

A NEW VISION FOR VULCAN THE PLAN

Birmingham Historical Society

May 22 1999

DRAFT

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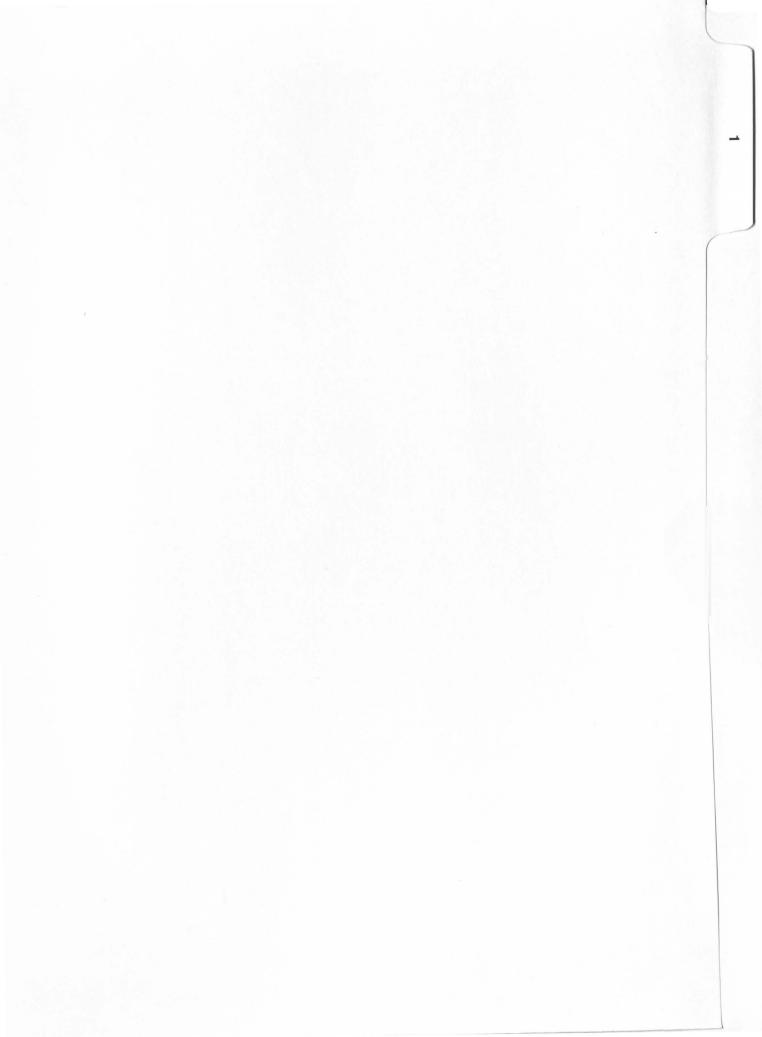
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I. INTRODUCTION

Deteriorating and abused, the great statue of Vulcan and his park on top of Birmingham's Red Mountain deserve restoration consistent with their original design and intent to serve as a symbol of our area and a focus of learning and understanding for citizens, school children and tourists. The Birmingham Historical Society presents this Vision for Vulcan and invites response from the Birmingham area.

Mission and Purpose. As the most widely recognized symbol of the founding and early growth of Birmingham, Vulcan is the once and future "place to visit" in the Birmingham area. It will be the place to tell the history of our area to the tourists who, every survey says, want to know about us; and it will be the place for our children, indeed all of us, to learn about where we came from and what we have accomplished.

Restoration. The statue of Vulcan will be removed from its pedestal, repaired in accordance with the sculptor Giuseppe Moretti's original design, and reinstalled on a properly designed and permanent frame. The monument will be restored in accordance with the magnificent 1930s design. Subsequently installed marble cladding will be removed to reveal the original stone work from local rock by local stone masons of Italian descent, and the elevator will be relocated to the center of the pedestal. The surrounding park, including cascade, terraces and staircases, will be restored to its original character.

Improvements. Additional improvements will be limited to those appropriate to the size of the site and the expected visitation and will consist principally of a visitors center, modeled after the highly successful visitors centers built by the National Park Service around the country. The visitors center will accommodate a multi-media interpretive center, exhibits, a gift shop, offices and rest rooms adequate to serve the site. Picnic pavilions and access for service trucks will accommodate both casual visitors and special events. Lighting will feature the statue.

Organization and Ownership. The restoration and improvement of Vulcan Park and its ongoing operation will be managed through a public-private partnership. Funds for the restoration and improvements will come from public and private sources, inspired by the lead gift of the McWane family whose forbears first cast Vulcan in 1903 and underwrote a substantial portion of its original cost. The City of Birmingham will continue to own Vulcan Park and will be responsible for structural maintenance, utilities and insurance.

A non-profit corporation will be established to raise (with the assistance of the Chamber of Commerce) the remaining portion of the \$10,000,000 required for the restoration and improvements, and to manage the future operation of the park under contract with the City. The board of the Vulcan Park Foundation will be representative of the governments and organizations that have supported Vulcan through the years and in the present restoration effort. The Vulcan Park Foundation will employ a director and a small staff and will contract for maintenance, cleaning and security services. Funds for operations will come from admissions, concessions and special events and from the City of Birmingham. The City will continue to provide financial support for park operations at the current level, adjusted for inflation.

The Birmingham Historical Society will be responsible to the Vulcan Park Foundation for exhibits and educational programs featuring Vulcan and the history of the Birmingham area. An Endowment will support these programs. The Society will recruit volunteers and will manage the gift shop in the visitors center and special events on the site. The Society's offices may be housed in the visitors center.

II. FACTS AND CHRONOLOGY

THE RESUME OF A MAN OF IRON

Conception

Vulcan was born from a burning desire on the part of Birmingham businessmen to promote the area's industrial potential at the 1904 St. Louis World's Fair. Presenting the world's largest cast metal structure -- largest U.S. Statue after the Statue of Liberty -- would surely make an impression. And it did (see Triumph of the Fair, below).

Gestation

A dramatic story, chronicled on the front pages of major New York newspapers: Sculptor Giuseppe Moretti, Italian immigrant, had 40 days to create the model of Vulcan in an unfinished New Jersey church in the dead of winter. Moretti, a popular figure on the art scene, shipped Vulcan's plaster cast "parts" to Birmingham foundries in segments. Meanwhile, the art world swooned with admiration over the work in progress.

D.O.B.

Birmingham Steel and Iron, operated by James R. McWane, went into action. The largest castings ever made, supported by money from the Birmingham public, began to form the Man of Iron. Time span from Vulcan's conception to his dedication at the World's Fair: 9 months. Total cost: \$20,000. A near miracle of technology and desire.

Triumph of the Fair

Vulcan "held court" in the center of the Palace of Mines and Metallurgy (a major pavilion), surrounded by other exhibits touting Alabama's minerals and industries. Fair attendance: 19 million. Awards: Best Exhibit in Palace (for Vulcan himself), silver medals for Moretti and McWane.

Homecoming

After 7 months in St. Louis, Vulcan returned to Birmingham. But where? Birmingham ladies objected to his bare bottomed torso. The Alabama State Fairgrounds warmly accepted him -- for 30 years, he was a popular meeting place for families gathering at the fair.

Graduation

Finally, Vulcan truly returned home to the crest of Red Mountain from which his original materials had been mined. Perched atop a pedestal with a museum in his base, he became a highly visible landmark on the Birmingham scene.

II. FACTS AND CHRONOLOGY continued A RESUME OF A MAN OF IRON

All Eyes on Vulcan

Once moved, he became the man to visit in Birmingham, the city's only real tourist attraction, and the premier place for first kisses and marriage proposals. The neon torch (shining green in times of traffic safety, red when fatalities occur) was added in the 1940s. Vulcan is the city symbol to all.

A Victim of Age

Following the common practice of the 1930s, Vulcan's interior was filled with cement, a substance which expands at a rate 20% higher than iron. With the passage of time, contracting with the cold, expanding with the heat, Vulcan's exterior cracked. He must now be repaired so that his long life may continue.

Help on the Way

Measures will be taken to repair Vulcan by removing him -temporarily -- from his high perch over Birmingham, extracting the concrete, and stabilizing his structure. At the same time, his base will also be strengthened with a new steel frame.

STATS AT BIRTH

Claims to fame: Largest cast metal statue in world; second-largest U.S. Statue

Height of statue: 56 feet

Birth: Difficult and heroic; iron molders worked night and day

Weight: 120,000 lbs.

Foot size: 6 feet (can sleep one reclining person)

Circumference of chest: 22 feet, 6 inches

Circumference of waist: 18 feet, 3 inches

Sum of his parts: Cast of iron in 15 pieces with flanges

Height of pedestal: 123 feet

Height above Birmingham: 390 feet

II. FACTS AND CHRONOLOGY continued

THE RED MOUNTAIN PARK

When it was first proposed in 1905 that Vulcan be placed on Red Mountain, the time was not right for such a move. But, by 1935, when the idea for Vulcan Park was proposed again, iron ore mining had ceased here, the mineral railroad had been abandoned and accessibility was improved via automobile. Birmingham also had a parks department, established in 1925, and a parks master, a plan calling for a vast park atop Red Mountain. (See Appendix I for deeds dedicating Vulcan Park.)

Under a cooperative effort between Kiwanis Club members and Birmingham parks superintendent R. S. Marshall and with funding from the Alabama Highway Department and manpower from the Works Progress Administration, the project moved ahead. Architects Warren, Knight and Davis designed the monument, carefully placed during construction to avoid mine chambers below. Italian immigrant stonecutters and sculptors, who had worked on fine houses during preceding boom years, crafted the stone for both tower and grounds improvements. They quarried the rock as they widened U. S. 31 into Alabama's first, all-paved, four-lane road. Vulcan boosters intended for the park to become a visitor destination. The final park reflects the excellent site-sensitive work that came to be identified with WPA projects across America.

II. FACTS AND CHRONOLOGY continued BRIEF CHRONOLOGY OF THE STATUE AND PARK

Oct. 13, 1903	Commercial Club (now Chamber of Commerce) chooses Vulcan to represent Birmingham
Nov. 24, 1903	Giuseppe Moretti commissioned to sculpt the colossal iron man
JanFeb 1904	Full-size plaster casts poured at St. Stephen's Church, Passaic, New Jersey
Mar. 12-May 7, 1904	Birmingham Steel and Iron foundry casts the Iron Man from Sloss No. 2 Pig Iron
May-Nov. 30, 1904	Vulcan as Alabama's exhibit in the Palace of Mines and Metallurgy, St. Louis World's Fair
October 1906-1935	Vulcan at the Alabama State Fairgrounds, Birmingham
1935-1938	Kiwanis spearheads public-private campaign to build the Red Mountain monument and park
1968-1971	Vulcan Park modernized for Birmingham's Centennial
1993-1994	National Park Service studies recommend Vulcan as best possible site for a visitor center telling the story of Vulcan and of the city. NPS documents the statue and park as a potential National Historic Landmark.
1999	Birmingham plans for the full restoration of the statue and park

SIGNIFICANCE

Vulcan: A Unique American Landmark

World's largest cast iron statue Alabama's exhibit at the 1904 St. Louis World's Fair Major surviving exhibit of the St. Louis fair 60 tons, 56 feet tall Only the Statue of Liberty is taller Symbol of spirit, industry and community

Vulcan Park: A Monumental Setting

Atop the red ore vein that supplied early industry Views from 600 feet above Birmingham

III. EXISTING CONDITIONS

1. HISTORIC DOCUMENTATION AND DESIGNATIONS

Research and documentation has been undertaken to develop a complete history of the site and a clear understanding of its significance. Development of programs and facilities should enhance significant historic fabric and known history of the site.

National Register of Historic Places

In 1976, the Vulcan Statue and Park were listed in the National Register of Historic Places in the first round of listings of historic sites in Jefferson County. The National Register of Historic Places is the nation's list of properties worthy of preservation.

The Secretary of Interior's Standards for the Preservation of Historic sites apply to National Register Properties. Briefly, these standards support the preservation of significant historic fabric. Federal funds can not be used to demolish National Register properties. (See Appendix II for the Secretary's Standards).

National Park Service Recommendation for National Historic Landmark Study

A 1992-1993 National Park Service sponsored study of more than 600 sites in a five-country area surrounding Birmingham selected Vulcan as one of two sites for future study and possible eligibility for National Historic Landmark status. (See Appendix III for the National Park Service recommendations.)

Historic American Building Survey-Historic American Engineering Record (HABS-HAER)

In 1993 and 1994, these Washington D. C.-based National Park Service documentation divisions sent teams of historians, architects and photographers to record and delineate the Vulcan statue, monument and park and the Valley View Mine. Documentation resulted in several ink on mylar drawings, large-format photographs and several histories of the statue, the park and the adjacent railroad and ore mining activity. Topographic maps of the site and adjacent mines were developed.

The Vulcan Park original documentation is now located in the HABS-HAER Collection of the Library of Congress, Washington D. C. and available for worldwide access. Birmingham Public Library Archives houses documentation copies. (See Appendix IV for HAER documentation.)

III. EXISTING CONDITIONS continued

Save America's Treasures

Vulcan and his park have been selected for this millennium initiative of the National Trust for Historic Preservation and the White House. The City of Birmingham, the Alabama Historical Commission and the Alabama Preservation Alliance supported the nomination which was prepared by the Society.

Save Outdoor Sculpture-S.O.S.

The Vulcan statue is listed in this national registry of outdoor sculpture worthy of preservation.

Alabama Engineering Hall of Fame

Birmingham Historical Society accepted this award for Vulcan in 1995.

2. FUTURE STUDIES

Archeological Investigation

A thorough archeological investigation of the site to determine historic fabric and other features that might prove useful in enhancing the known history of the site has not been conducted. This investigation should include identification of the prehistoric and historic features and minimally comply with the federal Section 106 Review process.

Artifacts identified during the investigation that might assist with interpretation should be provided environmentally controlled and monitored storage.

Geological Investigation

This has not been conducted nor have maps for the underground mining been located for the site.

Complete Topographic Map and Model With Property Description

A complete topographic map and model of the site with descriptions of historic, geological and other features will prove useful for telling the story of Vulcan and his city and also for noting potential maintenance and safety problems. This map will also delineate property lines.

Site Usage and Design Standards

Building and interpretive activities should not threaten historic resources.

The statue, monument and park should be restored as fully as feasible to its original character, following the Secretary of the Interior's Standards.

EXISTING CONDITIONS OF THE STATUE AND PARK continued

The Vulcan statue is in a serious state of disrepair, in need of a new internal skeleton. The park-like setting in which he stands is dated and inadequately serves the needs of the public.

IMPROVEMENTS SINCE THE 1930s

Capital Improvements

Major capital improvements to the statue and monument have not taken place at the park since the early 1970s. At this time, the Centennial fix up expanded the parking area, reclad the original monument with marble, paved walkways and terraces with exposed aggregate concrete and constructed a gift shop and picnic pavilion on the crest. The fix up was part of an unrealized plan to provide mono-rail transit and improvements to multiple tourist destinations including the zoo and the botanical gardens. The fix-up covered up or disregarded 1930s era stone cascades, terraces, retaining walls and mine and park entrances.

Short-Term Improvements

In preparation for the Olympics, the City of Birmingham allocated \$1.5 million for cosmetic improvements including signage, landscaping and installation of an exhibit written by the Birmingham Historical Society and installed in the tower. Structures and mechanical systems in the park are in sad condition. (See the schedule of City expenditures for Vulcan Park as compared to other City institutions in Appendix V.)

Improvements to the Vulcan Trail

Working with the Five Points South Neighborhood, the City of Birmingham has used Alabama Highway Department Enhancement (ISTEA-Tea21) and other funds to convert the historic L. & N. Mineral Railroad to a recreational trail. The trail will extend westward to Green Springs Park along the northern flank of Vulcan Park, offering spectacular views of the city. The current allocation is \$465,000.

State of the Statue

The statue of Vulcan is in a serious state of disrepair and is in danger of falling from its pedestal. Both poor maintenance and the deleterious effect of the concrete fill placed in the statue in the 1930s have taken a toll on Vulcan.

Though the statue appears structurally stable, cracks have developed and moisture trapped by the concrete is leaching through. The opening of the head to permit ease of accessing the red and green lights on the outstretched right arm has allowed water to pour into the statue thereby increasing the cracking process.

In 1993, Birmingham Historical Society bought Nick Veloz, then a National Park Service conservator of outdoor sculpture, to the city to review the statue's condition. Veloz recommended that the statue be removed from the pedestal within five years. He noted that if properly conserved, cast iron can last for thousand of years, as has a now two thousand year-old cast iron column in India.

In the past few years, the City has sponsored numerous engineering studies documenting conditions of the statue. The City's policy of patch and repair cracks through in-situ methods and by not removing the statue from the pedestal has not stopped deterioration of the monument. (See the schedule of City expenditures for engineering studies in Appendix VI.)

Repair of the statue in situ appears infeasible at this time. Robinson Iron, an Alexander City foundry that specializes in the casting of architectural iron worldwide, has been elected by the City to handle the restoration of the statue and the monument recommends taking the statue down for repairs ASAP. (See the Robinson Iron's plan in Appendix VII. This study is not that company's most recent assessment, however the cost for services remains the same as was projected here).

State of the Monument and Park Buildings

The 1970s improvements clad the original stone monument and museum with white Georgia marble and expanded the original base. Mechanical systems, including air-conditioning and elevators are in disrepair.

The original tower portion of the monument remains. The original museum with its white-Alabama clad walls does not remain. The 1970s improvements paved the mountaintop site, adding concrete-defined rose gardens, overlooks and a pavilion with gift and food sales, while destroying the original open and naturalistic setting. As the redevelopments at Vulcan were part of a package to market several destinations, the parking area was quadrupled to provide space for visitors to take the monorail from Vulcan to the zoo and botanical gardens. The monorail was not built, the lot remains.

Cascades, Terraces, Stairways, Mine and Auto Entrances and Drainage Channels

The 1993-1994 Historic American Engineering Record (HAER) documentation delineated significant features of the original landscape plan constructed by Italian stone cutters and sculptors during the 1930s following plans drawn by the Park Board Superintendent. These features include the statue atop a monument set at the crest of an exposed seam of red iron ore, terraces overlooking the city and Shades Mountain carefully tailored to maximize views, views of Vulcan as visitors entered the park from the city side via a monumental staircase and from the automobile entrance via the grand, rocky cascade, an entrance to the Lone Pine No. 3 Mine located beneath the site and numerous retaining walls of limestone and red iron ore The majority of these remain covered over by heavy overgrowth. (See the HAER map of Vulcan Park in the Appendix IV.)

Ownership

Channel 13 owns substantial portions of the Vulcan Park, including the parking lot and land bordering Vulcan Road, including the WPA drainage ditch on the west of the park and the entrance from 20th Street and Valley Avenue. The City began releasing portions of this land in 1947 for additional parking.

IV. FUNCTIONAL PROGRAM

VULCAN PARK AS A CITY MUSEUM

Along with its unique landmark character and tie to Birmingham's founding and early history, thoughtfully restored and enhanced Vulcan Park offers a choice site to communicate a capsule history of the area for both residents and visitors.

Included in the Society's conceptual plan is a new visitor center designed to fit in with a restored WPA-era monument and landscape. This center would include space for a multi-media presentation on Birmingham and its metropolitan area, both past and present. (It has been suggested that an animated Vulcan would serve as narrator.) There would also be room for moderate-scale changing exhibits related to both history and the evolving dynamics of the region. These features would serve to make a visit to Vulcan Park a must, and repeated visitation a new dimension.

The exceptional opportunity offered by Vulcan Park for views of the surrounding territory dovetails with this larger interpretive function. The restored site also could include viewing stations to help visitors understand what lies within view, not unlike those in national parks. Under special management, the park could also draw upon volunteers to help tell the history of this place.

Though it remains an exception in the United States, most cities in Europe proudly present city history museums. A properly fitted and directed program at Vulcan Park could put Birmingham at the forefront. With tourism the fastest growing industry in the world, and cultural/history tourism offering the richest potential in the field for generating extended stays, this new role for Vulcan Park becomes an economic development tool of great promise.

IV. FUNCTIONAL PROGRAM continued 1. EDUCATIONAL/INTERPRETIVE PROGRAM

MISSION: to become a dynamic interpretive site that tells the story of Vulcan and of Birmingham

MESSAGE

The Vulcan Story

Identification with Birmingham Industry

Mythology

How and By Whom Made

Travels/Finding a Home on the Mountain

Today's Birmingham

A Capsule History of the City

Geology

Mining and Manufacturing

City Growth

Vulcan Comes to the Mountain

Today's Birmingham

MEDIA

Interpreters and informed, objective, enthusiastic personnel both paid staff and volunteers), audio visual presentations, permanent exhibits, wayside exhibits, publications, souvenirs/sales, recreational experiences, schools programs including workshops, tours and curriculum development, changing exhibits, festivals, tours, special and fund raising events.

Interpretation oriented to visitor experience at facilities including visitor center, statue/monument, terraces, walkways and overlooks, mine site, mineral railroad trail

AUDIENCE

Casual visitors	Repeat Users
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Locals showing off the city

Visitors to the city

Recreational users: walkers, hikers, romantics

School groups

Recreational users

Attendees at special events

Guiding Principals for the Visitor Experience

A visitor who feels well oriented, welcome and comfortable is more receptive to any interpretive message. To accomplish this:

A site must be easy to find with good signage and mapping directing the visitor to the site.

A well-oriented site should move visitor through it in an orderly sequence presenting options to expand the visit.

A site must include unobtrusive, readily accessible restrooms. Ideally, this means restrooms at the beginning and end of the tour route.

IV. FUNCTIONAL PROGRAM continued 2. PROPOSED VISITOR EXPERIENCES FOR VULCAN PARK Scenario I - Casual Visitors

Arrival Sequence-Parking

VISITOR CENTER

Rest rooms, accessed from the outside

Audiovisual/exhibit experience

Stories: Vulcan and the men who created him and the industrial district . . . a capsule history of how the place came to be, an overview of regional growth

Media: Short film in "black box" 88-person theater which is an integral part of the continuing visitor experience which may include exhibits with large-scale photography, models, reproductions or dioramas

Personnel: knowledgeable, courteous folks including full time staff & volunteers

Sales area

Souvenirs, publications as an integral part of interpretation, information on other sites to visit in Birmingham

(Classrooms/conference rooms, offices, lounge, storage/equipment facilities would not be visible to casual visitor. The meeting area might include space for changing exhibits and for conducting workshops and volunteer activities.)

Note: This site activity may be open during fewer hours than the statue, tower, and recreational aspects of the site.

VULCAN STATUE AND TOWER

Interpret city view from top of tower

Stories: explanation of what visitor can see: the view of Jones and Shades Valleys and of the Red Mountain crest

Media: text etched in glass, displays /telescopes with historic views

Space at the base of the tower

Consider this space as a major space for public entertaining with the option for gatherings to spill out onto the terrace overlooking the city; use walls to reenforce view as seen from the tower

IV. FUNCTIONAL PROGRAM

PROPOSED VISITOR EXPERIENCE continued

Scenario 2-Options for Expanded Visits and Recreational Use

Develop PARK/TRAILS with interpretive media

City Overlook
Lone Pine Mine Entrance
Mineral Railroad Overlook/Terrace
Mineral Railroad Roadbed

Stories: WPA park construction, Italian labor force, mining and railroad history of site, mining and railroad labor force

Media: waysides, coordinated signage

IV. Scenario 3-Festivals/Special Events/Educational Program

Develop an **educational program** for the schools with workshops, tours, and curriculum materials tied to existing and ongoing heritage education programs

Develop a **major annual event** that focuses attention on the site

Consider piggy-backing with the already existing events: the July 4 Fireworks and the
Vulcan runs.

Develop a series of annual special events, tours and programs highlighting various aspects of the site

Develop changing exhibits

Coordinate community events and private functions at site.

Provide small, mountain-top pavilion with rest-rooms and catering kitchens to service special events on the ridge, as well as facilities for trail hikers.

3. INTERPRETIVE THEMES FOR VULCAN PARK

THE VULCAN STORY

- Symbol of Birmingham iron industry
- Mythology
- How and by whom made
- Travels/finding a home++

A CAPSULE HISTORY OF THE CITY GEOLOGY

Brief history
Broad sea deposits/mountain building++
Iron ore, coal, limestone/dolomite++
How deposited, grades, where deposits
located

MINING

Industrialists/Workers++
Types of mining++
Location of mines++
Mineral railroad++
What life was like for them

MANUFACTURING

History of ironmaking/tied to District Catalan forges Early and modern foundries Industry today++ Essentials of operations

CITY GROWTH

Prehistoric/historic
Establishment of Jefferson
County/agricultural economy
Recognition of resource potential
Railroad and industrial hub/county seat
The magic city
Economic ups and downs++
Use of chronological chart comparing

THE CITY TODAY++

PEOPLE

Creeks/Cherokees
Early settlers/preBirmingham
Blacks
Whites

New Settlers/post Birmingham

Origins
Where they settled
Where they worked

What they contributed

4. INTERPRETIVE THEMES TIED TO OTHER PLACES TO SEEN FROM SITE

VULCAN

Birmingham Museum of Art-Moretti's career as a sculptor

A CAPSULE HISTORY OF THE CITY

GEOLOGY

- .Red Mountain Museum/Cut/Geological Walkway
- . Smith Hall/Alabama Museum of Natural History, Tuscaloosa
- . Ruffner Mountain Nature Center
- . McWane Center

MINING

- . Alabama Mining Museum, Dora
- . Aldrich Mining Museum, Aldrich
- . Ruffner Mountain Nature Center
- . McWane Center

MANUFACTURING ...HOW IRON IS PRODUCED

- . Tannehill Ironworks/ State Historic Park, Tannehill
- . Brierfield Ironworks/State Historic Park, Brierfield
- . Shelby Ironworks, Shelby
- . Irondale Furnaces, Mountain Brook
- . Sloss Furnaces National Historic Landmark
- . U.S. Steel Fairfield Works
- . McWane Center

CITY GROWTH/PREHISTORY

. Arlington Historic House and Gardens

RAILROADS

. Heart of Dixie Railroad Museum, Calera

PEOPLE

- . Birmingham Historical Districts, commercial and residential
- . Relevant historic houses open to the public

Arlington House

William Cook House, Nauvoo

Owen House, McCalla

Corry House/Old York, Oakman

Jemison House, Tuscaloosa

Battle Friedman House, Tuscaloosa

Dearing House, Tuscaloosa

- . Rickwood Field
- . Birmingham Civil Rights Institute & District
- . Bethel Baptist Church, Sixteenth Street Baptist Church and the 58 other Civil Rights Churches

V. ARCHITECTURAL PROGRAM

Components

Entrances and Parking

Visitor Center with lobby, circulation and exhibit areas, theatre, gift shop, classroom, offices, library, lounge and restrooms

Cascade

Monument with exhibit space at the base, staircase and elevator within the column leading to an open-air observation deck

Views of Vulcan

View of the City

Walkways

Terraces

Mine Entrance

Vulcan Trail Entrance

Waysides

Ridge Pavilion

VI. BUDGETS

VULCAN PARK RESTORATION

Statue Restoration	\$2,000,000
Monument Restoration and Lighting	2,400,000
Site Restoration	2,000,000
Visitor Center	1,700,000
Exhibits and Film Development	800,000
Land Acquisition, Easements, Leases	
Endowment for Educational Programming	500,000
Contingency	600,000
TOTAL	<u>\$10,000,000</u>
STATUE RESTORATION Removal of the Statue Statue Restoration and Armature	\$500,000 1,200,000
Reinstallation Contingency	150,000 150,000
TOTAL	<u>\$2,000,000</u>
MONUMENT RESTORATION Demolition Rebuild Base and Restore Statue Rebuild Observation Balcony New Attachment for Statue New Elevator & Stairs Exterior Lighting General Conditions Design and Engineering	\$400,000 650,000 150,000 50,000 250,000 100,000 400,000 200,000
Contingency TOTAL	200,000 \$2,400,000

VI. BUDGETS continued

LANDSCAPE RESTORATION-SITEWORK

Engineering Survey	20,000
Structural Retaining Walls (6,500 s.f.)	192,000
Retaining Wall Restoration	124,000
Fountain Pools, Coping, Mechanical	250,000
Stone Steps (750 s.f.)	26,000
Sandstone Curbs (3,000 1.f.)	40,000
Sidewalks (35,000 s.f.)	240,000
Wrought Iron Fence and Gate (550 l.f.)	28,000
Site Lighting	120,000
Picnic Pavilion	20,000
Site Furnishings	30,000
Landscape and Irrigation	300,000
Asphalt Resurfacing (7,000 s.y.)	60,000
Valleydale Entrance	30,000
Signage/Waysides	60,000
Site Demolition	50,000
Site Grading	50,000
Design and Engineering	130,000
100% Contingency	<u>230,000</u>
<u>TOTAL</u>	\$2,000,000

VISITOR CENTER

Facilities and Features	Square Fee	
Lobby-Circulation + map	900	
Exhibit Areas, 40' x 50'	2,000	
Gift Shop & Storage	600	
Theater/Lecture Area (88 seats)	1,200	
Classrooms (2)	1,200	
Offices/Library	500	
Lounge	100	
Rest Rooms	<u>500</u>	
TOTAL	7,000	

Recommended Budget

Building Construction	\$1,260,000
Sitework at Building	80,000
Furniture & Equipment	120,000
Design & Engineering	140,000
Contingency	100,000
TOTAL	\$1,700,000

VII. OPERATIONAL PLAN AND BUDGET

OPERATIONS

The Vulcan Park Foundation, a new non-profit corporation will be responsible for the management of the statue and park. The foundation will include representation from the Chamber of Commerce (that created the statue), the Kiwanis (that created the park), the City (that owns the statue and park), the Birmingham Historical Society (that advances the preservation and interpretation of the site), the education field and from members elected at large.

The foundation will manage the site and conduct fundraising activities, conducting day-to-day operations. The foundation will contract for building, landscape, elevator, HAVC and other general maintenance concerns and security, food service and educational and volunteer program management.

Site and concession revenues together with an annual City of Birmingham appropriation, equal to the current Vulcan Park budget, and private fundraising will support site operations. Revenues from gift shop, food sales and admissions will be used for program support, including renewal of exhibits and other program offerings. (See Appendix VIII for Current and Proposed Operating Budgets for Vulcan Park.) The Vulcan Endowment for Educational Programs will provide support for educational venues telling the story of Vulcan and of Birmingham

The City of Birmingham will retain title to the land ("for use as a public park only" as stated by the donor of the land "to the City of Birmingham and its successors forever, for the use and purpose aforesaid,") provide utilities, insurance and structural and preventative maintenance for the statue and the park.

Site management standards will be prepared and made a part of agreements with the City of Birmingham creating the Vulcan Park Foundation.

VII. VULCAN PARK OPERATING BUDGET Facilities, Expenses and Sources of Revenue

FACILITIES

Vulcan atop a Monument with exhibit area at base and observation deck with views of Vulcan and of the region

Visitor Center with restrooms, 88-seat theater, exhibit areas, gift shop, classrooms, library, lounge and storage

Park Grounds, interpreted and used for recreation and special events

PROPOSED ANNUAL BUDGET

EXPENSES

Site Staff

Director	\$70,000
Site Manager	\$50,000
Fiscal Officer/Administrator	\$35,000
Interpreters	\$150,000
3 full-time, 2 part-time, 2 summer interns	
Education and Volunteers	\$80,000
Security	\$40,000
Landscape, Elevator, HAVC, Ordinary Maintenance	\$50,000
Supplies	\$5,000
Program/Marketing Development	\$50,000
TOTAL	<u>\$520,000</u>
SOURCES OF REVENUE	
Admission	
Casual visitation	\$100,000
100,000 1 st year, max 250,000	,
Other Earned Income	•
Gift Shop Sales	
Special Event Fees	
Food Service Fees	
Schools/Other Tours	\$40,000
City of Birmingham Operating Budget	c.\$355,000
Private Donations	
Endowment for Educational Programs	\$25,000
(5% \$500,000)	•
TOTAL	<u>\$520,000</u>

VIII. MANAGEMENT STRUCTURE

VULCAN PARK FOUNDATION RESPONSIBILITIES

- Operate the park
- Conduct fundraising
- · Receive and manage funds
- Approve budgets
- Supervise construction

CITY RESPONSIBILITIES

Maintain a Dedicated Public Park

Maintain Continued Operating Support at current level + inflation

Provide Utilities and Insurance

Maintain Structural and Preventative Maintenance, including

- Statue Inspections/Painting/Maintenance
- Mine Inspection
- Structural repairs
- HAVC Replacement
- Elevator Replacement
- Parking Lot Resurfacing
- Roof repairs

OPERATIONS AT VULCAN PARK

On-Site Services

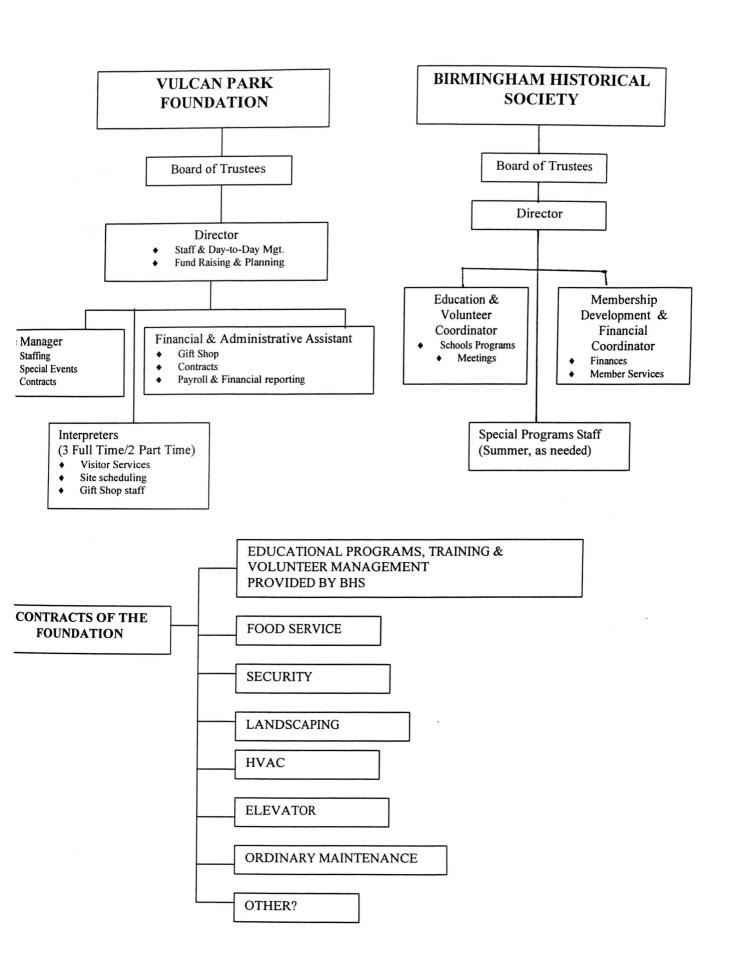
- Interpretation
- Gift Shop
- Special Events
- Food Service
- Educational Programs

Promotion

Fundraising

General, not Structural Maintenance

- Landscape Maintenance
- HVAC and Elevator Maintenance
- Ordinary Maintenance
- Security



VULCAN PARK STAFFING PLAN

DAYS OF OPERATION

Thursday-Tuesday

HOURS OF OPERATION

Winter:December-February

Nine-Sunset

Spring/Fall:March-May, September-November Nine-Sunset, -Eleven on weekends

Summer:June-August

Nine-Nine, -Eleven on weekends

ROUTINE VISITOR SERVICES STAFF-INTERPRETERS

Daytime operations will take a minimum of two persons on site.

Evening operations take three persons, one of whom is a security type.

Summer operations need four persons, nine to five, weekdays and nine to eleven on weekends. Full-time positions can be supplemented by summer-hires/area teachers.

Interpreter 1-Rover: Open gate, clean up messes on site, rove and go where the public is, provide security during evening hours.

Interpreter 2-Hold-Down The Fort: Maintain cash register and gift shop operations, work on paperwork at gift shop, prepare deposits and inventory, answer phone and take reservations for special events, maintain the calendar. Switch off with Rover.

Interpreter 3: Back Up Person for above positions to cover work week and extended hours of park operations in the summer and for special events supervision

Part-time Evening Interpreter 4: Security-type person to take evening shifts Volunteers: assist with gift shop operations, serve as docents for school groups and visitors, provide support services and assist with special events. A dedicated core of at least 10-12, serving every week for two to three hours, would be ideal.

MANAGEMENT STAFF

Director: supervises operations of Vulcan Park and staff, reporting to the Vulcan Park Foundation Board; handles fundraising and staff hiring and development.

Site Manager: Maintain standards for physical operation of the site, coordinating maintenance contractors, coordinates staff assignments and handles special events, following Maintenance Standards for the Site.

Financial Officer/Administrative Assistant: provides day-to-day financial services for including daily deposits and all financial reporting, purchases and maintain records for the gift shop, handles payroll and contracts.

Other Considerations

Special Event Staff to be billed to the event. Interpreters to switch off and work special events. National Park Service has a "Night Differential" pay rate: time and one quarter after 6:00 p.m.

IX. FUNDRAISING PROPOSED SCENARIO

- 1. Select Campaign Co-Chairmen
- 2. Appoint Steering Committee with Responsibilities for Target Campaign Segments
- 3. Approve Campaign Time Frame: Four-Six Months, Schools Campaign: September 1 to November 1, 1999
- 4. Chamber provides staff support for fundraising campaign. Chamber hires a fundraiser (or allocates a staffer's time) for six-months to coordinate efforts with Chamber, Chamber Fundraising Committee and other cooperating groups and do necessary legwork to make the campaign a success.
- 5. Chamber provides office and expenses for campaign operations from Chamber budget: c. \$100,000 minimum.
- 6. Confirm Targets, Goals and Plans for Each Campaign Segments

 Each Steering Committee Member is assigned chairmanship of one of the following campaigns and provided assistance by the Chamber campaign staff.

1. Mc Wane Challenge to match gifts one-to-four	\$2 million
2. Visitor Center Donor(s)	\$1.7 million
3. Corporate Community (Campaign for	\$1 million
Statue/Monument Restoration	
In-Kind services	\$.8 million
4. Citizens (Campaign for the Statue Restoration)	\$1 million
5. Foundations	\$1 million
6. Kiwanis Members	1 million
7. Schools- Endowment for Educational Programs	.5 million
8. City of Birmingham	2 million
TOTAL	\$10 million

X. SCHEDULES

1. RESTORATION OF THE STATUE, MONUMENT AND PARK AND CONSTRUCTION OF A VISITOR CENTER

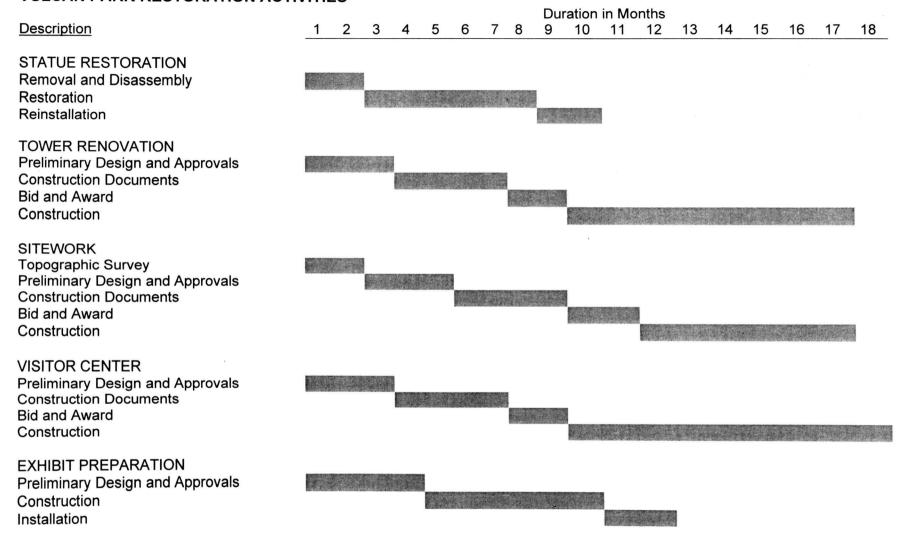
Option 1. Construction should not begin until all funds are raised and the Vulcan Park Foundation is in place.

Option 2: Take Statue Down to Aid Fundraising: Should the statue be taken down due to its poor condition, after the initial two month take down-clean up time, the pieces would be available for public display, secured by Robinson Iron, at Vulcan Park, thereby creating opportunities for visitation and a public campaign to get the statue back up.

Note: The take-down might signal the start of the campaign to get Vulcan back up.

A construction schedule follows.

VULCAN PARK RESTORATION ACTIVITIES



NOTES

- 1. Tower Renovation should be substantially complete before Statue is reinstalled.
- 2. Sitework should be scheduled to complete at least two months after tower completion.
- 3. Visitor Center construction may be coordinated with overall sitework or may be undertaken after sitework is complete.

X. SCHEDULES continued

2. FUNDRAISING CAMPAIGN AND FOUNDATION CREATION

The current public awareness campaign began in January, 1999 when *The Birmingham News* pledged to keep the restoration of Vulcan on its front page until the project is successful.

The City of Birmingham's placement of monitors to measure Vulcan's cracking prompted *The News*' campaign.

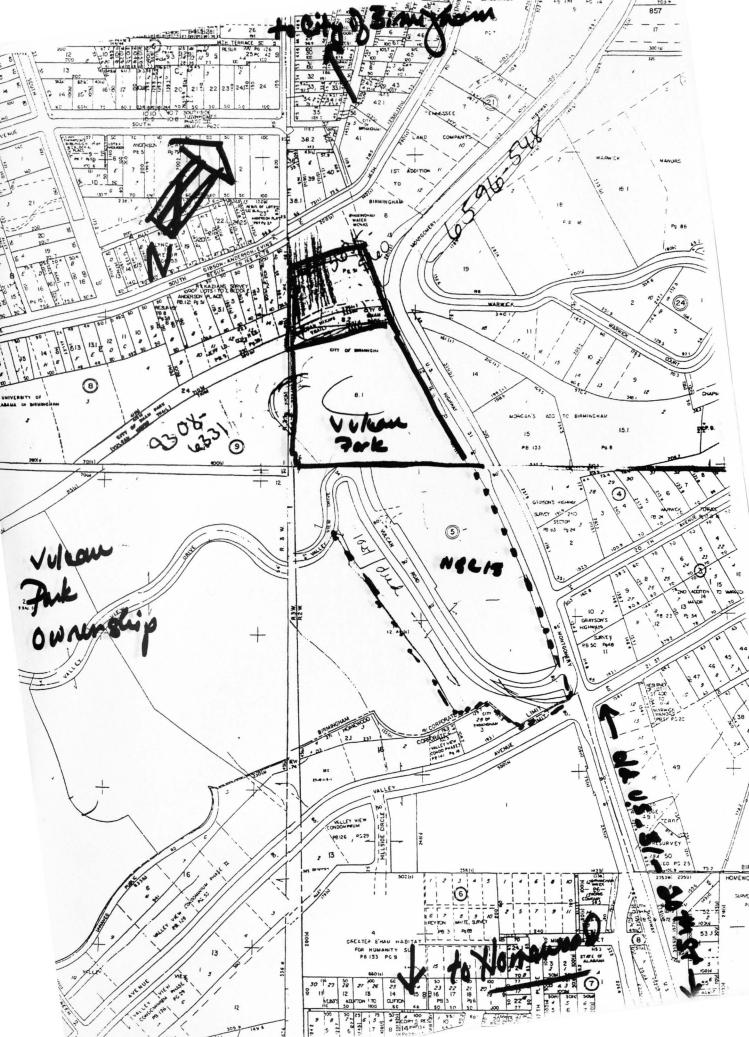
By raising awareness, *The News* together with other media have generated significant grassroots interest and contributions to the Save Vulcan effort even though folks have no idea to what they are donating. A special Sunday edition of *The Birmingham News* on Vulcan prompted a \$2 million challenge grant from the McWane Foundation, operated by descendants of the family that cast the statue in 1903 and 1904.

The Birmingham Area Chamber of Commerce has drawn together several committees of supportive Chamber members, citizens and community groups to spearhead the fundraising efforts. These committees include the Steering, Marketing, Scheduling, Budget and Leadership Committee. The Marketing Committee appears quite energetic.

An entity to review expenditure of funds raised and to manage the long-term future of Vulcan and his Park is needed to insure that the site becomes and remains a major visitor destination and a source of public education and of pride for the greater Birmingham community. With a challenge grant from AmSouth Bank, Birmingham Historical Society is spearheading efforts to create the Vulcan Park Foundation. Birmingham Historical Society is also advancing its Vision for the site in a detailed written document and through public presentations.

3. ORGANIZATIONAL SCHEDULE

Presentation of Birmingham Historical Society's Vision for Vulcan to May 20 decision makers **TBA** Review/Approval of final Vision for Vulcan by the Chamber **TBA** Review/Approval of final Vision by the City of Birmingham **TBA** Announcement of Challenge Grant to support the legal agreements establishing a Vulcan Park Foundation, legal negotiations to be completed before restoration begins TBA Announcement of Corporate Support for School Campaign Organization of Campaign Leadership: Co-Chairmen May and Steering Committee Staffing of Chamber-sponsored Campaign Office May **TBA** Formation of initial board of the Vulcan Park Foundation with representation from the following: Chamber of Commerce **Kiwanis** BHS City Three members to be elected at-large and to include representatives of education and possibly major donors. Kick off of Save Vulcan Campaign TBA Design and Construction Documents, needed to begin construction **TBA** Topographic Survey, needed to complete legal agreements and begin landscape restoration Formal Save Vulcan Campaign TBA TBA Signing of Legal Agreements (before start of restoration) January 1 Take-Down of the Statue, if not sooner, due to deterioration 2000 March 1 Presentation of Pieces at Vulcan Park



STATE OF ALABAMA, JIFFERSON COUNTY.

KNOW ALL MEN BY THESE PRISENTS that, for and in consideration of the sum of Five Pollars (\$5.00) and other valuable consideration to the undersigned grantor, Tennessee Land Company, a corporation, in hone paid by the City of birmingham, a municipal corporation, the receipt whereof is hereby acknowledged, the said TENNESSEE LAND COMPANY does grant, bergain, sell and convey unto the said CITY OF EIGHLAGHAM, for use as a public park only, the following described real estate situated in Jefferson County, Alabama, to-wit:

A tract of land located in the South-West quarter of South-West quarter of Section 6, Tounship 18 South, Range 2 West of the Huntsville Principal Meridian, Jefferson County, Alabama, and described as follows: Begin at the southwest corner of said quarter-quarter section; thence in an eastcrly direction along the southern boundary thereof 575.0 feet, more or less, to intersection with the southwest boundary of right of way of the stontgomery Highway as now constructed, said right of way having been conveyed by the Tennessee Land Company to Jefferson County, Alebama, by deed duted November 3, 1933; thence in a northwesterly direction along said right of way boundary which is a line parallel with, on the southwest side of and 60 feet distant from the center line of said highway 192.0 feet, more of less; thence in a northeasterly direction 10.0 feet to a point in said right of way boundary; thence in a northwesterly direction along said southwest boundary of right of way, which is a line parallel with, on the southwest side of end 50.0 feet distant from center line of said highway 161.0 feet; thence in a southwesterly direction 25.0 feet to a point in said right of way boundary; thence in a northwesterly direction along said southwest boundary of right of way, which is a line parallel with, on the southwest side of and 75.0 feet distant from center line of said highway 234.4 feet, more or less, to intersection with the southern boundary of right of way of the Louisville and Nashville Railroad Company (Red Gap Branch); thence in a southwesterly direction along said boundary of right of way 507.0 feet, more or less, to intersection with the western boundary of said quarter-quarter section; thence in a southerly direction along said western boundary 576.0 feet, more or less, to point of beginning; said tract of land herein conveyed having an area of 4.45 acres, more or less;

TO HAVE AND TO HOLD to the City of Birmingham and its

successors forever, for the use and purpose aforesaid.

And the said Tennessee Lend Company does for itself and for its successors and assigns covenant with the said City of Birmingham and its successors that it is lawfully seized in fee simple of said premises; that they are free from all encumbrances; that it has a good right to sell and

DEED 2694 PAGE 358

convey the same as aforesaid; that it will, and its successors and assigns shall warrant and defend the same to the said City of Birmingham and its successors fewer against the lawful claims of all persons.

IN WITNESS WHERLOF, the said Tennessee Land Company has cauthis deed to be executed in its name and behalf by its President, J. L. Perry, and its corporate seal to be hereunto affixed and attested by the signature of its _____ Secretary, who are thereunto duly authorized this, the 4th day of **December**, 1935.

TENNESSEE LAND COMPANY.

ATTEORS TO THE SECRETARY.

Benney Bur Hillamy of aman

APPHOVED:

VICE PRESIDENT.

December, 1935.

STATE OF ALABAMA, JEFFERSON COUNTY.

I, Beesie S. Beetie, a Notary Public in and for sold County in said State, hereby certify that J. L. Perry and J. Beelker, whose names as President and ______ Secretary, respectively, of the Tennessee Land Company, a corporation, are signed to the foregoing conveyance, and who are known to me, acknowledged before me on this day that, being informed of the contents of this conveyance, they, as such officers and with full authority, execute the same voluntarily for and as the act of said corporation on the day the same bears date.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this, the ### day

Perie & Berry.
Notary Public.

DECTATORS

4. 3

KNOW ALL MEN BY THESE PRESENTS that, for and in consideration of the sum of One Bollar paid by the City of Birmingham, a municipal corporation, to the Tennessee Coal, Iron and Railroad Company, receipt of which is hereby acknowledged, the said TENNESSEE COAL, IRON AND RAILROAD COMPANY, a corporation, does hereby remise, release, quitclaim and convey unto the said CITY OF BIRMINGHAM, (for use as a park a strip of 1snd 50 feet wide, formerly used as a right of way by the Louisville and Nashville Railroad Company, in the South-West quarter of South-West quarter of Section 6, Township 18 South, Range 2 West of the Huntsville Principal Meridian, Jefferson County, Alabama, and having an area of 0.49 of an acre, more or less, said strip of land being 25.0 feet wide on each side, of the following described center line:

Begin at the southwest corner of said South-West quarter of South-West quarter of Section 6; thence in a northerly direction along the western boundary of said quarter-quarter section 403.0 feet, more or less, to the point of beginning of said center line; thence in an easterly direction along the center line of said strip of land formerly used as a right of way by the Louisville and Nashville Railroad Company 425.0 feet to the terminus of center line of strip of land herein conveyed; said terminus being in the eastern boundary of right of way of the Montgomery Highway; the said tract of land being part of that certain tract of land quitclaimed and conveyed by the Louisville and Nashville Railroad Company to the Tennessee Coal, Iron and Railroad Company by deed dated January 11, 1949, recorded in the Birmingham Division of the office of Judge of Probate of Jefferson County, Alabama, in Volume 4238, page 42. EXCEPTING, however, from this quitclaim deed any part of the said strip of land which may lie east of the northeast boundary of right of way for the Montgomery Highway.

TO HAVE AND TO HOLD unto the said City of Birmingham, its successors and assigns, forever; subject, however, to the following: (a) The right granted by the Temmessee Coal, Iron and Railroad Company to Southern Bell Telephone and Telegraph Company by deed dated August 8, 1949, to maintain a cable and pole line and to change the pole line portion of said cable and pole line to an underground cable; (b) Right of way cohveyed by Temmessee Land Company to The Birmingham Water Works Company by deed dated the 8th day of December, 1914; (c) Right of way of Birmingham Electric Company; (d) Right granted by Louisville and Nashville Railroad Company to the City of Birmingham by contract dated the 3rd day of January, 1939, to construct and maintain a platform and steps on said land; and (e) Such other outstanding rights and easements of any kind which may exist over, upon or across said land.

This conveyance is made on the condition, however, that the said property shall be used for park purposes only, and, if the City of Birmingham shall cease to use the said land for park purposes for a period of twelve (12) consecutive months, or if the grantee herein should at any time use the said land or any part thereof or permit it to be used for any purpose other than park purposes, the title to the said land shall thereupon revert to the Tennessee Coal, Iron and Railroad Company.

IN WITNESS WHEREOF, the Termessee Coal, Iron and Railroad Company has caused these presents to be executed in its name and behalf and its corporate seal to be hereinto affixed and attested by its officers thereunto duly authorized this, the ... 1922 day of February 1951.

ATTEST: DENNESSEE COAL, IRON AND RATIROAD COMPANY,

Secretary.

By

Secretary.

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Market Bullian Market Company

Hanager Land popartments

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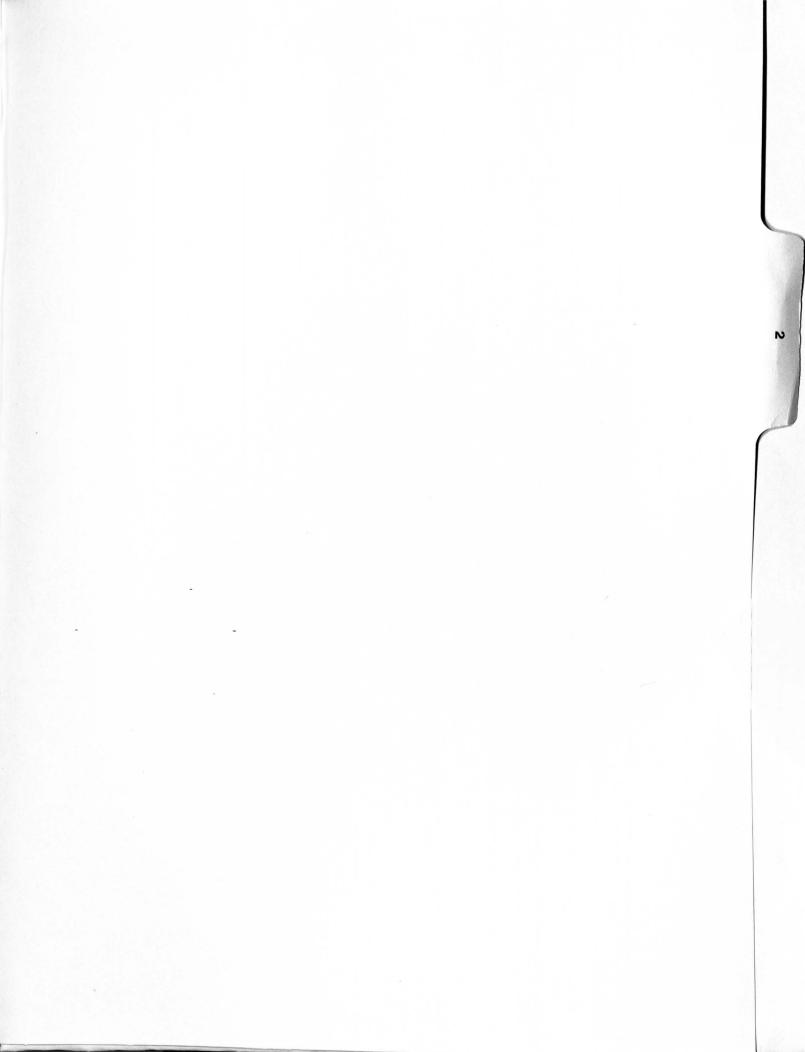
COUNTY OF JEFFERSON

I, Bessie S. Borres, a Notary Public in and for said County in said State, hereby certify that A.V. Wielel and C.R. Secretary, respectively, of the Tennessee Coal, Iron and Railroad Company, a corporation, are signed to the foregoing conveyance and who are known to me, acknowledged before me on this day that, being informed of the contents of the conveyance, they, as such officers and with full authority, executed the same voluntarily for and as the act of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this, the 19 day of Bessie S. Barres, 1951.

Bessie S. Barres, Notary Public.

FILED IN OFFICE FOR RECORD THIS THE MAR 1 1951 AND DULY RECORDED IN 1953 PAGE 427 DM C. GARNER, Judgo of Probable DEED 4000 PAGE 422





The Secretary of the Interior's Standards for Rehabilitation &

Illustrated
Guidelines
for
Rehabilitating
Historic
Buildings



U.S. Department of the Interior National Park Service Cultural Resources

The Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards were written in 1976 by W. Brown Morton III and Gary L. Hume (the ten Standards for Rehabilitation and their guidelines have been the most-used component of this larger document which also contains standards and guidelines for acquisition, protection, stabilization, preservation, restoration, and reconstruction). The guidelines to the rehabilitation standards were revised and expanded in 1983 by Gary L. Hume and Kay D. Weeks and issued together with the 1976 standards as a separate book entitled The Secretary of the Interior's Standards for Rehabilitation with Guidelines for Applying the Standards. The 1976 Standards for Rehabilitation were revised in 1990 by Gary L. Hume, H. Ward Jandl, and Kay D. Weeks following a public commenting period.

The Secretary of the Interior's Standard's for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings / W. Brown Morton III ... [et al.]; Anne E. Grimmer and Kay D. Weeks, project directors.

Includes bibliographical references.

1. Architecture—United States—Conservation and restoration— Standards. 2. Historic buildings-United States-Conservation and restoration—Standards. I. Morton, W. Brown. II. Grimmer, Anne E., III. Weeks, Kay D. IV. United States. National Park Service. Preservation Assistance Division. V. Title: Illustrated guidelines for rehabilitating historic buildings. NA106.S4 1991 720' .28'8021873-dc20

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The Secretary of the Interior's Standards for Rehabilitation &

Illustrated Guidelines for Rehabilitating Historic Buildings

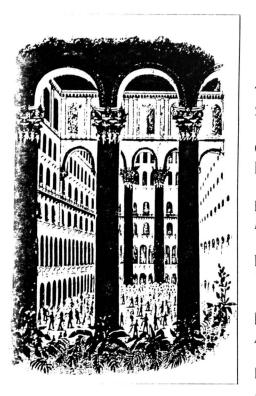
W. Brown Morton III • Gary L. Hume • Kay D. Weeks • H. Ward Jandl

Anne E. Grimmer and Kay D. Weeks *Project Directors*

U.S. Department of the Interior National Park Service Heritage Preservation Services

Washington, D.C. Reprinted 1997

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Building Site. Jack E. Boucher, HABS.

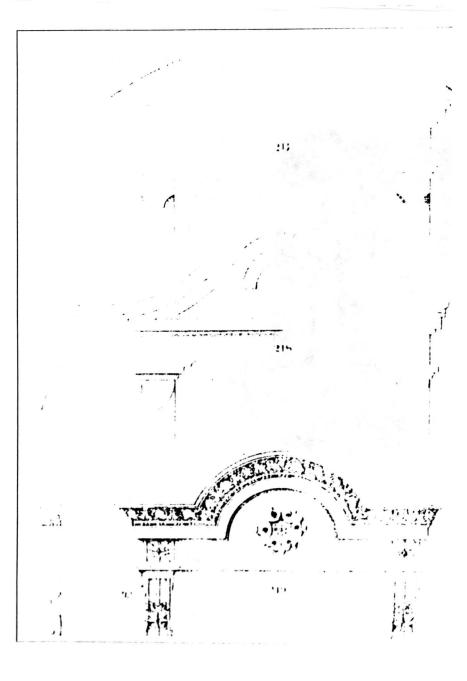
Setting (District or Neighborhood). Charles Ashton.

Energy Conservation. Laura A. Muckenfuss.

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Accessibility Considerations. Department of Cultural Resources, Raleigh, North Carolina.

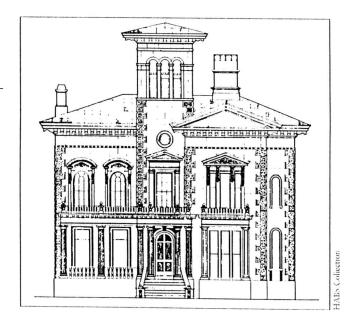
Health and Safety Considerations. National Park Service Files.



Acknowledgements

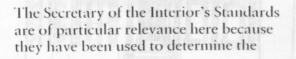
The illustrated version of the Standards and Guidelines for Rehabilitation was developed by the Technical Preservation Services Branch, Preservation Assistance Division of the National Park Service. Project Directors Anne E. Grimmer and Kay D. Weeks wish to thank those professional staff members who assisted in the book's preparation by providing technical review of the text, conducting photo research, and taking photographs. They include Michael J. Auer, Charles E. Fisher, Thomas C. Jester, Lauren G. Meier, ASLA, and Sharon C. Park, AIA. Tim Buchner prepared several technical drawings. Special thanks go to Jack E. Boucher and Catherine LaVoie of the Historic American Buildings Survey (HABS) who were especially helpful in conducting photographic research. Boucher's work appears throughout the book. Mary Randlett's photograph of ongoing rehabilitation work is featured on the cover.

All photographs and drawings included in this publication not individually credited have been selected from National Park Service Files.



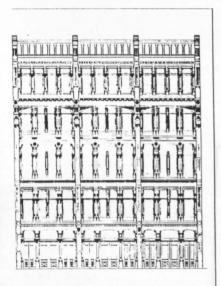
Foreword

A banner year, 1991 marks the 75th anniversary of the National Park Service as well as 25 years of preservation achievements resulting from passage of the National Historic Preservation Act of 1966. Publication of the illustrated Guidelines for Rehabilitating Historic Buildings fittingly coincides with the celebration of this important Act that created our National Register programs and established a solid Federal/State partnership nationwide. Since 1966, over 800,000 properties have been placed in the National Register of Historic Places through the joint efforts of State Historic Preservation Offices, Federal agencies, Certified Local Governments, and the private sector. Over the past quarter century, historic preservation grants to the States for survey, planning and rehabilitation have amounted to nearly \$600 million, an investment totaling close to \$1.2 billion with the inclusion of matching non-Federal funds. Additionally, the Preservation Tax Incentives, now in their 14th year, have contributed to the rehabilitation of nearly 22,000 historic properties, representing an investment of almost \$15 billion in private funds.



appropriateness of work treatments for *every* grant-in-aid and Tax Act project over a 25-year period. By emphasizing repair over replacement, and limited rather than wholesale change to accommodate new uses, the Standards and their accompanying Guidelines seek to ensure the presaction of those qualities for which each property was listed in the National Register.

Finally, this illustrated version of the Guidelines for Rehabilitating Historic Buildings has been designed to enhance overall understanding of basic preservation principles. Showing specific examples of appropriate treatments as well as the consequences of inappropriate treatments is just another aspect of a sustained effort to encourage the most respectful approaches possible in rehabilitating our nation's irreplaceable historic properties.



HABS Collection

The Secretary of the Interior's Standards for Rehabilitation

Introduction to the Standards

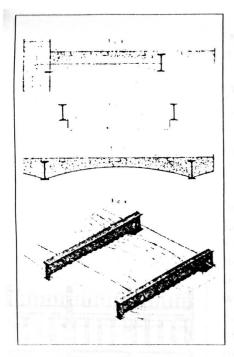
 ${
m T}$ he Secretary of the Interior is responsible for establishing standards for all programs under Departmental authority and for advising Federal agencies on the preservation of historic properties listed in or eligible for listing in the National Register of Historic Places. In partial fulfillment of this responsibility, the Secretary of the Interior's Standards for Historic Preservation Projects have been developed to guide work undertaken on historic buildings; there are separate standards for acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction. The Standards for Rehabilitation (codified in 36 CFR 67) comprise that section of the overall preservation project standards and addresses the most prevalent treatment. "Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

Initially developed by the Secretary of the Interior to determine the appropriateness of proposed project work on registered properties within the Historic Preservation Fund grant-in-aid program, the Standards for Rehabilitation have been widely used

over the years — particularly to determine if a rehabilitation qualifies as a Certified Rehabilitation for Federal purposes. In addition, the Standards have guided



Federal agencies in carrying out their historic preservation responsibilities for properties in Federal ownership or control; and State and local officials in reviewing



both Federal and nonfederal rehabilitation proposals. They have also been adopted by historic district and planning commissions across the country.

The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of the buildings. They also encompass related landscape features and the building's site and environment, as well as attached, adjacent, or related new construction. To be certified for Federal tax purposes, a rehabilitation project must be determined by the Secretary to be consistent with the historic character of the structure(s), and where applicable, the district in which it is located.

As stated in the definition, the treatment "rehabilitation" assumes that at least some repair or alteration of the historic building will be needed in order to provide for an efficient contemporary use; however, these repairs and alterations must not damage or destroy materials, features or finishes that are important in defining the building's historic character. For example, certain treatments — if improperly applied—may cause or accelerate physical deterioration

of the historic building. This can include using improper repointing or exterior masonry cleaning techniques, or introducing insulation that damages historic fabric. In almost all of these situations, use of these materials and treatments will result in a project that does not meet the Standards. Similarly, exterior additions that duplicate the form, material, and detailing of the structure to the extent that they compromise the historic character of the structure will fail to meet the Standards.

The Secretary of the Interior's Standards for Rehabilitation

The Standards (Department of Interior regulations, 36 CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

- 2. 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.
- 3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements. from other buildings, shall not be undertaken.
- 4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
- 5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
- 6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature 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.

- 7. 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.
- 8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
- 9. 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.
- 10. 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.



Guidelines for Rehabilitating Historic Buildings

Introduction to the Guidelines

The Guidelines for Rehabilitating Historic Buildings were initially developed in 1977 to help property owners, developers, and Federal managers apply the Secretary of the Interior's "Standards for Rehabilitation" during the project planning stage by providing general design and technical recommendations. Unlike the Standards, the Guidelines are *not* codified as program



Drawing: Nicholas Satterlee

requirements. Together with the "Standards for Rehabilitation," they provide a model process for owners, developers, and Federal agency managers to follow.

The Guidelines are intended to assist in applying the Standards to projects generally; consequently, they are not meant to give case-specific advice or address exceptions or rare instances. For example, they

cannot tell owners or developers which features of their own historic building are important in defining the historic character and must be preserved—although examples are provided in each section or which features could be altered, if necessary, for the new use. This kind of careful case-by-case decision-making is best accomplished by seeking assistance from qualified historic preservation professionals in the planning stage of the project. Such professionals include architects, architectural historians, historians, archeologists, and others who are skilled in the preservation, rehabilitation, and restoration of the historic properties.

The Guidelines pertain to historic buildings of all sizes, materials, occupancy, and construction types; and apply to interior and exterior work as well as new exterior additions. Those approaches, treatments, and techniques that are consistent with the Secretary of the Interior's "Standards for Rehabilitation" are listed in the "Recommended" column on the left; those approaches, treatments, and techniques which could adversely affect a building's historic character are listed in the "Not Recommended" column on the right.

To provide clear and consistent guidance for owners, developers, and Federal agency managers to follow, the "Recommended" courses of action in each section are listed in order of historic preservation concerns so that a rehabilitation project may be successfully planned and completed—one that, first, assures the preservation of a building's important or "character-defining" architectural materials and features and, second, makes possible an efficient contemporary use. Rehabilitation guidance in each section begins with protection and maintenance, that work which should be maximized in every project to enhance overall preservation goals. Next, where some deterioration is present, repair of the building's historic materials and features is recommended. Finally, when deterioration is so extensive that repair is not possible, the most problematic area of work is considered: replacement of historic materials and features with new materials.

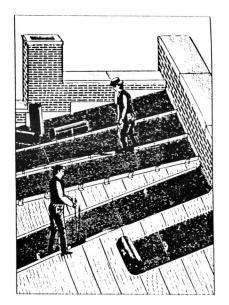
To further guide the owner and developer in planning a successful rehabilitation project, those complex design issues dealing with new use requirements such as alterations and additions are highlighted at the end of each section to underscore the need for particular sensitivity in these areas.

Identify, Retain, and Preserve

The guidance that is basic to the treatment of all historic buildings—identifying, retaining, and preserving the form and detailing of those architectural materials and features that are important in *defining* the historic character—is always listed first in the "Recommended" column. The parallel "Not Recommended" column lists the types of actions that are most apt to cause the diminution or even loss of the building's historic character. It should be remembered, however, that such loss of character is just as often caused by the cumulative effect of a series of actions that would seem to be minor interventions. Thus, the guidance in *all* of the "Not Recommended" columns must be viewed in that larger context, e.g., for the total impact on a historic building.

Protect and Maintain

After identifying those materials and features that are important and must be retained in the process of rehabilitation work, then *protecting and maintaining* them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes the maintenance of historic material through treat-



ments such as rust removal, caulking, limited paint removal, and re-application of protective coating; the cyclical cleaning of roof gutter systems; or installation of fencing, protective plywood, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

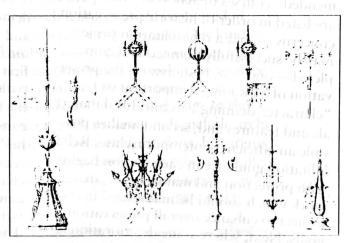
Repair

Next, when the physical condition of character-defining materials and features warrants additional work repairing is recommended. Guidance for the repair of historic materials such as masonry, wood, and architectural metals again begins with the least degree of intervention possible such as patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading them according to recognized preservation methods. Repairing also includes the limited replacement in kind or with compatible substitute material of extensively deteriorated or missing parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of slate or tile roofing). Although using the same kind of material is always the preferred option, substitute material is acceptable if the form and design as well as the substitute material

itself convey the visual appearance of the remaining parts of the feature and finish.

Replace

Following repair in the hierarchy, guidance is provided for *replacing* an entire



character-defining feature with new material because the level of deterioration or damage of materials precludes repair (for example, an exterior cornice; an interior staircase; or a complete porch or storefront). If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation project, then its replacement is appropriate. Like the guidance for repair, the preferred option is always replacement of the entire feature in kind, that is, with the

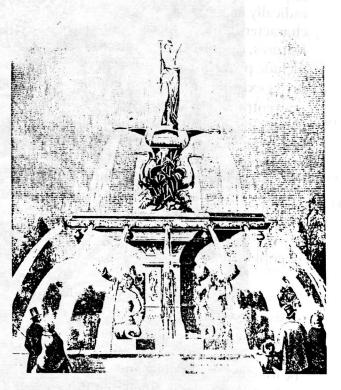
same material. Because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material.

It should be noted that, while the National Park Service guidelines recommend the replacement of an entire character-defining feature under certain well-defined circumstances, they *never* recommend removal and replacement with new material of a feature that—although damaged or deteriorated—could reasonably be repaired and thus preserved.

Design for Missing Historic Features

When an entire interior or exterior feature is missing (for example, an entrance, or cast iron facade; or a principal staircase), it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing through the process of carefully documenting the historical appearance. Where an important architectural feature is missing, its recovery is always recommended in the guidelines as the first or preferred, course of action. Thus, if adequate historical, pictorial, and physical documentation exists so that the feature may be accurately reproduced, and if it is desirable to re-establish the feature as part of the building's historical appearance, then designing and constructing a

new feature based on such information is appropriate. However, a *second* acceptable option for the replacement feature is a



new design that is compatible with the remaining character-defining features of the historic building. The new design should always take into account the size, scale, and material of the historic building itself and, most importantly, should be clearly differentiated so that a false historical appearance is not created.

Alterations/Additions to Historic Buildings

Some exterior and interior alterations to historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character.

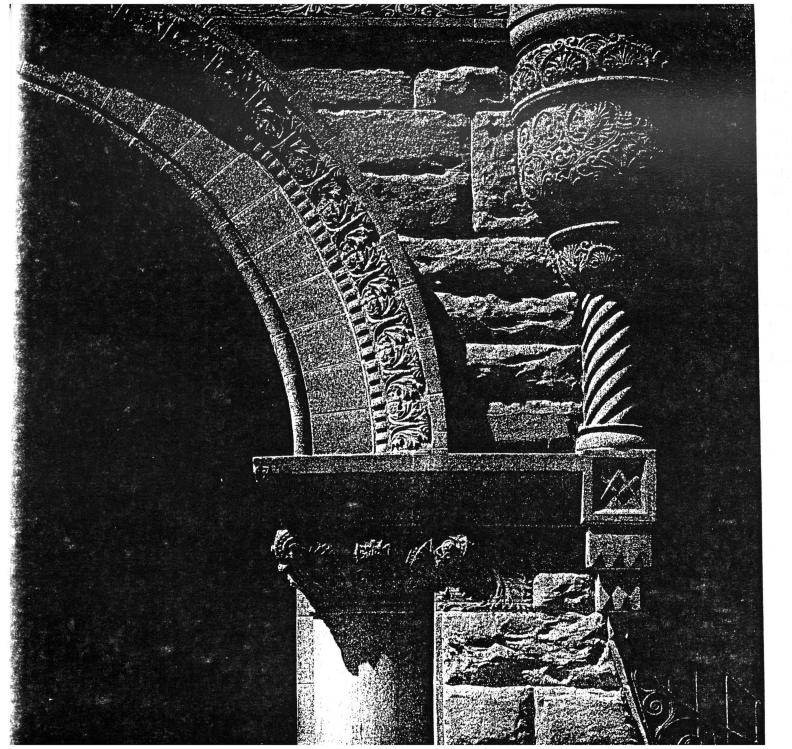
The construction of an exterior addition to a historic building may seem to be essential for the new use, but it is emphasized in the guidelines that such new additions should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, i.e., non character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alterative, it should be designed and constructed to be clearly differentiated from the historic

building and so that the character-defining features are not radically changed, obscured, damaged, or destroyed.

Additions to historic buildings are referenced within specific sections of the guidelines such as Site, Roof, Structural Systems, etc., but are also considered in more detail in a separate section, New Additions to Historic Buildings.

Energy Conservation/Accessibility Considerations/Health and Safety Code Considerations

These sections of the rehabilitation guidance address work done to meet accessibility requirements and health and safety code requirements; or retrofitting measures to conserve energy. Although this work is quite often an important aspect of rehabilitation projects, it is usually not a part of the overall process of protecting or repairing character-defining features; rather, such work is assessed for it potential negative impact on the building's historic character. For this reason, particular care must be taken not to radically change, obscure, damage, or destroy character-defining materials or features in the process of undertaking work to meet various code requirements.



Building Exterior

Masonry

BRICK

STONE

TERRA COTTA

CONCRETE

Adobe

STUCCO

Mortar

Building Exterior

Masonry

The longevity and appearance of a masonry wall is dependent upon the size of the individual units and the mortar.

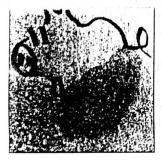
Stone is one of the more lasting of masonry building materials and has been used throughout the history of American building construction. The kinds of stone most commonly encountered on historic buildings in the U.S. include various types of sandstone, limestone, marble, granite, slate and fieldstone. Brick varied considerably in size and quality. Before 1870, brick clays were pressed into molds and were often unevenly fired. The quality of brick depended on the type of clay available and the brick-making techniques; by the 1870s—with the perfection of an extrusion process—bricks became more uniform and durable. Terra cotta is also a kiln-dried clay product popular from the late 19th century until the 1930s. The development of the steel-frame office buildings in the early 20th century contributed to the widespread use of architectural terra cotta. Adobe, which consists of sun-dried earthen bricks, was one of the earliest permanent building materials used in the U.S., primarily in the Southwest where it is still popular.

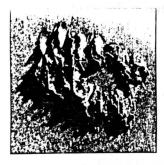
Mortar is used to bond together masonry units. Historic mortar was generally quite soft, consisting primarily of lime and sand with other additives. After 1880, portland cement was usually added resulting in a more rigid and non-absorbing mortar. Like historic mortar, early stucco coatings were also heavily lime-based, increasing in hardness with the addition of portland cement in the late 19th century. Concrete has a long history, being variously made of tabby, volcanic ash and, later, of natural hydraulic cements, before the introduction of portland cement in the 1870s. Since then, concrete has also been used in its precast form.

While masonry is among the most durable of historic building materials, it is also very susceptible to damage by improper maintenance or repair techniques and harsh or abrasive cleaning methods.









conjunt applied with a felttoped marker to polished amate is being removed with a mattine of solvents. The tight about outline was never fully eliminated using december of the followed by a the pouline followed by a therough detergent and and a rote.

Recommended

Identify, retain, and preserve

Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building such as walls, brackets, railings, cornices, window architraves, door pediments, steps, and columns and details such as tooling and bonding patterns, coatings, and color.

Protect and maintain

Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.

Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.

Carrying out masonry surface cleaning tests after it has been determined that such cleaning is appropriate. Tests should be observed over a sufficient period of time so that both the immediate and the long range effects are known to enable selection of the gentlest method possible.

Not Recommended

Removing or radically changing masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing or rebuilding a major portion of exterior masonry walls that could be repaired so that, as a result, the building is no longer historic and is essentially new construction.

Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated to create a new appearance.

Removing paint from historically painted masonry.

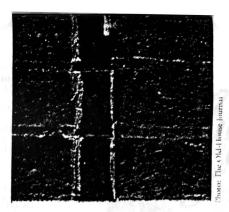
Radically changing the type of paint or coating or its color.

Failing to evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, differential settlement of the building, capillary action, or extreme weather exposure.

Cleaning masonry surfaces when they are not heavily soiled to create a new appearance, thus needlessly introducing chemicals or moisture into historic materials.

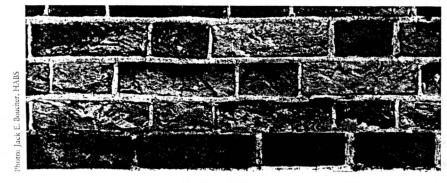
Cleaning masonry surfaces without testing or without sufficient time for the testing results to be of value.

When this brick wall was sandblasted, a downspout (since removed) protected the original smooth surface of the center strip from damage.



Recommended

Cleaning masonry surfaces with the gentlest method possible, such as low pressure water and detergents, using natural bristle brushes.



Too hard and inflexible a mortar has caused this soft, 18th century brick to spall.

Inspecting painted masonry surfaces to determine whether repainting is necessary.

Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., handscraping) prior to repainting.

Applying compatible paint coating systems following proper surface preparation.

Repainting with colors that are historically appropriate to the building and district.

Not Recommended

Sandblasting brick or stone surfaces using dry or wet grit or other abrasives. These methods of cleaning permanently crode the surface of the material and accelerate deterioration.

Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.

Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.

Applying high pressure water cleaning methods that will damage historic masonry and the mortar joints.

Removing paint that is firmly adhering to, and thus protecting, masonry surfaces.

Using methods of removing paint which are destructive to masonry, such as sandblasting, application of caustic solutions, or high pressure waterblasting.

Failing to follow manufacturers' product and application instructions when repainting masonry.

Using new paint colors that are inappropriate to the historic building and district.

Recommended

Evaluating the overall condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to the masonry features will be necessary.

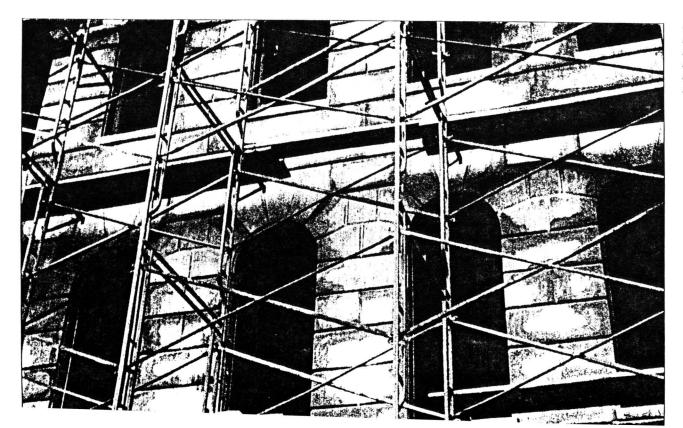
Repair

Repairing masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, loose bricks, damp walls, or damaged plasterwork.

Not Recommended

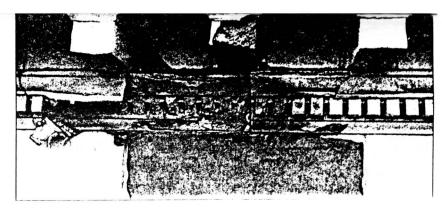
Failing to undertake adequate measures to assure the protection of masonry features.

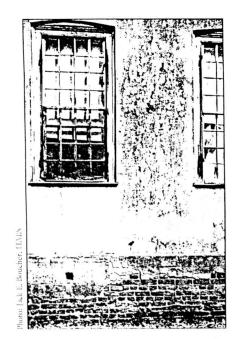
Removing nondeteriorated mortar from sound joints, then repointing the entire building to achieve a uniform appearance.



Composite patching with a cementitious mixture is being used to repair eroded areas of this sandstone facade.

Moisture from a faulty roof and drainage system has been trapped inside this limestone cornice by a waterproof coating, causing severe damage to the stone.





Excessive moisture has damaged not only the stuccoed wall surface, but also the brick substrate.

Recommended

Removing deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.

Duplicating old mortar in strength, composition, color, and texture.

Duplicating old mortar joints in width and in joint profile.

Repairing stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, composition, color, and texture.

Using mud plaster as a surface coating over unfired, unstabilized adobe because the mud plaster will bond to the adobe.

Not Recommended

Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.

Repointing with mortar of high portland cement content (unless it is the content of the historic mortar). This can often create a bond that is stronger than the historic material and can cause damage as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.

Repointing with a synthetic caulking compound.

Using a "scrub" coating technique to repoint instead of traditional repointing methods.

Changing the width or joint profile when repointing.

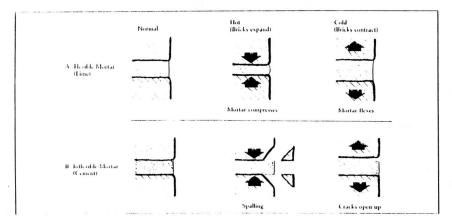
Removing sound stucco; or repairing with new stucco that is stronger than the historic material or does not convey the same visual appearance.

Applying cement stucco to unfired, unstabilized adobe. Because the cement stucco will not bond properly, moisture can become entrapped between materials, resulting in accelerated deterioration of the adobe.

Cutting damaged concrete back to remove the source of deterioration (often corrosion on metal reinforcement bars). The new patch must be applied carefully so it will bond satisfactorily with, and match, the historic concrete.

Repairing masonry features by patching, piecing-in, or consolidating the masonry using recognized preservation methods. Repair may also include the limited replacement in kind—or with compatible substitute material—of those extensively deteriorated or missing parts of masonry features when there are surviving prototypes such as terra-cotta brackets or stone balusters.

Applying new or non-historic surface treatments such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problems.



Not Recommended

Patching concrete without removing the source of deterioration.

Replacing an entire masonry feature such as a cornice or balustrade when repair of the masonry and limited replacement of deteriorated or missing parts are appropriate.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the masonry feature or that is physically or chemically incompatible.

Applying waterproof, water repellent, or non-historic coating such as stucco to masonry as a substitute for repointing and masonry repairs. Coatings are frequently unnecessary, expensive, and may change the appearance of historic masonry as well as accelerate its deterioration.

Flexible mortar expands and contracts with temperature changes. Bricks bonded by inflexible mortar tend to spall at the edges in hot weather and separate from the mortar when it is cold. Temperature fluctuations result in cracks which permit water to enter, causing additional deterioration.

Replace

Replacing in kind an entire masonry feature that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model to reproduce the feature. Examples can include large sections of a wall, a cornice, balustrade, column, or stairway. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Removing a masonry feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

Design for Missing Historic Features

etaz elduromi sə dinə

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Designing and installing a new masonry feature such as steps or a door pediment when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

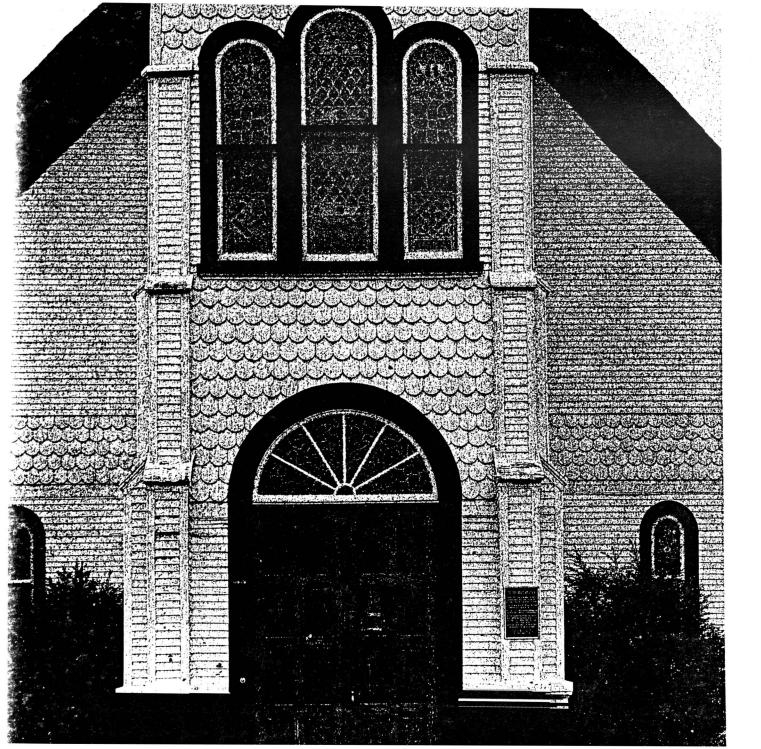
Not Recommended

Creating a false historical appearance because the replaced masonry feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new masonry feature that is incompatible in size, scale, material and color.



Coving—the bollowing out of an adobe wall just above grade—may be caused by standing rainwater, rainwater splash-up from the ground, or by salts deposited in the adobe by moisture evaporation. This adobe wall is being patched in the traditional manner with adobe mud.



Wood

CLAPBOARD
WEATHERBOARD
SHINGLES AND
OTHER WOODEN SIDING
AND DECORATIVE ELEMENTS

Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.

Not Recommended

Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.

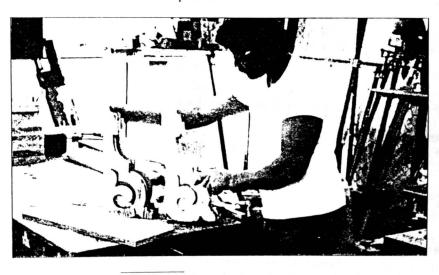
Inspecting painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.

Removing paint that is firmly adhering to, and thus, protecting wood surfaces.

Replacing an entire wood feature such as a cornice or wall when repair of the wood and limited replacement of deteriorated or missing parts are appropriate.

Using substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the good feature or that is physically or chemically incompatible.

If a characterdefining feature is missing, it should be replaced with a matching feature. This shop artisan used traditional tools to replicate a missing porch bracket; after the new bracket is painted, both original and duplicate will be installed on-site.



Removing damaged or deteriorated paint to the next sound layer using the gentlest method possible (handscraping and handsanding), then repainting.

Using destructive paint removal methods such as a propane or butane torches, sandblasting or waterblasting. These methods can irreversibly damage historic woodwork.

D. L. Danded Applicards are being L. tively replaced, thereby maximizing and then of the historic siding.



Using with care electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when paint is so deteriorated that total removal is necessary prior to repainting.

Using chemical strippers primarily to supplement other methods such as handscraping, handsanding and the above-recommended thermal devices. Detachable wooden elements such as shutters, doors, and columns may with the proper safeguards—be chemically dip-stripped.

Applying compatible paint coating systems following proper surface preparation.

Not Recommended

Using thermal devices improperly so that the historic woodwork is scorched.

Failing to neutralize the wood thoroughly after using chemicals so that new paint does not adhere.

Allowing detachable wood features to soak too long in a caustic solution so that the wood grain is raised and the surface roughened.

Failing to follow manufacturers' product and application instructions when repainting exterior woodwork.

Repainting with colors that are appropriate to the historic building and district.

Evaluating the overall condition of the wood to

determine whether more than protection and

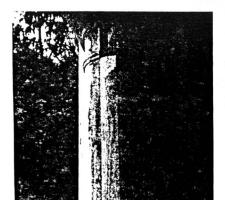
maintenance are required, that is, if repairs to

wood features will be necessary.

Not Recommended

Using new colors that are inappropriate to the historic building or district.

Failing to undertake adequate measures to assure the protection of wood features.





To replace deteriorated portions of the column, strips of new wood were milled to conform to the shape and appearance of the old column framework, glued in place, then back-primed and painted.

Repair

Repairing wood features by patching, piecing-in, consolidating, or otherwise reinforcing the wood using recognized preservation methods. Repair may also include the limited replacement in kind—or with compatible substitute material—of those extensively deteriorated or missing parts of features where there are surviving prototypes such as brackets, molding, or sections of siding.

Replacing an entire wood feature such as a cornice or wall when repair of the wood and limited replacement of deteriorated or missing parts are appropriate.

Using substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the wood feature or that is physically or chemically incompatible.

Replace

Replacing in kind an entire wood feature that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model to reproduce the feature. Examples of wood features include a cornice, entablature or balustrade. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Removing an entire wood feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.



Design for Missing Historic Features

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

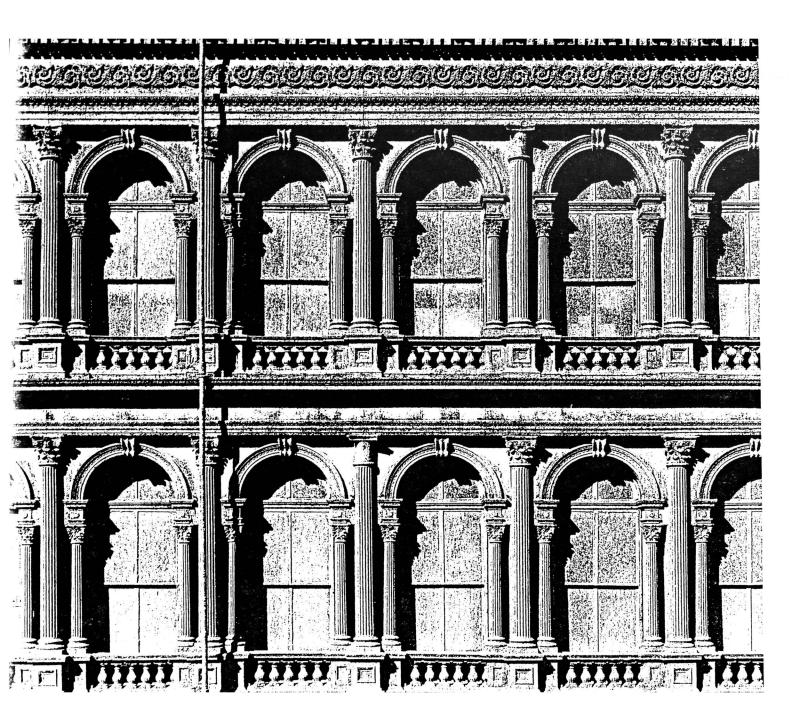
Designing and installing a new wood feature such as a cornice or doorway when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended

Creating a false historical appearance because the replaced wood feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new wood feature that is incompatible in size, scale, material and color.

As protection from the extremes of weather, paint should be re-applied to exterior wood on a regular basis.



Architectural Metals

CAST IRON

STEEL

PRESSED TIN

COPPER

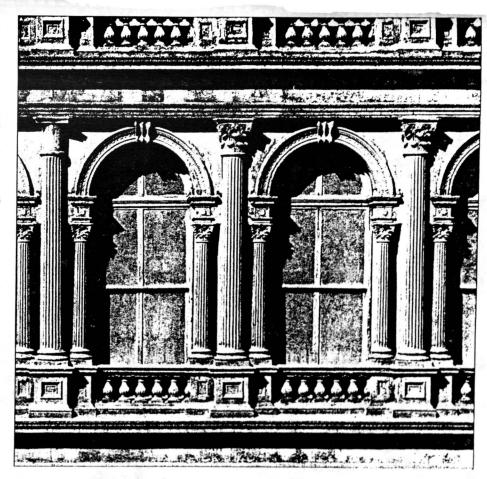
ALUMINUM

ZINC

Architectural Metals

Architectural metal features—such as cast iron facades, porches, and steps; sheet metal cornices, siding, roofs, roof cresting and storefronts; and cast or rolled metal doors, window sash, entablatures, and hardware—are often highly decorative and may be important in defining the overall historic character of the building.

Metals commonly used in historic buildings include lead, tin, zinc, copper, bronze, brass, iron, steel, and to a lesser extent, nickel alloys, stainless steel and aluminum. Historic metal building components were often created by highly skilled, local artisans, and by the late 19th century, many of these components were prefabricated and readily available from catalogs in standardized sizes and designs.



Accorative cast from storefront column analblasted in order to remove flaking pane and rust prior to repainting. Unlike it metal, such as copper and tin, which and dimined by abrasive cleaning, andled cing is an appropriate method for Louis est from a very bard metal.

Identify, retain, and preserve

Recommended

Identifying, retaining, and preserving architectural metal features such as columns, capitals, window hoods, or stairways that are important in defining the overall historic character of the building; and their finishes and colors. Identification is also critical to differentiate between metals prior to work. Each metal has unique properties and thus requires different treatments.

Protect and maintain

Protecting and maintaining architectural metals from corrosion by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved, decorative features.

Cleaning architectural metals, when appropriate, to remove corrosion prior to repainting or applying other appropriate protective coatings.

Identifying the particular type of metal prior to any cleaning procedure and then testing to assure that the gentlest cleaning method possible is selected or determining that cleaning is inappropriate for the particular metal.

Removing or radically changing architectural metal features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Removing a major portion of the historic architectural metal from a facade instead of repairing or replacing only the deteriorated metal, then reconstructing the facade with new material in order to create a uniform, or "improved" appearance.

Radically changing the type of finish or its historic color or accent scheme.

Failing to identify, evaluate, and treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Placing incompatible metals together without providing a reliable separation material. Such incompatibility can result in galvanic corrosion of the less noble metal, e.g., copper will corrode cast iron, steel, tin, and aluminum.

Exposing metals which were intended to be protected from the environment.

Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.

Using cleaning methods which alter or damage the historic color, texture, and finish of the metal; or cleaning when it is inappropriate for the metal.

Removing the patina of historic metal. The patina may be a protective coating on some metals, such as bronze or copper, as well as a significant historic finish.

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with appropriate chemical methods because their finishes can be easily abraded by blasting methods.

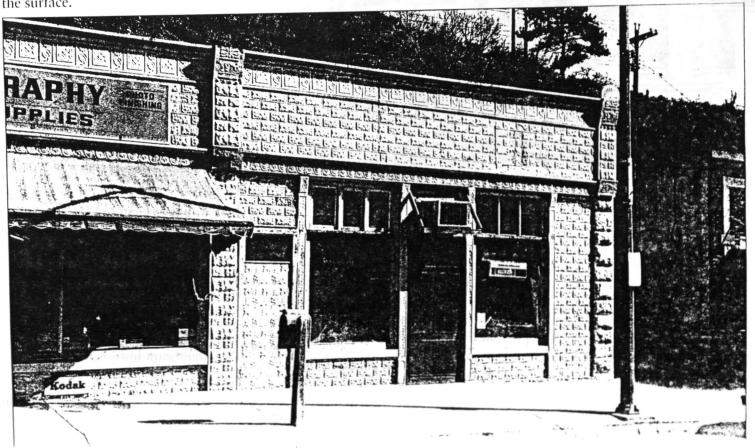
Using the gentlest cleaning methods for cast iron, wrought iron, and steel—hard metals—in order to remove paint buildup and corrosion. If handscraping and wire brushing have proven ineffective, low pressure grit blasting may be used as long as it does not abrade or damage the surface.

Not Recommended

Cleaning soft metals such as lead, tin, copper, terneplate, and zine with grit blasting which will abrade the surface of the metal.

Failing to employ gentler methods prior to abrasively cleaning east iron, wrought iron or steel; or using high pressure grit blasting.

Although these pressed metal storefronts have been well maintained over the years, gaps in the seams between the metal sheets above the door and slight stains along the cornice line indicate a possible roof leak. The roof should be investigated and repaired before the moisture results in rust and more severe metal deterioration.



Applying appropriate paint or other coating systems after cleaning in order to decrease the corrosion rate of metals or alloys.

historic building or district.

Not Recommended

Failing to re-apply protective coating systems to metals or alloys that require them after cleaning so that accelerated corrosion occurs.

Repainting with colors that are appropriate to the Using new colors that are inappropriate to the historic building or district.



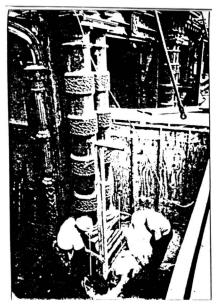
Deteriorated portions of the decorative pressed metal cornice have been inappropriately replaced with nonmatching, plain metal sheets, adversely affecting the historic character of this building.

Applying an appropriate protective coating such as lacquer to an architectural metal feature such as a bronze door which is subject to heavy pedestrian use.

Evaluating the overall condition of the architectural metals to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

Failing to assess pedestrian use or new access patterns so that architectural metal features are subject to damage by use or inappropriate maintenance such as salting adjacent sidewalks.

Failing to undertake adequate measures to assure the protection of architectural metal features.



The cast-iron columns of this theater are being repaired during rehabilitation. Some of the east iron elements such as the smaller, non-structural columns missing from the bay on the right will be replaced with a lightweight substitute material such as cast aluminum, an acceptable alternative according to the Standards.

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Repair

Repairing architectural metal features by patching, splicing, or otherwise reinforcing the metal following recognized preservation methods.

Repairs may also include the limited replacement in kind—or with a compatible substitute material—of those extensively deteriorated or missing parts of features when there are surviving prototypes such as porch balusters, column capitals or bases; or porch cresting.

Replace

Replacing in kind an entire architectural metal feature that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model to reproduce the feature. Examples could include cast iron porch steps or steel sash windows. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Recommended

Design for Missing Historic Features

Designing and installing a new architectural metal feature such as a metal cornice or cast iron capital when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended

Replacing an entire architectural metal feature such as a column of a balustrade when repair of the metal and limited replacement of deteriorated or missing parts are appropriate.

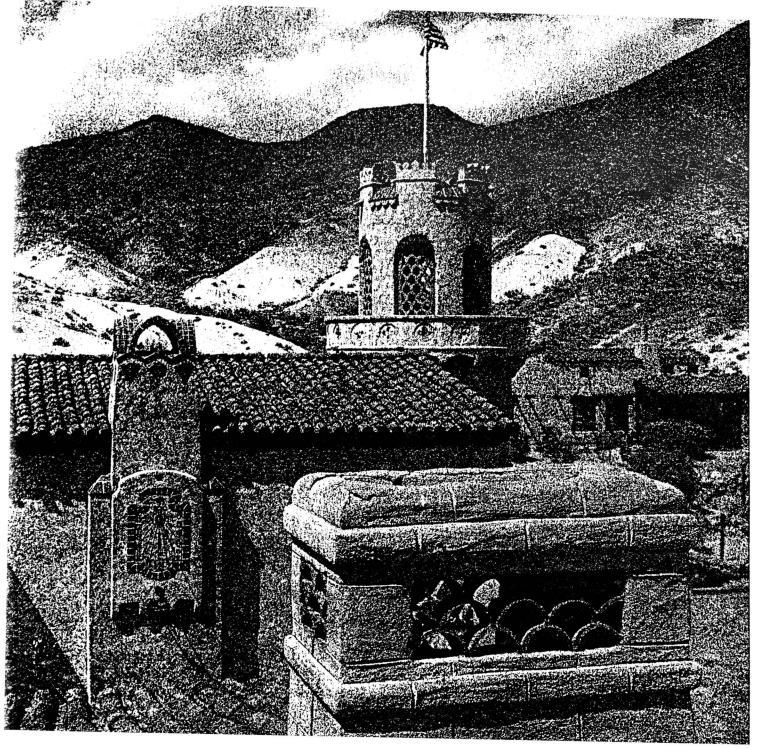
Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the architectural metal feature or is that physically or chemically incompatible.

Removing an architectural metal feature that is unrepairable and not replacing it; or replacing it with a new architectural metal feature that does not convey the same visual appearance.

Not Recommended

Creating a false historical appearance because the replaced architectural metal feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new architectural metal feature that is incompatible in size, scale, material and color.

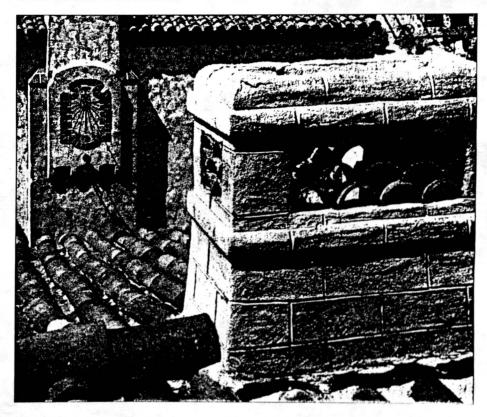


Roofs

Building Exterior Roofs

The roof—with its shape; features such as cresting, dormers, cupolas, and chimneys; and the size, color, and patterning of the roofing material—is an important design element of many historic buildings. In addition, a weather tight roof is essential to the longterm preservation of the entire structure. Historic roofing reflects availability of materials, levels of construction technology, weather, and cost. For example, throughout the country in all periods of history, wood shingles have been used—their size, shape, and detailing differing according to regional craft practices. European settlers used clay tile for roofing as early as the mid-17th century. In some cities, such as New York and Boston, clay was popularly used as a precaution against fire. The Spanish influence in the use of clay tiles is found in the southern, southwestern and western states. In the mid-19th century, tile roofs were often replaced by sheet-metal, which is lighter and easier to maintain. Evidence of the use

of slate for roofing dates from the mid-17th century. Slate has remained popular for its durability, fireproof qualities, and decorative applications. The use of metals for roofing and roof features dates from the 18th century, and includes the use of sheet iron, corrugated iron, galvanized metal, tinplate, copper, lead and zinc. Awareness of these and other traditions of roofing materials and their detailing will contribute to more sensitive treatment.



Identify, retain, and preserve

Identifying, retaining, and preserving roofs—and their functional and decorative features—that are important in defining the overall historic character of the building. This includes the roof's shape, such as hipped, gambrel, and mansard; decorative features such as cupolas, cresting, chimneys, and weathervanes; and roofing material such as slate, wood, clay tile, and metal, as well as its size, color, and patterning.

This well-maintained mansard roof displays its handsome and varied decorative detailing -- castiron cresting, wood shingles, and pedimented dormers.



Protect

Protecting and maintaining a roof by cleaning the gutters and downspouts and replacing deteriorated flashing. Roof sheathing should also be checked for proper venting to prevent moisture condensation and water penetration; and to insure that materials are free from insect infestation.

Radically changing, damaging, or destroying roofs which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

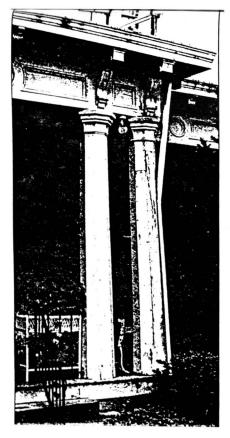
Removing a major portion of the roof or roofing material that is repairable, then reconstructing it with new material in order to create a uniform, or "improved" appearance.

Changing the configuration of a roof by adding new features such as dormer windows, vents, or skylights so that the historic character is diminished.

Stripping the roof of sound historic material such as slate, clay tile, wood, and architectural metal.

Applying paint or other coatings to roofing material which has been historically uncoated.

Failing to clean and maintain gutters and downspouts properly so that water and debris collect and cause damage to roof fasteners. sheathing, and the underlying structure.



The roof drainage system has been neglected for such a long time that, as a result, the wood comice and a porch column are both severely deteriorated.

Providing adequate anchorage for roofing material to guard against wind damage and moisture penetration.

Protecting a leaking roof with plywood and building paper until it can be properly repaired.

Repair

Repairing a roof by reinforcing the historic materials which comprise roof features. Repairs will also generally include the limited replacement in kind—or with compatible substitute material—of those extensively deteriorated or missing parts of features when there are surviving prototypes such as cupola louvers, dentils, dormer roofing; or slates, tiles, or wood shingles on a main roof.

> New copper valley flashing is installed as part of overall repairs to the historic slate roof and its drainage system.

Not Recommended

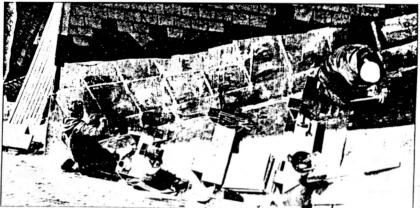
Allowing roof fasteners, such as nails and clips to corrode so that roofing material is subject to accelerated deterioration.

Permitting a leaking roof to remain unprotected so that accelerated deterioration of historic building materials—masonry, wood, plaster, paint and structural members—occurs.

Replacing an entire roof feature such as a cupola or dormer when of the historic materials and limited replacement of deterio rated or missing parts are appropriate.

Failing to reuse intact slate or tile when only the roofing substrate needs replacement.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the roof or that is physically or chemically incompatible.



Replace

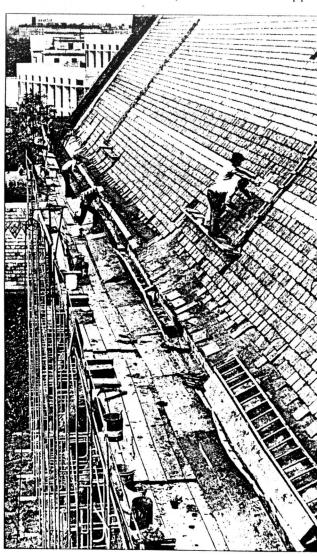
Replacing in kind an entire feature of the roof that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model to reproduce the feature. Examples can include a large section of roofing, or a dormer or chimney. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.



The size, shape, and detailing of the historic shingles as well as the method of fabrication and installation were carefully researched prior to selecting this new woodshingle roofing.

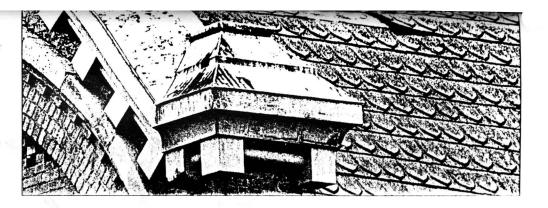
Not Recommended

Removing a feature of the roof that is unrepairable, such as a chimney or dormer, and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.



Workmen are in the process of removing deteriorated roofing slates and replacing them with new matching slates.

New galvanized sheet-iron shingles will need to be reproduced using the pattern of the original shingle.



The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Design for Missing Historic Features

Designing and constructing a new feature when the historic feature is completely missing, such as chimney or cupola. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Alterations/Additions for the New Use

Installing mechanical and service equipment on the roof such as air conditioning, transformers, or solar collectors when required for the new use so that they are inconspicuous from the public rightof-way and do not damage or obscure characterdefining features.

Designing additions to roofs such as residential, office, or storage spaces; elevator housing; decks and terraces; or dormers or skylights when required by the new use so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.

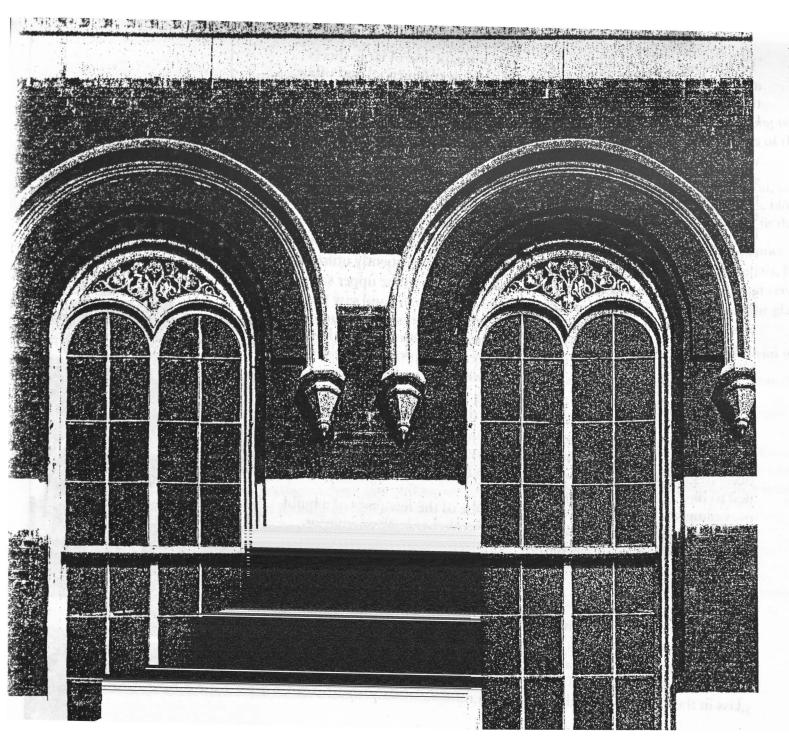
Not Recommended

Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new roof feature that is incompatible in size, scale, material and color.

Installing mechanical or service equipment so that it damages or obscures character-defining features; or is conspicuous from the public right-of-way.

Radically changing a character-defining roof shape or damaging or destroying character-defining roofing material as a result of incompatible design or improper installation techniques.



Windows

Windows

Technology and prevailing architectural styles have shaped the history of windows in the United States starting in the 17th century with wooden casement windows with tiny glass panes seated in lead cames. From the transitional single-hung sash in the early 1700s to the true doublehung sash later in the same century, these early wooden windows were characterized by the small panes, wide muntins, and the way in which decorative trim was used on both the exterior and interior of the window. As the sash thickness increased by the turn of the century, muntins took on a thinner appearance as they narrowed in width but increased in thickness according to the size of the window and design practices. Regional traditions continued to have an impact on the prevailing window design such as with the long-term use of "french windows" in areas of the deep South.

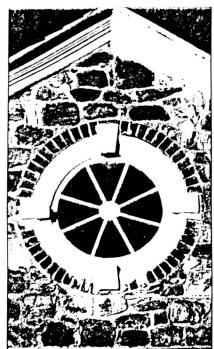
Changes in technology led to the possibility of larger glass panes so that by the mid-19th century, two-over-two lights were common; the manufacturing of plate glass in the United States allowed

for dramatic use of large sheets of glass in commercial and office buildings by the late 19th century. With mass-produced windows, mail order distribution, and changing architectural styles, it was possible to obtain a wide range of window designs and light patterns in sash. Popular versions of Arts and Crafts houses constructed in the early 20th century frequently utilized smaller lights in the upper sash set in groups or pairs and saw the reemergence of casement windows. In the early 20th century, the desire for fireproof building construction in dense urban areas contributed to the growth of a thriving steel window industry along with a market for hollow metal and metal clad wooden windows.

As one of the few parts of a building serving as both an interior and exterior feature, windows are nearly always an important part of the historic character of a building. In most buildings, windows also comprise a considerable amount of the historic fabric of the wall plane and thus are deserving of special consideration in a rehabilitation project.







The distinctive shape and decorative detailing of a building's windows often help establish its architectural style and drarater.

Identify, retain, and preserve

Identifying, retaining, and preserving windows and their functional and decorative features that are important in defining the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, panelled or decorated jambs and moldings, and interior and exterior shutters and blinds.

Conducting an in-depth survey of the conditions of existing windows early in rehabilitation planning so that repair and upgrading methods and possible replacement options can be fully explored.

Protect and maintain

Protecting and maintaining the wood and architectural metal which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Not Recommended

Removing or radically changing windows which are important in defining the historic character of the building so that, as a result, the character is diminished.

Changing the number, location, size or glazing pattern of windows, through cutting new openings, blocking-in windows, and installing replacement sash that do not fit the historic window opening.

Changing the historic appearance of windows through the use of inappropriate designs, materials, finishes, or colors which noticeably change the sash, depth of reveal, and muntin configuration; the reflectivity and color of the glazing; or the appearance of the frame.

Obscuring historic window trim with metal or other material.

Stripping windows of historic material such as wood, cast iron, and bronze.

Replacing windows solely because of peeling paint, broken glass, stuck sash, and high air infiltration. These conditions, in themselves, are no indication that windows are beyond repair.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of the windows results.



Maintaining a historic window may include work as basic as replacing a sash cord.

Making windows weather tight by re-caulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, i.e. if repairs to windows and window features will be required.

Repair

Repairing window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Such repair may also include replacement in kind of those parts that are either extensively deteriorated or are missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds.

Not Recommended

Retrofitting or replacing windows rather than maintaining the sash, frame, and glazing.

Failing to undertake adequate measures to assure the protection of historic windows.

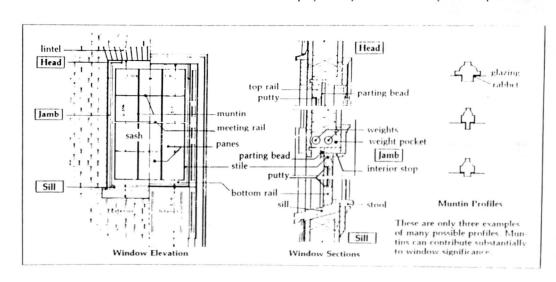
Replacing an entire window when repair of materials and limited replacement of deteriorated or missing parts are appropriate.

Failing to reuse serviceable window hardware such as brass sash lifts and sash locks.

Using substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the window or that is physically or chemically incompatible.



Deterioration of poorly maintained windows usually begins on horizontal surfaces where water collects. Problem areas on this sill are clearly indicated by paint fallow due to moistine.

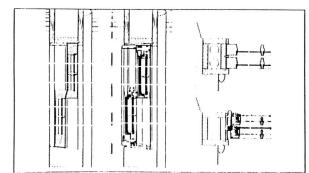


These distributed identify individed parts and fabrication details of a bistoric troudender details.

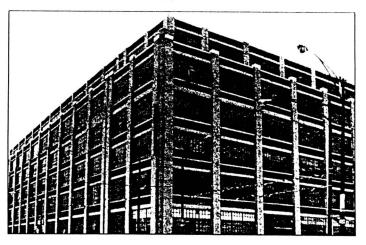
Replace

Replacing in kind an entire window that is too deteriorated to repair using the same sash and pane configuration and other design details. If using the same kind of material is not technically or economically feasible when replacing windows deteriorated beyond repair, then a compatible substitute material may be considered. For example, on certain types of large buildings, particularly high-rises, aluminum windows may be a suitable replacement for historic wooden sash provided wooden replacement are not practical and the design detail of the historic windows can be matched. Historic color duplication, custom contour panning, incorporation of either an integral muntin or 5/8" deep trapezoidal exterior muntin grids, where applicable, retention of the same glass to frame ratio, matching of the historic reveal, and duplication of the frame width, depth, and such existing decorative details as arched tops should all be components in aluminum replacements for use on historic buildings.

La come larger buildings, it may be approprinte to replace seriously deteriorated repulous with new ones that replicate most of the historic visual qualities. This two-part descent shows the original windows in a mill and the rehabilitation solution that retained the wood frames, then utilized an alammam such with true divided lights and a passyback interior storm panel.



Removing a character-defining window that is unrepairable and blocking it in; or replacing it with a new window that does not convey the same visual appearance.





The steel pivot windows in this historic manufacturing building were replaced with new windows which matched the multilighted originals.

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above bave been addressed.

Design for Missing Historic Features

Designing and installing new windows when the historic windows (frames, sash and glazing) are completely missing. The replacement windows may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the window openings and the historic character of the building.

Alterations/Additions for the New Use

Designing and installing additional windows on rear or other non-character-defining elevations if required by the new use. New window openings may also be cut into exposed party walls. Such design should be compatible with the overall design of the building, but not duplicate the fenestration pattern and detailing of a characterdefining elevation.

Providing a setback in the design of dropped ceilings when they are required for the new use to allow for the full height of the window openings.

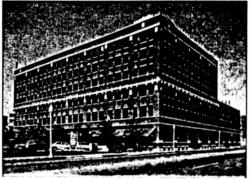
Creating a false historical appearance because the replaced window is based on insufficient historical, pictorial, and physical documentation.

Introducing a new design that is incompatible with the historic character of the building.

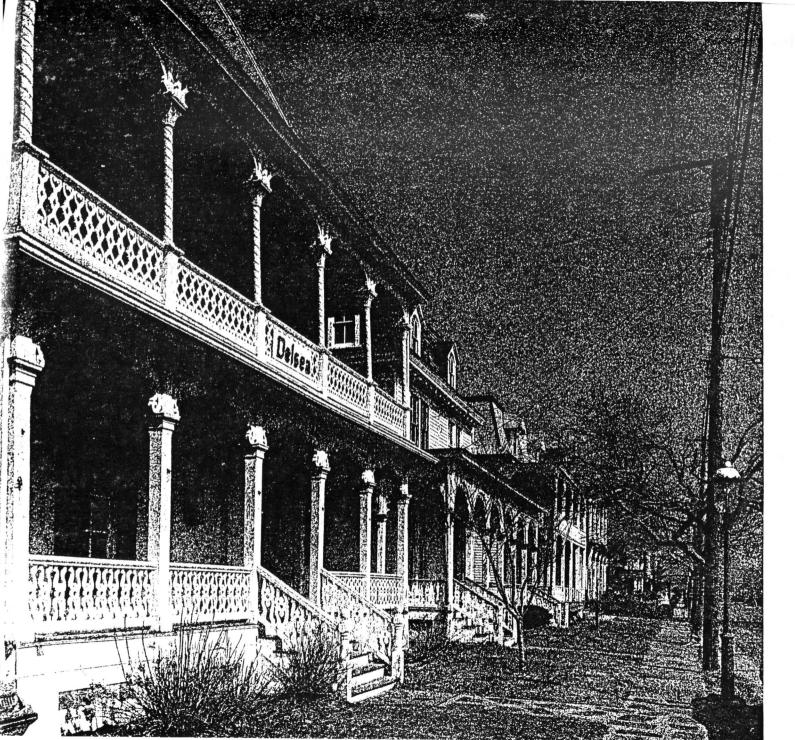
Installing new windows, including frames, sash, and muntin configuration that are incompatible with the building's historic appearance or obscure, damage, or destroy character-defining features.

Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appear ance of the windows are changed.





When the six-over-six windows never replaced with inappropriate single dear of tinted glass, the historic industrial character of this building was lost.



Entrances and Porches

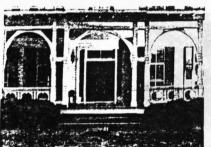
Entrances and Porches

Entrances and porches are quite often the focus of historic buildings, particularly on primary elevations. Together with their functional and decorative features such as doors, steps, balustrades, pilasters, and entablatures, they can be extremely important in defining the overall character of a building. In many cases, porches were energy-saving devices. shading southern and western elevations. Usually entrances and porches were integral components of a historic building's design; for example, porches on Greek Revival houses, with Doric or Ionic columns and pediments, echoed the architectural elements and features of the larger building. Central one-bay porches or arcaded porches are evident in Italianate style buildings of the 1860s. Doors of Renaissance Revival style buildings frequently supported entablatures or pedi-

ments. Porches were particularly prominent features of Eastlake and Stick Style houses; porch posts, railings, and balusters were characterized by a massive and robust quality, with members turned on a lathe. Porches of bungalows of the early 20th century were characterized by tapered porch posts, exposed post and beams, and low pitched roofs with wide overhangs. Art Deco commercial buildings were entered through stylized glass and stainless steel doors.









Identify, retain, and preserve

Identifying, retaining, and preserving entrancesand their functional and decorative features that are important in defining the overall historic character of the building such as doors, fanlights, sidelights, pilasters, entablatures, columns, balustrades, and stairs.

Protect and maintain

Protecting and maintaining the masonry, wood, and architectural metal that comprise entrances and porches through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to entrance and porch features will be necessary.

A variety of historic entrances and porches is illustrated here, ranging from the elegance of a Georgian-style entrance, to the more vernacular nature of a 19th century wood porch, to the utilitarian, yet romantic Mediterranean-style loggia.

Not Recommended

Removing or radically changing entrances and porches which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Stripping entrances and porches of historic material such as wood, cast iron, terra cotta tile, and brick.

Removing an entrance or porch because the building has been reoriented to accommodate a new use.

Cutting new entrances on a primary elevation.

Altering utilitarian or service entrances so they appear to be formal entrances by adding panelled doors, fanlights, and sidelights.

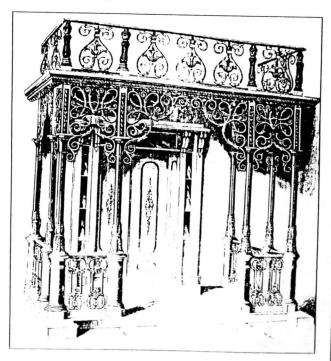
Failing to provide adequate protection to materials on a cyclical basis so that deterioration of entrances and porches results.

Failing to undertake adequate measures to assure the protection of historic entrances and porches.

Repair

Repairing entrances and porches by reinforcing the historic materials. Repair will also generally include the limited replacement in kind—or with compatible substitute material—of those extensively deteriorated or missing parts of repeated features where there are surviving prototypes such as balustrades, cornices, entablatures, columns, sidelights, and stairs.

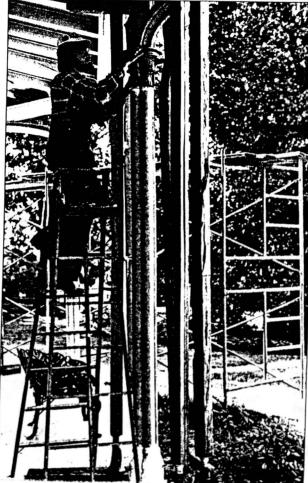
In the 19th century some cast-iron porches could be purchased by mail. such as this madeto-order veranda which was featured in an 1870 foundiv catalog.



Not Recommended

Replacing an entire entrance or porch when the repair of materials and limited replacement of parts are appropriate.

Using a substitute material for the replacement parts that does not convey the visual appearance of the surviving parts of the entrance and porch or that is physically or chemically incompatible.



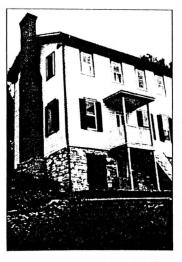
Careful inspection of pour beating such as these column capitale is necessary before initiating and halala titti on for open

Replace

Replacing in kind an entire entrance or porch that is too deteriorated to repair—if the form and detailing are still evident—using the physical evidence as a model to reproduce the feature. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.







Removing an entrance or porch that is unrepairable and not replacing it; or replacing it with a new entrance or porch that does not convey the same visual appearance.

A 1910 wrap-around porch was removed from this 1830 house during rehabilitation. Although a later addition, the porch should not have been removed because it had acquired significance over time and was thus an important feature in defining the character of this historic structure.

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Design for Missing Historic Features

Designing and constructing a new entrance or porch when the historic entrance or porch is completely missing. It may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building.

Alterations/Additions for the New Use

Designing enclosures for historic porches when required by the new use in a manner that preserves the historic character of the building. This can include using large sheets of glass and recessing the enclosure wall behind existing scrollwork, posts, and balustrades.

Designing and installing additional entrances or porches when required for the new use in a manner that preserves the historic character of the buildings, i.e., limiting such alteration to noncharacter-defining elevations.

11 is rehabilitation connected two separate porches, resulting in the civation of a large continuous porch that obscures the historic turn porch design; it is thus incompatible with the historic character of the house.



Not Recommended

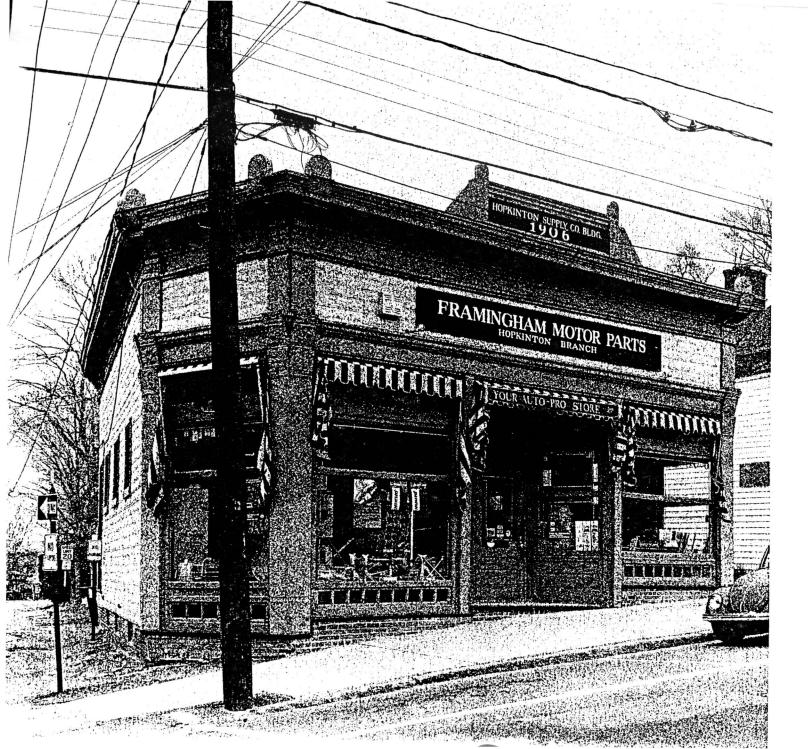
Creating a false historical appearance because the replaced entrance or porch is based on insufficient historical, pictorial, and physical documentation.

Introducing a new entrance or porch that is incompatible in size, scale, material, and color.

Enclosing porches in a manner that results in a diminution or loss of historic character such as using solid materials such as wood, stucco, or masonry.

Installing secondary service entrances and porches that are incompatible in size and scale with the historic building or obscure, damage, or destroy character-defining features.





Storefronts

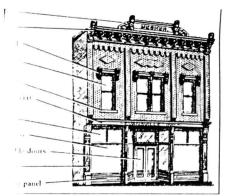
Storefronts

The storefront is usually the most prominent feature of a historic commercial building, playing a crucial role in a store's advertising and merchandising strategy. Although a storefront normally does not extend beyond the first story, the rest of the building is often related to it visually through a unity of form and detail. Planning should always consider the entire building; window patterns on the upper floors, cornice elements, and other decorative features should be carefully retained, in addition to the storefront itself.

The earliest extant storefronts in the U.S., dating from the late 18th and early 19th centuries, had bay or oriel windows and provided limited display space. The 19th century witnessed the progressive enlargement of display windows

as plate glass became available in increasingly larger units. The use of cast iron columns and lintels at ground floor level permitted structural members to be reduced in size. Recessed entrances provided shelter for sidewalk patrons and further enlarged display areas. In the 1920s and 1930s, aluminum, colored structural glass, stainless steel, glass block, neon, and other new materials were introduced to create Art Deco storefronts.





These architectural details are typical of historic commercial buildings (this particular one is No. 4016 in the George L. Mesker and Company catalog of 1905). The design utilized both east and galvanized iron.

Identify, retain, and preserve

Identifying, retaining, and preserving storefronts—and their functional and decorative features—that are important in defining the overall historic character of the building such as display windows, signs, doors, transoms, kick plates, corner posts, and entablatures. The removal of inappropriate, nonhistoric cladding, false mansard roofs, and other later alterations can help reveal the historic character of a storefront.

Not Recommended

Removing or radically changing storefronts—and their features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Changing the storefront so that it appears residential rather than commercial in character.

Removing historic material from the storefront to create a recessed arcade.

Introducing coach lanterns, mansard designs, wood shakes, nonoperable shutters, and small-paned windows if they cannot be documented historically.

Changing the location of a storefront's main entrance.

Protect

Protecting and maintaining masonry, wood, and architectural metals which comprise storefronts through appropriate treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of storefront features results.

Protecting storefronts against arson and vandalism before work begins by boarding up windows and installing alarm systems that are keyed into local protection agencies.

Permitting entry into the building through unsecured or broken windows and doors so that interior features and finishes are damaged through exposure to weather or through vandalism.

Stripping storefronts of historic material such as wood, cast iron, terra cotta, carrara glass, and brick.

Evaluating the overall condition of storefront materials to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

Not Recommended

Failing to undertake adequate measures to assure the preservation of the historic storefront.



A false-fronted wood store is now used as a museum. Although the weathered wood is part of its charm, repainting is recommended as a good maintenance practice to protect the wood.

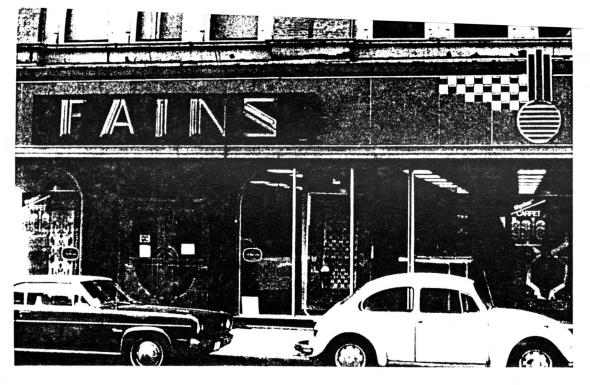
Repair

Repairing storefronts by reinforcing the historic materials. Repairs will also generally include the limited replacement in kind—or with compatible substitute materials—of those extensively deteriorated or missing parts of storefronts where there are surviving prototypes such as transoms, kick plates, pilasters, or signs.

Replacing an entire storefront when repair of materials and limited replacement of its parts are appropriate.

Using substitute material for the replacement parts that does not convey the same visual appearance as the surviving parts of the storefront or that is physically or chemically incompatible.

This sleek red and black Moderne storefront was added to a more staid late-19th century commercial building in the 1930s - both are now in need of repair. According to the Standards, later storefronts that have acquired significance over time should generally be retained in rehabilitation.





This appropriate new storefront replaces an old one that was too deteriorated to save. It features a recessed doorway based on the historic design and respects the scale and proportion of the existing building.

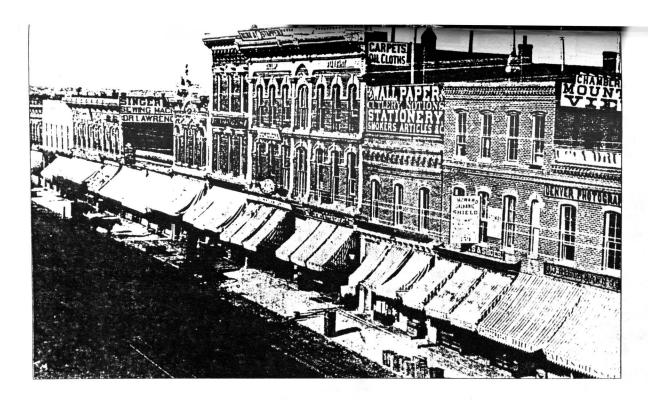
Recommended

Replace

Replacing in kind an entire storefront that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model. If using the same material is not technically or economically feasible, then compatible substitute materials may be considered.

Not Recommended

Removing a storefront that is unrepairable and not replacing it; or replacing it with a new storefront that does not convey the same visual appearance.



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Recommended

Design for Missing Historic Features

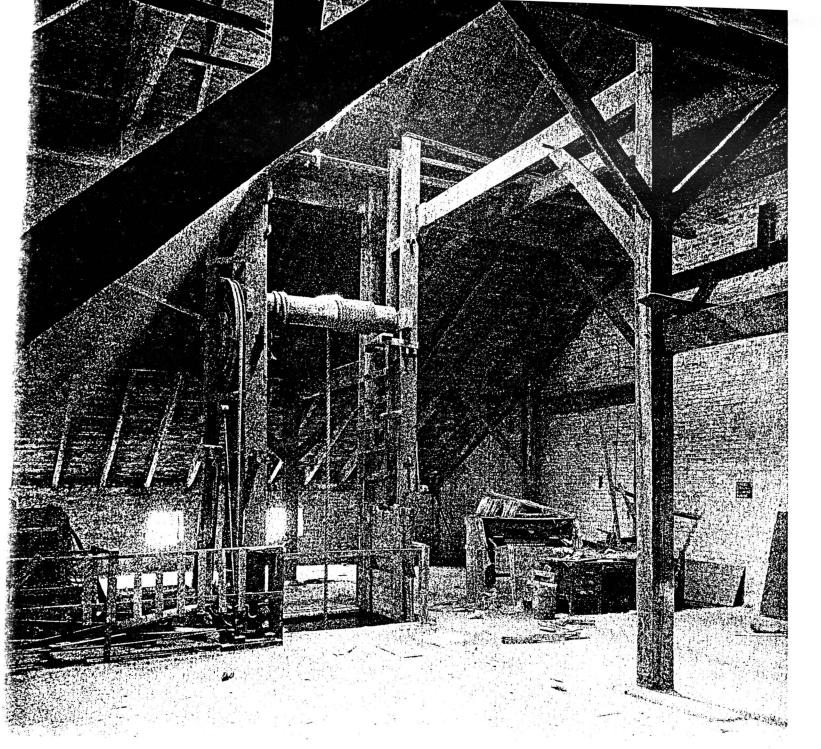
Designing and constructing a new storefront when the historic storefront is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended

Creating a false historical appearance because the replaced storefront is based on insufficient historical, pictorial, and physical documentation.

Introducing a new design that is incompatible in size, scale, material, and color.

Using inappropriately scaled signs and logos or other types of signs that obscure, damage, or destroy remaining characterdefining features of the historic building.



Building Interior

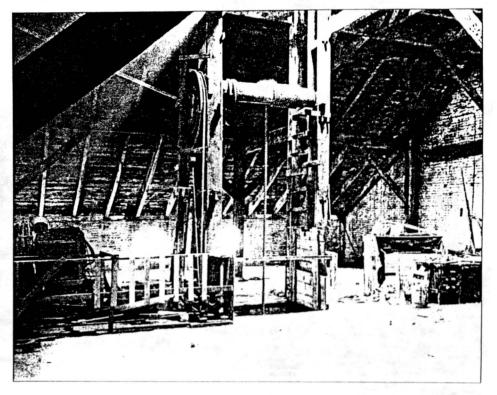
Structural Systems

Building Interior

Structural Systems

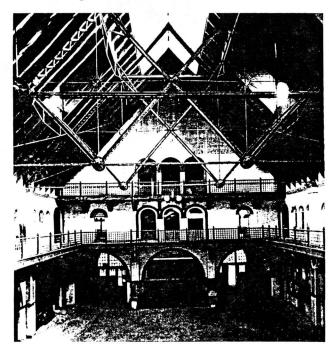
If features of the structural system are exposed such as loadbearing brick walls, cast iron columns, roof trusses, posts and beams, vigas, or stone foundation walls, they may be important in defining the building's overall historic character. Unexposed structural features that are not characterdefining or an entire structural system may nonetheless be significant in the history of building technology; therefore, the structural system should always be examined and evaluated early in the project planning stage to determine both its physical condition and its importance to the building's historic character or historical significance.

The types of structural systems found in America include, but certainly are not limited, to the following: wooden frame construction (17th c.), balloon frame construction (19th c.), loadbearing masonry construction (18th c.), brick cavity wall construction (19th c.), heavy timber post and beam industrial construction (19th c.), fireproof iron construction (19th c.), heavy masonry and steel construction (19th c.), skeletal steel construction (19th c.), and concrete slab and post construction (20th c.).



Identify, retain, and preserve

Identifying, retaining, and preserving structural systems—and individual features of systems that are important in defining the overall historic character of the building, such as post and beam systems, trusses, summer beams, vigas, cast iron columns, above-grade stone foundation walls, or loadbearing brick or stone walls.



The exposed metal roof-truss system of this waiting room not only provides structural support, but is also important in defining the interior character of the train station.

Protect and maintain

Protecting and maintaining the structural system by cleaning the roof gutters and downspouts; replacing roof flashing; keeping masonry, wood, and architectural metals in a sound condition; and assuring that structural members are free from insect infestation.

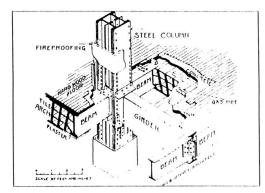
Removing, covering, or radically changing features of structural systems which are important in defining the overall historic characteristics. ter of the building so that, as a result, the character is diminished.

Putting a new use into the building which could overload the existing structural system; or installing equipment or mechanical systems which could damage the structure.

Demolishing a loadbearing masonry wall that could be augmented and retained, and replacing it with a new wall (i.e., brick or stone), using the historic masonry only as an exterior veneer.

Leaving known structural problems untreated such as deflection of beams, cracking and bowing of walls, or racking of structural members.

Utilizing treatments or products that accelerate the deterioration of structural material such as introducing urea-formaldehyde foam insulation into frame walls.



Detail of a column and girder connection and floor construction. The Fair Store, Chicago, Illinois, 1892 (Jenney and Mundie, architects). This type of connec tion was used in many iron and steel buildings; "fireproofine" was provided by terra cotta tile and plaster.

Failing to provide proper building maintenance so that deteriora tion of the structural system results. Causes of deterioration include subsurface ground movement, vegetation growing too close to foundation walls, improper grading, fungal rot, and poor interior ventilation that results in condensation.

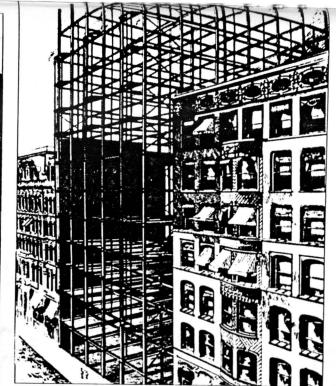


broider to preserve this historic woodpane building, new steel framing was in ted to reinforce the wood post and Lean structure. Original wood framing menders were notched to accommodate if e new steel frame.

Examining and evaluating the physical condition of the structural system and its individual features using non-destructive techniques such a X-ray photography.

Repair

Repairing the structural system by augmenting or upgrading individual parts or features. For example, weakened structural members such as floor framing can be paired with a new member, braced, or otherwise supplemented and reinforced.



Unity Building, Chicago, Illinois, 1891-1892 (Clinton I. Warren, architect). The development of the skeleton frame was pioneered by architects of the "Chicago School" in the late-19th century. With this method the weight of the building is carried on the frame, not the walls, allowing the construction of taller buildings without increasing the wall thickness.

Not Recommended

Utilizing destructive probing techniques that will damage or destroy structural material.

Upgrading the building structurally in a manner that diminishes the historic character of the exterior, such as installing strapping channels or removing a decorative cornice; or that damages interior features or spaces.

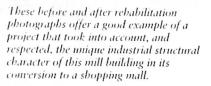
Replacing a structural member or other feature of the structural system when it could be augmented and retained.

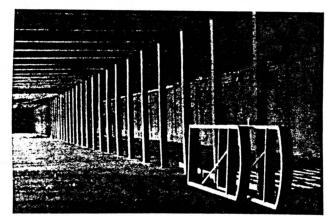
Replace

Replacing in kind—or with substitute material those portions or features of the structural system that are either extensively deteriorated or are missing when there are surviving prototypes such as cast iron columns, roof rafters or trusses, or sections of loadbearing walls. Substitute material should convey the same form, design, and overall visual appearance as the historic feature; and, at a minimum, equal its loadbearing capabilities.

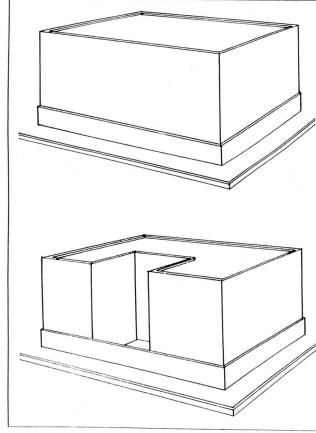
Installing a replacement feature that does not convey the same visual appearance, e.g., replacing an exposed wood summer beam with a steel beam.

Using substitute material that does not equal the loadbearing capabilities of the historic material and design or is otherwise physically or chemically incompatible.









A rehabilitation proposal to convert a historic waterfront warehouse into a residential apartment building called for cutting out a large section of the rectangular-shaped bistoric building. The new "U" shape would provide more apartments with a water front view. This schematic drawing shows the drastic change that would result to the structure and character of the historic building if a portion had been removed as proposed (the project was denied because it did not meet the Standards).

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Alterations/Additions for the New Use

Limiting any new excavations adjacent to historic foundations to avoid undermining the structural stability of the building or adjacent historic buildings. Studies should be done to ascertain potential damage to archeological resources.

Correcting structural deficiencies in preparation for the new use in a manner that preserves the structural system and individual characterdefining features.

Designing and installing new mechanical or electrical systems when required for the new use which minimize the number of cutouts or holes in structural members.

Adding a new floor when required for the new use if such an alteration does not damage or destroy the structural system or obscure, damage, or destroy character-defining spaces, features, or finishes.

Creating an atrium or a light well to provide natural light when required for the new use in a manner that assures the preservation of the structural system as well as character-defining interior spaces, features, and finishes.

Not Recommended

Carrying out excavations or regrading adjacent to or within a historic building which could cause the historic foundation to settle, shift, or fail; could have a similar effect on adjacent historic buildings; or could destroy significant archeological resources.

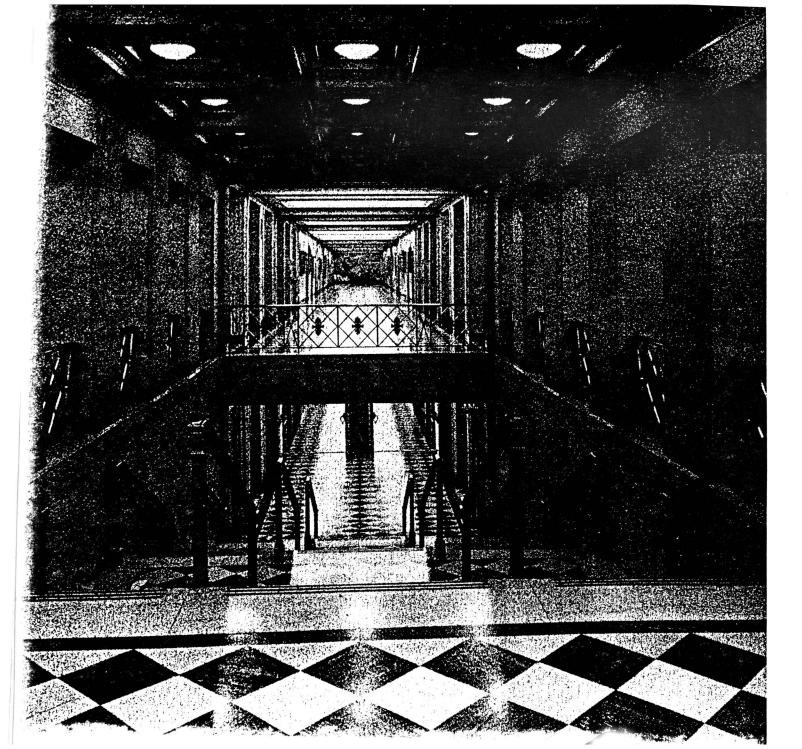
Radically changing interior spaces or damaging or destroying features or finishes that are character-defining while trying to correct structural deficiencies in preparation for the new use.

Installing new mechanical and electrical systems or equipment in a manner which results in numerous cuts, splices, or alterations to the structural members.

Inserting a new floor when such a radical change damages a structural system or obscures or destroys interior spaces, features, or finishes.

Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appearance of the windows are radically changed.

Damaging the structural system or individual features; or radically changing, damaging, or destroying character-defining interior spaces, features, or finishes in order to create an atrium or a light well.



Building Interior

Spaces, Features and Finishes

Building Interior

Spaces, **Features** and Finishes An interior floor plan, the arrangement and sequence of spaces, and built-in features and applied finishes are individually and collectively important in defining the historic character of the building. Their identification, retention, protection, and repair should be given prime consideration in every rehabilitation project. In evaluating historic interiors prior to rehabilitation, it should be kept in mind that interiors are comprised of a series of primary and secondary spaces. This is applicable to all buildings, from courthouses to cathedrals, to cottages and office buildings. Primary spaces, including entrance halls, parlors, or living rooms, assembly rooms and lobbies, are defined not only by their features and finishes, but by the size and proportion of the rooms themselves—purposely

created to be the visual attraction or functioning "core" of the building. Care should be taken to retain the essential proportions of primary interior spaces and not to damage, obscure, or destroy distinctive features and finishes.

Secondary spaces include areas and rooms that "service" the primary spaces and may include kitchens, bathrooms, mail rooms, utility spaces, hallways, firestairs and work spaces in a commercial or office building. Extensive changes can often be made in these less important areas without having a detrimental effect on the overall historic character.



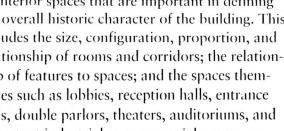




Interior Spaces Identify, retain and preserve

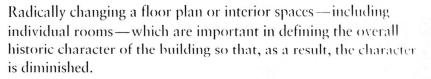
Recommended

Identifying, retaining, and preserving a floor plan or interior spaces that are important in defining the overall historic character of the building. This includes the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves such as lobbies, reception halls, entrance halls, double parlors, theaters, auditoriums, and important industrial or commercial use spaces.



Interior Features and Finishes Identify, retain and preserve

Identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantels, panelling, light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.



Altering the floor plan by demolishing principal walls and partitions to create a new appearance.

Altering or destroying interior spaces by inserting floors, cutting through floors, lowering ceilings, or adding or removing walls.

Relocating an interior feature such as a staircase so that the historic relationship between features and space is altered.

Removing or radically changing features and finishes which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Installing new decorative material that obscures or damages character-defining interior features or finishes.

Removing paint, plaster, or other finishes from historically finished surfaces to create a new appearance (e.g., removing plaster to expose masonry surfaces such as brick walls or a chimney piece).

Applying paint, plaster, or other finishes to surfaces that have been historically unfinished to create a new appearance.

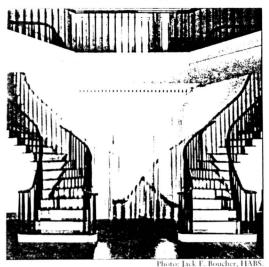
Stripping paint to bare wood rather than repairing or reapplying grained or marbled finishes to features such as doors and panelling.

Radically changing the type of finish or its color, such as painting a previously varnished wood feature.



These photographs suggest the richness and diversity of public building spaces, features, and finishes.





This historic character of these 19th century residential interiors was protected and maintained during rebabilitation.

Protect and maintain

Protecting and maintaining masonry, wood, and architectural metals which comprise interior features through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems.

Protecting interior features and finishes against arson and vandalism before project work begins, erecting protective fencing, boarding-up windows, and installing fire alarm systems that are keyed to local protection agencies.

Protecting interior features such as a staircase, mantel, or decorative finishes and wall coverings against damage during project work by covering them with heavy canvas or plastic sheets.

Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as wall coverings, parquet flooring and panelling.

Removing damaged or deteriorated paints and finishes to the next sound layer using the gentlest method possible, then repainting or refinishing using compatible paint or other coating systems.

Repainting with colors that are appropriate to the historic building.

Not Recommended

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of interior features results.

Permitting entry into historic buildings through unsecured or broken windows and doors so that the interior features and finishes are damaged by exposure to weather or through vandalism.

Stripping interiors of features such as woodwork, doors, windows, light fixtures, copper piping, radiators; or of decorative materials.

Failing to provide proper protection of interior features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.

Failing to take new use patterns into consideration so that interior features and finishes are damaged.

Using destructive methods such as propane or butane torches or sandblasting to remove paint or other coatings. These methods can irreversibly damage the historic materials that comprise interior features.

Using new paint colors that are inappropriate to the historic building.

Limiting abrasive cleaning methods to certain industrial or warehouse buildings where the interior masonry or plaster features do not have distinguishing design, detailing, tooling, or finishes; and where wood features are not finished, molded, beaded, or worked by hand. Abrasive cleaning should only be considered after other, gentler methods have been proven ineffective.

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to interior features and finishes will be necessary.

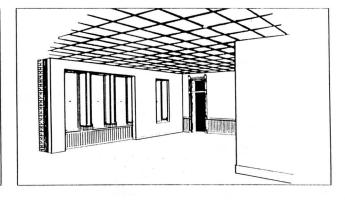
Repair

Repairing interior features and finishes by reinforcing the historic materials. Repair will also generally include the limited replacement in kind—or with compatible substitute material of those extensively deteriorated or missing parts of repeated features when there are surviving prototypes such as stairs, balustrades, wood panelling, columns; or decorative wall coverings or ornamental tin or plaster ceilings.

Not Recommended

Changing the texture and patina of character-defining features through sandblasting or use of abrasive methods to remove paint, discoloration or plaster. This includes both exposed wood (includ ing structural members) and masonry.

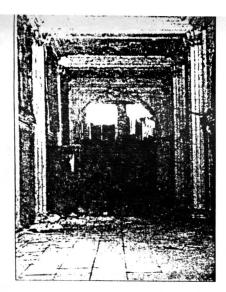
Failing to undertake adequate measures to assure the protection of interior features and finishes.



Replacing an entire interior feature such as a staircase, panelled wall, parquet floor, or cornice; or finish such as a decorative wall covering or ceiling when repair of materials and limited replacement of such parts are appropriate.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts or portions of the interior feature or finish or that is physically or chemically incompatible.

Furring out exterior walls to add insulation and suspending new ceilings to hide ductionk and wiring can change a room's proportions and can also destroy or obscure significant decorative detailing.



Replace

Replacing in kind an entire interior feature or finish that is too deteriorated to repair—if the overall form and detailing are still evident—using the physical evidence as a model for reproduction. Examples could include wainscoting, a tin ceiling, or interior stairs. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Before and after: Prior to rebabilitation of this botel, water intrusion and freeze-thate cycles had caused extensive efflorescence and plaster failure. The ornamental plaster was almost fully re-manufactured, then gilded. Light fixtures and other detailing were also carefully replicated.



Removing a character-defining feature or finish that is unrepairable and not replacing it; or replacing it with a new feature or finish that does not convey the same visual appearance.

During rebabilitation, the historic plaster was removed from perimeter walls, leaving the brick exposed; in addition historically painted wood trim was stripped. Removing finishes not only destroys historic materials that should be retained and preserved, but it also gives the interior an appearance it never had historically.





The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Design for Missing Historic Features

Designing and installing a new interior feature or finish if the historic feature or finish is completely missing. This could include missing partitions, stairs, elevators, lighting fixtures, and wall coverings; or even entire rooms if all historic spaces, features, and finishes are missing or have been destroyed by inappropriate "renovations." The design may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building, district, or neighborhood.

Not Recommended

Creating a false Listorical appearance because the replaced feature is based on insufficient physical, historical, and pictorial documentation or on information derived from another building.

Introducing a new interior feature or finish that is incompatible with the scale, design, materials, color, and texture of the surviving interior features and finishes.

Alterations/Additions for the New Use

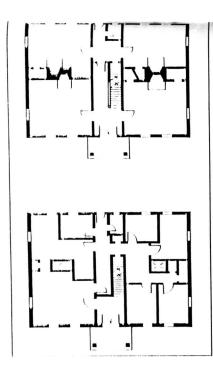
Accommodating service functions such as bathrooms, mechanical equipment, and office machines required by the building's new use in secondary spaces such as first floor service areas or on upper floors.

Dividing rooms, lowering ceilings, and damaging or obscuring character-defining features such as fireplaces, niches, stairways or alcoves, so that a new use can be accommodated in the building.

Reusing decorative material or features that have had to be removed during the rehabilitation work including wall and baseboard trim, door molding, panelled doors, and simple wainscoting; and relocating such material or features in areas appropriate to their historic placement. Discarding historic material when it can be reused within the rehabilitation project or relocating it in historically inappropriate areas.

Installing permanent partitions in secondary spaces; removable partitions that do not destroy the sense of space should be installed when the new use requires the subdivision of character-defining interior space.

Installing permanent partitions that damage or obscure character defining spaces, features, — finishes.



Adding several new rooms to a distinctive piterior space may radically change it bistoric character. Before (top): The original plan ieas a central ball with tom large, equally sized rooms around it. Lack room had a freplace with a mantel and A. contine trim. After (bottom): During rehabilitation, numerous small rooms were added; the open stair was also a placed with a boxed in stair and the congoid from and fireplaces were removed.

Alterations/Additions for the New Use

Enclosing an interior stairway where required by code so that its character is retained. In many cases, glazed fire-rated walls may be used.

Placing new code-required stairways or elevators in secondary and service areas of the historic building.

Creating an atrium or a light well to provide natural light when required for the new use in a manner that preserves character-defining interior spaces, features, and finishes as well as the structural system.

Adding a new floor if required for the new use in a manner that preserves character-defining structural features, and interior spaces, features, and finishes.

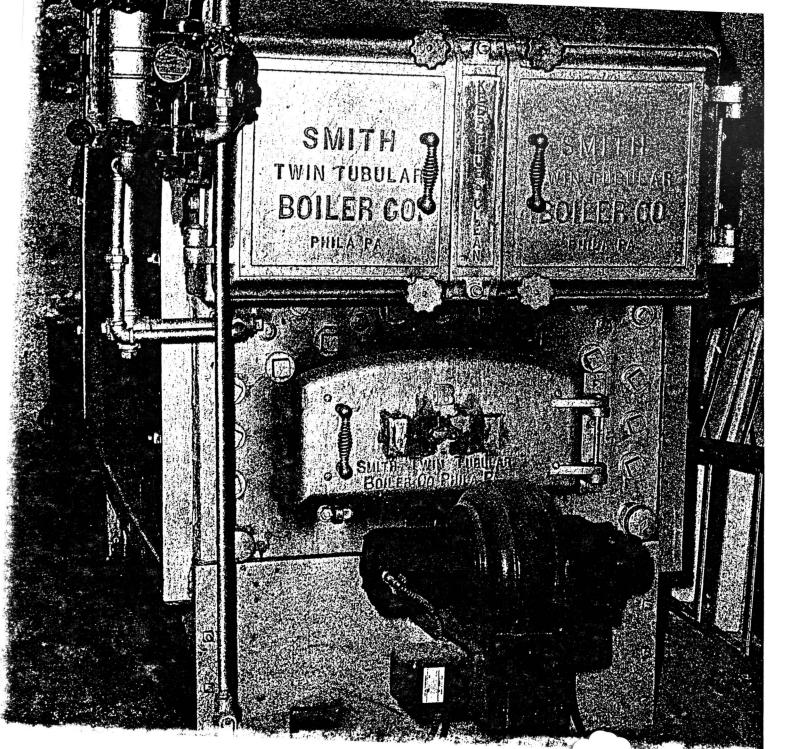
Not Recommended

Enclosing an interior stairway with fire-rated construction so that the stairwell space or any character-defining features are destroyed.

Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding new code-required stairways and elevators.

Destroying character-defining interior, spaces, features, or finishes; or damaging the structural system in order to create an atrium or light well.

Inserting a new floor within a building that alters or destroys the fenestration; radically changes a character-defining interior space; or obscures, damages, or destroys decorative detailing.



Building Interior

Mechanical Systems

HEATING

Air Conditioning

ELECTRICAL

AND PLUMBING

Building Interior

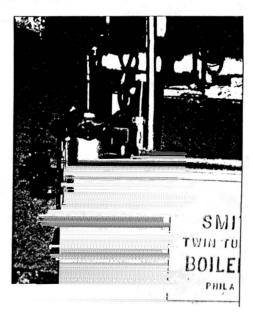
Mechanical Systems

Mechanical, lighting and plumbing systems improved significantly with the coming of the Industrial Revolution. The 19th century interest in hygiene, personal comfort, and the reduction of the spread of disease was met with the development of central heating, piped water, piped gas, and networks of underground cast iron sewers. Vitreous tiles in kitchens, baths and hospitals could be cleaned easily and regularly. The mass production of cast iron radiators made central heating affordable to many; some radiators were elaborate and included special warming chambers for plates or linens. Ornamental grilles and registers provided decorative covers for functional heaters in public spaces. By the turn of the 20th century, it was common to have all of these modern amenities in a building.

The greatest impact of the 20th century on mechanical systems was the use of electricity for interior lighting, forced air ventilation, elevators for tall buildings, exterior lighting and electric heat. The new age of technology brought an increasingly high level

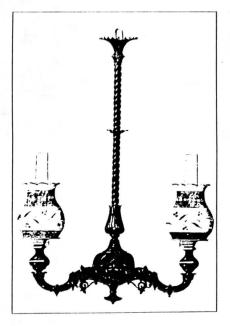
of design and decorative art to the functional elements of mechanical, electrical and plumbing systems.

The visible decorative features of historic mechanical systems such as grilles, lighting fixtures, and ornamental switchplates may contribute to the overall historic character of the building and should thus be retained and repaired, whenever possible. Their identification needs to take place together with an evaluation of their physical condition early in project planning. On the other hand, the functioning parts of many older systems, such as compressors and their ductwork, and wiring and pipes may often need to be upgraded or entirely replaced in order to accommodate the new use and to meet code requirements.





The visible features of historic mechanical systems, such as heating, lighting, and plumbing, may sometimes help define the overall character of an interior.



A gaslight may be converted for electrical use to extend its functional and decorative life.

Identify, retain and preserve

Identifying, retaining, and preserving visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, grilles, plumbing fixtures, switchplates, and lights.

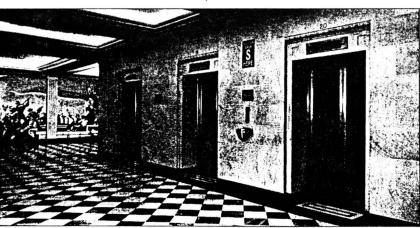


Photo: Brooks Photographers, HABS Collection

Not Recommended

Removing or radically changing features of mechanical systems that are important in defining the overall historic character of the building so that, as a result, the character is diminished.

> The bronze elevator doors and light coffers play an important decorative role in this early-20th century administrative building.

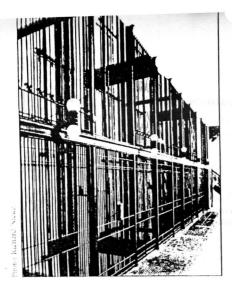
Protect and maintain

Protecting and maintaining mechanical, plumbing, and electrical systems and their features through cyclical cleaning and other appropriate measures.

Preventing accelerated deterioration of mechanical systems by providing adequate ventilation of attics, crawlspaces, and cellars so that moisture problems are avoided.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of mechanical systems and their visible features results.

Enclosing mechanical systems in areas that are not adequately ventilated so that deterioration of the systems results.



But junction and design elegance are and on in this row of east iron elevator cases and light fixtures adorning an early-20th century commercial building.

Improving the energy efficiency of existing mechanical systems to help reduce the need for elaborate new equipment. Consideration should be given to installing storm windows, insulating attic crawl space, or adding awnings, if appropriate.

Repair

Repairing mechanical systems by augmenting or upgrading system parts, such as installing new pipes and ducts; rewiring; or adding new compressors or boilers.

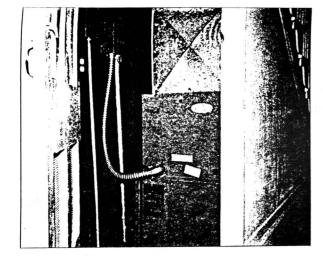
Not Recommended

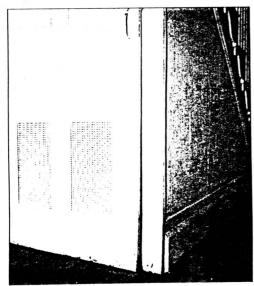
Installing unnecessary air conditioning or climate control systems which can add excessive moisture to the building. This additional moisture can either condense inside, damaging interior surfaces, or pass through interior walls to the exterior, potentially damaging adjacent materials as it migrates.

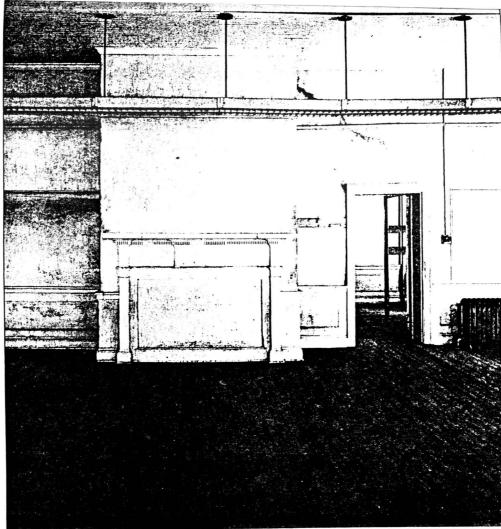
Replacing a mechanical system or its functional parts when it could be upgraded and retained.



The historic window on a primary facade has been shortened and the area below it filled in with brick in order to install a through-the-wall air conditioning unit. In addition to changing the window size and destroying the sill, the unit itself is visually obtrusive.







This row of hanging fluorescent lights installed in an earlier renovation mars an otherwise classically detailed interior. They have also caused the historic headed ceiling to pull away from the joists.

When a late-19th century single-family house was converted to four rental units, the new HVAC system was installed under the central stair. When the door is closed, only the vents indicate its presence.

Recommended

Replace

Replacing in kind—or with compatible substitute material—those visible features of mechanical systems that are either extensively deteriorated or are prototypes such as ceiling fans, switchplates, radiators, grilles, or plumbing fixtures.

Not Recommended

Installing a replacement feature that does not convey the same visual appearance.

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Not Recommended

Alterations/Additions for the New Use

Installing a completely new mechanical system if required for the new use so that it causes the least alteration possible to the building's floor plan, the exterior elevations, and the least damage to the historic building material.

Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.

Providing adequate structural support for new mechanical equipment.

Failing to consider the weight and design of new mechanical equipment so that, as a result, historic structural members or finished surfaces are weakened or cracked.

Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.

Installing vertical runs of ducts, pipes, and cables in places where they will obscure character-defining features.

Concealing mechanical equipment in walls or ceilings in a manner that requires the removal of historic building material.

Installing "dropped" acoustical ceiling to hide mechanical equipment when this destroys the proportions of character-defining interior spaces.

Installing air conditioning units if required by the new use in such a manner that historic features are not damaged or obscured and excessive moisture is not generated that will accelerate deterioration of historic materials.

Cutting through features such as masonry walls in order to install air conditioning units.

Installing heating/air conditioning units in the window frames in such a manner that the sash and frames are protected. Window installations should be considered only when all other viable heating/cooling systems would result in significant damage to historic materials.

Radically changing the appearance of the historic building or damaging or destroying windows by installing heating/air conditioning units in historic window frames.



Building Site



Building Site

The landscape surrounding a historic building and contained within an individual parcel of land is considered the building site. The site, including its associated features, contributes to the overall character of the historic property. As a result, the relationship between the buildings and landscape features within the site's boundaries should be considered in the overall planning for rehabilitation project work.

Landscapes which contain historic buildings are found in rural, suburban, and urban communities and reflect environmental influences such as climate as well as the historic period in which they were created. Landscapes created for functional purposes as well as aesthetic enjoyment have been a part of American history since European settlement. Historic American styles in landscape design developed from 17th-18th century Spanish and Colonial gardens, evolving into the pastoral and picturesque design of the 19th century. Victorian carpet bedding, popular during the late 19th century, produced profuse plantings of annuals and

perennials. Later, the early 20th century yielded a return to classical traditions, with revival gardens reflecting European renaissance design.

The building site may be significant in its own right, or derive its significance simply from its association with the historic structure. The level of significance, association, integrity, and condition of the building site may influence the degree to which the existing landscape features should be retained during the rehabilitation project. In an industrial property, the site may be defined simply as the relationship between buildings or between the ground plane and open space and its associated buildings. Designed historic landscapes significant in the field of landscape architecture require a more detailed analysis of their character-defining features which may include lawns, hedges, walks, drives, fences, walls, terraces, water features, topography (grading) and furnishings. Vegetation is an important feature in landscapes; this material, including both native species and cultivated

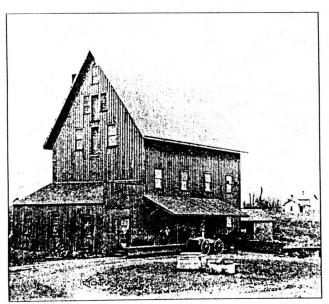
plants, creates an appearance that is constantly changing, both seasonally and annually. Since most plant material is adapted to specific environments, the character of landscapes varies dramatically in different climates, elevations and regions.



Identify, retain and preserve

Identifying, retaining, and preserving buildings and their features as well as features of the site that are important in defining its overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; furnishings such as lights, fences, or benches; decorative elements such as sculpture, statuary or monuments; water features including fountains, streams, pools, or lakes; and subsurface archeological features which are important in defining the history of the site.

Retaining the historic relationship between buildings and the landscape.



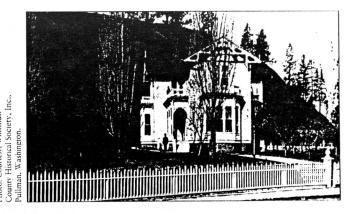
The stream and circular wagon approach are

important features of this historic

mill site.

Not Recommended

Removing or radically changing buildings and their features or site features which are important in defining the overall historic character of the property so that, as a result, the character is diminished.



Landscape fear times that are important in defining the bistoric character of a building site may includfences, walks, and smill outbind lings, as well as these, bushes and topography that may be included belyind the home

Removing or relocating buildings or landscape features thus destroying the historic relationship between buildings and the landscape.

Removing or relocating historic buildings on a site or in a complex of related historic structures—such as a mill complex or farm—thus diminishing its historic character.

Moving buildings onto the site, thus creating a false historical appearance.

Radically changing the grade level of the site. For example, changing the grade adjacent to a building to permit development of a formerly below-grade area that would drastically change the historic relationship of the building to its site.

Providing proper drainage to assure that water does not erode foundation walls; drain toward the building; or damage or erode the landscape.

Minimizing disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying or damaging important landscape features or archeological resources.

Surveying and documenting areas where the terrain will be altered to determine the potential impact to important landscape features or archeological resources.

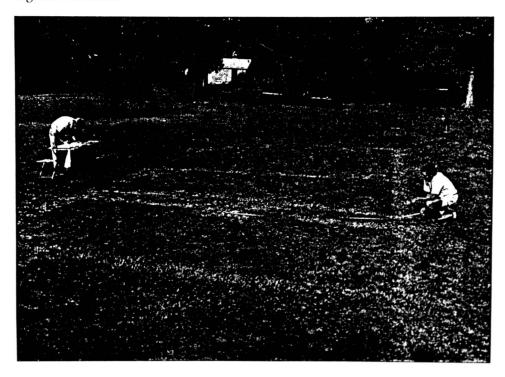
Not Recommended

Failing to maintain adequate site drainage so that buildings and site features are damaged or destroyed; or alternatively, changing the site grading so that water no longer drains properly.

Introducing heavy machinery into areas where it may disturb or damage important landscape features or archeological resources.

Failing to survey the building site prior to the beginning of rehabilitation work which results in damage to, or destruction of, important landscape features or archeological resources.





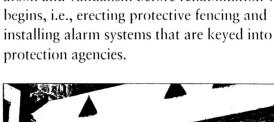
Protect and maintain

Protecting, e.g., preserving in place important archeological resources.

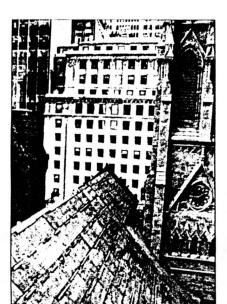
Planning and carrying out any necessary investigation using professional archeologists and modern archeological methods when preservation in place is not feasible.

Preserving important landscape features, including ongoing maintenance of historic plant material.

Protecting building and landscape features against arson and vandalism before rehabilitation work installing alarm systems that are keyed into local







▲ ► The roof and stained glass windows of this historic church have been appropriately covered with plywood as a protective measure during construction of a new building on an adjacent lot.

Not Recommended

Leaving known archeological material unprotected so that it is damaged during rehabilitation work.

Permitting unqualified personnel to perform data recovery on archeological resources so that improper methodology results in the loss of important archeological material.

Allowing important landscape features to be lost or damaged due to a lack of maintenance.

Permitting the property to remain unprotected so that the building and landscape features or archeological resources are damaged or destroyed.

Removing or destroying features from the building or site such as wood siding, iron fencing, masonry balustrades, or plant material.

Providing continued protection of masonry, wood, and architectural metals which comprise the building and site features through appropriate cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Evaluating the overall condition of materials and features to determine whether more than protection and maintenance are required, that is, if repairs to building and site features will be necessary.

Repair

Repairing features of the building and site by reinforcing historic materials.

> Park-like settings surrounding many historic mansions are important in defining their historic character. However, the relationship between building and site was destroyed by an inappropriate rehabilitation when this house was converted into offices, and the formally landscaped grounds in front of the house were bulldozed to provide a parking lot.

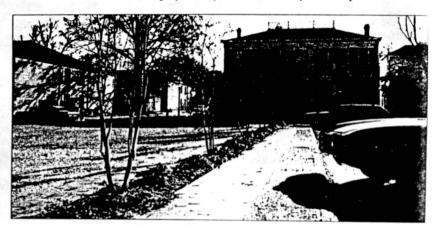
Not Recommended

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building and site features results.

Failing to undertake adequate measures to assure the protection of building and site features.

Replacing an entire feature of the building or site such as a fence, walkway, or driveway when repair of materials and limited compatible replacement of deteriorated or missing parts are appropriate.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building or site feature or that is physically or chemically incompatible.



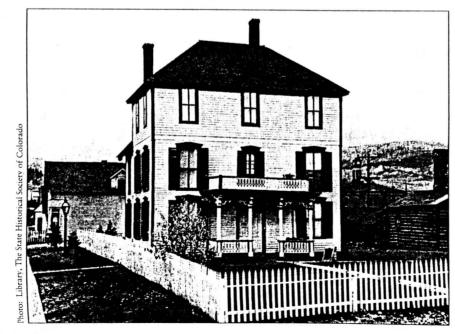
Replace

Replacing in kind an entire feature of the building or site that is too deteriorated to repair if the overall form and detailing are still evident. Physical evidence from the deteriorated feature should be used as a model to guide the new work. This could include an entrance or porch, walkway, or fountain. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Removing a feature of the building or site that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

Replacing deteriorated or damaged landscape features in kind.

Adding conjectural landscape features to the site such as period reproduction lamps, fences, fountains, or vegetation that is historically inappropriate, thus creating a false sense of historic development.



This wood picket fence is as important to the site as the shutters, porch detailing, and clapboards are to the house. As such, the fence was carefully repaired and painted as part of an overall project to preserve the historic residence.

the following work is highlighted to indicate that it represents the particularly complex technical or designaspects of rehabilitation project work and should only be considered after the preservation concerns listed above have been addressed. Kecommended

Design for Missing Historic Features

Designing and constructing a new feature of a building or site when the historic feature is completely missing, such as an outbuilding, terrace or driveway. It may be based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building and site.

Alterations/Additions for the New Use

Designing new onsite parking, loading docks, or ramps when required by the new use so that they are as unobtrusive as possible and assure the preservation of the historic relationship between the building or buildings and the landscape.

Designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape.

Removing nonsignificant buildings, additions, or site features which detract from the historic character of the site. Not Recommended

Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new building or site feature that is out of scale or of an otherwise inappropriate design.

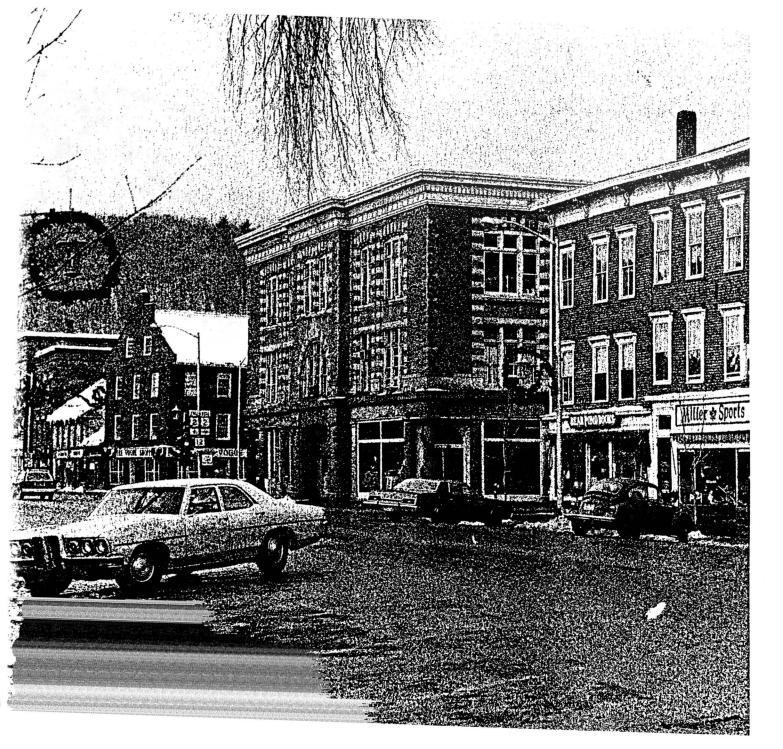
Introducing a new landscape feature, including plant material, that is visually incompatible with the site, or that alters or destroys the historic site patterns or vistas.

Locating any new construction on the building where important landscape features will be damaged or destroyed, for example removing a lawn and walkway and installing a parking lot.

Placing parking facilities directly adjacent to historic buildings where automobiles may cause damage to the buildings or to important landscape features.

Introducing new construction onto the building site which is visually incompatible in terms of size, scale, design, materials, color, and texture; which destroys historic relationships on the site; or which damages or destroys important landscape features.

Removing a historic building in a complex of buildings; or removing a building feature, or a landscape feature which is important in defining the historic character of the site.



Setting

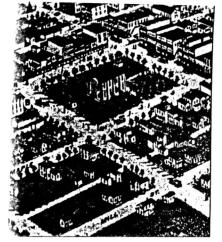
District or Neighborhood

Setting

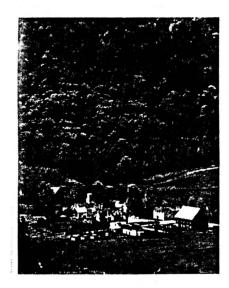
District or Neighborhood

The setting is the area or environment in which a historic property is found. It may be an urban or suburban neighborhood or a natural landscape in which a building has been constructed. The elements of setting, such as the relationship of buildings to each other, setbacks, fence patterns, views, driveways and walkways, and street trees together create the character of a district or neighborhood. In some instances, many individual building sites may form a neighborhood or setting. In rural environments, agricultural or natural landscapes may form the setting for an individual property.





In an urban historic district, the alignment and width of roads, the relationship between buildings and yards, and the repetition of trees lining the streets help define its historic character.



The setting is an important aspect of a historic district. In a rural historic district, the natural topography and landscape features, agricultural field patterns, roads, and the organization of buildings and structures all contribute to its character.

Identify, retain and preserve

Identifying, retaining, and preserving building and landscape features which are important in defining the historic character of the setting. Such features can include roads and streets, furnishings such as lights or benches, vegetation, gardens and yards, adjacent open space such as fields, parks, commons or woodlands, and important views or visual relationships.

Retaining the historic relationship between buildings and landscape features of the setting. For example, preserving the relationship between a town common and its adjacent historic houses, municipal buildings, historic roads, and landscape features.

Protect and maintain

Protecting and maintaining historic building materials and plant features through appropriate treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems; and pruning and vegetation management.

Protecting buildings and landscape features against arson and vandalism before rehabilitation work begins by erecting protective fencing and installing alarm systems that are keyed into local protection agencies.

Not Recommended

Removing or radically changing those features of the setting which are important in defining the historic character.

Destroying the relationship between the buildings and landscape features within the setting by widening existing streets, changing landscape materials or constructing inappropriately located new streets or parking.

Removing or relocating historic buildings or landscape features, thus destroying their historic relationship within the setting.

Failing to provide adequate protection of materials on a cyclical basis which results in the deterioration of building and landscape features.

Permitting the building and setting to remain unprotected so that interior or exterior features are damaged.

Stripping or removing features from buildings or the setting such as wood siding, iron fencing, terra cotta balusters, or plant material.

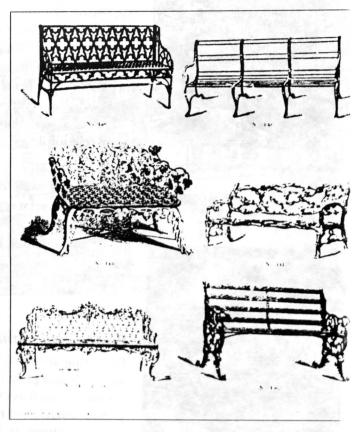
Evaluating the overall condition of the building and landscape features to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.



Cast Iron Benches, Illustrated Catalogue of Ornamental Iron Works, Janes, Kirtland & Co., 1870. Benches can be important features both in defining an urban streetscape as well as a more rural landscape.

Not Recommended

Failing to undertake adequate measures to assure the protection o building and landscape features.



Repair

Repairing features of the building and landscape by reinforcing the historic materials. Repair will also generally include the replacement in kind or with a compatible substitute materia—of those extensively deteriorated or missing parts of features where there are surviving prototypes such as porch balustrades or paving materials.

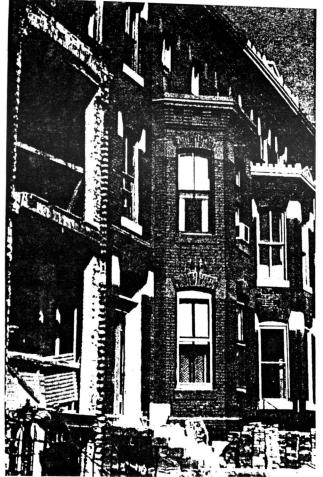
Replacing an entire feature of the building or landscape when repair of materials and limited replacement of deteriorated or missing parts are appropriate.

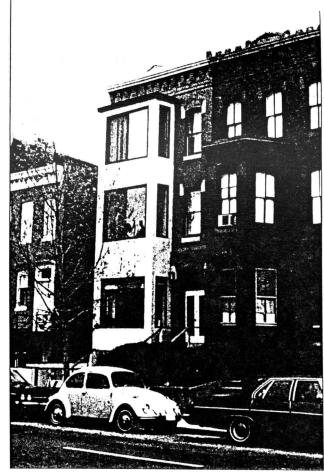
Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building or landscape, or that is physically, chemically, or ecologically incompatible.

Street furniture such as this historic clock helps define an urban district's character and thus should be retained in

a rehabilitation.

This late-19th century residential historic district is characterized by brick rowhouses with two-storied bays. A streetscape's visual continuity can be marred by an insensitive rehabilitation such as the one shown here. The original two-story brick bay of one of the bouses was removed and replaced with a three-story bay that is incompatible in size, materials, and detailing.





Recommended

/ Not Recommended

Replace

Replacing in kind an entire feature of the building or landscape that is too deteriorated to repair when the overall form and detailing are still evident — using the physical evidence as a model to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Removing a feature of the building or landscape that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

The following work is highlighted because it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns above have been addressed.

Recommended

Design for Missing Historic Features

Designing and constructing a new feature of the building or landscape when the historic feature is completely missing, such as rowhouse steps, a porch, a streetlight, or terrace. It may be a restoration based on documentary or physical evidence; or be a new design that is compatible with the historic character of the setting.

Alterations/Additions for the New Use

Designing required new parking so that it is as unobtrusive as possible, thus minimizing the effect on the historic character of the setting. "Shared" parking should also be planned so that several businesses can utilize one parking area as opposed to introducing random, multiple lots.

Designing and constructing new additions to historic buildings when required by the new use. New work should be compatible with the historic character of the setting in terms of size, scale, design, material, color, and texture.

Removing nonsignificant buildings, additions or landscape features which detract from the historic character of the setting.

Not Recommended

Creating a false historical appearance because the replaced feature is based on insufficient documentary or physical evidence.

Introducing a new building or landscape feature that is out of scale or otherwise inappropriate to the setting's historic character, e.g., replacing picket fencing with chain link fencing.

Placing parking facilities directly adjacent to historic buildings which cause damage to historic landscape features, including removal of plant material, relocation of paths and walkways, or blocking of alleys.

Introducing new construction into historic districts that is visually incompatible or that destroys historic relationships within the setting.

Removing a historic building, building feature, or landscape feature that is important in defining the historic character of the setting.

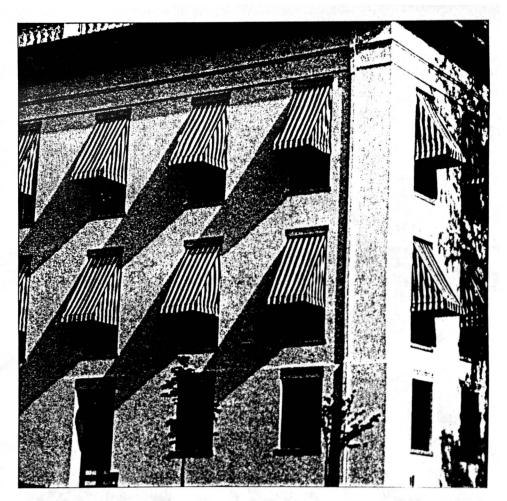
Although the work in the following sections is quite often an important aspect of rehabilitation projects, it is usually *not* part of the overall process of preserving character-defining features (maintenance, repair, replacement); rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, radically change, damage, or destroy character-defining features in the process of rehabilitation work.



Energy Conservation

Energy Conservation

Some character-defining features of a historic building or site such as cupolas, shutters, transoms, skylights, sun rooms, porches, and plantings also play a secondary, energy-conserving role. Therefore, prior to retrofitting historic buildings to make them more energy efficient, the first step should always be to identify and evaluate the existing historic features to assess their inherent energy-conserving potential. If it is determined that retrofitting measures are necessary, then such work needs to be carried out with particular care to insure that the building's historic character is preserved in the process of rehabilitation.



District/Neighborhood

Maintaining those existing landscape features which moderate the effects of the climate on the setting such as deciduous trees, evergreen windblocks, and lakes or ponds.

Not Recommended

Stripping the setting of landscape features and landforms so that the effects of the wind, rain, and the sun results in accelerated deterioration of historic materials.

Building Site

Retaining plant materials, trees, and landscape features, especially those which perform passive solar energy functions such as sun shading and wind breaks.

Removing plant materials, trees, and landscape features, so that they no longer perform passive solar energy functions.

Installing freestanding solar collectors in a manner that preserves the historic property's character-defining features.

Installing freestanding solar collectors that obscure, damage, or destroy historic landscape or archeological features.

Designing attached solar collectors, including solar greenhouses, so that the character-defining features of the property are preserved.

Locating solar collectors where they radically change the property's appearance; or damage or destroy character-defining features.

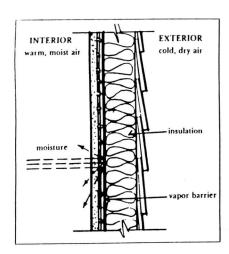
Masonry/Wood/Architectural Metals

Installing thermal insulation in attics and in unheated cellars and crawlspaces to increase the efficiency of the existing mechanical systems.

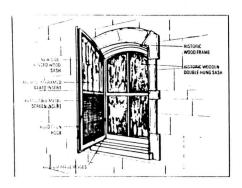
Applying thermal insulation with a high moisture content into wall cavities in an attempt to reduce energy consumption.

Installing insulating material on the inside of masonry walls to increase energy efficiency where there is no character-defining interior molding around the window or other interior architectural detailing.

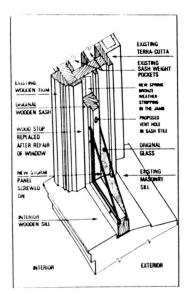
Resurfacing historic building materials with more energy efficient but incompatible materials, such as covering historic masonry with exterior insulation.



When installing insulation in the wall cavity of a historic wood-frame building, a vapor barrier must be placed facing-in toward the heated side of the wall. The vapor barrier prevents moisture from passing from the warm interior to the cold exterior, thus keeping the insulation and adjacent building materials dry.



Historic residential window—appropriate storn tendow retrofit. The single coment, wooden storn window has two removable panels for screen and glass userts. It is designed to minimize visual changes to the historic building.



Historic commercial window—appropriate storm tendow retrofit. This cutaway view—bows bow the historic sash would receive a recessed storm panel through routing or cutting an inside rabbet.

Installing passive solar devices such as a glazed "trombe" wall on a rear or inconspicuous side of the historic building.

Roofs

Placing solar collectors on non-character-defining roofs or roofs of nonhistoric adjacent buildings.

Windows

Utilizing the inherent energy conserving features of a building by maintaining windows and louvered blinds in good operable condition for natural ventilation.

Improving thermal efficiency with weatherstripping, storm windows, caulking, interior shades, and if historically appropriate, blinds and awnings.

Installing interior storm windows with air-tight gaskets, ventilating holes, and/or removable clips to insure proper maintenance and to avoid condensation damage to historic windows.

Installing exterior storm windows which do not damage or obscure the windows and frames.

Not Recommended

Installing passive solar devices such an attached glazed "trombe" wall on primary or other highly visible elevations; or where historic material must be removed or obscured.

Placing solar collectors on roofs when such collectors change the historic roofline or obscure the relationship of the roof features such as dormers, skylights, and chimneys.

Removing historic shading devices rather than keeping them in an operable condition.

Replacing historic multi-paned sash with new thermal sash utilizing false muntins.

Installing interior storm windows that allow moisture to accumulate and damage the window.

Installing new exterior storm windows which are inappropriate in size or color.

Replacing windows or transoms with fixed thermal glazing or permitting windows and transoms to remain inoperable rather than utilizing them for their energy conserving potential.

Considering the use of lightly tinted glazing on non-character-defining elevations if other energy retrofitting alternatives are not possible.

Entrances and Porches

Utilizing the inherent energy conserving features of a building by maintaining porches and double vestibule entrances in good condition so that they can retain heat or block the sun and provide natural ventilation.

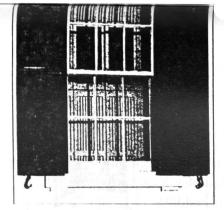
Not Recommended

Using tinted or reflective glazing on character-defining or other conspicuous elevations.

Enclosing porches located on character-defining elevations to create passive solar collectors or airlock vestibules. Such enclosures can destroy the historic appearance of the building.



In hot climates, buildings were bistorically designed to minimize the heat gain from the summer sun. The wide roof overhangs, exterior porches, shutters, shade trees, and heavy masonry walls (painted white) are all energy saving characteristics.



Shutters were used to minimize temperature extremes. If interior or exterior shutters are present, they should be retained, preserved, and used as they were historically.

This decorative east-iron vent serves a useful passive energy conservation function by allowing air to circulate at basement level. Recommended

Interior Features

Retaining historic interior shutters and transoms for their inherent energy conserving features.

New Additions to Historic Buildings

Placing new additions that have an energy conserving function such as a solar greenhouse on non-character-defining elevations.

Mechanical Systems

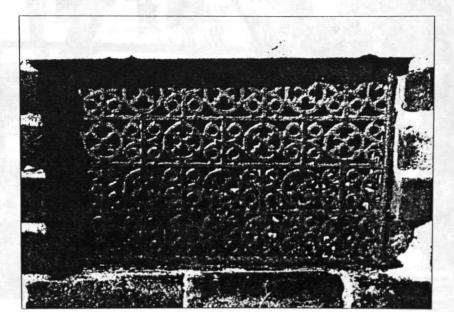
Improving energy efficiency of existing mechanical systems by installing insulation in attics and basements.

Not Recommended

Removing historic interior features which play a secondary energy conserving role.

Installing new additions such as multi-story solar greenhouse additions which obscure, damage, or destroy character-defining features.

Replacing existing mechanical systems that could be repaired for continued use.

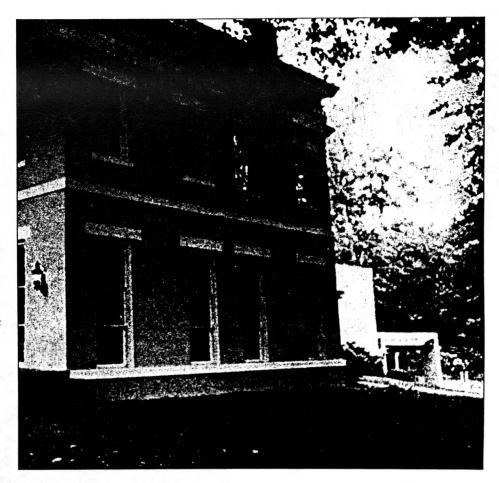


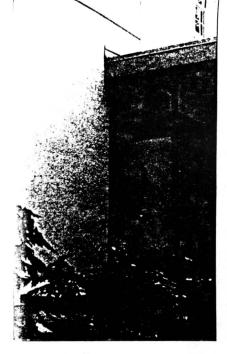


New Additions to Historic Buildings

New Additions to Historic Buildings

An attached exterior addition to a historic building expands its "outer limits" to create a new profile. Because such expansion has the capability to radically change the historic appearance, an exterior addition should be considered only after it has been determined that the new use cannot be successfully met by altering non-character-defining interior spaces. If the new use cannot be met in this way, then an attached exterior addition is usually an acceptable alternative. New additions should be designed and constructed so that the character-defining features of the historic building are not radically changed, obscured, damaged, or destroyed in the process of rehabilitation. New design should always be clearly differentiated so that the addition does not appear to be part of the historic resource.





An 1847 residence was successfully onwerted into a bank, with the construction of a low-scale addition. The drawing shows how the three-unit addition has been tepped down the bill, each unit set further back from the historic structure as it extends horizontally. As a result, the new addition is only partially visible from the historic "approach." The small connector was sensitively designed to minimize loss of bistoric building materials.

Placing functions and services required for the new use in non-character-defining interior spaces rather than constructing a new addition.

Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed.

Locating the attached exterior addition at the rear or on an inconspicuous side of a historic building; and limiting its size and scale in relationship to the historic building.

Designing new additions in a manner that makes clear what is historic and what is new.

Not Recommended

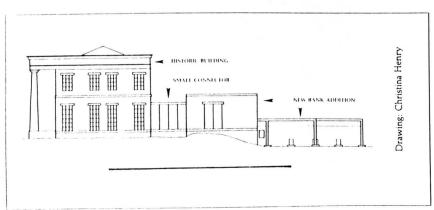
Expanding the size of the historic building by constructing a new addition when the new use could be met by altering non-character defining interior spaces.

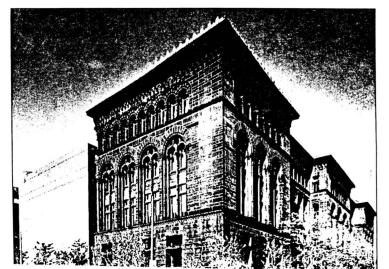
Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

Designing a new addition so that its size and scale in relation to the historic building are out of proportion, thus diminishing the historic character.

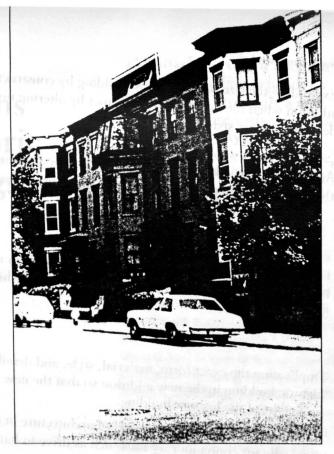
Duplicating the exact form, material, style, and detailing of the historic building in the new addition so that the new work appears to be part of the historic building.

Imitating a historic style or period of architecture in new additions, especially for contemporary uses such as drive-in banks or garages.

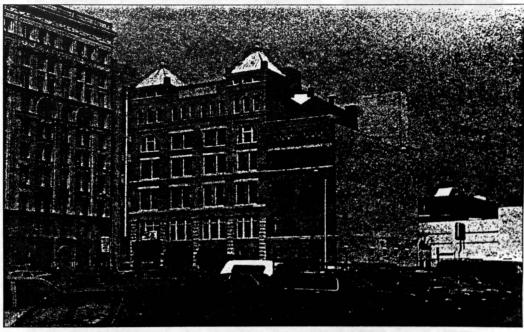




A new 10-story using added to the back of a historic library constitutes major expansion, yet is compatible because it reads as a subsidiary unit to the much larger bistoric building.



profile and proportions of a three-story row house; more important, it has interrupted the uniform roof height of the block. The greenhouse is also a jarring element in an otherwise intact 19th century streetscape. Below: A sizeable employee lounge was added atop this four-story historic commercial building. Because the rooftop addition has been set back from both the front and side roof edges against a party wall, the historic character of the building and the district have been preserved.



Recommended

Considering the attached exterior addition both in terms of the new use and the appearance of other buildings in the historic district or neighborhood. Design for the new work may be contemporary or may reference design motifs from the historic building. In either case, it should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.

Not Recommended

Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.

Using the same wall plane, roof line, cornice height, materials, siding lap or window type to make additions appear to be a part of the historic building.



The historic residence is on the right. By copying the decorative gable and three-part window in the new addition, the old and new portions are virtually indistinguishable. This approach violates the Standards for Rehabilitation.

Placing new additions such as balconies and greenhouses on non-character-defining elevations and limiting the size and scale in relationship to the historic building.

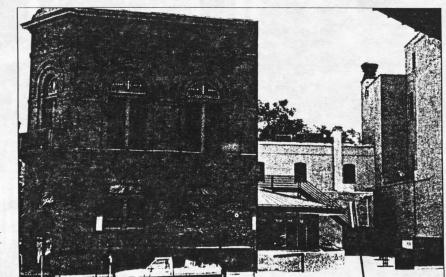
Designing additional stories, when required for the new use, that are set back from the wall plane and are as inconspicuous as possible when viewed from the street.

Not Recommended

Designing new additions such as multi-story greenhouse additions that obscure, damage, or destroy character-defining features of the historic building.

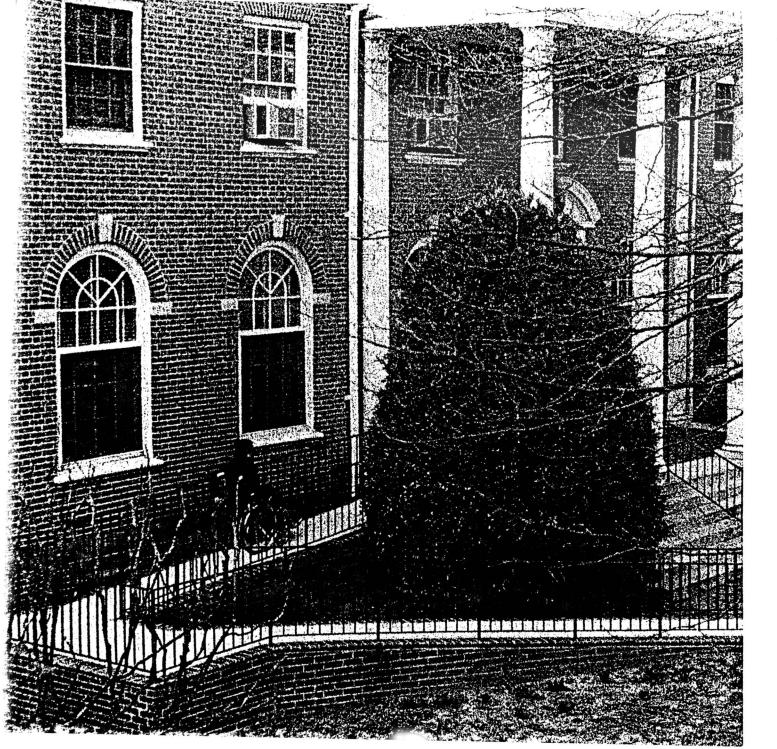
Constructing additional stories so that the historic appearance of the building is radically changed.





Two small Victorian cottages, above, were connected to provide additional floor space in a commercial rehabilitation. The inappropriate infill connector, below, is on the same plane as the historic facades, essentially making the two cottages appear as one building. If the new infill had been substantially set back from the facade, the distinct form of each cottage would have been retained.

In rehabilitating a historic bank for a new use, a small restaurant addition was built on the rear. The new addition is compatible with the historic building primarily because of its scale and location.



Accessibility Considerations

Accessibility Considerations

It is often necessary to make modifications to a historic property so that it can comply with current accessibility code requirements. Accessibility to certain historic buildings and sites is required by three specific federal laws: the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. Federal rules, regulations, and standards have been developed which provide guidance on how to accomplish access in historic areas. The question is not if access should be provided; the question is how to provide

it to meet both accessibility and historic preservation requirements. Thus, work must be carefully planned and undertaken so that it does not result in a loss of character-defining spaces, features, and finishes. The goal is to provide the highest level of access with the lowest level of impact.



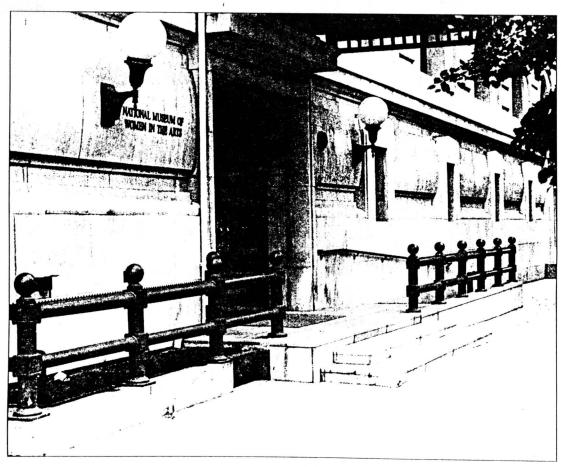
Identifying the historic building's character defining spaces, features, and finishes so that accessibility code-required work will not result in their damage or loss.

Complying with barrier-free access requirements, in such a manner that character-defining spaces, features, and finishes are preserved.

Not Recommended

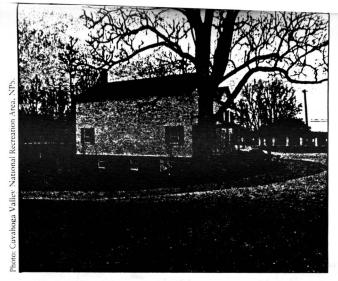
Undertaking code-required alterations before identifying those spaces, features or finishes which are character-defining and must therefore be preserved.

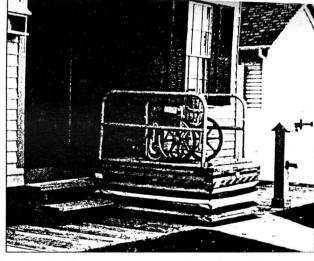
Altering, damaging, or destroying character-defining features in attempting to comply with accessibility requirements.



istoric cast iron railing was preserved a permanent ramp was designed for useum's main entrance.

parking areas, properly graded ramps and wall ways around the site, and access real in the building to all services.





An accordion-type platform lift that retracts to ground level when not in use has been installed to make this historic house accessible.

Working with local disability groups, access specialists, and historic preservation specialists to determine the most appropriate solution to access problems.

Not Recommended

Making changes to buildings without first seeking expert advice from access specialists and historic preservationists, to determine solutions.

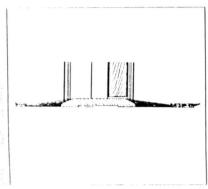
Providing barrier-free access that promotes independence for the disabled person to the highest degree practicable, while preserving significant historic features.

Providing access modifications that do not provide a reasonable balance between independent, safe access and preservation of historic features.

Designing new or additional means of access that are compatible with the historic property and its setting.

Designing new or additional means of access without considering the impact on the historic property and its setting.

A relatively simple way to increase accessibility inside a historic building may be to add bevels to the sides of a threshold.





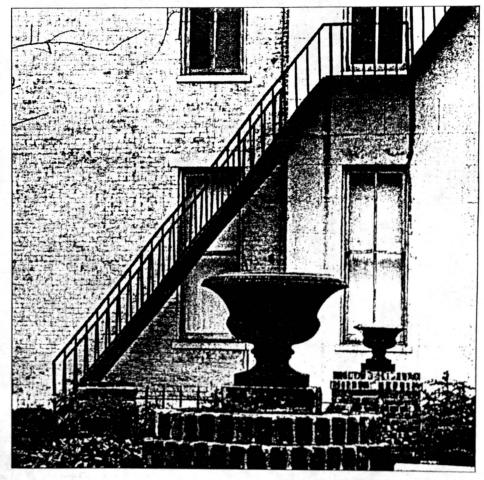
Health and Safety Considerations

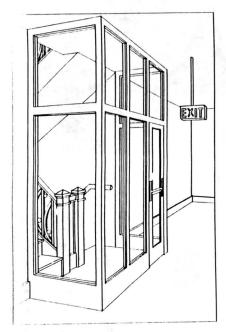
Health and Safety Considerations

In undertaking rehabilitation work on historic buildings, it is necessary to consider the impact that meeting current health and safety codes (public health, occupational health, life safety, fire safety, electrical, structural and building codes) will have on character-defining spaces, features, and finishes. Special coordination with the responsible code officials at the state, county or municipal level may be required. Securing required building permits and occupancy licenses is best accomplished early in rehabilitation planning.

In the area of occupational health, research on older, more commonly used building materials (insulation, floor and wall coverings and lead paints) indicates that the presence of toxic substances in them is potentially hazardous to building occupants. Following careful investigation and analysis, some form of abatement may be required such as encapsulation, or partial or total removal. All workers involved in the encapsulation, repair, or removal of known toxic materials should be adequately trained and

should wear proper personal protective equipment. Finally, preventive and routine maintenance programs for historic structures known to contain such materials should also be developed to include proper warnings and precautions.





Existing decorative staircases in historic buildings may meet safety requirements if enclosed with safety glass. This enclosure preserves the stairs while providing a seeme means of egress.

Identifying the historic building's characterdefining spaces, features, and finishes so that code-required work will not result in their damage or loss.

Complying with health and safety codes, including seismic code requirements, in such a manner that character-defining spaces, features, and finishes are preserved.

Removing toxic building materials only after thorough testing has been conducted and only after less invasive abatement methods have been shown to be inadequate.

Providing workers with appropriate personal protective equipment for hazards found in the worksite.

Working with local code officials to investigate systems, methods, or devices of equivalent or superior effectiveness and safety to those prescribed by code so that unnecessary alterations can be avoided.

Upgrading historic stairways and elevators to meet health and safety codes in a manner that assures their preservation, i.e., so that they are not damaged or obscured.

Not Recommended

Undertaking code-required alterations to a building or site before identifying those spaces, features, or finishes which are character defining and must therefore be preserved.

Altering, damaging, or destroying character-defining spaces, features, and finishes while making modifications to a building or site to comply with safety codes.

Destroying historic interior features and finishes without careful testing and without considering less invasive abatement methods.

Removing unhealthful building materials without regard to per sonal and environmental safety.

Making changes to historic buildings without first exploring equivalent health and safety systems, methods, or devices that max be less damaging to historic spaces, features, and finishes.

Damaging or obscuring historic stairways and elevators or altering adjacent spaces in the process of doing work to meet code require ments.

installed in this highly ornamental plaster ceiling during the building's rebabilitation. Sprinkler heads have been unobtrusively located in the center of the decorative plaster relief. The ter specification is of an



Recommended

Installing sensitively designed fire suppression systems, such as sprinkler systems that result in retention of historic features and finishes.

Applying fire-retardant coatings, such as intumescent paints, which expand during fire to add thermal protection to steel.

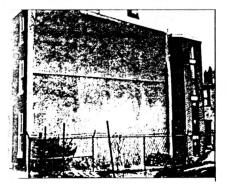
Not Recommended

Covering character-defining wood features with fire-resistant sheathing which results in altering their visual appearance.

Using fire-retardant coatings if they damage or obscure characterdefining features.

Adding a new stairway or elevator to meet health and safety codes in a manner that preserves adjacent character-defining features and spaces.

Placing a code-required stairway or elevator that cannot be accommodated within the historic building in a new exterior addition. Such an addition should be on an inconspicuous elevation.



order to comply with safety codes, it y be necessary to add an exterior fire p to a historic building as part of a abilitation project. The brick stairtower uen on the top is compatible in materand scale, and inconspicuously iched to the rear elevation of the historonehouse. The example on the bottom res a large-scale concrete and glass a tower that is incompatible in materials I scale, located as it is on a highly visible ation of the historic brick building.

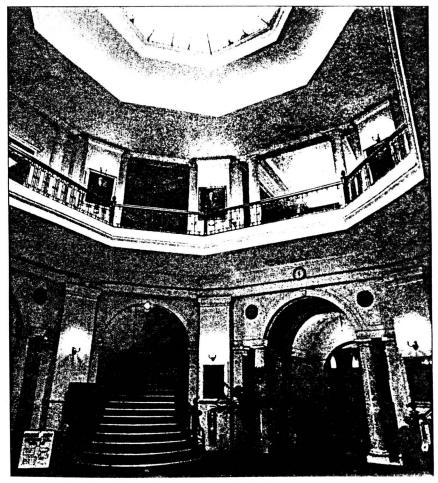


In buildings such as this historic courthouse, where old lead-based paint is essentially intact and covered with a leadfree topcoat, removing the historic paint because of potential toxicity may not be necessary. Historic paint can provide valuable documentation about the evolution of a building and should be retained, whenever possible.

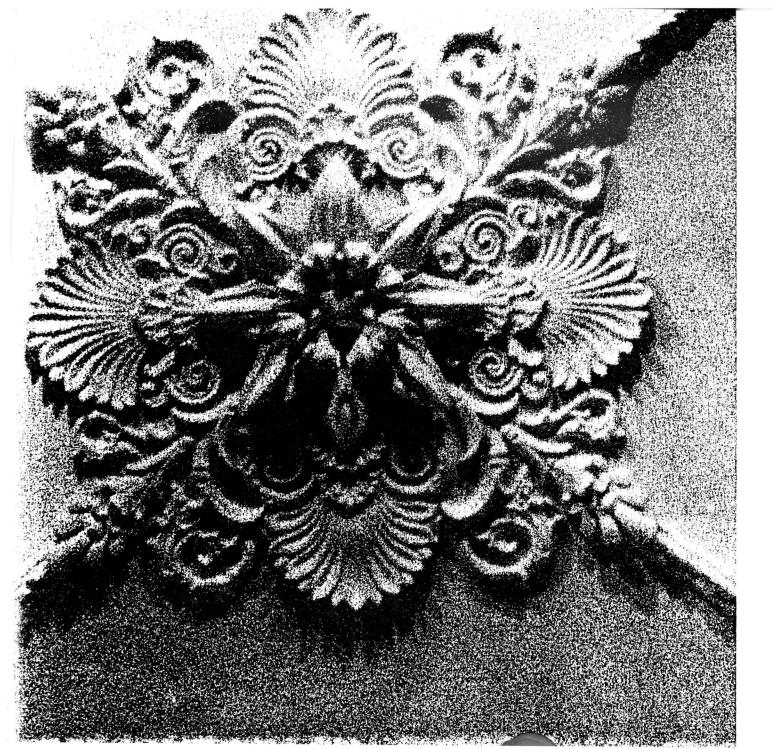
Not Recommended

Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding a new code-required stairway or elevator.

Constructing a new addition to accommodate code-required stairs and elevators on character-defining elevations highly visible from the street; or where it obscures, damages, or destroys characterdefining features.



Health and Safety Considerations 103

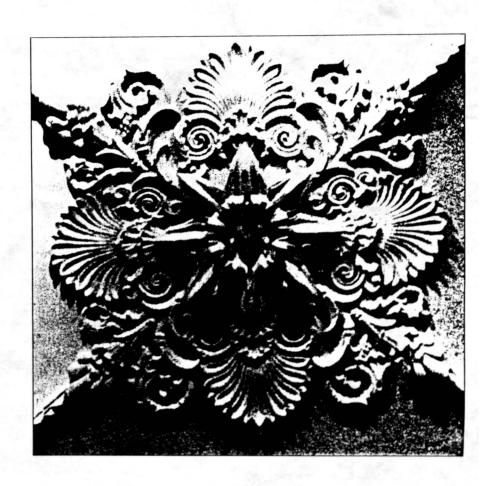


Technical Guidance Publications

Technical Guidance **Publications**

For a free copy of the TPS catalog of historic preservation publications, write:

Heritage Preservation Services (2255) **Technical Preservation Services** National Park Service 1849 C Street NW, Washington, D.C. 20240.



TE FASTENINGS

Program/Training Information

Federal Historic Preservation Laws, Sara K. Blumenthal, Ed. Lists the major historic preservation laws that govern a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. 59 pages. 1990.

Interpreting the Secretary of the Interior's Standards for Rehabilitation. Michael J. Auer, Ed. Explains how the National Park Service applies the Standards in its administration of the historic preservation tax incentives program. 33 project bulletins. 150 illustrations, 1988.

Preservation Tax Incentives for Historic Buildings. Explains Federal tax incentives available to owners who rehabilitate commercial historic structures. Includes an outline of the certification process, program regulations, and a list of State Historic Preservation Officers. 24 pages. Revised 1990.

Preservation Briefs

Preservation Briefs assist owners and developers of historic buildings in recognizing and resolving common preservation and repair problems prior to work. The briefs are especially useful to preservation tax incentive program applicants because they recommend those methods and approaches for rehabilitating historic buildings that are consistent with their historic character.

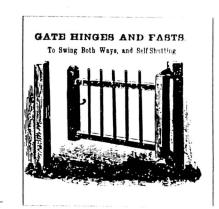
Preservation Briefs 1: The Cleaning and Waterproof Coating of Masonry Buildings. Robert C. Mack, AIA. Provides guidance on cleaning and waterproofing techniques and explains the consequences of their inappropriate use. 4 pages. 5 illustrations. 1975.

Preservation Briefs 2: Repointing Mortar Joints in Historic Brick Buildings. Robert C. Mack, AIA, de Teel Paterson Tiller, and James S. Askins. Provides information on appropriate materials and methods for repointing historic brick buildings. 8 pages. 12 illustrations. 1980.

Preservation Briefs 3: Conserving Energy in Historic Buildings. Baird M. Smith, AIA. Provides information on materials and techniques to consider or avoid when undertaking weatherization and energy conservation measures in historic buildings. 8 pages. 8 illustrations, 1978.

Preservation Briefs 4: Roofing for Historic Buildings. Sarah M. Sweetser. Provides a brief history of the most commonly used roofing materials in America. Presents a sound preservation approach to roof repair, roof replacement, and the use of alternative roofing materials. 8 pages. 16 illustrations, 1978.

Preservation Briefs 5: The Preservation of Historic Adobe Buildings. Provides information on the traditional materials and construc-



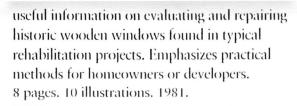
tion of adobe buildings, and the causes of adobe deterioration. Makes recommendations for preserving historic adobe buildings. 8 pages. 15 illustrations, 1978.

Preservation Briefs 6: Dangers of Abrasive Cleaning to Historic Buildings. Anne E. Grimmer. Cautions against the use of sandblasting to clean various building materials and suggests measures to mitigate the effects of improper cleaning. Explains the limited circumstances under which abrasive cleaning may be appropriate. 8 pages. 10 illustrations. 1979.

Preservation Briefs 7: The Preservation of Historic Glazed Architectural Terra-Cotta, de Teel Patterson Tiller, Discusses deterioration problems that commonly occur with terra-cotta and provides methods for determining the extent of such deterioration. Makes recommendations for maintenance and repair, and suggests appropriate replacement materials. 8 pages. 11 illustrations, 1979.

Preservation Briefs 8: Aluminum and Vinyl Siding on Historic Buildings: The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings. John H. Myers, revised by Gary L. Flume. Discusses various types of historic wood siding and repair and replacement in kind. Outlines the instances under which substitute siding may be an acceptable alternative. 7 pages. 5 illustrations. Rev, 1984.

Preservation Briefs 9: The Repair of Historic Wooden Windows, John H. Myers, Provides

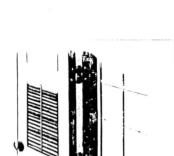


Preservation Briefs 10. Exterior Paint Problems on Historic Woodwork. Kay D. Weeks and David W. Look, AIA. Identifies and describes common types of paint surface conditions and failures. Provides guidance on preparing historic woodwork for repainting, including limited and total paint removal. 12 pages. 14 illustrations, 1982.

Preservation Briefs 11. Rehabilitating Historic **Storefronts.** H. Ward Jandl. Explores the role of the storefront in historic buildings and provides guidance on rehabilitation techniques for historic storefronts as well as compatible new storefront designs. 12 pages. 12 illustrations, 1982.

Preservation Briefs 12. The Preservation of Historic Pigmented Structural Glass (Vitrolite and Carrara Glass). Provides information on the early manufacture, installation, and use of this decorative building product commonly found in 20th century buildings; reasons for its damage; and a general approach for its maintenance, repair, and replacement. 8 pages. 16 illustrations, 1984.

Preservation Briefs 13. The Repair and Thermal Upgrading of Historic Steel Windows. Sharon C. Park, AIA. Presents brief historical background on the development, use, and styles of rolled steel windows popular in the first half





of the 20th century. Explains steps for cleaning and repairing damaged steel windows; also provides information on appropriate methods of weatherstripping and options for storm panels or the installation of thermal glass. 12 pages. 10 illustrations, 1984.

Preservation Briefs 14: New Exterior Additions to Historic Buildings: Preservation Concerns. Kay D. Weeks. Uses a series of examples to suggest ways that attached new additions can successfully serve contemporary uses as part of a rehabilitation project while preserving significant historic materials and features and the building's historic character. 12 pages. 30 illustrations, 1986.

Preservation Briefs 15: Preservation of Historic Concrete: Problems and General Approaches. William B. Coney, AIA. Focuses on cast-in-place and reinforced concrete. The guidance addresses the causes of concrete deterioration, the signs of deterioration, and actual concrete repair. 12 pages. 27 illustrations. 1987.

Preservation Briefs 16: The Use of Substitute Materials on Historic Building Exteriors. Sharon C. Park, AIA. Includes a discussion of when to use substitute materials, cautions regarding their expected performance, and descriptions of several substitute materials together with their advantages and disadvantages. Summary charts are included. 14 pages. 34 illustrations, 1988.

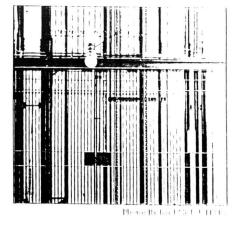
Preservation Briefs 17: Architectural Character-Identifying the Visual Aspects of Historic

Buildings as an Aid to Preserving Their Character, Lee H. Nelson, FAIA. Essential guidance to help property owners and architects identify those features of historic buildings that give the building its visual character so that their preservation can be maximized in rehabilitation. 12 pages. 27 illustrations, 1988.

Preservation Briefs 18: Rehabilitating Interiors in Historic Buildings—Identifying Character-Defining Elements. H. Ward Jandl. Assists building owners in identifying significant interior spaces, features, and finishes so they may be preserved in rehabilitation work. The guidance applies to all building types and styles, from 18th century churches to 20th century office buildings. 8 pages. 11 illustrations. 1988.

Preservation Briefs 19: The Repair and Replacement of Historic Wooden Shingle Roofs. Sharon C. Park, AIA. Discusses historic wooden roofing, expectations for longevity, and repair and replacement options. Identifies roofing material that duplicates the appearance of a historic roof, offers guidance on proper installation, and provides information on coatings and maintenance procedures to help preserve the new roof. 12 pages. 16 illustrations. 1989.

Preservation Briefs 20: The Preservation of Historic Barns. Michael J. Auer. Identifies historic barn types, helps owners understand the historic character of their barns, and offers advice on the maintenance, repair, and rehabilitation of old and historic barns. 12 pages. 30 illustrations, 1989.





Preservation Briefs 21: Repairing Historic Flat Plaster—Walls and Ceilings. Marylee MacDonald. Guides building owners on repairing historic plaster using traditional materials and techniques. Suggests replacement options if the historic plaster is severely deteriorated. Useful chart on various plaster bases and compatible basecoats and finish coats. 14 pages. 17 illustrations, 1989.

Preservation Briefs 22: The Preservation and Repair of Historic Stucco. Anne E. Grimmer. Describes the evolution of stucco as a popular building material, beginning with a brief history of how stucco is applied, and how its composition, texture, and surface patterns have changed. Includes guidelines for the historic property owner or manager on repairing historic stucco, with sample mixes for 18th, 19th, and 20th century stucco types. 16 pages. 33 illustrations. 1990.

Preservation Briefs 23: Preserving Historic Ornamental Plaster. David Flaharty. Explains the processes of run-in-place and cast ornamentation by using three common decorative forms as examples: the cornice, ceiling medallion, and coffered ceiling. Illustrates common causes of plaster deteroriation and repair techniques. Useful advice on selecting and evaluating a restoration contractor is included. 14 pages. 34 illustrations. 1990.

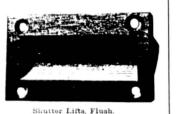
Preservation Briefs 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches. Sharon C. Park, AIA. Outlines the history of mechanical systems

from the 18th c. to the early 20th c. Discusses issues involving occupant comfort and climate control. Underscores the importance of careful planning in order to balance preservation objectives with the interior climate needs of historic buildings. Useful chart included that gives an overview of contemporary HVAC systmes together with advantages and disadvantages. 12 pages. 17 illustrations. September, 1991.

Preservation Briefs 25: The Preservation of Historic Signs. Michael J. Auer. Reviews sign types and practices from the 18th c. to the 1960's. Discusses the complex issues involved in repairing and re-using historic signs for contemporary businesses. 12 pages. 30 illustrations. September, 1991.

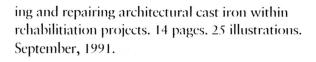
Preservation Briefs 26: The preservation and Repair of Historic Log Buildings. Bruce D. Bomberger. Reviews and illustrates historic log construction from the 18th c. to the early 20th c., focusing on horizontally-laid logs. Disucesses traditional splicing-in techniques, the use of epoxies, and log replacement, as well as guidance on the repair and replacement of chinking and daubing. 16 pages. 25 illustrations. September, 1991.

Preservation Briefs 27: The Maintenance and Repair of Architectural Cast Iron, John G. Waite, AlA. Historical Overview by Margot Gayle. Discusses cast iron in terms of 19th century industrial development. Emphasizes the importance of this versatile material in architectural building design, technology, and ornamentation. Provides essential guidance on maintain-







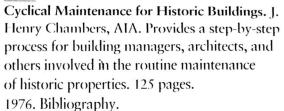


Technical Reports

Technical Reports address in detail problems confronted by architects, engineers, government officials, and other technicians involved in the preservation of historic buildings.

A Glossary of Historic Masonry Deterioration Problems and Preservation Treatments. Anne E. Grimmer. Generously illustrated, provides information on 22 common masonry deterioration problems and their known treatments. Intended for use both as a general reference tool and an on-site interpretive guide in the maintenance and preservation of historic structures. 68 pages. 41 illustrations. 1984. Bibliography.

Access to Historic Buildings for the Disabled: Suggestions for Planning and Implementation. Charles Parrott. Describes methods to achieve barrier-free access to historic buildings that conform with the Department of the Interior's historic preservation standards. Addresses a variety of specific needs for the disabled, including ramps, vertical wheelchair lifts, curb cuts, railings, restrooms, miscellaneous fixtures, and signs. Also examines techniques to make programs and services housed in historic buildings accessible in lieu of architectural changes. 92 pages. 42 illustrations. 1980. Bibliography.



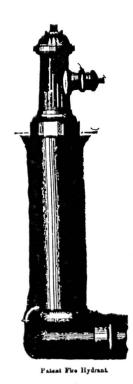
Epoxies for Wood Repairs in Historic Buildings. Morgan W. Phillips and Dr. Judith E. Selwyn. Presents research findings on the use of epoxies to preserve historic wood features rather than replacing them. Discusses low-viscosity epoxy consolidants that can be soaked into rotted wood in order to restore its solidity; and epoxy pastes for filling holes and cracks in historic woodwork. Includes useful case-study applications, suggested formulations, and lists of suppliers. 72 pages. 43 illustrations. Appendix. 1978.

Gaslighting in America: A Pictorial Survey, 1815-1910. Denys Peter Myers. Surveys the types and style of gas fixtures that appeared in the rooms and on the streets of 19th and early 20th century America. 279 pages. 120 illustrations. Originally published by the National Park Service in 1978, re-issued by Dover Press, New York, in 1990.

Keeping it Clean: Removing Dirt, Paint, Stains, and Graffiti from Historic Exterior Masonry. Anne E. Grimmer. Covers virtually every aspect of a cleaning project—identifying building materials to be cleaned and ones that might be affected by cleaning; scheduling cleaning around other work; what to ask for in cleaning "specs;" and what kind of test cleaning procedures to use. Useful chart summarizes







cleaners and removal techniques. 45 pages. 35 illustrations. Bibliography.

Metals in America's Historic Buildings: Uses and Preservation Treatments. Margot Gayle and David W. Look, AIA. One of the most complete sourcebooks available on historic architectural metals, such as lead, tin, zinc, bronze, copper, iron, nickel, steel and aluminum. Part 1 focuses on the identification and historic uses of architectural metals; Part 2 provides in-depth information on repair and preservation methods, discussing each metal individually. 168 pages. 180 illustrations. Bibliography. 1980.

Moisture Problems in Historic Masonry Walls: Diagnosis and Treatment. Baird M. Smith, AIA. Intended for architects, building owners, property managers, and others responsible for the care and maintenance of historic buildings. Discusses problems caused by excessive moisture in historic masonry walls and outlines a methodology for diagnosing such problems and selecting appropriate treatments. 48 pages. 32 illustrations. 1984. Bibliography.

Moving Historic Buildings. John Obed Curtis. Discusses the limited circumstances under which a historic masonry or frame building should be moved. Establishes a methodology for planning, research, and recording prior to the move; and addresses the siting, foundation construction, building reassembly, and restoration work after a successful move has taken place. 50 pages. 47 illustrations. Bibliography.

Photogrammetric Recording of Cultural Resources. Perry E. Borchers. Describes the basic principles of photogrammetry and their application to the recording of cultural resources. Includes several case study applications. 38 pages. 27 illustrations. Bibliography. 1977.

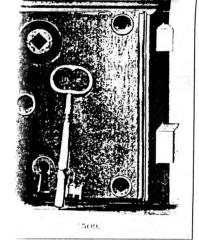
Rectified Photography and Photo Drawings for Historic Preservation. J. Henry Chambers, AIA. Explains the process of making photographic negatives of a predetermined size or scale which can be enlarged to a convenient architectural scale, then printed on photosensitive drafting film for working drawings, surveys, and feasibility studies. 38 pages. 13 illustrations. 1973.

Using Photogrammetry to Monitor Materials Deterioration and Structural Problems on Historic Buildings: Dorchester Heights Monument, A Case Study. J. Henry Chambers, AIA. Details the cost-effectiveness of close-range photogrammetry in monitoring the condition of historic masonry structures, particularly when more conventional methods of inspection are impracticable. 16 pages. 6 illustrations. Bibliography. 1985.

X-Ray Examination of Historic Structures. David M. Hart. Explains a method for nondestructive probing of historic buildings that permits investigation of components normally hidden from view. Intended for architects, conservators, and other professionals. 24 pages. 19 illustrations. Bibliography. 1975.



Photo: Jack F. Boucher.



Preservation Case Studies

Preservation Case Studies provide practical, solution-oriented information for developers, planners, and owners by presenting and illustrating a specific course of action taken to preserve one building or an entire block of buildings. Individual case studies may highlight an innovative rehabilitation technique, financing strategies, or an overall planning methodology.

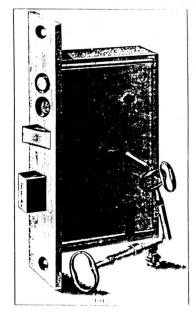
Abbeville, South Carolina: Rehabilitation Planning and Project Work the Commercial Town Square. John M. Bryan and the Triad Architectural Associates. Excellent planning guide for historic building owners interested in rehabilitating an entire block to enhance local commercial trade. Uses a series of architectural drawings and sketches, recommends preservation work for each building inventoried as well as the urban setting. 55 pages. 24 illustrations, 1979.

Fort Johnson, Amsterdam, New York: A Historic Structure Report. Mendel-Mesick-Cohen. From an on-site inspection conducted in 1974-1975, shows steps to take prior to undertaking preservation or restoration work on a historic building. Documents the current state of the building's exterior and interior materials and overall structural stability. Recommends work that meets the Department of Interior's historic preservation standards. Archeological report included. 54 pages. 89 illustrations. Appendices, 1978.

Main Street Historic District, Van Buren, Arkansas: Storefront Rehabilitation/Restoration Within a Districtwide Plan, Susan Guthrie. Illustrates in detail how storefronts in a small town's commercial center were successfully rehabilitated. Emphasizes both planning and rehabilitation by inclusion of working drawings, and before, during and after photographs. 31 pages. 30 illustrations. 1980.

Maymont Park-The Italian Garden, Richmond, Virginia: Landscape Restoration. Barry W. Starke, ASLA. Outlines step-by-step process of conducting historical research on a National Register-listed park, preparing existing conditions documentation, and recommending project work. Includes the landscape architect's drawings and specifications to restore stone walls, garden walkways, and domed pergola according to Department of the Interior historic preservation standards. 39 pages. 29 illustrations, 1980.

Planning for exterior Work on the First Parish Church, Portland, Maine, Using Photographs as Project Documentation. John C. Hecker, AIA, and Sylvanus W. Doughty. Using annotated photographs detailing physical damage and deterioration of a specific church building, shows how project work recommendations were made. Useful methodology for owners and developers planning rehabilitation work on any building. Includes architectural specifications for several work areas, such as site improvements, mortar, brick masonry, rough carpentry, slate roofing, dampproofing,



flashing, and painting. 58 pages. 15 illustrations. Secretary of the Interior's Standards as Appendix. 1979.

Olmsted Park System, Jamaica Pond Boathouse, Jamaica Plain, Massachusetts: Planning for the Preservation of the Boathouse Roof. Richard White. Focuses on planning the preservation of a specific public park building, but useful for planning an entire project to meet Department of Interior historic preservation standards. Presents a responsible process of documenting proposed work, including a brief history of the site and building, evaluation of deterioration, architectural drawings, and a summary of successful completed work. 58 pages. 25 illustrations. Appendix. 1979.

Rehabilitating Historic Hotels: Peabody Hotel, Memphis, Tennessee. Floy A. Brown. Explains use of the preservation tax credit to rehabilitate an important downtown hotel. Outlines the success of other hotel rehabilitations across the United States, then focuses on the Peabody Hotel in Memphis. The case study describes the Peabody's architectural importance, the scope of rehabilitation work, and the funding initiative. 44 pages. 21 illustrations. Appendix. 1979.

The Morse-Libby Mansion: A Report on Restoration Work, 1973-1977. Morgan W. Phillips. Describes and illustrates preservation methods and techniques used in the exterior restoration of an Italianate mansion. 55 pages. 84 illustrations. Appendices. 1977.

Preservation Tech Notes

Preservation Tech Notes (PTN) provide innovative solutions to specific problems in preserving cultural resources—buildings, structures, and objects. Tech Notes are intended for practitioners in the preservation field, including architects, contractors, and maintenance personnel, as well as for owners and developers seeking the preservation tax investment credit for rehabilitation. Topic categories for this series to date include doors, windows, finishes, interior spaces, mechanical systems, museum collection storage, temporary protection, exterior woodwork, masonry, and metals.

PTN 1 Windows(1): Planning Approaches to Window Preservation by Charles E. Fisher. January, 1984.

PTN 2 Windows(2): Installing Insulating Glass in Existing Steel Windows by Charles E. Fisher, January, 1984.

PTN 3 Windows(3): Exterior Storm Windows: Casement Design Wooden Storm Sash by Wayne Trissler and Charles E. Fisher. January, 1984.

PTN 4 Windows(4): Replacement Wooden Frames and Sash: Protecting Woodwork Against Decay by William C. Feist. January, 1984.

PTN 5 Windows(5): Interior Metal Storm Windows by Laura A. Muckenfuss and Charles E. Fisher. January, 1984.

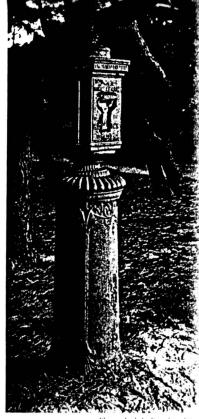


Photo: Jack I Bouch r. H

LIUMBS AND LEVELS

PTN 6 Windows(6): Replacement Wooden Sash and Frames with Insulating Glass and Integral Muntins by Charles Parrott. January, 1984.

PTN 7 Windows(7): Window Awnings by Laura A. Muckenfuss and Charles E. Fisher. September, 1984.

PTN 8 Windows(8): Thermal Retrofit of Historic Wooden Sash Using Interior Piggyback Storm Panels by Sharon C. Park, AIA. September, 1984.

PTN 9 Windows(9): Interior Storm Windows: Magnetic Seal by Charles E. Fisher. September, 1984.

PTN 10 Temporary Protection(1): Temporary Protection of Historic Stairways During Rehabilitation Work by Charles E. Fisher. March, 1985.

PTN 11 Windows(10): Temporary Window Vents in Unoccupied Historic Buildings by Charles E. Fisher and Thomas A. Vitanza. August, 1985.

PTN 12 Windows(11): Installing Insulating Glass in Existing Wooden Sash Incorporating the Historic Glass by Charles E. Fisher. September, 1985.

PTN 13: Not issued.

PTN 14 Museum Collections(1): Museum Collection Storage in a Historic Building Using a Prefabricated Structure by Don Cumberland, Jr.. September, 1985.

PTN 15 Windows(13): Aluminum Replacement Windows with Sealed Insulating Glass and Trapezoidal Muntin Grids by Charles Parrott. September, 1985.

PTN 16 Historic Interior Spaces(1): Preserving Historic Corridors in Open Office Plans by Christina Henry. October, 1985.

PTN 17 Exterior Woodwork(1): Proper Painting and Surface Preparation by Sharon C. Park, AIA. May, 1986.

PTN 18 Exterior Woodwork(2): Paint Removal from Wood Siding by Alan O'Bright. September, 1986.

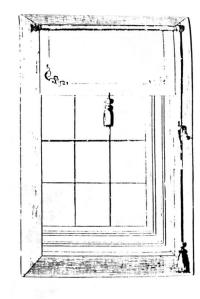
PTN 19 Windows(14): Reinforcing Deteriorated Wooden Windows by Paul Stumes, P. Eng. November, 1986.

PTN 20 Windows(15): Interior Storms for Steel Casement Windows by Charles E. Fisher and Christina Henry. November, 1986.

PTN 21 Windows(16): Repairing and Upgrading Multi-Light Wooden Mill Windows by Christopher Closs. December, 1986.

PTN 22 Windows(12): Aluminum replacement for Steel Industrial Sash by Charles E. Fisher. December, 1986.

PTN 23 Masonry(1): Substitute Materials: Replacing Deteriorated Serpentine Stone with Pre-Cast Concrete by Robert M. Powers. September, 1988.



PTN 24 Mechanical Systems(1): Replicating Historic Elevator Enclosures by Marilyn E. Kaplan, AIA. June, 1989.

PTN 25 Doors(1): Historic Garage and Carriage Doors: Rehabilitation Solutions by Bonnie J. Halda, AIA. July, 1989.

PTN 26 Historic Interior Spaces(2): Preserving Historic Office Building Corridors by Thomas G. Keohan. July, 1989.

PTN 27 Metals(1): Conserving Outdoor Bronze Sculpture by Dennis R. Montagna. August, 1989.

PTN 28 Exterior Woodwork (3): Log Crown Repair and Selective Replacement Using Epoxy and Fiberglass Reinforcing Rods by Harrison Goodall. September, 1989.

PTN 29 Windows(17): Repair and Retrofitting Industrial Steel Windows by Robert M. Powers. August, 1989.

PTN 30 Museum Collection(2): Reducing Visible and Ultraviolet Light Damage to Interior Wood Finishes by Ron Sheets and Charles E. Fisher. September, 1990.

PTN 31 Finishes(1): Process Painting Decals as a Substitute for Hand-Stencilled Ceiling Medallions by Sharon C. Park, AIA. September, 1990.

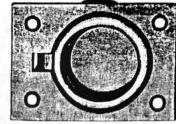
PTN 32 Metals(2): Restoring Stamped Zinc and Galvanized Steel Roof Cornices by Richard Pieper. September, 1990. PTN 33 Metals(3): In-kind Replacement of Historic Stamped-Metal Exterior Siding by Rebecca A. Shiffer. September, 1991.

PTN 34 Masonry(2): Stabilization and Repair of a Historic Terra Cotta Cornice by Jeffrey S. Levine and Donna Ann Harris. Septermber, 1991.

PTN 35 Site(1): Restoring Vine Coverage to Historic Buildings by Karen E. Day. October, 1991.

PTN 36 Windows(19): Aluminum Replacement With True Divided Lights, Interior Piggyback Storms, and Exposed Historic Wooden Frames by Charles Parrott. October, 1991.

FLUSH RINGS



Flush Rings, for Sliding Barn and Trap Doors

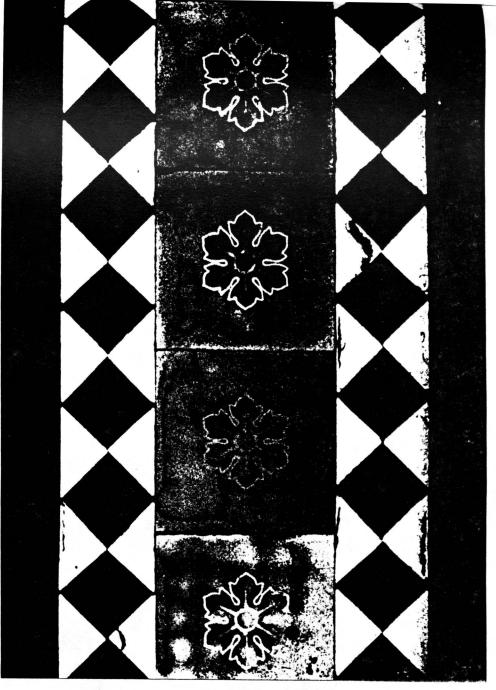


Co-Published Books

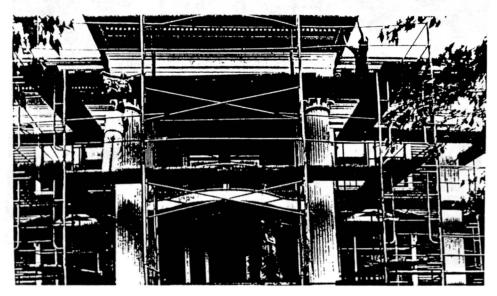
Interiors Handbook for Historic Buildings. National Park Service and the Historic Preservation Education Foundation (HPEF). Charles E. Fisher, Ed. Prepared for a national conference on appropriate interior treatments for historic buildings, includes nearly 400 pages of technical papers as well as guidance for architects, developers, building managers, curators, and property owners. Addresses both rehabilitation and restoration issues, including inspection, evaluation and planning, architectural features and materials, systems and fixtures, space utilization and adaptive reuse, finishes and decorative accessories, and fire protection and building codes. 550 pages. Illustrated. 1988.

Respectful Rehabilitation: Answers to Your Questions on Historic Buildings. National Park Service and National Trust for Historic Preservation. Kay D. Weeks and Diane Maddex, Eds. Provides answers to 150 questions often asked in rehabilitating historic buildings for new uses. 185 pages. 150 illustrations. Bibliography. 1982.

The Window Handbook: Successful Strategies for Rehabilitating Windows in Historic Buildings. National Park Service and the Center for Architectural Conservation, Georgia Institute of Technology. Charles E. Fisher, Ed. 16 Preservation Tech Notes on windows. 262 pages. Illustrated. Appendices. 1986.



Technical Guidance Publications 117



"The many awards garnered by historic rehabilitation projects throughout the Nation are testimony to the value of the Secretary's Standards and Guidelines." Nellie Longsworth

Nellie Longsworth President Preservation Action

NATIONAL PARK SERVICE PROJECT SUMMARY

The following project summary has been prepared by the Southeast Regional Office, Cultural Resources Planning Division of the National Park Service

In June 1991, this Study of Alternatives for the Birmingham District Industrial Heritage Corridor (the District) was initiated by the National Park Service to evaluate the significance of the iron, steel, coal, and transportation systems in Bibb, Shelby, Jefferson, Tuscaloosa, and Walker counties of Alabama within a national context. The first volume of this study provided a description, brief history, assessment, and survey forms for the major sites in the District. The survey data collected for this study led the National Park Service to determine that "most of the properties lack the required level of integrity as 'true, accurate, and relatively unspoiled examples' of a (nationally significant) resource type. This is not a problem that is likely to be overcome by more detailed study and justification." The production of foundry iron and cokemaking was not established as nationally significant in this study. The National Park Service especially encourages further study of the District's labor history.

The study included a preliminary survey of 600 sites and structures. Sloss Furnaces is the only National Historic Landmark in the District, but the statue of Vulcan, and Thomas Cokeworks and Housing District were identified as resources which should be documented in order to determine their levels of significance. The National Park Service determined that "the following properties failed to meet National Historic Landmark criteria because they do not possess high levels of historic integrity: Brookside Coal Mine-Coke Ovens; Ruffner Red Ore Mines; Coalburg Coke Ovens; Shelby Ironworks; Gould Mines and Coke Ovens; Alabama Coal Mining Company Mine; and the TCI-USX Ensley Works. The following properties were found wanting due to a combination of low levels of historic integrity and the absence of national significance: Sloss Red Ore Mine No. 2; Pratt Coke Ovens; and the Tannehill Furnaces. The following properties were found to lack national significance: Muscoda Red Ore Mines; Altamont Parkway; Alabama Power Company (Building); General Josiah Gorgas House; John Bankhead House; and the Powell Avenue Power Station."2 Some of these sites are currently being preserved and interpreted by local communities, private groups, and the state.

The most interesting element of the industrial history of the District was the labor force, which primarily consisted of African Americans. Unlike their northern counterparts, the iron plantations and the burgeoning iron and steel mills of the Birmingham District harnessed the abundant regional labor force of slaves, before and during the Civil War, and the freed African Americans afterwards. The prevalent use of convict labor is an element of the New South which can also be told in the District. The struggles of African Americans to be recognized and given the same rights as

¹Memorandum from Associate Director, Planning and Development, Washington Office, National Park Service to Regional Director, Southeast Region, National Park Service, dated September 3, 1992.

²Memorandum from Chief Historian, National Park Service, to Regional Director, Southeast Region, National Park Service, dated August 20, 1992.

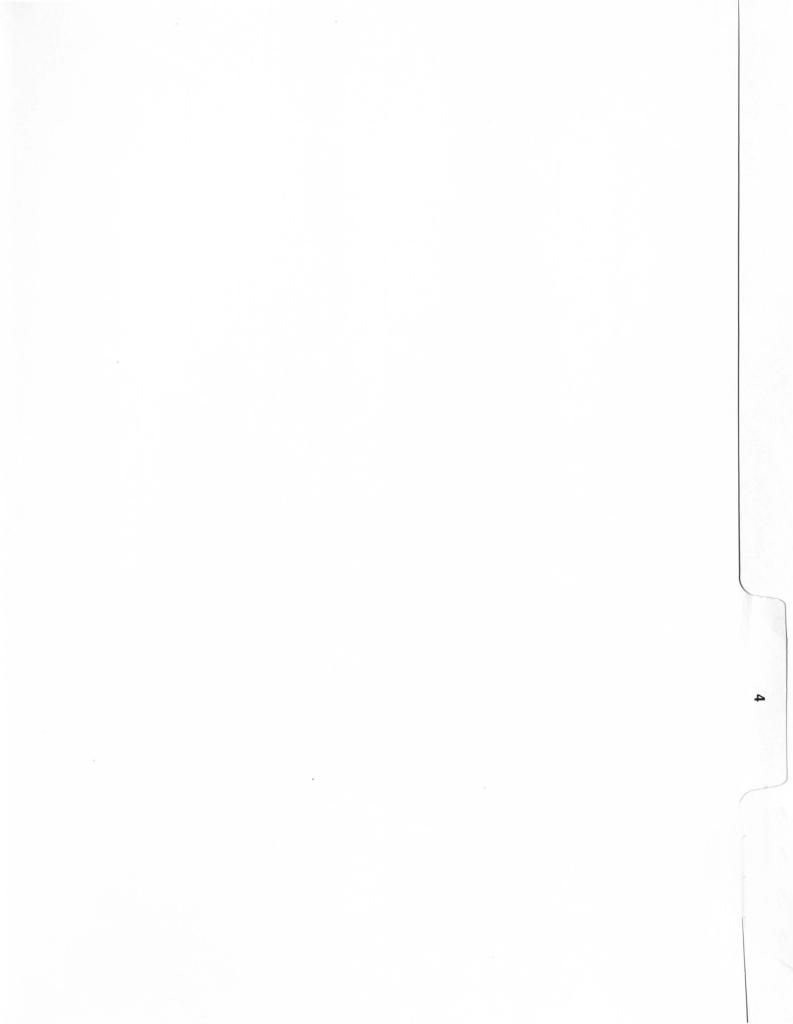
their white counterparts are important historical events that are presented at the Civil Rights Institute which opened in 1992 in Birmingham.

Based upon this determination, the Birmingham District appears to be unsuitable for inclusion in the National Park System as a park service "unit," but is very worthy of preservation. Therefore, this volume of the study identifies alternatives to protect and interpret District resources relying primarily on State, local, or private initiatives. However, the National Park Service and other federal agencies may coordinate or provide technical assistance in planning preservation, and could oversee any additional federal funds appropriated to the project.

Recommendations to be put forth in the Study of Alternatives are as follows:

- 1. Further research and documentation should be conducted on Vulcan and Thomas Cokeworks and Housing District for National Historic Landmark documentation.
- 2. The District's labor history should be considered as a potential area for evaluation in the nationwide Labor History Theme Study to be conducted by the National Park Service.
- 3. If the proposed American Heritage Partnership Program is approved by Congress, then the District may qualify for some type of assistance and recognition under the proposed program.
- 4. The Birmingham District's resources should continue to receive some technical and financial assistance for preservation and planning through existing NPS programs and authorities.

Although the District's resources fail to support establishment of a National Park Service unit, the significant heritage of the District needs to be preserved. The local populace should continue to take the lead in preserving and interpreting these resources and to seek assistance from other private and governmental bodies in accomplishing these efforts.



VULCAN PARK IMPROVEMENTS: City of Birmingham Capitol Allocations, 1980--2003

Fiscal Year Expenditur Items of Cost	Total Estimate	City's Estimate	Capital Budget	Source of Funding	Source of Information
1980 Vulcan Hike and Bike Trail		\$200,000.00			1980-84 Capital Budget
1990 Engineering or Architectural #01094		\$205,000.00	\$250,000.00		1990-1994 Capital Budget
1991 Engineering or Architectural	\$295,000.00	\$295,000.00	\$45,000.00	CIF	1991-1995 Capital Budget
1992 Engineering or Architectural			\$250,000.00	PBF-92	1991-1995 Capital Budget
1993 Vulcan Master Plan	\$125,000.00	\$125,000.00	\$125,000.00	02-1720	1995-1999 Capital Budget
1993 Vulcan Park Engineering Study?	\$250,000.00		\$250,000.00	33-01607	1995-1999 Capital Budget
1995-1996 Park Improvements Landscaping/Tower Exhibit/Security	\$1,000,000.00		\$1,000,000.00	PBF-96/	1996-2000 Capital Budget
1995-1996 Park Improvements ISTEA Trail Improvements?	\$375,000.00		\$375,000.00	FED. GRANT	1996-2000 Capital Budget
1995-1996 Existing Appropriation Engineering Study?	\$160,000.00	\$160,000.00	\$160,000.00	PBF-92/33	1996-2000 Capital Budget
TOTALS	\$2,655,000.00		\$2,655,000.00		

Note: The Capital Budget and Capital Improvement Program Budget 1997-2001 does not list Vulcan. The Capital Budget and Capital Improvement Program Budget for 1999-2003 does not list Vulcan.

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BIRMINGHAM HISTORICAL SOCIETY Annual Visitation and Operating Budgets for 1994-1995 for City of Birmingham Historic Sites and Cultural Institutions and Top Birmingham Area Tourist Attractions

	VISITATION	Management (ANNUAL BUDG	ET
Institution	1995	1998(Estimated)	1995	1999
Alabama State Fair Authority				\$1,273,983.00
Arlington	20,656	10,359	\$284,468.00	\$439,741.49
Birmingham Botanical Gardens	210,000	210,000	Park & Rec*	Park & Rec*
Birmingham Civil Rights Institute				\$700,000.00
Birmingham Museum of Art	111,000	220,000	\$2,255,057.00	\$2,523,699.99
Discovery 2000			\$663,000.00	\$663,000.00
Red Mountain Museum	81,000			
Sloss Furnaces National Historic Landmark	113,070	60,000	\$475,958.00	\$635,416.40
Southern Museum of Flight	15,298	49,919	203,619	\$337,153.71**
Visionland			50	\$1,000,000.00
Vulcan Park	95,395	12,000	Park & Rec*	Park & Rec*
Zoo	356,176	55,000	Park & Rec*	Park & Rec*

Sources: Birmingham Business Journal telephone poll, Official Operating Budget, City of Birmingham, *Birmingham Botanical Gardens, Vulcan Park and the Zoo are divisions of the Park and Rec Board specific budgets for the individual sites are not available. Total Park Board Budget in 1999 is \$10,768, 862.90. Zoo Capital improvements of \$151,360.00 are included in the 1999 budget.

^{**} Southern Museum of Flight Capital improvements: property acquisition \$150,000 and restrooms \$10,000

Institution	1994 Attendance	Admission (in 1995)
Riverchase Galleria	11.000.000	Free
Birmingham-Jefferson Civic Center	and the second second second	Varies with Event
	Maria and American	Free
	602,908	\$1 (age 6 & up)
Birmingham Zoo	500,000	\$5 adult. \$2 ages 2-12
Boutwell Municipal Auditorium	485,000	Varies
	467,867	\$4 adult, \$3 child
	425,000	\$2 adults, \$1 ages 6-11
Birmingham City Stages	260,000	\$15 day, \$20 weekend
Botanical Gardens and Japanese Gardens	210,000	Free
	204,243	\$7, \$9, \$11
	200,000	Free
Birmingham Museum of Art	200,000	Free, donation suggested
Festival of Arts	200,000	\$5/adult, \$2/child, \$7/weekend
Birmingham Civil Rights Institute	111,000	Free, donation suggested
Vulcan Park	105,109	\$1 (ages 6 & up)
Red Mountain Museum	81,000	\$2 general, \$1.50 in group
	Riverchase Galleria Birmingham-Jefferson Civic Center New Birmingham Race Course Oak Mountain State Park Birmingham Zoo Boutwell Municipal Auditorium Birmingham Barons (home games) Tannehill State Park Birmingham City Stages Botanical Gardens and Japanese Gardens Birmingham Bulls (home games) Sloss Furnaces Birmingham Museum of Art Festival of Arts Birmingham Civil Rights Institute Vulcan Park Red Mountain Museum	Riverchase Galleria 11,000,000 Birmingham-Jefferson Civic Center 1,753,031 New Birmingham Race Course 936,898 Oak Mountain State Park 602,908 Birmingham Zoo 500,000 Boutwell Municipal Auditorium 485,000 Birmingham Barons (home games) 467,867 Tannehill State Park 425,000 Birmingham City Stages 260,000 Botanical Gardens and Japanese Gardens 210,000 Birmingham Bulls (home games) 204,243 Sloss Furnaces 200,000 Birmingham Museum of Art 200,000 Festival of Arts 200,000 Birmingham Civil Rights Institute 111,000 Vulcan Park 105,109

Source: Birmingham Business Journal telephone poll, 1995.

H:LOTUS\VULCAN\VULFINA.WK4 Sheet: Annual Budgets MKE

BIRMINGHAM HISTORICAL SOCIETY Annual Visitation and Operating Budgets for 1994-1995 for City of Birmingham Historic Sites and Cultural Institutions and Top Birmingham Area Tourist Attractions

Annual	Visitation.	
B. Business Journal	City Budget	Annual Budget
	20,656	284,468
200,000	210,000	Park & Rec
210,000		
200,000	111,000	2,255,057
		663,000
81,000	81,000	
200,000	113,070	475,958
	15,298	203,619
	95,395	Park & Rec
	356,176	Park & Rec
	200,000 210,000 200,000 81,000	B. Business Journal City Budget 20,656 200,000 210,000 210,000 111,000 81,000 81,000 200,000 113,070 15,298 95,395

Sources: Birmingham Business Journal telephone poll, Official Operating Budget, City of Birmingham, Notes: Birmingham Botanical Gardens, Vulcan Park and the Zoo are divisions of the Park and Rec Board specific budgets for the individual sites are not available.

^{*} Any city funding for the Civil RIghts Institute is not listed in the Operating Budget.

Rank	Institution	1994 Attendance	Admission
1	Riverchasse Galleria	11,000,000	Free
2	Birmingham-Jefferson Civic Center	1,753,031	Varies with Event
3	New Birmingham Race Course	936,898	Free
4	Oak Mountain State Park	602,908	\$1 (age 6 & up)
5	Birmingham Zoo	500,000	\$5 adult. \$2 ages 2-12
	Boutwell Municipal Auditorium	485,000	Varies
7	Birmingham Barons (home games)	467,867	\$4 adult, \$3 child
8	Tannehill State Park	425,000	\$2 adults, \$1 ages 6-11
	Birmingham City Stages	260,000	\$15 day, \$20 weekend
10	Botanical Gardens and Japanese Gardens	210,000	Free
11	Birmingham Bulls (home games)	204,243	\$7, \$9, \$11
12	Sloss Furnaces	200,000	Free
	Birmingham Museum of Art	200,000	Free, donation suggested
14	Festival of Arts	200,000	\$5/adult, \$2/child, \$7/weekend
15	Birmingham Civil Rights Institute	111,000	Free, donation suggested
	Vulcan Park	105,109	\$1 (ages 6 & up)
17	Red Mountain Museum	81,000	\$2 general, \$1.50 in group

Source: Birmingham Business Journal telephone poll.

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CITY OF BIRMINGHAM OFFICIAL CAPITAL BUDGET AND CAPITAL IMPROVEMENT PROGRAM CURRENTLY ACTIVE PROJECTS

PARKS

		LAKKS			1
		PROJECT		CURRENT	UNEXPENDED
DESCRIPTION	FUND			APPROP	BALANCE
ATHLETIC FIELD IMPROVEMENTS	AD	02276	1999	\$11,508.00	\$8,534.00
ATHLETIC FIELD IMPROVEMENTS	AQ	02276	1999	4,000.00	4,000.00
ATHLETIC FIELD IMPROVEMENTS	33	02276	1999	7,000.00	6,758.00
ATHLETIC FIELD IMPROVEMENTS	60	02276	1999	2,492.00	2,492.00
BOTANICAL GARDENS DESIGN	AO	01193	1997	26,890.00	24,390.00
BOTANICAL GARDENS DESIGN	60	01193	1997	9,356.00	9,356.00
BOTANICAL GARDEN EDUC. BLDG.	45	02190	1999	295,000.00	294,521.00
BOTANICAL GARDEN-ROOF REP.	45	00812	1999	25,000.00	22,875.00
BRADFORD PARK	33	01593	1993	115,000.00	30,000.00
BRADFORD PARK	AD	01593	1997	147,095.00	112,435.00
BRADFORD PARK	AO	01593	1997	7,905.00	7,905.00
BRADFORD PARK	45	01593	1997	72,500.00	72,500.00
DESIGN AND MANAGEMENT	02	01723	1993	119,720.00	2,745.00
ENGINEERING AND MANAGEMENT	02	01047	1994	349,589.00	24,195.00
FAIR PARK IMPROVEMENTS	AD	02225	1998	24,533.00	1,871.00
FAIR PARK PAVILION ROOF	52	02246	1998	75,000.00	75,000.00
FAIR PARK RENOVATIONS	45	01994	1995	375,000.00	2,316.00
FAIR PARK RENOVATIONS	AA	02129	1997	1,000,000.00	36,334.00
FAIRGROUNDS-SPRINKLER	45	00830	1999	2,862.00	2,862.00
FRIENDS OF LINN PARK	02	01721	1993	25,000.00	3,444.00
HAWKINS PARK	94	20465	1997	1,000.00	1,000.00
HIGHLAND GOLFCOURSE LNDSCPE	45	01881	1999	212,000.00	212,000.00
HIGHLAND PARK ROOF REPAIRS	33	02325	1999	17,850.00	5,850.00
HIGHLAND RECREATION CHILLER	AO	02155	1998	44,000.00	11,405.00
HOOPER CITY VEST POCKET #37	44	01885	1994	10,000.00	11,674.00
LEGION FIELD IMPROVEMENTS	AD	01986	1995	2,030,334.00	18,552.00
MEMORIAL PARK EXPANSION	45	02185	1998	400,000.00	246,010.00
MISC PROJECTS	33	99999	1998	11,151.00	11,151.00
MISC PROJECTS	34	99999	1998	1,006.00	1,006.00
PARK DEDICATION	45	02150	1998	100,000.00	100,000.00
RICKWOOD FIELD	45	02179	1998	15,000.00	15,000.00
RUSHTON PARK	33	02366	1999	40,000.00	40,000.00
TENNIS COURT LIGHTS	45	02353	1999	190,000.00	190,000.00
VULCAN MASTER PLAN	02	01720	1993	137,600.00	5,140.00
VULCAN MASTER PLAN	45	01720	1997	48,000.00	42,988.00
VULCAN PARK	33	01607	1993	250,000.00	20.150.00
VULCAN PARK	52	02219	1998	200,000.00	29,742.00
VULCAN PARK	AO	01607	1996	1,000,000.00	871,997.00

CITY OF BIRMINGHAM PROPOSED CAPITAL BUDGET AND CAPITAL IMPROVEMENT PROGRAM

TITLE: Vulcan Rails to Trails

CATEGORY: Park Improvements

PROJECT TRACKING NO:

SUBMITTED BY: Planning, Engineering & Permits

PROJECT NUMBER:

CAPITAL IMPROVEMENT PROGRAM FUNDING SCHEDULE

Fund Name/ Fund #	Fund Total	Existing Approp.	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
HIF/46	\$93,600		\$93,600				
Federal Grants	374,400		374,400				
Total Est. Cost	\$468,000		\$468,000				
Description: Co the Vulcan Park		a bicycle/wall			on: To improvitional recrea		
OPERATING BUD PERSONNEL O SUPPLIES ANI EQUIPMENT	COST	\$ \$					
			Pps	Pole	,D		
						<u>, , , , , , , , , , , , , , , , , , , </u>	

VULCAN PARK: Existing Program Expenses and Sources of Revenue

FACILITIES: Observatory + statue, concessions building, ticket booth, park grounds, parking lot

EXPENSES- FY 92-93 BUDGET*

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Supervisor (1)

Gardeners (2)

Guards (2)

Cashiers (4)	
Subtotal Salaries and Benefits Overtime	\$235,392 \$7,805
Subtotal	\$243,197
Utilities (Water/electrical) Telephone	\$33,918 ?
Security Services	\$12,507
Building/facilities/supplies	\$23,977
TOTAL	\$313,599

REVENUE

City Operating Budget	\$220,401
Concession- Y arborough Contract	\$3,778
Telescopes	\$5,526
Admission	
Visitors (\$1 per person)	\$83,894
Special Events (\$30 per event)	

TOTAL \$313,599

Hours at Vulcan: 8:00 a.m.-11 p.m. (15 hours per day - 350 days per week.... Carl Mattil believed Vulcan should always be open.) Hourly and seasonal visitation stats are not available.

Current annual events: Fireworks and?

*Operational expenses over an extended period of time have not been kept as Vulcan Park financial information has been part of the Park Board overall budget. These figures for FY 92-93 were furnished by Eddie Mae Johnson at the Park Board. Unnamed city officials are currently preparing a total budget for Vulcan Park for FY 95-96 according to Fiscal Agent for the Park Board.

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VULCAN PARK - FINANCIAL INFORMATION

STAFF AND SALARY INFORMATION

BALARIES WITH FRINGE BENEFITS
AS PROJECTED FOR 1994-95

Under wood, lid

Analysis with set the grid

AN PROJECTED FOR 1994-95

CLASSIFICATION	AS PROJECTED FOR 19
Guard	\$ 27,444.39
Guard	\$ 26,756.49
Cashier	\$ 24,932.98
Cashier	\$ 25,283.77
Cashier	\$ 25,283.77
Cashier	\$ 25,274.07
Landscape Supervisor	\$ 33,829.97
Gardner	\$ 26,089.23
Laborer	\$ 20,497,47

TOTAL SALARIES & FRINGES \$235,392.14

EXPENDITURES - JULY 1, 1992 THROUGH JUNE 30, 1993

OVERTIME	\$	7,805.00
JANITORIAL		1,200.00
PAINTING		1,251.00
LUMBER		46.00
ELECTRICAL	٠	2,233.00
AIR CONDT, PLUMBING AND HEATING		279.00
SMALL TOOLS		123.00
CHEMICALS		166.00
BUILDINGS AND FACILITIES		6,344.00
GENERAL OFFICE		128.00
CLOTHING-UNIFORMS		689.00
PRINTING AND PUBLISHING		489.00
TRAVEL EXPENSE		29.00
ELECTRICITY	3	0,343.00
WATER	1	3,575.00
SECURITY SERVICES	1	2,507.00
PROFESSIONAL SERVICES - OTHER	_	1,000.00

TOTAL EXPENDITURES \$ 78,207.00

INCOME - JULY 1, 1992 THROUGH JUNE 30, 1993

ADMISSIONS \$ 83,894.25 GIFT SHOP & CONCESSIONS 3,778.52 TELESCOPES 5,526.03

TOTAL INCOME \$ 93,198.80





Copy

THE RESTORATION OF VULCAN PHASE I PRE-DESIGN

presented to

THE CITY OF BIRMINGHAM, ALABAMA

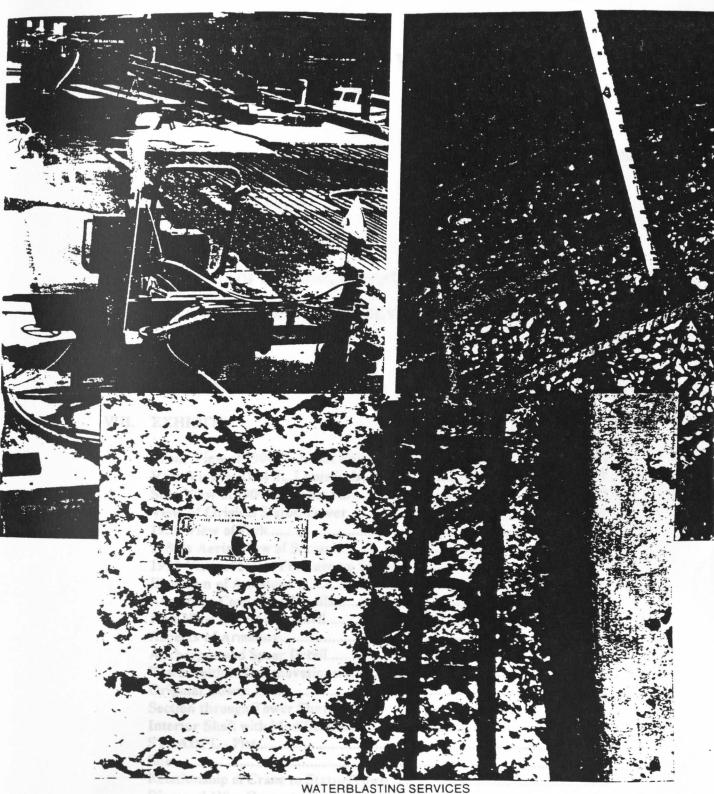
by

ROBINSON IRON CORPORATION MOODY SPRAGUE, ARCHITECTS LANE BISHOP YORK DELAHAY INC., ENGINEERS

November 4, 1994



HYDROCUTTINGR



HYDROCUTTING * AIRPORT RUNWAY CLEANING * PAINT STRIPE REMOVAL SALES * RENTALS * PARTS * CONSULTANTS * CONTRACTING 1.000 TO 60,000 PSI

THE RESTORATION OF VULCAN PHASE I PRE-DESIGN

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EXECUTIVE SUMMARY

On August 3, 1994, Robinson Iron Corporation was given authorization by the City of Birmingham to proceed with Phase I Pre-Design of the Restoration of Vulcan. This phase of the project included the formalization of the sculpture restoration procedure and an analysis of the tower pedestal support.

Sculpture Restoration

Giuseppe Moretti's 1904 Vulcan is in a serious state of disrepair. The primary cause of deterioration is the concrete ballast fill which was introduced into the lower two-thirds of the statue's interior in 1939. The differential in the coefficients of expansion between the concrete and the cast iron coupled with freeze-thaw conditions resulting from water penetration through the open head have caused excessive stress in the lower part of the structure. Some spalling of the cast iron skin has occurred. In addition, the accelerated corrosion of the low carbon fasteners which hold the sculpture together indicate a full restoration of the sculpture is warranted to guarantee the longevity and reduce liability to the City of Birmingham.

In order to safely remove the concrete fill, the statue must be removed from the pedestal. Calculations indicate this can be accomplished with a mobile crane removing the statue in component form down to the concrete fill line. The entire lower torso with fill inside would be lifted from the pedestal after cutting below the feet with a diamond wire saw. All concrete would be removed using hydrodemolition. After complete disassembly the cast iron would be cleaned using low pressure dry grit blasting. All missing or irreparably damaged cast iron would be recast from new patterns. The castings would then be reassembled around a stainless steel armature designed to strengthen original or repaired iron joints and provide a means for a secure anchorage to the tower pedestal cap. After the application of a series of paint coatings the restored sculpture / armature would be re-installed in large component form via the mobile crane.

Pedestal Restoration

The Mayor's Task Force on Improvements to Vulcan Park has recommended restoring the park to its original WPA character. The centerpiece of the park was the slender stone tower which supported Vulcan. In order to restore the tower, all construction which was part of the 1971 renovations must be removed. These elements include the freestanding elevator tower, the enclosed observation deck, the enlarged ground level lobby, and the polished white marble cladding. The tower's original stonework appears to be substantially intact beneath the cladding. New stone to match the original is available to repair existing openings and to rebuild the original ground floor exhibit gallery. The open air observation balcony can be rebuilt to comply with current building code and accessibility requirements. The interior of the tower can be redesigned to accommodate both an elevator and a stair. Modifications which this work will require will not be apparent from the outside and will facilitate new structural connections required in the reinstallation of the statue. The construction period for renovations should be about 12 months.

PROJECT OVERVIEW

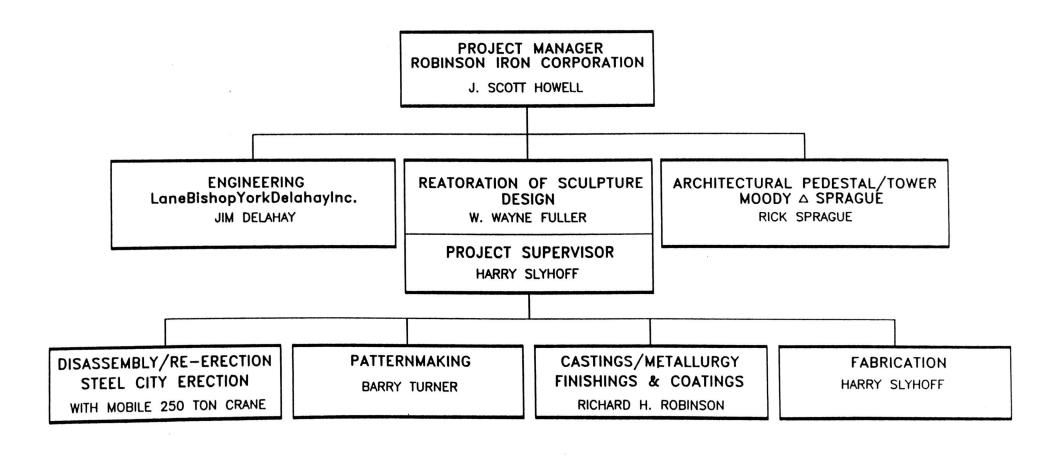
Project Statement

The goals and objectives of Vulcan Restoration Phase I Pre-Design were as follows:

- 1. Assess the condition of the existing pedestal and sculpture assembly.
- 2. Determine an appropriate course of action for the restoration of the Vulcan sculpture and provide preliminary drawings for this scope of work.
- 3. Determine the feasibility of restoring the pedestal to a 1939 Works Progress Administration appearance within structural and life safety code requirements while maintaining adequate visitor flow.
- 4. Prepare phases of the total project complete with budget projections for each phase.

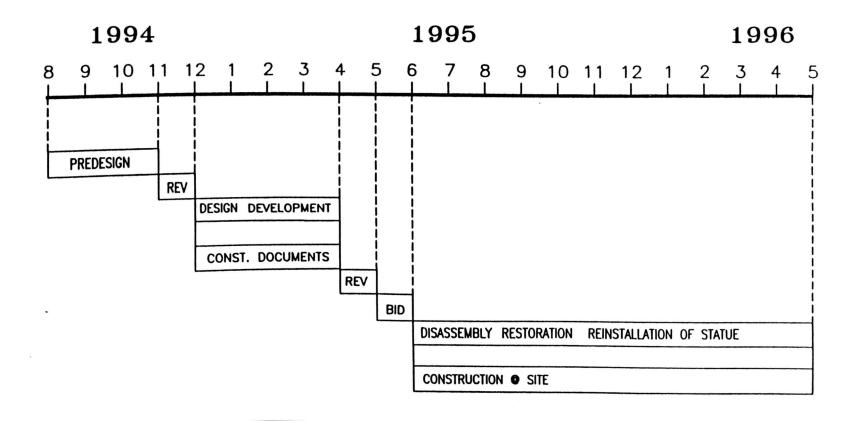
VULCAN RESTORATION PROJECT

ORGANIZATION CHART



VULCAN RESTORATION PROJECT

PROJECT SCHEDULE



HISTORICAL PERSPECTIVE

Statue

Sixty historic photographs and twenty-five newspaper articles were provided by the Birmingham Historical Society. This information supplemented by Raymond J. Rowell, Sr. "Vulcan in Birmingham" (1972) and George Clinton Thompson "Vulcan: Birmingham's Man of Iron (1991) provided an invaluable insight into the inception, production, and subsequent display of the sculpture. A listing of pertinent observations and facts regarding the statue and pedestal follow:

- 1. The statue was painted a dark color for display in the 1904 Louisiana Exposition.
- 2. The cast iron wall sections of the sculpture vary between one and three inches in thickness.
- 3. The original spear, hammer handle, scalp, and auxiliary hammer are missing elements from the 1904 configuration. In addition large cast iron segments are missing from the right deltoid, left forearm and anvil top.
- 4. The castings comprising the anvil have been significantly altered. The tip of the anvil is presently 180 degrees different from the 1904 configuration. In addition, the anvil support castings have been stacked incorrectly.
- 5. The 1939 placement of the anvil is much closer to the leg of the sculpture than the 1904 version, and its angle in relation to the statue has been altered. This alteration changed the angle of the hammer handle and created an artificial rotation of the left hand.
- 6. The ladder rungs and drain pipe were not part of the 1904 Vulcan.
- 7. The additional brace between the left elbow and the left hip was not a component of the 1904 configuration.

Pedestal

After the St. Louis World Exposition in 1904, the statue of Vulcan was returned to Birmingham and erected at the Alabama State Fairgrounds. In 1935, a group of civic leaders developed the idea that Vulcan could become an important symbol of the city and proposed placing him in a park on top of Red Mountain. The Birmingham Park Board was persuaded to acquire land, the Works Progress Administration provided labor and probably site planning, and the Birmingham architectural firm Warren, Knight, and Davis was selected to design a slender tower upon which the statue would be mounted. Construction of the park began in 1937 and was completed in 1939.

For the next thirty years, Vulcan Park became a popular and captivating civic attraction. By the late 1960's, however, the appearance of the park and its structures had deteriorated. As the city approached its centennial in 1971, interest emerged in "modernizing" the park and the Park Board selected the architectural firm of Elliott and Bradford to develop a renovation plan. Their design added an elevator, an enclosed observation deck and an enlarged ground level lobby to the original tower. They also added several new structures and significantly altered the park's appearance and site organization. Construction on this project began in 1969 and was completed in time for centennial festivities.

Little has been done to the park since 1971, and those improvements are beginning to look tired and dated. In the following sections. the original tower design and the 1971 alterations will be discussed in more detail.

WPA Tower

The original tower was 123 feet high with a one story gallery around the base and an open air balcony about 25 feet below the top. The structure was designed in the Art Deco style with a slender profile and a slight taper to the top. The principal exterior material was rough faced sandstone which was also used in walls and site features throughout the park. The interior of the tower had only a set of metal stairs which was connected to concrete landings. The tower, the base and the balcony were octagonal in plan.

The approach to and through the tower was a carefully orchestrated experience. From the parking lot, a visitor would walk up a series of terraces with cascading ponds on axis with the tower. The entrance to the tower was recessed in the octagonal base and opened directly to the central staircase. Doors to the left and right of the entrance opened to a small gallery for exhibits which would lead the visitor around the tower and back to the central stair. Once the visitors began climbing the stairs, they were completely enclosed by the stonework. The few windows in the tower were simply narrow slits and offered only a limited view to the outside. Upon reaching the top, the visitor would open a solid door and step outside to a panoramic view. The experience of being outside with the breeze, the sounds, and an unobstructed view overhead was the climax of this adventure. From this vantage point one could look up to see details on the statue which were not apparent from the ground and look out to see mountains and valleys stretching to the horizon.

1971 Renovations

The 1971 renovations removed the outdoor balcony and the ground level gallery but left the tower structure and the internal stair in place. Steel framework was added to the top of the tower which supported a larger, enclosed observation deck. At the base, a larger ground floor lobby was constructed with a free-standing elevator which served the observation deck. Elevator mechanical equipment were located in a storage room above the observation level. The roof of both the observation deck and the new lobby was sloped which gave each the profile of a carousel.

The outside surface of the original tower and the new elevator were clad in polished white Georgia marble. Based on the architect's construction drawings and field observations, it appears that this attachment was done with relatively little damage to the original stonework. About 16 blocks of stone were cut out at each of the towers ten levels. Steel angles were anchored at these points to support a unistrut cage around the tower. The marble was then hung from the unistrut members.

The tower has a 2 1/2 foot thick concrete foundation which is circular in shape and 34 feet in diameter. The top of this foundation is 2 1/2 feet below the finished floor of the lobby. In order to install a 5 foot deep elevator pit without damaging the foundations, the pit and the elevator shaft were located just outside the foundation circular.

The tower and statue have a variety of light fixtures for night illumination. Fixtures are located on the roof of the lobby, the underside of the observation deck and around the base of the statue. These lights are not maintained and are not currently in operation.

ANALYSIS OF EXISTING CONDITIONS

Analysis of existing conditions was based on both physical observations and preliminary calculations. Observations were made to evaluate the physical condition and state of repair of the major structural components to the extent reasonably ascertainable without disturbing the floor, wall or ceiling finishes. The determination or advisement related to the existence or proportion of asbestos, modification, installation, abatement or removal of a product, material or process containing asbestos has not been addressed by the design group.

Statue

The analysis of the cast iron statue was based solely on physical observation. No calculations were performed. Some of the most detailed information was taken from the April 24, 1992 report by Law Engineering entitled "Statue of Vulcan-Report of Phase 1 Studies". The statue is currently in a serious state of disrepair and does not appear to be stable.

Of major concern is the existence of structural cracks in the cast iron. These cracks are being caused by the expansion of the concrete fill and expansion due to corrosion of the low carbon fasteners which hold the component castings together.

Volumetric expansion coefficients for cast iron and concrete as measured at 68 F are as follows:

Cast Iron .0000197 for one degree F Concrete .0000240 for one degree F

This means the concrete is expanding at a rate roughly 20% greater than the cast iron. The result of this action can easily be observed by the large crack which presently extends from the inside of one of Vulcan's legs through the groin area to the other leg. The concrete also contains lime or calcium hydroxide which is basic. The pH differential which exists between the concrete and the cast iron is accelerating the corrosion of the cast iron. In addition, the lime is creating a leaching effect through the cracks and casting joints which has a detrimental effect on the painted finish and overall appearance of the sculpture.

Vulcan is held together with bolts and pins which are composed of a low carbon ferrous alloy. The lower carbon content gives the alloy more tensile strength, thus allowing the ironworker the ability to exert great force on critical connections. Unfortunately, the lower carbon alloy fasteners corrode at a greater rate than the cast iron components. This corrosion creates expansion which causes cracks in the castings at the bolt locations. Evidence of cracking created by expansion due to corrosion exists in numerous locations on the statue.

Conditions which appear structurally unstable include the attachment of the left arm, the anchorage of the statue, and numerous other connections. The framing of the left arm of Vulcan was noted as a concern in the April 24, 1992 report by Law Engineering:

The wrist connection to the forearm is connected by three bolts. These three bolts have been off centered from their original location by approximately 10 degrees. One bolt in the lower right corner of this connection is actually not bolted through the flange and clip, but through the clip and to the edge of the flange which is broken off of the forearm section.

The April 24, 1992, report further notes that the exterior of the bolts connecting the upper left arm to the forearm "appear to be in a corroded condition". This condition is in need of immediate repair.

As previously stated, when Vulcan was assembled on Red Mountain in 1939 his lower torso was filled with concrete. Original structural drawings from this construction show that the statue is connected to the pedestal by bolts into the feet and by steel rods which extend ten feet up the statue's legs into the concrete fill. It appears that these rods are resisting only a small portion of the uplift and moment present on the statue and that the statue is held in place mainly by the concrete ballast. Steel anchor rods were not visible at the base of the statue. If these anchors are present the large amount of water present in the base of the statue has probably corroded the anchors and the structural capacity has been affected. Positive attachment to prevent overturning of the statue should be provided in any remedial procedure.

Finally, the April 24, 1992, report by Law Engineering identifies several additional areas that appear to be structurally questionable. These areas focus on hard to reach areas of the statue including the connection of the forearm to the wrist on the right (p. 14) and a bell and spigot type joint at Vulcan's chest (p. 18). Such areas cannot be reviewed thoroughly without the removal of the statue from the existing pedestal.

Paint

Layer analysis performed by Frank S. Welsh Architectural Coatings Consultant of paint samples obtained from the sculpture on two occasions has revealed seven coats of paint:

Medium Gray

Medium Gray

Dark Gray

Black

Silver (Aluminum)

Prime Red

Brown (present color)

The second coat of gray has been interpreted as a finish coat with a Munsell Color number of N5.0/. The paint is a unmodified oil base typical for turn of the century coatings.

Pedesta!

The existing structure on which Vulcan stands is a twelve tier reinforced concrete pedestal with an outboard steel frame elevator tower which is connected to the concrete pedestal at the top level. The foundation for the pedestal consists of a mat foundation. It appears that when the elevator was added, it was located in a position so that it would not interfere with the existing pedestal footing. Metal pan stairs are present in the center of the pedestal structure leading up to the observation platform.

The pedestal was evaluated by both physical observations and preliminary structural design calculations. The following items were noted as part of the physical evaluation of the structure:

- 1. A large amount of moisture was noted inside the pedestal structure on the top four or five stories. This has caused severe deterioration of the metal pan stairs and remedial action has been taken to correct these measures. Some of the repair methods appear questionable and several flights of stairs are in need of replacement.
- 2. A body of standing water was observed in one of the small gardens adjacent to the pedestal structure. The Parks and Recreation Board stated that the sprinkler system had been checked for leaks and none had been found. The source of the standing water could not be identified. This water introduces the possibility for future pedestal settlement.

Design calculations performed include a structural analysis of the existing elevator frame and pedestal structure. The analysis was based on drawing S1 by Warren, Knight & Davis dated February 2, 1936, and drawings S1-S6 by Paragon Engineering, Inc., dated August 26, 1962. Both the reinforced concrete pedestal and the steel frame elevator meet approximately 90% of existing 1991 Southern Building Code (SBC) requirements. The remaining 10% relates mostly to connection details where recent research and code requirements have more clearly defined correct design procedures. These items include the size of anchor bolts at the elevator tower, splice plates for wide flange columns at the elevator tower, lap splices for reinforcement in the concrete pedestal and hook lengths for reinforcement in both structures. Maximum deflection from wind load for both structures appears to be within typical design values.

The structure was also evaluated for conformance with the 1994 SBC which may be adopted by the City of Birmingham in the near future. This code has far reaching earthquake provision and the reinforced concrete pedestal does not appear to be adequate for these forces. Deflection of the pedestal structure under earthquake loading is approximately four inches. This amount of deflection causes excessive forces in several members at the base of the pedestal.

The documents reviewed seem to be in general conformance with the 1991 Standard Building Code with the exceptions noted above. This report does not express or imply any warranty of the structure but only addresses the condition of the portion which was readily accessible and observable at the time of inspection.

Site

Analysis of the project site was limited to the determination of mine shafts in the area near the statue pedestal for possible structural implications. Mineshaft extrapolations provided by Richard K. Anderson, Jr. indicate the Lone Pine Mine No. 3 passes between the statue pedestal and the rest rooms/gift shop building. The alignment of the portal presents limited threat to the statue or the machinery required to perform the restoration.

RESTORATION METHODOLOGY

Safety

The project will be conducted under strict safety guidelines. Worker safety will be stressed at every job meeting. Meetings will be held with all personnel on a minimum bi-weekly basis during the entire project.

Removal

In order to properly restore Vulcan, the statue must be removed from its pedestal. This phase of the work must be performed by qualified riggers and construction personnel. Temporary bracing will be utilized to stabilize the piece prior to rigging. A crane with a capacity of 250 tons would be staged at the pedestal base. This crane will operate at a 50 foot radius with the boom point elevation at 223 feet. At that height lift capacity is calculated to be 191,200 pounds. A second crane will be staged for man-basket access to the statue's exterior. The disassembly would most likely be sequenced as follows:

Right arm
Left arm and hammer
Anvil
Anvil base
Head
Upper torso
Lower torso (with concrete fill)

All disassembly would be along original seam lines via bolt removals. If the bolts cannot be removed mechanically, experience has shown the use of oxy-acetylene torches can be used to cut low carbon bolt heads without damage to the surrounding cast iron. If the bolts cannot be removed with heat they will be drilled out with a magnetic drill press.

When the disassembly reaches the concrete fill line the entire lower torso will be rigged for lifting with the concrete intact. A diamond wire saw would be employed to cut the concrete and reinforcement bars below the feet of Vulcan. The calculated weight of this lift is 85 tons. The main lift points will be eight 1 1/2" diameter eyebolts cored to a depth of 24 inches into the concrete and set with epoxy.

Concrete Removal

Removal of the estimated 80 cubic yards of concrete from the interior of Vulcan presents an interesting challenge. Several methods have been considered.

Chemical demolition (non-explosive cracking agents) would be slow and could harm the statue. This method involves drilling holes in the concrete and filling the holes with chemicals. These chemicals expand when mixed with water, thereby cracking the concrete. The chemicals are powerful, and controlling the cracking process so as not to crack the iron would be difficult.

Conventional impact hammers in conjunction with other abrasive methodology (sanders, chipping hammers, etc.) could be used. This method, however, would be slow, expensive and potentially hazardous to the statue. Vibrations and impact could cause crack propagation.

Hydrodemolition provides the best alternative. The process involves the use of relatively low volumes of water (10-25 gallons per minute) and extremely high water pressure (10,000-40,000 psi). The process is being used extensively to remove concrete on bridges where project specifications prohibit conventional demolition. The process is very controllable, environmentally clean, relatively quiet, without vibration, dust free. It will not damage metal and, pulverizes the concrete for easy removal. The equipment needed for hydrodemolition (high horsepower pumps, intensifiers, jeweled nozzles, etc.) is compact and readily mobile.

Transport

The sub-components would be transported 65 miles from a staging area in the parking lot to Robinson Iron's facility in Alexander City, Alabama. Because of the public sentiment involved with Vulcan this portion of the project is recommended to be performed in phases so that large portions of the sculpture remain on-site in restored or original form during most phases of the project. For reasons of security, public safety and environmental control, Vulcan must be restored in an indoor, shop setting.

Design

Robinson engineers and designers will submit a complete set of construction documents for approval prior to the restoration. These documents will include:

- A complete assessment of the present condition of the sculpture and a recommendation as to the amount of recasting necessary for the complete restoration.
- 2. A revised design for the new Type 304 stainless steel armature assembly with connective details based on the actual internal configuration of the sculpture.
- 3. As-built construction drawings at the conclusion of the project.

The construction documents would be reviewed and stamped by Lane Bishop York Delahay, Inc., Structural Engineers, Birmingham, Alabama.

Cleaning

After completing the disassembly of the sub-components each original casting would be cleaned to a bare white metal using dry grit blasting. Dry grit blasting is to be at 50 p.s.i. using a fine blast medium such as sugar sand or black beauty through a 3/8" nozzle. At this point a thorough inspection in conjunction with the Owner's Representative will be necessary to determine those elements which must be recast. The criteria for replacement:

- . Missing elements such as the scalp, spear auxiliary hammer and hammer handle.
- . Evidence of structural cracks which cannot be repaired.
- . Evidence of thin wall sections resulting from corrosion.

Every effort will be made to conserve as much of the original cast iron as possible. In most cases sufficient metal section exists for the use of splice plate to repair the cracked castings as follows:

- 1. Drill a 1/2" diameter hole at the end of the crack to prevent propagation.
- 2. Apply a 1/2" thick (minimum) stainless steel splice plate to the inside of the cast iron spanning the entire cracked area.
- 3. Drill and tap 1/2" bolts 12" o.c. (maximum) in pre-determined bolt pattern on either side of the crack.
- 4. V-notch the crack with an abrasive grinder.
- 5. Weld the external face of the crack with pure nickel welding rod.
- 6. Grind smooth.
- 7. Tie the stainless steel splice plate to the armature with structural members.

Patternmaking

Original components scheduled for replacement would be utilized to create patterns for recasting purposes. These patterns would be enlarged to account for shrinkage at a rate of one-eight inch per linear foot. The detailing of each piece would also be recreated as required prior to recasting. Patterns would be returned to the City for public display at the conclusion of the project or stored at Robinson Iron if desired. New patterns to replace the missing elements are to be created from shop drawings.

Metallurgical Analysis

A cast iron sample from Vulcan was obtained on October 20, 1994. Spectrographic analysis has yielded the following information:

Element	Percentage
Carbon	3.40
Silicon	2.30
Sulfur	.042
Phosphorous	.190
Manganese	.358
Chromium	.024
Nickel	.010
Molybdenum	.002
Aluminum	.010
Copper	.015
Iron	93.65

The chemical characterics indicate a Class 25-30 grey iron alloy. The relatively high phosphorous content is very typical of ores mined in the Birmingham area. In some cases, high phosphorous content can create excessively hard (not machinable) iron, however the thick sections of Vulcan would tend to negate this possibility.

Recasting

New castings in Class 30 grey iron ASTM A48 would be produced in sand molds employing the same basic process utilized by Moretti in 1904. New castings are to be free of all typical foundry defects such as porosity, cold shuts, shrinkage, hot tears and warpage. A certified metallurgical analysis is to be provided with the new castings. New castings must have mechanical properties equal to or greater than the original castings.

All gating and flashing is to be thoroughly removed after the castings are taken from the sand molds and carefully blasted to bare white metal.

Reassembly

Vulcan would be reassembled along original seamlines using Type 304 stainless steel mechanical fasteners. Slotted connection plates would be utilized at expansion joints. Where weldments are required, they are to be made by certified welders only in strict accordance with American Welding Society standards and practices. All cast iron weldments would be made using a pure nickel rod. The entire sculpture would be reassembled over a structural stainless steel armature specifically designed for wind loading and corrosion resistance. This armature would also include internal ladders for access to the sculpture by maintenance personnel. A sealed hatch with a flexible gasket at the rear of the sculpture is to be provided for access to Vulcan's exterior. This man-sized hatch would be used for periodic inspections. Removable eyebolts which attach to the armature will be provided for steeplejack painting purposes.

Major sub-components of the sculpture would be fabricated and reassembled in a manner which would naturally prevent water penetration into the interior of the piece. This objective would be accomplished with overlap joints and drip edges. The top of the head would be sealed with a new scalp casting.

The entire sculpture would be reassembled in a manner which would facilitate air circulation. Some water penetration and condensate is inevitable. Provisions are to be made to allow this moisture to escape or dry naturally.

Coatings

A four component paint process is recommended for Vulcan's exterior:

Pre-Primer - Tnemezinc 90-97 (by Tnemec Paint Co., Kansas City, MO) pre-primer applied in the shop as the reassembly occurs.

Primer - Tne

- Tnemec Series 66 epoxiline - Two component epoxy primer.

Finish

- Tnemec Series 73 Endurashield gloss aliphatic polyurethane - color to be selected.

Clear Coat - Tnemec Series 76 Endura - Clear with optional pearlescent.

The interior of the sculpture is to be coated with 90-97 pre-primer followed by Series 66 primer.

Site Reassembly

This phase of the work is to be performed utilizing the same crane and scaffolding equipment employed during the disassembly phase. All work would be performed by highly skilled Robinson personnel. All coatings would be carefully touched-up after the reassembly is complete.

Insurance and Bonding

Robinson Iron will cover the cost of all insurance and bonding requirements on the sculpture restoration portion of the project.

Lighting

Night illumination presents a wonderful opportunity to enhance the monument's presence on the Red Mountain skyline. Both the statue and the pedestal can be seen from a variety of directions and will require a combination of ground, pole and surface mounted fixtures for the best results. The effectiveness of the lighting will be influenced significantly by the paint color selected for the statue. The lighter the color the better the statue will be seen against a dark sky. We strongly recommend testing paint colors while the statue is still in place before a final decision is made. In order to light the statue and the tower properly, a lighting budget of \$250,000.00 should be established for design, testing, and installation.

Maintenance

Robinson Iron would provide a complete maintenance schedule at the conclusion of the project along with the as-built drawings of the restored Vulcan. This schedule would include:

- . Periodic inspection procedures
- . Coatings maintenance guidelines
- . Lighting maintenance schedules

Lightning Protection

The sculpture would be properly grounded for lightning protection.

Pedestal

The City's Task Force on Vulcan Park improvements has strongly recommended restoring the park to its WPA character. Taking this as a guide, the following design objectives were set for tower renovations:

- 1. Remove all 1971 renovations and restore the WPA tower to its original profile and general appearance.
- 2. Restore the original visitor experience of the park and tower, the axial view, the enclosed ascent within the tower, and the view from an open air balcony.
- 3. Provide an elevator to the balcony.
- 4. Provide any structural modifications required by the reinstallation of the statue.

Design Options

Based on the design objectives discussed above, three renovation options were studied. In each option, all 1971 renovations are removed and the WPA tower is restored to its original appearance but with a slightly larger balcony and a higher railing:

- 1. Option A: Retain the existing freestanding elevator. This option permits the interior of the tower to be restored to its original condition but seriously compromises the exterior appearance and profile of the tower.
- 2. Option B: Remove the existing elevator and construct a new elevator shaft in the center of the tower. Remove the existing metal stairs from the center of the tower and locate separate flights of metal stairs on opposite sides of the elevator shaft. The existing concrete landings would remain in place. In order to install the elevator, the floor level of the lobby must be raised 2 1/2 feet to accommodate the elevator pit and the top of the tower must be removed and rebuilt with 6 more feet of clearance at the top level for the elevator cab. This option restores the original profile of the tower and facilitates structural modifications required for the reinstallation of the statue, but requires significant alterations inside.
- 3. Option C: Remove the existing elevator and construct a new elevator shaft in the center of the tower. Remove the existing metal stairs and concrete stair landings, then construct a metal double helix stair around the elevator shaft. This option provides two stairways within the tower which create the opportunity to separate ascending from descending visitors. All other features of this option are the same as Option B.

A fourth option was also considered. This option would demolish the existing tower and elevator and build an entirely new structure to match the original design. This option would ensure that all current code requirements are met completely and that the tower could be enlarged slightly to accommodate the original configuration of the statue and the anvil.

BUDGET

Vulcan Restoration and Tower Pedestal Design - Fee Proposal

Project Phase	Description	% of Project	Amount
1	Pre-design	4	\$ 91,850.00
2	Design	4	\$ 77,900.00
3	Statue Restoration	79	\$1,622,800.00
4	Construction	6	\$ 120,750.00
	Documents		
5	Construction	7	\$ 141,700.00
	Administration		\$2,055,000.00
	Less Phase 1 Billings		\$ 91,850.00
	Net Amount		<u>\$1,963,150.00</u>

Notes:

- 1. Fees for all Architectural and Engineering services are included.
- 2. Monthly progress billings on Project Phases are to be submitted for approval and payment.
- 3. Project Phases 2 and 4 are concurrent.
- 4. Project Phases 3 and 5 are concurrent.
- 5. Geotechnical services and materials testing (other than statue restoration) are not included.
- 6. The fee does not include a lighting allowance (see below).
- 7. All P.R./documentary costs have been excluded.

Tower Restoration - Budget Proposal

Schematic design drawings and written memoranda were prepared to describe more fully the scope of work required for each option. Based on these documents and the original construction documents, the following preliminary construction estimates were developed.

Option A	\$1.9 million
Option B	\$2.2 million
Option C	\$2.5 million
Option D	\$5.0 million

These estimates include a design contingency of 10% and presume a construction start within 12 months. These estimates are for the tower construction alone and include no allowance for site related construction.

Lighting - Budget Proposal

Estimated cost of all testing, equipment and installation \$250,000.00

RECOMMENDATIONS

Statue

- 1. Remove Vulcan from its present location in a safe, professional manner.
- 2. Remove the concrete fill from the interior of the sculpture.
- 3. Repair all original cast iron unless replacement is unavoidable.
- 4. Recast missing or damaged cast iron in accordance with historic documentation of the 1904 configuration.
- 5. Reassemble the sculpture around a new stainless steel armature designed for current applicable building codes.
- 6. Coat the sculpture with a four component epoxy polyurethane paint system.
- 7. Provide access to the interior of the sculpture for periodic maintenance inspection.
- 8. Provide attachment points for exterior steeplejack rigging to facilitate re-coating on a periodic basis.

Pedestal

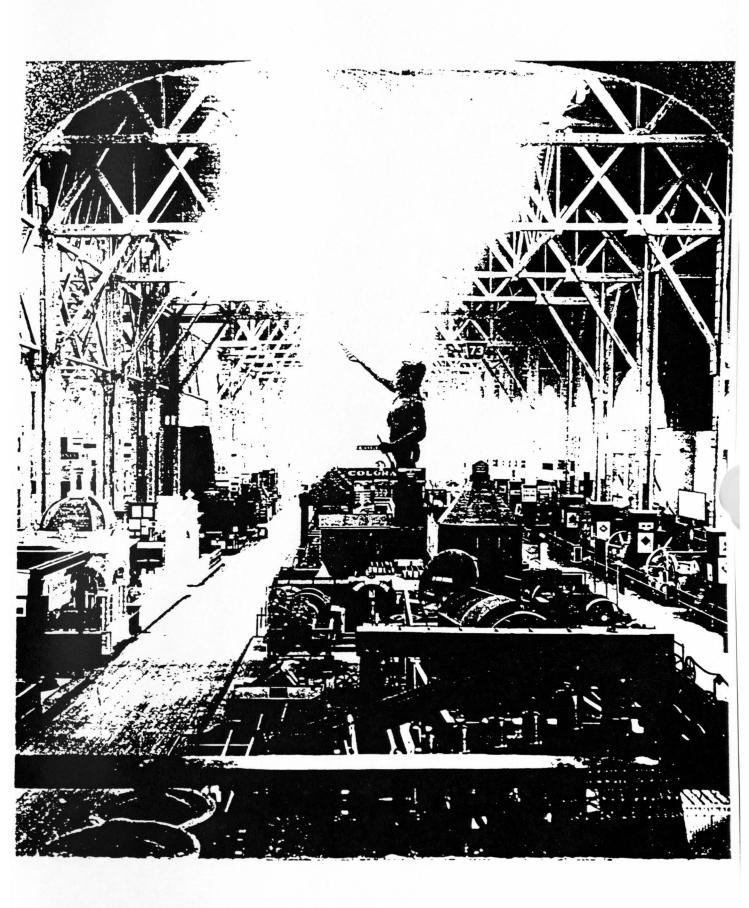
In the section on restoration methodology, the following four renovation options were presented:

- 1. Option A: Retain the freestanding elevator and restore the WPA tower.
- 2. Option B: Restore the WPA tower with an interior elevator and a single set of stairs.
- 3. Option C: Restore the WPA tower with an interior elevator and two sets of stairs.
- 4. Option D: Demolish the existing tower and build a new one.

Based on the design objectives set by the Vulcan Task Force and the preliminary construction cost estimates, Option B is recommended as the best value which meets all design objectives. The principal cost in each of the renovation options is the restoration of the tower. The cost for installing the elevator inside the tower represents a relatively small premium for a significant aesthetic benefit. The tower has historically had only one set of stairs and will continue to be well served by only one. The cost for installing a second stair with the additional demolition to the original structural frame is unnecessary. Since the tower is structurally sound and can be adapted to accommodate a stair, an elevator, and the new connections required by the statue, the cost for an entirely new structure was also considered unnecessary.

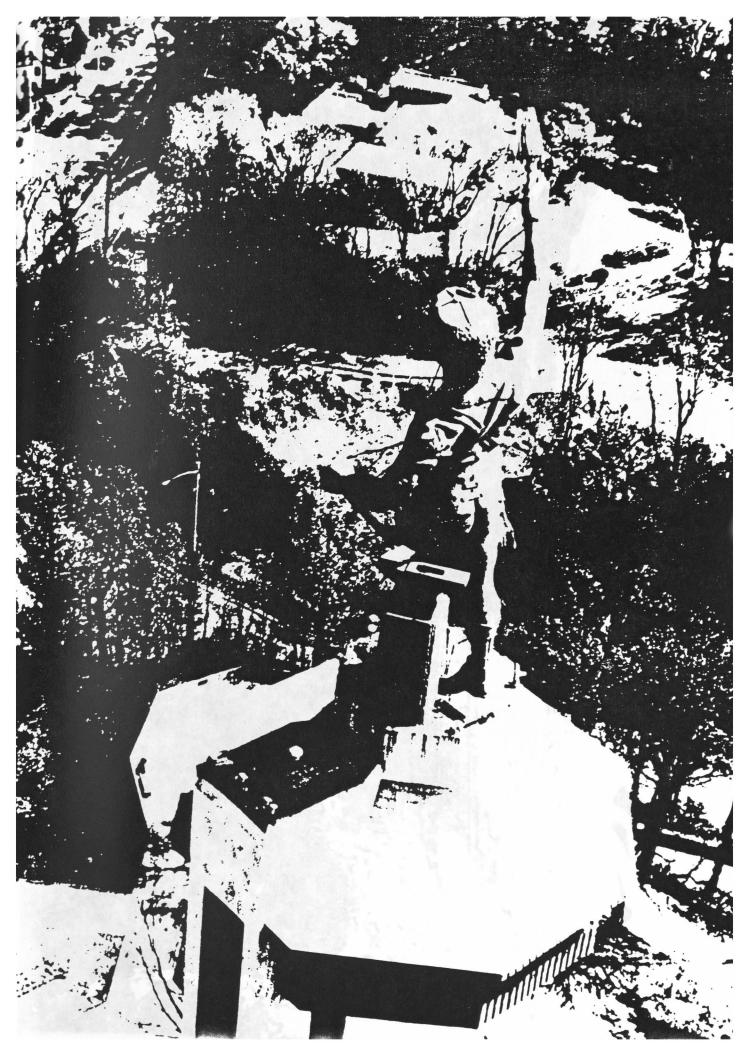












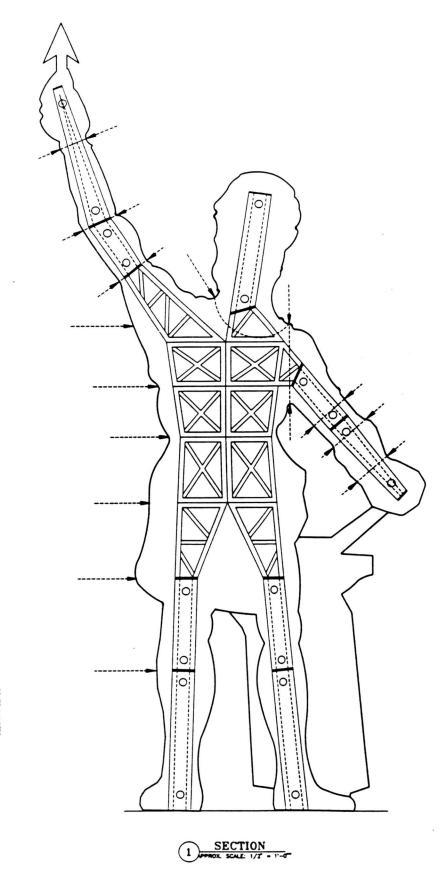




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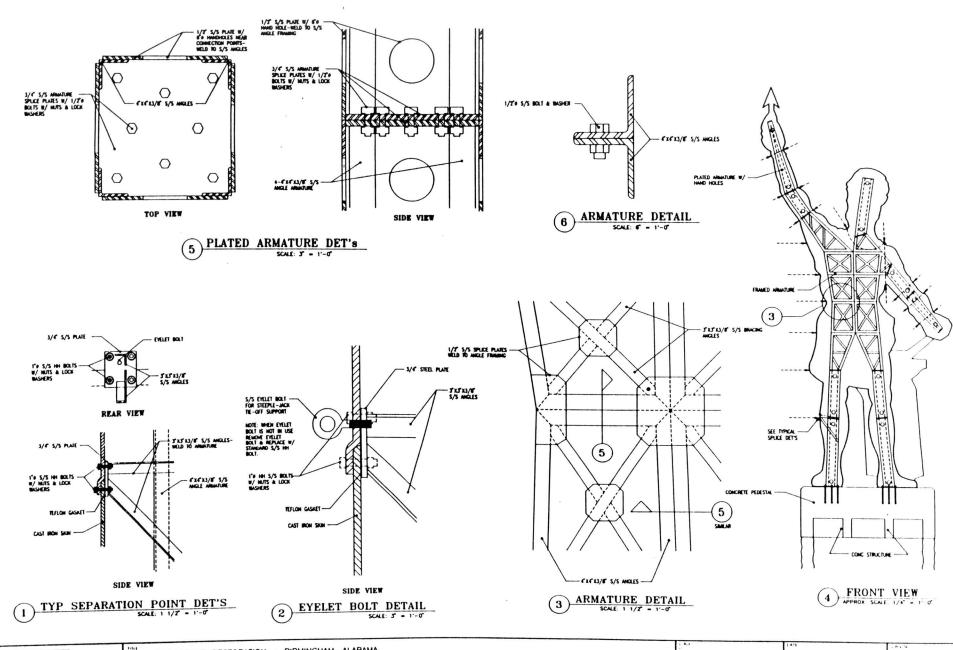
10-10-94

7112

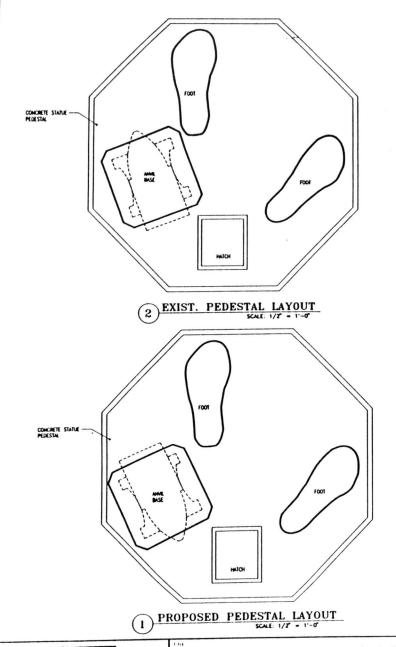


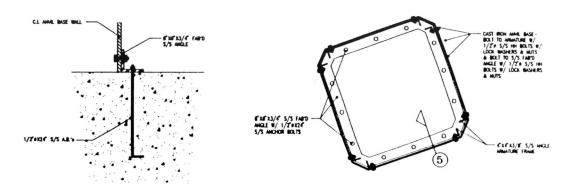
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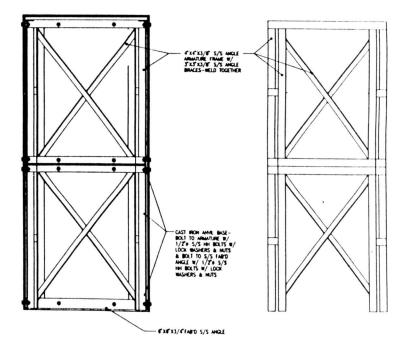
N Probinson from





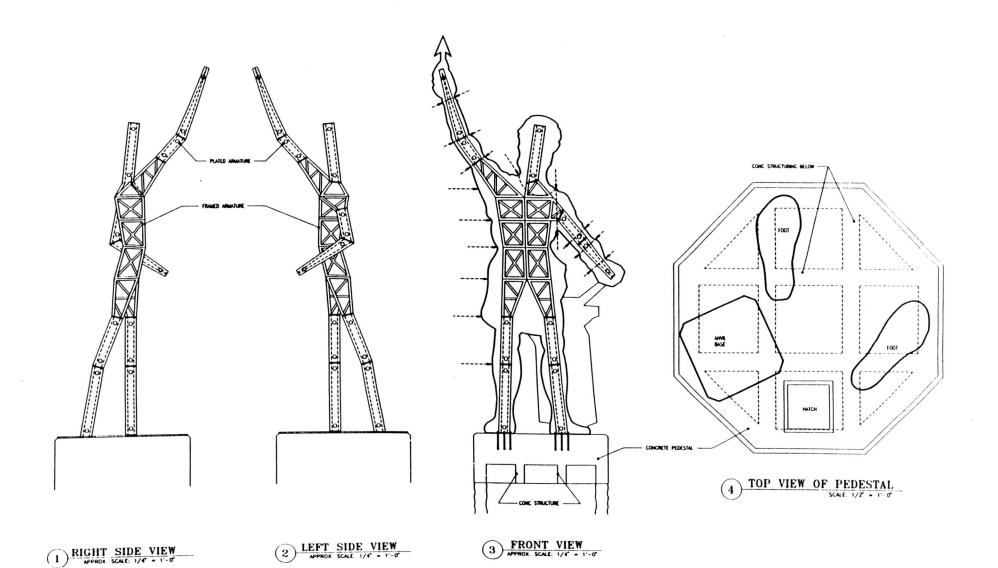
5 DET OF ANVIL BASE ANCHORAGE

6 DETAIL OF ANVIL BASE



3 SECTION THRU ANVIL BASE SCALE: 3/4" - 1'-0"

4 ELEV OF ANVIL BASE ARMATURE



Continue to

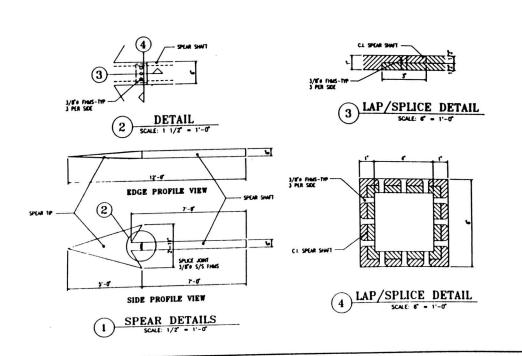
VULCAN STATUE RESTORATION - BIRMINGHAM, ALABAMA ARMATURE ELEVATIONS & VIEWS

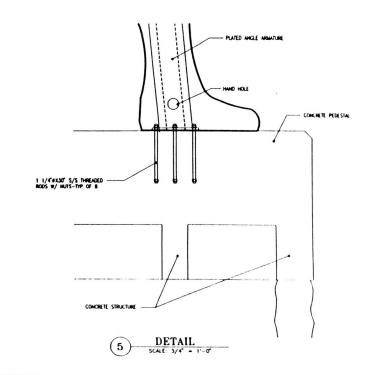
AS NOTED

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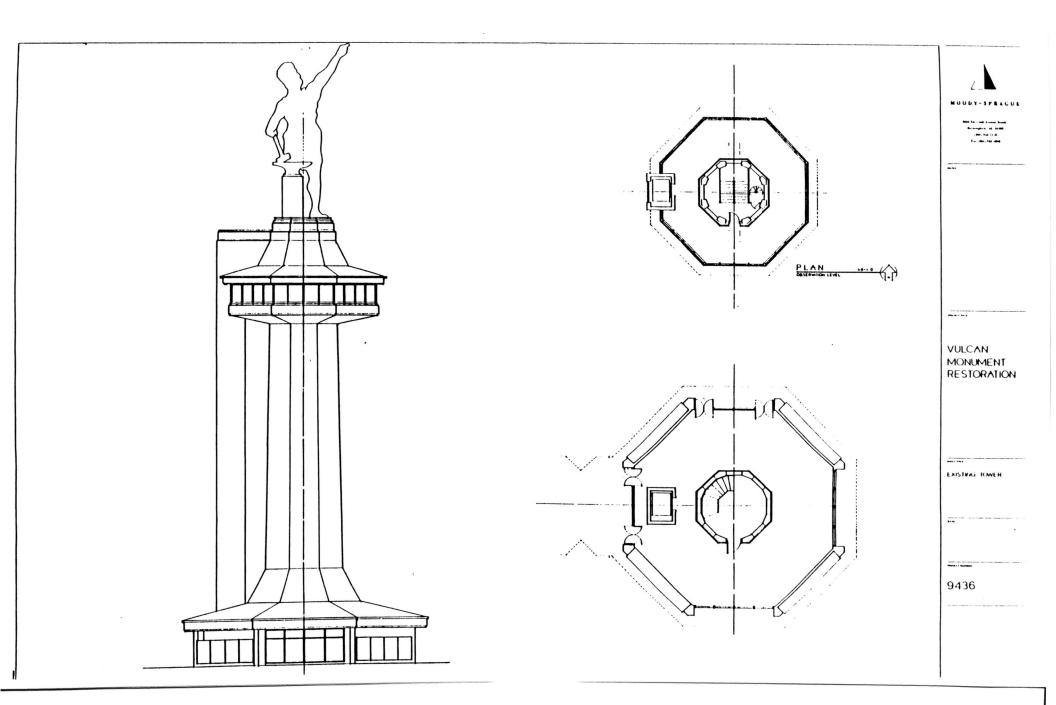
S France

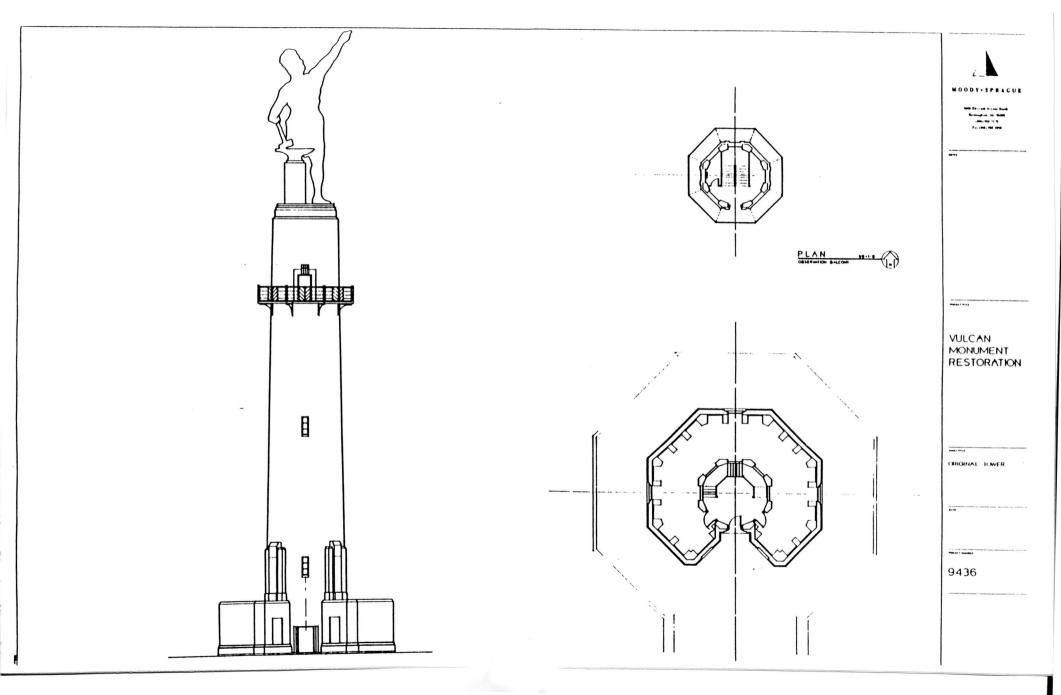
VULCAN STATUE RESTORATION - BIRMINGHAM, ALABAMA DETAILS

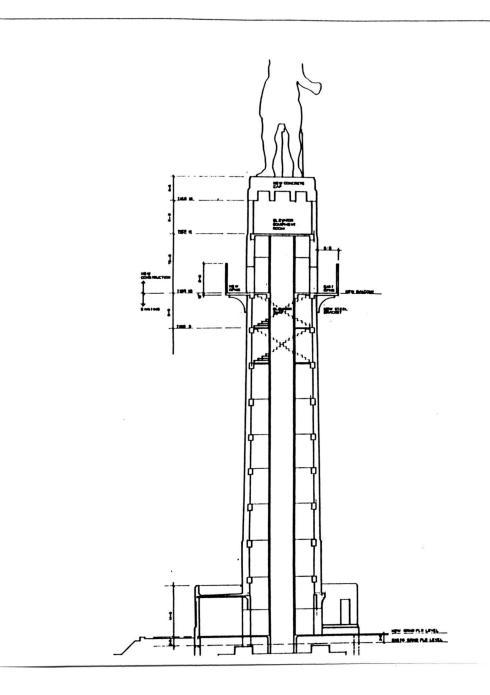
AS NOTED

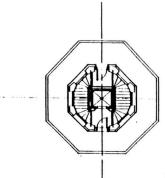
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VULCAN MONUMENT RESTORATION

RENOVATION SECTION and PLAN

MN/ELEM

DFDR LOAD- 4

STRUCTURE DATA

TYPE - SPACE

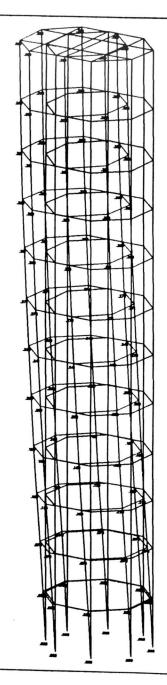
NJ = 104

. . .

MAI- IL

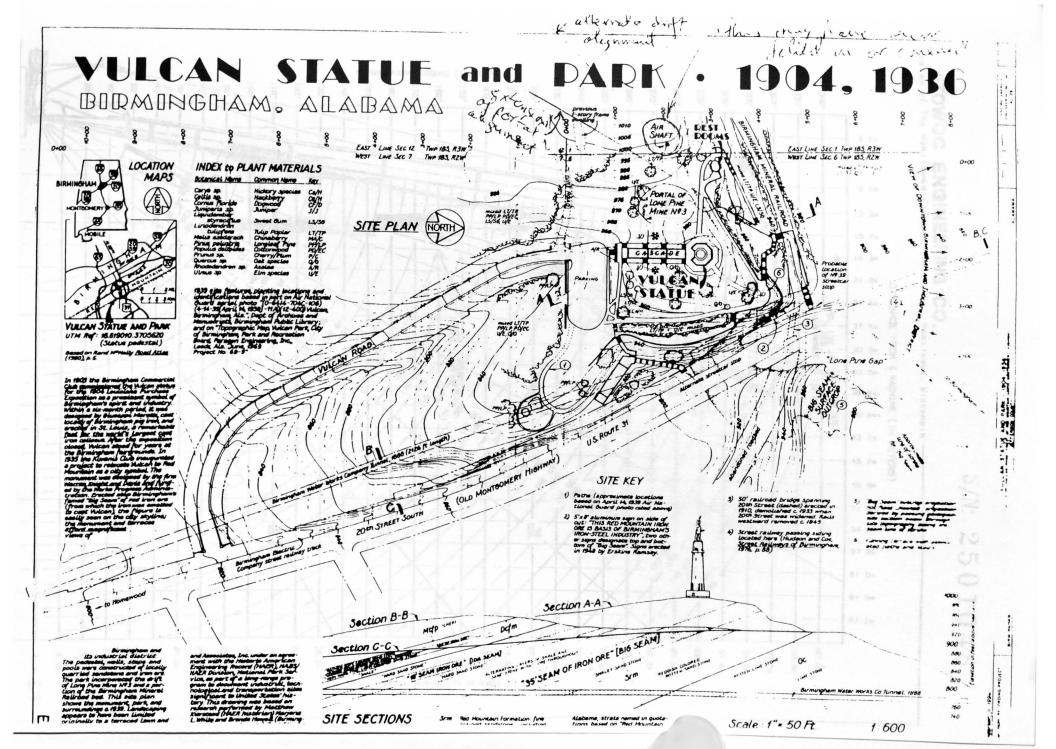
WAX- 18.5

ZMAX= 119.5

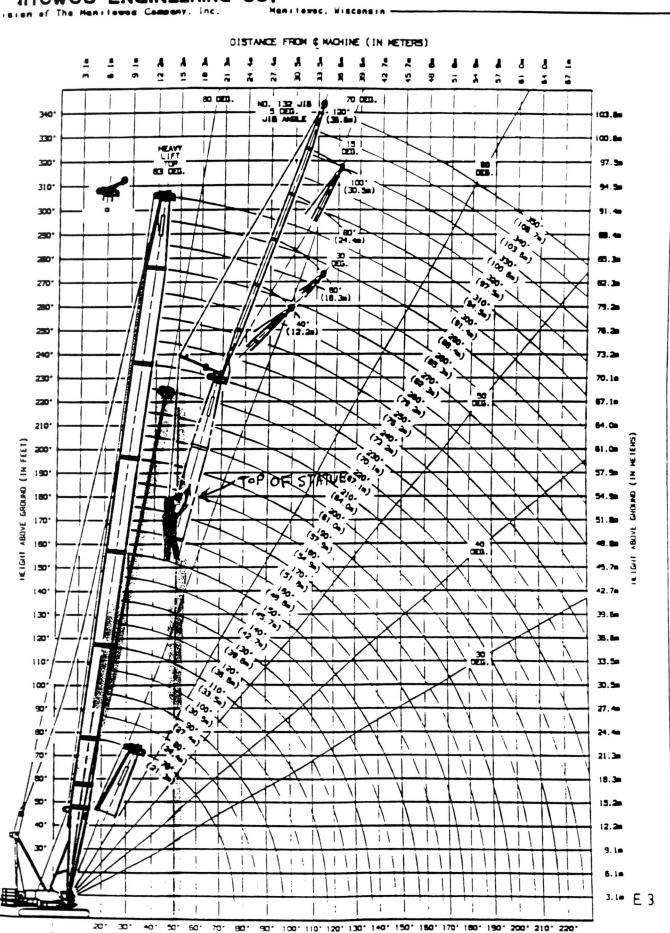


UNIT FEE KIP

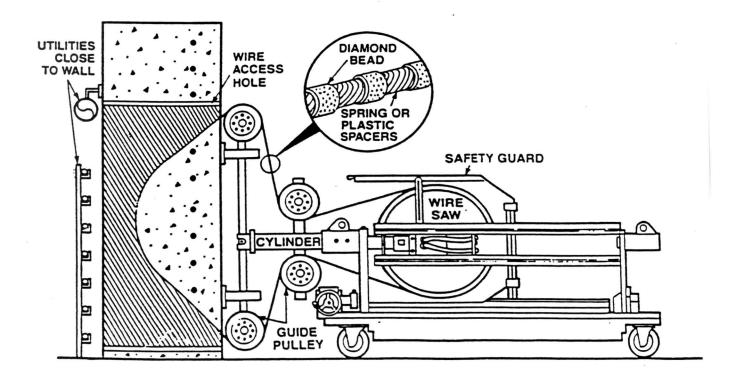
J-104,M-196



JITOWOC ENGINEERING CO.



DIAMOND WIRE CONCRETE CUTTING TYPICAL WALL CUT





VICTORY

FOR

VULCAN

PRESENTED

BY

DILLON CORPORATE SERVICES, INC.

[&]quot;Real Solutions for Real Estate needs"



I. Introduction

Dillon Corporate Services, Inc., a commercial real estate consulting firm, headquartered in Dallas, Texas and with a satellite office in Birmingham, Alabama, has assembled an impressive group of entrepreneurs and executives with relevant experience to pursue the growth of Dillon's consulting capacity.

Dillon's objective with Victory for Vulcan is to develop the premier dining/entertainment destination in Birmingham along with restoring the Vulcan Statue to its original luster. Dillon envisions the following plan:

- Restoring the fractured Vulcan Statue.
- Removing the marble exterior to expose the original stonework, opening the observation deck and add lighting.
- Razing the buildings at the base of the tower and constructing a 10,000 15,000 SF building for a high end "white tablecloth" prime steak and seafood restaurant (i.e., Mortons, Del Friscos Double Eagle, Sullivans, III Forks) Sullivans, owned and operated by Lone Star Steak Houses based in Dallas, Texas for example could be a great fit since it has a large dining room and two separate bar areas, one consisting of stage, dance floor and tables with a Jazz/Blues live music theme six nights a week.
- Future site for corporate sponsored educational facility on the history of Vulcan and its significance to the Birmingham community.
- ➤ Keep operational control of Vulcan Park with the City of Birmingham Park and Recreation Board.

II. Strategy

Dillon has partnered with the Birmingham based Giattina, Fisher, Aycock Architects, Inc. to bring this vision to reality. Giattina and Fisher's experience is second to none in the state of Alabama. With past restoration projects like Miss Liberty in Liberty Park in Vestavia, they are the most qualified group to manage and develop this plan. Accordingly, Robinson Iron Corporation, which submitted a Vulcan restoration plan to the city of Birmingham almost five years ago, will act as construction manager and engineer for the refurbishment of Vulcan Statue.

Dillon's capacity will be the following:

- Raising city, surrounding municipalities, state and federal funds for the project
- Overseeing the development and construction of the planned building
- > Securing a tenant for the building
- Providing post-completion consulting



VULCAN REDEVELOPMENT PRELIMINARY BUDGET

TOTAL ESTIMATED COST	\$9.758.000
CONTINGENCY	<u>\$500,000</u>
DEVELOPMENT/PROJECT MANAGEMENT FEES	\$750,000
LEASING COMMISSIONS	\$108,000
ARCHITECTURAL/ENGINEERING FEES	\$900,000
SITEWORK, ROADWORK, LANDSCAPE	\$1,500,000
RESTAURANT - 10,000 SF (A)	\$1,200,000
BASE RENOVATION	\$2,600,000
STATUE RENOVATION	\$2,200,000

(A) SHELL COSTS + TENANT IMPROVEMENT ALLOWANCE OF \$20/SF

The information contained herein has been estimated using sources believed to be reliable; however, Dillon Corporate Services, Inc. makes no guarantees, warranties, or representations as to the completeness or accuracy thereof until further due diligence has been performed.



VICTORY FOR VULCAN

This plan will provide a vehicle to generate revenues to restore, maintain, and preserve Vulcan Park's historical significance for future generations.

OBJECTIVES

- I. Restore Vulcan Park to its original WPA Design of the 1930's
- II. Create the Vulcan Authority that will secure the long term presence of the newly restored Vulcan Park

PLAN OF ACTION

Step 1:	Dillon Corporate Services, Inc. ("Dillon") in conjunction with the City of
	Birmingham creates Vulcan Authority comprised of government, civic, historic
	and business leaders in the community.

- Step 2: Dillon to assemble a team to restore Vulcan Park
 ➢ Giattina Fisher Aycock Architects- Project Architect
 ➢ Robinson Iron Corporation- Statue Restoration
- Step 3: Dillon to secure a letter of intent for a national credit Tenant to lease the restaurant on a long term basis.
- Step 4: Dillon to coordinate and secure funding for initial restoration project-Federal and State appropriations (est. \$10,000,000) and continue the campaign for local contributions (est. \$2-\$3,000,000)
- Step 5: Newly formed Vulcan Authority to create endowment to fund future maintenance and restoration needs of Vulcan Park.



VULCAN REDEVELOPMENT PRELIMINARY REVENUE ANALYSIS

RESTAURANT SITE- PROPOSED LEASE TERMS:

ASSUMPTIONS:

EASE TERM:

10 YEARS

ACILITY SIZE:

10,000 SF

RENTAL RATE:

\$18.00 /SF TRIPLE NET

ESTIMATED PROJECT/REST. VALUATION:

\$1,800,000

CURRENT TAX RATE:

\$0.69 /\$100

Annual Monies to Vulcan Trust Fund

Rental:

\$180,000

Sales Taxes Generated (A):

\$120,000

Property Taxes:

\$12,420

Annual Income:

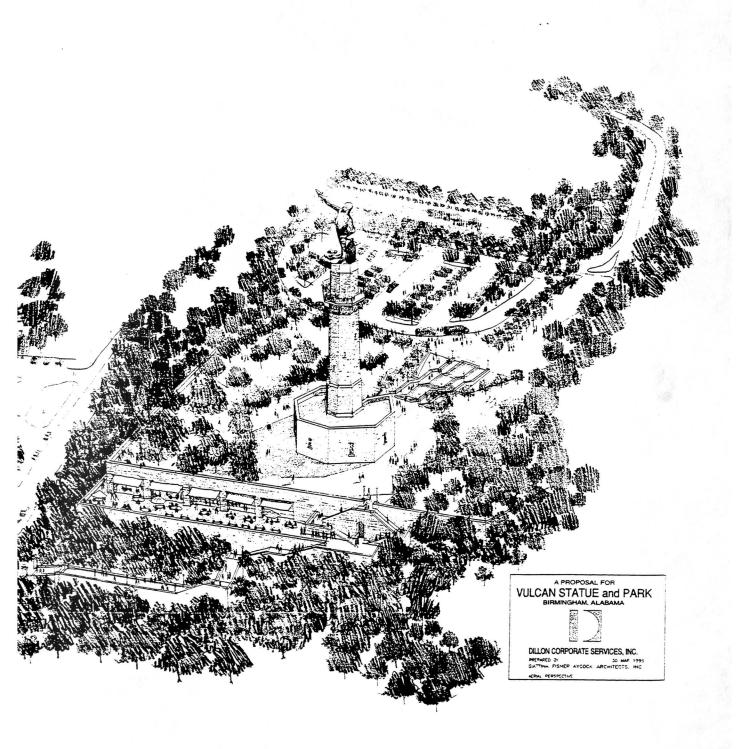
\$312,420

A) Current Sales Tax = 8%, 3% of which is funded to the city; Assume 3% of est. sales at rest. of \$4,000,000

NOTE:

Estimated Revenues do not include any additional rents resulting from percentage rental, CPI adjustments, etc.

he information contained herein has been estimated using sources believed to be reliable; however, Dillon Corporate Services, Inc. makes no parantees, warranties, or representations as to the completeness or accuracy thereof until further due diligence has been performed.



Richard K. Anderson, Jr.
Cultural Resource Documentation Services
2331 Clematis Trail
Sumter, SC 29150-2309

Re: Review of "Victory for Vulcan" proposal by Dillon Corporate Services, Inc.

Ms. Marjorie L. White Birmingham Historical Society One Sloss Quarters Birmingham, AL 35222

Dear Marjorie:

I have spent some time going over the copy of Dillon Corporate Services' proposal for Vulcan Park and Monument, and my opinions are below. My comments are limited to the apparent effects of the proposed program on the historic features of the Vulcan Monument site, based upon the architectural renderings by Giattina Fisher Aycock Architects (an aerial perspective, and site plan). I don't have the expertise to comment extensively on the cost estimates of the proposal.

- 1) While the proposed project appears to restore the Vulcan Monument and the southern water cascade and steps to their 1930s conditions, it does not appear to restore the remaining park landscaping and footpaths around the monument, which were also part of the original design.
- 2) The Vulcan Monument is a tribute to Birmingham's *industrial* heritage and business growth. The proposed plan would obliterate significant visible remains of a red ore mine and the Birmingham Mineral Railroad bed at the site, not to mention the visible natural rock stratification of Red Mountain in which lie the famous "Big Seam" and other iron ore seams responsible for Birmingham's siting and development! These remains are of activities and natural features that literally put Birmingham "on the map," and as a unique interwoven conjunction of survivors at the Vulcan Monument, they represent the scores of mines and railroad routes that made Birmingham into the nationally significant industrial center that it is today. Most of the old mines and many railroad routes that served them have been razed and are no longer visible to or accessible to the public. As a public monument to Birmingham's industrial might erected on public land, it is important that the Vulcan site retain these natural and industrial contextual features for public interpretation and preservation. There is no other site like this in Birmingham so uniquely suited to commemorating the raw mineral resources (iron ore), extraction industries (mines and railroads), iron products and the "spirit of Birmingham" (Vulcan himself).

- 3) It seems to me to be a betrayal of public trust to destroy or obscure historical features in a *public* park in the name of a private commercial venture billed as the restoration of Birmingham's most prominent public monument. The Vulcan statue badly needs repair, but this project appears to repair "the man" while overthrowing everything immediately below him. There would still be public issues concerning the stewardship of community historical treasures, even if the site were privately owned.
- 4) The attempt to obtaining federal funds for construction work at Vulcan Monument may trigger Section 103 and Section 110 review procedures, especially since the proposed project appears to significantly degrade natural, historical and archeological features at the site. The fact that the Vulcan Monument has been documented for the Historic American Engineering Record may not be enough to mitigate adverse effects in this case. No archeological surveys or mine maps were performed for HAER documentation. Before federal funds could be released, significant attempts to create a design that had little or no impact on the historic site features would have to be generated. The designs would have to be reviewed, and final project scope agreed upon between federal sources, city and private parties. This may take some time and lead to a project with quite a different appearance. Additional costs for archeological surveys and reports may be required where new construction is anticipated.
- 5) It seems to me that the old iron ore mine drifts and shafts would need to be mapped and shored to ensure no subsidence problems will affect new construction in the future. I believe the present tourist shop has experienced some settlement due to its erection over one of the mine tunnels.
- 6) While I am not a project estimator, it seems to me that construction costs are considerably underestimated for the type of construction that would be required to build the project illustrated in the proposal. A building with a roof strong enough to support soil deep enough for trees would have to be substantially stronger than average. It would present several challenges so far as keeping out water.
- 7) The Dillon group and the architects would be well advised to generate a project design more sensitive to the site's historical features than the current renderings show. I am sure the views of Birmingham from the crest of Red Mountain and Vulcan's gallery would be a strong draw to restaurant patrons, but there must be a better way to build an attractive, profitable restaurant in this public park setting that do not compromise the natural and historical features already there.
- 8) Instead of covering up or destroying the rock strata, park features, mine, and railroad bed, isn't there some way to incorporate these as highlighted features for the proposed restaurant? Isn't there some way to draw attention to them and preserve them within the restaurant program? Now, there is a design challenge which if successfully met could make for a unique and extremely interesting restaurant instead of another run-of-the-mill steak house (albeit with a spectacular view). I think the investment made in planning and building such a place would be

more than paid back with prolonged patronage and lots of good press in both tourist and preservation circles. This will not be an easy project to accomplish, however.

I believe the illustrations provided with the proposal are probably "off the cuff" sketches hardly intended to be definitive or final. However, I am concerned that people seeing the renderings would assume they represented an advanced stage of project development. I hope Birmingham citizens can prevail on the Dillon group, the architects and other project supporters to consider a much more sensitive project, or set this proposal aside until someone elicits a proposal that treats the resources more responsibly. If I can be of further help, please contact me.

Sincerely,

Richard K. Anderson, Jr.

RRQ KAD

STATEMENT OF SERVICES AND QUALIFICATIONS

RICHARD K. ANDERSON, JR.

(803) 775-8928 (voice & fax)

Cultural Resource Documentation Services Colony Square, Suite 21 741 Bultman Drive Sumter, SC 29150-2555

e-mail: rkanderson@FTC-l.net

SERVICES OFFERED

HABS/HAER documentation (documentation to the standards of the Historic American Buildings Survey/Historic American Engineering Record, National Park Service); documentary research, writing, field work, and measured drawings for historical records, Section 106 and other environmental compliance regulations, conservation and restoration, maintenance and planning;

Measured drawings and industrial archeology of historic industries, architecture, ships & boats, bridges, machinery & artifacts; for archival records, museum exhibits, publications, conservation and restoration, maintenance and planning; in-house CAD (MicroStation), scanning, and electrostatic plotting facilities.

Technical illustration for publications, exhibits, lectures, interpretive and instructional materials; research and writing for technical subjects (history of technology).

Consultation and instruction in documentation techniques

Scanning, editing, vectorization, restoration of architectural and engineering drawings

EDUCATION

1976 Masters Degree in Architecture University of Pennsylvania, Philadelphia, PA

1973 B.A., Architecture Princeton University, Princeton, NJ

RELEVANT WORK EXPERIENCE

1989-Present Documentation Consultant specializing in measured drawings for

Section 106 documentation (HABS/HAER), museum artifacts; technical illustration and graphics for exhibits and publications

1979-Present Documentation Consultant, private practice

1978-1989 Staff Architect (GS-11), Historic American Buildings Survey/Historic

American Engineering Record (HABS/HAER), National Park

Service, Washington, DC

HABS/HAER PROJECT CONSULTATION

(Consultation below concentrated on the research and production of HABS/HAER measured drawings documentation for the historic buildings and industries below, including site maps, structures, machinery, and process diagrams)

1995-97	Shelby Iron Works, Shelby, AL Brierfield Iron Works (Bibb Furnace), Brierfield, AL Joliet Works, Illinois Steel Company, Joliet, IL Jet Propulsion Laboratory, Edwards Test Station, Edwards, CA North Base, Air Force Flight Test Center, Edwards AFB, Edwards, C 32nd Street Baptist Church, Birmingham, AL Harmony Street Baptist Church, Birmingham, AL Bethel Baptist Church, Birmingham, AL South Elyton Baptist Church, Birmingham, AL Mt. Ararat Baptist Church, Sherman Heights, Ensley, AL Corry House, Oakman, AL	Α
	Valley View Red Ore Mine, Birmingham, AL (addenda)	
	Vulcan Statue and Park, Birmingham, AL (addenda)	
1993-94	Valley View Red Ore Mine, Birmingham, AL	
	Vulcan Statue and Park, Birmingham, AL	
	Smith Hall , Tuscaloosa, AL	
	Cook House, Nauvoo, AL	
1002	Ferry Eureka, San Francisco Maritime NHP, San Francisco, CA	
1992	Thomas By-product Coke Works (Republic Steel Corporation),	
	Birmingham, AL Hardie-Tynes Manufacturing Company, Birmingham, AL	
	"Billy Goold" Coal Mine and Coke Ovens, Birmingham, AL	
	Brookside Coal Mine and Beehive Coke Ovens, Birmingham, AL	
	Boshell's Saw and Grist Mill, Walker County, AL	
	Birmingham District Industrial Railroads, Birmingham, AL	
	Bald Mountain Gold Mill, Lead, SD	
1991	American Window Glass Company, Jeannette, PA	
	Huber Coal Breaker, Blue Coal Company, Ashley, PA	
	Homestead Steel Works, Pittsburgh, PA	
1990	United States Steel CorporationDuquesne Works, Pittsburgh, PA	

(SEE PGS. 5-6 FOR LIST OF HAER PROJECTS COMPETED WHILE EMPLOYED AT HABS/HAER, 1978-1989)

ARTIFACT RECORDATION

(machinery, buildings, vehicles, small craft)

Six traditional fishing vessels on Bayou DuLarge, Terrebonne Parish, LA under contract to R. Christopher Goodwin & Associates

Engine of the Paddle-wheel Steamer Columbus, (c. 1828); HAER mitigatory documentation under contract to R. Christopher Goodwin and Associates for Army Corps of Engineers compliance

Field work and photography for measured drawings of 760mm (30") gauge Hawaiian sugar plantation locomotive, 2-4-0T "PAULO", built by Hohenzollern Actien-Gesellschaft für Locomotivbau, Düsseldorf.

Artifacts below recorded under contract to National Museum of American History, Smithsonian Institution:

Smith	isonian insuluuon.
1993-94	Louise B., Smith Island, MD oyster tonging boat (c. 1966); measured drawings for Smithsonian Watercraft Collection
1993-94	Darlene, Smith Island, MD crab scraping boat (c. 1990); measured drawings for Smithsonian Watercraft Collection
1988-97	Concord Coach (c. 1845), stagecoach, considered oldest surviving intact example of predecessor of "Western Stagecoach"
1981-96	Propeller Ship <i>Indiana</i> propulsion plant (c. 1845), measured drawings of boiler, engine, and auxiliaries such as feedwater heater, boiler feed pumps, etc.
1991	Conjure Woman's Cabin (c. 1850), Bellefield Nature Center, Georgetown, SC; six sheets of measured drawings of a two-room wooden cabin to be replicated for an NMAH exhibit
1990	Roper Steam Velocipede (c. 1862); measured drawings of steam-driven bicycle, considered world's first motorcycle
HISTORIC SHIP RECORDATION	
1993-95	Paddle-wheel Ferry <i>Eureka</i> (1890), San Francisco Maritime National Historic Park, San Francisco, CA. Lines drawings of hull for HAER, National Park Service
1990	Bugeye Louise Travers (1896), Calvert Marine Museum, Solomons, MD (measured drawings completed to HAER standards, 1990)
PUBLICATIONS (writing and technical illustration)	
1994-95	Complete revision of HABS/HAER, National Park Service, U.S. Department of the Interior, <u>HAER Field Instructions</u> as <u>Recording Historic Structures & Sites for the Historic American Engineering Record.</u>
1994	HABS/HAER, National Park Service, U.S. Department of the Interior, Guidelines for Recording Historic Ships. Washington, DC: 1988. 2nd edition revisions and typesetting.
1992-93	Emory L. Kemp, ed., <u>Industrial Archaeology: Techniques</u> . Melbourne, FL: Krieger Publishing Company, 1996. I wrote and illustrated Chapter 9, Field Work and Measured Drawings, for this university-level textbook.
1989	John Burns, ed., <u>Recording Historic Structures</u> . Washington, DC: The American Institute of Architects Press, 1989. I wrote sections in this book on interpretive drawings, recording historic industrial processes, and recording historic ships. Numerous measured drawings wholly or partially done by myself were included in this publication.

- HABS/HAER, National Park Service, U.S. Department of the Interior, Guidelines for Recording Historic Ships. Washington, DC: 1988. I was this book's principal author and illustrator; it covers documentation of historic ships to HABS/HAER standards via written materials, large-format photography and measured drawings. I revised it in 1994 at the request of HAER and the Council of American Maritime Museums (CAMM) for republication by CAMM.
- HABS/HAER, National Park Service, U.S. Department of the Interior, HAER Field Instructions Washington, DC: 1981. I was principal reviser and co-author of this volume, the HAER program's basic manual for documenting historic industrial sites to HABS/HAER standards.

ARTICLES

- Anderson, Richard K., Jr., "Pilot Schooner Alabama," Seaways: Journal of Maritime History and Research, Vol 2, No. 2 (March/April, 1991)
- Anderson, Richard K., Jr., "E.C. Collier. Two-Sail Bateau "Skipjack", Seaways: Journal of Maritime History and Research, Vol 2, No. 1 (Jan/Feb, 1991)
- Kemp, Emory L. and Richard K. Anderson, Jr., "The Reading-Halls Station Bridge," <u>The Journal for the Society for Industrial Archeology</u>, Vol. 13, No. 1 (1987)
- Anderson, Richard K., Jr., "Lifting Lines of the Schooner WAWONA," <u>APT Bulletin</u>, Vol. 9, No. 1 (1987)
- Anderson, Richard K., Jr., "Maritime Recording: A HAER Initiative," <u>CRM Bulletin</u>, Vol. 9, No. 3 (June, 1986)

MANUSCRIPTS

- Anderson, Richard K., Jr., The Ruins, Stateburg, Sumter County, South Carolina (HABS No. SC-549), in progress for Historic American Buildings Survey, National Park Service, U.S. Department of the Interior.
- Anderson, Richard K., Jr., The Borough House, Stateburg, Sumter County, South Carolina (HABS No. SC-362), 1987. Historic American Buildings Survey, National Park Service, U.S. Department of the Interior.
- Anderson, Richard K., Jr., The Church of the Holy Cross, Sumter County, South Carolina (HABS No. SC-13-14), 1985. Historic American Buildings Survey, National Park Service, U.S. Department of the Interior.

PAPERS

Numerous papers given on recording projects, recording techniques, and documentary standards at conferences of Society for Industrial Archeology, Society for Historical Archaeology, the National Trust for Historic Preservation, the Museum Small Craft Association, and other groups.

TEACHING POSITIONS

1990-Present

Savannah College of Art & Design (Savannah, GA): Professor of Historic Preservation, instructor for "HP202: Recording and Interpretation", a lab and studio course in HABS measured drawings and documentation. Also instructor for "HP 728: Special Topics", a graduate level course in industrial, maritime and landscape preservation issues (spring 1992)

1990	Museum Small Craft Association: co-instructor for workshops in measuring and drawing small craft	
EXHIBIT AND ILLUSTRATION WORK		
1995	Line illustrations for <i>America on Record: A History of Sound Recording</i> by Andre J. Millard, Oxford University Press, 1995.	
1994	Line illustrations for <i>Building the Ultimate Dam: John S. Eastwood and the Control of Water in the West</i> by Donald C. Jackson, University Press of Kansas, 1995.	
1991	Pee Dee Tobacco Project, illustrations for traveling exhibit on historic tobacco barns and tobacco farming in South Carolina (opened Oct. 1991), Institute for Southern Studies, University of South Carolina in conjunction with the South Carolina State Museum	
1988	Railroad Map, "Field and Factory" National Museum of American History, Smithsonian Institution	
1987	Line illustrations for <i>Great American Bridges and Dams</i> by Donald C. Jackson, The Preservation Press, 1988.	
1987	Developmental Sketch for exhibit of propulsion plant of Propeller Ship <i>Indiana</i> , National Museum of American History, Smithsonian Institution	
HABS/HAEF	R drawings produced by myself have been on exhibit at Mystic Seaport Museum, Mystic, CT (1993); Calvert Marine Museum, Solomons, MD (1990); National Building Museum, Washington, DC (1989); Shreveport Water Works Company, McNeil Street Pumping Station Museum, Shreveport, LA (1985, permanent exhibit); Library of Congress, Washington, DC (1983); Quincy Mine Hoist, Houghton, MI (1980, permanent exhibit)	
	HISTORIC FURNISHINGS PLANS (technical illustration)	

Edison National Historic Site, West Orange, New Jersey. Measured drawings, diagrams, perspective views of machine shop and laboratory spaces for Historic Furnishings Plan developed by Harpers Ferry Center, National Park Service, Harpers Ferry, WV.

HABS/HAER PROJECTS (1978-1989 as HAER Staff Architect)

- HISTORIC INDUSTRIES -

Boston & Albany 4-4-0 No. 39 (locomotive), St.Louis, MO
Central of Vermont Railroad: Locomotive Shed, St.
Johnsbury, VT
(see ships below also)

Block Island Light, Block Island, RI
Manchester Mill, Richmond, VA
(see ships below also)

1981-87 1985	Reading-Halls Station Bridge, Muncy, PA Kennecott Mining Company, Kennicott, Alaska - advisor (see ships below also)
1983-84 1983	Boott Cotton Mills, Lowell, MA Picatinny Arsenal, Dover, DE Savanna Army Depot (survey), Savanna, IL
1982 1979-81	Wilson's Bridge, Washington Co., MD - advisor Ben Thresher's Mill, St. Johnsbury, VT Rellows Falls Bridge, North Walpole, NH
1980	Shreveport Water Works Company, Shrevepoπ, LA Potomac Edison Co. Dam No. 4 Hydro-electric Plant, Shepherdstown, WV
1979	Betz's Mill, Shepherdstown, WV Waddell "A" Truss Bridge, Trimble, MO Womack's Mill, Yanceyville, NC
1978	Watervliet Arsenal, Watervliet, NY Quincy Mining Company, Houghton, MI
	- HISTORIC ARCHITECTURE -
1986 1984	The Borough House, Stateburg, SC The Church of the Holy Cross, Stateburg, SC
	- HISTORIC SHIPS -
1989	Ship Falls of Clyde, Honolulu, HI Schooner Lettie G. Howard, New York, NY
1988 1987-88 1986 1986 1985	Skipjack E.C. Collier, St. Michaels, MD Paddle-wheel Ferry Ticonderoga, Shelburne, VT Ship Balclutha, San Francisco, CA Pilot Schooner Alabama, Vineyard Haven, MA Bugeye Louise Travers, Solomons, MD Schooner Wawona, Seattle, WA
AVALABA	

AWARDS

March 1990 - Meritorious Service Award
U.S. Department of the Interior

PAST AND PRESENT CLIENTS

Division of Transportation, National Museum of American History, Smithsonian Institution
Division of Conservation, National Museum of American History, Smithsonian Institution
Historic American Engineering Record, HABS/HAER, National Park Service, Washington, DC
Harpers Ferry Center, National Park Service, Harpers Ferry, WV
Computer Sciences Corporation, Edwards AFB, CA
R. Christopher Goodwir, & Associates, Inc., Frederick, MD

Institute for the History of Technology and Industrial
Archeology, West Virginia University, Morgantown, WV
South Carolina Department of Archives and History,
Columbia, SC
Birmingham Historical Society, Birmingham, AL
Sumter County Historical Society, Sumter, SC
Calvert Marine Museum, Solomons, MD
Institute for Southern Studies,
University of South Carolina, Columbia, SC
Society for Industrial Archeology, Washington, DC
Museum Small Craft Association
Savannah College of Art and Design, Savannah, GA
National Geographic Magazine, Washington, DC

(References available upon request)

MEMBERSHIPS

American Association for State and
Local History
Association for Preservation Technology
National Trust for Historic Preservation
Society for Industrial Archeology
Society for the History of Technology

Society for Historical Archaeology National Maritime Historical Society Railway and Locomotive Historical Society South Carolina Historical Society

INTERESTS and AVOCATIONS

History of industry, engineering, technology, and transportation
History of religion, philosophy, science, politics and economics
Industrial archeology
Architecture and architectural history
Naval architecture
Historic preservation
Mechanical engineering, machine shop practice, metalwork, model building
Conservation of metals
Graphic design and typography
Mineralogy, Chemistry, Physics
Botany