not illuminated should be repaired or replaced. The current code requires exit signs in all rooms that require two means of egress (i.e., assembly rooms over 50 occupants). The exit signs should also be readily visible from any direction of approach. Furthermore, no point should be more than 100 feet from the nearest visible exit sign.

With regard to the existing means of egress illumination, it is highly recommended that additional emergency lights be provided throughout such that the means of egress serving the occupied portion will be illuminated at an intensity of not less than 1 foot-candle at the floor level.

### **6.8 Means of Egress System**

#### *Caracol Tower*

According to the attached approved Request for Modification (i.e., code equivalency) dated March 10, 1981, the sub-basement, the 6th and the 7th floors of the Caracol Tower were allowed to have only one means of egress

provided those floors are used for storage purposes only and signs are posted in conspicuous locations so stipulating, and a metal ladder be installed for emergency means of egress from the 6th and 7th floors leading to the roof. Our site observation indicates that those floors are used primarily for storage purposes, however, signs in conspicuous locations and a metal ladder to the roof were not observed. We recommend providing the requested signs and metal ladder to conform to the approved request if the sub-basement, 6th and 7th floors are to continue to be used as storage spaces.

If any of these floors is to be converted to another use, new fire escapes and fire escape ladders complying with SHBC 8 - 502.2 may be used in lieu of a second means of egress.

As outlined in Section 5.8 of this report, handrails and means of egress identification do not comply with the code. It is our opinion that handrails should be provided at interior stairs and illuminated exit signs should be provided at locations outlined in Section 6.7.

If modifications (e.g. change in use) are proposed within the upper levels of the Caracol Tower, it may be necessary to consider using the existing spiral stair as an exit. Should this be necessary, it is suggested this approach be reviewed and discussed with the City of Los Angeles Department of Building and Safety and Fire Department. SHBC 8 - 502.1, exception 5 allows for an alternative condition in lieu of total conformance with existing exiting requirements, provided that such condition will provide or allow for the ability to quickly and safely evacuate any portion of the building without undue exposure and will meet the intended exiting and life safety stipulated by the SHBC regulations.

With respect to the specific code-compliance issues related to each program option, the following recommendations have been considered in the resolution of each plan:

#### **OPTION A**

- Basement – Additional doors from the staff lounge to the patio, which in turn provides direct exit access to grade, have been provided to comply with a two means of egress requirement and provide adequate separation between the two exit access doors from the basement.
- Level 1 – The west stair connects the basement to Level 1, which in turn is atmospherically connected to Level 2 via the east stair located north of the Southwest Hall. This code compliance issue has been resolved by providing a 2-hour occupancy separation with 90-minute opening protection to isolate the two-level stair.  
Level 2 – Exiting from the Van Nuys Gallery will be via a dedicated exit path to a public way, separated by guardrails or bollards from the loading docks; which might potentially contain obstructors to egress. The exit path should graphically identify the path of egress through paint or colored materials.

The Van Nuys Gallery is provided with two means of egress that are not adequately separated from each other (i.e., less than one-half the diagonal

distance of the room). Considering that the Torrance Tower will remain unchanged with respect to occupancy and use, it is our opinion that the existing condition may remain as is. This issue should be reviewed and discussed with the City of Los Angeles Department of Building and Safety.

The separation between the two existing means of egress from the Plains Hall is less than half of the diagonal distance of the hall. Due to the fact that the Plains Hall is existing and the use of this room will remain unchanged, it is our opinion that the existing condition may remain as is. This issue should be reviewed and discussed with the City of Los Angeles Department of Building and Safety.

#### **OPTION B**

- Basement – Additional doors from the staff lounge to the patio, which in turn provides direct exit access to grade, have been provided to comply with a two means of egress requirements and provide adequate separation between the two exit access doors from the basement.
- Level 1 – The west stair connects the basement to Level 1, which in turn is atmospherically connected to Level 2 via the east stair located north of the Southwest Hall. This code compliance issue has been resolved by providing a 2-hour occupancy separation with 90-minute opening protection to isolate two-level stair.

#### **6.9 High-Rise Requirements**

The project is not classified as a high-rise building.

#### **6.10 Automatic Fire Extinguishing System**

##### *6.10.1 Automatic Sprinkler System*

Based on the proposed provision of an automatic sprinkler system, the following code exceptions may be realized, subject to complying with the applicable code requirements and concurrence with the City of Los Angeles Department of Building and Safety and Fire Department:

- One-hour construction reduction
- Existing non-conforming interior finish materials
- Exemption of enclosure of vertical shafts and stairways
- Unlimited floor area with respect to allowable construction type
- Increased fire department path of travel from emergency vehicle access route(s) (see below)
- Possible exceptions to specific exiting requirements of the regular code (e.g. means of egress separation distance, egress widths).

Our experiences dealing with many fire departments have shown that the provision of an automatic sprinkler system may aid in negotiating with the City of Los Angeles Fire Department Access and Hydrant Unit to permit the use of fire department access that may not fully comply with the current codes. It is our recommendation that once the proposed plans have been finalized, a meeting with the City of Los Angeles Fire Department Access and Hydrant Unit be arranged.

Due to the fact that valuable items are displayed inside the museum and stored in the storage rooms, special water-based extinguishing systems, such as water mist or pre-action system should be taken into consideration. In addition, gaseous fire suppression systems, such as FM200 or Inergen are also alternatives to the water-based fire extinguishing system. It should be noted that integration of system activation and notification of these special fire-extinguishing systems into an overall building fire alarm system would be required.

#### *6.10.2 Standpipe System*

The SHBC does not specifically require standpipes in historic buildings, but as a new automatic sprinkler system is planned for this project, a combined sprinkler/standpipe system could be accommodated with minimal additional cost. On this basis, we recommend that the addition of a Class I standpipe system be considered for this project. Class I standpipe system is equipped with 2-inch outlets and to be located at every floor-level landing of every required stairway above or below grade. Outlets at stairways should be located within the exit enclosure. The provision of a new standpipe system could be used to mitigate existing code-compliance concerns.

#### *6.10.3 Fire Extinguishers*

Although halon is allowed to exist in existing buildings, it is not permitted to be used in new construction because of the Ozone depletion concern. It is recommended that all halon fire extinguishers be replaced with water-based, carbon dioxide or multipurpose dry chemical fire extinguishers. Since the project primarily contains ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics, Class A fire is deemed appropriate. In accordance with NFPA 10, fire extinguishers should be located throughout the project buildings and a maximum travel distance to extinguisher should not exceed 75 feet.

#### *6.10.4 High-Piled Storage*

In accordance with NFPA 13, 1999 Edition, high-piled storage is defined a storage over 12 feet in height. Storage over 12 feet in height was observed in several locations throughout the building. Sprinkler protection for high-piled storage is more stringent than that for regular non high-piled storage. Therefore, it is our recommendation that storage height in all areas be limited to 12 feet otherwise sprinkler protection in such areas over 12 feet will have to be designed according to requirements for high-piled storage.

### **6.11 Fire Alarm System**

SHBC 8 - 409 requires every qualified historic building or property be provided with fire alarm systems as required for the use or occupancy by the regular code or other approved alternative.

The project is designed to contain more than 300 occupants at any given time. Therefore, in accordance with Section 303 of the 2002 LABC, Group A, Division 2.1 will be an appropriate occupancy classification of the project. Section 303.9 of the 2002 LABC requires an approved fire alarm system installed as set forth in the 2002 Los Angeles Fire Code (L AFC).

Based on the age of the existing fire alarm system, existing level of non-compliance with the Fire Alarm Code (lack of devices/appliances, locations, installation methods, etc.) and unavailability or defaulting in obtaining replacement parts, we strongly recommend that the existing fire alarm system be replaced with a new, state of the art, addressable fire alarm system.

### **6.12 Accessibility**

Generally, the regular code for access for persons with disabilities is to be applied to qualified historic buildings or properties unless strict compliance will threaten or destroy the historic significance or character-defining features of the building or property. As outlined in Section 5.12 of this report, most aspects of this project do not meet the current accessibility requirements of the LABC and ADAAG. The following recommendations to correct existing deficient conditions have been addressed in the development of programs Option A and B:

- The ticket booth located on Level 2 will be accessible.
- Three standard accessible parking stalls complying with LABC 1129b.4.1 and ADAAG 4.6.3 will be provided.
- One van accessible parking stall complying with LABC 1129b.4.2 and ADAAG 4.1.2(5)(B) will be provided.
- New proposed restrooms will be accessible and comply with LABC 1115B.
- Additional elevator(s), ramp(s) and lift(s) will provide accessibility throughout the project.
- All drinking fountains will be a “hi-lo” type in an accessible location.
- Visual alarm devices will be provided for the hearing impaired.
- The new accessible routes, to the maximum extent feasible, will coincide with the route for the general public.

The small exhibition spaces, Northwest Hall and Lower Southwest Hall, in Caracol Tower are and will remain inaccessible in both Option A and B, as will the western Basement of the Main Museum building in Option A. This is due to the excessive hardship required to make them accessible while maintaining their historic integrity. The application of SHBC and alternative equivalent facilitation provisions (see section 6.12.2 of this report) will need to be negotiated with the City of Los Angeles Department of Building and Safety as part of the future development of this project.

#### 6.12.1 Preferred Alternatives (LABC 8 - 603 and ADAAG 4.1.7(3))

The alternatives for each category are listed in order of priority. These alternatives apply only to the specific building standards listed below.

##### ENTRY

- Access to any entrance used by the general public and no further than 200 feet from the primary entrance.
- Access at any entrance not used by the general public but open and unlocked with directional signs at the primary entrance and as close as possible to, but no further than 200 feet from, the primary entrance.

##### ACCESSIBLE ROUTE

- Accessible routes from an accessible entrance to all publicly used spaces on at least the level of the accessible entrance shall be provided. Access shall be provided to all levels of a building or facility whenever practical.

##### DOOR

- Single-leaf door with a minimum 30" of clear opening.
- Single-leaf door with a minimum 29.5" of clear opening.
- Double door, one leaf with a minimum 29.5" of clear opening.
- Double doors operable with a power-assisted device to provide a minimum 29.5" clear opening when both doors are in the open position.

##### POWER-ASSISTED DOORS

- A power-assisted door or doors may be considered an equivalent alternative to level landings, strikeside clearance and door-opening forces required by the regular code. Regular doors are required to comply with level landings, strikeside clearance and door-opening force requirements.

##### TOILET ROOMS

- If toilets are provided, at least one accessible toilet facility along an accessible route shall be provided. An accessible unisex facility may be designated.

##### EXTERIOR AND INTERIOR RAMPS AND LIFTS

- A lift or a ramp of greater than standard slope but no greater than 1:10, for horizontal distances not to exceed 12 feet. Signs shall be posted at upper and lower levels to indicate steepness of the slope.

- Access by ramps of 1:6 slope for horizontal distance not to exceed 13 inches. Signs shall be posted at upper and lower levels to indicate steepness of the slope.
- Access provided by experiences, services, functions, materials and resources through methods, including, but not limited to, maps, plans, videos, virtual reality, and related equipment, at accessible levels. This alternative shall be documented as required in Section 8 - 605 of the SHBC.

#### DISPLAYS AND WRITTEN DOCUMENTS

- Displays and written information, documents, etc., should be located where they can be seen by a seated person. Exhibits and signage displayed horizontally (e.g., open books) should be no higher than 44" above the floor surface.

#### 6.12.2 Equivalent Facilitation (LABC 8 - 604)

If the application of the preferred alternatives would threaten or destroy the historic significance or character-defining features of the building or site or cause unreasonable hardship, use of other designs and technologies, or deviation from particular technical and scoping requirements are permitted provided the following conditions are met:

- Such alternatives are applied only on an item-to-item or a case-by-case basis.
- The alternative design/technologies used will provide substantially equivalent or greater accessibility to, and usability of, the facility.
- The official charged with the enforcement of the standards should document the reasons for the application of the alternatives and their effect on the historic significance or character-defining features. Such document should be in accordance with LABC 8 - 602.2, Item 3, and should include the opinions and comments of state or local accessibility officials and the opinions and comments of representative local groups of people with disabilities. Such documentation should be recorded and entered into the permanent file of the enforcing agency.

#### 6.12.3 Exceptions (LABC 8 - 605)

If no equivalent facilitation as provided in Section 6.12.2 is feasible, an exception from the literal requirements for full or equal access or any alternative provisions may be provided only if the following conditions are met:

- Such exception is considered only on an item-to-item or a case-by-case basis.
- Interpretive exhibits and/or equal services to the exempted significant historic aspects are provided for the public in a location fully accessible to and usable by persons with disabilities, including persons with hearing and sight impairment.
- Services are provided in an accessible location equal to those provided in the excepted location.

- The official charged with the enforcement of the standards should document the reasons for the application of the alternatives and their effect on the historic significance or character-defining features. Such document should be in accordance with LABC 8 - 602.2, Item 3, and should include the opinions and comments of state or local accessibility officials and the opinions and comments of representative local groups of people with disabilities. Such documentation should be recorded and entered into the permanent file of the enforcing agency.

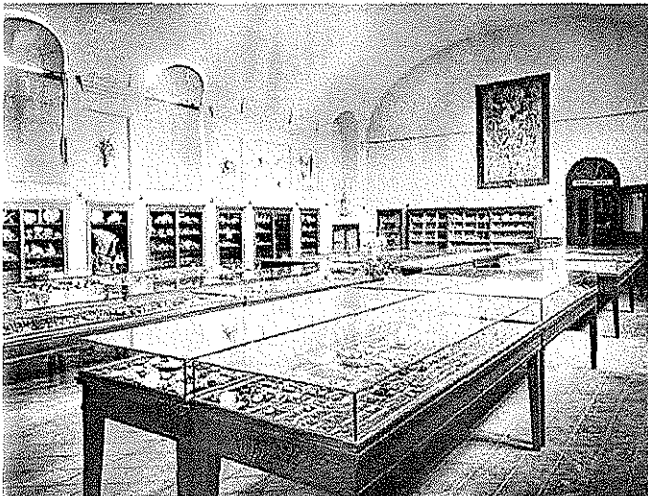
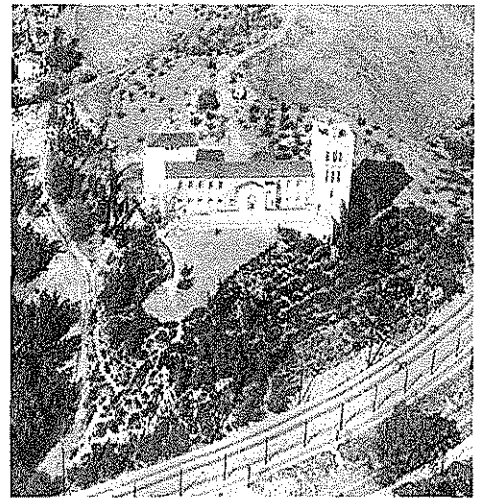
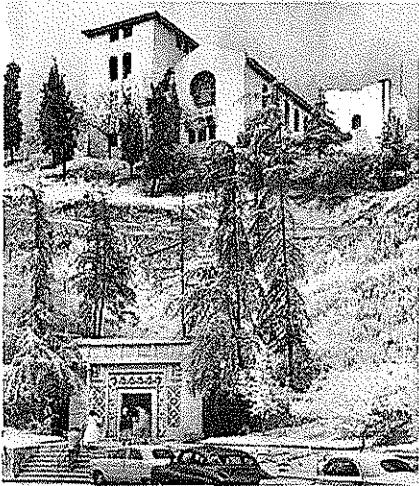
#### **CONCLUSION**

This report documents our findings pertaining to the nonstructural fire/life safety and accessibility requirements based on the site survey conducted on September 4, 2003. Recommendations to upgrade existing non-conforming building elements to comply with the level of fire/life safety and accessibility intended by the regular code (2002 Los Angeles Building Code), the State Historical Building Code and ADAAG have also been included in this report. In consideration that the project is deemed a historic building, compliance with the regular codes may threaten the historic significance or character defining features. In this case, alternative solutions have been recommended in order to provide a reasonable level of safety to occupants and access to persons with disabilities. These alternative solutions, however, require discussion with and agreement from the City of Los Angeles Department of Building and Safety and Fire Department. Therefore, it is recommended meeting(s) with representatives from the City of Los Angeles Department of Building and Safety and Fire Department be scheduled as early as possible to discuss our approaches to code compliance.



# Southwest Museum Rehabilitation Study

Phase I Planning



## Project Cost Analysis

Option A

Option B

## PROJECT COST ANALYSIS

**CONSULTANT** *Davis, Langdon & Adamson*

**PRINCIPALS** *Rick Lloyd, ASSOCIATE PRINCIPAL*  
*Cathy Smith, ASSOCIATE*

### INTENT AND SCOPE

Davis Langdon Adamson has prepared estimates of probable cost for Southwest Museum Rehabilitation Options A and B for use in a financial analysis of the institution.

### METHODOLOGY AND LIMITATIONS

The probable cost of construction for Options A and B as described herein are based on schematic drawings and outlined descriptions of work provided by Levin & Associates and their engineering consultant team in September of 2003. In addition, Davis Langdon Adamson visited the site accompanied by Museum personnel, discussed the proposed work with the consultants and referred to previous, recent costs for similar projects. Reasonable assumptions, based on the project type, were made for other work not specifically described in the drawings or specifications.

The tables following in this report are extracted from the detailed Feasibility Cost Study Plan prepared for the Autry National Center. For the purpose of determining probable construction costs, it has been assumed that construction would commence following the transfer of the fully conserved artifact collection to new facilities at the Autry National Center; no earlier than January of 2007. The construction period is estimated to be 18 months, without phasing. Unit rates have been obtained from historical records and/or discussion with contractors regarding current bid costs in the area, and then adjusting for projected inflation at the assumed mid-point of construction, October of 2007.

This estimate of probable costs is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 4 bidders for all items of subcontracted work and 6 - 7 general contractor bids.

Since Davis Langdon Adamson has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon Adamson's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon Adamson cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

## INCLUSIONS & EXCLUSIONS

The project analyzes two options for the renovation of the Southwest Museum located in Los Angeles, CA. Option A has a total square footage of 38,203 sf, of which 527 sf is new construction area. Option B has 42,627 sf, of which 4,736 sf is new construction area. Please refer to the architectural drawings provided in the Architectural Analysis section of this report.

### Inclusions

The Cost Plan includes the following assumptions for building systems:

- Foundations include excavation and removal at new construction areas, allowances for shoring and underpinning as required, reinforced concrete wall footings, new elevator pits, and an allowance for work to the existing foundations where they interface with the new foundations.
- Vertical structure includes reinforced CMU walls and concrete retaining walls. Also included is an allowance for shotcrete infill walls as required.
- Horizontal structure includes reinforced concrete slab on grade at new construction areas. Suspended floors include structural steel framed floor at truck maneuvering area and roof decks at new construction areas. Also included is a seismic joint allowance and fireproofing to steel.
- Exterior cladding for the building includes new cement plaster to the entire wall area. Also included is restoration of existing exterior glazing and doors and new windows to match existing.
- Roofing and waterproofing includes waterproofing to retaining walls and to Caracol Tower balconies, new membrane roofing at the Caracol Tower, and allowances for flashings, copings and sheet metal work and caulking and sealants. Restoration of existing skylights is also included.
- Interior partitions include metal stud framed partitions with batt insulation and painted gypsum board surface. Interior doors include aluminum framed glazed entrance doors and wood doors in wood frames at office area. An allowance for work to existing rails and balustrades has been included.
- Interior finishes include flooring of quarry tile, ceramic tile, carpet, linoleum, VCT, restoring original concrete floors, and sealed concrete, an allowance for bases, wall finishes of ceramic tile, and ceilings allowance.
- Function equipment includes an allowance for general building equipment such as markerboards and tackboards, fire extinguisher cabinets, mecho shades, dock levelers and bumper guards, code and room identification signage. Also included are toilet partitions and accessories, allowances for shelving and millwork, built-in cabinets and countertops.

- Vertical transportation includes new stairs at Braun Building, restoring existing staircases, two new hydraulic passenger elevators and an allowance for upgrading cab finishes of existing elevator in Option A and a new gear elevator for Option B.
- Plumbing includes sanitary fixtures, waste, vent and domestic service, pipework, hose bibbs and floor drains, sump pump, water heating equipment, natural gas distribution and roof drainage. Trade demolition.
- HVAC includes chilling and heat generation equipment, thermal expansion compensation and circulation, hydronic pipework distribution, (2) air handling units, (12) fan-coil units, VAV boxes at Braun Building, sound attenuators, air distribution systems, building management controls and unit ventilation. Trade demolition.
- Electrical includes main, emergency, machine, equipment and user convenience power, lighting, lighting controls, telephone/data, conduit only – MATV and audio/visual systems, fire alarm and security systems. Trade demolition.
- Fire protection includes reaction sprinkler system – complete.
- Site preparation includes providing necessary retaining walls, clearing and re-grading existing courtyard with fountain, and for Option B, to widen driveway by 6' - 0", excavate and re-grade existing parking area.
- Site development includes new vehicular and pedestrian paving, new site retaining walls, and allowances for new drainage, lighting, and landscaping.
- Site utilities include fire repression hookups, water, gas, sewer, electrical mains power (conduit only) & telecommunications/signals (conduit only) – trade demolition.

**Exclusions**

- Environmental impact mitigation
- Cost escalation beyond a midpoint date of October 2007
- Hazardous material handling, disposal and abatement
- Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
- Sustainable design
- Work associated with the removal and relocation of existing exhibit and artifacts
- Move in costs
- Costs associated in new exhibits



OPTION A BUILDING COMPONENT SUMMARY

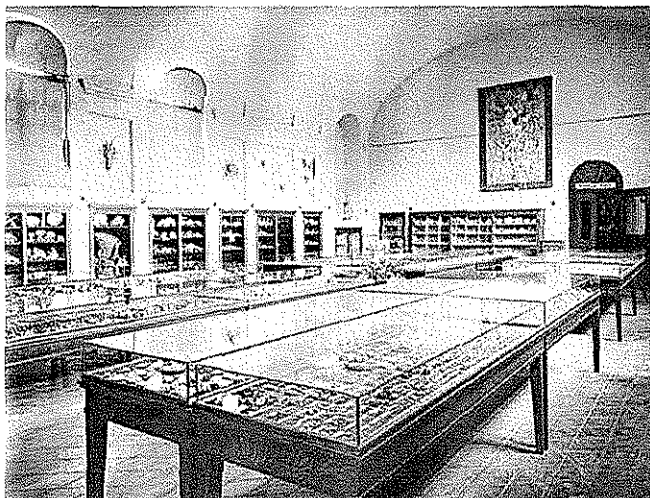
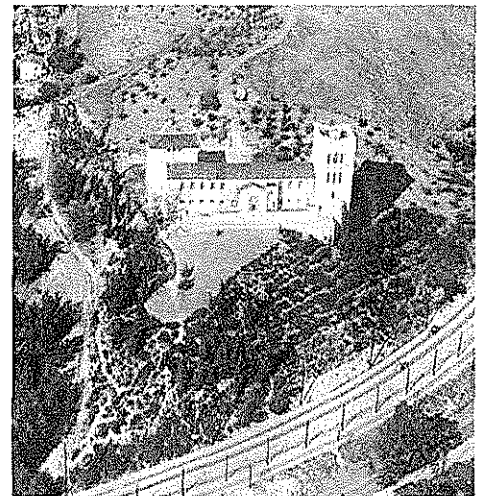
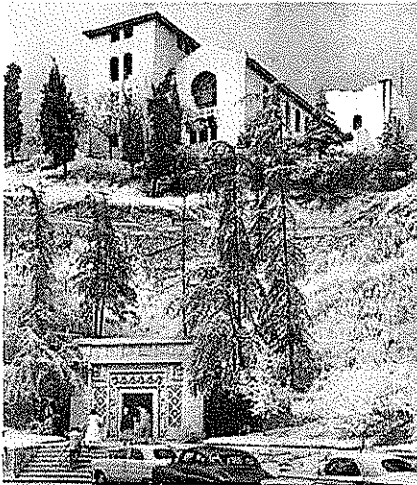
	GROSS AREA	38,203 SF (\$/SF)	\$ x 1,000
Foundations		2.07	79
Vertical Structure		2.24	86
Floor & Roof Structures		8.54	326
Exterior Cladding		35.49	1,356
Roofing, Waterproofing & Skylights		7.19	275
<i>Shell</i>		55.52	2,121
Interior Partitions, Doors & Glazing		6.51	249
Floor, Wall & Ceiling Finishes		17.15	655
<i>Interiors</i>		23.66	904
Function Equipment & Specialities		6.93	265
Stairs & Vertical Transportation		7.72	295
<i>Equipment &amp; Vertical Transportation</i>		14.65	560
Plumbing Systems		6.72	257
Heating, Ventilating & Air Conditioning		28.17	1,076
Electric Lighting, Power & Communications		29.92	1,143
Fire Protection Systems		4.50	172
<i>Mechanical &amp; Electrical</i>		69.31	2,648
<b>Total Building Construction)</b>		<b>163.15</b>	<b>6,233</b>
Building Demolition		6.57	251
Site Preparation and Demolition		2.57	98
Site Paving, Structures & Landscaping		16.54	632
Utilities on Site		6.63	253
<b>Total Site Construction</b>		<b>32.31</b>	<b>1,234</b>
<b>TOTAL BUILDING &amp; SITE</b>		<b>195.46</b>	<b>7,467</b>
General Conditions	15.00%	29.32	1,120
Contractor's Overhead & Profit Fee	8.00%	17.98	687
<b>PLANNED CONSTRUCTION COST</b>	<b>November 2003</b>	<b>242.76</b>	<b>9,274</b>
Contingency for D	20.00%	48.56	1,855
Escalation to midpoint	12.05%	35.10	
<b>RECOMMENDED BUDGET</b>	<b>January 2007</b>		<b>1,341</b>
Project Soft Costs:	32.00%	<b>326.41</b>	<b>12,470</b>
<i>Architectural/Engineering Fees</i>			3,990
<i>Special Consultant Fees</i>			
<i>Reimbursable Expense</i>			
<i>Project/Construction Management Fee</i>			
<i>Permits and Testing</i>			
<i>Change Orders</i>			
<i>Insurance (builders all-risk)</i>			
<i>Furniture, Fixtures and Equipment</i>			
<i>Soft Cost Contingency</i>			
<b>TOTAL Project Costs, Option A</b>			<b>16,460</b>

**OPTION B BUILDING COMPONENT SUMMARY**

	GROSS AREA	38,203 SF (\$/SF)	\$ x 1,000
Foundations		6.08	259
Vertical Structure		6.92	295
Floor & Roof Structures		9.98	425
Exterior Cladding		33.19	1,415
Roofing, Waterproofing & Skylights		13.51	576
<i>Shell</i>		69.69	2,971
Interior Partitions, Doors & Glazing		7.13	304
Floor, Wall & Ceiling Finishes		17.23	735
<i>Interiors</i>		24.36	1,038
Function Equipment & Specialities		10.17	434
Stairs & Vertical Transportation		11.14	475
<i>Equipment &amp; Vertical Transportation</i>		21.32	909
Plumbing Systems		7.72	329
Heating, Ventilating & Air Conditioning		30.17	1,286
Electric Lighting, Power & Communications		30.92	1,318
Fire Protection Systems		4.50	192
<i>Mechanical &amp; Electrical</i>		73.31	3,125
<b>Total Building Construction)</b>		188.68	8,043
Building Demolition		8.59	366
Site Preparation and Demolition		8.03	343
Site Paving, Structures & Landscaping		31.75	1,353
Utilities on Site		5.94	253
<b>Total Site Construction</b>		54.31	2,315
<b>TOTAL BUILDING &amp; SITE</b>		242.99	10,358
General Conditions	15.00%	36.43	1,553
Contractor's Overhead & Profit Fee	8.00%	22.36	953
<b>PLANNED CONSTRUCTION COST</b>	<b>November 2003</b>	<b>301.78</b>	<b>12,864</b>
Contingency for D	20.00%	60.36	2,573
Escalation to midpoint	12.05%	43.66	1,861
<b>RECOMMENDED BUDGET</b>	<b>January 2007</b>	<b>405.80</b>	<b>17,298</b>
Project Soft Costs:	32.00%		5,535
<i>Architectural/Engineering Fees</i>			
<i>Special Consultant Fees</i>			
<i>Reimbursable Expense</i>			
<i>Project/Construction Management Fee</i>			
<i>Permits and Testing</i>			
<i>Change Orders</i>			
<i>Insurance (builders all-risk)</i>			
<i>Furniture, Fixtures and Equipment</i>			
<i>Soft Cost Contingency</i>			
<b>TOTAL Project Costs, Option B</b>			<b>22,833</b>

# Southwest Museum Rehabilitation Study

Phase I Planning



## Financial Analysis

Intent And Scope

Methodology And Limitations

Analysis

Section I: Site Analysis & Overview of Alternatives

Section II: Available Markets

Section III: Comparable Facilities

Section IV: Attendance Projection & Financial Analysis

Section V: Tables

## FINANCIAL ANALYSIS

**CONSULTING FIRM**     *Economic Research Associates*

**PRINCIPALS**     *John Robinett, SENIOR VICE PRESIDENT*  
*Linda Cheu, SENIOR ASSOCIATE*  
*Brett Piercy, ASSOCIATE*

### INTENT AND SCOPE

The Autry National Center of the American West has retained Economics Research Associates (ERA) to conduct a market and economic analysis of the Southwest Museum as an ongoing museum at the current location. As part of this study, ERA analyzed two different renovation alternatives for the Southwest Museum. Under the first alternative, the Southwest Museum building would be rehabilitated primarily in order to bring the building up to code and current performance standards for museums. In the second alternative, the Southwest Museum facility would also be rehabilitated, with additional resources devoted to creating new spaces that would enhance the revenue generating potential for the museum.

### METHODOLOGY AND LIMITATIONS

ERA's research and analysis related to this assignment included the following tasks:

- Met with the client team and discussed the client's planning process, vision, and objectives for the study.
- Coordinated ERA's work with that of the planning team and worked with the team to develop two alternatives for analysis.
- Visited the museum and reviewed its current physical facilities.
- Reviewed the museum's permanent collection, temporary exhibitions, and exhibition history.
- Examined the Southwest Museum's visitation history.
- Reviewed the Southwest Museum's financial operations.
- Conducted basic analysis related to the pertinent demographic characteristics of the Southwest Museum's local, regional, and visitor market.
- Evaluated key operating characteristics of comparable and competitive projects in order to provide performance benchmarks for the Southwest Museum.
- Reviewed Autry Museum cost structure as an indicator of the standards of the new operator.
- Determined attendance potential in a stabilized operating year for the Southwest Museum under both alternatives.

- Based upon the attendance potential, projected the financial performance of the Southwest Museum under both alternatives.

Further background related to the Southwest Museum, an overview of the two alternatives for analysis, as well as a discussion about the museum site is contained in Section II immediately following this section. Section III contains a summary of key demographic research related to the resident and visitor markets available to the Southwest Museum. A summary of ERA's research on key operating characteristics of comparable museums is presented in Section IV, and ERA's attendance projection and financial analysis is contained in Section V.

#### **ANALYSIS SECTION I: SITE ANALYSIS AND OVERVIEW OF ALTERNATIVES**

This section contains an overview of the Southwest Museum, an analysis of the surrounding area and the current site, and an overview of the two alternatives that have been analyzed as part of this study.

##### **Background Information on the Southwest Museum**

The Southwest Museum, founded in 1907, is the oldest museum in Los Angeles. Its mission is to protect, present, and interpret the history and culture of the American Indian peoples. It is well known for having one of the nation's premier museum, library, and archive collections related to the American Indian, and also has an extensive collection of pre-Hispanic, Spanish Colonial, Latino, and Western American art and artifacts. For ninety years, the museum has been involved in research, publications, exhibitions, and other educational programs and activities with the goal of enhancing the public's understanding and appreciation of the Americas, with particular emphasis on the western United States and Mesoamerica. Along with the primary museum building, the Southwest Museum also operates Casa de Adobe, a replica of an early 19th century Mexican California ranch house. Exhibits contained in the Casa are focused on materials pertaining to the Spanish presence in the New World.

##### **Site Analysis**

Since 1914, the Southwest Museum has been located in its current location midway between downtown Los Angeles and Pasadena. It is located in a residential neighborhood near the intersection of Highway 110 (the Pasadena Freeway) and Avenue 43. The building is a historic landmark and was built on a hill that overlooks the Arroyo Seco. The new Southwest Museum Gold Line station recently opened and is located at the base of Mt. Washington and directly below the museum. The station is approximately 10 minutes from downtown Los Angeles and 15 minutes from Old Pasadena.

The site location and access is an important factor that affects attendance to museums and other attractions by both residents and tourists. A brief overview of the positive and limiting factors of the Southwest Museum's site follows.

*Positive Factors*

The Southwest Museum's site has some positive factors, including:

- Relatively good highway access off of two major highways.
- A dedicated Gold Line station with quick access to downtown Los Angeles and Old Pasadena.
- A historic building.
- A central location within Northeast Los Angeles.

*Limiting Factors*

There are also limiting factors, including:

- The site location is not in downtown or central Los Angeles.
- There are no other major attractions or retail areas currently located nearby which could provide synergies with the museum. However, the city of Los Angeles is presently undertaking an extensive "linkages" study that will identify and master plan such synergistic opportunities.
- The parking area is limited. There is public support for a "park and ride" at the lightrail station, although a location has not yet been determined.

**Overview of Alternatives**

In order to provide a framework for analyzing the impact of renovations to the Southwest Museum, the project team identified two major alternatives for analysis with different focuses. A summary of the physical changes including square footage by type of space for both options is presented in Table II - 1. An overview of each alternative along with specific features is discussed in the following section. Basic assumptions that are part of both alternatives are as follows:

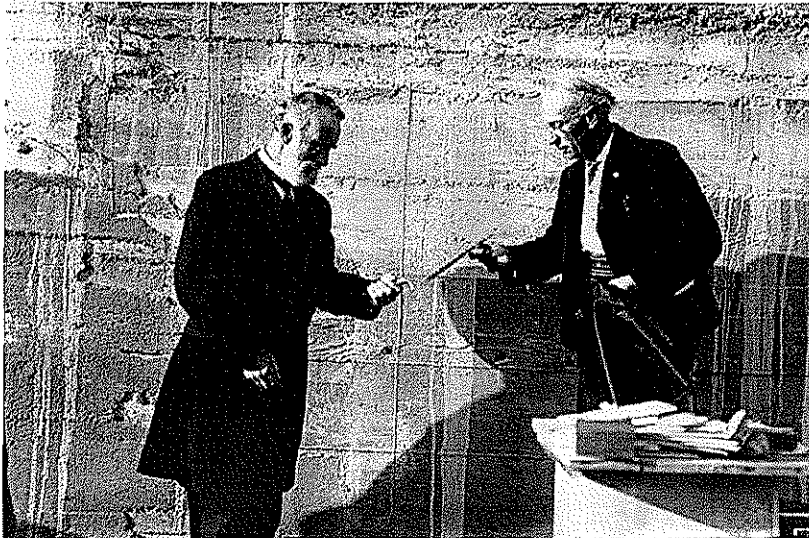
- The rehabilitation of the building is for museum use and activities related to the museum experience only. No alternative uses were explored in these two options.
- No new buildings were developed as part of either alternative.
- Neither option provides bus access to the parking area above the museum.
- Primary storage of the Southwest collection will be shifted to the Griffith Park Campus.
- Primary conservation areas as well as collections management activity are also assumed to be at the Griffith Park Campus.
- Floor plans for each option are provided in the Architectural Evaluation and Recommendations section.

**Option A**

The major focus of the first alternative, referred to as “Option A,” is on physical enhancements that address code compliance and achieve basic museum standards of temperature, humidity, and climate control. Some minimum improvements to assist the museum in better utilizing existing space are included as well. There will be a focus on supporting the history curriculum of third to fifth grade elementary school classes. A summary of key aspects of Option A as well as ERA’s analysis of positive and negative impacts of each factor is presented in Table I - 2.

**Option B**

The focus of Option B is to increase those features that will enhance the ability of the Southwest Museum to achieve significantly higher levels of attendance and revenue. Examples of changes include increased exhibit space, the addition of a museum café, and the creation of an outdoor amphitheater/plaza area that can be used for special events. A summary of the proposed changes under Option B, along with ERA’s analysis of the positive and negative factors associated with these changes is presented in Table I - 3.



FOO1 - Ground Breaking Ceremony, Dr. Norman Bridge hands spade to Charles Lummis

**Table I - I  
Summary of Building Square Footage By Use**

<b>SPACES</b>	<b>EXISTING BUILDING</b>	<b>OPTION A</b>	<b>OPTION B</b>
<b>Exhibition</b>			
Sprague Hall	2,191	2,191	2,191
Plains Hall	1,545	1,545	1,545
Northwest Hall	906	906	906
California Hall (upper Poole)	2,633	2,633	2,633
Van Nuys Hall (Torrance)	Listed as storage	1,053	1,053
Upper Southwest Hall	1,307	1,547	1,547
Lower Southwest Hall / Children's Discovery	824		824
New Gallery (Former Basketry Display and Storage)	398		1,840
<b>Subtotal Exhibition</b>	<b>9,804</b>	<b>9,875</b>	<b>12,539</b>
<b>Community</b>			
Education workshop	0		567
Auditorium/community	Sprague used	2,360	2,360
Community Gallery / Foyer	0	762	1,010
Library	6,795	1,632	0
Courtyard/patio event area		0 <sup>1</sup>	8,009
<b>Subtotal Community</b>	<b>6,795</b>	<b>4,754</b>	<b>11,946</b>
<b>Commercial</b>			
Museum store	1,007	1,136	1,517
Store Storage	49		
Vending machines	46	28	0
Coffee bar & storage			787
Kitchen & pantry			520
<b>Subtotal Commercial</b>	<b>1,102</b>	<b>1,164</b>	<b>2,824</b>
<b>Exhibitions / Collections Support</b>			
Curator's offices	109	365	400
Exhibition Preparation	611	660	806
Receiving	0	245	572
Storage	5920*	991	993
<b>Subtotal Exhibitions / Collections</b>	<b>6,640</b>	<b>2,261</b>	<b>2,771</b>

<sup>1</sup> Currently shared space of approximately 3,000 sq. ft.

SPACES	EXISTING BUILDING	OPTION A	OPTION B
<b>Administrative</b>			
Director's Office (incl. Assistant)	246	494	451
Reception/visitor's services	0	173	540
Marketing/PR	0	214	140
Education	210	260	312
Security & operations	0	443	443
Conference Room	0	303	224
Staff & Volunteer Lounges,	438	844	757
Copy & storage			
Membership office	80	0	0
Computer office	80	0	0
Unspecified office space	1,043	0	0
<b>Subtotal Administrative</b>	<b>2,097</b>	<b>2,731</b>	<b>2,867</b>
<b>Circulation and Building</b>			
Bathrooms			
Staff 1 (existing)	25	25	25
Staff 2	70	126	141
Public 1	338	450	840
Public 2	0	538	573
Corridors & stairs	3771*	4,512	5,502
Elevator shafts & machine rooms	275	666	918
Mechanical space	0	149	94
Janitor/util./work space	278	102	102
<b>Subtotal Circulation and Building</b>	<b>4,757</b>	<b>6,568</b>	<b>8,195</b>
<b>Grand Total</b>	<b>31,195</b>	<b>27,353</b>	<b>41,142</b>

Table I - II  
 Summary / Analysis of Option A

TOPIC	PROPOSED OPTION A
EXHIBITION SPACE	Existing plus some reclaimed space from current use as storage. Revitalized for more enjoyable museum-going experience.
PERMANENT EXHIBITS	Four galleries (6,631 square feet) with a focus on State mandated Social Studies curriculum. Drawn from the Southwest Museum collection.
ROTATING EXHIBITS	Two galleries (3,244 square feet) drawn from the Southwest Museum storage, each rotating once per year.
EXHIBIT DESIGN STAFF	Leverage existing staff of Autry National Center
LOADING & STAGING	No change
STORAGE	Assume primary storage at Griffith Park. (Poole basement retained as overflow, non-collections storage or admin.or other low-cost use)
PARKING	Re-stripe to maximize parking capacity in existing lot(s)
GOLD LINE LINK	Improved signage and way-finding creating a strong graphic connection with the Southwest Museum station to both the Southwest Museum and the Casa.
FOOD SERVICE	Modest enhancement with kitchen facility to provide snacks or pre-made food for patrons.
COMMUNITY MEETING ROOM	A general space shared with “programmable educational space”.
RETAIL SALES	Same amount of retail sales space in same or new location.
ACCESSIBILITY	Minimum code required upgrades, fully utilizing relief provided by Historic Building Code.
CASA DE ADOBE	No change in use, perhaps rent out “as-is” or design as modest add-on experience for school children in home life of early California. No historical analysis done.
OUTDOOR SPACE	Minor enhancements to hardscape and softscape
BRAUN LIBRARY	Programmable educational/ community space.

**POSITIVE FACTORS**

Could encourage additional repeat visitation, cross marketing with Autry, renovation can be used as marketing drive

Positive impact on school groups

Can show more of temporary exhibits, possible modest positive impact on repeat visitation and new induced visitation

Modest positive impact

No impact

No impact

No impact

Positive impact

Per capita spending at the museum will increase slightly

Some revenue enhancement from Autry staff and additional space.

Retail sales would likely remain stable.

Limited impact.

Some rental days, school group interpretive visits.

No impact

Some revenue enhancement from Autry staff and additional space.

**NEGATIVE / MITIGATING FACTORS**

Competitive influence of the Autry, brand confusion

Possible negative impact on per capita spending as mix changes to favor school groups

n/a

May not necessarily save costs due to Autry staff time billed to the Southwest Museum

Still cannot have outside rotating exhibits

No impact

Buses are not able to access the SW Museum parking lot.

Southwest Museum will still primarily remain an automobile destination.

None

Increased costs – utilities, program staff, maintenance, janitorial, security

None

None

None

None

**Table I - III  
Summary / Analysis of Option B**

<b>TOPIC</b>	<b>OPTION B</b>
<b>EXHIBITION SPACE</b>	Reclaim all to-be-vacated space as new exhibition areas except where required for other program. A net gain of 2,600 sf.
<b>PERMANENT EXHIBITS</b>	Four galleries (6,631 sf) - reconceptualize exhibition focus and presentation for broader appeal.
<b>ROTATING EXHIBITS - SW COLLECTION</b>	Ability to securely receive and present exhibitions on loan
<b>VISITING EXHIBITS</b>	Ability to securely receive and present exhibitions on loan. Two contiguous galleries (4,178 SF) available for one major traveling exhibition per year.
<b>EXHIBIT DESIGN STAFF</b>	Add curatorial and design team staff to focus on programmatic profile of Southwest.
<b>LOADING &amp; STAGING</b>	Modification with covered loading area for accepting art and artifacts on loan from other museums.
<b>STORAGE</b>	Modification to allow on-site storage and staging of touring shows and objects on loan upon arrival.
<b>PARKING</b>	Provision of 110 parking spaces through grading and re-lining of current parking area.
<b>GOLD LINE LINK</b>	Improved signage and way-finding creating a strong graphic connection with the Southwest Museum station to both the Southwest Museum and the Casa.
<b>FOOD SERVICE</b>	Museum café (approximately 1,000 SF)
<b>COMMUNITY MEETING ROOM</b>	Fully appointed community room, with larger, nicer capabilities
<b>RETAIL SALES</b>	Increased square footage of retail space, plus enhanced merchandising.
<b>ACCESSIBILITY</b>	Install system off ramps and elevators to allow full and easy access to all levels of museum.
<b>CASA DE ADOBE</b>	Refresh and utilize space for enhanced visitor experience, dining destination and/or event rentals.
<b>OUTDOOR SPACE</b>	Introduction of amphitheater and/or plaza space for outdoor festivals, "mercados", dining or other entertainment.
<b>BRAUN LIBRARY</b>	Enhanced community room above cafe and larger gift shop.

## POSITIVE FACTORS

Additional exhibit area can lead to increase in attendance. Could encourage additional repeat visitation, cross marketing with Autry, renovation can be used as marketing drive

Can result in increase attendance and length of stay.

Can result in increase attendance and length of stay.

Can lead to higher repeat visitation.

Additional programming could be developed to attract more visitors.

See comments under Rotating and Visiting Exhibits.

See comments under Rotating and Visiting Exhibits.

Most likely adequate, not as costly as building a parking structure.

Positive impact

Will increase per capita sales and allow for some catering capability. If concession, limited additional cost.

Will allow for greater amount of programming.

Will allow museum gift shop to show more merchandise and could lead to increased sales.

More comfortable environment for visitors.

Additional rentals.

Potential for special events attendance and revenues: major community festivals and performances as well as private rentals for weddings, corporate events, etc.

Allows for more community programming.

## NEGATIVE / MITIGATING FACTORS

Additional costs to curate, design, and maintain additional exhibits. Increased marketing costs as well. Competition from Autry, brand confusion.

Increased operating costs.

Increased operating costs.

Increased operating costs and security requirements potentially.

Increased operating costs.

n/a

n/a

Buses are still not able to access the SW Museum parking lot.

Southwest Museum will still primarily remain an automobile destination.

Requires additional programming staff.

Could require additional staff.

n/a

n/a

Requires more staff to plan and execute programs.

Requires additional staff.

## SECTION II: AVAILABLE MARKETS

Much of the potential success of any cultural attraction is a function of its available markets available to serve it, as well as the relative drawing power of the proposed development. While the Southwest Museum draws primarily from area residents, ERA reviewed key characteristics of the Los Angeles resident and visitor markets.

### Resident Market

ERA defined the regional resident market as a 50-mile radius around the site. The regional resident market is segmented into a primary market consisting of residents living within 25 miles of the site, and a secondary market within 25 to 50 miles. Table IV-1 presents demographic data for these markets.

Several demographic factors are typically evaluated to assess a market population's propensity to attend a cultural attraction: age, income and education levels. The following are summary characteristics:

- The resident market area population is very large. In 2001, 8.7 million people resided within 25 miles of the museum and an additional 4.6 million resided between 25 - 50 miles of the museum.
- Between 2001 and 2006, the market area population within 25 miles is expected to grow at an average annual rate of 1.1 percent and population between 25 and 50 miles is expected to increase by an average of 1.8 percent per year, compared with a total US population growth rate of 1.2 percent.
- The primary and secondary markets have high average household sizes compared with the nation as a whole. In 2001, average household size was 3.0 in the primary market and 3.1 in the secondary market compared with 2.6 nationwide.
- Compared with the nation, population in the primary and secondary markets is young with higher percentages of those under 44, and particularly high percentages of children 14 and under.
- 47 percent of the population in the primary market is of Hispanic origin, and a third of the secondary market is Hispanic, compared with just 12 percent nationwide. There is also a strong Asian presence in market areas, accounting for 13 percent of the primary market population and 12 percent of the secondary market, compared with less than 4 percent nationwide.

- Income levels in the primary market are comparable to nationwide income levels, and income levels in the secondary market area are notably higher than both the primary market area and the nation as a whole. For example, in 2001, median household income in the primary market area was approximately \$43,000, compared with \$44,000 nationwide. Median household income in the secondary market area was nearly 40 percent higher at \$59,000.

(see Table II - I on the following page)



F002 - Blazing a trail up Museum Hill - lunch break. Dec. 10, 1908

**Table II - I  
Resident Market Demographic Profile**

	0 - 25 miles	25 - 50 miles	USA
<b>Population</b>			
2001	8,712,543	4,566,541	281,334,952
2006	9,196,905	4,985,542	297,928,788
CAGR 2001 - 2006	1.1%	1.8%	1.2%
<b>Households*</b>			
2001	2,862,279	1,453,615	105,343,517
2006	2,979,099	1,562,157	111,917,542
CAGR 2001 - 2006	0.8%	1.5%	1.2%
<b>Families*</b>			
2001	1,930,200	1,071,564	71,734,889
2006	2,004,880	1,148,801	75,592,728
CAGR 2001 - 2006	0.8%	1.4%	1.1%
<b>Average Household Size</b>			
2001	3.0	3.1	2.6
2006	3.0	3.1	2.6
<b>Population by Age (2001)</b>			
0 to 14 Years	23.5%	23.8%	21.3%
15 to 24 Years	14.7%	14.1%	14.0%
25 to 34 Years	16.7%	15.2%	13.9%
35 to 44 Years	15.6%	16.9%	15.9%
45 to 54 Years	12.2%	13.4%	13.8%
55 to 64 Years	7.4%	7.8%	8.7%
65 to 74 Years	5.2%	4.8%	6.4%
75 and over	4.8%	4.1%	6.0%
<b>Median Age</b>			
2001	32.3	33.6	35.9
2006	32.9	34.2	36.7
<b>Race (2001)</b>			
White	45.9%	62.6%	67.5%
Black	9.8%	3.9%	11.2%
American Indian, Eskimo, Aleut	0.9%	0.8%	0.8%
Asian or Pacific Islander	13.0%	11.8%	3.5%
Other	25.0%	16.2%	5.2%
Hispanic Origin (Any race)	47.3%	33.0%	11.8%

\* A family consists of two or more people (one of whom is the householder) related by birth, marriage, or adoption residing in the same housing unit. A household consists of all people who occupy a housing unit regardless of relationship. A household may consist of a person living alone or multiple unrelated individuals or families living together.

Source: ESRI and Economics Research Associates.

**Table II - I**  
**Resident Market Demographic Profile (Continued)**

	0 - 25 miles	25 - 50 miles	USA
<b>Income</b>			
<i>Median Household Income</i>			
2001	\$43,262	\$59,153	\$44,007
2006	\$49,703	\$66,537	\$49,550
<i>Average Household Income</i>			
2001	\$57,683	\$74,790	\$55,970
2006	\$67,519	\$87,646	\$65,603
<i>Median Family Income</i>			
2001	\$47,707	\$65,357	\$51,561
2006	\$56,844	\$74,955	\$58,118
<i>Average Family Income</i>			
2001	\$61,047	\$81,189	\$63,449
2006	\$73,436	\$95,873	\$73,836
<i>Per Capita Income</i>			
2001	\$19,121	\$24,032	\$21,161
2006	\$22,054	\$27,695	\$24,861
<b>Household Income Distribution (2001)</b>			
< \$15,000	18.9%	10.0%	16.3%
\$15,000 to \$24,999	14.1%	9.5%	13.4%
\$25,000 to \$ 34,999	12.4%	10.1%	12.9%
\$35,000 to \$49,999	15.0%	14.4%	16.3%
\$50,000 to \$74,999	16.5%	20.9%	19.1%
\$75,000 to \$99,999	9.2%	12.9%	10.0%
\$100,000+	13.8%	22.1%	12.1%

### Los Angeles Visitor Market

While the majority of the support for the Southwest Museum comes from area residents, some support does come from tourists to the area. Below, we have briefly reviewed the characteristics of area tourists.

Los Angeles is one of the top domestic and international tourist markets. According to the Travel Industry Association of America (TIA), Los Angeles is one of the top five travel destinations in the United States.

In 2002, overnight visitation to Los Angeles County totaled 24.6 million according to the Los Angeles Convention and Visitors Bureau (LACVB), slightly less than peak visitation in the late 1980s, which reached 25 million. Visitation over the last decade was negatively impacted by the recession in the early 1990s, the Los Angeles riots in 1992, and earthquake in 1994, and terrorist attacks on September 11, 2001 among other factors. Overall, visitation has grown an average of less than 1 percent annually since 1980.

The split between domestic and international visitors has averaged approximately 77 percent domestic and 23 percent international since 1995, however, the visitor mix changed in 2001 to 80 percent domestic and 20 percent international. In the near term future, the international visitor market share is expected to decline further to 18 percent of total overnight visitation to Los Angeles. Visitation by domestic overnight visitors, in particular the visiting friends and relatives (VFR) segment, should compensate for the declines in long-haul domestic and international tourism. The LACVB projects declines in visitor spending driven primarily by economic factors, coupled with reductions in average travel party size, somewhat shorter lengths of stay and an increase in VFR visitation.

Selected characteristics of Los Angeles tourists include:

- The domestic visitor market has a higher share of business visitors (27 - 30 percent) versus the international visitor market of approximately 13 - 15 percent, according to visitor surveys conducted by the LACVB in 2000. The combined pleasure-oriented (non-business) visitor market accounts for approximately 76 percent of the total overnight market.
- The average party size was 2.1 persons with an average length of stay at 3.5 days for domestic visitors. International visitors tend to have a slightly smaller travel party compared to domestic visitors (1.6 versus 2.1 persons) and longer length of stay (6.4 days versus 3.5 days).
- The five main domestic visitor origin markets include: San Francisco/Bay Area (13 percent), San Diego (12 percent), Sacramento (6 percent), Fresno (4 percent), and Las Vegas (4 percent).
- Regarding the international visitor market, the top origin market is Mexico (28 percent) followed by Japan (12 percent), Canada (8 percent), the United Kingdom (8 percent) and South Korea (4 percent).
- The average visitor experiences roughly 3.6 areas of Los Angeles County and visits approximately 5.8 attractions during their stay.

The LACVB does not currently track visitation to submarkets within Los Angeles, but did report that downtown hotels accounted for 11 percent of occupied room-nights in all of LA County last year, consistent with historical LACVB data reporting that 11% of all overnight visitors stay downtown. However, visitation to downtown would also include visitors staying elsewhere in the County. Downtown attractions include the Disney Concert Hall, the Museum of Contemporary Art (MOCA), the new Cathedral, California Science Center, as well as ethnic districts of Little Tokyo, Chinatown, and El Pueblo.

### **SECTION III: COMPARABLE FACILITIES**

In order to provide a context for analysis of the potential attendance at the Southwest Museum given the renovations in the two alternatives, ERA conducted a brief review of attendance, pricing, exhibit square footage, and employment at comparable facilities. ERA researched 25 facilities throughout the United States that contain some exhibit content related to the experience of Native Americans. In order to provide a broader perspective, ERA included information on the operating experience of both small and large institutions. A summary of information is provided in Table IV - 1.

#### **Attendance**

Attendance at the 25 facilities reviewed ranges generally from 18,000 at the Koshare Indian Museum in La Junta, CO to close to 473,000 at the Smithsonian National Museum of the American Indian located in New York City. It should be noted that the latter museum has no admission fee, which is one reason for the high annual attendance. The museum with the second highest annual attendance is the Heard Museum in Phoenix, AZ, which receives approximately 250,000 visitors per year. The Field Museum in Chicago has an annual attendance of approximately 1.2 million, but while this museum has some American Indian exhibit content, is more generally considered a natural history museum and not a direct comparable for the Southwest Museum. Of the museums surveyed, 11 out of 25 had an annual attendance of 100,000 or more, while the remaining 14 had less than 100,000 visitors per year. It should be noted that attendance statistics can be slightly misleading due to differences in methods for tracking and defining visitors (i.e. paid visitation, attendance to special events, etc.)

#### **Exhibit Area**

Information on square footage of exhibit area was not available for all museums. However, for the museums for which the information was available, the exhibit area ranged in size from 2,500 square feet at the Indian Center Museum in Wichita, KS to 53,000 square feet at the Heard Museum.

#### **Relationship between Attendance and Size of Exhibit Area**

There is a relationship between annual attendance and the amount of exhibit space at museums. While factors such as free admission, high profile visiting exhibits, and very small or very large exhibited objects can affect this ratio, most museums demonstrate a ratio of attendance to square footage within a certain range. This ratio is a commonly used performance standard.

A summary of attendance, exhibit area, and the resulting ratio of attendance to square feet of exhibit space for selected comparable museums are shown in Table IV - 2. Most of the museums have a ratio between 2.9 and 13.6. As expected, the Smithsonian Museum has a much higher ratio of 23.7 due to the free admission policy. The median ratio of attendance to exhibit square footage is around 6.3. The Southwest Museum currently has a fairly low ratio of 4.1, which implies that the Southwest Museum is below average in generating attendance relative to its exhibit space. In the previous years, the ratio was higher and around the median at 6.5. Since then, attendance has declined, resulting in a lower ratio.

#### **Admission Price**

Three of the 25 museums reviewed do not charge an admission fee (the National Smithsonian Museum of the American Indian, the Stewart Indian Cultural Center in Carson City, NV, and the Wheelwright Museum in Santa Fe, NM). For those museums that do charge an admission fee, the adult admission price ranges from \$2.00 at the Koshare Indian Museum, the Five Civilized Tribes Museum in Muskogee, OK, and the Indian Center Museum in Wichita, KS to \$14.00 at the Bowers Museum of Cultural Art. Of the 22 museums that do charge an admission fee, 13 have an adult admission price of \$5 or under, eight museums have adult admission prices between \$6 and \$10, and only one museum has an adult admission price over \$10. The adult admission price for the Southwest Museum is \$6.

Children's prices are typically between 40 and 50 percent of the adult admission price, and most offer some type of student and senior discount. Children under the age of five or six are typically free.

#### **Staffing Levels**

ERA researched the number of full-time, part-time, and volunteer staffing levels at the selected museums. As shown in the table, the staffing levels exhibit a very large range in number, from three full-time staff persons at the Iroquois Indian Museum in Howes Cave, NY and the Koshare Indian Museum in Colorado to around 80 full-time staff at the Heard Museum and the Indian Pueblo Cultural Center in Albuquerque, New Mexico. Part-time staffing levels also vary greatly, but all of the museums reviewed rely heavily upon volunteer staff for their operations.

### **SECTION IV: ATTENDANCE PROJECTION AND FINANCIAL ANALYSIS**

In this section, ERA presents attendance projections and estimates for revenue and earned income for both alternatives for the Southwest Museum. Our estimates are based on the following factors:

- An understanding of the two alternatives for the Southwest museum with respect to how changes in physical space will affect programming, exhibit, special event, and revenue generation potential.
- ERA's review of prior studies conducted for the Southwest as well as interviews with museum staff regarding historic attendance and operations.

- Demographic research on the resident and visitor markets available to the Southwest Museum.
- Review of key characteristics of comparable museums.
- ERA's own experience with operating characteristics of a variety of museums.
- ERA's estimates are for a stabilized operating year. It should be noted that immediately after a museum opens or undergoes renovations or expansion, attendance and associated spending is likely to be as much as 30 to 40 percent higher than in a stabilized year of operations. Within three years, attendance typically drops to this stabilized level.

#### **OPTION A**

ERA projected attendance, earned income, operating expenses, and the resulting net income and operating gap under Option A. A summary of ERA's key assumptions and estimates are provided in the following section.

#### **Attendance**

Current attendance at the Southwest Museum is 38,000, of which schoolchildren represent 53 percent. Estimates of the museum's existing and projected market penetration into resident and visitor markets are shown in Table V - 1. ERA estimates that given the merger with the Autry Museum and the physical improvements that are part of Option A, the Southwest Museum should be able to attract 46,000 visitors annually. Most of this increase is expected to be a result of cross-marketing efforts with the Autry, the increased attention within the exhibits devoted to school curriculum, and general public interest relating to the renovations.

#### ***Earned Income***

ERA estimates that earned income under Option A will increase to approximately \$809,000 from \$668,000. The assumptions and inputs behind this estimate are shown in Table V - 2 and described below as follows:

- *Admission fees* - The adult admission price will remain the same at \$6.00. The admission yield (a number which reflects the actual admission price per visitor including member admission, free admission, and other discounts) is expected to remain the same at 56 percent. Income generated from admission fees is expected to increase solely as a result of increased attendance.
- *School groups income* - Income generated by school groups is expected to increase by \$4,000 to \$24,000 in a stabilized operating year.
- *Museum store revenues* - Overall gift shop revenues are expected to increase due to increased attendance. However, actual per capita expenditures are actually expected to decline slightly due to the higher proportion of school groups. The Southwest Museum gift shop currently has one of the highest per capita expenditures in the industry.

- *Food sales (net)* – Currently there is only a vending machine at the Southwest Museum, which generates practically no revenue for the museum. In Option A, there is expected to be a limited amount of prepared food available. ERA estimates food expenditures under Option A to be \$.25 per capita, of which. Total revenue (assuming 30 percent cost of food) is estimated to be around \$8,000.
- *Membership* – Current membership income at the Southwest Museum is approximately \$100,000. There are close to 1,250 members, which means that the average membership price (including corporate and family memberships) is around \$80. ERA estimates that income from membership will increase approximately 20 percent to \$120,000 due to increased marketing efforts and cross marketing with the Autry Museum.
- *Programs / Education* – There is currently no significant program income at the Southwest Museum. It is ERA's opinion that given the changes at the Museum and Autry management, there will be increased ability to offer programs that generate income. For purposes of analysis, ERA assumed that the Southwest Museum could generate \$8,000 of program income based on approximately 40 programs per year, with an average of 20 people per program and an average price of \$10 per person. Programs could include lectures, gallery tours, hands-on classes in arts and crafts, films, etc.
- *Special Exhibits* – Income generated from special exhibits is not likely to change since touring shows are not part of the Option A program.
- *Festivals and Special Events* – Currently, festivals and major programs, including the Navajo Rug Auction and the Intertribal Marketplace, generate \$90,000 annually. ERA estimates that this amount would likely increase to approximately \$120,000 due to increased attendance and marketing efforts.
- *Facility Rental* – Due to a combination of physical improvements and Autry management and marketing of the facility, ERA estimates that the Southwest Museum could be successfully rented to community groups or for private parties. In Option A, ERA estimates that there could be around six rentals at \$500 each.
- *Casa de Adobe* – This space may also be rented – ERA assumes that this facility could also generate six rentals at \$500 each annually.

#### **Operating Expenses**

In order to estimate operating expenses for the Southwest Museum under Option A, ERA reviewed existing operating expense levels for both the Southwest and Autry Museum, developed a staffing plan and operating costs by category, and examined standard operating ratios typical for other museums to confirm reasonableness of our estimates. Key assumptions are described as follows:

- *Staffing plan* – A staffing plan that summarizes the existing staffing level in terms of full-time equivalent (FTE) staff is presented in Table V - 3. As shown, there are currently approximately 23 FTE staff persons at the Southwest Museum, and ERA does not expect this to change in Option A. While Autry management, marketing, and programming staff may allocate time to the Southwest Museum which may represent an increase in overall operating costs for the Southwest Museum, ERA did not project any increase in staffing levels for the museum under Option A.
- *Wages and Salaries* – Based upon the staffing plan and existing wages and salary rates, ERA estimated costs of wages and salaries for the Southwest Museum. As shown, total wages and salaries are estimated to be close to \$780,400.
- *Employee Benefits* – ERA estimated employee benefits to be 23 percent of wages and salaries.
- *Administrative* – Administrative costs were assumed to increase by 10 percent from \$200,000 to \$220,000 in Option A.
- *Exhibits and Curatorial* – Exhibit and curatorial costs were also projected to increase, from \$145,000 to \$175,000. These additional costs are associated with the addition of increased rotating exhibits from the permanent collection and expenses associated with developing a new school curriculum-based exhibit.
- *Conservation* – ERA does not project conservation costs under Option A.
- *Facilities and Operations* – Costs associated with facility maintenance and operations were kept the same in Option A.
- *Program and Education* – The program and education expenses were increased slightly for Option A to account for expenses associated with the increased programs that are expected to occur.
- *Memberships* – ERA estimates that membership expenses will increase slightly. Currently, membership expenditures are approximately \$16 per member. ERA kept this ratio but increase the overall expenses to reflect the associated increase in number of members projected under Option A.
- *Advertising / Public Relations / Marketing* – Marketing expenses are very important and should be at a level of approximately 8 percent of the total operating budget in order to maximize the museum's attendance potential. ERA increased the marketing budget to approximately \$160,000 in accordance with the industry operating ratio.
- *Museum Store Cost of Goods Sold* – Currently, the cost of goods sold in the museum store is approximately 60 percent of total revenue. A more typical ratio is 50 percent, which ERA assumes can be achieved in Option A.

- *Museum Store Other Expenses* – Other expenses for the Museum Stores are assumed to increase slightly from \$18,000 to \$20,000 in Option A. Based upon these assumptions, ERA estimates that operating expenses in Option A will be close to \$2.1 million annually in a stabilized year.

#### **Net Income and Operating Gap**

A consolidated pro forma that shows annual attendance, square footage, operating revenue and operating expenses, and the resulting operating gap is presented in table v - 5. Based upon earned income of \$809,000 and operating expenses of close to \$2.1 million, the Southwest Museum will have to raise close to \$1.3 million annually from private donations, foundation or government grants, or other revenue sources to cover the facility's operating costs under Option A.

- In order to confirm the reasonableness of these assumptions, ERA compared these results to a number of standard industry ratios. As shown, the ratio of earned income to total income required under Option A is approximately 39 percent, which is fairly typical for a museum. This ratio typically ranges from 30 to 50 percent, depending on a number of factors.
- The total staff cost as a percentage of total operating cost is approximately 46 percent, which is also typical. This range is generally between 40 and 50 percent for museums.
- The operating expense per square foot is \$49.30, which is just below the national average (according to an American Association of Museums survey) of \$50 per square foot.
- The attendance per square foot of exhibit space is nearly 4.7, which is higher than the existing ratio but still less than average.

#### **Cost of Renovation**

In addition to the above mentioned fundraising required on an annual basis, the Southwest Museum will need to raise slightly over \$16.2 million (includes hard and soft costs) for the cost of making the physical improvements associated with Option A (see Appendix A).

#### **OPTION B**

ERA projected attendance, earned income, operating expenses, and the resulting net income and operating gap under Option B. A summary of ERA's key assumptions and estimates are provided in the following section.

#### **Attendance**

Estimates of the museum's existing and projected market penetration into resident and visitor markets are shown in table v - 1. ERA estimates that given the merger with the Autry Museum and the physical improvements that are part of Option B, the Southwest Museum should be able to attract 64,000 visitors. Most of this increase is expected to be a result of cross-marketing efforts with the Autry, increased overall marketing efforts, and the increased exhibit area.

### *Earned Income*

ERA estimates that earned income under Option B will increase to approximately \$1.3 million. The assumptions and inputs behind this estimate are shown in table v - 2 and described below as follows:

- *Admission fees* – ERA has increased the adult admission price slightly to \$6.75. Given the admission prices of comparable facilities, it would be difficult to raise the price higher than this amount. The admission yield is expected to remain the same at 56 percent. Based on these assumptions, total income from admission fees is expected to be \$73,700 under Option B (excluding school groups).
- *School groups income* – Income generated by school groups is expected to increase to be approximately \$26,000 under Option B.
- *Museum store revenues* – ERA estimated that overall per capita spending will be around \$10, based on current spending patterns. This is one of the highest in the industry and is largely due to the excellent quality of the museum store products and reputation. Based upon the increased attendance and the per capita spending, ERA estimates that museum store revenues will be close to \$645,000, nearly one-third higher than previously. The expanded gift store space and website sales will help support this increase in revenue.
- *Food sales* – Option B includes the development of a 1,000 square foot café. Based upon the experience of comparable museum cafes, ERA estimates that the Southwest Museum café could generate food sales of \$1.50 per person on average, which would generate a total of \$96,000 in revenue. However, the café would be operated by an outside company, so of the total revenue, the Southwest Museum would likely capture about 15 percent or \$14,400.
- *Membership* – ERA assumes that due to increased program offerings, marketing, and attendance, the Southwest Museum will be able to increase the number of museum members of various types. For purposes of analysis, we estimate that the average membership fee will increase from \$80 to \$85 (this reflects a mix of corporate, individual, and family members) and that the number of members will increase from 1,250 to 2,100. This number reflects a similar ratio of members to museum visitors of slightly over 3 percent.
- *Programs / Education* – Program income under Option B should increase due to the ability to hold educational programs in the new spaces. ERA estimates that the Southwest Museum under Option B would be able to generate program income of approximately \$16,000. This is based on having approximately 50 events per year that generate average revenue of \$400 per event, which could mean a combination of higher priced events with lower attendance or lower priced events with higher attendance.

- *Special Exhibits* – Income generated from special exhibits is estimated to be \$32,000. The renovations under Option B will allow the Southwest Museum to receive traveling exhibits. ERA assumes that there will be approximately three special exhibits per year, of which one may be higher profile and allow the museum to charge an extra admission fee. For purposes of this analysis, ERA estimated that one exhibit annually would generate an additional \$2 per person in revenue for 25 percent of the annual attendance.
- *Festivals and Special Events* – Festivals and special event income is expected to increase substantially to \$240,000 annually due to the opportunities provided by the new outdoor amphitheater space. This reflects a minimum of two additional festivals or special events per year.
- *Facility Rental* – Facility rental income was also estimated to increase to \$10,000, which reflects 12 small rentals at \$500 each and four major rentals at \$1,000.
- *Casa de Adobe* – Depending on the improvements made to Casa de Adobe, ERA estimates that this facility could be rented approximately 12 times per year at \$500 per rental.

#### **Operating Expenses**

In order to estimate operating expenses for the Southwest Museum under Option B, ERA reviewed existing operating expense levels for both the Southwest and Autry Museum, developed a staffing plan and operating costs by category, and examined standard operating ratios typical for other museums to confirm reasonableness of our estimates. Key assumptions are described as follows:

- *Staffing plan* – A staffing plan that summarizes the existing staffing level in terms of full-time equivalent (FTE) staff is presented in Table V - 3. ERA estimated that the staffing level would increase from 23 FTE staff in the existing and Option A scenarios to 41 FTE staff under Option B. The additional staff positions include additional curatorial staff, conservation staff, additional marketing and development staff, additional maintenance, janitorial, and security staff, and one additional store assistant.
- *Wages and Salaries* – Based upon the staffing plan and existing wages and salary rates, ERA estimated costs of wages and salaries for the Southwest Museum under Option B. As shown, total wages and salaries are estimated to be \$1.4 million.
- *Employee Benefits* – ERA estimated employee benefits to be 23 percent of wages and salaries.
- *Administrative* – Administrative costs are estimated to increase to \$250,000.
- *Exhibits and Curatorial* – Exhibit and curatorial costs are projected to increase to \$350,000, based upon input from the Autry Museum.

- *Conservation* – ERA included a budget of \$40,000 for supplies related to conservation, based upon input and standards from the Autry Museum.
- *Facilities and Operations* – Operating costs related to facilities and operations were projected based upon \$7 per square foot. This is typical for non-staff facilities costs.
- *Program and Education* – The program and education expenses were increased proportionally to account for the increased level of programming under Option B.
- *Memberships* – In order to maintain a higher level of members, ERA estimates that the Southwest Museum will have to spend approximately \$20 per member on membership related expenses.
- *Advertising / Public Relations / Marketing* – Marketing expenses are very important and should be at a level of approximately 8 percent of the total operating budget in order to maximize the museum's attendance potential. ERA increased the marketing budget to approximately \$290,000 in accordance with this operating standard.
- *Museum Store Cost of Goods Sold* – Currently, the cost of goods sold in the museum store is approximately 60 percent of total revenue. A more typical ratio is 50 percent, which ERA assumes can be achieved in Option B.
- *Museum Store Other Expenses* – Other expenses for the Museum Stores are assumed to increase slightly from \$18,000 to \$30,000 in Option B.

Based upon these assumptions, ERA estimates that operating expenses in Option B will be roughly close to \$3.5 million annually in a stabilized year.

#### **Net Income and Operating Gap**

A consolidated pro forma that shows annual attendance, square footage, operating revenue and operating expenses, and the resulting operating gap under Option B is presented in table V - 5. Based upon earned income of \$1.3 million and operating expenses of close of \$3.5 million, the Southwest Museum will have to raise approximately \$2.2 million annually from private donations, foundation or government grants, or other revenue sources to cover the facilities operating costs under Option B.

In order to confirm the reasonableness of these assumptions, ERA compared these results to a number of standard industry ratios.

- As shown, the ratio of earned income to total income required under Option A and B is approximately 38 percent, which is fairly typical for a museum. This ratio typically ranges from 30 to 50 percent, depending on a number of factors.
- The total staff cost as a percentage of total operating cost is approximately 46 percent, which is also typical. This range is generally between 40 and 50 percent for museums.

- The operating expense per square foot ranges from 49-67% in Options A and B respectively, Option B is slightly above the national average (according to an American Association of Museums survey) of \$50 per square foot but well within a reasonable range given the level of activities and attendance projected for the Southwest Museum under Option B.
- The attendance per square foot of exhibit space is 4.7 in Option A and 5.1 in Option B, which is higher than the existing ratio and just slightly lower than average.

#### **Cost of Renovation**

In addition to annual fundraising described above, the Southwest Museum will need to raise slightly over \$22.8 million (includes hard and soft costs) for the cost of making the physical improvements associated with Option B (see Appendix A).

#### **Parking Requirements**

In order to assess the physical capacity of the museum to accommodate the higher levels of attendance projected, ERA performed a preliminary parking analysis of the Southwest. Assuming 85 percent auto arrival, and taking into consideration projected school groups and typical seasonal and daily operating patterns, we estimate that the current parking lot spaces would be sufficient to support Option A attendance levels. Under Option B, we estimate that some 110 parking spaces will be required. It is our understanding that this level could be achieved through re-grading the current parking area and service drive to the Braun Library together into a single surface.

(Tables shown on following pages)



F003 - Construction of the museum, witnessed from banks of the Los Angeles River

Table IV - I

## CHARACTERISTICS OF SELECTED COMPARABLE CULTURAL FACILITIES

Cultural Attraction	Location	Attendance	EXHIBIT AREA
			sq. ft.
National Mus.of the American Indian, Smithsonian	New York, NY	560,000	20,000
The Heard Museum	Phoenix, AZ	250,000	53,000
The UT Institute of Texan Cultures	San Antonio, TX	234,000	50,000
The Bowers Museum of Cultural Art	Santa Ana, CA	175,000	20,000
Eiteljorg Museum of American Indian and Western Art	Indianapolis, IN	102,004	25,000
California State Indian Museum	Sacramento, CA	101,786	5,000
Indian Pueblo Cultural Center	Albuquerque, NM	97,000	10,000
Museum of the Plains Indians and Crafts Center	Browning, MT	80,000	n/a
Sioux Indian Museum	Rapid City, SD	70,000	n/a
The Institute for American Indian Studies	Washington Green, CT	60,000	n/a
Indian Center Museum	Wichita, KS	60,000	2,500
Institute of American Indian Arts Museum	Santa Fe, NM	60,000	4,626
The Five Civilized Tribes Museum	Muskogee, OK	35,000	n/a
Southern Plains Indian Museum and Crafts Center	Anadarko, OK	28,000	n/a
Stewart Indian Cultural Center	Carson City, NV	25,000	n/a
Iroquois Indian Museum	Howes Cave, NY	24,300	n/a
Koshare Indian Museum, Inc.	La Junta, CO	18,000	n/a
Museum of Man	San Diego, CA	245,227	n/a
Gilcrease Museum	Tulsa, OK	93,706	n/a
Burke Museum	Seattle, WA	100,000	n/a
Wheelwright Museum	Santa Fe, NM	33,398	n/a
Fine Arts Museum	Santa Fe, NM	125,000	n/a
Indian Arts & Culture Museum	Santa Fe, NM	65,000	10,000
International Folk Art Museum	Santa Fe, NM	71,513	25,000
Field Museum	Chicago, IL	1,212,475	n/a

<sup>1</sup>Includes full-time and part-time volunteers.<sup>2</sup>New Mexico Residents/Non-Residents<sup>3</sup>Under Age 16 Free<sup>4</sup>Ages 13-17/ages 5-12.

Source: American Association of Museums Official Museum Directory, 2002; ERA

ADMIT PRICE	ADMIT PRICE	# OF STAFF	# OF STAFF	# OF STAFF	# OF STAFF
Adult	Child	Full Time	Part Time	Volunteer	Intern
free	free	223	19	79	n/a
\$7.00	\$3.00	75	17	700	4
\$4.00	\$2.00	100	19	450	2
\$8.00	\$4.00	37	44	301	0
\$5.00	\$2.00	47	9	800	4
\$3.00	\$1.50	1	2	30	0
\$4.00	n/a	85	0	100	0
\$4.00	\$1.00	3	0	0	0
\$7.00	free	3	0	0	0
\$4.00	\$2.00	6	6	27	6
\$2.00	\$1.00	7	4	219	4
\$4.00	free	14	0	4	20
\$2.00	free	3	3	103	0
\$3.00	\$1.00	3	0	0	0
free	free	n/a	n/a	n/a	n/a
\$7.00	\$4.00/\$5.50	3	4	75	0
\$2.00	\$1.00	3	8	65	0
\$6.00	\$3.00	22	12	17	9
\$5.00	\$3.00	35	2	300	2
\$6.50	\$3.00	30	58	122	2
free	free	10	7	130	0
\$5.00/\$7.00	free	12	2	8	2
\$5.00/\$7.00	free	25	1	61	2
\$5.00/\$7.00	free	18	2	115	2
\$8.00	\$4.00	460	32	450	10

Table IV - II

## RATIO OF ATTENDANCE TO EXHIBIT SQ. FOOTAGE AT SELECTED COMPARABLE MUSEUMS

Museum	Attendance	Exhibit Area (Sq. Ft.)	Attendace to Sq. Ft. Exhibit Ratio
National Museum of the American Indian, Smithsonian	472,900	20,000	23.65
The Spanish Institute	30,000	2,200	13.64
Institute of American Indian Arts Museum	60,000	4,626	12.97
Studio Museum in Harlem	100,000	10,000	10.00
Indian Pueblo Cultural Center	97,000	10,000	9.70
The Bowers Museum of Cultural Art	175,000	20,000	8.75
African American Historical & Cultural Museum	60,000	7,765	7.73
Indian Arts & Culture Museum	65,000	10,000	6.50
The Balch Institute for Ethnic Studies	34,100	5,700	5.98
Japanese American National Museum	100,000	18,300	5.46
The Heard Museum	250,000	53,000	4.72
The UT Institute of Texan Cultures	234,000	50,000	4.68
<b>Southwest Museum</b>	<b>40,000</b>	<b>9,800</b>	<b>4.08</b>
Eiteljorg Museum of American Indian and Western Art	102,096	25,000	4.08
International Folk Art Museum	71,513	25,000	2.86

**Table V - I**  
**PROJECTED ATTENDANCE FOR SOUTHWEST MUSEUM ALTERNATIVE SCENARIOS**

Market Segment	Market Size	Existing	Market Penetration	
			Option A	Option B
<i>Resident Market</i>				
Primary Market (0 to 25 miles)	8,903,149	0.30%	0.38%	0.49%
Secondary Market (25 to 50 miles)	4,729,741	0.17%	0.18%	0.30%
<i>Total Resident Market</i>	<i>13,632,890</i>	<i>0.26%</i>	<i>0.31%</i>	<i>0.42%</i>
<i>Visitor Market</i>	<i>18,000,000</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.04%</i>
<b>Grand Total</b>	<b>31,632,89</b>	<b>0.12%</b>	<b>0.15%</b>	<b>0.20%</b>

Market Segment	Existing	Projected Attendance	
		Option A	Option B
<i>Resident Market</i>			
Primary Market (0 to 25 miles)	27,000	33,800	43,500
Secondary Market (25 to 50 miles)	8,000	8,600	14,200
<i>Total Resident Market</i>	<i>35,000</i>	<i>42,400</i>	<i>57,700</i>
<i>Visitor Market</i>	<i>3,000</i>	<i>3,600</i>	<i>6,300</i>
<b>Grand Total</b>	<b>38,000</b>	<b>46,000</b>	<b>64,000</b>

Market Segment	Existing	Share of Total Attendance	
		Option A	Option B
<i>Resident Market</i>			
Primary Market (0 to 25 miles)	71%	73%	68%
Secondary Market (25 to 50 miles)	21%	19%	22%
<i>Total Resident Market</i>	<i>92%</i>	<i>92%</i>	<i>90%</i>
<i>Visitor Market</i>	<i>8%</i>	<i>8%</i>	<i>10%</i>
<b>Grand Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



**F004** - Lummis' vision: A museum sited so as "to see and to be seen."

**Table V - II**  
**EARNED INCOME FOR SOUTHWEST MUSEUM ALTERNATIVES**

<b>KEY FACTORS FOR ANALYSIS</b>	<b>Existing</b>	<b>Option A</b>	<b>Option B</b>
<i>Total Attendance</i>	38,000	46,000	64,000
Adults / Students / Senior / Member	18,000	22,000	38,000
School Groups	20,000	24,000	26,000
<b>Admission Price</b>			
Adult	\$6.00	\$6.00	\$6.75
Student / Senio	\$4.00	\$4.00	\$5.00
School Groups	\$1.00	\$1.00	\$1.00
Members	\$0.00	\$0.00	\$0.00
Per Capita Admission Expenditure	\$3.35	\$3.35	\$3.78
Admissions Yield (excluding schools)	56%	56%	56%
Gift Shop Avg. Per Capita	\$10.44	\$9.75	\$10.07
Gift Shop Square Footage	1,007	1,136	1,517
Gift Shop Sales per SF	\$394	\$395	\$425
Food Sales Avg. Per Capita	\$0.00	\$0.25	\$1.50
Members	1,250	1,500	2,100
Avg. Membership Fee	\$80	\$80	\$85
<b>EARNED INCOME</b>			
Admission Fees	\$60,300	\$73,700	\$143,640
School Groups Income	\$20,000	\$24,000	\$26,000
Museum Store	\$396,758	\$448,720	\$644,725
Food Sales (net)	\$0	\$8,050	\$14,400
Membership	\$100,000	\$120,000	\$178,500
Educational Programs	\$0	\$8,000	\$16,000
Special Exhibits	\$1,000	\$1,000	\$32,000
Festivals and Events	\$90,000	\$120,000	\$240,000
Facility Rental	\$0	\$3,000	\$10,000
Casa de Adobe	\$0	\$3,000	\$6,000
<b>Total Earned Income<sup>1</sup></b>	<b>\$668,000</b>	<b>\$809,000</b>	<b>\$1,311,000</b>

<sup>1</sup>Rounded  
Source: Southwest Museum, ERA.

**Table V - III  
STAFFING PLAN FOR SOUTHWEST MUSEUM ALTERNATIVES**

Position	Existing	Option A	FTE POSITIONS	
			Option A	Option B
Museum Director	1	1	1	1
Assistant to Director	1	1	1	1
Special Projects	1	1	1	1
Reception / Admin Assistants	2	2	2	2
Senior Curator	1	1	1	1
Curator	0	0	0	1
Assistant Curator	0.25	0.25	0.25	2
Conservator	0	0	0	1
Conservator Interns	0	0	0	2
Collections	1.25	1.25	1.25	1.5
Marketing / PR Manager	0	0	0	1
Marketing / Devt. Assistant	0	0	0	1
Membership / Visitor Services	0	0	0	1.5
Development Director	0	0	0	1
Education /Program Director	1	1	1	1
Program Assistant	2	2	2	2
Maintenance Manager	1	1	1	1
Maintenance Assistant	2	2	2	3
Janitorial	2	2	2	3
Chief of Security	1	1	1	1
Security Staff	3.5	3.5	3.5	8
Store Manager	1	1	1	1
Store Assistants	2	2	2	3
<b>Grand Total</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>41</b>

Source: Southwest Museum, ERA.

**Table V - IV  
OPERATING EXPENSES FOR SOUTHWEST MUSEUM ALTERNATIVES**

<b>Category</b>	<b>Existing</b>	<b>Option A</b>	<b>Option B</b>
Wages and Salaries	\$780,375	\$780,375	\$1,409,250
Employee Benefits	\$179,486	\$179,486	\$324,128
Administrative	\$200,000	\$220,000	\$250,000
Exhibits & Curatorial	\$145,000	\$175,000	\$675,000
Conservation	\$0	\$0	\$40,000
Facilities & Operations	\$230,000	\$230,000	\$325,290
Program & Education	\$70,000	\$80,000	\$105,000
Memberships	\$20,000	\$24,000	\$42,000
Advertising / Public Relations	\$20,000	\$160,000	\$290,000
Museum Store - Cost of Goods Sold	\$257,893	\$224,360	\$322,363
Museum Store - Other	\$18,000	\$20,000	\$30,000
<b>Total<sup>1</sup></b>	<b>\$1,921,000</b>	<b>\$2,093,000</b>	<b>\$3,813,000</b>

<sup>1</sup> Rounded

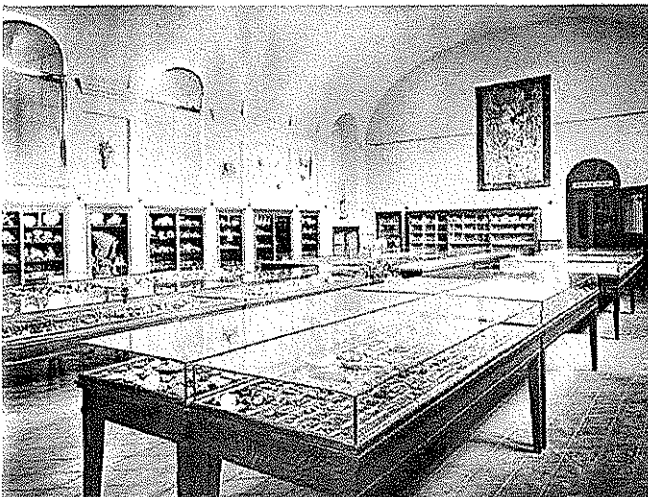
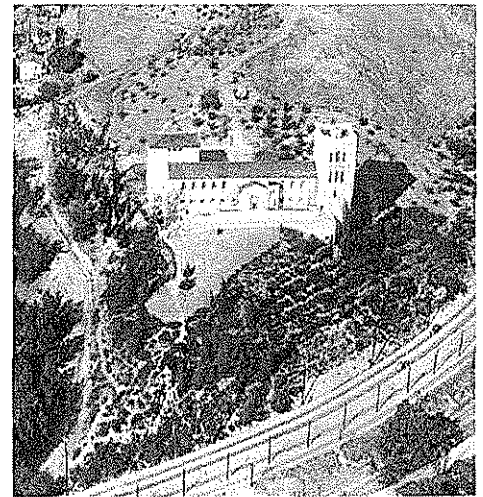
Table V - V

## ANALYSIS OF SOUTHWEST MUSEUM ALTERNATIVES: CONSOLIDATED STABILIZED YEAR PRO FORMA

Category	Existing	Option A	Option B
Annual Attendance	38,000	46,000	64,000
Gross Square Footage	42,076	42,453	52,092
Exhibit Square Footage	9,804	9,875	12,539
<b>Operating Revenue</b>			
Admission Fees	\$60,300	\$73,700	\$143,640
School Groups Income	\$20,000	\$24,000	\$26,000
Gift Shop	\$396,758	\$448,720	\$644,725
Food Sales	\$0	\$8,050	\$14,400
Membership	\$100,000	\$120,000	\$178,500
Programs / Education	\$0	\$8,000	\$16,000
Special Exhibits	\$1,000	\$1,000	\$32,000
Special Events	\$90,000	\$120,000	\$240,000
Facility Rental	\$0	\$3,000	\$10,000
Casa de Adobe	\$0	\$3,000	\$6,000
<b>Total Operating Revenue</b>	<b>\$668,000</b>	<b>\$809,000</b>	<b>\$1,311,000</b>
<b>Operating Expenses</b>			
Wages and Salaries	\$780,375	\$780,375	\$1,409,250
Employee Benefits	\$179,486	\$179,486	\$324,128
Administrative	\$200,000	\$220,000	\$250,000
Exhibits & Curatorial	\$145,000	\$175,000	\$675,000
Conservation	\$0	\$0	\$40,000
Facilities & Operations	\$230,000	\$230,000	\$325,290
Program & Education	\$70,000	\$80,000	\$105,000
Memberships	\$20,000	\$24,000	\$42,000
Advertising / Public Relations	\$20,000	\$160,000	\$290,000
Museum Store - Cost of Goods Sold	\$257,893	\$224,360	\$322,363
Museum Store - Other	\$18,000	\$20,000	\$30,000
<b>Total Operating Expenses</b>	<b>\$1,921,000</b>	<b>\$2,093,000</b>	<b>\$3,813,000</b>
Net Income (Loss)	(\$1,253,000)	(\$1,284,000)	(\$2,502,000)
Earned Income/Expenses Ratio	34.8%	38.7%	34.4%
Staff as a Percent of Total Expenses	50.0%	45.9%	45.5%
<b>Operating Expenses per SF</b>	<b>\$45.66</b>	<b>\$49.30</b>	<b>\$73.20</b>
<b>Industry Benchmarks</b>			
Low			\$12.00
Average			\$50.00
High			\$283.00
<b>Attendance per Exhibit SF</b>	<b>3.88</b>	<b>4.66</b>	<b>5.10</b>
<b>Industry Benchmarks</b>			
Low			2.83
Average			6.10
High			10.00

# Southwest Museum Rehabilitation Study

Phase I Planning



## Appendix

Acknowledgements  
Sources

## APPENDIX

### ACKNOWLEDGEMENTS

Levin & Associates, Architects, would like to express our gratitude to the consultants responsible for each chapter of the Southwest Museum Rehabilitation Study. Their thoroughness and professional commitment to this project have been far beyond what was expected.

In addition would like to acknowledge the following parties, whose support and effort were indispensable in this project:

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*Louis Gomez*

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*Ed Reyes*, COUNCILMEMBER

THE AUTRY NATIONAL CENTER BOARD OF TRUSTEES

THE FRIENDS OF THE SOUTHWEST MUSEUM COALITION

### SOURCES

This study would not have been possible without the bountiful collection of the Braun Research Library at the Southwest Museum. The following is a list of the most relevant sources used by Levin & Associates, Architects, and their consultants in the preparation of the Southwest Museum Rehabilitation Study. Much more material of great value was encountered in the Braun Research Library, which space does not allow us to reprint here.

### BOOKS AND PUBLICATIONS

In addition to the material cited below, please refer to the footnotes and Reference Codes list for each consultant's section.

Bingham, Edwin R., Charles F. Lummis, *Editor of the Southwest*. San Marino: The Huntington Library, 1955.

Butz, Patricia, *A Selected History of the Braun Research Library of the Southwest Museum*. (Spring 1984).

Clark, Donovan Lee, *History of Southwest Museum, 1905-55*, June 1956.

Gordon, Dudley, *Charles F. Lummis, Crusader in Corduroy*. (Los Angeles: Cultural Assets Press with the cooperation of the Southwest Museum, the Historical Society of Southern California and the Lummis Memorial Association, 1972.

Krech, Shepard III and Hall, Barbara A. Hall, *Collecting Native America*, 1870-1960. Washington D.C.: Smithsonian Institution Press, 1999. (See Chapter 3, Thomas H. Wilson and Cheri Falkenstein-Doyle, "Charles Fletcher Lummis and the Origins of the Southwest Museum," pp 74-104.)

Wilson, Thomas H., *F.W. Hodge and the Southwest Museum*, (self-published, 1994; ms. of essay)

The Southwest Museum, *Southwestern Museum Handbook*, v. 19-34 (1941-57).

The Southwest Museum, *Casa de Adobe Handbook*, various editions from 1930-73.

The Southwest Society of the Archaeological Institute of America, The Southwest Society of the *Archaeological Institute of America Third Bulletin*, May 1907 (see Charles F. Lummis, "The Southwest Museum," pp 2-12)

The Southwest Society of the Archaeological Institute of America, The *Southwest Society of the Archaeological Institute of America Fifth Bulletin*, (1910)

#### **ARCHITECTURAL AND ENGINEERING DRAWINGS**

The drawings below, all found in the Braun Research Library, were consulted extensively by the project team. They are grouped by date and project.

- Main building, completed 1914, Hunt & Burns, Architects (includes unbuilt work, as well as consultant/subcontractor drawings)
  - 1 sheet - Plan & Section, balconies in upper stories of tower, no date
  - 4 sheets - Elevations and Sections, museum and proposed addition, no date
  - 1 sheet - Proposed additions to Southwest Museum - cross section, author uncertain, no date
  - 1 sheet - Stairs, Window Guards, Rails, Gates - shop drawing submitted by Pacific Ornamental Iron Works to Hunt and Burns, July 30, 1914
  - Pastel & Charcoal Rendering; Hunt & Burns, Architects, CA. 1912
  - Watercolor of scheme I, never built, Hunt & Eager Architects, 1906
  
- Mayan Portal and Tunnel, completed 1920, Hunt & Burns, Architects (includes preliminary and unbuilt work, as well as consultant/subcontractor drawings)
  - 1 sheet - Plans, elevations, sections - section through waiting room, plan at ground floor level, section through tunnel, plan of tunnel elevator shaft, elevation of superstructure, March 1919
  - 1 sheet - Plan, Front Elevation, Side Elevation, Section, Detail Portal at Tunnel Entrance, 1919

- Caroline Boeing Poole Wing, Addition to the Southwest Museum by Gordon B. Kaufmann, Architect, completed 1941. Construction set dated March 29, 1940
  - Sheet #1 - Plot Plan
  - Sheet #2 - Basement Plan Details and Schedules
  - Sheet #3 - 1st Floor Plan and Details
  - Sheet #4 - Elevations and Sections
  - Sheet #5 - Main Entrance and Case Details
  - Sheet S-1 - Basement & Foundation & Details
  - Sheet S-2 - Main Floor Framing Plan and Details
  - Sheet S-3 - Column Schedule & Details
  - Sheet S-4 - Roof Framing Plan & Details
  - Sheet M-1 - Service Line Plan
  - Sheet M-2 - Plumbing-Heating & Electrical Plans, First & Basement Floors
  - Pencil rendering, artist un-named
  
- Southwest Museum Tower Underpinning, Labarre & Converse Foundation Engineers, full set dated January 25, 1932
  - Sheet #1 - Map of site
  - Sheet #2 - Plan & Elevations of Piers & Footings
  - Sheet #3 - Excavation, Shoring & Jacking Details
  - Sheet #4 - Structural Details, Piers and Footings
  - Sheet #5 - Structural Details, Piers and Footings
  - Sheet #6 - Structural Details, Piers and Footings, 35 Foot Lengths
  - Additional sheet - Plan of Proposed Underpinning, New Columns and Foundations, Basement, May 1934
  
- Allan Braun Research Library, Glenn E. Cook Architect, completed 1979 (includes consultant/subcontractor drawings)
  - 14 Sheets - Architectural Set, Revision 2, 1976
  - Sheets 1-6 - Structural Steel Shop Drawings, Oltsmans Construction Co./Quality Steel Fabricators, February 3, 1977
  - Drawings by Burt C. Gentle Co. May 1977
  - Sheet #1 - Lighting Plan, Beam plan, section, shelving plan, footing plate plan
  - Sheet #2 - Burt C. Gentle Co., Typical structure, electrical wiring details, etc.
  - Sheet #3 - Burt C. Gentle Co., Shelving details
  - Sheet #1rev. - Lighting plan, beam plan, shelving plan
  - Sheet #2rev. - Revised ceiling channels
  - Sheet #3rev. - Shelving Plan
  - Sheet #4rev. - Book lift elevations
  
- Additional projects by Glenn E. Cook Architect, 1981-1983
  - Sheet #1 - Fire Safety Modifications, First Level Floor Plan, January 5, 1981
  - Sheet #2 - Fire Safety Modifications, Second Level Plan, January 5, 1981
  - Sheet #3 - Entrance Canopy - South Entry, 1982-1983
  - Sheet # 5 - Covered Walkway and Storage Room, 1982-1983
  
- Interior Renovation, LAX Studios, Designers, set dated September 1, 1981
  - Sheet 1 - Plan
  - Sheet 2 - Entrance Gallery

Sheet 3 - Entrance Gallery  
Sheet 4 - Bathrooms, etc  
Sheet 5 - Section  
Sheet 6 - Auditorium  
Sheet 7 - Auditorium  
Sheet 8 - Library Gallery  
Sheet 9 - Library Gallery  
Sheet 10 - Library Gallery

- Torrance Tower Renovation, LAX Studios, Designers, undated set  
Sheet 1 - Floor Plan  
Sheet 2 - Ceiling Plan  
Sheet 3 - Elevations  
Sheet 4 - Details  
Sheet 5 - Details  
Sheet 6 - Ceiling Plan  
Sheet A - (Details)  
Sheet B - (Details)  
Additional sheet - Second Floor Torrance Tower Plan, no attribution or date
- Site Work: Grading, Access Improvements, Landscape 1982-1985 - Consultants as listed

Survey and Topographic Map - Metrex, May 12, 1982  
Disabled Access Drop-off: Demolition/Site Plan - J. Charles Hoffman, ASLA, November 15, 1984  
Grading and Paving Plan for Driveway Relocation - DMJM December 4, 1984  
Irrigation Plan - Lyman Brewer,  
Topographic Map of Southwest Museum - March 6, 1985  
Parking Layout - Rex B. Link and Associates, August 19, 1985

#### **MISCELLANEOUS PUBLISHED AND UNPUBLISHED DOCUMENTS**

- These documents were found in the Braun research library and also supplied by the Museum administration.

Southwest Museum, selected documents from the Southwest Museum Archives, 1909-14  
Minutes of the Southwest Museum Board of Directors, 1909-14  
Groundbreaking (2 folders)  
Minutes of the Board, 1912-14  
Roster 1915  
Minutes 1915  
Misc forms and form letters  
Museum construction reports  
Misc blueprints  
Cornerstone laying  
Deaths and Resolutions  
Incorporation

Proxies

Resolutions (2 folders)

List of Names

Misc

Bids Painting, Plumbing, elec

- SouthWest Museum, Director's Reports, 1940-70.
- Strategic Long Range Planning Alternatives for the Southwest Museum, prepared by Harrison Price Company, April 13, 1992
- Southwest Museum General Conservation Survey, April 30, 1993
- Southwest Museum Caracol Tower Due Diligence Report, December 16, 1996
- Southwest Museum Main Museum Building-Damage Assessment Analysis and Impact of January 17, 1994 Northridge Earthquake, March 28, 1997
- Southwest Museum Museum Building Repair Cost Estimates: Replacement Estimate and Damage Repair Estimate, April 30, 1997
- FEMA PA Grant Acceleration Program Notice of Interest Form for Casa de Adobe and Southwest Museum Caracol Tower, October 23, 1997
- Cost Estimating Format Summary for Museum Artifact Storage Adm., Office and Store, FEMA DSR 32839, December 1, 1997
- PA Grant Acceleration Program Settlement Offer Decision Form, January 29, 1998
- Documentation for Request and Approval of Time Extension for Caracol Tower Repair - various dates
- Documentation of Request and Approval for "Improved Project" for Caracol Tower - various dates
- FEMA Damage Survey Report Project Description and DSR Summary, April 8, 1998
- FEMA Damage Survey Report Data Sheet DSR 92839, no date
- Documentation for Project Compliance with National Historic Preservation Act - various dates
- Southwest Museum Emergency Information and Floor Plans, June 14, 2002

## PHOTOGRAPHS

The historical photographs listed below were selected from the rich collection of the Braun Research Library, and appear with their Braun serial numbers:

**EX001** - Aerial View c.1930's - Braun #S1.569A

**EX002** - Façade from a Southwest Museum publication

**EX003** - The Monk Library of Arizoniana - Braun #S2.17

**IN001** - South Façade - Braun #S1.574

**H001** - Portrait of Charles Lummis on display in Braun Research Library

**H002** - Site, 1907-1910, by Charles Lummis - Braun #S1.601

**H005** - Scheme II Plan - The Southwest Society of the Archaeological Institute of America Fifth Bulletin, (1910)

**H006** - Under construction May 1913 - Braun #S1.503

**H007** - Caracol tower & south terrace ca. 1913, by Charles Lummis - Braun #S1.506

**H008** - Entry hall stair - Braun #S2.14A

**H009** - Caracol Tower CA. 1914 - Braun #S1.146

**H010** - Nov 16, 1912 Ground Breaking Ceremony - Braun #S1.21

**Ho11** - Former "Hall of Archaeology" - Braun #S2.9  
**Ho12** - Torrance Tower, circa 1920 - Braun #S178.10  
**Ho13** - Plains Hall as "Hall of Conchology" - Braun #S2.8  
**Ho14** - Mayan Portal - Braun #S1.638  
**Ho15** - Portal & Elevator Tower, ca.1919-1920 - Braun #S1.591  
**Ho17** - Upper Poole Wing in original condition - Braun #S1.348  
**Ho18** - Aerial photo ca.1982- Braun #S1.675  
**Ho19** - Construction of the museum - Braun #S1.572  
**Ao01** - Aerial photo, February 12, 1942 - Braun #S1.650  
**Ao02** - View with "Yellow Line" car, 1920 - Braun #S1.189  
**Ao03** - Main stair circa 1925 - Braun #S2.13A  
**Ao04** - Sprague Hall - Braun #S1.166  
**Ao05** - Caroline Boeing Poole Wing, April 2, 1941 - Braun #S1.347  
**Ao06** - Museum and Mayan Portal by Frasher's Foto, circa 1930- Braun #S1.632  
**Ao07** - Mayan Portal - Braun #S1.638  
**Ao08** - Saturday children's program by Eyre Powell Press Service, 1930's - Braun #S1.597  
**Ao09** - Southeast view by Johannes Bartholow Sky, 1938- Braun #S1.617  
**Ao10** - Torrance Tower under construction, possibly by Charles Lummis - Braun #S1.188  
**Fo01** - Ground Breaking Ceremony - Braun #S1.36  
**Fo02** - Trail up Museum Hill, Dec. 10, 1908 by Charles Lummis - Braun #S1.14  
**Fo03** - Construction of the museum Lummis - Braun #S1.572  
**Fo04** - Aerial perspective - Braun #S1.569A

These additional photographs were provided by project consultants, as noted:

**Ao11** - Ceramic light fixture, entry hall, 2003. Photo courtesy of Katherine Smith  
 Photographs **HRo01** through **HRo42** 2003, courtesy of Historic Resources Group.  
 Photographs **So01** through **So06 2003**, courtesy of Englekirk & Sabol, Inc.  
 Photographs **Mo01** through **Mo10** and **Po01**, 2003, courtesy of the Sullivan Partnership.  
 Photographs **Eo01** through **Eo30, 2003**, courtesy of Nikolakopoulos & Associates.  
 Photographs **LSoo1** through **LSoo6**, 2003, courtesy of Schirmer Engineering Corporation