

ARCADY APARTMENTS (HCM #1124)
2615-2627 West Wilshire Boulevard
CHC-2017-2795-MAEX

Agenda packet includes:

1. [Staff Recommendation Report](#)
2. [ZIMAS Report](#)
3. [Mills Act Historical Property Contract Application](#)
4. [Historic Structure Report \(HSR\)](#)

Please click on each document to be directly taken to the corresponding page of the PDF.

Los Angeles Department of City Planning

RECOMMENDATION REPORT

CULTURAL HERITAGE COMMISSION

CASE NO.: CHC-2017-2795-MAEX

HEARING DATE: August 17, 2017
TIME: 10:00 AM
PLACE: City Hall, Room 1010
200 N. Spring Street
Los Angeles, CA 90012

Location: 2615-2627 West Wilshire Boulevard;
622-630 South Rampart Boulevard
Council District: 1 - Cedillo
Community Plan Area: Westlake
Area Planning Commission: Central
Neighborhood Council: MacArthur Park
Legal Description: Tract TR 6241, Lots 4-7, and
Wilshire Boulevard Tract,
Block 6, Lot 12

PROJECT: 2615-2627 West Wilshire Boulevard; 622-630 South Rampart Boulevard
Arcady Apartments, Historic-Cultural Monument (HCM) #1124

APPLICANT & OWNER: Wilshire Royale Pacific, LLC. / One Eleven Tampa LLC.
c/o Karl Slovin
13949 Ventura Boulevard, Ste. 350
Sherman Oaks, CA 91423

APPLICANT'S REPRESENTATIVE: Tara Hamacher, Historic Consultants, Inc.
256 South Robertson Boulevard, #2401
Beverly Hills, CA 90211

REQUEST: **APPROVAL OF EXEMPTION FROM LIMITATION OF ELIGIBILITY FOR HISTORICAL PROPERTY CONTRACT (MILLS ACT) APPLICATION**

RECOMMENDATION: **That the Cultural Heritage Commission:**

1. **FIND** the above-listed property does not meet the stated conditions for valuation exemption.
2. **DECLINE** the above-listed property for exemption from the valuation limit.

VINCENT P. BERTONI, AICP
Director of Planning

[SIGNED ORIGINAL IN FILE]

Ken Bernstein, AICP, Manager
Office of Historic Resources

[SIGNED ORIGINAL IN FILE]

Lambert M. Giessinger, Architect
Historical Property Contracts Manager
Office of Historic Resources

[SIGNED ORIGINAL IN FILE]

Melissa Jones, Planning Assistant
Office of Historic Resources

ATTACHED EXHIBITS:

- Attachment 1 – ZIMAS Report
- Attachment 2 - Mills Act Historical Property Contract Application
- Attachment 3 – Historic Structure Report (HSR)

BACKGROUND

Economic incentives foster preservation of residential neighborhoods and revitalization of downtown commercial districts. The Mills Act is the single most important economic incentive program in California for preservation of qualified historic buildings by private property owners.

Enacted in 1972, Mills Act legislation grants participating local governments (cities and counties) authority to enter into contracts with owners of qualified historic properties who actively participate in rehabilitation, restoration, and maintenance work to receive property tax relief. The City of Los Angeles (City) adopted Mills Act legislation in 1996. Since then, 870 properties have benefited from the program.

A formal agreement, known as a Mills Act or Historical Property Contract (Mills Act Contract), is executed between the City and property owner for a revolving minimum ten-year term. Contracts are automatically renewed each year. Property owners agree to rehabilitate, restore, maintain, and protect the property in accordance with the *Secretary of the Interior's Standards for Rehabilitation (Secretary's Standards)* and conditions identified in the Contract. Periodic inspections by City and County officials ensure proper adherence to the Contract. The City may impose penalties for breach of Contract or failure to protect the historic property. The Contract is binding to all successive owners.

The Mills Act is codified in Los Angeles Administrative Code Chapter 14. Section 19.142 identifies limitations on eligibility for the Mills Act. The current pre-contract assessed value limits are \$1,500,000 for single-family residential properties and \$3,000,000 for multi-family residential, commercial, or industrial properties. Properties located in the Greater Downtown Los Angeles Area, including the Figueroa Economic Strategy Area, and National Register of Historic Places-listed Hollywood Boulevard Commercial and Entertainment District are exempt from valuation limits. The Cultural Heritage Commission may grant an exemption from the limitations imposed by Administrative Code Section 19.142 under the following conditions:

- (a) granting the exemption will not cause the cumulative loss of property tax revenue to the City to exceed \$2,000,000 annually; and*
- (b) the site, building or structure is a particularly significant Historic-Cultural Monument or Contributing Structure to an Historic Preservation Overlay Zone; and*
- (c) granting the exemption will assist in the preservation of a site, building or structure which would otherwise be in danger of demolition, substantial alteration or relocation.*

The above-listed criteria are further delineated in the Contract application materials to include substantial rehabilitation and excessive and/or unusual maintenance requirements for a property.

In order to better substantiate justification for exemption properties to meet the ordinance criteria, the application process requires preparation of an Historic Structure Report (HSR) consistent with format requirements published by the Office of Historic Preservation *Historic Structure Report Format Guidelines* and the National Park Service in *Preservation Brief 43: The Preparation and Use of Historic Structure Reports*. An HSR provides documentary, graphic, and physical information about a property's history and existing condition. Broadly recognized as an effective part of preservation planning, an HSR also addresses management or owner goals for continued use or re-use of the property. It provides a thoughtfully considered argument for selecting the most appropriate approach to treatment, prior to commencement of work, and outlines a scope of recommended tasks. The HSR serves as an important guide for all changes made to a historic property during a project—repair, rehabilitation, or restoration—and can also provide information for maintenance procedures. This requirement sets a higher bar for exemption requests and allows property owners and staff to better understand the unique challenges such properties entail and the owner's commitment to preservation under a Mills Act Contract.

SUBJECT PROPERTY

The subject property is located in the Westlake/MacArthur Park neighborhood on the north side of Wilshire Boulevard between Rampart Boulevard and Coronado Street. The legal description of the property includes five lots: lots 4 to 7 of Tract 6241 and lot 12 of the Wilshire Boulevard Tract. The property is identified by the Los Angeles County Assessor as 5141-009-015. The building footprint occupies half of the subject property. The property was determined eligible for the National Register of Historic Places (National Register) in 1999 under a Section 106 Review; therefore, it was listed in the California Register of Historical Resources (California Register). In 2016, the property was designated as Historic-Cultural Monument #1124 based on findings that the building is an excellent example of the Beaux-Arts architecture, and is a notable work of master architects Walker and Eisen. The building was constructed in 1927 and was originally named the Arcady Apartments.



Primary, west and south elevations, view northeast (2017)

Description

The twelve-story multi-family building is U-shaped in plan, oriented south and west, and built of reinforced concrete with masonry infill. The exterior is primarily clad in painted stucco, with concrete and cast stone architectural elements. The primary entrance to the building is at the southeast corner; however, the original entrance was located on the west elevation within the courtyard. The windows are double-hung, and a majority of them are not original.

The south and west elevations of the subject property exhibit many character-defining features of the Beaux-Arts style, namely the strong vertical appearance and decorative motifs. The vertical appearance is accentuated by the full-height piers that stretch from the foundation to the cornice. Balconies cantilever from exterior walls at the tenth floor. However, as is typical with Beaux-Arts style, the façade is separated horizontally into a podium comprising of the first two floors, a shaft comprising of the third through tenth floors and a capital comprising of the uppermost floors.

The building has a flat roof with a built-up asphalt surface and is accessible through the central stairwell. The parapets have been secured by brace framing. The surface material appears to be in good condition; however the drainage and gutter systems are poor. There are two open panel roof signs and flag poles on the roof.

The building has experienced a number of alterations. At the podium level, a few of the original store front windows and doors have been replaced, some of the openings infilled, and other openings have extensive modifications. The original primary entrance was relocated from Rampart Boulevard to Wilshire Boulevard. Also, a majority of the original wood windows of the residential units were replaced with either vinyl or aluminum without muntins separating the glass panes, and many windows have air conditioning units installed.

The interiors have also been significantly altered through time. The lobby space historically featured intricately painted surfaces. These paintings are no longer extant, and many of the materials have also been altered. The residential units feature original moldings and a few have retained original kitchens and interior doors; however, most of these spaces feature non-original cabinetry, flooring materials, and fixtures.

Rehabilitation/Restoration/Maintenance Plan

The scope of rehabilitation, restoration, and maintenance work is not substantial and primarily includes maintenance related items. Recently completed work is mostly cosmetic in nature. Of the four completed items listed, two of them would have required permits under the building code to commence work and finalized permits could not be found or produced for either. These items included repair to the concrete slab for the interior courtyard and the other was rehabilitation of the two roof top signs. Although the owner appears to maintain the property, issues with the quality of work were noted during the site inspection.

A majority of the future work is proposed to be completed by 2020; however, many of the items have long-term dates for completion which indicate that the work would commence as soon as the condition worsened or upon unit turnover. Proposed contract items that will be completed within the first year are studying the seismic deficiencies of the structural elements of the building, restoring and repairing the wood and steel windows, replacing existing window air conditioning units with alternate window air conditioning units, painting the exterior of the lower stories, replacing fabric awnings, repairing cracks in the exterior cast stone, repairing water control joints on the roof, replacing the boiler, and repairing the elevators.

While the HSR outlines a well-rounded plan for continued maintenance on the property, it fails to propose a substantial scope of work that would prove necessity for granting an exemption to the valuation limitation of the Mills Act program. The seismic study and analysis of the exterior façade deterioration should have been part of the HSR. Further, the continued use of window air conditioners is not appropriate for a building of this type. Alternative HVAC systems, along with other mechanical systems, should have also been studied through the HSR in order to qualify for the Mills Act program.

Review

Chattel, Inc. (Chattel) reviewed Mills Act contract application materials and conducted an on-site, pre-approval inspection on behalf of the Office of Historic Resources (OHR) on July 10, 2017. The inspection was attended by the owner, Karl Slovin, and consultant, Tara Hamacher.

Although the property is significant as a noted example of Beaux Arts design and a representative work by master architects, the proposed rehabilitation plan does not propose any substantial private investment beyond routine maintenance, and the appropriateness of completed and proposed rehabilitation tasks is questionable. Staff does not recommend approval of the exemption from valuation limitation for a Mills Act Contract.

FINDINGS

A) Granting the exemption will not cause the cumulative loss of property tax revenue to the City to exceed \$2,000,000 annually.

The estimated fiscal impact to the City of Los Angeles on the existing and proposed Mills Act Contracts for 2017 is as follows:

Fiscal Impact of (870) existing Mills Act Contracts:	\$1,306,766
Fiscal Impact of (21) 2017 Applications (excluding exemptions):	\$29,265
Fiscal Impact of Pending Exemption Application:	\$5,212
Fiscal Impact of (4) other Exemption Applications:	\$7,842
Fiscal Impact of all proposed and executed contracts (1997 to 2017):	\$1,349,085

The City's share of the general levy property tax collected by the County Assessor for FY 2017-18 (1.02% of property value) is 0.107151415, or 10.7%. It is the intent of the City Council that unrealized City revenue from the loss of property taxes not collected due to executed Historical Property Contracts shall not exceed

\$2,000,000 annually. The current total revenue loss projection for 2017-18 would put the program at 67.5% capacity.

Therefore, Criterion A is met.

B) The site, building or structure is a particularly significant Historic-Cultural Monument or Contributing Structure to an Historic Preservation Overlay Zone.

The property is eligible for listing in the National Register, listed in the California Register, and designated as a Historic-Cultural Monument due to the distinguishing characteristics of the architecture and as a notable example of design by master architects. Therefore, Criterion B is met.

C) Granting the exemption does not assist in the preservation of a site, building or structure which would otherwise be in danger of demolition, substantial alteration or relocation.

The proposed and completed work outlined in the Historic Structure Report and rehabilitation plan do not provide sufficient evidence of substantial investment beyond routine maintenance. Since no substantial work is proposed, it is assumed that the property is functioning in a fair or typical manner and, therefore, is not in danger of demolition, substantial alteration or relocation. Although the maintenance scope of work may demonstrate an amount of financial investment, it does not represent a substantial scope of work necessary to bring a property back into a state of utility that would save it from destruction, continued neglect or substantial alteration. Therefore, Criterion C is not met.

RECOMMENDATIONS FOR FUTURE ACTIONS

Staff recommends that the owner reassess their goals in utilizing the Mills Act incentive towards completing a substantial rehabilitation of the property. Also, the current owner should obtain retroactive permits for all work that was not completed without permits (structural reinforcement of pool deck, rooftop sign rehabilitation, exterior electrical work, etc.). In order to recommend approval of the exemption of valuation limitations for this application, a substantial scope of work must be fully studied and proposed in the Historic Structure Report.

A substantial scope of work for this property would include:

- Scaled drawings of the property (plans, elevations, window survey);
- Replace all incompatible windows with compatible;
- Remove all incompatible, window-mounted air-conditioning units and propose a more compatible HVAC system;
- Propose rehabilitation of storefronts;
- Propose rehabilitation of the altered bathroom windows;
- Propose sign program for storefront tenants;
- Analysis of exterior concrete and propose rehabilitation of the building envelope;
- Study reconstruction of the historic entrance;
- Study compliance of the property with the Americans with Disabilities Act, specifically the pool and amenity spaces; and
- Propose a comprehensive exterior lighting plan.



City of Los Angeles Department of City Planning

8/7/2017 PARCEL PROFILE REPORT

PROPERTY ADDRESSES

622 S RAMPART BLVD

ZIP CODES

90057

RECENT ACTIVITY

None

CASE NUMBERS

CPC-1984-1-HD

ORD-161116-SA35

ORD-129279

ZA-2009-1926-ZV-SPR

ZA-2008-3901-ZV-SPR

ENV-2013-3392-CE

ENV-2008-3902-MND

ND-84-339-CUZ

Address/Legal Information

PIN Number	133-5A201 54
Lot/Parcel Area (Calculated)	6,253.7 (sq ft)
Thomas Brothers Grid	PAGE 634 - GRID B2
Assessor Parcel No. (APN)	5141009015
Tract	WILSHIRE BOULEVARD TRACT
Map Reference	M R 66-5
Block	6
Lot	12
Arb (Lot Cut Reference)	None
Map Sheet	133-5A201

Jurisdictional Information

Community Plan Area	Westlake
Area Planning Commission	Central
Neighborhood Council	MacArthur Park
Council District	CD 1 - Gilbert Cedillo
Census Tract #	2087.20
LADBS District Office	Los Angeles Metro

Planning and Zoning Information

Special Notes	None
Zoning	C2-2
Zoning Information (ZI)	ZI-2275 Westlake Recovery Redevelopment Project ZI-2452 Transit Priority Area in the City of Los Angeles ZI-2374 LOS ANGELES STATE ENTERPRISE ZONE
General Plan Land Use	Community Commercial
General Plan Footnote(s)	Yes
Hillside Area (Zoning Code)	No
Specific Plan Area	None
Special Land Use / Zoning	None
Design Review Board	No
Historic Preservation Review	Yes
Historic Preservation Overlay Zone	None
Other Historic Designations	None
Other Historic Survey Information	None
Mills Act Contract	None
CDO: Community Design Overlay	None
CPIO: Community Plan Imp. Overlay	None
District	None
Subarea	None
CUGU: Clean Up-Green Up	None
NSO: Neighborhood Stabilization Overlay	No
POD: Pedestrian Oriented Districts	None
SN: Sign District	No
Streetscape	No
Adaptive Reuse Incentive Area	None
Ellis Act Property	No
Rent Stabilization Ordinance (RSO)	Yes

This report is subject to the terms and conditions as set forth on the website. For more details, please refer to the terms and conditions at zimas.lacity.org
(*) - APN Area is provided "as is" from the Los Angeles County's Public Works, Flood Control, Benefit Assessment.

CRA - Community Redevelopment Agency	Westlake Recovery Redevelopment Project
Central City Parking	No
Downtown Parking	No
Building Line	None
500 Ft School Zone	Active: Los Angeles Academy of Arts and Enterprise Active: Charles White Elementary School
500 Ft Park Zone	Active: Lafayette Multipurpose Community Center
Assessor Information	
Assessor Parcel No. (APN)	5141009015
Ownership (Assessor)	
Owner1	WILSHIRE ROYALE PACIFIC LLC AND C/O C/O KARL SLOVIN
Owner2	ONE ELEVEN TAMPA LLC
Address	13949 VENTURA BLVD STE 350 SHERMAN OAKS CA 91423
Ownership (Bureau of Engineering, Land Records)	
Owner	REDFERN, THOMAS W. ET AL (TRS) REDFERN FAMILY TRUST DTD 6-22-95 REDFERN, THOMAS W. ET AL (TRS) REDFERN FAMILY TRUST DTD JUNE 22, 1995 REDFERN, THOMAS W. ET AL (TRS) REDFERN FAMILY TRUST DTD JUNE 22, 1995
Address	P. O. BOX 5643 CARMEL CA 93921 P. O. BOX 5643 CARMEL CA 93921 P.O. BOX 5643 CARMEL CA 93921
APN Area (Co. Public Works)*	0.769 (ac)
Use Code	0553 - Residential - Five or More Units or Apartments (Any Combination) - 5 Stories or More - Pool and Misc.
Assessed Land Val.	\$6,820,740
Assessed Improvement Val.	\$26,329,260
Last Owner Change	07/17/2015
Last Sale Amount	\$32,500,325
Tax Rate Area	12706
Deed Ref No. (City Clerk)	964804 762616 745634 3360677 2529668 1143467
Building 1	
Year Built	1927
Building Class	BX
Number of Units	193
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	154,326.0 (sq ft)
Building 2	
Year Built	1950
Building Class	DX
Number of Units	0
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	12,500.0 (sq ft)
Building 3	No data for building 3
Building 4	No data for building 4

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Building 5 No data for building 5

Additional Information

Airport Hazard	None
Coastal Zone	None
Farmland	Area Not Mapped
Urban Agriculture Incentive Zone	Yes
Very High Fire Hazard Severity Zone	No
Fire District No. 1	No
Flood Zone	None
Watercourse	No
Hazardous Waste / Border Zone Properties	No
Methane Hazard Site	Methane Zone
High Wind Velocity Areas	No
Special Grading Area (BOE Basic Grid Map A-13372)	Yes
Oil Wells	None

Seismic Hazards

Active Fault Near-Source Zone	
Nearest Fault (Distance in km)	0.67796664
Nearest Fault (Name)	Puente Hills Blind Thrust
Region	Los Angeles Blind Thrusts
Fault Type	B
Slip Rate (mm/year)	0.70000000
Slip Geometry	Reverse
Slip Type	Moderately / Poorly Constrained
Down Dip Width (km)	19.00000000
Rupture Top	5.00000000
Rupture Bottom	13.00000000
Dip Angle (degrees)	25.00000000
Maximum Magnitude	7.10000000
Alquist-Priolo Fault Zone	No
Landslide	No
Liquefaction	No
Preliminary Fault Rupture Study Area	No
Tsunami Inundation Zone	No

Economic Development Areas

Business Improvement District	LOS ANGELES TOURISM MARKETING
Promise Zone	Los Angeles
Renewal Community	No
Revitalization Zone	Central City
State Enterprise Zone	LOS ANGELES STATE ENTERPRISE ZONE
Targeted Neighborhood Initiative	None

Public Safety

Police Information	
Bureau	Central
Division / Station	Rampart
Reporting District	251
Fire Information	
Bureau	Central
Batallion	11
District / Fire Station	11
Red Flag Restricted Parking	No

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CASE SUMMARIES

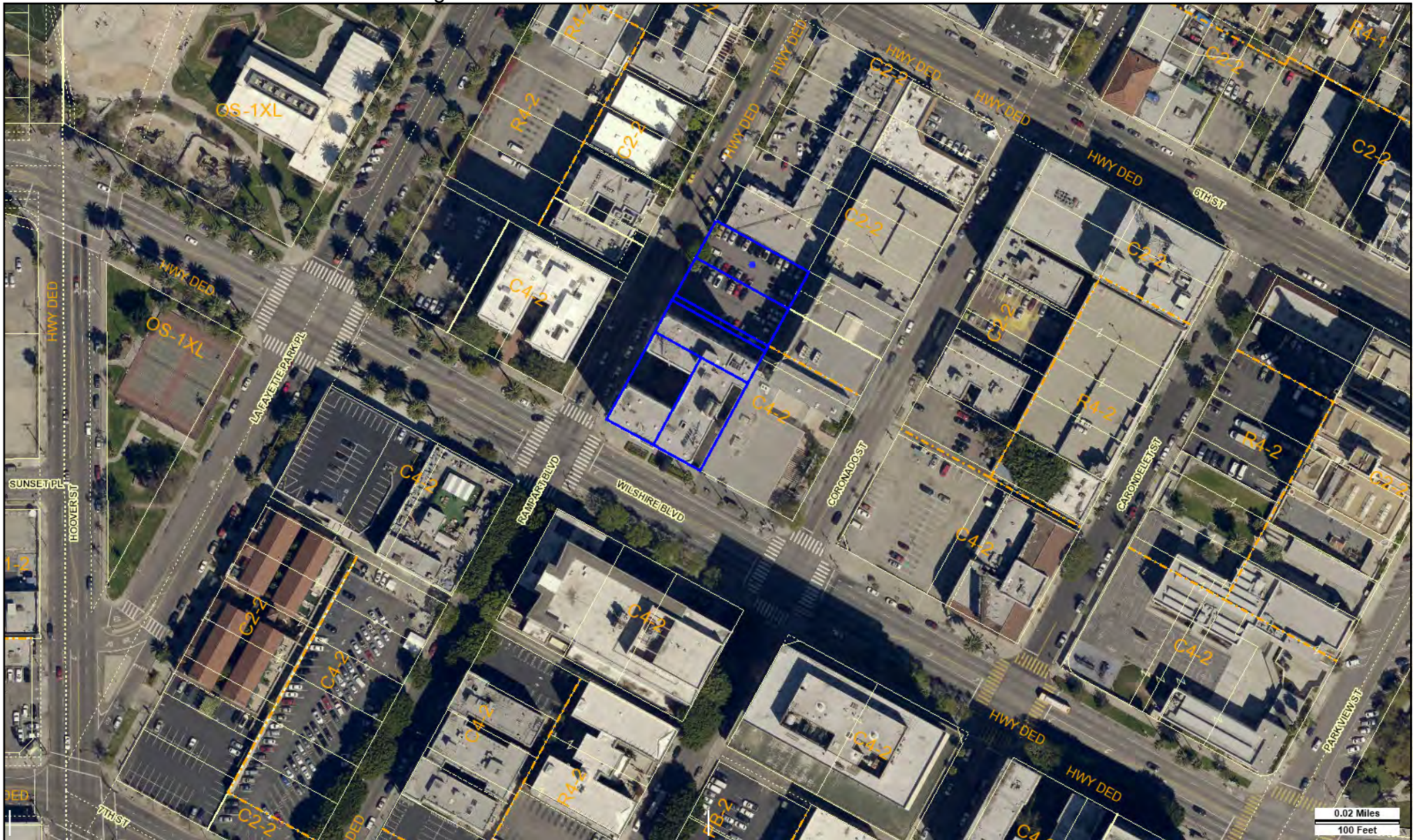
Note: Information for case summaries is retrieved from the Planning Department's Plan Case Tracking System (PCTS) database.

Case Number:	CPC-1984-1-HD
Required Action(s):	HD-HEIGHT DISTRICT
Project Descriptions(s):	CHANGE OF HEIGHT DISTRICT WITHIN THE "CORE AREA OF L.A."- GENERAL PLAN ZONE CONSISTENCY PROGRAM.
Case Number:	ZA-2009-1926-ZV-SPR
Required Action(s):	SPR-SITE PLAN REVIEW ZV-ZONE VARIANCE
Project Descriptions(s):	ZONE VARIANCE TO LEGALIZE AN ADDITIONAL 50 UNITS - CURRENTLY 193 DWELLING UNITS AND GUEST ROOMS EXIST. VARIANCE FOR REDUCED PARKING AND OPEN SPACE.
Case Number:	ZA-2008-3901-ZV-SPR
Required Action(s):	SPR-SITE PLAN REVIEW ZV-ZONE VARIANCE
Project Descriptions(s):	A VARIANCE, FROM SECTION 12.16-C,3 PURSUANT TO SECTION 12.27 OF THE LAMC, TO ALLOW ZERO SQUARE FEET OF LOT AREA FOR THE PROPOSED 50 ADDITIONAL UNITS IN LIEU OF THE REQUIRED 400 SQUARE FEET OF LOT AREA PER UNIT; A VARIANCE, FROM SECTION 12.21-G PURSUANT TO SECTION 12.27 OF THE LAMC, TO ALLOW THE 50 ADDITIONAL UNITS TO HAVE ZERO OPEN SPACE IN LIEU OF THE REQUIRED 100 SQUARE FEET OF OPEN SPACE PER UNIT. A SITE PLAN REVIEW, PURSUANT TO SECTION 16.05-E OF THE LAMC, FOR THE PROPOSED 50 ADDITIONAL UNITS.
Case Number:	ENV-2013-3392-CE
Required Action(s):	CE-CATEGORICAL EXEMPTION
Project Descriptions(s):	THE PROPOSED ORDINANCE MODIFIES SECTION 22.119 OF THE LOS ANGELES ADMINISTRATIVE CODE TO ALLOW ORIGINAL ART MURALS ON LOTS DEVELOPED WITH ONLY ONE SINGLE-FAMILY RESIDENTIAL STRUCTURE AND THAT ARE LOCATED WITHIN COUNCIL DISTRICTS 1, 9, AND 14.
Case Number:	ENV-2008-3902-MND
Required Action(s):	MND-MITIGATED NEGATIVE DECLARATION
Project Descriptions(s):	A VARIANCE, FROM SECTION 12.16-C,3 PURSUANT TO SECTION 12.27 OF THE LAMC, TO ALLOW ZERO SQUARE FEET OF LOT AREA FOR THE PROPOSED 50 ADDITIONAL UNITS IN LIEU OF THE REQUIRED 400 SQUARE FEET OF LOT AREA PER UNIT; A VARIANCE, FROM SECTION 12.21-G PURSUANT TO SECTION 12.27 OF THE LAMC, TO ALLOW THE 50 ADDITIONAL UNITS TO HAVE ZERO OPEN SPACE IN LIEU OF THE REQUIRED 100 SQUARE FEET OF OPEN SPACE PER UNIT. A SITE PLAN REVIEW, PURSUANT TO SECTION 16.05-E OF THE LAMC, FOR THE PROPOSED 50 ADDITIONAL UNITS.
Case Number:	ND-84-339-CUZ
Required Action(s):	CUZ-ALL OTHER CONDITIONAL USE CASES
Project Descriptions(s):	Data Not Available

DATA NOT AVAILABLE

ORD-161116-SA35

ORD-129279



Address: 622 S RAMPART BLVD

Tract: WILSHIRE BOULEVARD
TRACT

Zoning: C2-2

APN: 5141009015

Block: 6

General Plan: Community Commercial

PIN #: 133-5A201 54

Lot: 12

Arb: None



RECORDING REQUESTED BY
AND WHEN RECORDED RETURN TO:

Los Angeles Department of City Planning
Historical Property Contracts Program
200 North Spring Street, Room 559
Los Angeles, California 90012

SPACE ABOVE THIS LINE IS RESERVED FOR RECORDER'S USE

TITLE(S)

HISTORICAL PROPERTY CONTRACT
BY AND BETWEEN THE CITY OF LOS ANGELES,
A MUNICIPAL CORPORATION, AND

Wilshire Royale Pacific LLC.

One Eleven Tampa LLC.

(PRINT NAME OF EACH OWNER AS LISTED ON TITLE)

FOR THE PRESERVATION AND BENEFIT OF THE
HISTORIC-CULTURAL MONUMENT OR
CONTRIBUTING STRUCTURE PROPERTY LOCATED AT

2615 - 2627 West Wilshire Boulevard, Los Angeles, CA 90057

(L.A.M.C. SECTIONS 19.140, et seq.)

THIS AGREEMENT is made and entered into this _____ day of _____, 2017, by and
(LEAVE DATE BLANK UNTIL RECORDED)
between the CITY OF LOS ANGELES, a municipal corporation (hereinafter referred to as the "City") and
Wilshire Royale Pacific LLC and One Eleven Tampa LLC (hereinafter referred to as the "Owner").

(PRINT NAME OF EACH OWNER AS LISTED ON TITLE)

WITNESSETH:

- (i) California Government Code Sections 50280, et seq. authorize cities to enter into contracts with the owners of qualified historical properties to provide for the use, maintenance and restoration of such historical properties so as to retain their characteristics as properties of historical significance.
- (ii) Owner possesses fee title in and to that certain real property, together with associated structures and improvements thereon, commonly known as the Arcady Apartments and located at the street address 2615 -2627 West Wilshire Boulevard, Los Angeles, California 90057, (hereinafter such property shall be referred to as the "Property"). A legal description of the Property and Rehabilitation/Restoration/Maintenance Plan (hereinafter referred to as the "Plan") for the Property is attached hereto, marked as **Exhibit "A"**, and is incorporated herein by this reference.

- (iii) On June 14, 2016: (a) the City Council of the City of Los Angeles declared the Property Historic-Cultural Monument No. 1124 pursuant to Section 22.171.10 of the Los Angeles Administrative Code (Council File No. 16 - 0496); or, (b) The Property was determined to be a Contributing Structure to the NA Historic Preservation Overlay Zone pursuant to Section 12.20.3 of the Los Angeles Municipal Code.
- (iv) City and Owner, for their mutual benefits, now desire to enter into this agreement both to protect and preserve the characteristics of historical significance of the Property and to qualify the Property for an assessment of valuation pursuant to the provisions of Section 439, et seq., of the California Revenue and Taxation Code.

NOW THEREFORE, City and Owner, in consideration of the mutual covenants and conditions set forth herein, do hereby agree as follows:

1. Effective Date and Term of Agreement.

This Historical Property Contract (hereinafter referred to as the "Agreement") shall be effective and commence on the date it is recorded (hereinafter referred to as the "effective date") and shall remain in effect for a term of ten (10) years thereafter. Each year upon the anniversary of the effective date, such initial term will automatically be extended, subject to provisions of paragraph 2, below.

2. Renewal.

Each year on the anniversary of the effective date of this Agreement (hereinafter referred to as the "renewal date"), a year shall automatically be added to the initial term of this Agreement unless notice of nonrenewal is mailed as provided herein. If either Owner or City desires in any year not to renew the Agreement, Owner or City shall serve written notice of nonrenewal of the Agreement on the other party in advance of the annual renewal date of the Agreement. Unless such notice is served by Owner to City at least ninety (90) days prior to the annual renewal date, or served by City to Owner at least sixty (60) days prior to the annual renewal date, one (1) year shall automatically be added to the term of the Agreement as provided herein. Upon receipt by Owner of a notice of nonrenewal from City, Owner may make a written protest of the notice. City may, at any time prior to the annual renewal date of the Agreement, withdraw its notice to Owner of nonrenewal. If either City or Owner serves notice to the other of nonrenewal in any year, the Agreement shall remain in effect for the balance of the term then remaining, either from its original execution or from the last renewal of the Agreement, whichever may apply.

3. Standards for Historical Property.

During the term of this Agreement, the Property shall be subject to the following conditions, requirements and restrictions:

- a. Owner shall preserve and maintain the characteristics of historical significance of the Property in accordance with the Plan. Attached hereto, marked as **Exhibit "B"**, and incorporated herein by this reference, is a list of those minimum standards and conditions for maintenance, use and preservation of the Property, which shall apply to such property throughout the term of this Agreement.
- b. Owner shall restore and rehabilitate the property according to the Plan, the rules and

regulations of the Secretary of the Interior's Standards for Rehabilitation (Exhibit "B"), and the California Historical Building Code.

- c. Owner shall allow reasonable periodic examinations, by prior appointment, of the interior and exterior of the Property by representatives of the City, County or City and County prior to any new agreement and every 5 years thereafter, and as may be necessary to determine owner's compliance with the terms and provisions of this Agreement.

4. Provision of Information of Compliance.

Owner hereby agrees to furnish City with any and all information requested by the City which may be necessary or advisable to determine compliance with the terms and provisions of this Agreement.

5. Cancellation.

City, following a duly noticed public hearing as set forth in California Government Code Sections 50280, et seq., may cancel this Agreement if it determines that Owner breached any of the conditions of this Agreement or has allowed the property to deteriorate to the point that it no longer meets the standards for a Historic-Cultural Monument or Contributing Structure. City may also cancel this Agreement if it determines that the Owner has failed to restore or rehabilitate the property in the manner specified in subparagraph 3(b) of the Agreement, including but not limited to Owner's failure to comply with the Plan and/or Owner's failure to complete the rehabilitation and restoration identified in the Plan as provided for in the Plan. Except as otherwise provided in Section 19.143 of the Los Angeles Municipal Code, in the event of cancellation of this Agreement by the City, Owner shall pay the State of California a cancellation fee of Twelve and One-Half percent (12 1/2%) of the current fair market value of the Property at the time of cancellation, as determined by County Assessor without regard to any restrictions on the Property imposed pursuant to this Agreement. Payment of the fee shall be made in accordance with the provisions of subsection (b) of Section 50286 of the Government Code.

6. Enforcement of Agreement.

In lieu of and/or in addition to any provisions to cancel the Agreement as referenced herein, City may specifically enforce, or enjoin the breach of, the terms of this Agreement. In the event of a default under the provisions of this Agreement by Owner, City shall give written notice to Owner by registered or certified mail addressed to the address stated in this Agreement, and if such a violation is not corrected to the reasonable satisfaction of the City within thirty (30) days thereafter, or if not corrected within such a reasonable time as may be required to cure the breach or default if said breach or default cannot be cured within thirty (30) days (provided that acts to cure the breach or default must be commenced within thirty (30) days and must thereafter be diligently pursued to completion by Owner), then City may, without further notice, declare a default under the terms of this Agreement and may bring any action necessary to specifically enforce the obligations of Owner pursuant to the terms of this Agreement, apply to any court, state or federal, for injunctive relief against any violation by Owner, or apply for such other relief as may be appropriate. City does not waive any claim of default by Owner if City does not enforce or cancel this Agreement. All other remedies at law or in equity which are not otherwise provided for in this Agreement or in City's regulations governing historic properties

are available to the City to pursue in the event that there is a breach of this Agreement. No waiver of any breach or default under this Agreement shall be deemed to a waiver of any other subsequent breach thereof or default hereunder.

7. Binding Effect of Agreement.

The Owner hereby voluntarily subjects the Property described in Exhibit "A" hereto to the covenants, reservations and restrictions as set forth in this Agreement. City and Owner hereby declare their specific intent that the covenants, reservations and restrictions as set forth herein shall be deemed covenants running with the land and shall pass to and be binding upon the Owner's successors and assigns in title or interest to the Property. Each and every contract, deed or other instrument hereinafter executed, covering or conveying the Property, or any portion thereof, shall conclusively be held to have been executed, delivered and accepted subject to the covenants, reservations and restrictions expressed in this Agreement whether or not such covenants, reservations and restrictions are set forth in such contract, deed or other instrument.

City and Owner hereby declare their understanding and intent that the burden of the covenants, reservations and restrictions set forth herein touch and concern the land in that Owner's legal interest in the Property is rendered less valuable thereby. City and Owner hereby further declare their understanding and intent that the benefit of such covenants, reservations and restrictions touch and concern the land by enhancing and maintaining the historic characteristics and significance of the Property for the benefit of the public and Owner.

8. Notice.

Any notice required to be given by the terms of this Agreement shall be provided at the address of the respective parties as specified below or at any other address as may be later specified by the parties hereto.

To City: Los Angeles Department of City Planning
200 North Spring Street, Room 559
Los Angeles, California 90012
Attn: Historical Property Contracts Manager

To Owner:	Name	Wilshire Royale Pacific LLC. & One Eleven Tampa LLC.	
	Address	13949 Ventura Boulevard	13949 Ventura Boulevard
		Sherman Oaks, CA 91423	Sherman Oaks, CA 91423

9. General Provisions.

- a. None of the terms, provisions or conditions of this Agreement shall be deemed to create a partnership between the parties hereto and any of their heirs, successors or assigns, nor

shall such terms, provisions or conditions cause them to be considered joint venturers or members of any joint enterprise.

- b. Owner agrees to and shall hold City and its elected officials, officers, employees and agents harmless from any and all liability for damage or claims for damage for personal injuries, including death, and claims for property damage which may arise from the direct or indirect use or operations of Owner or those of his contractor, subcontractor, agent, employee or other person acting on his behalf which relate to the use, operation and maintenance of the Property. Owner hereby agrees to and shall defend the City and its elected officials, officers, employees and agents with respect to any and all actions for damages caused by, or alleged to have been caused by, reason of Owner's activities in connection with the Property. This hold harmless provision applies to all damages and claims for damages suffered, or alleged to have been suffered, by reason of the operations referred to in this Agreement whether or not the City prepared, supplied or approved the plans, specifications or other documents for the Property.
- c. All of the agreements, rights, covenants, reservations and restrictions contained in this Agreement shall be binding upon and shall inure to the benefit of the parties herein, their heirs, successors, legal representatives, assigns and all persons acquiring any part or portion of the Property, whether by operation of law or in any manner whatsoever.
- d. In the event legal proceedings are brought by any party or parties to enforce or restrain a violation of any of the covenants, reservations or restrictions contained herein, or to determine the rights and duties of any party hereunder, the prevailing party in such proceeding may recover all reasonable attorney's fees to be fixed by the court, in addition to court costs and other relief ordered by the court.
- e. In the event that any of the provisions of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, or by subsequent preemptive legislation, the validity and enforceability of the remaining provisions, or portions thereof, shall not be effected thereby.
- f. This Agreement shall be construed and governed in accordance with the laws of the State of California.

10. Recordation.

No later than twenty (20) days after the parties execute and enter into this Agreement, City shall cause this Agreement to be recorded in the Office of the County Recorder of the County of Los Angeles.

11. Amendments.

This Agreement may be amended, in whole or in part, only by a written recorded instrument executed by the parties hereto.

12. Fees.

Owner agrees to pay any such fees associated with the administration of the Agreement, so long as the fee does not exceed the City's and County's reasonable cost of providing the service pursuant to this article for which the fee is charged.

IN WITNESS WHEREOF, the parties have caused this contract to be duly executed.

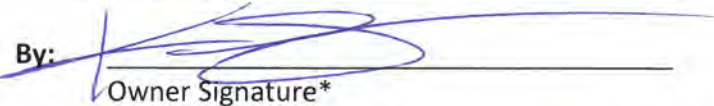
THE CITY OF LOS ANGELES, a municipal corporation:

ATTEST: HOLLY WOLCOTT, City Clerk/Executive Officer

By: _____
Deputy Date

By: _____
VINCENT P. BERTONI, AICP, Director of Planning Date

By: 
Owner Signature*
Karl Slovin, Authorized Person
Wilshire Royale Pacific LLC. 5/24/17
Print Name Date

By: 
Owner Signature*
Karl Slovin, Authorized Person
One Eleven Tampa LLC. 5/24/17
Print Name Date

By: _____
Owner Signature*

Print Name Date

APPROVED AS TO FORM
MICHAEL N. FEUER, City Attorney

By: _____
Deputy City Attorney, Office of the City Attorney Date

* Approved Recording Signature Method: The contract signature(s) and printed names(s) above MUST BE IDENTICAL to the printed names(s) on the first page of the contract and the Notary Acknowledgement Form. If not, the contract will be rejected by the County Recorder.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles

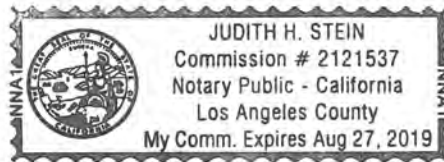
On 5-24-17 before me, Judith H. Stein, Notary Public
(insert name and title of the officer)

personally appeared KARL SLOVIN,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in
his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature [Handwritten Signature] (Seal)



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles)

On 5-24-17 before me, Judith H. Stein, Notary Public
(insert name and title of the officer)

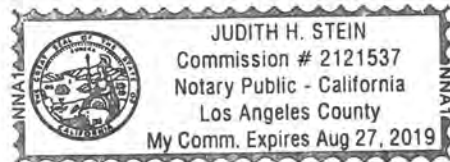
personally appeared KARL SLOVIN,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Judith H. Stein

(Seal)



CITY OF LOS ANGELES

CULTURAL HERITAGE COMMISSION APPLICATION FOR EXEMPTION FROM
LIMITATION ON ELIGIBILITY FOR
HISTORICAL PROPERTY CONTRACT

Los Angeles Administrative Code § 19.142 "Limitations on Eligibility" provides that:
...eligibility for Historical Property Contracts shall be limited... to buildings or structures with a pre-contract assessed valuation of \$1,500,000 or less for Single-Family dwellings, and \$3,000,000 or less for Multi-Family residential, commercial or industrial buildings, unless the individual property is granted an exemption from those limits by the Cultural Heritage Commission.

The Cultural Heritage Commission may grant exemption from the limitations imposed by this Section when:

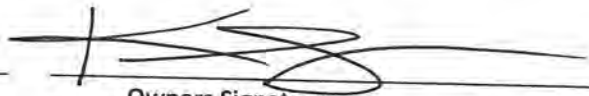
- (a) granting the exemption will assist in the preservation of a structure (including unusual and/or excessive maintenance requirements) that would otherwise be in danger of demolition, substantial alteration or relocation; and
- (b) the structure is an exceptional Historic-Cultural Monument or Contributing Structure to an HPOZ; and
- (c) granting the exemption will not cause the cumulative loss of property tax revenue to the City to exceed \$2,000,000 annually.

1. NAME: Wilshire Royale Pacific, LLC. and One Eleven Tampa, LLC.
2. ADDRESS: 13949 Ventura Blvd. Sherman Oaks, CA 91423
3. ADDRESS OF PROPERTY: 2619 W. Wilshire Boulevard, Los Angeles, CA 90057
4. HISTORIC-CULTURAL MONUMENT NUMBER: 1124 or HPOZ: _____
5. TAX ASSESSED VALUATION (Attach a copy of your most recent tax bill): \$ 32,637,150
6. EXEMPTION CRITERION: Granting the exemption will assist in the preservation of a structure that would otherwise be in danger of demolition, substantial alteration or relocation. *A Historic Structure Report prepared for the property is attached.*

I, Karl Slovin, owner of the structure referenced above apply for exemption from the limitations contained in L.A.A.C. §19.142. I certify, under the penalty of perjury, that the information attached and provided above is accurate. Executed this 8th day of May, 2018, at Los Angeles, California.

Karl Slovin

Owner's Name (print or type)


Owners Signature

For Office Use Only

- A) Cumulative loss of more than \$2,000,000? _____
- B) Exceptional HCM or HPOZ Contributing Structure? _____
- C) Specific threat to resource? Complete HSR submitted? _____

Percent above limit _____ % Criteria a, b, and c listed above satisfied? _____ Initial _____

CITY OF LOS ANGELES

HISTORICAL PROPERTY CONTRACT APPLICATION FORM

OWNER INFORMATION

PROPERTY ADDRESS: 2615 - 2627 West Wilshire Boulevard, Los Angeles, CA

OWNER(S) OF PROPERTY: Wilshire Royale Pacific, LLC./One Eleven Tampa LLC.

OWNER(S) MAILING ADDRESS: 13949 Ventura Blvd, Sherman Oaks, CA 91423

HOME TELEPHONE: WORK TELEPHONE: 818-501-8600 x 102

MOBILE TELEPHONE: ALTERNATE TELEPHONE:

OWNER(S) EMAIL: kslovin@mwestholdings.com ALTERNATE EMAIL: vsheynin@mwestholdings.com

PROPERTY INFORMATION

Legal Description: TRACT: 6241 BLOCK: 6 LOT: 4-7 ARB: None

Assessor Identification Number (AIN): 5141 - 009 - 015 COUNCIL DISTRICT NO.: 1

PROPERTY PURCHASE DATE: 7/17/2015 MOST RECENT ASSESSED VALUE: \$32,500,000

OWNER OCCUPIED: Yes No USE: Single-Family Dwelling Multi-Family/ Commercial/ Industrial

ADDRESSES FOR ALL OTHER PROPERTY OWNED WITHIN THE CITY OF LOS ANGELES ARE NOTED ON A SEPARATE SHEET OF PAPER, LABELED "ATTACHMENT E", AND SUBMITTED WITH THIS APPLICATION? Yes NA

TAXES ON ALL PROPERTY OWNED WITHIN THE CITY OF LOS ANGELES ARE PAID TO DATE? Yes No

ARE THERE ANY OUTSTANDING ORDERS TO COMPLY FROM THE LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY OR THE LOS ANGELES HOUSING DEPARTMENT? Yes No

HISTORICAL SIGNIFICANCE

Historic-Cultural Monument (HCM)

HCM NUMBER: 1124 HCM NAME: Arcady Apartments

Contributor to a Historic Preservation Overlay Zone (HPOZ)

HPOZ NAME: HISTORIC PROPERTY NAME:

ORIGINAL CONSTRUCTION DATE: 1927 ARCHITECT(S): Walker and Eisen

ARCHITECTURAL STYLE: Renaissance Revival/ NeoClassic

I AM (WE ARE) THE PRESENT OWNER(S) OF THE PROPERTY DESCRIBED ABOVE AND HEREBY APPLY FOR AN HISTORICAL PROPERTY CONTRACT.

Owner signature and date 2-23-17

OWNER SIGNATURE DATE OWNER SIGNATURE DATE

Karl Slovin

PRINT NAME PRINT NAME

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

PROPERTY ADDRESS: 2615 W. Wilshire Blvd, Los Angeles, CA

Use this form to propose all preservation work necessary to rehabilitate the property. In this plan, include all of the expected maintenance, restoration and replacement of historic features on the property, NOT modernization, remodels, or construction of new elements. Although modernization may be an important part of your rehabilitation project, this form is meant to specifically capture the preservation work involved and not anything else. Copy this page as necessary to include all items that apply to your property. Begin by listing recently completed preservation work (if applicable) and continue with work proposed to complete within the next ten years arranging in order of priority.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Concrete Slab replacement - Basement CeilingCost \$ 67,400 (round to nearest dollar) Contract Year of Proposed Work Completion: 2016Description of work: Structural reinforcement of basement ceiling due to corrosion from water infiltration beneath pool deck, courtyard.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Repair of Historic Roof signCost \$ 19,950 (round to nearest dollar) Contract Year of Proposed Work Completion: 2016Description of work: Repair and stabilization of roof sign and framework, and painting of entire structural frame.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Seismic ModelingCost \$ 145,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Evaluation of existing building/structure for seismic conformance with Mayor's Seismic Upgrade Ordinance. Results may impact other priorities if remedial work required.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Restoration and repair of wood framed windowsCost \$ 290,400 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018-2028Description of work: Repair of sills, sash and glazing, or replacement in kind of original wood framed windows, consistent with replacement of AC units in windows. Priority to repair/replace windows on primary facades, Wilshire, Rampart, Courtyard. (Wood windows to be replaced in-kind) Appox.100 units need replacement of the 242 total.

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

PROPERTY ADDRESS: 2615 W. Wilshire Blvd, Los Angeles, CA

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Replacement of Air Conditioning Units in windowsCost \$ 240,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018-2028

Description of work: Air units will be replaced with smaller profile units with minimal projection. Will be done concurrent with window repair. Priority to be to improve primary facades facing Wilshire, Rampart, Courtyard. (Assume 10 units per year, \$1,200 each.)

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Repair of all steel windows, various elevationsCost \$ 82,500 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018-2019

Description of work: Reglaze, replace all cracked glazing compound. Keep windows operational. Glass replacement were needed. Most steel windows are on north and east elevations (side and rear secondary elevations.) Ongoing.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Repaint Exterior, Lower StoriesCost \$ 50,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018

Description of work: Fill cracks and repaint lower two stories up to projecting cornice above 2nd level.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Repaint exterior, Upper StoriesCost \$ 950,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2025-2028

Description of work: Fill cracks, anchor all terra cotta - rooftop and upper stories, and repaint upper wall surfaces. Cost includes all scaffolding and lifts required.

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

PROPERTY ADDRESS: 2615 W. Wilshire Blvd, Los Angeles, CA

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Repair cracks/damage to terra cotta - Stories 1 and 2Cost \$ 12,680 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Repair all cracks and other damage from all terra cotta, balconies, cornices, quoins, entrances on lower levels, concurrent with exterior painting

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Replace Fabric Awnings, Wilshire and Rampart facadesCost \$ 15,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Replace fabric awnings in-kind.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Roof - Remove and Replace existing rolled roofingCost \$ 175,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2020Description of work: Complete removal and replacement of roof coatings. Repair flashing as requires around elevator penthouse and skylights. Seal and recoat roof as needed, annual maintenance cost of \$2,500 per year.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Replace water control joint on roofCost \$ 2,500 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Corroded pipe connection to be repaired.

EXHIBIT "A"

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Rooftop SkylightsCost \$ 20,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2019Description of work: Repair glass and glazing of skylights, integrated with roof repairs with flashing to ensure watertight seal.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Fire EscapesCost \$ 15,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2020Description of work: Routine painting and maintenance, inspect fastening and repair as needed. Retain in viable condition for ongoing use.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Arched Doors, CourtyardCost \$ 7,200 (round to nearest dollar) Contract Year of Proposed Work Completion: 2019Description of work: Repair as required and paint for ongoing use of original material.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Dining Room CeilingCost \$ 5,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2016Description of work: Repairs to water damaged ceiling in original restaurant space.

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

PROPERTY ADDRESS: 2615 W. Wilshire Blvd, Los Angeles, CA

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Interior Corridors, Floors 2-7 - Repainting and upgradeCost \$ 350,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018-2028Description of work: Remove vinyl wall covering on lower story corridors and repaint walls. Retain millwork, and paint. Replace flooring. (Work to be consistent with Floors completed in 2015.)

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Heat Pumps, retail spaces on ground floorCost \$ 15,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018-2028Description of work: Replace heat pumps in units when required for three retail spaces.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Central Hot Water TanksCost \$ 211,467 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Replacement of hot water tanks when needed, still in use, but at end of life cycle. (\$50,000 per tank.)

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Steam Boiler - replacementCost \$ 65,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018Description of work: Replace steam boiler (may be left in place in basement due to size)

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Aluminum Wiring

Cost \$ 434,250 (round to nearest dollar) Contract Year of Proposed Work Completion: 2023-2028

Description of work: Replace aluminum wiring where there are issues of electrical capacity. To be done as needed, and when apartments are vacant. Ongoing.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Plumbing - Drain Pipes

Cost \$ 294,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2023-2028

Description of work: Replace cast iron drain pipes throughout building.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Plumbing - Galvanized Domestic Pipes

Cost \$ 879,120 (round to nearest dollar) Contract Year of Proposed Work Completion: 2023-2028

Description of work: Replacing galvanized domestic water lines with new copper. As needed, and when apartments are vacant. Ongoing.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Elevators

Cost \$ 100,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2018

Description of work: Repair operating equipment from flood damage, and ongoing maintenance and repair as needed.

EXHIBIT "A"

REHABILITATION/RESTORATION/MAINTENANCE PLAN

PROPERTY ADDRESS: 2615 W. Wilshire Blvd, Los Angeles, CA

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Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: Replication of Reception Desk - Main LobbyCost \$ 15,000 (round to nearest dollar) Contract Year of Proposed Work Completion: 2017Description of work: Rebuild reception in main lobby space, based on historic photographs to match materials and design.

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: _____

Cost \$ _____ (round to nearest dollar) Contract Year of Proposed Work Completion: _____

Description of work: _____

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: _____

Cost \$ _____ (round to nearest dollar) Contract Year of Proposed Work Completion: _____

Description of work: _____

Maintenance Rehabilitation/Restoration Completed Proposed

Building Feature: _____

Cost \$ _____ (round to nearest dollar) Contract Year of Proposed Work Completion: _____

Description of work: _____

EXHIBIT "A"

MAINTENANCE AND REHABILITATION STANDARDS AND CONDITIONS**Secretary of the Interior's Standards for Rehabilitation**

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

Property Maintenance

All buildings, structures, yards and other improvements shall be maintained in a superior manner. All current building and zoning codes will be enforced. The following conditions are prohibited:

- a. Dilapidated buildings or features such as fences, roofs, doors, walls and windows.
- b. Abandoned or discarded objects, equipment or materials such as automobiles, automobile parts, furniture, appliances, containers, lumber or similar items stored outside but within property lines.
- c. Stagnant water or open excavations.
- d. Any device, decoration or structure, which is unsightly by reason of its height, condition or location.
- e. Peeling exterior paint or unremoved/uncovered graffiti.
- f. Overgrown landscaping, exposed bald areas within yards or grounds and broken hardscape features which could cause injury.
- g. Other substandard conditions as cited by the Cultural Heritage Commission, the Director of Planning, or the City's Historical Property Contracts Manager.

Conditions

This Historical Property Contract provides the potential for property tax reduction in exchange for agreement to rehabilitate and maintain an historic building. Existing conditions not in conformance with the Secretary of the Interior's Standards, may be required to be removed and the original conditions remedied as part of this contract.

THE ARCADY
WILSHIRE ROYALE APARTMENTS
Los Angeles, CA.

HISTORIC STRUCTURES REPORT



ROGER A. BREVOORT, Architectural Historian
March 2017

HISTORIC 
CONSULTANTS

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EXECUTIVE SUMMARY AND INTRODUCTION

This Historic Structures Report was prepared to identify the key architectural features and prioritize the preservation and long term maintenance needs of **The Arcady Apartments/Wilshire Royale Apartments**. The building was designated a Historic/Cultural Monument in the City of Los Angeles in 2016.

The purpose of this report is to assist the property owner, project design professionals, city staff, and other stakeholders in making decisions regarding future treatment of historic fabric and character-defining spaces. The goal is to retain the historic character of the property, and avoid further loss of original features, architectural details, or appearance. Much of the authenticity of the original interior character in the primary spaces has been compromised due to recent painting and detailing. Previous owners had installed the new flooring material. Fortunately, the architectural features, such as moldings and capitals are still in place, so the appearance is reversible. The goal in this report is to identify those specific features which should remain in place to avoid further loss of integrity that would impact the status of the building as a Historic and Cultural Monument

Alternatively, in some cases, the ideal goal would be to identify rehabilitation treatments with the intent to restore some of the original finishes and painting.

This document will also serve as a preservation plan for maintaining the integrity of the property, focusing on the exterior character, and maintaining the exterior in a manner consistent with the **Secretary of the Interior's Standards for Rehabilitation** which are the guidelines for preservation and maintenance procedures. It will also serve as a benchmark for prioritizing long-term exterior maintenance needs that should be addressed in a future Mills Act application, anticipated for submittal in 2017.

The physical systems of the building are in good condition, and have been upgraded over time. Structural repair and seismic strengthening is not currently a concern.

The main issue facing this building is the inconsistent replacement of the windows over time with windows of similar form, but different materials, which now has a minor cumulative impact on the overall integrity. Also, the fact that the apartments are all cooled by window air conditioning units yields an inconsistent appearance from the exterior due to the visibility of the units. There is no reasonable remedy for this situation. Ideally, the air-conditioning units would be replaced over time, coupled with repair and painting of existing wood windows or installation of matching new windows in a way that enhances the overall appearance of the primary facades.

Subsequent to this report, Historic Consultants will be preparing an application for the Mills Act program. The baseline documentation for maintenance needs of the significant features, as required by the Mills Act will be incorporated within this report. This Historic Structures Report is a requirement for the property to be considered for the valuation exemption pursuant to the Mills Act. Providing the baseline documentation for ongoing maintenance of the significant features is a primary objective of this report.

METHODOLOGY AND APPROACH

The approach undertaken for this report consisted of three major tasks, background research of existing reports and evaluations by prior inspectors or contractors, a site visit, and evaluation of significant features and maintenance concerns of the building sufficiently to establish priorities for future rehabilitation and major maintenance.

Roger Brevoort and Tara Hamacher of Historic Consultants conducted a site visit on October 20, 2016. The purpose of the site visit was to observe and photograph the subject property and identify the important architectural and character-defining features, the condition of features and building components, as well as building alterations that comprise the property. The goal was to determine the best approach to rehabilitating the building in a way that retains the significant features based on specific preservation treatments, and provide recommendations for preservation treatments to the owner. Ultimately this report will also serve as the basis for a Mills Act application.

An outline of priorities, and bids for projected maintenance work intended by the current owner are attached in the Appendix.

HISTORIC PRESERVATION REGULATORY FRAMEWORK

This report was prepared pursuant to the City of Los Angeles municipal code and the CEQA Guidelines. Following is an overview of the historic preservation regulatory framework related to current and future projects proposed at the subject property.

California Environmental Quality Act (CEQA) & Historical Resources

The California Environmental Quality Act (CEQA) was enacted in 1970 in order to inform, identify, prevent, and disclose to decision-makers and the general public the effects a project may have on the environment. Historical resources are included in the comprehensive definition of the environment under CEQA. A historical resource is defined by CEQA as:

- Any resource listed in or determined eligible for listing in the *California Register of Historical Resources* by the State Historical Resources Commission; or
- Any resource included in a local register of historical resources pursuant to §5020.1 (k) of the California Public Resources Code; or
- Any resource identified as significant in a historical resource survey meeting the criteria set forth in §5024.1 (g) of the California Public Resource Code; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
Historical Resource Analysis Report

CEQA Public Resources Code §21084.1 provides that any project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. Public Resources Code §5020.1(q) defines “substantial adverse change” as demolition, destruction, relocation, or alteration such that the significance of the historical resource would be impaired.

Pursuant to §15064.5(b)(3) of the CEQA guidelines, generally a project that follows *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or *The Secretary of*

the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

CEQA Guidelines §15064(d) Indirect Physical Change in the Environment

CEQA guidelines §15064(d)(1-3) stipulate review of projects for consideration of direct physical changes in the environment which may be caused by that project, and a review of reasonably foreseeable indirect physical changes in the environment which may be caused by said project. §15064(d)(1) defines a direct physical change in the environment as a physical change in the environment that is caused by and immediately related to the project. §15064(d)(2) defines an indirect physical change in the environment as a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. Pursuant to §15064(d)(3) an indirect physical change is to be considered only if that change is a reasonably foreseeable impact that may be caused by the project. A change that is speculative or unlikely to occur is not reasonably foreseeable.

California Register of Historical Resources

In order to be eligible for listing on the California Register of Historical Resources, one of the four following criteria must be met:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method or construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

City of Los Angeles Historic-Cultural Monument (Local Register) Eligibility Criteria

Any site (including significant trees or other plant life located on the site), building or structure of particular historic or cultural significance may be designated as a Historic-Cultural Monument by the City of Los Angeles Cultural Heritage Commission if it meets at least one of the following criteria:

1. Historic structures or sites in which the broad cultural, economic or social history of the nation, State or community is reflected or exemplified; or
2. Is identified with historic personages or with important events in the main currents of national, State or local history; or
3. Embodies the distinguishing characteristics of an architectural type, specimen, inherently valuable for a study of a period, style or method of construction; or
4. Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman; or
5. Is a notable work of a master builder, designer or architect whose individual genius influenced his or her age.

These criteria are deliberately broad enough to include a wide variety of historic resources, but a proposed resource should have sufficient architectural, historical, and/or cultural significance to warrant designation. A proposed resource may be eligible for designation if it meets only one of the criteria above.

ARCHITECTURAL HERITAGE AND DESIGN OF THE ARCADY



Historic Image, from owner. View from Wilshire Boulevard, ca: 1927

A major example of the Beaux Arts/NeoClassic style, the Arcady Apartments is a master work of Walker and Eisen, the preeminent architectural firm in Southern California during the 1920s to the 1940s. The Arcady Apartments was constructed in 1927, near the end of a building period during the mid-1920s that transitioned the area around Westlake Park into a neighborhood of high class residential apartments. The area was highly desirable because of the park, and the convenient and prestigious location between downtown Los Angeles and Hollywood.

Walker & Eisen Architects and Engineers (Walker & Eisen) were especially prolific in Los Angeles, designing many commercial buildings, apartment houses and hotels. In the context of the firm's work, The Arcady Apartments typifies the traditional Beaux Arts style of the early twentieth century, and is part of a distinctive collection of other Walker and Eisen buildings that are well-recognized as landmarks in downtown Los Angeles.

Albert R. Walker and Percy A. Eisen established the firm Walker & Eisen in 1919, on the eve of the 1920s population explosion that more than doubled the number of city residents (from roughly 575,000 in 1920 to over 1.2 million in 1929) (1). In partnership, Walker and Eisen were peers of Allison and Allison, Parkinson and Parkinson, Albert C. Martin and Associates, Nordstrom and Anderson, and Morgan, Walls and Clements. Collectively, these firms were responsible for shaping the early-twentieth century urban form of Los Angeles.

Because of their success they were able to recruit many highly skilled designers, several who trained at the Ecole des Beaux Arts as well as draftsmen who came from the Beaux Arts Institute of New York. At the height of the boom the firm employed fifty draftsmen. While both men shared design responsibilities, Eisen tended to focus on business development using his well-established connections to secure contracts for the firm. Walker was the creative force primarily focused on guiding the design effort (2).

Together Walker & Eisen were a powerful team. During the prime years of their partnership, they were responsible for the design of more than 200 buildings. Their work focused on larger scale commercial office buildings, apartment houses, hotels, and movie theaters. There was a time that Walker & Eisen successfully obtained the bulk of the contracts in the city.

Notes

1. Donald J. Schippers, "Walker & Eisen: Twenty Years of Los Angeles Architecture, 1920-1940," *Southern California Quarterly* 46, No. 4 (December 1964), 374.
2. Kevin Starr, *Material Dreams*, 212 and Schippers, Walker & Eisen, 377.

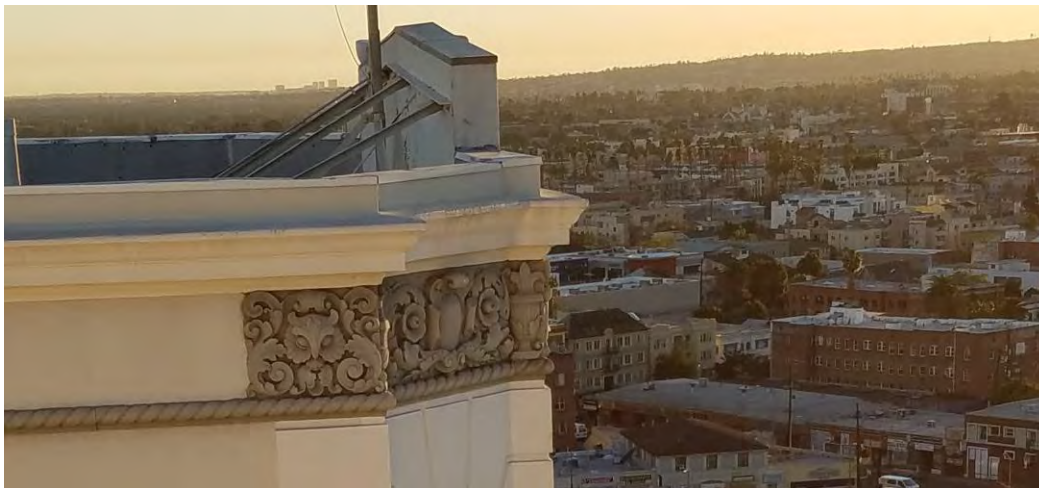
CONSTRUCTION CHRONOLOGY - BUILDING DESIGN AND LATER MODIFICATIONS

The Arcady Apartments was completed in 1927 using reinforced concrete construction. The primary walls have stucco sheathing, except for the rear (south and east) walls which are unpainted red brick. The building sits on a concrete foundation, with a basement beneath most of the building. The Arcady opened originally as a luxury apartment hotel with 396 rooms. The building later housed a Howard Johnson's hotel and Fifield Manor, a home for the elderly. Fifield Manor opened in 1955.

The Arcady Apartment is a 12 story, U-shaped structure of very typical early twentieth century form, with a prominent base, shaft and upper story cornice treatment. The two primary facades, facing Wilshire Boulevard on the south and Rampart Boulevard to the west, are both considered to be significant and character-defining aspects of the Arcady.

The building is constructed of poured concrete with cement plaster surfaces and corners and facade divisions articulated by quoins molded from cast stone. The base of the building features a standard ashlar pattern articulated in the cast stone, framing segmental arched openings around retail storefronts and the main entrance on Wilshire Boulevard. Projecting balconies supported on console brackets are located at the center of the primary facades at the second story, and are framed by wrought iron railings. Smaller oriel balconies are located on either side of the main balconies. All balconies are detailed with cast stone.

At the tenth story, there is a projecting cornice which is visually supported by Classical capitals. There are also projecting balconies at the 10th floor level that accent the center of the main facade, and the two wings that create identical facades on the west side. The sculptural relief detailing establishes the prominence of these two primary elevations.



The elevation at the apex of the U-shaped courtyard, initially the backdrop for the formal entrance into the lobby, remains intact, and is a primary elevation that is visually consistent with the facade of the main wings that are the current west elevation.

Arched openings are symmetrically located around the perimeter of the courtyard. Each opening contains a multi-paned window that fills the opening, articulated by heavily-scaled mullions that appear to be original and reflect the original entrance from this area.

Modification of the Entrance due to Earthquake damage.

The historic image shows the original grand entrance off Rampart Street. The entry featured a formal Classical, arched portal with a formal archway that was recessed slightly from the street (see below). A flight of stairs lead to the upper courtyard. The arch connected the two flanking wings of the building that frame the courtyard. This feature is clearly documented in historic photographs. It was removed in 1971 due to earthquake damage. The demolition is documented by Building Permit dated March 10, 1971, which specified "hand-demo only." The entire entrance area was then infilled to create the current pool and deck area at the western end of the courtyard.



Initial arched entry was located between the two primary wings. It was damaged by earthquake in 1971 and removed.



Pool and surrounding deck installed in 1982. The pool is located in the exact position of the original arched entry portal which is visible in the historic photo. This alteration fundamentally changed the function of this area from an entrance and courtyard, to what is effectively now a private deck between the two flanking wings of the building, with no relationship to the street.

Original Entrance



The original main entrance, at the apex of the courtyard between the two wings. It was the primary access, leading directly into the main lobby.



The new entrance is located along Wilshire Boulevard. Although this is still a primary elevation in terms of architectural importance, the entry is not as dramatic as the original location. This reorientation occurred in 1979, according to permit data.



Detail, Current entrance off Wilshire Boulevard, opening into the corridor that accesses the main entry.

ALTERATIONS RELATED TO SUBSEQUENT USES

The change in use from the apartments to elderly housing in 1955 did not require major changes to the building that impacted the historic character.

The primary change appears to be the enclosure of bathroom windows in each unit to allow installation of a shower. This modification was done in a consistent manner around the building so it is not dramatically evident, but it does have an impact on the overall integrity. Due to the functionality of this change, it is unlikely it will ever be reversed.

The modification of the original entrance of Rampart Street in 1971 caused a reorientation of the building, by converting the subordinate entry from Wilshire Boulevard into the primary access, although apparently this did not occur until 1979.

The transoms over the interior doors in the corridors were also enclosed at the same time, which would have had an impact on the original millwork, and character of the corridors.

The pool and deck area was created in 1982, which in effect changed the former entrance "courtyard" into an outdoor patio space, elevated from the street, and private for the building residents.

RECENT RENOVATIONS TO UPDATE THE INTERIOR

For the most part, the original spaces are physically intact, although they were repainted in 2016 and the décor of the first floor lobby has a markedly different character. The upper floors have also been upgraded, but in a manner more consistent with the original appearance.



Main Entrance lobby, ca: 1927. It was accessed by the original entry from the Courtyard, and by the subordinate entry hall that is now the primary access point from Wilshire Blvd.

Although the main entry lobby has been painted to project a dramatically different Moroccan style appearance, the original architectural details are still in place, giving a clear reference to the original NeoClassic appearance of this room. Remaining details include the original staircase and railing to the level of the main corridors, the columns and piers with Classical capitals, and the exposed ceiling beams. The original flooring had already been covered by the previous owner. It is not known if any original material, presumably marble may be in place beneath the current ceramic material.



Current lobby space, as painted in Fall of 2016. Although the paint scheme and current décor have diminished the integrity of the appearance, the architectural fabric and details remain in place. The lobby could be at least partially restored to its original character in the future as long as these elements remain in place.



Lobby, as modified, Fall 2016. Future changes include installation of a new desk area in rear corner (now plywood) with millwork based on historic photo, (prior page, same view) and cabinetry in original cafe/retail space (still extant).

DINING HALL



Original Dining Hall, ca. 1927. Note ceiling form, and hardwood floors.



Dining Hall, Current appearance, modified by prior owner, prior to 2016. Ceiling form and hardwood flooring is still in place

The former Dining Hall was modified by the prior owner when this area was leased to a restaurant tenant. The windows were infilled, and the main piers sheathed with white ceramic subway tile,

obscuring the original painted plaster surface. Again, while the surfaces are more recent, the form of the room remains intact, and is a potentially reversible condition.

Retail Space: The southwest corner of the building corner was originally a café. This is a double height space, now used as an art studio, but much of the original cabinetry is still intact. Due to the amount of original material still in place, this is considered to be a primary space.



Retail Space with Cabinetry. This cabinetry is original fabric.

PRESERVATION ZONING PLAN; IDENTIFICATION OF CHARACTER DEFINING SPACES

The Preservation Zoning Plan is a conceptual tool for prioritizing notable areas of a building based on their architectural importance to conveying the building's character. The areas are identified based on historic and architectural importance, degree of integrity, and in some cases, condition.

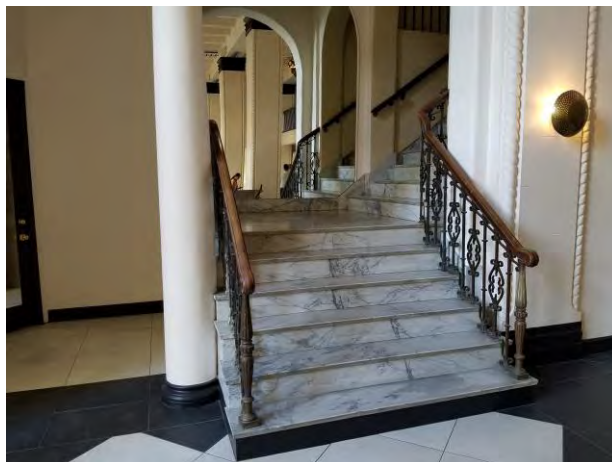
Zoning Plans are based on identification of Primary, Secondary and Tertiary spaces and architectural features that should be prioritized for Restoration, Rehabilitation, or Renovation depending on the level of significance.

The hierarchy of spaces in the Arcady Apartments is described below.

PRIMARY SPACES/FEATURES:

Primary spaces are defined as features that are significant, character defining, and worthy of preservation in their current condition/appearance, and would ideally be restored over time. "Primary spaces are those that are essential in conveying the historic and architectural character of a building." (www.nps.gov). The materials and features remain intact. In the case of this building, the primary spaces retain their original architectural details and spatial characteristics, although the surfaces have been painted in some areas.

- Exterior wall surfaces
- Exterior wall ornament: balconies and medallions
- Balconies and related exterior ornamentation
- Cornices
- Courtyard and first story walls and entrances
- Original wood sash windows (where they exist)
- Rooftop signage (original framework)
- Entrance Corridor from Wilshire Blvd (painted, but detailing still intact)
- Original Main Entrance Lobby (painted, but ornamental detailing is intact)
- Entrance Patio area, original location
- Mezzanine over main lobby
- Retail Space, former Royale Cafe, now Art Studio with original millwork
- Staircase from lobby to first residential floor (intact)
- Staircases, (east and west) to all upper floors (marble treads and steel handrails)



Staircase from entrance lobby to main staircase to upper floors

SECONDARY SPACES/FEATURE:

Features and spaces that are notable, and character-defining, but may not retain the integrity of design and character due to a change in materials or other physical alteration. “Secondary spaces are less critical in defining a building’s importance.” (www.nps.gov)

- Original Dining Room (surfaces modified, prior owner modification)
- Circulation Corridors, All upper Floors
- Entrance on Wilshire Boulevard facade
- Rooftop signage
- Interior of Apartments, Living Spaces with millwork and detailing
- Interior of Apartments: Kitchens and Bath
- Former retail spaces with mezzanines, first floor

TERTIARY SPACES/FEATURES:

Features or spaces that are not considered significant and can be modified as needed without impacting the integrity or significance of the property.

- Entire Basement, all spaces
- Pool deck and patio surfaces
- Roof and related structures

Zoning Plan Graphic – Main Floor

Second Floor

Third Floor, Representative of All Upper Floors

(Primary Spaces are in yellow, secondary in blue, tertiary are in green.)

See Full Size Preservation Zoning Plans in Appendix.

CHARACTER DEFINING ARCHITECTURAL FEATURES – Current Condition and Recommended Treatments

EXTERIOR FACADES:

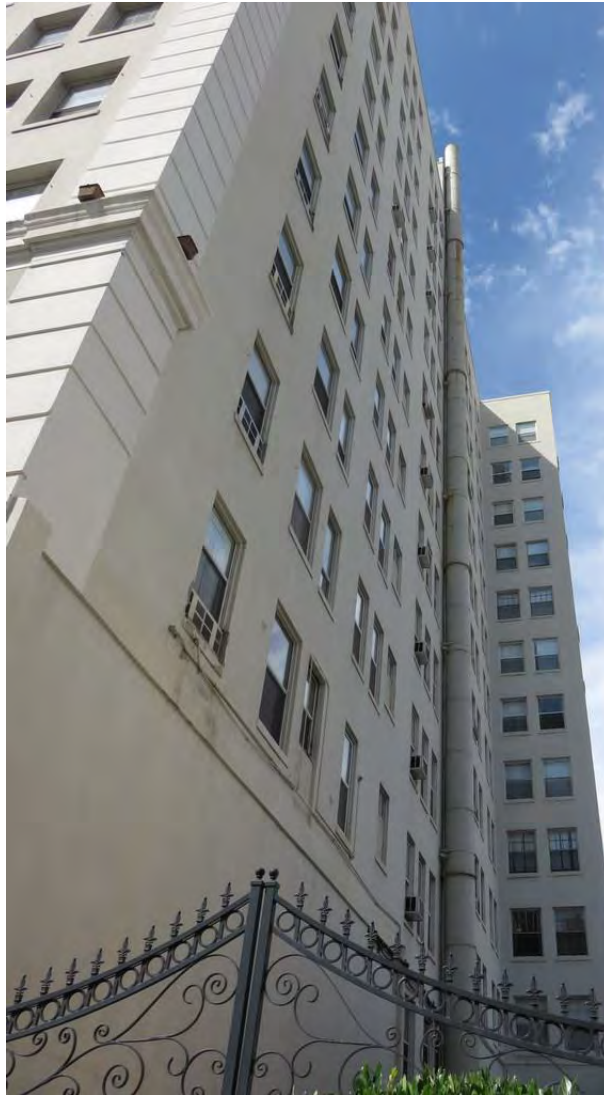


Upper façade ornamentation and cornice details. The window openings are evenly spaced. Window air conditioning units have a minor impact on the integrity of the appearance of these primary elevations, although there is no real alternative without major intervention to the interior.



Upper façade ornamentation and balconies, typical on the primary elevations. All of these components need periodic inspection for cracks and any weakening of the attachments.

SECONDARY FACADES



The rear elevation (east) is not ornamental or intended to be in prominent view. The walls are plain and only noted for the evenly spaced window openings. Window air conditioning units are less of a concern on these elevations in terms of impact on the architectural integrity of the building.

ENTRIES, LOBBIES AND PUBLIC SPACES



Main Entrance from Wilshire Boulevard, corridor leading to main lobby. This area was recently repainted to convey a “Moorish” character of the grand lobby. The original NeoClassic architectural features remain intact. The tile wainscot was added in 2016 as part of the upgrade.



Entrance corridor prior to current repainting. The faux-painting shown above was not original

STAIRWELLS



Stairway 1 winds through the upper stories. The marble stair treads and balustrade with stained natural wood bannister are original and should be retained.

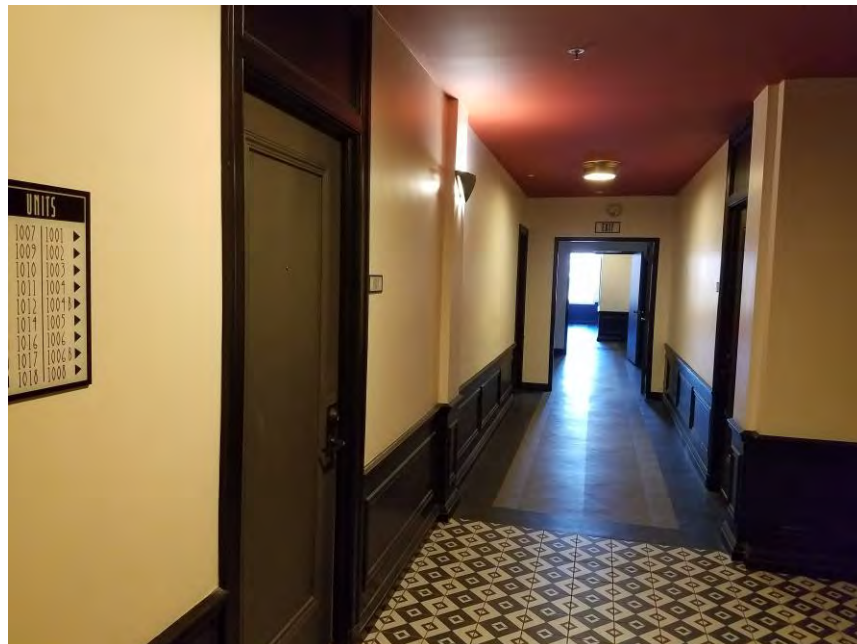


Stairway 2 accesses the upper stories. The marble stair treads and balustrade with wood bannister are original and should be retained. The railing does not meet current code requirements. A variance may be required to avoid future modifications of the railing, or the potential to enclose the stairwell, which would have a major impact on the character of the corridors, and the interior in general.

CORRIDORS



Former character of upper story corridor. This appearance is being updated. The millwork is being retained, but the color and carpeting are being changed. The dropped ceilings are being removed.



The upper floors are being renovated in sequence, starting with the top floor in 2016. Floors 12 through 8 are completed. Lower floors will be updated to match beginning in 2017. The work recaptures the ceiling height, and retains the original millwork, and is overall a compatible approach that works well with the building.



Upper floor upgrades include the elevator area, including repainting and installation of new floor tiles. The original bronze mail chute was retained on all floors. Oval panel is the former elevator indicator, left in place although not functional.

UPPER FLOOR APARTMENT UNITS



Historic image, apartment unit. Date unknown.



Existing apartment units, after renovation, retain typical details, including millwork on wall surfaces, and window framing

APARTMENT UNIT KITCHENS

One of the authentic aspects of the building is the fact that most of the kitchen cabinetry remains in place and is in sound condition. Countertops have replaced tile on counters in most units. There are only five apartments that retain the original tile counters, out of the 200 total units.



Kitchen Units have been upgraded in the majority of rooms. Appliances and countertops have been replaced, but upper cabinetry is original, and in good condition.



Kitchen Units have been upgraded in the majority of rooms, retaining most of the cabinetry.

BATHROOMS

The majority of bathrooms have been modified and upgraded through the replacement of fixtures over time. Notably, there are 24 bathrooms out of the original total of 200 that are still in completely original condition, with fixtures and floor tile intact (Building management has record of units that have original fixtures.)



Bathroom Units have also been upgraded in most of the apartments, including replacement of plumbing fixtures and floor tile.

ROOF AND DRAINAGE REQUIREMENTS



The rooftop will need maintenance. The sheathing will need to be replaced on a cyclical basis, and flashing painted.

HISTORIC SIGNAGE



The framework of the sign is an original feature, although the actual sign and language has changed. The frame has been recently stabilized and painted (2016).

MAJOR ITEMS FOR FUTURE CONSIDERATION

WINDOW APPEARANCE, TYPE AND CONDITION

There are six types of windows in the building at the present time. This results in an inconsistent appearance on the primary elevations and the courtyard walls. There are however, enough of the original wood double hung units on the primary elevations that restoration, or potentially replacement-in kind of the existing wood windows should remain long-term maintenance priority.

Original Wood Double-Hung	242
Vinyl Replacement Units	181
Steel Windows on Secondary Elevations (on Property Lines)	24
Fire Escape Metal Windows	32
Aluminum Double Hung Replacement Units	207
Small Aluminum Sliding Units at Bathrooms	<u>192</u>
TOTAL	878



Projecting air conditioning units with the original sash open, as well as the infilled windows for the showers, have a cumulative visual impact.

On the primary elevations within the U shaped interior court, the width of the windows varies. Each of the elevations have columns of narrow windows (at bathroom locations), in which the window openings have been filled in almost completely. A narrow space across the top is fit with a small aluminum sliding window. This infill was done in the mid-1950's to accommodate the renovation of bathrooms in the units. These windows are in usable condition, and due to their relationship to the internal restroom plan (tiled shower walls), this condition will not be changed in the foreseeable future. Recent exterior maintenance included painting the infill panels.

Many of the windows have air conditioning units installed at the bottom of the opening, such that the lower sash is still intact and in place, just in a raised position. A solid panel infills the remainder of the opening. Once air conditioning became an expected residential amenity, the installation of window AC units became a common practice for buildings of this era. Due to the concrete structural framing of the building there is no viable alternative that would remedy the need for window units. Installing a new HVAC system within the building would require major renovation of the interior, dropped ceilings for ductwork and other intrusive chases. The

alternative would be cutting new openings in the concrete, which is also a major impact, and counter to the Secretary of the Interior's Standards for Rehabilitation. The only viable option is to retain the individual air conditioning system, perhaps with new units of a different profile that could be installed in conjunction with window restoration. A flatter/thinner unit that would fit at the base of the window openings, allowing the windows to be closed further would unify the overall appearance of the building. Investigation into new units of a flatter shape, and perhaps with less projection from the wall, is recommended.



As noted, due to the concrete structural framing and walls of the building, there is no realistic option to install a central air conditioning system that would allow the air units to be removed from the window openings. New AC units of a flatter profile that would fit across the base of the window opening may present an option that would be less impactful to the character of the facades, especially the primary elevations and internal courtyard walls.

REHABILITATION NEEDS OF BUILDING COMPONENTS LONG RANGE TREATMENT RECOMMENDATIONS

REHABILITATION AND MAINTENANCE ITEMS COMPLETED DURING 2016

1. Pool deck and leakage into basement/garage repaired by replacement of elastomeric membrane below pool deck.
2. Exterior Spalling repaired
3. Lobby Renovation
4. New corridor lighting (Upper floors)
5. New storefront for Managers office
6. Upper floors upgraded – corridors and rooms are repainted and have new carpet
7. Crown Molding Repairs, top 5 floors
8. Roof flashing repaired next to Elevator room
9. Rooftop signs and framework were stabilized/strengthened and painted
10. ADA Access was improved on west side of property
11. Courtyard repairs
12. Two columns of bathroom window niches, painted and new stucco to match adjacent walls
13. Reconstructing the concrete floor of vacant retail suite

FUTURE REPAIR NEEDS - Identified Needs for Maintenance, (Source: PARTNER report, dated May 8, 2015)-

1. Repair cracked or spalled cornices – Inspect all areas of spalling for evidence of cracking, or where there is exposed rebar that may need to be replaced due to rust
2. Repair cracked moldings or other decorative items
3. Replace fabric awnings
4. Replace primary entrance door on south elevation
5. Replace all glazing compound, (hardened/cracked) on steel sash windows
6. Scrape paint, removed rust, prepare and repaint steel framed windows
7. Replace built-up roof membrane, either with new rolled asphalt, or replacement material
8. Replace parapet sheet metal coping
9. Repair skylights, including framing, and install new flashing at base

10. Replace aluminum branch wiring throughout building.
11. Replace toilets with low flow, as needed over time
12. Replace corroded cold water pipe joint connector on roof
13. Repaint exteriors (ongoing, cyclical over 10 year cycle)
14. Repair cracks and spalled cornices and moldings at building exterior (ongoing)
15. Restoring wood sash windows – long term maintenance over time.
16. Replacing built up roofing or apply alternate coating
17. Performing annual roof maintenance
18. Retrofitting existing stair handrail/guardrail (*will need variance from code requirements due to primary significance as historic feature, coordinate with Office of Historic Resources*)
19. Removing vinyl wall covering and repainting surfaces
20. Replacing cracked floor tiles
21. Replacing apartment unit appliances, ongoing
22. Replacing air conditioning units
23. Replacing wood shims under the air conditioning units
24. Replacing heat pump units
25. Replacing condensing units
26. Eventual replacement of in-use central hot water heater and storage tanks
27. Replacing steam boiler or as an alternate, removing steam boiler
28. Replacing cast iron waste drain pipes
29. Replacing galvanized domestic water lines with copper
30. Upgrading the main electrical switchgear serving the property
31. Removing abandoned central water heater and storage tanks

MILLS ACT AND PRESERVATION PRIORITIES

The items below are prioritized from the previous lists. These items are related to preservation concerns impacting to historic features or appearance. This is based on the assumption of a ten year planning horizon for an ongoing maintenance plan.

Specific cost estimates and repair specifications will be submitted as part of the Mills Act Application that will be sequential to this report.

1. Replace aluminum branch wiring: Years 5-10, as needed
2. Perform fire extinguisher inspection: Ongoing, as required by code, All Years, 1-10
3. Replacing corroded cold water pipe joint connector on roof: Year 1
4. Repainting exterior: Lower stories, Year 1-2, Upper stories, Year 7-10
5. Repairing cracks and spalled cornices and moldings at building exterior – Year 1
6. Replacing fabric awnings: Year 1
7. Restoring door finishes: Year 2
8. Removing/replacing cracked glazing compound at steel sash windows: Year 1
9. Restoring/Repairing wood framed windows: Years 1-2
10. Replacing built up roofing with rolled asphalt, or substitute material: Year 3
11. Restoring skylight: Year 2
12. Performing annual roof maintenance: Ongoing, Years 1-10
13. Removing vinyl wall covering and repainting interior surfaces: Years 5-10
14. Performing sectional, full-depth concrete slab replacement at corroded and spalled conditions to the basement ceiling (courtyard plaza slab): Years 3-5
15. Replacing cracked floor tiles: Year 1
16. Repairing moisture damaged ceiling in former restaurant: Year 1
17. Replacing apartment unit appliances: Ongoing, as needed, Years 1-10
18. Replacing air conditioning units: Ongoing, as needed, Years 1-10
19. Replacing wood shims under the air conditioning units: Ongoing, as needed, Years 1-10
20. Replacing heat pump units: Ongoing, as needed, Years 1-10

21. Replacing condensing units: Ongoing, as needed, Years 1-10
22. Removing abandoned central water heater and storage tanks: Year 5
23. Eventual replacement of in-use central hot water heater and storage tanks: As needed, Year 1-5
24. Replacing steam boiler or as an alternate, removing steam boiler: As needed, Year 1-5
25. Replacing cast iron waste drain pipes: As needed, Year 5-10
26. Replacing galvanized domestic water lines with copper: As needed, Year 5-10
27. Upgrading the main electrical switchgear serving the property: As needed, Year 5-10

APPENDIX

The Secretary of the Interior's Standards for Rehabilitation

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

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

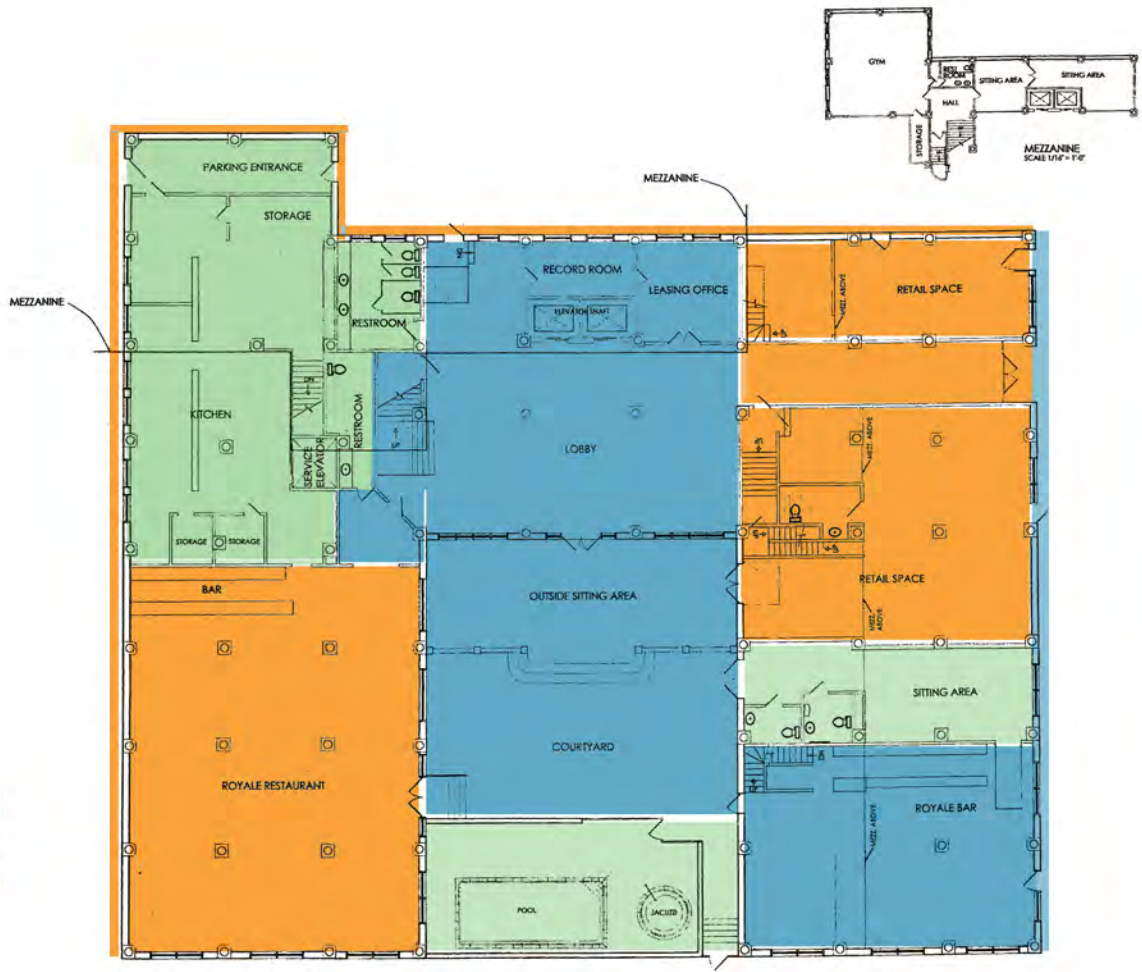
ATTACHMENTS FOLLOWING:

Preservation Zoning Plan Graphics

Building Permits for Cited Major Alterations

National Park Service: "Preservation Briefs"

**Repair of Historic Wood Windows
Preservation of Historic Terra Cotta
Rehabilitating Historic Storefronts
Rehabilitating Interiors in Historic Buildings**



- Primary ■
- Secondary ■
- Tertiary ■

EXISTING FIRST FLOOR AND MEZZANINE PLAN



REVISIONS

NO.	REVISION / ISSUE	DATE
1	NOI ORIGINAL ISSUE	04/11/09
2	REVAL. NO. ISSUE	04/13/09
3		
4		

FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

NOI FILE NO. 09-00000000
 REDFERN TRUST
 3311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91354
 REDFERN
 9310 WILSHIRE BLVD.
 LOS ANGELES, CA 90027

EXHIBIT "A"
 Page No. 2 of 19
 Case No. 2007-00000000

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A-4



Primary ■
 Secondary ■
 Tertiary ■

EXISTING 2ND FLOOR PLAN

EXHIBIT "A"
 Page No. 3 of 15
 Case No. 2009-004024



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FIELD OBSERVATIONS OF
 EXISTING PLAN LAYOUT

REDWOOD TRUST
 5311 TOPANCA CANYON RD.
 WOODLAND HILLS, CA 91364
 #10 WALSH DRIVE - REDFERN
 2619 WALSHIRE BLVD.
 LOS ANGELES, CA 90057

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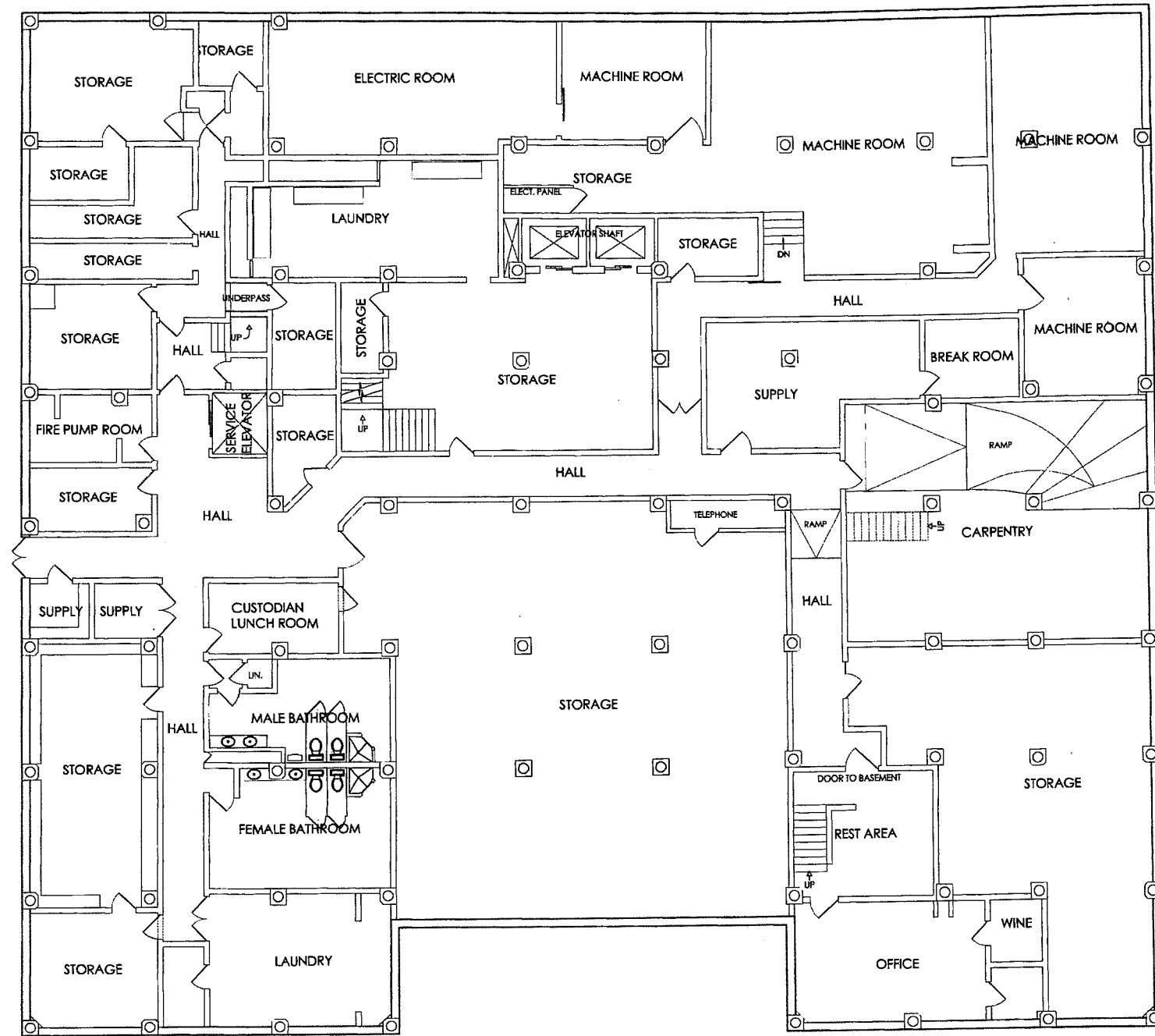
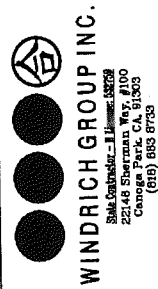


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 Case No. 2 009 1926

2A 2009 1926

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FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

Client's Name and Address
 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364

Project Name and Address
 #310 WILSHIRE = REDFERN
 2619 WILSHIRE BLVD
 LOS ANGELES, CA 90057

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WGI	RSAUD
Date	APRIL 15, 2009
Scale	NOT TO SCALE

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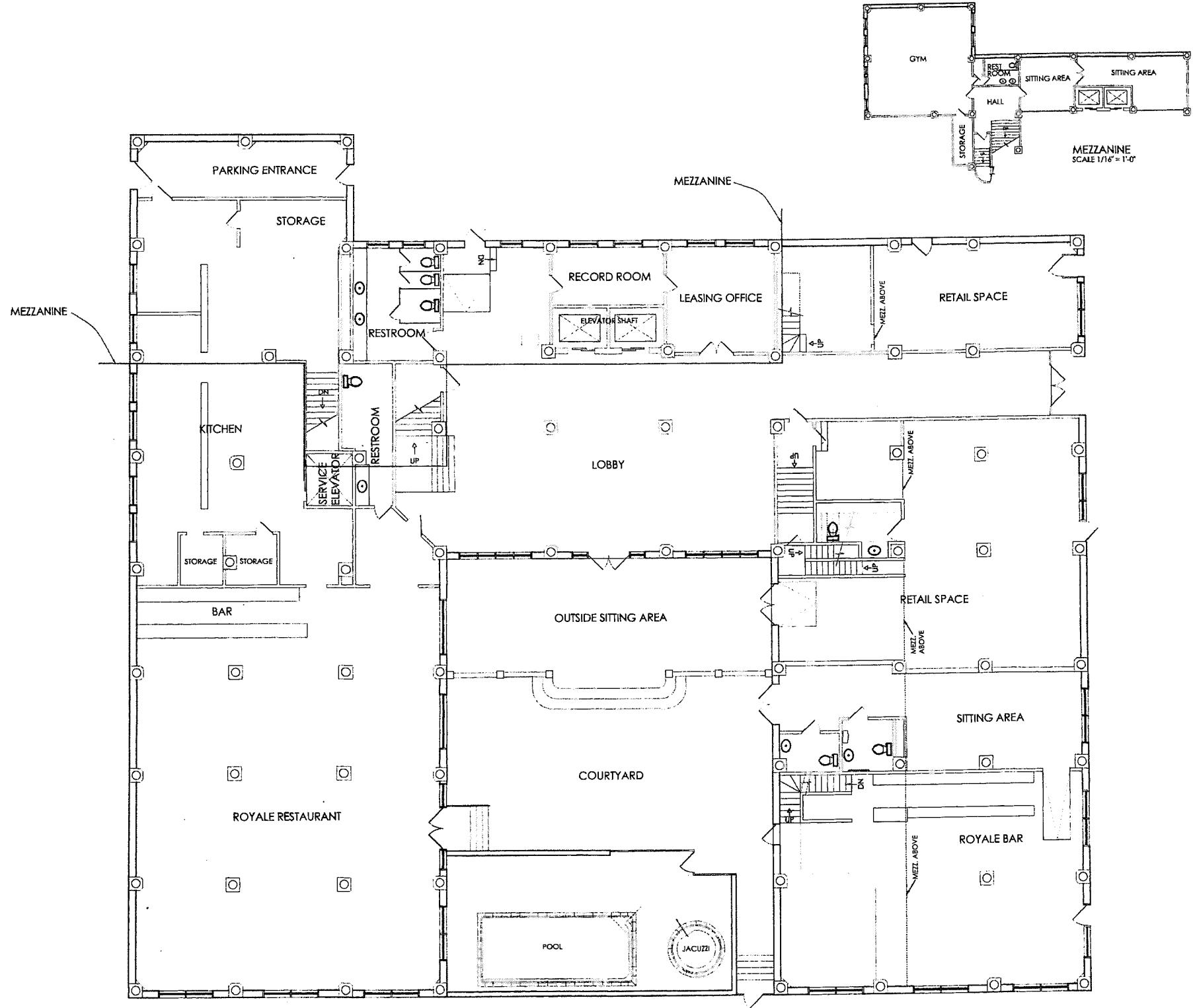


EXHIBIT "A"
 Page No. 2 of 13
 Case No. 7202-000-000

WINDRICH GROUP INC.
 2842 DEWEES - ELECTRICITY
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 (818) 843 8738

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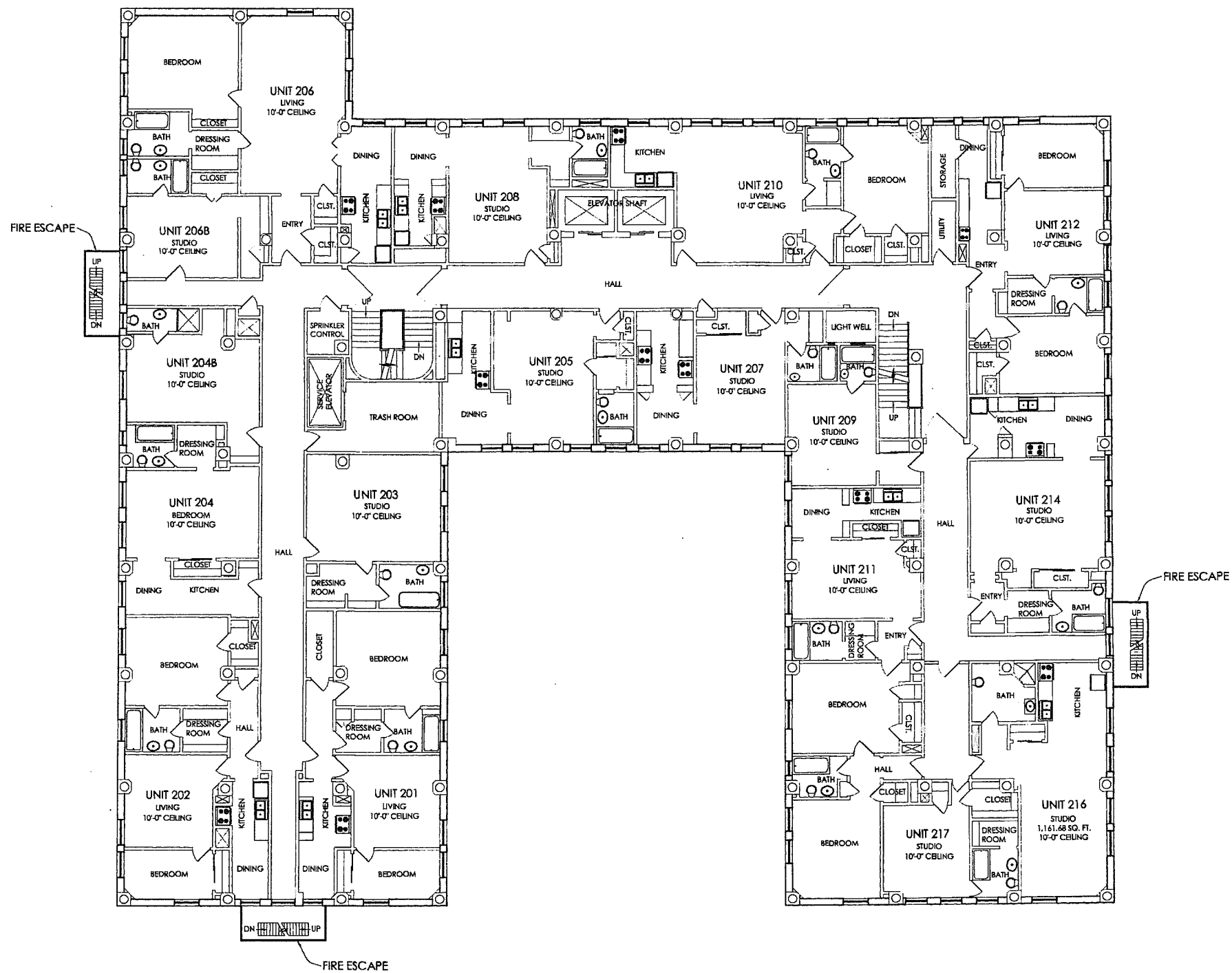
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 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364
 Project Name and Address
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

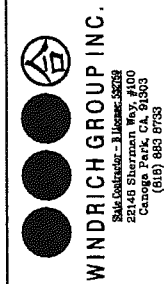
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EXISTING FIRST FLOOR AND MEZZANINE PLAN



EXISTING 2ND FLOOR PLAN



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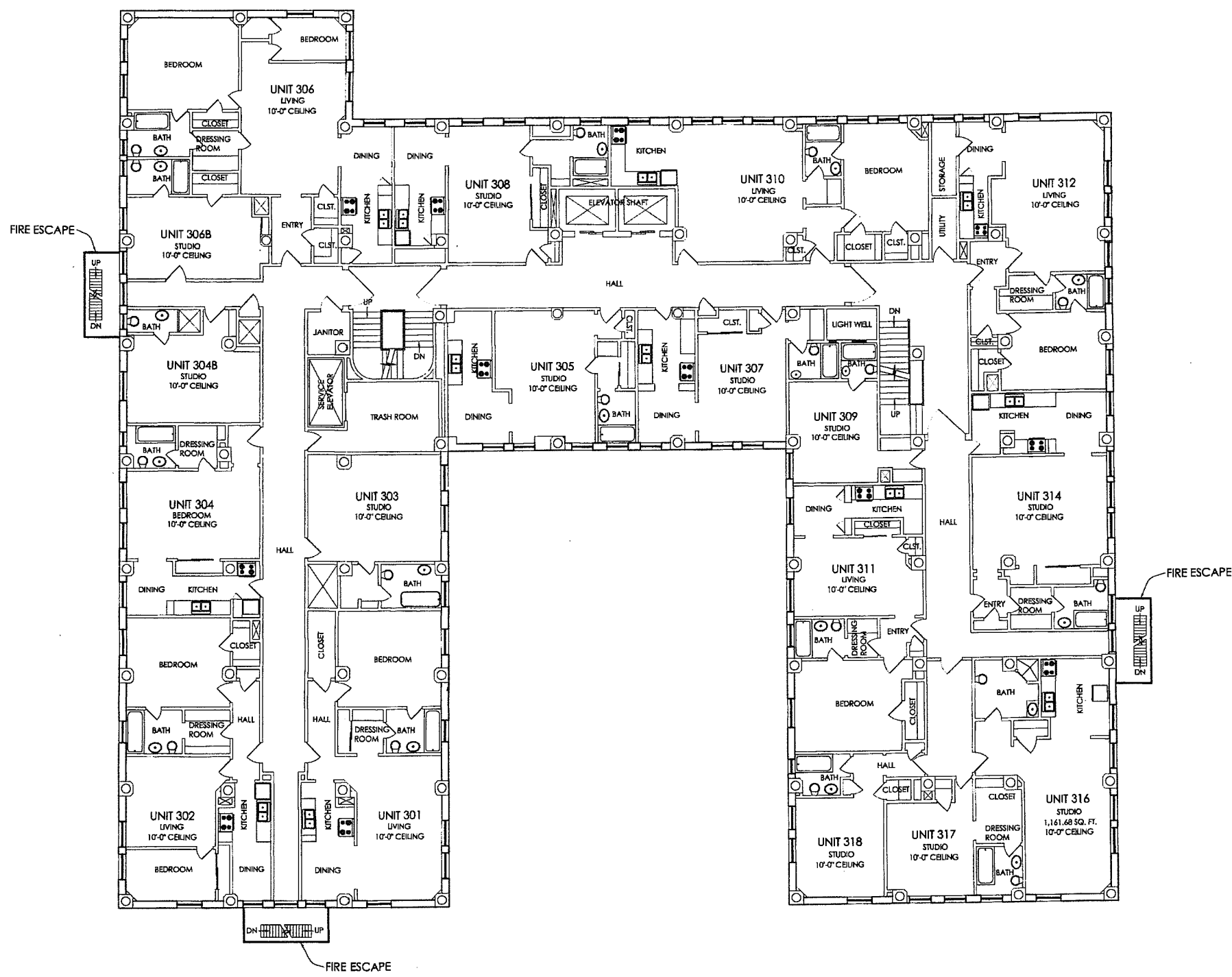
FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

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 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364
 Project Name and Address:
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

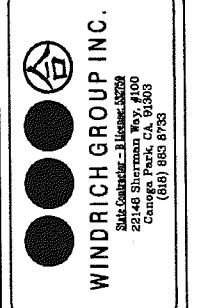
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 Case No. 2009-00122

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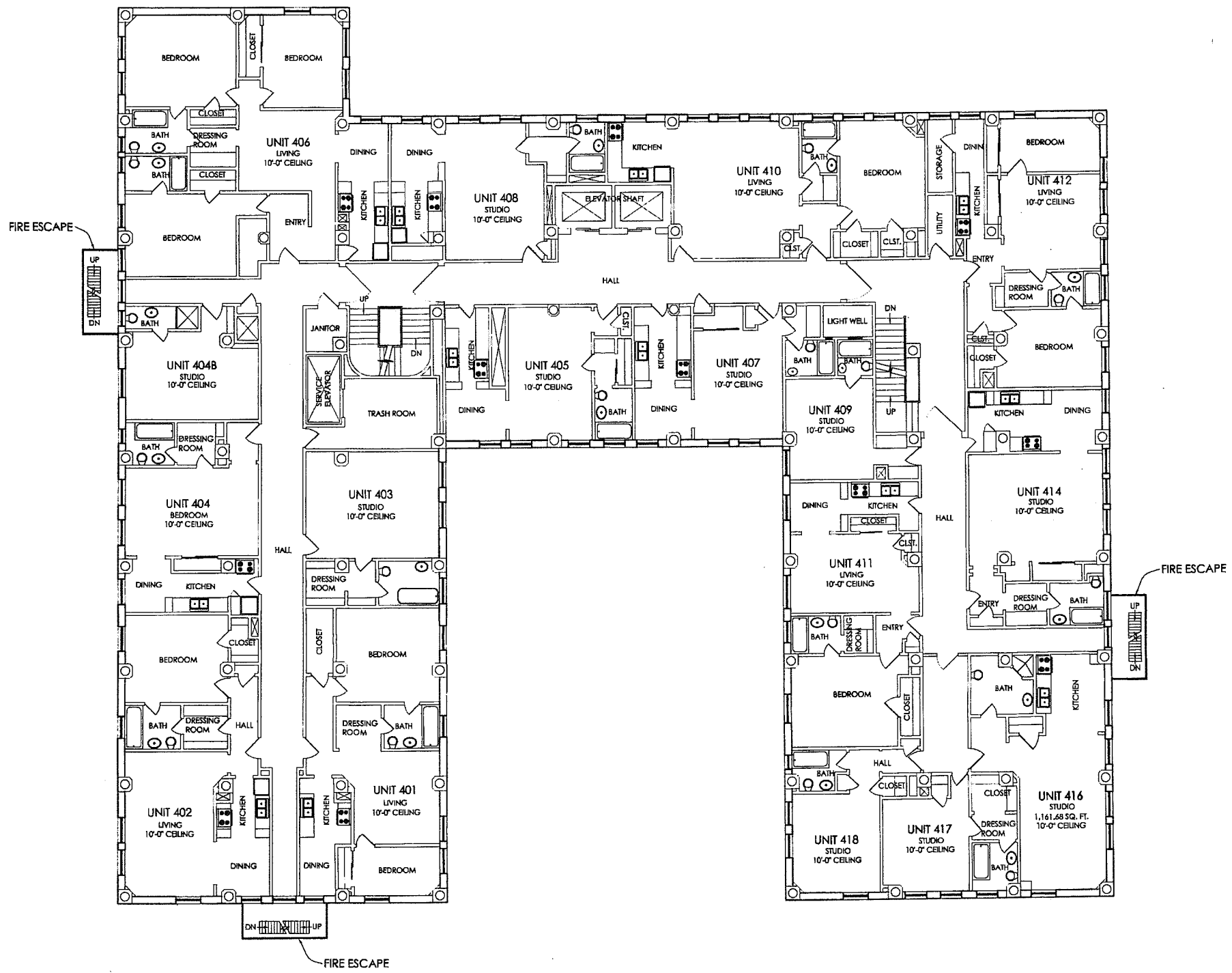
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 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364

Project Name and Address
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

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 Case No. 2009-1026 (2)

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 WOODLAND HILLS, CA 91364

Project Name and Address:
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 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

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 Page No. 5 of 13
 Case No. 2008-1024/21

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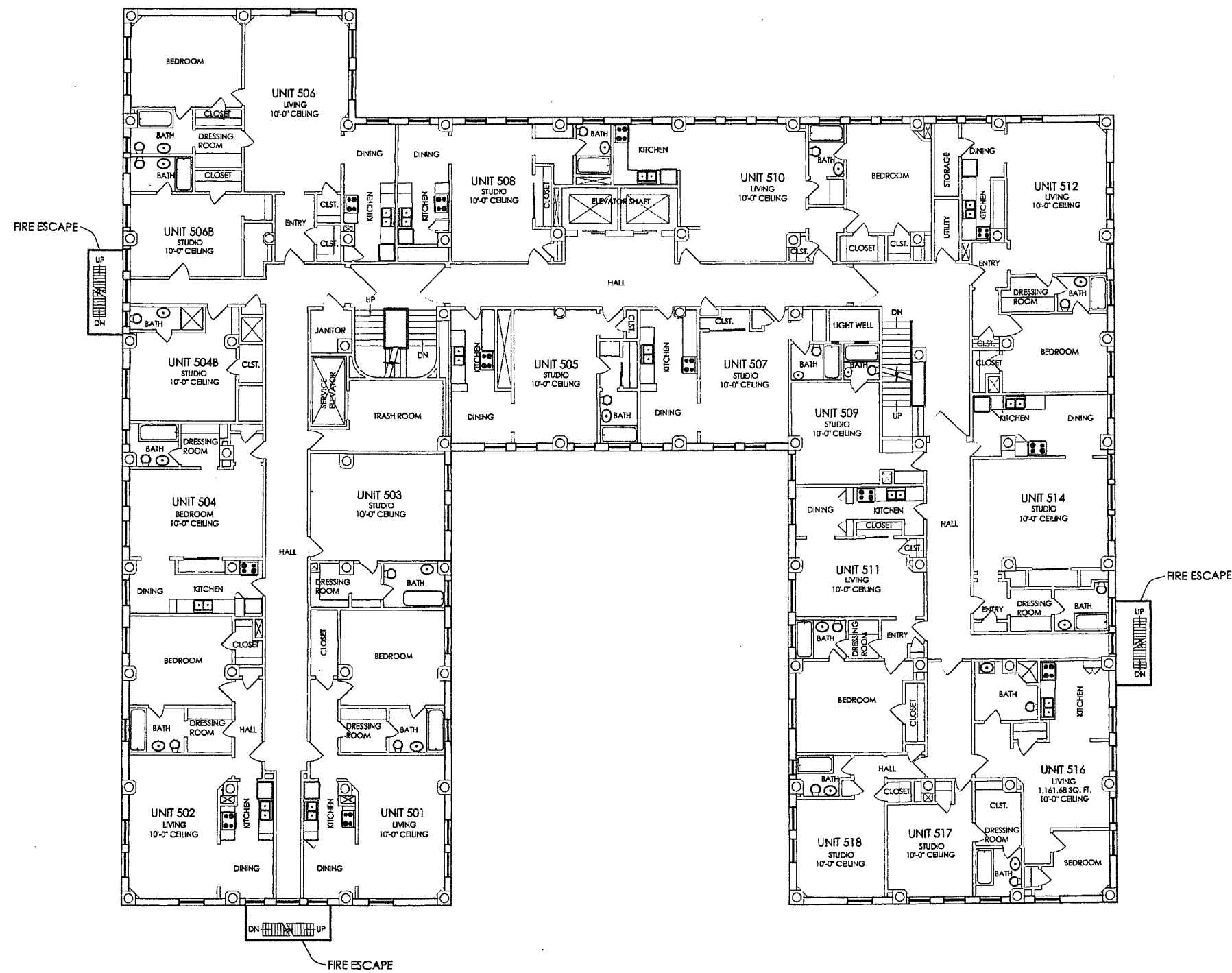
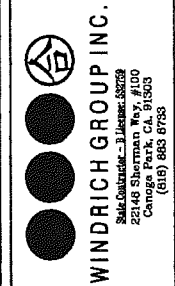


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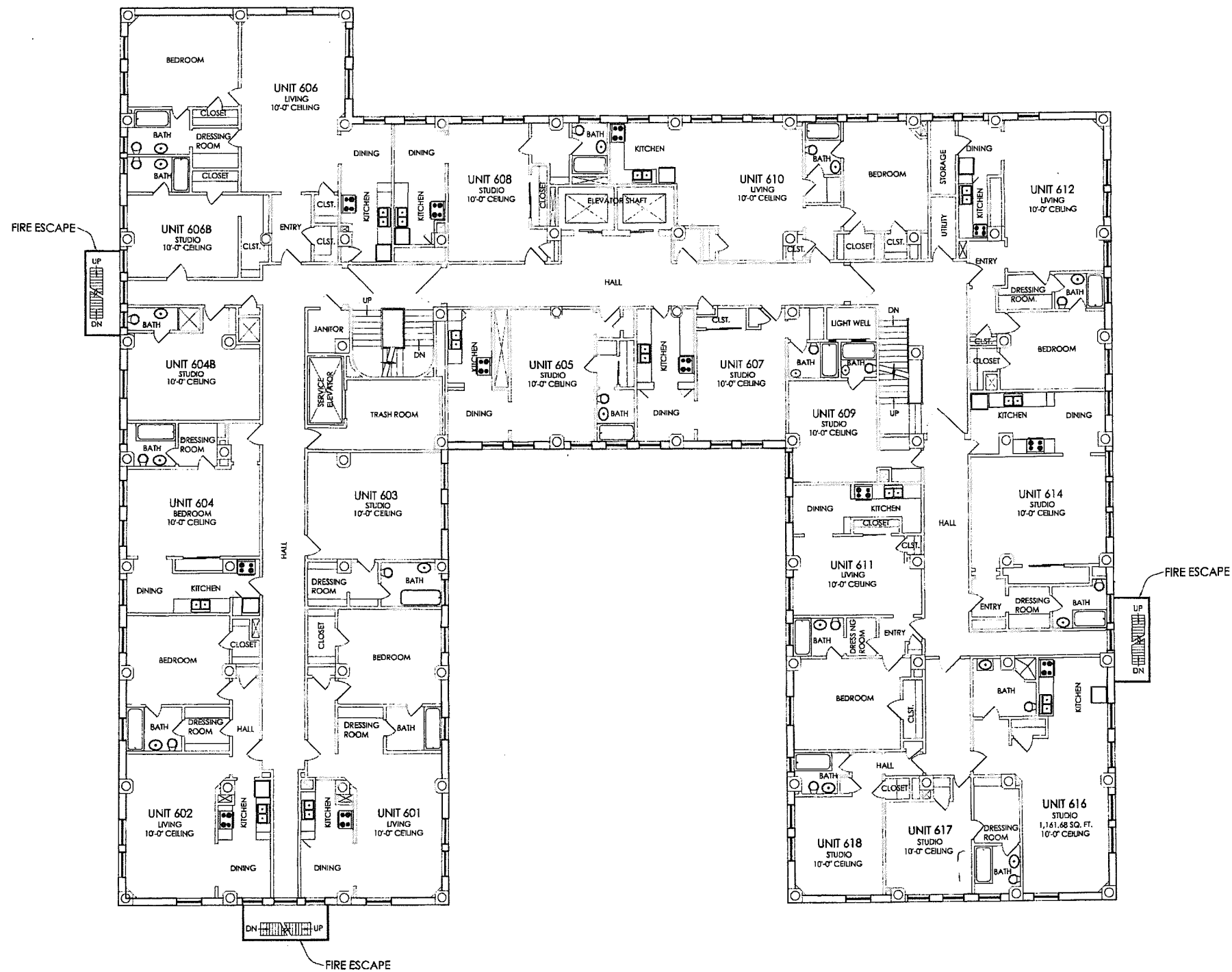
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 WOODLAND HILLS, CA 91364

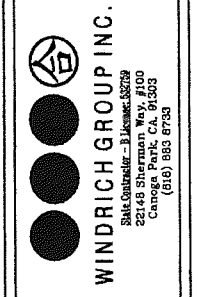
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 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
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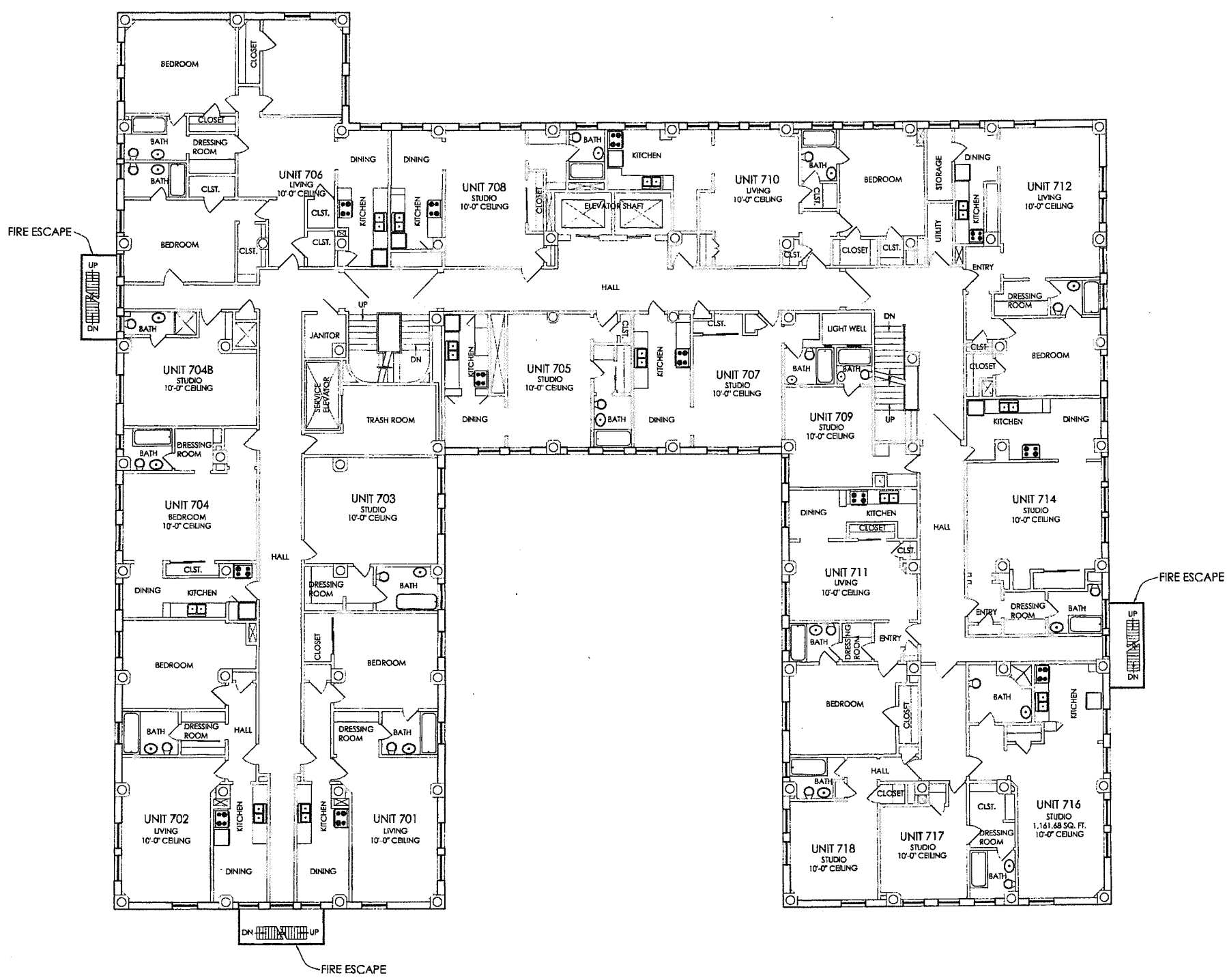
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 WOODLAND HILLS, CA 91364

Project Name and Address:
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 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

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 Page No. 7 of 13
 Case No. 26-01-1926(20)

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A-11



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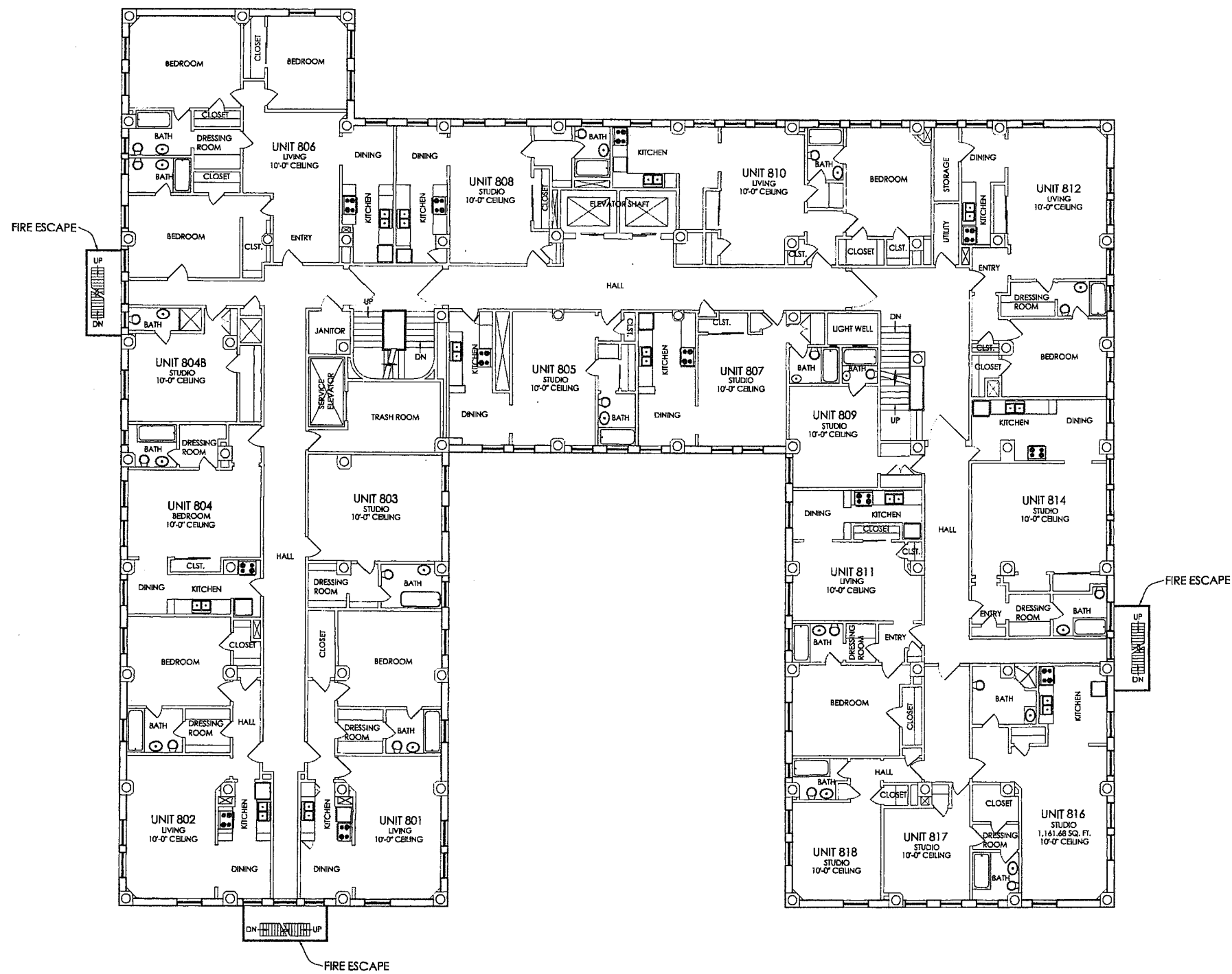
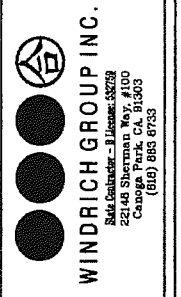


EXHIBIT "A"
 Page No. 9 of 13
 Case No. 28-09-1221 (2)

EXISTING 8TH FLOOR PLAN



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No.	Revision/Issue	Date
1	WGI ORIGINAL ISSUE	06.19.08
2	RSAUD. RE-ISSUE	04.15.09
3		
4		

FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

Client's Name and Address
 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364
 Project Name and Address
 #310 WILSHIRE - REDFERN
 2419 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

Drawn By: WGI
 Checked By: RSAUD
 Date: APRIL 15, 2009
 Scale: NOT TO SCALE

Sheet: **A-13**

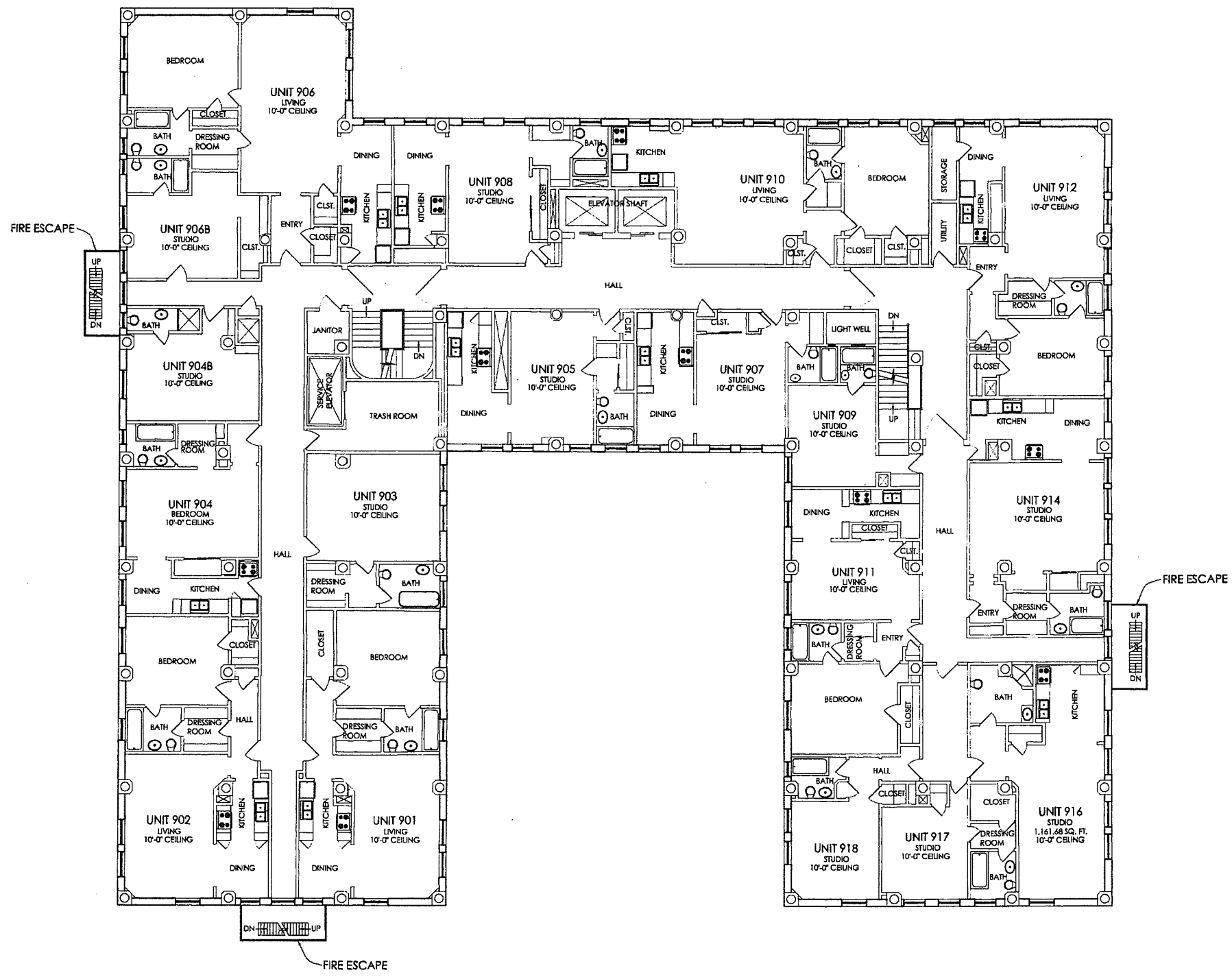


EXHIBIT "A"
 Page No. 10 of 13
 Case No. 2A-09-076(2)

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No.	Revision/Issue	Date
1	WGI ORIGINAL ISSUE	04.12.08
2	RSAUD RE ISSUE	04.15.09
3		
4		

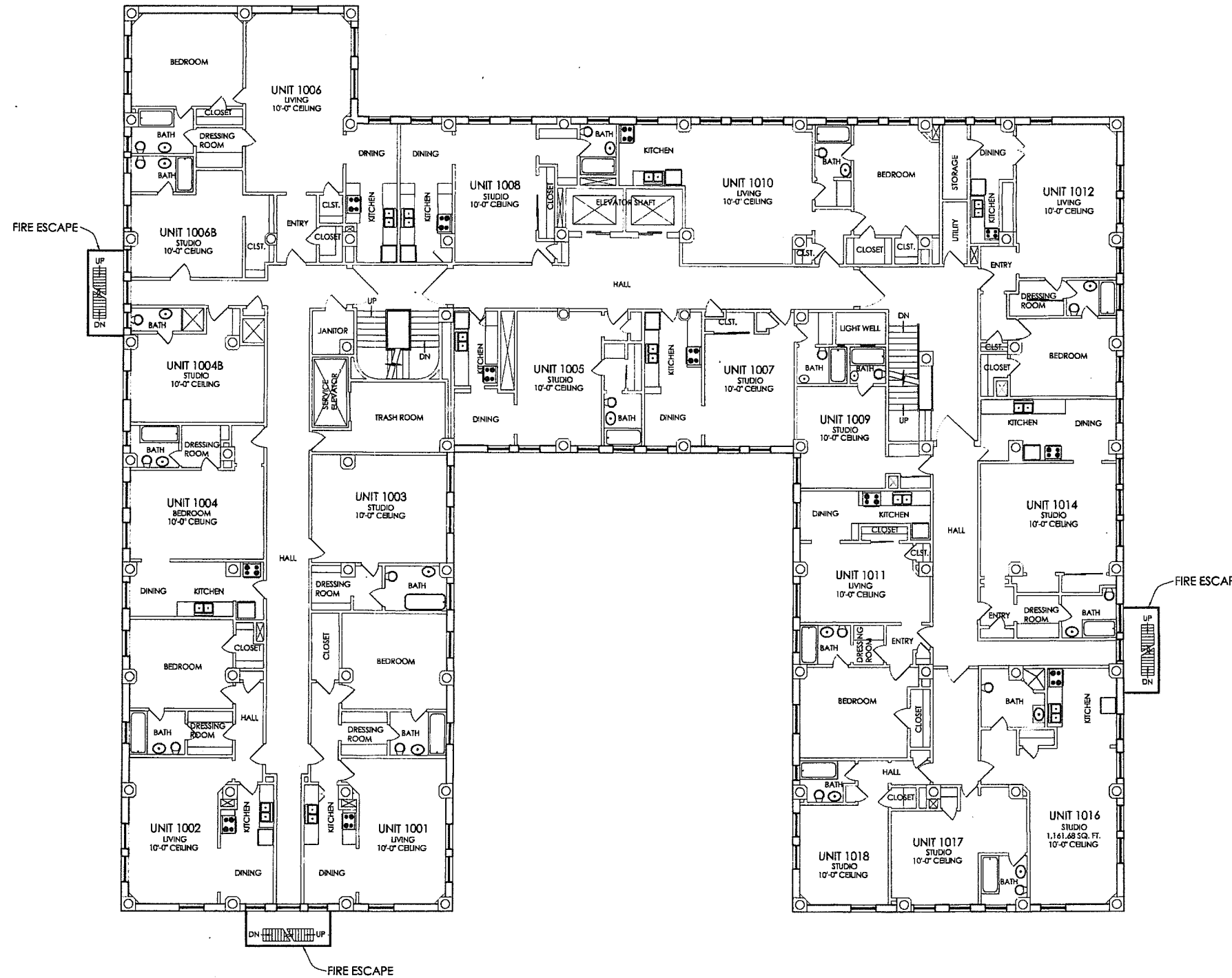
FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

Client's Name and Address:
 REDFERN TRUST
 531 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364
 Project Name and Address:
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

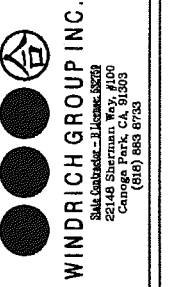
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 Checked by: RSAUD
 Date: APRIL 15, 2009
 Scale: NOT TO SCALE

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EXISTING 9TH FLOOR PLAN



EXISTING 10TH FLOOR PLAN



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No.	Revision/Issue	Date
1	WGI ORIGINAL ISSUE	04.15.09
2	REAUD. RE-ISSUE	04.15.09
3		
4		

FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

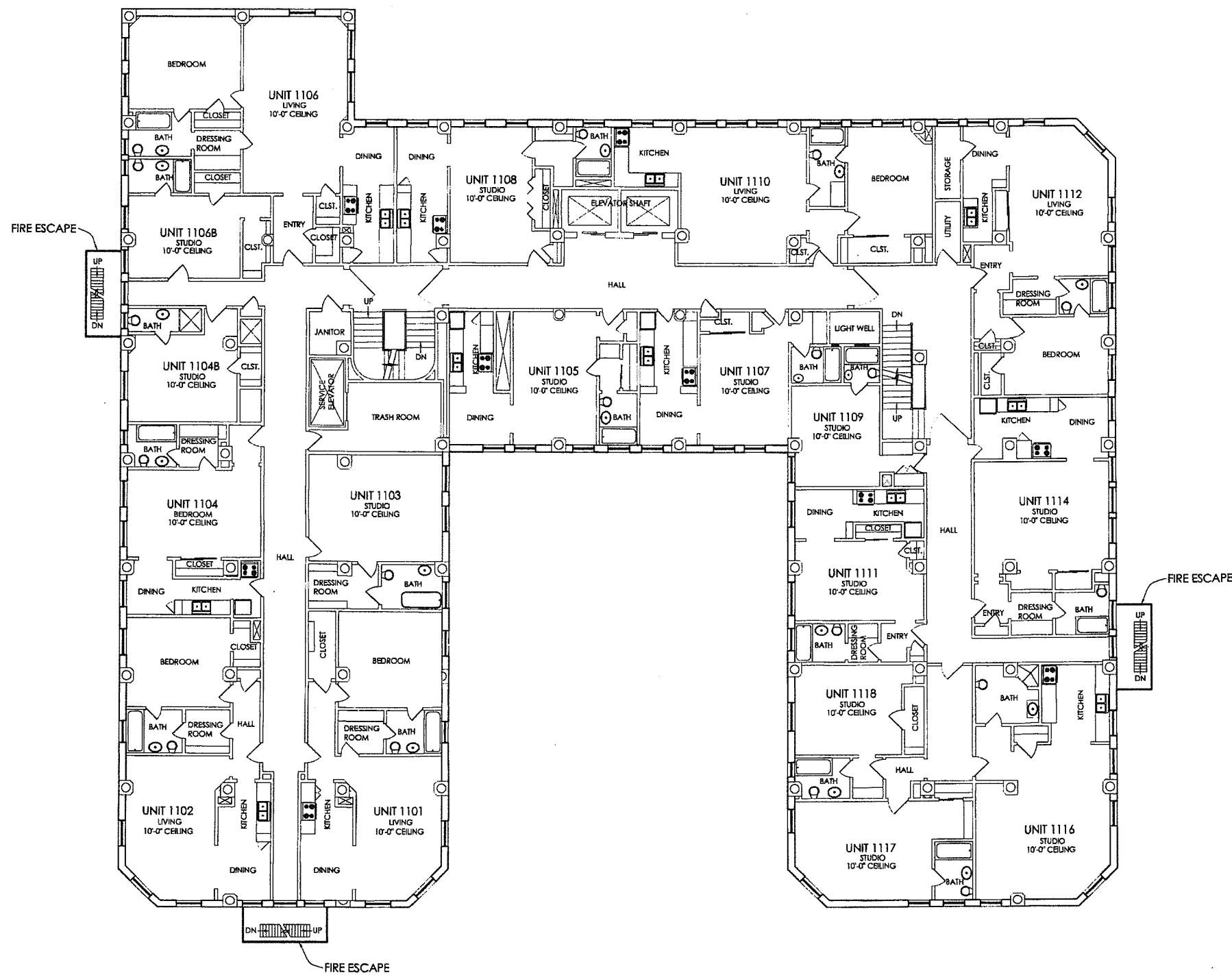
EXHIBIT "A"
 Page No. 11 of 13
 Case No. 2609-1926-24

Client Name and Address:
 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364

Project Name and Address:
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

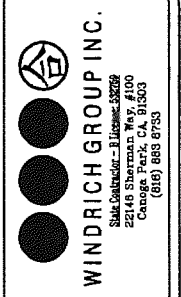
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 Date: APRIL 15, 2009
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EXISTING 11TH FLOOR PLAN

EXHIBIT "A"
 Page No. 12 of 13
 Case No. 28-09-1926(2)



WINDRICH GROUP INC.
 22145 Sherman Way, #100
 Van Nuys, CA 91411
 (818) 883-8723

No.	Revision/Issue	Date
1	WGI ORIGINAL ISSUE	04/19/09
2	RSAUD, RE-ISSUE	04/15/09
3		
4		

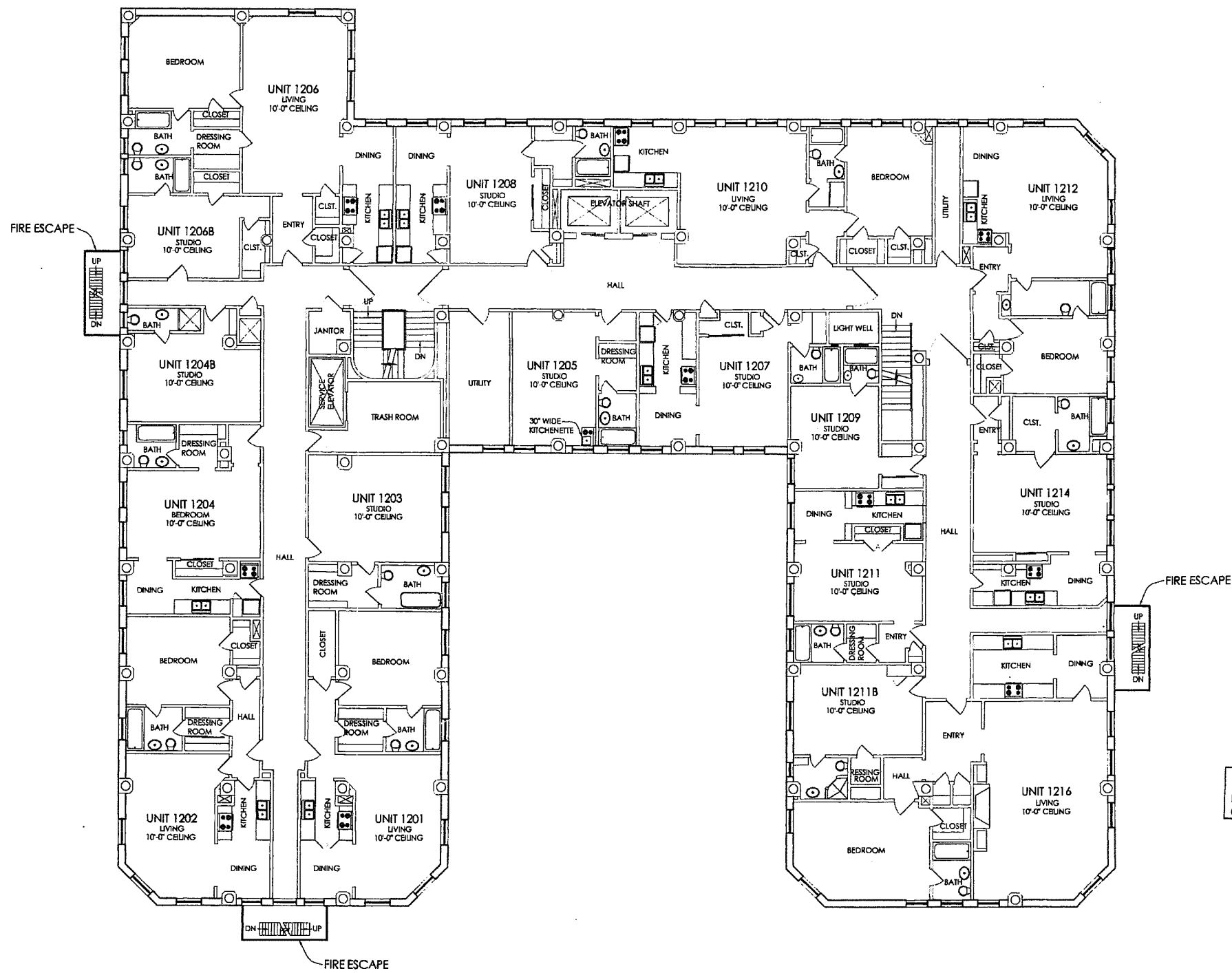
FIELD OBSERVATIONS OF
 EXISTING PLAN LAYOUT

Client Name and Address:
 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364

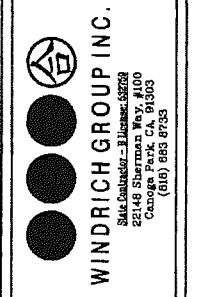
Project Name and Address:
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

Drawn By: WGI
 Checked By: RSAUD
 Date: APRIL 15, 2009
 Scale: NOT TO SCALE

Sheet: **A-16**



EXISTING 12TH FLOOR PLAN



WINDRICH GROUP INC.
 22148 Sherman Way, #100
 Canoga Park, CA, 91303
 (818) 895-8733

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No.	Revision/Issue	Date
1	WGI ORIGINAL ISSUE	06.19.08
2	RSAUD RE-ISSUE	04.15.09
3		
4		

FIELD OBSERVATIONS OF EXISTING PLAN LAYOUT

Client Name and Address
 REDFERN TRUST
 5311 TOPANGA CANYON RD.
 WOODLAND HILLS, CA 91364

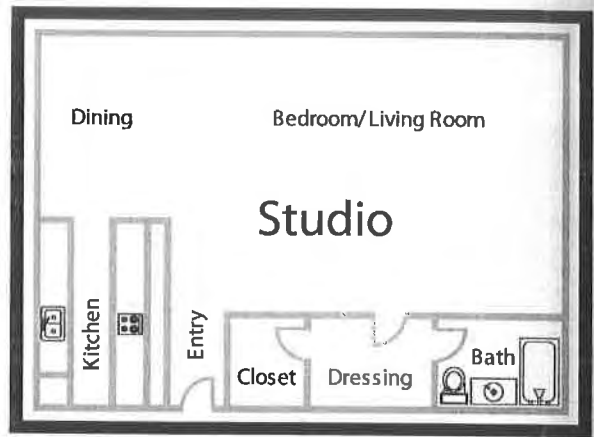
Project Name and Address
 #310 WILSHIRE - REDFERN
 2619 WILSHIRE BLVD.
 LOS ANGELES, CA 90057

EXHIBIT "A"
 Page No. 13 of 13
 Case No. ZAP-13-02

Drawn By: WGI
 Checked By: RSAUD
 Date: APRIL 15, 2009
 Scale: NOT TO SCALE

Sheet: **A-17**

Choose your new home from our elegant floor plans.



All Applications Must be Filled Out by Applicant

Blk. Form 1

PLANS AND SPECIFICATIONS and other data must also be filed

1

DEPARTMENT OF BUILDING AND SAFETY

Application for the Erection of Buildings

CLASS "A" "B" "C"

To the Board of Building and Safety Commissioners of the City of Los Angeles: Application is hereby made to the Board of Building and Safety Commissioners of the City of Los Angeles, through the office of the Superintendent of Buildings, for a building permit in accordance with the description and for the purpose hereinafter set forth. This application is made subject to the following conditions, which are hereby agreed to by the undersigned applicant and which shall be deemed conditions entering into the exercise of the permit:

- First: That the permit does not grant any right or privilege to erect any building or other structure therein described on any portion thereof, upon any street, alley, or other public place or portion thereof.
Second: That the permit does not grant any right or privilege to use any building or other structure therein described, or any portion thereof, for any purpose that is, or may hereafter be prohibited by ordinance of the City of Los Angeles.
Third: That the granting of the permit does not affect or prejudice any claim of title to, or right of possession to, the property described in such permit.

TAKE TO ROOM NO. 6 REAR OF NORTH ANNEX 1st Floor CITY CLERK PLEASE VERIFY

Lot No. [Handwritten: Lots 5-6-7] Block [Handwritten: 6241]

TAKE TO FIRST FLOOR 242 SO. BROADWAY

District No. [Handwritten: 9] M. B. Page [Handwritten: 19] F. B. Page [Handwritten: 780]

ENGINEER PLEASE VERIFY

No. [Handwritten: 2619 Wilshire Blvd] Street

[Handwritten: Box 7 1/2 Cor Rampart] (Location of Job)

(USE INK OR INDELIBLE PENCIL)

- 1. Purpose of Building: [Handwritten: Apartments] No. of Rooms: [Handwritten: 395] No. of Families: [Handwritten: 142]
2. Owner's name: [Handwritten: Arcadia Apartment Hotel Co.] Phone: [Handwritten: WA 9464]
3. Owner's address: [Handwritten: National City Bank Bldg]
4. Architect's name: [Handwritten: Walker & Egan] Phone: [Handwritten: WE 9261]
5. Contractor's name: [Handwritten: Christensen] Phone: [Handwritten: WH 1101]
6. Contractor's address: [Handwritten: 5615 W. 4th St]
7. TOTAL VALUATION OF BUILDING [Including Plumbing, Gas Fitting, Sowers, Casework, Elevators, Painting, Finishing, all Labor, etc.] [Handwritten: \$1,200,000.00]
8. Any other building or permit for a building on lot at present? [Handwritten: No] How used?
9. Size of proposed building: [Handwritten: 125'-0" x 140'-0"] Size of lot: [Handwritten: 125'-0" x 160'-7"] feet
10. Number of stories in height: [Handwritten: 12 + Basement] Height to highest point: [Handwritten: 140'-0"]
11. Material of foundation: [Handwritten: Concrete] Character of soil: [Handwritten: Salty]
12. Material of exterior walls: [Handwritten: Concrete (chip faced)]
13. Material of interior construction: [Handwritten: C. Tile & Gypsum Blocks]
14. Material of floors: [Handwritten: Concrete]
15. Material of roof: [Handwritten: concrete with gravel roof over]

I have carefully examined and read the above application and know the same is true and correct, and hereby certify and agree, if a permit is issued, that all of the provisions of the Building Ordinances will be complied with, whether herein specified or not; also certify that plans and specifications herewith filed conform to all of the provisions of the Building Ordinances and State Laws.

OVER

(Sign here)

(Owner or Authorized Agent)

FOR DEPARTMENT USE ONLY

PERMIT NO. 37358

Plans and Specifications checked and found to conform to Ordinances, State Laws, etc.

Application checked and found O.K.

Check date when permit is issued

[Handwritten signatures and dates]

[Handwritten signatures and dates]

DEC 30 1926

PLANS

[Handwritten signature]

#10

[Handwritten initials]

FOR DEPARTMENT USE ONLY

APPLICATION	O.K. <i>[initials]</i>
CONSTRUCTION	O.K. <i>[initials]</i>
ZONING	O.K. <i>[initials]</i>
SET-BACK LINE	O.K. <i>[initials]</i>
ORD. 33761 (N.S.)	O.K. <i>[initials]</i>
FIRE DISTRICT	O.K. <i>[initials]</i>

REMARKS

500 Tons of Steel
15000 Bbls of Cement

O.K. previous building is set back 5 feet from present property line in order to conform with Council Order dated April 27th 1926
John C. Shaw, City Engineer
by J.R. [initials] Deputy

This bldg will be set back to conform with above, 5' on Wilshire Blvd front

Ernest Thron
by [initials]
Inspection Notice # 3372

3

APPLICATION TO
ALTER, REPAIR, or DEMOLISH
AND FOR A
Certificate of Occupancy

Return to Public
CITY OF LOS ANGELES
DEPARTMENT
OF
BUILDING AND SAFETY
BUILDING DIVISION

Lot No. _____
Tract _____
Location of Building 2619 WILSHIRE Blvd } Approved by
(House Number and Street) City Engineer
Between what cross streets? N.E. Cor. Rampart & WILSHIRE Blvd. } Deputy.

USE INK OR INDELIBLE PENCIL

- Present use of building Apts Families _____ Rooms _____
(Store, Dwelling, Apartment House, Hotel or other purpose)
- State how long building has been used for present occupancy _____
- Use of building AFTER alteration or moving apts' home for apt Families _____ Rooms _____
- Owner FIFIELD WILSHIRE Phone _____
(Print Name)
- Owner's Address 2619 WILSHIRE Blvd P. O. Los Angeles
- Certificated Architect Stella Clements State License No. 813 B Phone TR 2-873
- Licensed Engineer _____ State License No. _____ Phone _____
- Contractor Jackson Bros State License No. _____ Phone _____
- Contractor's Address _____
- VALUATION OF PROPOSED WORK \$ 100 gmb.
Including all labor and material and all permanent lighting, heating, ventilating, water supply, plumbing, fire sprinkler, electrical wiring and elevator equipment therein or thereon.
- State how many buildings NOW } one apt. Bldg.
on lot and give use of each. } (Store, Dwelling, Apartment House, Hotel or other purpose)
- Size of existing building 125 x 140 Number of stories high 12 Height to highest point 150
- Material Exterior Walls concr. Exterior framework concr.
(Wood, Steel or Masonry) (Wood or Steel)
- Describe briefly all proposed construction and work:
Add PARTITION ON 12TH FL.

Certificate of Occupancy
DATE ISSUED
TRACER NO. (M)
RECEIPT NO.
CODE
FEE PAID

TYPE OF RECEIPT
DATE ISSUED
TRACER NO. (M)
RECEIPT NO.
CODE
FEE PAID

FILE WITH PERMIT 72143/53
NEW CONSTRUCTION

15. Size of Addition _____ x _____ Size of Lot _____ x _____ Number of Stories when complete _____
16. Footing: Width _____ Depth in Ground _____ Width of Wall _____ Size of Floor Joists _____ x _____
17. Size of Studs _____ x _____ Material of Floor _____ Size of Rafters _____ x _____ Type of Roofing _____

I hereby certify that to the best of my knowledge and belief the above application is correct and that the work authorized hereby will comply with all laws, and that in the doing of the work authorized hereby I will indemnify any person in violation of the Labor Code of the State of California relating to Workmen's Compensation Insurance.

Sign here Stella Clements
(Owner or Authorized Agent)

DISTRICT OFFICE **G GRADING** 2-11-54 By by T.H. Jackson
INSERVATION ROOM M-10 DEPARTMENT USE ONLY FILE 8712

Valuation \$ <u>400.00</u>	Area of Bldg. _____ Sq. Ft.	Investigation Fee \$ _____
Fee \$ <u>1-</u>	Fee \$ _____	Cert. of Occupancy Fee \$ _____
TYPE <u>I</u>	Maximum No. Occupants _____	Bldg. Permit Fee \$ <u>1.50</u>
GROUP <u>H1 & B-2</u>	Insure Loc. <u>Corner Loc</u>	Total \$ _____
Plans and Specifications checked <u>Alan Paley</u>	Owner-Ent Keyed <u>C4 60/100</u>	Lot Size <u>no legal</u>
Correction Verified _____	Zone _____	Fire District <u>1</u>
Filed with <u>72143</u>	Bldg. Line <u>5' WILSHIRE</u>	Street Widening _____
Plans, Specifications and Application checked and approved <u>J. M. ...</u>	Continuous Inspection _____	Application checked and approved <u>FEB 11 1954</u>
	SPRINKLER Specified—Required Valuation included Yes/No _____	Inspector <u>...</u>

DO NOT WRITE BELOW THIS LINE

TYPE OF RECEIPT	DATE ISSUED	TRACER NO. (M)	RECEIPT NO.	CODE	FEE PAID
Plan Checking	1-20-54		46392		
Supplemental Plan Checking					
Building Permit	FEB 10 1954		LA 79943		

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

CERTIFICATE OF OCCUPANCY

NOTE: Any change of use or occupancy must be approved by the Department of Building and Safety.

Address of Building 2519 Wilshire Blvd.

Permit No. and Year LA 72113/93

Certificate Issued March 23, 1993

This certifies that, so far as ascertained by or made known to the undersigned, the building at above address complies with the applicable requirements of the Municipal Code, as follows: Ch. 1, as to permitted uses; Ch. 9, Arts, 1, 3, 4, and 5; and with applicable requirements of State Housing Act,—for following occupancies:

Conversion of a 12 story, Type I, 125 x 160 Apartment Hotel and Dining Room to a Home for the Aged including an 8 x 22 Deteriorated Chemical Dispensing Room, Group P-1, Planned in violation of 1985 Ordinance, H-1, B-2 and related occupancy.

EXCEPT FOR DEVIATION 2 APPROVED BY BOARD OF BLDG. & SAFETY COMMISSIONERS
2519 Wilshire Blvd

Owner

Owner's Address

2519 Wilshire Blvd
Los Angeles 5, Calif.

3

APPLICATION TO ALTER - REPAIR - DEMOLISH
AND FOR CERTIFICATE OF OCCUPANCY

*Return to
Fidell...*

CITY OF LOS ANGELES

DEPT. OF BUILDING AND SAFETY

DIST. MAP 132-201	1. LEGAL LOT	BLK.	TRACT
ZONE C-4	2. BLDG. ADDRESS 2619 Wilshire Blvd.		APPROVED
FIRE DIST. 120-60 I	3. BETWEEN CROSS STS. N.E. corner Rampart AND Wilshire Blvd.		
INSIDE	4. PRESENT USE OF BLDG. hotel	NEW USE OF BLDG.	
KEY COR. LOD	5. OWNER Fifield Wilshire		
REV. COR. LOT SIZE No LEGAL	6. OWNER'S ADDRESS 2619 Wilshire Blvd.		
REAR ALLEY 12.5'	7. PERT. ARCH. Stiles Clements	STATE LICENSE NUMBER	813B
SIDE ALLEY BLDG. LINE 5' WILSHIRE	8. LIC. ENG.	STATE LICENSE NUMBER	
AFFIDAVITS	9. CONTRACTOR owner	STATE LICENSE NUMBER	
BLDG. AREA	10. SIZE OF EX. BLDG. 135 x 155 STORIES 12 HEIGHT 150		
SPRINKLERS REQ'D. SPECIFIED	11. MATERIAL EXT. WALLS: <input type="checkbox"/> WOOD <input type="checkbox"/> METAL <input type="checkbox"/> CONG. BLOCK <input type="checkbox"/> STUCCO <input checked="" type="checkbox"/> BRICK <input checked="" type="checkbox"/> CONCRETE		ROOF CONST: <input type="checkbox"/> WOOD <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> CONG. <input type="checkbox"/> OTHER

3

2619 Wilshire Blvd.

VALIDATION	LA 71337	NOV-30-55	21930	B - 2 CK	10.00
TYPE	GROUP I G-1	MAX. OCC. N.C.	DEC--8-55	22794	A - 1 CK 18.00
DIST. OFFICE	LA				
C. OF O. ISSUED	PC 10⁰⁰ BP \$ 18⁰⁰				

DWELL UNITS	12. VALUATION: TO INCLUDE ALL FIXED EQUIPMENT REQUIRED TO OPERATE AND USE PROPOSED BLDG. \$ 5000.00	VALUATION APPROVED
PARKING SPACES	13. SIZE OF ADDITION install two exterior doors	APPLICATION CHECKED
GUEST ROOMS	14. NEW WORK: MATERIAL EXT. WALLS MATERIAL ROOF	PLANS CHECKED
FILE WITH	I certify that in doing the work authorized hereby I will not employ any person in violation of the Labor Code of the State of California relating to workmen's compensation insurance. STILES CLEMENTS <i>by [Signature]</i> SIGNED	CORRECTIONS VERIFIED
CONT. INSP. CRIT So.		PLANS APPROVED
M-10		APPLICATION APPROVED

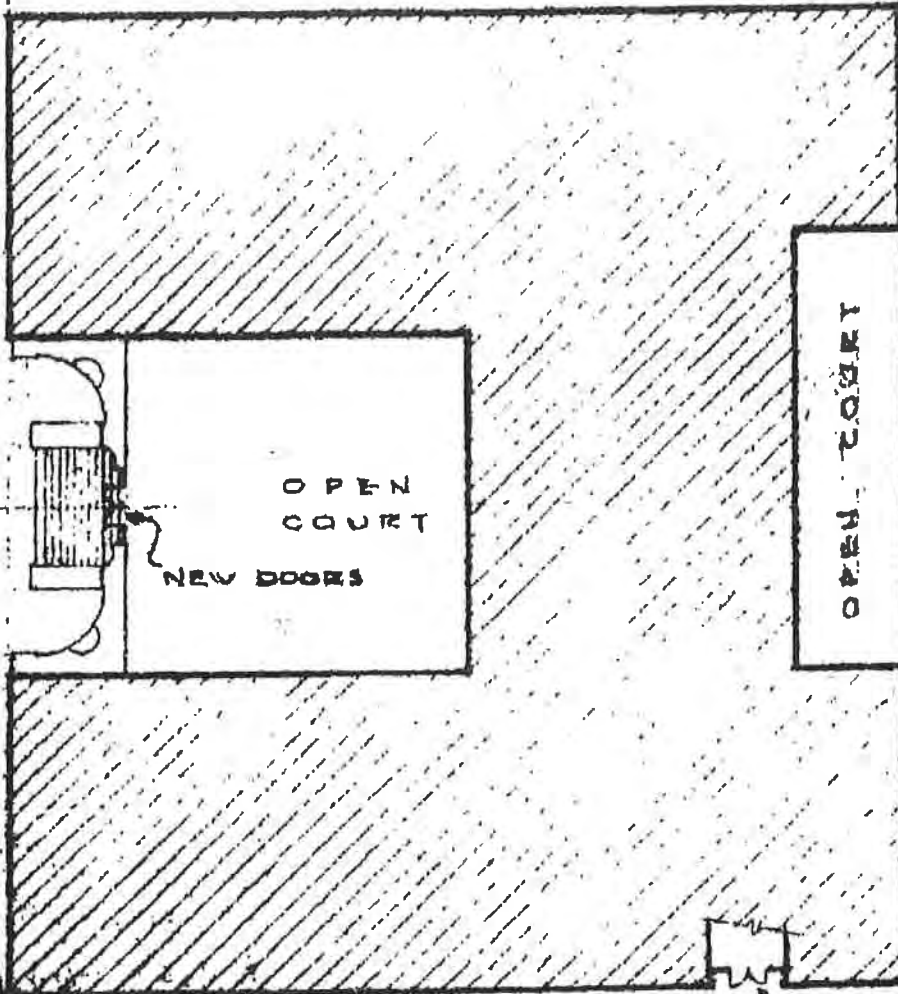
8772
OK TO ISSUE
M-10 12/15/55

This form when properly validated is a permit to the work described.

INSTRUCTIONS: 1. Applicant to Complete Numbered Items Only.
2. Plot Plan Required on Back of Original.

LAUREL BLVD.

CORNER



OPEN COURT
NEW DOORS

OPEN COURT

NEW DOORS

SIDEWALK

PROPERTY LINE

WILSHIRE BLVD.

PLOT PLAN -

FIELD WILSHIRE

NE CORNER - ROBERT & WILSHIRE BLVD. - LOS ANGELES, CALIF.

3 APPLICATION TO ADD-ALTER-REPAIR-DEMOLISH # **DE-1** AS 18-111-44
 CITY OF LOS ANGELES AND FOR CERTIFICATE OF OCCUPANCY DEPT. OF BUILDING AND SAFETY

INSTRUCTIONS: 1. Applicant to Complete Numbered Items Only. 2. Plot Plan Required on Back of Original.

1. LEGAL DESCR.	LOT 7	BLK.	TRACT 6241	CENSUS TRACT 2087
2. PRESENT USE OF BUILDING	E-05 Apartment		NEW USE OF BUILDING E-05 Same	DIST. MAP 132-201
3. JOB ADDRESS	2619 Wilshire Blvd.			ZONE 04-4
4. BETWEEN CROSS STREETS	Rampart AND Coara do		PHONE	FIRE DIST. I
5. OWNER'S NAME	Fifield Manor			LOT (TYPE) Rev/Cor
6. OWNER'S ADDRESS	2619 Wilshire L. A.		CITY	ZIP
7. ARCHITECT OR DESIGNER	Floyd Weaver		STATE LICENSE No.	PHONE 117.50
8. ENGINEER	Floyd Weaver		STATE LICENSE No.	PHONE
9. CONTRACTOR	XXXXXX Self Wrecking Co.		STATE LICENSE No.	PHONE 686-1450
10. LENDER	BRANCH		ADDRESS	BLDG. LINE 5' BL
11. SIZE OF EXISTING BLDG.	LENGTH 485	WIDTH 14	STORIES 1	NO. OF EXISTING BUILDINGS ON LOT AND USE 1
12. MATERIAL OF CONSTRUCTION OF EXISTING BLDG.	EXT. WALLS conc	ROOF conc	FLOOR conc	AFFIDAVIT C.C.P.
13. JOB ADDRESS	2619 Wilshire			ORD 59577
14. VALUATION TO INCLUDE ALL FIXED EQUIPMENT REQUIRED TO OPERATE AND USE PROPOSED BUILDING	\$ 1800.00			DISTRICT OFFICE LA
15. NEW WORK: (Describe)	Demo partial (earthquake) (Pub. Works St. - Canyon Permit)			GRADING yes
	handwreck only Archway on Rampart # 2163			CRIT. SOIL yes
NEW USE OF BUILDING	E (05) Same		SIZE OF ADDITION	HEIGHT
TYPE	GROUP I	SPRINKLERS REQ'D SPECIFIED N/C	IRRADIATION ACTIVITY	CONS. YES
BLDG. AREA	N/C	MAX. OCC. N/C	TOTAL	ZONED BY Flores
DWELL UNITS	N/C	GUEST ROOMS N/C	PARKING REQ'D PROVIDED N/C	FILE WITH
P.C. No. V5469	CONT. INSP.			INSPECTOR
P.C. 1027	S.R.C. X	G.P. No. 1/5	I.F. 1	O.S. C/O TYPIST MR

PLAN CHECK EXPIRES SIX MONTHS AFTER FEE IS PAID. PERMIT EXPIRES ONE YEAR AFTER FEE IS PAID OR SIX MONTHS AFTER FEE IS PAID IF CONSTRUCTION IS NOT COMMENCED.

CASHIER'S USE ONLY
 MAR-18-71 15788 E 25269 U-18X 10:07
 MAR-18-71 15788 E 25269 U-18X 15:50

STATEMENT OF RESPONSIBILITY

I certify that in doing the work authorized hereby I will not employ any person in violation of the Labor Code of the State of California relating to workmen's compensation insurance.
 "This permit is an application for inspection, the issuance of which is not an approval or an authorization of the work specified herein. This permit does not authorize or permit, nor shall it be construed as authorizing or permitting the violation or failure to comply with any applicable law. Neither the City of Los Angeles, nor any board, department, officer or employee thereof make any warranty or shall be responsible for the performance or results of any work described herein, or the condition of the property or soil upon which such work is performed." (See Sec. 91.0202 L.A.M.C.)

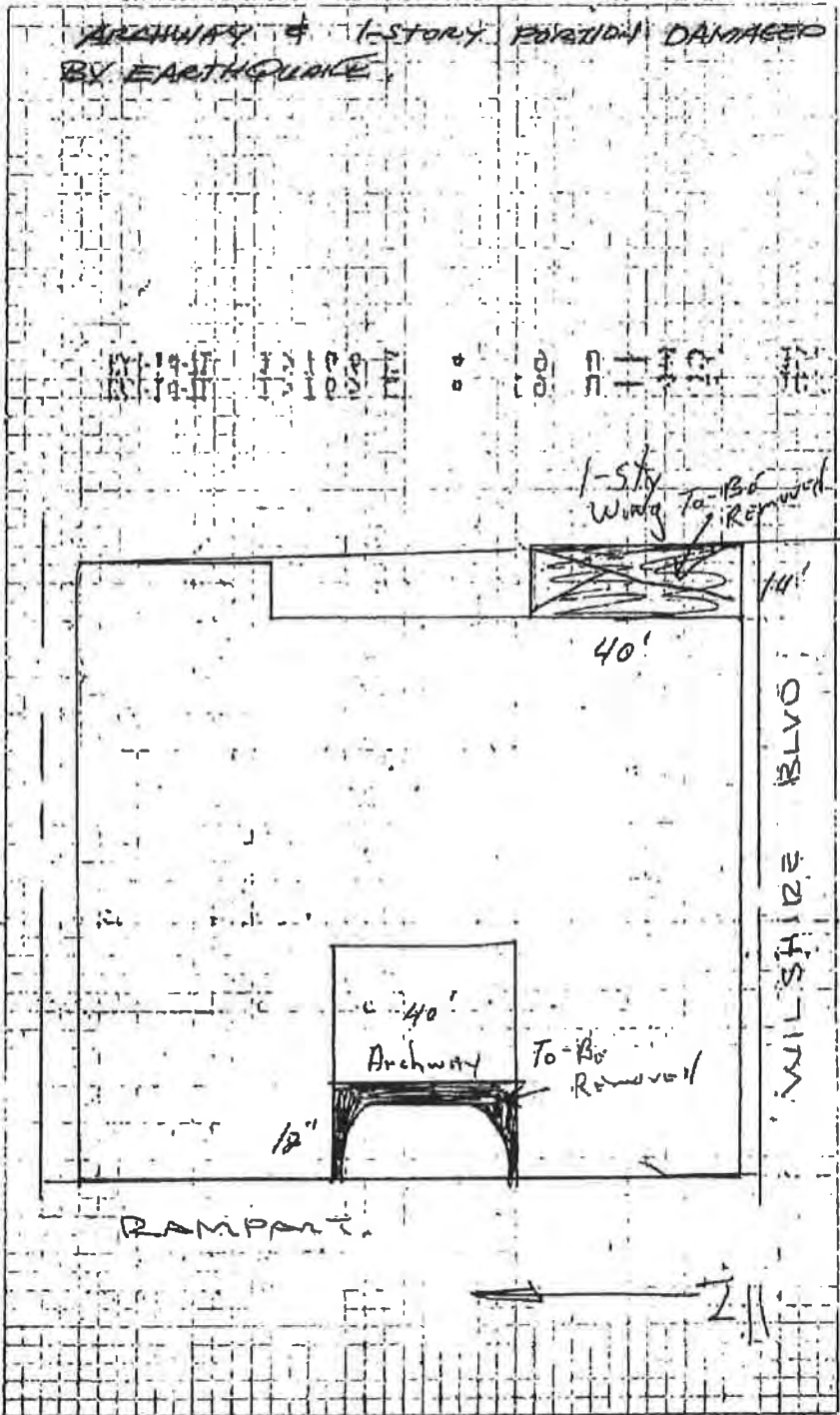
Signed: <i>L. Dalton</i> (Owner or Agent)	Name	Date
Bureau of Engineering	L. Dalton	3/18/71
Conservation		
Plumbing		
Planning		
Fire		
Traffic		

ON LOT PLAN SHOW ALL BUILDINGS ON LOT AND USE OF EACH

ARCHWAY & 1-STORY PARTIAL DAMAGED BY EARTHQUAKE

19-17 13-109 4' 0' 10' 10' 10'

1-Story Work To Be Removed



3 APPLICATION FOR INSPECTION -- TO ADD-ALTER-REPAIR-DEMOLISH
 CITY OF LOS ANGELES AND FOR CERTIFICATE OF OCCUPANCY
 BAS 8-3 (87.77) DEPT. OF BUILDING AND SAFETY

INSTRUCTIONS: Applicant to Complete Numbered Items Only.

1. LEGAL DESCR.	LOT 4,5,6,7,12	BLK 6	TRACT No. 6241	CD#10	211	DIST. MAP 132 201
2. PRESENT USE OF BUILDING	(05) Retirement Home		NEW USE OF BUILDING		No Change	
3. JOB ADDRESS	2619 Wilshire Boulevard					ZONE C4-4/C2-4
4. BETWEEN CROSS STREETS	Rampart Boulevard		AND Coronado		FIRE DIST. one	
5. OWNER'S NAME	ETHEL MANOR		Los Angeles		LOT (TYPED) irreg.	
6. OWNER'S ADDRESS	2619 Wilshire Blvd., Los Angeles,		90057		LOT SIZE	
7. ENGINEER	BUS. LIC. NO.		ACTIVE STATE LIC. NO.		NONE	
8. ARCHITECT OR DESIGNER	C. L. Senefeld #885075		C-1007		213/387-3271	
9. CONTRACTOR	To Be Bid		BUS. LIC. NO.		ACTIVE STATE LIC. NO.	
10. BRANCH LENDER	None		ADDRESS		CITY	
11. SIZE OF EXISTING BLDG.	WIDTH 25'-0"	LENGTH 157'-6"	STORIES 12	HEIGHT 135'	NO. OF EXISTING BUILDINGS ON LOT AND USE 1-Retirement Home	
12. CONST. MATERIAL OF EXISTING BLDG.	Concrete		EXT. WALLS	ROOF	FLOOR	
13. JOB ADDRESS	2619 Wilshire Boulevard					SEISMIC STUDY ZONE
14. VALUATION TO INCLUDE ALL FIXED EQUIPMENT REQUIRED TO OPERATE AND USE PROPOSED BUILDING	\$ 25,400.					DIST. OFFICE L.A.
15. NEW WORK (Describe)	Enclose Transoms Above Doors, Install Door					CRIT. SOIL
Close and Reconstruct all Exit Corridor Doors						GRADING Y/B
Close and Reconstruct all Exit Corridor Doors						HIGHWAY DED. Y/B
Close and Reconstruct all Exit Corridor Doors						FLOOD
NEW USE OF BUILDING	Same		SIZE OF ADDITION	None		CONS.
TYPE	GROUP OCC. D-3	BLOC. AREA	181,032		PLANS CHECKED	CONS.
DWELL UNITS	MAX OCC. 200 Persons		TOTAL		PLANS APPROVED	ZONED BY Kostrencich
GUEST ROOMS	PARKING REQ'D		STD. 45 COMP.		APPLIC. APPROVED	FILE WITH
SPEAKERS REQ'D	CONT. INSP.				INSPECTION ACTIVITY	INSPECTOR
P.C. NO.	12090	S.P.C.	154.04	T.I.	P.M.	I.F.
P.C. NO.	WORKERS COMPENSATION INSURANCE CERTIFICATE ON FILE		EXEMPT		None	
PERMIT EXPIRES TWO YEARS AFTER FEE IS PAID ON <input checked="" type="checkbox"/> DAYS AFTER FEE IS PAID IF CONSTRUCTION IS NOT COMMENCED.						
JUN-19-79 91638 E •84612 T-6 CK 130.90						
JUN-19-79 91639 E •84612 T-2 CK 154.00						

LIMIT OF PERMIT

"This permit is an application for inspection; the issuance of which is not an approval or an authorization of the work specified herein. This permit does not authorize or permit, nor shall it be construed as authorizing or permitting the violation or failure to comply with any applicable law. Neither the City of Los Angeles, nor any board, department, officer or employee thereof make any warranty or shall be responsible for the performance or results of any work described herein, or the condition of the property or soil upon which such work is performed." (See Sec. 91.0202 L.A.M.C.)

Signed: *[Signature]*
 (Owner or Agent Acting Properly Under the Contract)
 ALSO, sign statement on reverse side of application.

Signature/Date

Bureau of Engineering

ADDRESS APPROVED

DRIVEWAY

HIGHWAY DEDICATION

REQUIRED

COMPLETED

FLOOD CLEARANCE

SEWERS

SEWERS AVAILABLE

NOT AVAILABLE

SFC PAID

SFC DUE

Conservation

APPROVED FOR ISSUE NO FILE FILE CLOSED

Fire

APPROVED (TITLE 19) (L.A.M.C. 5700)

Housing

HOUSING AUTHORITY APPROVAL

Planning

APPROVED UNDER CASE #

Traffic

APPROVED FOR

Construction Tax

RECEIPT #

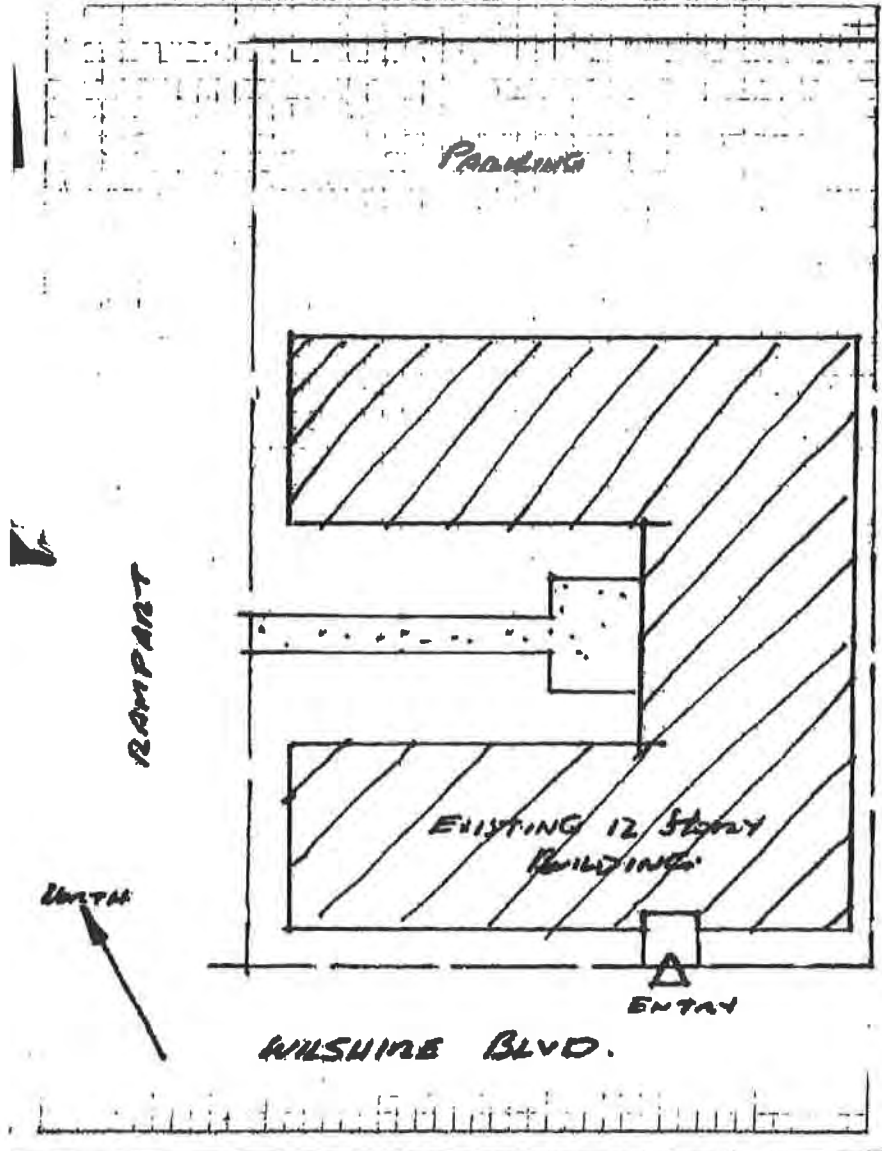
[Handwritten Signature]

LOTS 4,5,6,& 7 of Tract No. 6241 and
LOT 12, Block 6 of Wilshire Boulevard Tract in rear.

NO. 113 COMPENSATION CERTIFICATION

Frank Simpson ARCHT'S AGENT 5/17/29
ROBERT J. SIMPSON

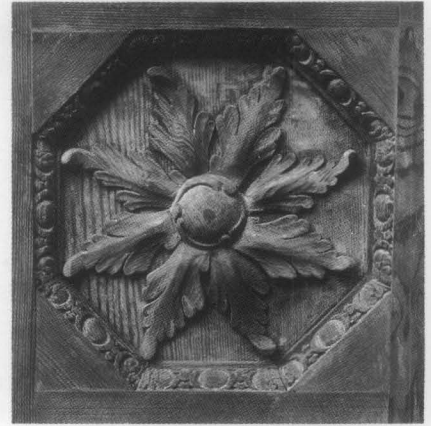
ON PLOT PLAN SHOW ALL BUILDINGS ON LOT AND USE OF EACH







18 PRESERVATION BRIEFS



Rehabilitating Interiors in Historic Buildings

Identifying and Preserving Character-defining Elements

H. Ward Jandl



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

A floor plan, the arrangement of spaces, and features and applied finishes may be individually or collectively important in defining the historic character of the building and the purpose for which it was constructed. Thus, their identification, retention, protection, and repair should be given prime consideration in every preservation project. Caution should be exercised in developing plans that would radically change character-defining spaces or that would obscure, damage or destroy interior features or finishes.

While the exterior of a building may be its most prominent visible aspect, or its "public face," its interior can be even more important in conveying the building's history and development over time. Rehabilitation within the context of the Secretary of the Interior's Standards for Rehabilitation calls for the preservation of exterior *and* interior portions or features of the building that are significant to its historic, architectural and cultural values.

Interior components worthy of preservation may include the building's **plan** (sequence of spaces and circulation patterns), the building's **spaces** (rooms and volumes), individual architectural **features**, and the various **finishes** and **materials** that make up the walls, floors, and ceilings. A theater auditorium or sequences of rooms such as double parlors or a lobby leading to a stairway that ascends to a mezzanine may comprise a building's most important spaces. Individual rooms may contain notable features such as plaster cornices, millwork, parquet wood floors, and hardware. Paints, wall coverings, and finishing techniques such as graining, may provide color, texture, and patterns which add to a building's unique character.

Virtually all rehabilitations of historic buildings involve some degree of interior alteration, even if the buildings are to be used for their original purpose. Interior rehabilitation proposals may range from preservation of existing features and spaces to total reconfigurations. In some cases, depending on the building, restoration may be warranted to preserve historic character adequately; in other cases, extensive alterations may be perfectly acceptable.

This Preservation Brief has been developed to assist building owners and architects in identifying and evaluating those elements of a building's interior that

contribute to its historic character and in planning for the preservation of those elements in the process of *rehabilitation*. The guidance applies to all building types and styles, from 18th century churches to 20th century office buildings. The Brief does not attempt to provide specific advice on preservation techniques and treatments, given the vast range of buildings, but rather suggests general preservation approaches to guide construction work.

Identifying and Evaluating the Importance of Interior Elements Prior to Rehabilitation

Before determining what uses might be appropriate and before drawing up plans, a thorough professional assessment should be undertaken to identify those tangible architectural components that, prior to rehabilitation, convey the building's sense of time and place—that is, its "historic character." Such an assessment, accomplished by walking through and taking account of each element that makes up the interior, can help ensure that a truly compatible use for the building, one that requires minimal alteration to the building, is selected.

Researching The Building's History

A review of the building's history will reveal why and when the building achieved significance or how it contributes to the significance of the district. This information helps to evaluate whether a particular rehabilitation treatment will be appropriate to the building and whether it will preserve those tangible components of the building that convey its significance for association with specific events or persons along with its architectural importance. In this regard, National Register files may prove useful in explaining why and for what period of time the

building is significant. In some cases research may show that later alterations are significant to the building; in other cases, the alterations may be without historical or architectural merit, and may be removed in the rehabilitation.

Identifying Interior Elements

Interiors of buildings can be seen as a series of primary and secondary spaces. The goal of the assessment is to identify which elements contribute to the building's character and which do not. Sometimes it will be the sequence and flow of spaces, and not just the individual rooms themselves, that contribute to the building's character. This is particularly evident in buildings that have strong central axes or those that are consciously asymmetrical in design. In other cases, it may be the size or shape of the space that is distinctive. The importance of some interiors may not be readily apparent based on a visual inspection; sometimes rooms that do not appear to be architecturally distinguished are associated with important persons and events that occurred within the building.

Primary spaces, are found in all buildings, both monumental and modest. Examples may include foyers, corridors, elevator lobbies, assembly rooms, stairhalls, and parlors. Often they are the places in the building that the public uses and sees; sometimes they are the most architecturally detailed spaces in the building, carefully proportioned and finished with costly materials. They may be functionally and architecturally related to the building's external appearance. In a simpler building, a primary space may be distinguishable only by its location, size, proportions, or use. Primary spaces are always important to the character of the building and should be preserved.

Secondary spaces are generally more utilitarian in appearance and size than primary spaces. They may include areas and rooms that service the building, such as bathrooms, and kitchens. Examples of secondary spaces in a commercial or office structure may include storerooms, service corridors, and in some cases, the offices themselves. Secondary spaces tend to be of less importance to the building and may accept greater change in the course of work without compromising the building's historic character.

Spaces are often designed to interrelate both visually and functionally. The **sequence of spaces**, such as vestibule-hall-parlor or foyer-lobby-stair-auditorium or stairhall-corridor-classroom, can define and express the building's historic function and unique character. Important sequences of spaces should be identified and retained in the rehabilitation project.

Floor plans may also be distinctive and characteristic of a style of architecture or a region. Examples include Greek Revival and shotgun houses. Floor plans may also reflect social, educational, and medical theories of the period. Many 19th century psychiatric institutions, for example, had plans based on the ideas of Thomas Kirkbride, a Philadelphia doctor who authored a book on asylum design.

In addition to evaluating the relative importance of the various spaces, the assessment should identify architectural **features** and **finishes** that are part of the



Figure 1. This architect-designed interior reflects early 20th century American taste: the checkerboard tile floor, wood wainscot, coffered ceiling, and open staircase are richly detailed and crafted by hand. Not only are the individual architectural features worthy of preservation, but the planned sequence of spaces—entry hall, stairs, stair landings, and loggia—imparts a grandeur that is characteristic of high style residences of this period. This interior is of Greystone, Los Angeles, California. Photography for HABS by Jack E. Boucher



Figure 2. The interiors of mills and industrial buildings frequently are open, unadorned spaces with exposed structural elements. While the new uses to which this space could be put are many—retail, residential, or office—the generous floor-to-ceiling height and exposed truss system are important character-defining features and should be retained in the process of rehabilitation.

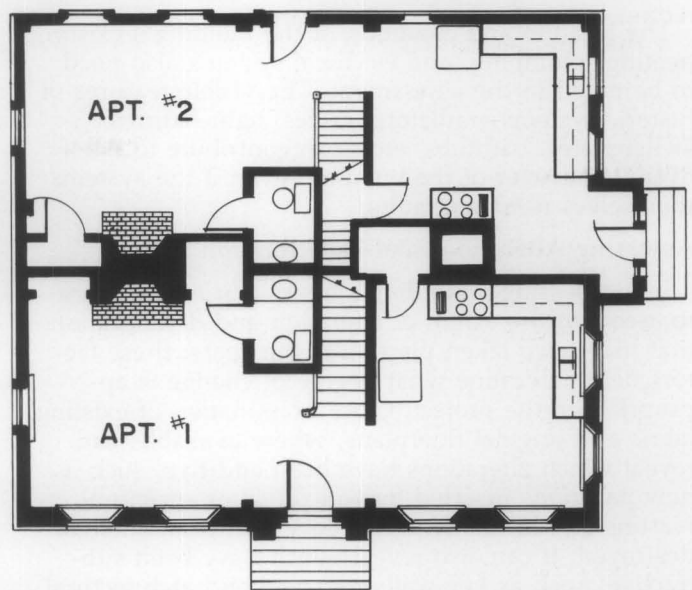
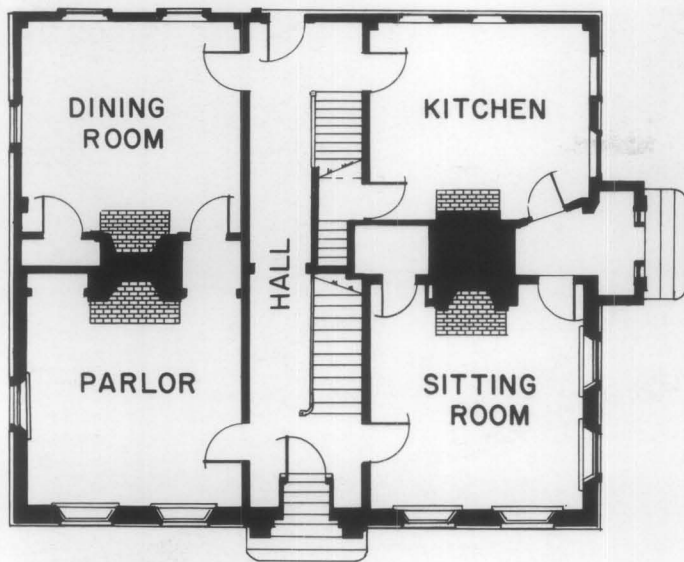


Figure 3. The floor plan at left is characteristic of many 19th century Greek Revival houses, with large rooms flanking a central hall. In the process of rehabilitation, the plan (at right) was drastically altered to accommodate two duplex apartments. The open stair was replaced with one that is enclosed, two fireplaces were eliminated, and Greek Revival trim around windows and doors was removed. The symmetry of the rooms themselves was destroyed with the insertion of bathrooms and kitchens. Few vestiges of the 19th century interior survived the rehabilitation. Drawing by Neal A. Vogel

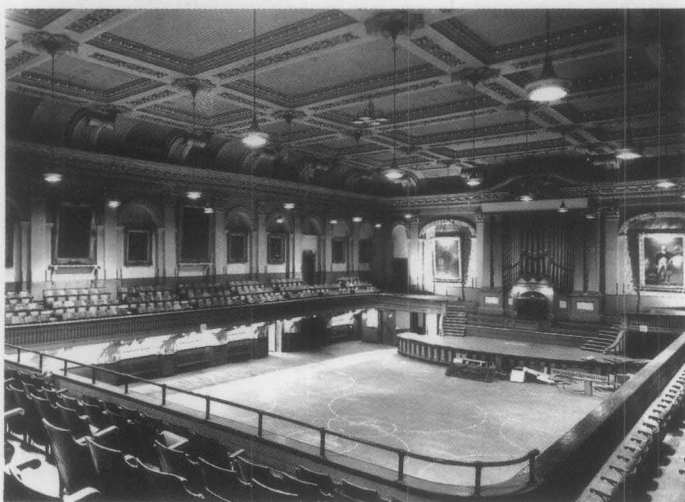


Figure 4. Many institutional buildings possess distinctive spaces or floor plans that are important in conveying the significance of the property. Finding new compatible uses for these buildings and preserving the buildings' historic character can be a difficult, if not impossible, task. One such case is Mechanics Hall in Worcester, Massachusetts, constructed between 1855 and 1857. This grand hall, which occupies the entire third floor of the building, could not be subdivided without destroying the integrity of the space.

interior's history and character. Marble or wood wainscoting in corridors, elevator cabs, crown molding, baseboards, mantels, ceiling medallions, window and door trim, tile and parquet floors, and staircases are among those features that can be found in historic buildings. Architectural finishes of note may include grained woodwork, marbled columns, and plastered walls. Those features that are characteristic of the building's style and period of construction should, again, be retained in the rehabilitation.



Figure 5. The interior of a simply detailed worker's house of the 19th century may be as important historically as the richly ornamented interior seen in figure 1. Although the interior of this house has not been properly maintained, the wide baseboards, flat window trim, and four-panel door are characteristic of workers' housing during this period and deserve retention during rehabilitation.

Features and finishes, even if machine-made and not exhibiting particularly fine craftsmanship, may be character-defining; these would include pressed metal ceilings and millwork around windows and doors. The interior of a plain, simple detailed worker's house of the 19th century may be as important historically as a richly ornamented, high-style townhouse of the same period. Both resources, if equally intact, convey important information about the early inhabitants and deserve the same careful attention to detail in the preservation process.

The location and condition of the building's existing heating, plumbing, and electrical systems also need to be noted in the assessment. The visible features of historic systems—radiators, grilles, light fixtures, switchplates, bathtubs, etc.—can contribute to the overall character of the building, even if the systems themselves need upgrading.

Assessing Alterations and Deterioration

In assessing a building's interior, it is important to ascertain the extent of alteration and deterioration that may have taken place over the years; these factors help determine what degree of change is appropriate in the project. Close examination of existing fabric and original floorplans, where available, can reveal which alterations have been **additive**, such as new partitions inserted for functional or structural reasons and historic features covered up rather than destroyed. It can also reveal which have been **subtractive**, such as key walls removed and architectural features destroyed. If an interior has been modified by additive changes and if these changes have not acquired significance, it may be relatively easy to remove the alterations and return the interior to its historic appearance. If an interior has been greatly altered through subtractive changes, there may be more latitude in making further alterations in the process of rehabilitation because the integrity of the interior has been compromised. At the same time, if the interior had been exceptionally significant, and solid documentation on its historic condition is available, reconstruction of the missing features may be the preferred option.

It is always a recommended practice to photograph interior spaces and features thoroughly prior to rehabilitation. Measured floor plans showing the existing conditions are extremely useful. This documentation is invaluable in drawing up rehabilitation plans and specifications and in assessing the impact of changes to the property for historic preservation certification purposes.

Drawing Up Plans and Executing Work

If the historic building is to be rehabilitated, it is critical that the new use not require substantial alteration of distinctive spaces or removal of character-defining architectural features or finishes. If an interior loses the physical vestiges of its past as well as its historic function, the sense of time and place associated both with the building and the district in which it is located is lost.

The recommended approaches that follow address common problems associated with the rehabilitation of historic interiors and have been adapted from the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Adherence to these suggestions can help ensure that character-defining interior elements are preserved in the process of rehabilitation. The checklist covers a range of situations and is not intended to be all-inclusive. Readers are strongly encouraged to review the full set of guidelines before undertaking any rehabilitation project.



Figure 6. This corridor, located in the historic Monadnock Building in Chicago, has glazed walls, oak trim, and marble wainscoting, and is typical of those found in late 19th and early 20th century office buildings. Despite the simplicity of the features, a careful attention to detail can be noted in the patterned tile floor, bronze mail chute, and door hardware. The retention of corridors like this one should be a priority in rehabilitation projects involving commercial buildings.

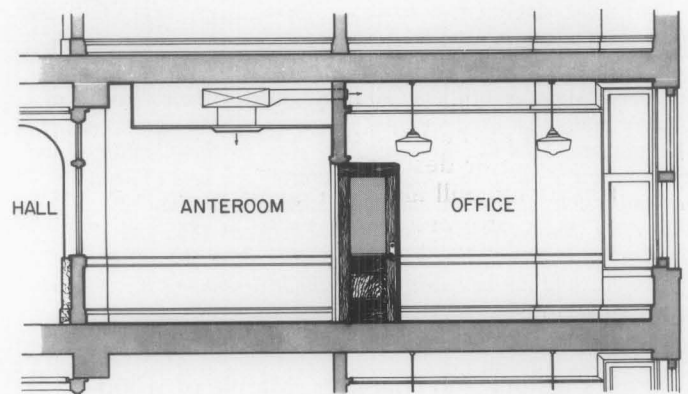


Figure 7. When the Monadnock Building was rehabilitated, architects retained the basic floor plan on the upper floors consisting of a double-loaded corridor with offices opening onto it. The original floor-to-ceiling height in the corridors and outside offices—the most important spaces—was maintained by installing needed air conditioning ductwork in the less important anterooms. In this way, the most significant interior spaces were preserved intact. Drawing by Neal A. Vogel

Recommended Approaches for Rehabilitating Historic Interiors

1. Retain and preserve floor plans and 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. Put service functions required by the building's new use, such as bathrooms, mechanical equipment, and office machines, in secondary spaces.
2. Avoid subdividing spaces that are characteristic of a building type or style or that are directly associated with specific persons or patterns of events. Space may be subdivided both vertically through the insertion of new partitions or horizontally through insertion of new floors or mezzanines. The insertion of new additional floors should be considered only when they will not damage or destroy the structural system or obscure, damage, or destroy character-defining spaces, features, or finishes. If rooms have already been subdivided through an earlier insensitive renovation, consider removing the partitions and restoring the room to its original proportions and size.
3. Avoid making new cuts in floors and ceilings where such cuts would change character-defining spaces and the historic configuration of such spaces. Inserting of a new atrium or a lightwell is appropriate only in very limited situations where the existing interiors are not historically or architecturally distinguished.
4. Avoid installing dropped ceilings below ornamental ceilings or in rooms where high ceilings are part of the building's character. In addition to obscuring or destroying significant details, such treatments will also change the space's proportions. If dropped ceilings are installed in buildings that lack character-defining spaces, such as mills and factories, they should be well set back from the windows so they are not visible from the exterior.
5. Retain and preserve interior features and finishes that are important in defining the overall historic character of the building. This might include columns, doors, cornices, baseboards, fireplaces and mantels, paneling, light fixtures, elevator cabs, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbleizing, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.
6. Retain stairs in their historic configuration and location. If a second means of egress is required, consider constructing new stairs in secondary spaces. (For guidance on designing compatible new additions, see Preservation Brief 14, "New Exterior Additions to Historic Buildings.") The application of fire-retardant coatings, such as intumescent paints; the installation of fire suppression systems, such as sprinklers; and the construction of glass enclosures can in many cases permit retention of stairs and other character-defining features.
7. Retain and preserve 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. If new heating, air conditioning, lighting and plumbing systems are installed, they should be done in a way that does not destroy character-defining spaces, features and finishes. Ducts, pipes, and wiring should be installed as inconspicuously as possible: in secondary spaces, in the attic or basement if possible, or in closets.
8. Avoid "furring out" perimeter walls for insulation purposes. This requires unnecessary removal of window trim and can change a room's proportions. Consider alternative means of improving thermal performance, such as installing insulation in attics and basements and adding storm windows.
9. Avoid removing paint and plaster from traditionally finished surfaces, to expose masonry and wood. Conversely, avoid painting previously unpainted millwork. Repairing deteriorated plasterwork is encouraged. If the plaster is too deteriorated to save, and the walls and ceilings are not highly ornamented, gypsum board may be an acceptable replacement material. The use of paint colors appropriate to the period of the building's construction is encouraged.
10. Avoid using destructive methods—propane and butane torches or sandblasting—to remove paint or other coatings from historic features. Avoid harsh cleaning agents that can change the appearance of wood. (For more information regarding appropriate cleaning methods, consult Preservation Brief 6, "Dangers of Abrasive Cleaning to Historic Buildings.")

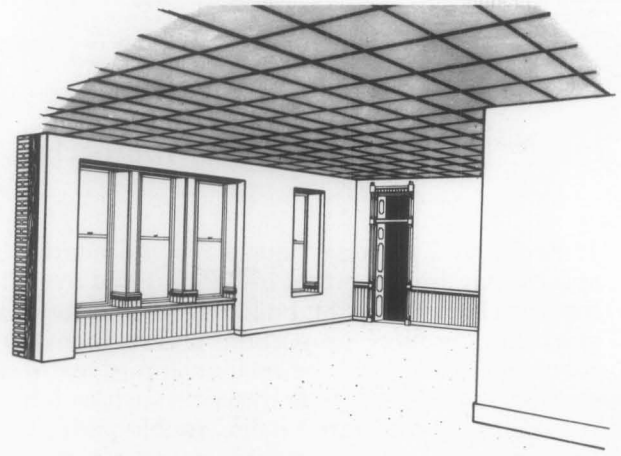
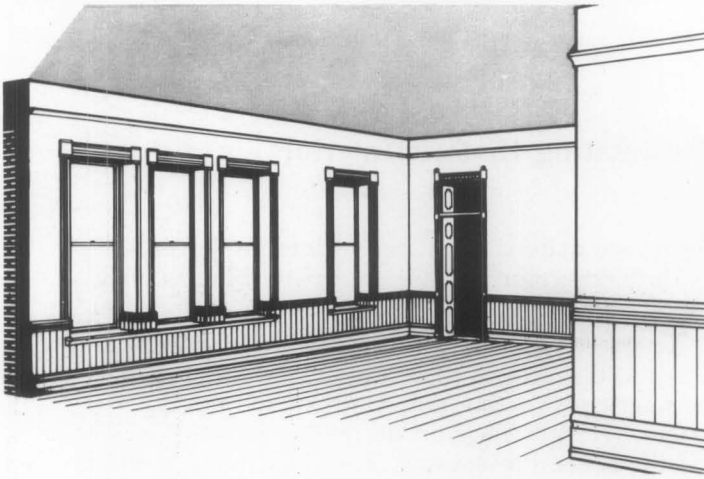


Figure 8. Furring out exterior walls to add insulation and suspending new ceilings to hide ductwork and wiring can change a room's proportions and can cause interior features to appear fragmented. In this case, a school was converted into apartments, and individual classrooms became living rooms, bedrooms, and kitchens. On the left is an illustration of a classroom prior to rehabilitation; note the generous floor-to-ceiling height, wood wainscoting, molded baseboard, picture molding, and Eastlake Style door and window trim. After rehabilitation, on the right, only fragments of the historic detailing survive: the ceiling has been dropped below the picture molding, the remaining wainscoting appears to be randomly placed, and some of the window trim has been obscured. Together with the subdivision of the classrooms, these rehabilitation treatments prevent a clear understanding of the original classroom's design and space. If thermal performance must be improved, alternatives to furring out walls and suspending new ceilings, such as installing insulation in attics and basements, should be considered. Drawings by Neal A. Vogel



Figure 9. The tangible reminders of early mechanical systems can be worth saving. In this example, in the Old Post Office in Washington, D.C., radiators encircle Corinthian columns in a decorative manner. Note, too, the period light fixtures. These features were retained when the building was rehabilitated as retail and office space. Photo: Historic American Buildings Survey



Figure 10. In this case plaster has been removed from perimeter walls, leaving brick exposed. In removing finishes from historic masonry walls, not only is there a loss of historic finish, but raw, unfinished walls are exposed, giving the interior an appearance it never had. Here, the exposed brick is of poor quality and the mortar joints are wide and badly struck. Plaster should have been retained and repaired, as necessary.



Figure 11. These dramatic "before" and "after" photographs show a severely deteriorated space restored to its original elegance: plaster has been repaired and painted, the scagliola columns have been restored to match marble using traditional craft techniques, and missing decorative metalwork has been re-installed in front of the windows. Although some reorganization of the space took place, notably the relocation of the front desk, the overall historic character of the space has been preserved. These views are of the lobby in the Willard Hotel, Washington, D.C. Credit: Commercial Photographers (left); Carol M. Highsmith (right)

Meeting Building, Life Safety and Fire Codes

Buildings undergoing rehabilitation must comply with existing building, life safety and fire codes. The application of codes to specific projects varies from building to building, and town to town. Code requirements may make some reuse proposals impractical; in other cases, only minor changes may be needed to bring the project into compliance. In some situations, it may be possible to obtain a code variance to preserve distinctive interior features. (It should be noted that the Secretary's Standards for Rehabilitation take precedence over other regulations and codes in determining whether a rehabilitation project qualifies for Federal tax benefits.) A thorough understanding of the applicable regulations and close coordination with code officials, building inspectors, and fire marshals can prevent the alteration of significant historic interiors.

Sources of Assistance

Rehabilitation and restoration work should be undertaken by professionals who have an established reputation in the field.

Given the wide range of interior work items, from ornamental plaster repair to marble cleaning and the application of graining, it is possible that a number of specialists and subcontractors will need to be brought in to bring the project to completion. State Historic Preservation Officers and local preservation organizations may be a useful source of information in this regard. Good sources of information on appropriate preservation techniques for specific interior features and finishes include the *Bulletin of the Association for Preservation Technology* and *The Old-House Journal*; other useful publications are listed in the bibliography.

Protecting Interior Elements During Rehabilitation

Architectural features and finishes to be preserved in the process of rehabilitation should be clearly marked on plans *and at the site*. This step, along with careful supervision of the interior demolition work and protection against arson and vandalism, can prevent the unintended destruction of architectural elements that contribute to the building's historic character.

Protective coverings should be installed around architectural features and finishes to avoid damage in the course of construction work and to protect workers. Staircases and floors, in particular, are subjected to dirt and heavy wear, and the risk exists of incurring costly or irreparable damage. In most cases, the best, and least costly, preservation approach is to design and construct a protective system that enables stairs and floors to be used yet protects them from damage. Other architectural features such as mantels, doors, wainscoting, and decorative finishes may be protected by using heavy canvas or plastic sheets.

Summary

In many cases, the interior of a historic building is as important as its exterior. The careful identification and evaluation of interior architectural elements, after undertaking research on the building's history and use, is critically important *before* changes to the building are contemplated. Only *after* this evaluation should new uses be decided and plans be drawn up. The best rehabilitation is one that preserves and protects those rooms, sequences of spaces, features and finishes that define and shape the overall historic character of the building.

This Preservation Brief is based on a discussion paper prepared by the author for a National Park Service regional workshop held in March, 1987, and on a paper written by Gary Hume, "Interior Spaces in Historic Buildings," October, 1987. Appreciation is extended to the staff of Technical Preservation Services Branch and to the staff of NPS regional offices who reviewed the manuscript and provided many useful suggestions. Special thanks are given to Neal A. Vogel, a summer intern with the NPS, for many of the illustrations in this Brief.

This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended. Preservation Briefs 18 was developed under the editorship of Lee H. Nelson, FAIA, Chief, Preservation Assistance Division, National Park Service, U.S. Department of the Interior, P.O. Box 37127, Washington, D.C. 20013-7127. Comments on the usefulness of this information are welcomed and may be sent to Mr. Nelson at the above address. This publication is not copyrighted and can be reproduced without penalty. Normal procedures for credit to the author and the National Park Service are appreciated.

Selected Reading List

There are few books written exclusively on preserving historic interiors, and most of these tend to focus on residential interiors. Articles on the subject appear regularly in *The Old-House Journal*, the *Bulletin of the Association for Preservation Technology*, and *Historic Preservation Magazine*.

Ferro, Maximilian L., and Melissa L. Cook. *Electric Wiring and Lighting in Historic American Buildings*. New Bedford, Massachusetts: AFC/A Nortek Company, 1984.

Fisher, Charles E. *Temporary Protection of Historic Stairways During Rehabilitation Work*. Preservation Tech Note. Washington, D.C.: Preservation Assistance Division, National Park Service, U.S. Department of the Interior, 1985.

Jennings, Jan, and Herbert Gottfried. *American Vernacular Interior Architecture 1870-1940*. New York: Van Nostrand Reinhold Company, 1988.

Johnson, Ed. *Old House Woodwork Restoration: How to Restore Doors, Windows, Walls, Stairs and Decorative Trim to Their Original Beauty*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1983.

Labine, Clem, and Carolyn Flaherty (editors). *The Old-House Journal Compendium*. Woodstock, New York: The Overlook Press, 1980.

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Washington, D.C.: Preservation Assistance Division, National Park Service, U.S. Department of the Interior, rev. 1983.

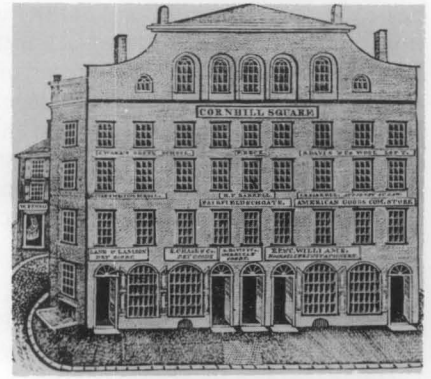
U.S. Department of Housing and Urban Development. *Rehabilitation Guidelines*, volumes 1-11. Washington, D.C.: U.S. Department of Housing and Urban Development, 1980-84.

Winkler, Gail Caskey, and Roger W. Moss. *Victorian Interior Decoration: American Interiors 1830-1900*. New York: Henry Holt and Company, 1986.

October 1988

Cover: Detail of carving on interior shutter. Hammond-Harwood House, Annapolis, Maryland.

11 PRESERVATION BRIEFS



Rehabilitating Historic Storefronts

H. Ward Jandl



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

The storefront is the most important architectural feature of many historic commercial buildings. It also plays a crucial role in a store's advertising and merchandising strategy to draw customers and increase business. Not surprisingly, then, the storefront has become the feature most commonly altered in a historic commercial building. In the process, these alterations may have completely changed or destroyed a building's distinguishing architectural features that make up its historic character.

As more and more people come to recognize and appreciate the architectural heritage of America's downtowns, however, a growing interest can be seen in preserving the historic character of commercial buildings. The sensitive rehabilitation of storefronts can result not only in increased business for the owner but can also provide evidence that downtown revitalization efforts are succeeding (see figure 1).

Once a decision is made to rehabilitate a historic commercial building, a series of complex decisions faces the owner, among them:

- if the original storefront has survived largely intact but is in a deteriorated condition, what repairs should be undertaken?
- if the storefront has been modernized at a later date, should the later alterations be kept or the building restored to its original appearance or an entirely new design chosen?
- if the building's original retail use is to be changed to office or residential, can the commercial appearance of the building be retained while accommodating the new use?

This Preservation Brief is intended to assist owners, architects, and planning officials in answering such questions about how to evaluate and preserve the character of historic storefronts. In so doing, it not only addresses the

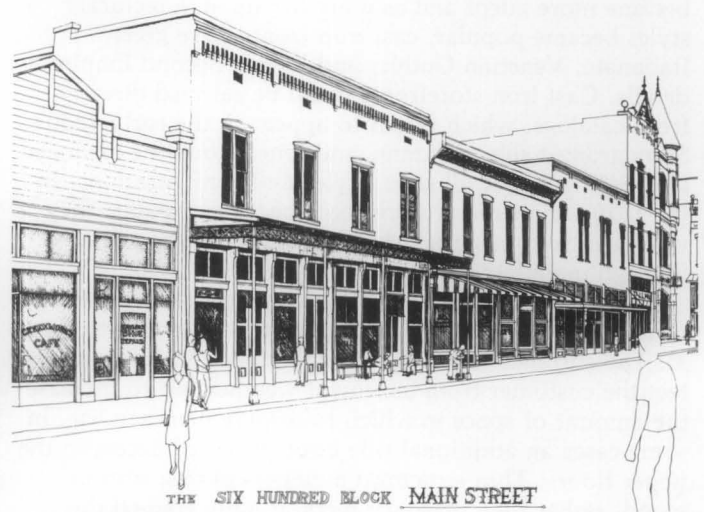


Figure 1. Inappropriate storefront alterations over the years—metal cladding, oversized signs and canopies—have detracted from the character of this historic district in Van Buren, Arkansas. A carefully considered rehabilitation plan for Main Street, including the removal of poorly designed signs, false fronts and the selection of an appropriate exterior paint color palette, serves to enhance the visual environment and preserves the district's sense of time and place. Photo above: Bob Dunn; Drawing, David Fitts

basic design issues associated with storefront rehabilitation, but recommends preservation treatments as well. Finally, although the Brief focuses on storefront rehabilitation, it is important to review this specific work in the broader context of preserving and maintaining the overall structure. Money spent on storefront rehabilitation may be completely wasted if repair and maintenance problems on the rest of the building are neglected.

Historical Overview

Commercial establishments of the 18th and early 19th centuries were frequently located on the ground floor of buildings and, with their residentially scaled windows and doors, were often indistinguishable from surrounding houses. In some cases, however, large bay or oriel windows comprised of small panes of glass set the shops apart from their neighbors. Awnings of wood and canvas and signs over the sidewalk were other design features seen on some early commercial buildings. The ground floors of large commercial establishments, especially in the first decades of the 19th century, were distinguished by regularly spaced, heavy piers of stone or brick, infilled with paneled doors or small paned window sash. Entrances were an integral component of the facade, typically not given any particular prominence although sometimes wider than other openings.

The ready availability of architectural cast iron after the 1840's helped transform storefront design as architects and builders began to experiment using iron columns and lintels at the ground floor level. Simultaneous advances in the glass industry permitted manufacturing of large panes of glass at a reasonable cost. The combination of these two technical achievements led to the storefront as we know it today—large expanses of glass framed by thin structural elements. The advertisement of the merchant and his products in the building facade and display windows quickly became critical factors in the competitive commercial atmosphere of downtowns. In the grouping of these wide-windowed facades along major commercial streets, the image of America's cities and towns radically changed.

The first cast iron fronts were simple post-and-lintel construction with little decoration. As iron craftsmen became more adept and as more ornate architectural styles became popular, cast iron fronts were given Italianate, Venetian Gothic, and French Second Empire details. Cast iron storefronts could be selected directly from catalogs, which began to appear in the early 1850's. Standardized sills, columns, and lintels could be arranged to create fronts of all sizes, styles and configurations. In the 1870's sheet metal storefronts became popular; they were also sold in standardized sizes and configurations through manufacturers' catalogs (see figure 2).

The typical 19th century storefront consisted of single or double doors flanked by display windows (see figure 3). The entrance was frequently recessed, not only to protect the customer from inclement weather but to increase the amount of space in which to display merchandise. In some cases an additional side door provided access to the upper floors. Thin structural members of cast iron or wood, rather than masonry piers, usually framed the storefront. The windows themselves were raised off the ground by wood, cast iron or pressed metal panels or bulkheads; frequently, a transom or series of transoms (consisting of single or multiple panes of glass) were

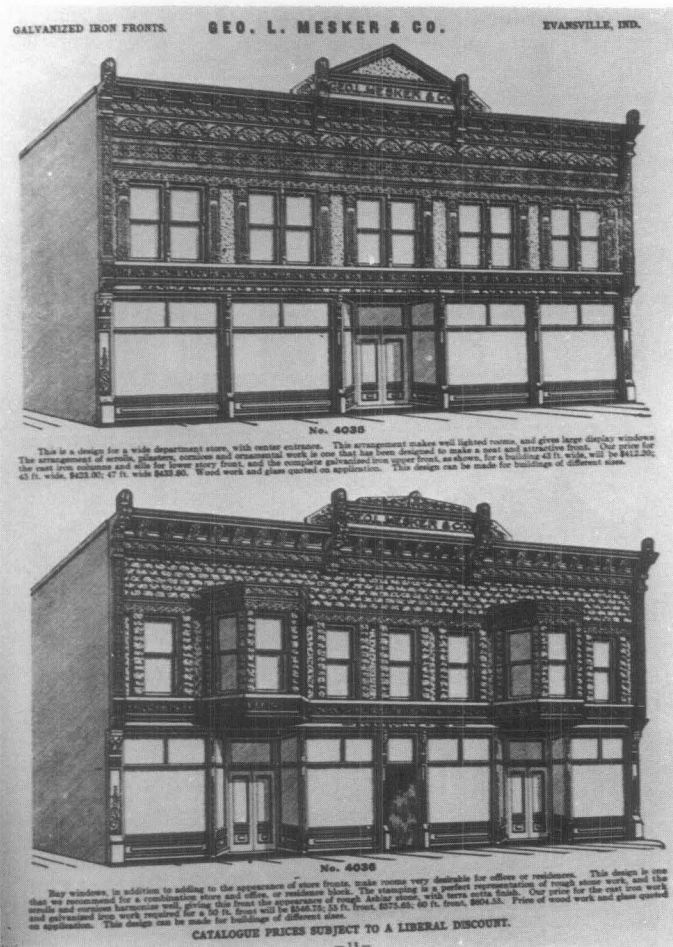


Figure 2. These 19th century galvanized iron storefronts could be purchased from George L. Mesker & Co. in Evansville, Indiana.

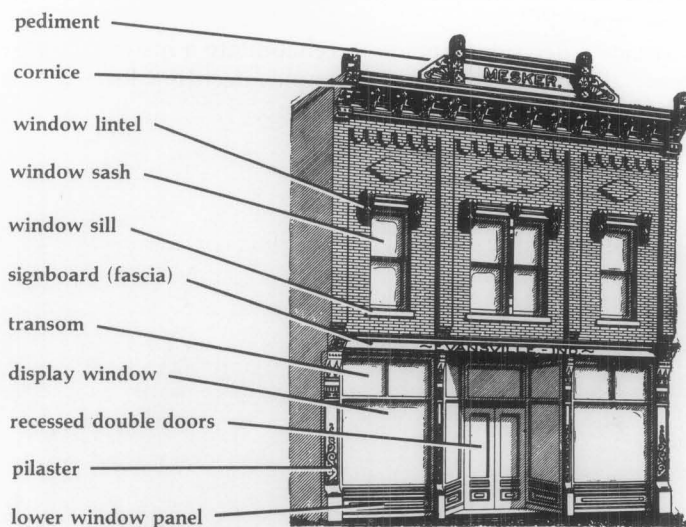


Figure 3. Become familiar with the architectural features typical of historic commercial buildings. A close look at a storefront's construction materials, features and relationship to the upper stories will help in determining how much of the original facade remains.

This particular storefront is No. 4016 in the George L. Mesker and Company catalog of 1905. One of Mesker's most popular designs, it featured cast-iron sills, columns and lintels, galvanized iron lintel and main cornice, window caps and pediment.

placed above each window and door. The signboard above the storefront (the fascia covering the structural beam) became a prominent part of the building. Canvas awnings, or in some cases tin or wooden canopies, often shaded storefronts of the late 19th century. Iron fronts were frequently put onto existing buildings as a way of giving them an up-to-date appearance. Except for expanding the display window area to the maximum extent possible and the increasing use of canvas awnings, few major technical innovations in storefront design can be detected from the 1850's through 1900.

The first decades of the 20th century saw the growing use of decorative transom lights (often using small prismatic glass panes) above display windows; in some cases, these transoms could be opened to permit air circulation into the store. Electric incandescent lights enabled storeowners to call attention to their entrance and display windows and permitted nighttime shopping. In the 1920's and 1930's a variety of new materials were introduced into the storefront, including aluminum and stainless steel framing elements, pigmented structural glass (in a wide variety of colors), tinted and mirrored glass, glass block and neon. A bewildering number of proprietary products also appeared during this period, many of which went into storefronts including Aklo, Vitrolux, Vitrolite, and Extrudalite. Highly colored and heavily patterned marble was a popular material for the more expensive storefronts of this period. Many experiments were made with recessed entries, floating display islands, and curved glass. The utilization of neon lighting further transformed store signs into elaborate flashing and blinking creations. During this period design elements were simplified and streamlined; transom and signboard were often combined. Signs utilized typefaces for the period, including such stylized lettering as "Broadway," "Fino" and "Monogram." Larger buildings of this period, such as department stores, sometimes had fixed metal canopies, with lighting and signs as an integral component of the fascia (see figure 4).

Because commercial architecture responds to a variety of factors—environmental, cultural, and economic, distinct regional variations in storefronts can be noted. Fixed metal canopies supported by guy wires, for example, were common in late 19th and early 20th century storefronts in southern states where it was advantageous to have shaded entrances all year long. Such a detail was less common in the northeast where moveable canvas awnings predominated. These awnings could be lowered in summer to keep buildings cooler and raised in winter when sunlight helps to heat the building.

Evaluating the Storefront

The important key to a successful rehabilitation of a historic commercial building is planning and selecting treatments that are sensitive to the architectural character of the storefront. As a first step, it is therefore essential to identify and evaluate the existing storefront's construction materials; architectural features; and the relationship of those features to the upper stories (see figure 5). This evaluation will permit a better understanding of the storefront's role in, and significance to, the overall design of the building. A second and equally important step in planning the rehabilitation work is a careful examination of the storefront's physical conditions to determine the ex-

tent and nature of rehabilitation work needed (see figure 6). In most cases, this examination is best undertaken by a qualified professional.



Figure 4. This storefront in New York City designed by Raymond Loewy typifies the streamlined look of the 1930's. Added to an earlier building, the front utilizes glass, stainless steel and neon to make a modern statement. This is a good example of a later storefront which has acquired significance and should be retained in any rehabilitation.



Figure 5. In some cases, as in the storefront on the extreme left, it is a simple matter to determine original appearance by looking at neighboring storefronts. Removal of the board and batten fasciabord, pent roof, and "colonial" style door, all of which could be undertaken at minimal cost, would restore the original proportions and lines of the building. Photo: Day Johnston

Guidelines for Rehabilitating Existing Historic Storefronts

1. Become familiar with the style of your building and the role of the storefront in the overall design. Don't "early up" a front. Avoid stock "lumberyard colonial" detailing such as coach lanterns, mansard overhangings, wood shakes, nonoperable shutters, and small paned windows except where they existed historically.
2. Preserve the storefront's character even though there is a new use on the interior. If less exposed window area is desirable, consider the use of interior blinds and insulating curtains rather than altering the existing historic fabric.
3. Avoid use of materials that were unavailable when the storefront was constructed; this includes vinyl and aluminum siding, anodized aluminum, mirrored or tinted glass, artificial stone, and brick veneer.
4. Choose paint colors based on the building's historical appearance. In general do not coat surfaces that have never been painted. For 19th century storefronts, contrasting colors may be appropriate, but avoid too many different colors on a single facade.



Figure 6. Storefronts of the 1940's, 50's, and 60's were frequently installed by attaching studs or a metal grid over an early front and applying new covering materials. If the existing storefront is a relatively recent addition with little or no architectural merit, begin by removing the covering materials in several places as was done here. If this preliminary investigation reveals evidence of an earlier front, such as this cast-iron column, carefully remove the later materials to assess the overall condition of the historic storefront. The black mastic visible on the lower masonry panels was used for installing pigmented structural glass. Some attachment methods for modern facings, such as mastic or metal lath, may have seriously damaged the original fabric of the building, and this must be taken into account in the rehabilitation process. Photo: Bob Dunn

The following questions should be taken into consideration in this two-part evaluation:

Construction Materials, Features, and Design Relationships

Storefront's Construction Materials: What are the construction materials? Wood? Metal? Brick or other masonry? A combination?

Storefront's Architectural Features: What are the various architectural features comprising the storefront and how are they arranged in relationship to each other?

- **Supporting Columns/Piers:**
What do the columns or piers supporting the storefront look like? Are they heavy or light in appearance? Are they flush with the windows or do they protrude? Are they all structural elements or are some columns decorative?
- **Display Windows and Transoms:**
Are the display windows and transoms single panes of glass or are they subdivided? Are they flush with the

facade or are they recessed? What is the proportion of area between the display windows and transom? Are there window openings in the base panels to allow natural light into the basement?

- **Entrances:**
Are the entrances centered? Are they recessed? Is one entrance more prominent than the others? How is the primary retail entrance differentiated from other entrances? Is there evidence that new entrances have been added or have some been relocated? Are the doors original or are they later replacements?
- **Decorative Elements:**
Are there any surviving decorative elements such as molded cornices, column capitals, fascia boards, brackets, signs, awnings or canopies? Is there a belt-course, cornice, or fascia board between the first and second floor? Are some elements older than others indicating changes over time?

Storefront's Relationship to Upper Stories: Is there a difference in materials between the storefront and upper stories? Were the storefront and floors above it created as an overall design or were they very different and unrelated to each other?

It is also worthwhile to study the neighboring commercial buildings and their distinctive characteristics to look for similarities (canopies, lighting, signs) as well as differences. This can help determine whether the storefront in question is significant and unique in its own right and/or whether it is significant as part of an overall commercial streetscape.

Physical Condition

Mild Deterioration: Do the surface materials need repair? Is paint flaking? Are metal components rusting? Do joints need recaulking where materials meet glass windows? Mild deterioration generally requires only maintenance level treatments.

Moderate Deterioration: Can rotted or rusted or broken sections of material be replaced with new material to match the old? Can solid material (such as Carrara glass) from a non-conspicuous location be used on the historic facade to repair damaged elements? Do stone or brick components need repointing? Is the storefront watertight with good flashing connections? Are there leaky gutters or air conditioner units which drip condensation on the storefront? Is caulking needed? Moderate deterioration generally requires patching or splicing of the existing elements with new pieces to match the deteriorated element.

Severe Deterioration: Have existing facing materials deteriorated beyond repair through vandalism, settlement, or water penetration? Is there a loss of structural integrity? Is the material rusted through, rotted, buckling, completely missing? Are structural lintels sagging? Are support columns settled or out of alignment? Severe deterioration generally requires replacement of deteriorated elements as part of the overall rehabilitation.

In evaluating whether the existing storefront is worthy of preservation, recognize that good design can exist in any period; a storefront added in 1930 may have greater architectural merit than what is replaced (see figure 4). In commercial historic districts, it is often the diversity of

styles and detailing that contribute to the character; removing a storefront dating from 1910 simply because other buildings in the district have been restored to their 1860's appearance may not be the best preservation approach. If the storefront design is a good example of its period and if it has gained significance over time, it should be retained as part of the historical evolution of the building (this architectural distinctiveness could also be an economic asset as it may attract attention to the building).

Deciding a Course of Action

The evaluation of the storefront's architectural features and physical condition will help determine the best course of action in the actual rehabilitation work. The following recommendations, adapted from the Secretary of the Interior's "Standards for Rehabilitation" and the accompanying interpretive guidelines, are designed to ensure that the historic commercial character of the building is retained in the rehabilitation process.

If the original or significant storefront exists, repair and retain the historic features using recommended treatments (see following sections on rehabilitating metal, wood and masonry storefronts as well as the guidelines for rehabilitating existing historic storefronts found on page 3).

If the original or significant storefront no longer exists or is too deteriorated to save, undertake a contemporary design which is compatible with the rest of the building in scale, design, materials, color and texture; or undertake an accurate restoration based on historical research and physical evidence (see section on "Replacement Storefronts"). Where an original or significant storefront no longer exists and *no* evidence exists to document its early appearance, it is generally preferable to undertake a contemporary design that retains the commercial "flavor" of the building. The new storefront design should not draw attention away from the historic building with its detailing but rather should respect the existing historic character of the overall building. A new design that copies traditional details or features from neighboring buildings or other structures of the period may give the building a historical appearance which blends in with its neighbors but which never, in fact, existed. For this reason, use of conjectural designs, even if based on similar buildings elsewhere in the neighborhood or the availability of different architectural elements from other buildings or structures, is generally not recommended.

Rehabilitating Metal Storefronts

Rehabilitating metal storefronts can be a complex and time-consuming task. Before steps are taken to analyze or treat deteriorated storefronts, it is necessary to know which metal is involved, because each has unique properties and distinct preservation treatments. Storefronts were fabricated using a variety of metals, including cast iron, bronze, copper, tin, galvanized sheet iron, cast zinc, and stainless steel. Determining metallic composition can be a difficult process especially if components are encrusted with paint. Original architect's specifications (sometimes available from permit offices, town halls, or records of the original owner) can be important clues in this regard and should be checked if at all possible.

Iron—a magnetic, gray-white malleable metal, readily susceptible to oxidation. Cast iron, most commonly found in storefronts, is shaped by molds and can withstand great compressive loads. Rolled sheet iron, sometimes galvanized with zinc, also was used in storefront construction. Stainless steel began to appear in storefronts after 1930.

Zinc—a medium-hard, bluish-white metal, widely used as a protective coating for iron and steel. It is softer than iron and is nonmagnetic.

Copper—a nonmagnetic, corrosion-resistant, malleable metal, initially reddish-brown but when exposed to the atmosphere turns brown to black to green.

Bronze and brass—nonmagnetic, abrasive-resistant alloys combining copper with varying amounts of zinc, lead, or tin. These copper alloys, more commonly found in office buildings or large department stores, range in color from lemon yellow to golden brown to green depending on their composition and are well suited for casting (see figure 7).

Aluminum—a lightweight, nonmagnetic metal commonly found on storefronts dating from the 1920's and 30's. Its brightness and resistance to corrosion has made it a popular storefront material in the 20th century.

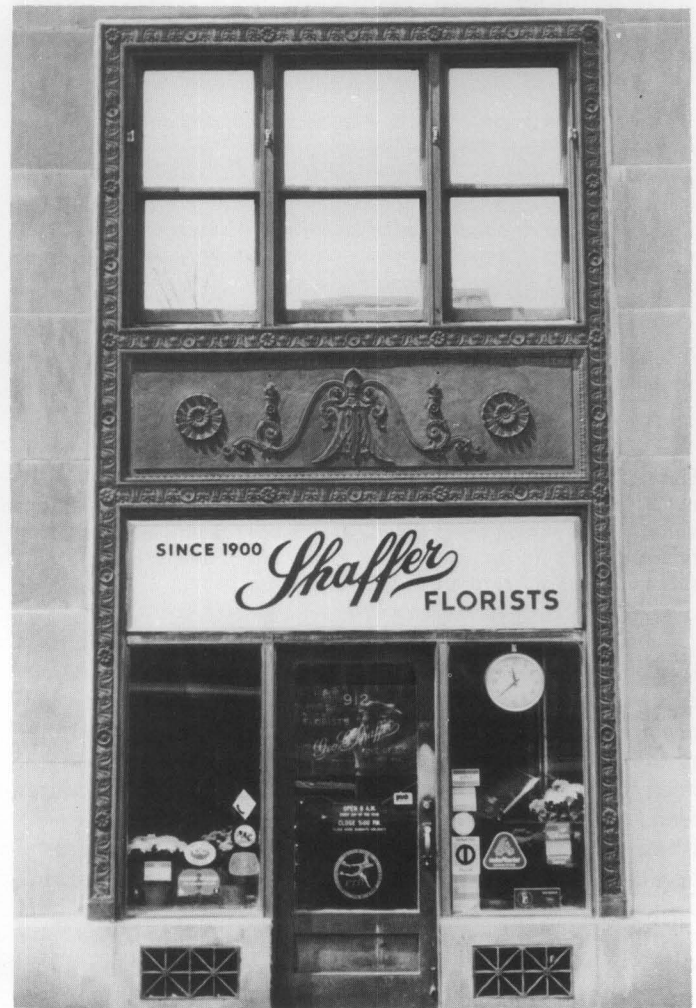


Figure 7. Part of a large office building constructed in Washington, D.C. in 1928, this finely detailed bronze storefront is typical of many constructed during this period. It should be noted that the original grilles, spandrel panel and window above are all intact. Photo: David W. Look, AIA

Repair and Replacement of Metal

Simply because single components of a storefront need repair or replacement should not be justification for replacing an entire storefront. Deteriorated metal architectural elements can be repaired by a variety of means, although the nature of the repair will depend on the extent of the deterioration, the type of metal and its location, and the overall cost of such repairs. Patches can be used to mend, cover or fill a deteriorated area. Such patches should be a close match to the original material to prevent galvanic corrosion. Splicing—replacement of a small section with new material—should be undertaken on structural members only when temporary bracing has been constructed to carry the load. Reinforcing—or bracing the damaged element with additional new metal material—can relieve fatigue or overloading in some situations.

If metal components have deteriorated to a point where they have actually failed (or are missing), replacement is the only reasonable course of action. If the components are significant to the overall design of the storefront, they should be carefully removed and substituted with components that match the original in material, size and detailing (see figure 8).



Figure 8. When the Grand Opera House in Wilmington, Delaware, was rehabilitated, missing cast-iron columns were cast of aluminum to match the original; in this particular case, because these columns do not carry great loads, aluminum proved to be successful substitute. Photo: John G. Waite

Before going to the expense of reproducing the original, it may be useful to check salvage yards for compatible components. Missing parts of cast iron storefronts can be replaced by new cast iron members that are reproductions of the original. New wooden patterns, however, usually need to be made if the members are large. This procedure tends to be expensive (it is usually impossible to use existing iron components as patterns to cast large elements because cast iron shrinks 1/5 inch per foot as it cools). In some situations, less expensive substitute materials such as aluminum, wood, plastics, and fiberglass, painted to match the metal, can be used without compromising the architectural character of the resource.

Cleaning and Painting

Cast iron storefronts are usually encrusted with layers of paint which need to be removed to restore crispness to the details. Where paint build-up and rust are not severe

problems, handscraping and wire-brushing are viable cleaning methods. While it is necessary to remove all rust before repainting, it is not necessary to remove all paint. For situations involving extensive paint build-up and corrosion, mechanical methods such as low-pressure gentle dry grit blasting (80-100 psi) can be effective and economical, providing a good surface for paint. Masonry and wood surfaces adjacent to the cleaning area, however, should be protected to avoid inadvertent damage from the blasting. It will be necessary to recaulk and putty the heads of screws and bolts after grit blasting to prevent moisture from entering the joints. Cleaned areas should be painted immediately after cleaning with a rust-inhibiting primer to prevent new corrosion. Before any cleaning is undertaken, local codes should be checked to ensure compliance with environmental safety requirements.

Storefronts utilizing softer metals (lead, tin), sheet metals (sheet copper), and plated metals (tin and terneplate) should not be cleaned mechanically (grit blasting) because their plating or finish can be easily abraded and damaged. It is usually preferable to clean these softer metals with a chemical (acid pickling or phosphate dipping) method. Once the surface of the metal has been cleaned of all corrosion, grease, and dirt, a rust-inhibiting primer coat should be applied. Finish coats especially formulated for metals, consisting of lacquers, varnishes, enamels or special coatings, can be applied once the primer has dried. Primer and finish coats should be selected for chemical compatibility with the particular metal in question.

Bronze storefronts, common to large commercial office buildings and major department stores of the 20th century, can be cleaned by a variety of methods; since all cleaning removes some surface metal and patina, it should be undertaken only with good reason (such as the need to remove encrusted salts, bird droppings or dirt). Excessive cleaning can remove the texture and finish of the metal. Since this patina can protect the bronze from further corrosion, it should be retained if possible. If it is desirable to remove the patina to restore the original surface of the bronze, several cleaning methods can be used: chemical compounds including rottenstone and oil, whitening and ammonia, or precipitated chalk and ammonia, can be rubbed onto bronze surfaces with a soft, clean cloth with little or no damage. A number of commercial cleaning companies successfully use a combination of 5% oxalic acid solution together with finely ground India pumice powder. Fine glass-bead blasting (or peening) and crushed walnut shell blasting also can be acceptable mechanical methods if carried out in controlled circumstances under low (80-100 psi) pressure. Care should be taken to protect any adjacent wood or masonry from the blasting.

The proper cleaning of metal storefronts should not be considered a "do-it-yourself" project. The nature and condition of the material should be assessed by a competent professional, and the work accomplished by a company specializing in such work.

Rehabilitating Wooden Storefronts

The key to the successful rehabilitation of wooden storefronts is a careful evaluation of existing physical conditions. Moisture, vandalism, insect attack, and lack of maintenance can all contribute to the deterioration of wooden storefronts. Paint failure should not be mistaken-

ly interpreted as a sign that the wood is in poor condition and therefore irreparable. Wood is frequently in sound physical condition beneath unsightly paint. An ice pick or awl may be used to test wood for soundness—decayed wood that is jabbed will lift up in short irregular pieces; sound wood will separate in long fibrous splinters.

Repair and Replacement of Wood

Storefronts showing signs of physical deterioration can often be repaired using simple methods. Partially decayed wood can be patched, built up, chemically treated or consolidated and then painted to achieve a sound condition, good appearance, and greatly extended life.

To repair wood showing signs of rot, it is advisable to dry the wood; carefully apply a fungicide such as pentachlorophenol (a highly toxic substance) to all decayed areas; then treat with 2 or 3 applications of boiled linseed oil (24 hours between applications). Afterward, fill cracks and holes with putty; caulk the joints between the various wooden members; and finally prime and paint the surface.

Partially decayed wood may also be strengthened and stabilized by consolidation, using semi-rigid epoxies which saturate porous decayed wood and then harden. The consolidated wood can then be filled with a semi-rigid epoxy patching compound, sanded and painted. More information on epoxies can be found in the publication "Epoxies for Wood Repairs in Historic Buildings," cited in the bibliography.

Where components of wood storefronts are so badly deteriorated that they cannot be stabilized, it is possible to replace the deteriorated parts with new pieces (see figure 9). These techniques all require skill and some expense, but are recommended in cases where decorative elements, such as brackets or pilasters, are involved. In some cases, missing edges can be filled and rebuilt using wood putty or epoxy compounds. When the epoxy cures, it can be sanded smooth and painted to achieve a durable and waterproof repair.



Figure 9. Rather than replace an entire wooden storefront when there is only localized deterioration, a new wooden component can be pieced-in, as seen here in this column base. The new wood will need to be given primer and top coats of a high quality exterior paint—either an oil-base or latex system. Also wood that is flaking and peeling should be scraped and hand-sanded prior to repainting. Photo: H. Ward Jandl

Repainting of Wood

Wooden storefronts were historically painted to deter the harmful effects of weathering (moisture, ultraviolet rays from the sun, wind, etc.) as well as to define and accent architectural features. Repainting exterior woodwork is thus an inexpensive way to provide continued protection from weathering and to give a fresh appearance to the storefront.

Before repainting, however, a careful inspection of all painted wood surfaces needs to be conducted in order to determine the extent of surface preparation necessary, that is, whether the existing layers of paint have deteriorated to the point that they will need to be partially or totally removed prior to applying the new paint.

As a general rule, removing paint from historic exterior woodwork should be avoided unless absolutely essential. Once conditions warranting removal have been identified, however, paint can be removed to the next sound layer using the gentlest method possible, then the woodwork repainted. For example, such conditions as mildewing, excessive chalking, or staining (from the oxidization of rusting nails or metal anchorage devices) generally require only thorough surface cleaning prior to repainting. Intercoat peeling, solvent blistering, and wrinkling require removal of the affected layer using mild abrasive methods such as hand scraping and sanding. In all of these cases of limited paint deterioration, after proper surface preparation the exterior woodwork may be given one or more coats of a high quality exterior oil finish paint.

On the other hand, if painted wood surfaces display continuous patterns of deep cracks or if they are extensively blistering and peeling so that bare wood is visible, the old paint should be completely removed before repainting. (It should be emphasized that because peeling to bare wood—the most common type of paint problem—is most often caused by excess interior or exterior moisture that collects behind the paint film, the first step in treating peeling is to locate and remove the source or sources of moisture. If this is not done, the new paint will simply peel off.)

There are several acceptable methods for total paint removal, depending on the particular wooden element involved. They include such thermal devices as an electric heat plate with scraper for flat surfaces such as siding, window sills, and doors or an electric hot-air gun with profiled scraper for solid decorative elements such as gingerbread or molding. Chemical methods play a more limited, supplemental role in removing paint from historic exterior woodwork; for example, caustic or solvent-base strippers may be used to remove paint from window muntins because thermal devices can easily break the glass. Detachable wooden elements such as exterior shutters, balusters and columns, can probably best be stripped by means of immersion in commercial dip tanks because other methods are too laborious. Care must be taken in rinsing all chemical residue off the wood prior to painting or the new paint will not adhere.

Finally, if the exterior woodwork has been stripped to bare wood, priming should take place within 48 hours (unless the wood is wet, in which case it should be permitted to dry before painting). Application of a high quality oil type exterior primer will provide a surface over which either an oil or latex top coat can be successfully used.

Rehabilitating Masonry Storefronts

Some storefronts are constructed of brick or stone, and like their metal and wooden counterparts, also may have been subjected to physical damage or alterations over time. Although mortar may have disintegrated, inappropriate surface coatings applied, and openings reduced or blocked up, careful rehabilitation will help restore the visual and physical integrity of the masonry storefront.

Repair and Replacement of Masonry

If obvious signs of deterioration—disintegrating mortar, spalling bricks or stone—are present, the causes (ground moisture, leaky downspouts, etc.) should be identified and corrected. Some repointing may be necessary on the masonry surface, but should be limited to areas in which so much mortar is missing that water accumulates in the mortar joints, causing further deterioration. New mortar should duplicate the composition, color, texture, and hardness, as well as the joint size and profile of the original. Badly spalling bricks may have to be replaced. Deteriorated stone may be replaced in kind, or with a matching substitute material; in some cases where not visually prominent, it may be covered with stucco, possibly scored to resemble blocks of stone.

Cleaning Masonry

Inappropriate cleaning techniques can be a major source of damage to historic masonry buildings. Historic masonry should be cleaned only when necessary to halt deterioration or to remove graffiti and stains, and always with the gentlest means possible, such as water and a mild detergent using natural bristle brushes, and/or a non-harmful chemical solution, both followed by a low-pressure water rinse.

It is important to remember that many mid-19th century brick buildings were painted immediately or soon after construction to protect poor quality brick or to imitate stone. Some historic masonry buildings not originally painted were painted at a later date to hide alterations or repairs, or to solve recurring maintenance or moisture problems. Thus, whether for reasons of historical tradition or practicality, it may be preferable to retain existing paint. If it is readily apparent that paint is not historic and is a later, perhaps unsightly or inappropriate treatment, removal may be attempted, but only if this can be carried out without damaging the historic masonry. Generally, paint removal from historic masonry may be accomplished successfully only with the use of specially formulated chemical paint removers. No abrasive techniques, such as wet or dry sandblasting should be considered. If non-historic paint cannot be removed without using abrasive methods, it is best to leave the masonry painted, although repainting in a compatible color may help visually.

Removing unsightly mastic from masonry presents a similarly serious problem. Its removal by mechanical means may result in abrading the masonry, and chemical and heat methods may prove ineffective, although solvents like acetone will aid in softening the hardened mastic. If the mastic has become brittle, a flat chisel may be used to pop it off; but this technique, if not undertaken with care, may result in damaging the masonry. And even if total removal is possible, the mastic may have permanently stained the masonry. Replacement of these masonry sec-

tions marred by mastic application may be one option in limited situations; individual pieces of stone or bricks that have been damaged by inappropriate alterations may be cut out and replaced with new pieces that duplicate the original. However, since an exact match will be nearly impossible to achieve, it may be necessary to paint the repaired masonry in order to create a harmonious facade. Replacement of a large area with new materials may not be acceptable as it may give the building a new, non-historic appearance inappropriate to the building style and period.

Designing Replacement Storefronts

Where an architecturally or historically significant storefront no longer exists or is too deteriorated to save, a new front should be designed which is compatible with the size, scale, color, material, and character of the building. Such a design should be undertaken based on a thorough understanding of the building's architecture and, where appropriate, the surrounding streetscape (see figure 10). For example, just because upper floor windows are arched is not sufficient justification for designing arched openings for the new storefront. The new design should "read" as a storefront; filling in the space with brick or similar solid material is inappropriate for historic buildings. Similarly the creation of an arcade or other new design element, which alters the architectural and historic character of the building and its relationship with the street, should be avoided. The guidelines on page 8 can assist in developing replacement storefront designs that respect the historic character of the building yet meet current economic and code requirements.

Guidelines for Designing Replacement Storefronts

1. *Scale:* Respect the scale and proportion of the existing building in the new storefront design.
2. *Materials:* Select construction materials that are appropriate to the storefronts; wood, cast iron, and glass are usually more appropriate replacement materials than masonry which tends to give a massive appearance.
3. *Cornice:* Respect the horizontal separation between the storefront and the upper stories. A cornice or fascia board traditionally helped contain the store's sign.
4. *Frame:* Maintain the historic planar relationship of the storefront to the facade of the building and the streetscape (if appropriate). Most storefront frames are generally composed of horizontal and vertical elements.
5. *Entrances:* Differentiate the primary retail entrance from the secondary access to upper floors. In order to meet current code requirements, out-swinging doors generally must be recessed. Entrances should be placed where there were entrances historically, especially when echoed by architectural detailing (a pediment or projecting bay) on the upper stories.
6. *Windows:* The storefront generally should be as transparent as possible. Use of glass in doors, transoms, and display areas allows for visibility into and out of the store.
7. *Secondary Design Elements:* Keep the treatment of secondary design elements such as graphics and awnings as simple as possible in order to avoid visual clutter to the building and its streetscape.



Figure 10. (A) This existing storefront, added in the 1950's to a late 19th century brick building, extends beyond the plane of the facade; faced with anodized aluminum and permastone, it does not contribute to the architectural and historic character of the building. (B) This replacement design uses "lumberyard colonial" detailing, such as barn-type doors, shutters, small paned windows, and a wood shake pent roof. The design, detailing, and choice of materials are clearly inappropriate to this commercial building. (C) This replacement design retains the 1950's projecting canopy but symmetrical placement of the doors relates well to the second floor windows above; this contemporary design is compatible with the scale and character of the building. (D) This replacement design accurately restores the original appearance of the building; based on historical research and physical evidence, it too is an acceptable preservation approach. Drawings: Sharon C. Park, AIA

A restoration program requires thorough documentation of the historic development of the building prior to initiating work. If a restoration of the original storefront is contemplated, old photographs and prints, as well as physical evidence, should be used in determining the form and details of the original. Because storefronts are particularly susceptible to alteration in response to changing marketing techniques, it is worthwhile to find visual documentation from a variety of periods to have a clear understanding of the evolution of the storefront. Removal of later additions that contribute to the character of the building should not be undertaken.

Other Considerations

Pigmented Structural Glass

The rehabilitation of pigmented structural glass storefronts, common in the 1930's, is a delicate and often frustrating task, due to the fragility and scarcity of the material. Typically the glass was installed against masonry walls with asphaltic mastic and a system of metal shelf angles bolted to the walls on three-foot centers. Joints between the panels were filled with cork tape or an elastic joint cement to cushion movement and prevent moisture infiltration.

The decision to repair or replace damaged glass panels should be made on a case-by-case basis. In some instances, the damage may be so minor or the likelihood of finding replacement glass so small, that repairing, re-anchoring and/or stabilizing the damaged glass panel may be the only prudent choice. If the panel is totally destroyed or missing, it may be possible to replace with glass salvaged from a demolition; or a substitute material, such as "spandrel glass," which approximates the appearance of the original. Although pigmented structural glass is no longer readily available, occasionally long-established glass "jobbers" will have a limited supply to repair historic storefronts.

Awnings

Where based on historic precedent, consider the use of canvas awnings on historic storefronts (see figure 11).

Awnings can help shelter passersby, reduce glare, and conserve energy by controlling the amount of sunlight hitting the store window, although buildings with northern exposures will seldom functionally require them. Today's canvas awnings have an average life expectancy of between 4 and 7 years. In many cases awnings can disguise, in an inexpensive manner, later inappropriate alterations and can provide both additional color and a strong store identification. Fixed aluminum awnings and awnings simulating mansard roofs and umbrellas are generally inappropriate for older commercial buildings. If awnings are added, choose those that are made from soft canvas or vinyl materials rather than wood or metal; be certain that they are installed without damaging the building or visually impairing distinctive architectural features and can be operable for maximum energy conservation effect.

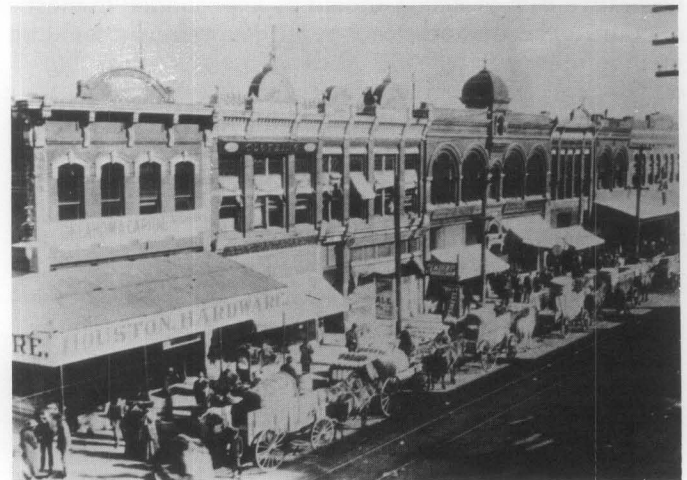


Figure 11. Try to locate old photographs or prints to determine what alterations have been made to the storefront and when they were undertaken. Awnings were common elements of storefronts at the turn of the century. They can be equally useful today.

Signs

Signs were an important aspect of 19th and early 20th century storefronts and today play an important role in defining the character of a business district. In examining historic streetscape photographs, one is struck by the number of signs—in windows, over doors, painted on exterior walls, and hanging over (and sometimes across) the street. While this confusion was part of the character of 19th century cities and towns, today's approach toward signs in historic districts tends to be much more conservative. Removal of some signs can have a dramatic effect in improving the visual appearance of a building; these include modern backlit fluorescent signs, large applied signs with distinctive corporate logos, and those signs attached to a building in such a way as to obscure significant architectural detailing. For this reason, their removal is encouraged in the process of rehabilitation. If new signs are designed, they should be of a size and style compatible with the historic building and should not cover or obscure significant architectural detailing or features. For many 19th century buildings, it was common to mount signs on the lintel above the first story. Another common approach, especially at the turn of the century, was to paint signs directly on the inside of the display windows. Frequently this was done in gold leaf. New hanging signs may be appropriate for historic commercial buildings, if they are of a scale and design compatible with the historic buildings. Retention of signs and advertising painted on historic walls, if of historic or artistic interest (especially where they provide evidence of early or original occupants), is encouraged.

Paint Color

Paint analysis can reveal the storefront's historic paint colors and may be worth undertaking if a careful restoration is desired. If not, the paint color should be, at a minimum, appropriate to the style and setting of the building. This also means that if the building is in a historic district, the color selection should complement the building in question as well as other buildings in the block. In general, color schemes for wall and major decorative trim or details should be kept simple; in most cases the color or colors chosen for a storefront should be used on other painted exterior detailing (windows, shutter, cornice, etc.) to unify upper and lower portions of the facade.

Windows

Glass windows are generally the most prominent features in historic storefronts, and care should be taken to ensure that they are properly maintained. For smaller paned windows with wooden frames, deteriorated putty should be removed manually, taking care not to damage wood along the rabbet. To reglaze, a bead of linseed oil-based putty should be laid around the perimeter of the rabbet; the glass pane pressed into place; glazing points inserted to hold the pane; and a final seal of putty beveled around the edge of the glass. For metal framed windows, glazing compound and special glazing clips are used to secure the glass; a final seal of glazing compound then is often applied. If the glass needs replacing, the new glass should match the original in size, color and reflective qualities. Mirrored or tinted glass are generally inappropriate

replacements for historic storefronts. The replacement of cracked or missing glass in large windows should be undertaken by professional glaziers.

Code Requirements

Alterations to a storefront called for by public safety, handicapped access, and fire codes can be difficult design problems in historic buildings. Negotiations can be undertaken with appropriate officials to ensure that all applicable codes are being met while maintaining the historic character of the original construction materials and features. If, for instance, doors opening inward must be changed, rather than replace them with new doors, it may be possible to reverse the hinges and stops so that they will swing outward.

Summary

A key to the successful rehabilitation of historic commercial buildings is the sensitive treatment of the first floor itself (see figure 12). Wherever possible, significant storefronts (be they original or later alterations), including windows, sash, doors, transoms, signs and decorative features, should be repaired in order to retain the historic character of the building. Where original or early storefronts no longer exist or are too deteriorated to save, the commercial character of the building should nonetheless be preserved—either through an accurate restoration based on historic research and physical evidence or a contemporary design which is compatible with the scale, design, materials, color and texture of the historic building. The sensitive rehabilitation of historic storefronts will not only enhance the architectural character of the overall building but will contribute to rejuvenating neighborhoods or business districts as well.



Figure 12. This photograph of three late 19th century commercial buildings clearly shows the impact of preserving and rehabilitating storefronts. The one on the right has been totally obscured by a "modern" front added in the 1950's. Although inappropriate alterations have taken place on the left storefront, it is still possible to determine the original configuration of the doors and display windows. The storefront in the middle has remained intact. Although in need of some minor maintenance work, the appeal of the original design and materials is immediately apparent.

Additional Reading

- Bryan, John M. and the Triad Architectural Associates. *Abbeville, South Carolina: Using Grant-in-Aid Funds for Rehabilitation Planning and Project Work in the Commercial Town Square*. Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Gayle, Margot and Edmund V. Gillon, Jr. *Cast Iron Architecture in New York*. New York: Dover Publications, Inc., 1971.
- Gayle, Margot and David W. Look and John G. Waite. *Metals in America's Historic Buildings: Uses and Preservation Treatments*. Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Gelbloom, Mara. "Old Storefronts." *The Old-House Journal* VI, No. 3 (March 1978), pp. 25-34.
- Grimmer, Anne E. "Dangers of Abrasive Cleaning to Historic Buildings." (Preservation Briefs 6), Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1979.
- Guthrie, Susan. *Main Street Historic District, Van Buren, Arkansas: Using Grant-in-Aid Funds for Storefront Rehabilitation*. Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Hartmann, Robert R. "Design for the Business District, Part I." Racine, Wisconsin: Racine Urban Aesthetics, Inc., 1979.
- Hensley, Tom. "The Preservation of Historic Pigmented Structural Glass (Vitrolite and Carraa Glass)." Denver: Rocky Mountain Regional Office, National Park Service, 1981.
- Marsh, Ellen. "An Introduction to Storefront Rehabilitation." *Conserve Neighborhoods*, No. 7 (Summer 1979).
- Mintz, Norman. "A Practical Guide to Storefront Rehabilitation." Technical Series No. 2.: Albany, N.Y.: Preservation League of New York State, 1977.
- Myers, John H. *The Repair of Historic Wooden Windows*. (Preservation Briefs 9). Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Park, Sharon C. *Storefront Rehabilitation: A 19th Century Commercial Building*. Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Phillips, Morgan W. and Dr. Judith E. Selwyn. "Epoxy for Wood Repairs in Historic Buildings." Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1978.
- Rifkind, Carole. *Main Street: The Face of Urban America*. New York: Harper and Row, 1977.
- The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*. Washington, D.C.: Technical Preservation Services Division, U.S. Department of the Interior, 1980.
- Weeks, Kay D. and David W. Look. "Exterior Paint Problems on Historic Woodwork." (Preservation Briefs 10). Washington, D.C.: Technical Preservation Services, U.S. Department of the Interior, 1982.

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This publication has been prepared pursuant to the Economic Recovery Tax Act of 1981 which directs the Secretary of the Interior to certify rehabilitations of historic buildings that are consistent with their historic character; the advice and guidance provided in this brief will assist property owners in complying with the requirements of this law.

Preservation Briefs 11 has been developed under the technical editorship of Lee H. Nelson, AIA, Chief, Preservation Assistance Division, National Park Service, U.S. Department of the Interior, Washington, D.C. 20240. Comments on the usefulness of this information are welcomed and can be sent to Mr. Nelson at the above address.

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Cover drawing: This woodcut of the Joy Building, built in 1808 in Boston, shows early storefronts with shutters; note the profusion of signs covering the facade, advertising the services of the tenants.

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Preservation Briefs: 9

The Repair of Historic Wooden Windows

John H. Myers

The windows on many historic buildings are an important aspect of the architectural character of those buildings. Their design, craftsmanship, or other qualities may make them worthy of preservation. This is self-evident for ornamental windows, but it can be equally true for warehouses or factories where the windows may be the most dominant visual element of an otherwise plain building (see figure 1). Evaluating the significance of these windows and planning for their repair or replacement can be a complex process involving both objective and subjective considerations. The *Secretary of the Interior's Standards for Rehabilitation*, and the accompanying guidelines, call for respecting the significance of original materials and features, repairing and retaining them wherever possible, and when necessary, replacing them in kind. This Brief is based on the issues of significance and repair which are implicit in the standards, but the primary emphasis is on the technical issues of planning for the repair of windows including evaluation of their physical condition, techniques of repair, and design considerations when replacement is necessary.

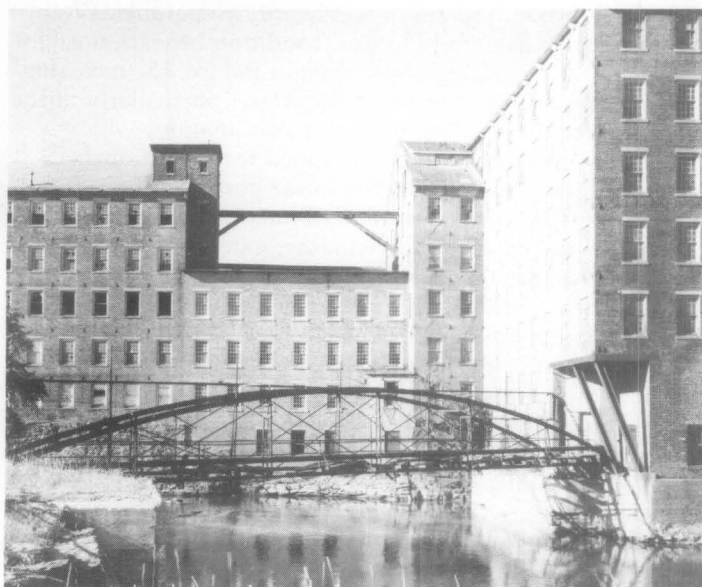


Figure 1. Windows are frequently important visual focal points, especially on simple facades such as this mill building. Replacement of the multi-pane windows here with larger panes could dramatically change the appearance of the building. The areas of missing windows convey the impression of such a change. Photo: John T. Lowe

Much of the technical section presents repair techniques as an instructional guide for the do-it-yourselfer. The information will be useful, however, for the architect, contractor, or developer on large-scale projects. It presents a methodology for approaching the evaluation and repair of existing windows, and considerations for replacement, from which the professional can develop alternatives and specify appropriate materials and procedures.

Architectural or Historical Significance

Evaluating the architectural or historical significance of windows is the first step in planning for window treatments, and a general understanding of the function and history of windows is vital to making a proper evaluation. As a part of this evaluation, one must consider four basic window functions: admitting light to the interior spaces, providing fresh air and ventilation to the interior, providing a visual link to the outside world, and enhancing the appearance of a building. No single factor can be disregarded when planning window treatments; for example, attempting to conserve energy by closing up or reducing the size of window openings may result in the use of *more* energy by increasing electric lighting loads and decreasing passive solar heat gains.

Historically, the first windows in early American houses were casement windows; that is, they were hinged at the side and opened outward. In the beginning of the eighteenth century single- and double-hung windows were introduced. Subsequently many styles of these vertical sliding sash windows have come to be associated with specific building periods or architectural styles, and this is an important consideration in determining the significance of windows, especially on a local or regional basis. Site-specific, regionally oriented architectural comparisons should be made to determine the significance of windows in question. Although such comparisons may focus on specific window types and their details, the ultimate determination of significance should be made within the context of the whole building, wherein the windows are one architectural element (see figure 2).

After all of the factors have been evaluated, *windows should be considered significant to a building if they:* 1) are original, 2) reflect the original design intent for the building, 3) reflect period or regional styles or building practices, 4) reflect changes to the building resulting from major periods or events, or 5) are examples of exceptional craftsmanship or design. Once this evaluation of significance has been completed, it is possible to pro-

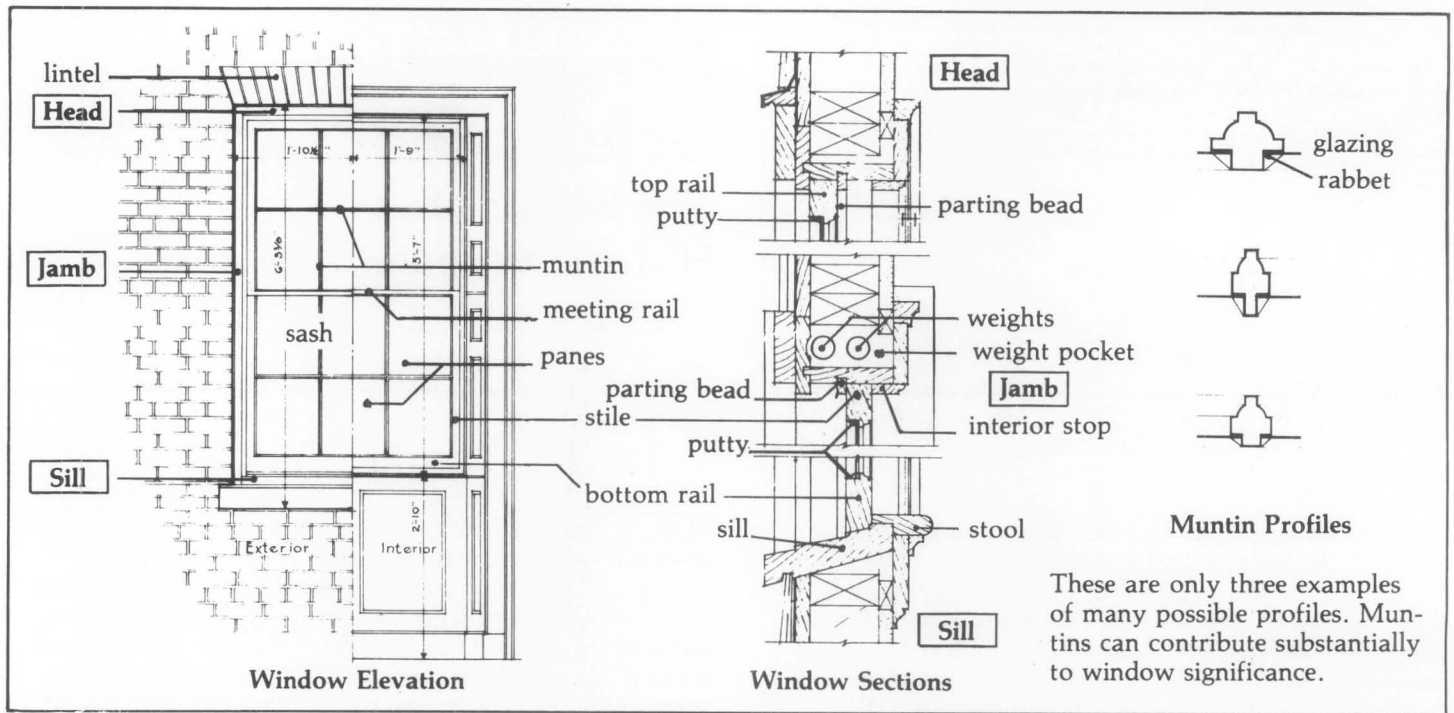


Figure 2. These drawings of window details identify major components, terminology, and installation details for a wooden double-hung window.

ceed with planning appropriate treatments, beginning with an investigation of the physical condition of the windows.

Physical Evaluation

The key to successful planning for window treatments is a careful evaluation of existing physical conditions on a unit-by-unit basis. A graphic or photographic system may be devised to record existing conditions and illustrate the scope of any necessary repairs. Another effective tool is a window schedule which lists all of the parts of each window unit. Spaces by each part allow notes on existing conditions and repair instructions. When such a schedule is completed, it indicates the precise tasks to be performed in the repair of each unit and becomes a part of the specifications. In any evaluation, one should note at a minimum, 1) window location, 2) condition of the paint, 3) condition of the frame and sill, 4) condition of the sash (rails, stiles and muntins), 5) glazing problems, 6) hardware, and 7) the overall condition of the window (excellent, fair, poor, and so forth).

Many factors such as poor design, moisture, vandalism, insect attack, and lack of maintenance can contribute to window deterioration, but moisture is the primary contributing factor in wooden window decay. All window units should be inspected to see if water is entering around the edges of the frame and, if so, the joints or seams should be caulked to eliminate this danger. The glazing putty should be checked for cracked, loose, or missing sections which allow water to saturate the wood, especially at the joints. The back putty on the interior side of the pane should also be inspected, because it creates a seal which prevents condensation from running down into the joinery. The sill should be examined to insure that it slopes downward away from the building and allows water to drain off. In addition, it may be advisable to cut a dripline along the underside of the sill. This almost invisible treatment will insure proper water run-off, particu-

larly if the bottom of the sill is flat. Any conditions, including poor original design, which permit water to come in contact with the wood or to puddle on the sill must be corrected as they contribute to deterioration of the window.

One clue to the location of areas of excessive moisture is the condition of the paint; therefore, each window should be examined for areas of paint failure. Since excessive moisture is detrimental to the paint bond, areas of paint blistering, cracking, flaking, and peeling usually identify points of water penetration, moisture saturation, and potential deterioration. Failure of the paint should not, however, be mistakenly interpreted as a sign that the wood is in poor condition and hence, irreparable. Wood is frequently in sound physical condition beneath unsightly paint. After noting areas of paint failure, the next step is to inspect the condition of the wood, particularly at the points identified during the paint examination.

Each window should be examined for operational soundness beginning with the lower portions of the frame and sash. Exterior rainwater and interior condensation can flow downward along the window, entering and collecting at points where the flow is blocked. The sill, joints between the sill and jamb, corners of the bottom rails and muntin joints are typical points where water collects and deterioration begins (see figure 3). The operation of the window (continuous opening and closing over the years and seasonal temperature changes) weakens the joints, causing movement and slight separation. This process makes the joints more vulnerable to water which is readily absorbed into the end-grain of the wood. If severe deterioration exists in these areas, it will usually be apparent on visual inspection, but other less severely deteriorated areas of the wood may be tested by two traditional methods using a small ice pick.

An ice pick or an awl may be used to test wood for soundness. The technique is simply to jab the pick into a wetted wood surface at an angle and pry up a small sec-



Figure 3. Deterioration of poorly maintained windows usually begins on horizontal surfaces and at joints where water can collect and saturate the wood. The problem areas are clearly indicated by paint failure due to moisture. Photo: Baird M. Smith, AIA

tion of the wood. Sound wood will separate in long fibrous splinters, but decayed wood will lift up in short irregular pieces due to the breakdown of fiber strength.

Another method of testing for soundness consists of pushing a sharp object into the wood, perpendicular to the surface. If deterioration has begun from the hidden side of a member and the core is badly decayed, the visible surface may appear to be sound wood. Pressure on the probe can force it through an apparently sound skin to penetrate deeply into decayed wood. This technique is especially useful for checking sills where visual access to the underside is restricted.

Following the inspection and analysis of the results, the scope of the necessary repairs will be evident and a plan for the rehabilitation can be formulated. Generally the actions necessary to return a window to "like new" condition will fall into three broad categories: 1) routine maintenance procedures, 2) structural stabilization, and 3) parts replacement. These categories will be discussed in the following sections and will be referred to respectively as Repair Class I, Repair Class II, and Repair Class III. Each successive repair class represents an increasing level of difficulty, expense, and work time. Note that most of the points mentioned in Repair Class I are routine maintenance items and should be provided in a regular maintenance program for any building. The neglect of these routine items can contribute to many common window problems.

Before undertaking any of the repairs mentioned in the following sections all sources of moisture penetration should be identified and eliminated, and all existing decay fungi destroyed in order to arrest the deterioration process. Many commercially available fungicides and wood preservatives are toxic, so it is extremely important to follow the manufacturer's recommendations for application, and store all chemical materials away from children and animals. After fungicidal and preservative treatment the windows may be stabilized, retained, and restored with every expectation for a long service life.

Repair Class I: Routine Maintenance

Repairs to wooden windows are usually labor intensive and relatively uncomplicated. On small scale projects this

allows the do-it-yourselfer to save money by repairing all or part of the windows. On larger projects it presents the opportunity for time and money which might otherwise be spent on the removal and replacement of existing windows, to be spent on repairs, subsequently saving all or part of the material cost of new window units. Regardless of the actual costs, or who performs the work, the evaluation process described earlier will provide the knowledge from which to specify an appropriate work program, establish the work element priorities, and identify the level of skill needed by the labor force.

The routine maintenance required to upgrade a window to "like new" condition normally includes the following steps: 1) some degree of interior and exterior paint removal, 2) removal and repair of sash (including reglazing where necessary), 3) repairs to the frame, 4) weatherstripping and reinstallation of the sash, and 5) repainting. These operations are illustrated for a typical double-hung wooden window (see figures 4a-f), but they may be adapted to other window types and styles as applicable.

Historic windows have usually acquired many layers of paint over time. Removal of excess layers or peeling and flaking paint will facilitate operation of the window and restore the clarity of the original detailing. Some degree of paint removal is also necessary as a first step in the proper surface preparation for subsequent refinishing (if paint color analysis is desired, it should be conducted prior to the onset of the paint removal). There are several safe and effective techniques for removing paint from wood, depending on the amount of paint to be removed. Several techniques such as scraping, chemical stripping, and the use of a hot air gun are discussed in "Preservation Briefs: 10 Paint Removal from Historic Woodwork" (see Additional Reading section at end).

Paint removal should begin on the interior frames, being careful to remove the paint from the interior stop and the parting bead, particularly along the seam where these stops meet the jamb. This can be accomplished by running a utility knife along the length of the seam, breaking the paint bond. It will then be much easier to remove the stop, the parting bead and the sash. The interior stop may be initially loosened from the sash side to avoid visible scarring of the wood and then gradually pried loose using a pair of putty knives, working up and down the stop in small increments (see figure 4b). With the stop removed, the lower or interior sash may be withdrawn. The sash cords should be detached from the sides of the sash and their ends may be pinned with a nail or tied in a knot to prevent them from falling into the weight pocket.

Removal of the upper sash on double-hung units is similar but the parting bead which holds it in place is set into a groove in the center of the stile and is thinner and more delicate than the interior stop. After removing any paint along the seam, the parting bead should be carefully pried out and worked free in the same manner as the interior stop. The upper sash can be removed in the same manner as the lower one and both sash taken to a convenient work area (in order to remove the sash the interior stop and parting bead need only be removed from one side of the window). Window openings can be covered with polyethylene sheets or plywood sheathing while the sash are out for repair.

The sash can be stripped of paint using appropriate techniques, but if any heat treatment is used (see figure 4c), the glass should be removed or protected from the sudden temperature change which can cause breakage. An



Figure 4a. The following series of photographs of the repair of a historic double-hung window use a unit which is structurally sound but has many layers of paint, some cracked and missing putty, slight separation at the joints, broken sash cords, and one cracked pane. Photo: John H. Myers



Figure 4b. After removing paint from the seam between the interior stop and the jamb, the stop can be pried out and gradually worked loose using a pair of putty knives as shown. To avoid visible scarring of the wood, the sash can be raised and the stop pried loose initially from the outer side. Photo: John H. Myers



Figure 4c. Sash can be removed and repaired in a convenient work area. Paint is being removed from this sash with a hot air gun while an asbestos sheet protects the glass from sudden temperature change. Photo: John H. Myers

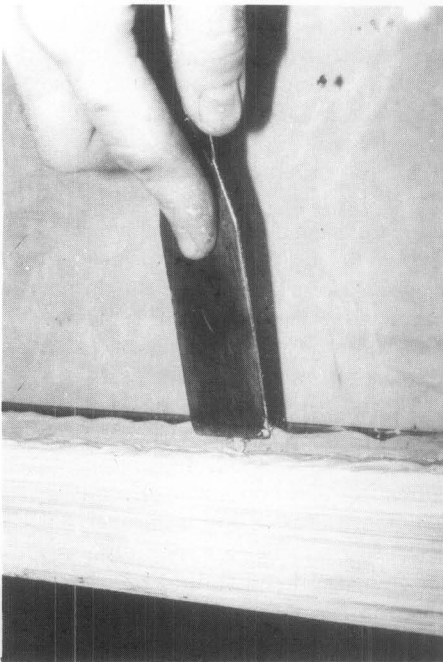


Figure 4d. Reglazing or replacement of the putty requires that the existing putty be removed manually, the glazing points be extracted, the glass removed, and the back putty scraped out. To reglaze, a bed of putty is laid around the perimeter of the rabbet, the pane is pressed into place, glazing points are inserted to hold the pane (shown), and a final seal of putty is beveled around the edge of the glass. Photo: John H. Myers



Figure 4e. A common repair is the replacement of broken sash cords with new cords (shown) or with chains. The weight pocket is often accessible through a removable plate in the jamb, or by removing the interior trim. Photo: John H. Myers



Figure 4f. Following the relatively simple repairs, the window is weathertight, like new in appearance, and serviceable for many years to come. Both the historic material and the detailing and craftsmanship of this original window have been preserved. Photo: John H. Myers

overlay of aluminum foil on gypsum board or asbestos can protect the glass from such rapid temperature change. It is important to protect the glass because it may be historic and often adds character to the window. Deteriorated putty should be removed manually, taking care not to damage the wood along the rabbet. If the glass is to be removed, the glazing points which hold the glass in place can be extracted and the panes numbered and removed for cleaning and reuse in the same openings. With the glass panes out, the remaining putty can be removed and the sash can be sanded, patched, and primed with a preservative primer. Hardened putty in the rabbets may be softened by heating with a soldering iron at the point of removal. Putty remaining on the glass may be softened by soaking the panes in linseed oil, and then removed with less risk of breaking the glass. Before reinstalling the glass, a bead of glazing compound or linseed oil putty should be laid around the rabbet to cushion and seal the glass. Glazing compound should only be used on wood which has been brushed with linseed oil and primed with an oil based primer or paint. The pane is then pressed into place and the glazing points are pushed into the wood around the perimeter of the pane (see figure 4d). The final glazing compound or putty is applied and beveled to complete the seal. The sash can be refinished as desired on the inside and painted on the outside as soon as a "skin" has formed on the putty, usually in 2 or 3 days. Exterior paint should cover the beveled glazing compound or putty and lap over onto the glass slightly to complete a weathertight seal. After the proper curing times have elapsed for paint and putty, the sash will be ready for reinstallation.

While the sash are out of the frame, the condition of the wood in the jamb and sill can be evaluated. Repair and refinishing of the frame may proceed concurrently with repairs to the sash, taking advantage of the curing times for the paints and putty used on the sash. One of the most common work items is the replacement of the sash cords with new rope cords or with chains (see figure 4e). The weight pocket is frequently accessible through a door on the face of the frame near the sill, but if no door exists, the trim on the interior face may be removed for access. Sash weights may be increased for easier window operation by elderly or handicapped persons. Additional repairs to the frame and sash may include consolidation or replacement of deteriorated wood. Techniques for these repairs are discussed in the following sections.

The operations just discussed summarize the efforts necessary to restore a window with minor deterioration to "like new" condition (see figure 4f). The techniques can be applied by an unskilled person with minimal training and experience. To demonstrate the practicality of this approach, and photograph it, a Technical Preservation Services staff member repaired a wooden double-hung, two over two window which had been in service over ninety years. The wood was structurally sound but the window had one broken pane, many layers of paint, broken sash cords and inadequate, worn-out weatherstripping. The staff member found that the frame could be stripped of paint and the sash removed quite easily. Paint, putty and glass removal required about one hour for each sash, and the reglazing of both sash was accomplished in about one hour. Weatherstripping of the sash and frame, replacement of the sash cords and reinstallation of the sash, parting bead, and stop required an hour and a half. These times refer only to individual operations; the entire proc-

ess took several days due to the drying and curing times for putty, primer, and paint, however, work on other window units could have been in progress during these lag times.

Repair Class II: Stabilization

The preceding description of a window repair job focused on a unit which was operationally sound. Many windows will show some additional degree of physical deterioration, especially in the vulnerable areas mentioned earlier, but even badly damaged windows can be repaired using simple processes. Partially decayed wood can be water-proofed, patched, built-up, or consolidated and then painted to achieve a sound condition, good appearance, and greatly extended life. Three techniques for repairing partially decayed or weathered wood are discussed in this section, and all three can be accomplished using products available at most hardware stores.

One established technique for repairing wood which is split, checked or shows signs of rot, is to: 1) dry the wood, 2) treat decayed areas with a fungicide, 3) water-proof with two or three applications of boiled linseed oil (applications every 24 hours), 4) fill cracks and holes with putty, and 5) after a "skin" forms on the putty, paint the surface. Care should be taken with the use of fungicide which is toxic. Follow the manufacturers' directions and use only on areas which will be painted. When using any technique of building up or patching a flat surface, the finished surface should be sloped slightly to carry water away from the window and not allow it to puddle. Caulking of the joints between the sill and the jamb will help reduce further water penetration.

When sills or other members exhibit surface weathering they may also be built-up using wood putties or home-made mixtures such as sawdust and resorcinol glue, or whitening and varnish. These mixtures can be built up in successive layers, then sanded, primed, and painted. The same caution about proper slope for flat surfaces applies to this technique.

Wood may also be strengthened and stabilized by consolidation, using semi-rigid epoxies which saturate the porous decayed wood and then harden. The surface of the consolidated wood can then be filled with a semi-rigid epoxy patching compound, sanded and painted (see figure 5). Epoxy patching compounds can be used to build up



Figure 5. This illustrates a two-part epoxy patching compound used to fill the surface of a weathered sill and rebuild the missing edge. When the epoxy cures, it can be sanded smooth and painted to achieve a durable and waterproof repair. Photo: John H. Myers

missing sections or decayed ends of members. Profiles can be duplicated using hand molds, which are created by pressing a ball of patching compound over a sound section of the profile which has been rubbed with butcher's wax. This can be a very efficient technique where there are many typical repairs to be done. Technical Preservation Services has published *Epoxy for Wood Repairs in Historic Buildings* (see Additional Reading section at end), which discusses the theory and techniques of epoxy repairs. The process has been widely used and proven in marine applications; and proprietary products are available at hardware and marine supply stores. Although epoxy materials may be comparatively expensive, they hold the promise of being among the most durable and long lasting materials available for wood repair.

Any of the three techniques discussed can stabilize and restore the appearance of the window unit. There are times, however, when the degree of deterioration is so advanced that stabilization is impractical, and the only way to retain some of the original fabric is to replace damaged parts.

Repair Class III: Splices and Parts Replacement

When parts of the frame or sash are so badly deteriorated that they cannot be stabilized there are methods which permit the retention of some of the existing or original fabric. These methods involve replacing the deteriorated parts with new matching pieces, or splicing new wood into existing members. The techniques require more skill and are more expensive than any of the previously discussed alternatives. It is necessary to remove the sash and/or the affected parts of the frame and have a carpenter or woodworking mill reproduce the damaged or missing parts. Most millwork firms can duplicate parts, such as muntins, bottom rails, or sills, which can then be incorporated into the existing window, but it may be necessary to shop around because there are several factors controlling the practicality of this approach. Some woodworking mills do not like to repair old sash because nails or other foreign objects in the sash can damage expensive knives (which cost far more than their profits on small repair jobs); others do not have cutting knives to duplicate muntin profiles. Some firms prefer to concentrate on larger jobs with more profit potential, and some may not have a craftsman who can duplicate the parts. A little searching should locate a firm which will do the job, and at a reasonable price. If such a firm does not exist locally, there are firms which undertake this kind of repair and ship nationwide. It is possible, however, for the advanced do-it-yourselfer or craftsman with a table saw to duplicate moulding profiles using techniques discussed by Gordie Whittington in "Simplified Methods for Reproducing Wood Mouldings," *Bulletin of the Association for Preservation Technology*, Vol. III, No. 4, 1971, or illustrated more recently in *The Old House*, Time-Life Books, Alexandria, Virginia, 1979.

The repairs discussed in this section involve window frames which may be in very deteriorated condition, possibly requiring removal; therefore, caution is in order. The actual construction of wooden window frames and sash is not complicated. Pegged mortise and tenon units can be disassembled easily, if the units are out of the building. The installation or connection of some frames to the surrounding structure, especially masonry walls, can complicate the work immeasurably, and may even require

dismantling of the wall. It may be useful, therefore, to take the following approach to frame repair: 1) conduct regular maintenance of sound frames to achieve the longest life possible, 2) make necessary repairs in place wherever possible, using stabilization and splicing techniques, and 3) if removal is necessary, thoroughly investigate the structural detailing and seek appropriate professional consultation.

Another alternative may be considered if parts replacement is required, and that is sash replacement. If extensive replacement of parts is necessary and the job becomes prohibitively expensive it may be more practical to purchase new sash which can be installed into the existing frames. Such sash are available as exact custom reproductions, reasonable facsimiles (custom windows with similar profiles), and contemporary wooden sash which are similar in appearance. There are companies which still manufacture high quality wooden sash which would duplicate most historic sash. A few calls to local building suppliers may provide a source of appropriate replacement sash, but if not, check with local historical associations, the state historic preservation office, or preservation related magazines and supply catalogs for information.

If a rehabilitation project has a large number of windows such as a commercial building or an industrial complex, there may be less of a problem arriving at a solution. Once the evaluation of the windows is completed and the scope of the work is known, there may be a potential economy of scale. Woodworking mills may be interested in the work from a large project; new sash in volume may be considerably less expensive per unit; crews can be assembled and trained on site to perform all of the window repairs; and a few extensive repairs can be absorbed (without undue burden) into the total budget for a large number of sound windows. While it may be expensive for the average historic home owner to pay seventy dollars or more for a mill to grind a custom knife to duplicate four or five bad muntins, that cost becomes negligible on large commercial projects which may have several hundred windows.

Most windows should not require the extensive repairs discussed in this section. The ones which do are usually in buildings which have been abandoned for long periods or have totally lacked maintenance for years. It is necessary to thoroughly investigate the alternatives for windows which do require extensive repairs to arrive at a solution which retains historic significance and is also economically feasible. Even for projects requiring repairs identified in this section, if the percentage of parts replacement per window is low, or the number of windows requiring repair is small, repair can still be a cost effective solution.

Weatherization

A window which is repaired should be made as energy efficient as possible by the use of appropriate weatherstripping to reduce air infiltration. A wide variety of products are available to assist in this task. Felt may be fastened to the top, bottom, and meeting rails, but may have the disadvantage of absorbing and holding moisture, particularly at the bottom rail. Rolled vinyl strips may also be tacked into place in appropriate locations to reduce infiltration. Metal strips or new plastic spring strips may be used on the rails and, if space permits, in

the channels between the sash and jamb. Weatherstripping is a historic treatment, but old weatherstripping (felt) is not likely to perform very satisfactorily. Appropriate contemporary weatherstripping should be considered an integral part of the repair process for windows. The use of sash locks installed on the meeting rail will insure that the sash are kept tightly closed so that the weatherstripping will function more effectively to reduce infiltration. Although such locks will not always be historically accurate, they will usually be viewed as an acceptable contemporary modification in the interest of improved thermal performance.

Many styles of storm windows are available to improve the thermal performance of existing windows. The use of exterior storm windows should be investigated whenever feasible because they are thermally efficient, cost-effective, reversible, and allow the retention of original windows (see "Preservation Briefs: 3"). Storm window frames may be made of wood, aluminum, vinyl, or plastic; however, the use of unfinished aluminum storms should be avoided. The visual impact of storms may be minimized by selecting colors which match existing trim color. Arched top storms are available for windows with special shapes. Although interior storm windows appear to offer an attractive option for achieving double glazing with minimal visual impact, the potential for damaging condensation problems must be addressed. Moisture which becomes trapped between the layers of glazing can condense on the colder, outer prime window, potentially leading to deterioration. The correct approach to using interior storms is to create a seal on the interior storm while allowing some ventilation around the prime window. In actual practice, the creation of such a durable, airtight seal is difficult.

Window Replacement

Although the retention of original or existing windows is always desirable and this **Brief** is intended to encourage that goal, there is a point when the condition of a window may clearly indicate replacement. The decision process for selecting replacement windows should *not* begin with a survey of contemporary window products which are available as replacements, but should begin with a look at the windows which are being replaced. Attempt to understand the contribution of the window(s) to the appearance of the facade including: 1) the pattern of the openings and their size; 2) proportions of the frame and sash; 3) configuration of window panes; 4) muntin profiles; 5) type of wood; 6) paint color; 7) characteristics of the glass; and 8) associated details such as arched tops, hoods, or other decorative elements. Develop an understanding of how the window reflects the period, style, or regional characteristics of the building, or represents technological development.

Armed with an awareness of the significance of the existing window, begin to search for a replacement which retains as much of the character of the historic window as possible. There are many sources of suitable new windows. Continue looking until an acceptable replacement can be found. Check building supply firms, local woodworking mills, carpenters, preservation oriented magazines, or catalogs or suppliers of old building materials, for product information. Local historical associations and state historic preservation offices may be good sources of

information on products which have been used successfully in preservation projects.

Consider energy efficiency as one of the factors for replacements, but do not let it dominate the issue. Energy conservation is no excuse for the wholesale destruction of historic windows which can be made thermally efficient by historically and aesthetically acceptable means. In fact, a historic wooden window with a high quality storm window added should thermally outperform a new double-glazed metal window which does not have thermal breaks (insulation between the inner and outer frames intended to break the path of heat flow). This occurs because the wood has far better insulating value than the metal, and in addition many historic windows have high ratios of wood to glass, thus reducing the area of highest heat transfer. One measure of heat transfer is the U-value, the number of Btu's per hour transferred through a square foot of material. When comparing thermal performance, the lower the U-value the better the performance. According to *ASHRAE 1977 Fundamentals*, the U-values for single glazed wooden windows range from 0.88 to 0.99. The addition of a storm window should reduce these figures to a range of 0.44 to 0.49. A non-thermal break, double-glazed metal window has a U-value of about 0.6.

Conclusion

Technical Preservation Services recommends the retention and repair of original windows whenever possible. We believe that the repair and weatherization of existing wooden windows is more practical than most people realize, and that many windows are unfortunately replaced because of a lack of awareness of techniques for evaluation, repair, and weatherization. Wooden windows which are repaired and properly maintained will have greatly extended service lives while contributing to the historic character of the building. Thus, an important element of a building's significance will have been preserved for the future.

Additional Reading

- ASHRAE Handbook-1977 Fundamentals*. New York: American Society of Heating, Refrigerating and Air-conditioning Engineers, 1978 (chapter 26).
- Ferro, Maximilian. *Preservation: Present Pathway to Fall River's Future*. Fall River, Massachusetts: City of Fall River, 1979 (chapter 7).
- "Fixing Double-Hung Windows." *Old House Journal* (no. 12, 1979): 135.
- Look, David W. "Preservation Briefs: 10 Paint Removal from Historic Woodwork." Washington, DC: Technical Preservation Services, U.S. Department of the Interior, forthcoming.
- Morrison, Hugh. *Early American Architecture*. New York: Oxford University Press, 1952.
- Phillips, Morgan, and Selwyn, Judith. *Epoxies for Wood Repairs in Historic Buildings*. Washington, DC: Technical Preservation Services, U.S. Department of the Interior (Government Printing Office, Stock No. 024-016-00095-1), 1978.
- Rehab Right*. Oakland, California: City of Oakland Planning Department, 1978 (pp. 78-83).
- "Sealing Leaky Windows." *Old House Journal* (no. 1, 1973): 5.
- Smith, Baird M. "Preservation Briefs: 3 Conserving Energy in Historic Buildings." Washington, DC: Technical Preservation Services, U.S. Department of the Interior, 1978.

7 PRESERVATION BRIEFS

The Preservation of Historic Glazed Architectural Terra-Cotta

de Teel Patterson Tiller



U.S. Department of the Interior National Park Service
Preservation Assistance Division Technical Preservation Services

Glazed architectural terra-cotta was significant in the development of important architectural idioms in this country—specifically, the “Chicago School,” the High Rise and the Historic or Beaux Arts styles. In fact, glazed architectural terra-cotta is one of the most prevalent masonry building materials found in the urban environment today (Fig. 1). Popular between the late 19th century and the 1930s, glazed architectural terra-cotta offered a modular, varied and relatively inexpensive approach to wall and floor construction. It was particularly adaptable to vigorous and rich ornamental detailing. However, with changing vogues in materials and architectural styles and rising production costs, glazed architectural terra-cotta fell into disfavor and disuse by the mid-20th century.

Today, information on the maintenance, rehabilitation and replacement of glazed architectural terra-cotta is limited, as are sources of new glazed architectural terra-cotta. This report, then, will discuss some of the major deterioration problems that commonly occur in historic glazed architectural terra-cotta, methods of determining the extent of that deterioration and recommendations for the maintenance, repair and replacement of the deteriorated historic material.

What is Terra-Cotta?

Generically, the broadest definition of terra-cotta refers to a high grade of weathered or aged clay which, when mixed with sand or with pulverized fired clay, can be molded and fired at high temperatures to a hardness and compactness not obtainable with brick. Simply put, terra-cotta is an enriched molded clay brick or block. The word *terra-cotta* is derived from the Latin word *terra-cocta*—literally, “cooked earth.” Terra-cotta clays vary widely in color according to geography and types, ranging from red and brown to white.

Terra-cotta was usually hollow cast in blocks which were open to the back, like boxes, with internal compartment-like stiffeners called webbing (Fig. 2). Webbing substantially strengthened the load-bearing capacity of the hollow terra-cotta block without greatly increasing its weight.

Terra-cotta blocks were often finished with a glaze; that is, a slip glaze (clay wash) or an aqueous solution of metal salts was brushed or sprayed on the air-dried block before firing. Glazing changed the color, imitated different finishes, and produced a relatively impervious surface on the weather face of the final product. The glaze on the terra-cotta unit possessed excellent weathering properties when properly maintained. It had rich color and provided a hard surface that was not easily chipped off. Glazing offered unlimited and fade-resistant colors to the designer. Even today, few building

materials can match the glazes on terra-cotta for the range and, most importantly, the durability of colors.

Types of Terra-Cotta

Historically there are four types or categories of terra-cotta which have enjoyed wide use in the history of the American building arts: 1) brownstone, 2) fireproof construction, 3) ceramic veneer, and 4) glazed architectural.

Brownstone terra-cotta is the variety of this masonry material used earliest in American buildings (mid- to late 19th century). The brownstone type is a dark red or brown block either glazed (usually a slip glaze) or unglazed. It was hollow cast and was generally used in conjunction with other masonry in imitation of sandstone, brick or real brownstone. It is often found in the architecture of Richard Upjohn, James Renwick, H. H. Richardson and is associated with the Gothic and Romanesque Revival movements through such ornamental detailing as moldings, finials and capitals.

Fireproof construction terra-cotta was extensively developed as a direct result of the growth of the High Rise building in America. Inexpensive, lightweight and fireproof, these rough-finished hollow building blocks were ideally suited to span the I-beam members in floor, wall and ceiling construction (Fig. 3). Certain varieties are still in production today, although fireproof construction terra-cotta is no longer widely employed in the building industry.

Ceramic veneer was developed during the 1930s and is still used extensively in building construction today. Unlike traditional architectural terra-cotta, ceramic veneer is not hollow cast, but is as its name implies: a veneer of glazed ceramic tile which is ribbed on the back in much the same fashion as bathroom tile. Ceramic veneer is frequently attached to a grid of metal ties which has been anchored to the building.

Glazed architectural terra-cotta was the most complex development of terra-cotta as a masonry building material in this country. The hollow units were hand cast in molds or carved in clay and heavily glazed (often in imitation of stone) and fired. Sometimes called “architectural ceramics,” glazed architectural terra-cotta was developed and refined throughout the first third of the 20th century and has been closely associated with the architecture of Cass Gilbert, Louis Sullivan, and Daniel H. Burnham, among others. Significant examples in this country include the Woolworth Building (1913) in New York City and the Wrigley Building (1921) in Chicago.

Late 19th and early 20th century advertising promoted the durable, impervious and adaptable nature of glazed archi-

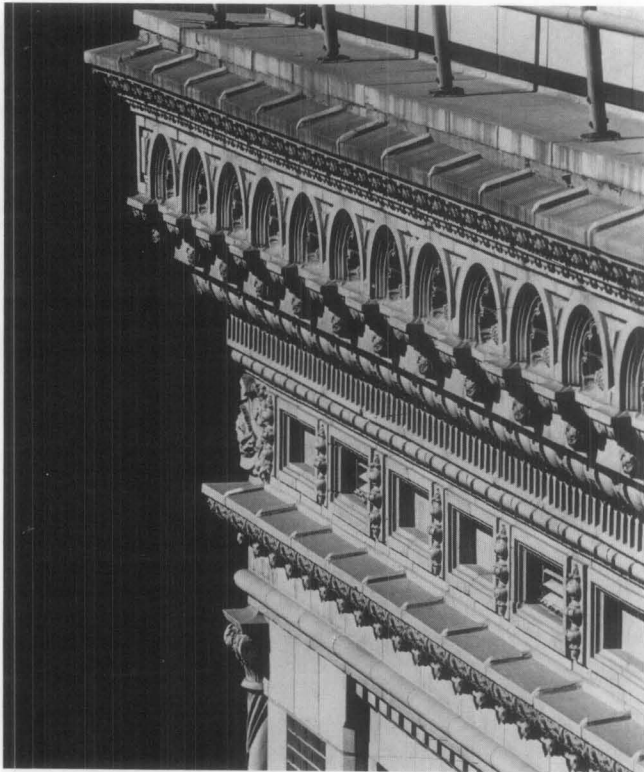


Figure 1. Terra-Cotta Detailing. Adaptable to every nuance of color, texture, and modeling, glazed architectural terra-cotta was ideally suited to satisfy the tastes of an eclectic age. Its popularity was, however, short lived; it endured only 30 or 40 years after its introduction as a building material late in the 19th century. (Larry Payne, Houston, Texas)

tectural terra-cotta. It provided for crisp, vigorous modeling of architectural details as the molds were cast directly from clay prototypes without loss of refinement. Glazed architectural terra-cotta could accommodate subtle nuances of modeling, texture and color. Compared to stone, it was easier to handle, quickly set and more affordable to use. Thought to be fireproof and waterproof, it was readily adaptable to structures of almost any height. The cost of molding the clay, glazing and firing the blocks, when compared to carving

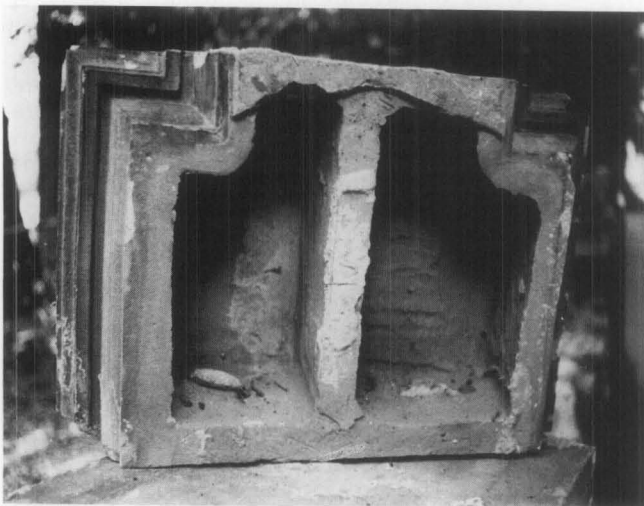


Figure 2. Webbing. Webbing, or the hollow internal compartment construction of glazed architectural terra-cotta blocks, made them inexpensive to produce, easy to handle and light in construction; these were significant factors in the popularity of the material in the first decades of this century.

stone, represented a considerable savings, especially when casts were used in a modular fashion—that is, repeated over and over again. Maintenance of the fired and glazed surface was easy; it never needed paint and periodic washings restored its original appearance.

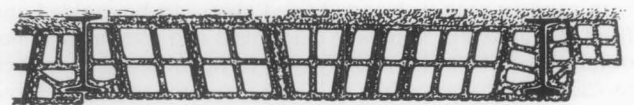
With the passage of time, many of the phenomenal claims of the early proponents of glazed architectural terra-cotta have proven true. There are many examples throughout this country that attest to the durability and permanence of this material. Yet present-day deterioration of other significant glazed architectural terra-cotta resources ultimately belie those claims. Why? Historically, the lack of foresight or understanding about the nature and limitations of the material has, in many instances, allowed serious deterioration problems to occur that are only now becoming apparent.

Characteristics of Glazed Architectural Terra-Cotta as a Building Material

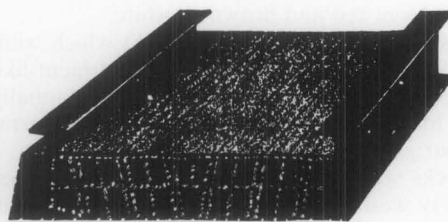
Glazed architectural terra-cotta has many material properties similar to brick or stone. It also has many material properties radically different from those traditional masonry materials. It is those differences which must be considered for a better understanding of some of the material characteristics of glazed architectural terra-cotta when it is used as a building material.

Difficult to identify: Glazed architectural terra-cotta probably comprises one of the largest if not the largest constituent material in some of our urban environments today. However, the infinite varieties of glazing have hidden this fact from the casual observer. One of the attractive features of glazed architectural terra-cotta in its time was that it could be finished (glazed) in exact imitation of stone. In fact, many building owners and architects alike are often surprised to discover that what they presumed to be a granite or limestone building is glazed architectural terra-cotta instead.

Two separate systems: Historically, glazed architectural terra-cotta has been used in association with two specific and very different types of building systems: as part of a traditional *load-bearing* masonry wall in buildings of modest height, and as a *cladding material* in High Rise construction. As cladding, glazed architectural terra-cotta often utilized an extensive metal anchoring system to attach it or to “hang it” onto a wall framing system or superstructure (Fig. 4). In the first instance the anchoring was limited; in the second, the anchoring was often extensive and complex. Likewise, in the first instance, deterioration has generally been limited. However, where glazed architectural terra-cotta was used as clad-



Section Through Typical Arch



Perspective of Typical Arch

Figure 3. Fireproof construction terra-cotta. Perspective and section through fireproof construction terra-cotta and I-beam detailing in industrial floor construction. (Detail, “Sweets” Industrial Catalogue of Building Construction, 1906)

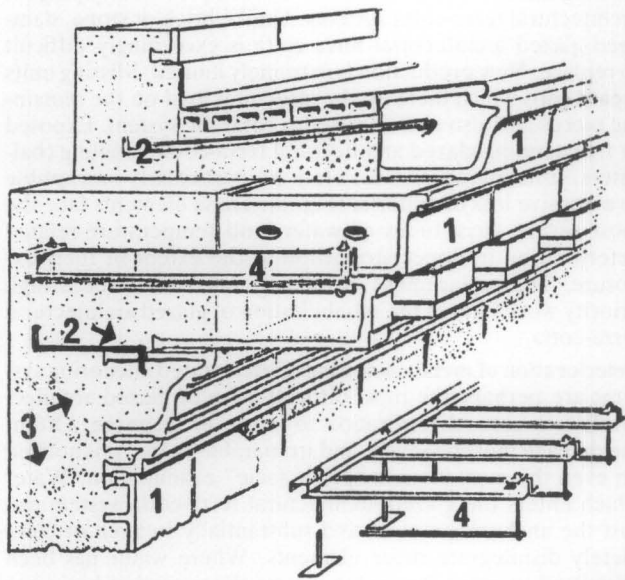


Figure 4. Typical Construction Detail of Glazed Architectural Terra-Cotta Ornament. Construction detailing was often complex. The terra-cotta units (1) which were laid in mortar were fitted with holes or slots to receive the metal anchors (2) (often called "Z" straps or "light iron") which were often fitted directly to the building frame. Masonry backfill (3) (either brick or poured cement) was laid between the terra-cotta units, with the building frame encasing the metal anchor. Overhanging or protruding elements were further secured by metal dowels or outriggers (4). (Detail, *Architectural Terra Cotta*, Charles E. White, Jr., 1920)

ding, particularly in high rise construction, present-day deterioration and failure are often severe.

Complexity of deterioration: Deterioration is, by nature of the design, infinitely complex—particularly when glazed architectural terra-cotta has been used as a cladding material. Deterioration creates a "domino"-like breakdown of the whole system: glazed units, mortar, metal anchors, and masonry backfill. In no other masonry system is material failure potentially so complicated.

Poor original design: The root of deterioration in glazed architectural terra-cotta systems often lies in a misapplication of the material. Historically, glazed architectural terra-cotta was viewed as a highly waterproof system needing neither flashing, weep holes nor drips. This supposition, however, has proved to be untrue, as serious water-related failure was evident early in the life of many glazed architectural terra-cotta clad or detailed buildings.

Common Deterioration Problems

No one case of deterioration in glazed architectural terra-cotta is ever identical to another owing to the infinite number of variations with the material: original manufacture, original installation inconsistencies, number of component parts, ongoing repairs or the various types and sources of deterioration. However, certain general statements may be made on the nature of glazed architectural terra-cotta deterioration.

Material failure can most commonly be attributed to water-related problems. However, less frequent though no less severe causes may include: faulty original craftsmanship, which is often cited but hard to determine; stress-related deterioration; damage caused by later alterations and additions; or inappropriate repairs.

Water-related deterioration: As with most building conservation and rehabilitation problems, water is a principal source of deterioration in glazed architectural terra-cotta. Terra-cotta systems are highly susceptible to such complex water-

related deterioration problems as glaze crazing, glaze spalling and material loss, missing masonry units and deteriorated metal anchoring, among others.

Crazing, or the formation of small random cracks in the glaze, is a common form of water-related deterioration in glazed architectural terra-cotta. When the new terra-cotta unit first comes from the kiln after firing, it has shrunken (dried) to its smallest possible size. With the passage of time, however, it expands as it absorbs moisture from the air, a process which may continue for many years. The glaze then goes into tension because it has a lesser capacity for expansion than the porous tile body; it no longer "fits" the expanding unit onto which it was originally fired. If the strength of the glaze is exceeded, it will crack (craze) (Fig. 5). Crazing is a process not unlike the random hairline cracking on the surface of an old oil painting. Both may occur as a normal process in the aging of the material. Unless the cracks visibly extend into the porous tile body beneath the glaze, crazing should not be regarded as highly serious material failure. It does, however, tend to increase the water absorption capability of the glazed architectural terra-cotta unit.

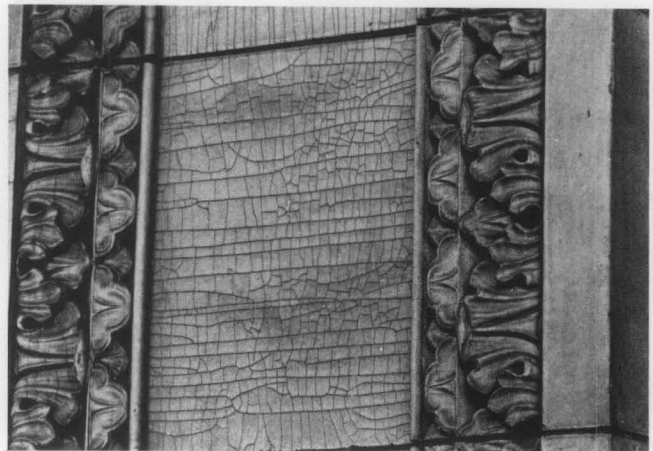


Figure 5. Crazing. Water and air-borne moisture entering the glazed architectural terra-cotta causes expansion of the porous clay body which increases its volume. This, in turn, is sufficient to upset the "fit" of the glaze and to make it shatter, commonly called crazing.

Spalling, the partial loss of the masonry material itself, is, like crazing, caused by water and is usually a result not only of air-borne water but more commonly of water trapped within the masonry system itself. Trapped water is often caused by poor water detailing in the original design, insufficient maintenance, rising damp or a leaking roof. In most cases, trapped water tends to migrate outward through masonry walls where it eventually evaporates. In glazed architectural terra-cotta, the water is impeded in its journey by the relatively impervious glaze on the surface of the unit which acts as a water barrier. The water is stopped at the glaze until it builds up sufficient pressure (particularly in the presence of widely fluctuating temperatures) to pop off sections of the glaze (glaze spalling) or to cause the wholesale destruction of portions of the glazed architectural terra-cotta unit itself (material spalling).

Glaze spalling may appear as small coin-size blisters where the glaze has ruptured and exposed the porous tile body beneath (Fig. 6). This may occur as several spots on the surface or, in more advanced cases of deterioration, it may result in the wholesale disappearance of the glaze. Spalling of the glaze may also be symptomatic of deterioration (rusting) of the internal metal anchoring system which holds the terra-cotta units together and to the larger building structure. The increase in volume of the metal created by rusting creates increased internal pressures in the terra-cotta unit which, in



Figure 6. Glaze Spalling. Blistering of the glaze, like crazing, is the result of the increase in water in the porous clay body and the subsequent destruction of the glaze as a result of water migration and pressure. Glaze spalling may also be caused by deterioration of metal anchors behind the terra-cotta unit.



Figure 7. Material Spalling. Excessive expansion of the porous tile body caused by water and freezing temperatures produces major material spalling, a situation often difficult to repair.

turn, may spall the glaze, or in more extreme cases, cause material spalling.

Material spalling is a particularly severe situation. Not only is the visual integrity of the detailing impaired, but a large area of the porous underbody, webbing and metal anchoring is exposed to the destructive effects of further water entry and deterioration (Fig. 7). Both glaze and material spalling must be dealt with as soon as possible.

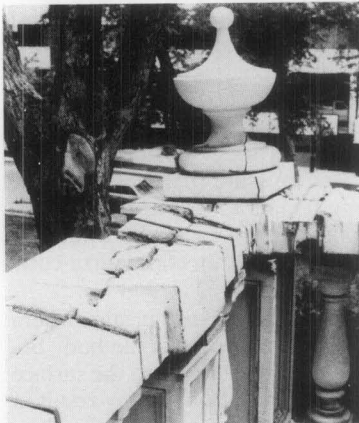


Figure 8. Deterioration of Exposed Detailing. Exposed or freestanding terra-cotta detailing (parapets, urns, balusters, etc.) have traditionally been subject to the most severe vicissitudes of deterioration as a result of freezing temperatures and water. (Colorado State Historic Preservation Office)

Missing units is a serious situation which particularly plagues architectural terra-cotta systems. Unlike brick or stone, damaged glazed architectural terra-cotta is exceedingly difficult to replace. New production is extremely limited. Missing units create gaps which increase the structural load on the remaining pieces and also permit water to enter the system. Exposed or freestanding glazed architectural terra-cotta detailing (balusters, urns, parapet walls, etc.) are particularly susceptible to extensive loss of material (Fig. 8). These elements face the most severe vicissitudes of water- and temperature-related deterioration in direct proportion to the extent of their exposure. The replacement of missing units should be a high priority work item in the rehabilitation of glazed architectural terra-cotta.

Deterioration of metal anchoring: Deteriorated anchoring systems are perhaps the most difficult form of glazed architectural terra-cotta deterioration to locate or diagnose. Often, the damage must be severe and irreparable before it is noticed on even the most intense "prima facie" examination. Water which enters the glazed architectural terra-cotta system can rust the anchoring system and substantially weaken or completely disintegrate those elements. Where water has been permitted to enter the system, some deterioration has more than likely taken place. Partial deterioration results in staining and material spalling. Total deterioration and the lack of any anchoring system may result in the loosening of the units themselves, threatening the architectural or structural integrity of the building. Recently, falling glazed architectural terra-cotta units have become a serious safety concern to many building owners and municipal governments (Fig. 9). Early detection of failing anchoring systems is exceedingly difficult.

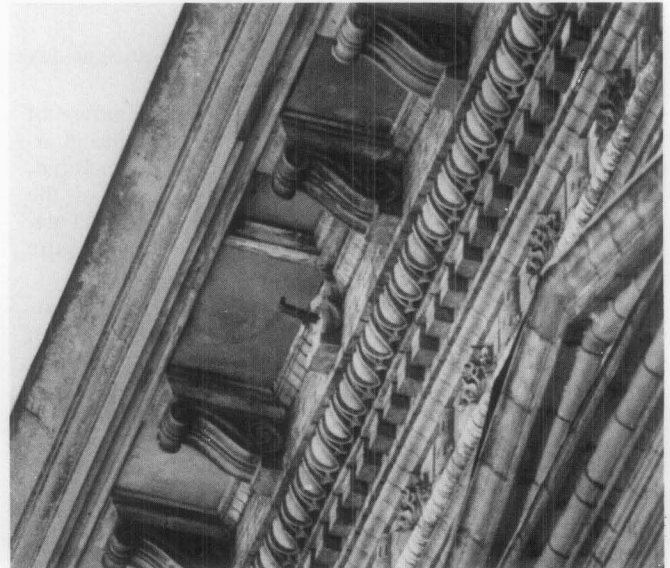


Figure 9. Deterioration of Metal Anchoring and Masonry Backfill. Trapped water may deteriorate masonry backfill or rust metal anchoring causing overhanging architectural elements to loosen and drop from the building. This is particularly true when unmaintained roof drainage systems fail and soak the masonry system. Note the exposed metal anchoring.

Deterioration of mortar and other adjacent materials: Deteriorated mortar has always been a key to the survival or failure of any masonry system. This is particularly true with glazed architectural terra-cotta. In recognition of the fragile nature of the system, the need for insuring a relatively dry internal system is important. Sound mortar is the "first line" of defense in terra-cotta systems. It is a maintenance "must." Deteriorated mortar joints are a singularly culpable source of water and, therefore, of deterioration. Mortar deterioration may result from improper original craftsmanship or air-

and water-borne pollution. More often, however, lack of ongoing maintenance is mainly responsible. Deteriorated mortar should not be overlooked as a major source of glazed architectural terra-cotta failure.

The deterioration of materials adjoining the glazed architectural terra-cotta (flashing, capping, roofing, caulking around windows and doors) bears significant responsibility in its deterioration. When these adjoining materials fail, largely as a result of lack of maintenance, water-related deterioration results. For instance, it is not uncommon to find wholesale terra-cotta spalling in close proximity to a window or doorway where the caulking has deteriorated.

Stress-related deterioration: Stress-related deterioration of glazed architectural terra-cotta frequently occurs in high rise buildings. The evolution of stress relieving details (flexible joints, shelf angles, etc.) occurred late in the development of American building construction. Consequently, most early continuously clad High Rise buildings (c.1900–1920s) had little or no provisions for normal material and building movement in their original design. The development of large stress-related cracks or wholesale material deterioration is often caused by unaccommodated building-frame shortening under load, thermal expansion and contraction of the façade and moisture expansion of the glazed architectural terra-cotta units themselves (Fig. 10). Cracks running through many units or stories or large areas of material deterioration often indicate stress-related problems. This sort of deterioration, in turn, permits significant water entry into the terra-cotta system.

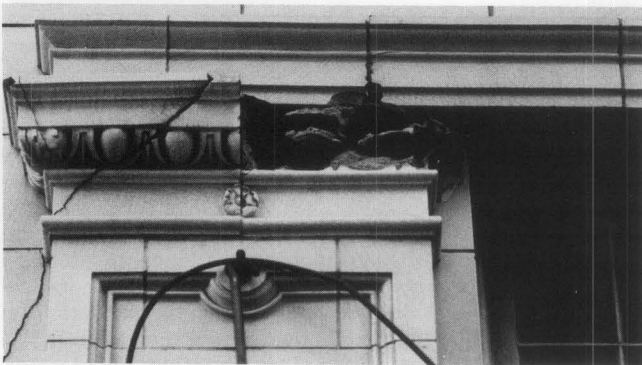


Figure 10. Structural Cracking. Structural cracking, whether static (*nonmoving*) or dynamic (*moving or active*), should be caulked to prevent water entry into the glazed architectural terra-cotta system. Note the exposed webbing.

Inappropriate repairs: Inappropriate repairs result because using new terra-cotta for replacement of deteriorated or missing glazed architectural terra-cotta has generally been impractical. Repairs, therefore, have traditionally been made in brick or cementitious build ups of numerous materials such as stucco or fiberglass. Some materials are appropriate temporary or permanent replacements, while others are not. (These issues are discussed at a later point in this report.) However, improper anchoring or bonding of the repair work or visual incompatibility of repairs have themselves, with the passage of time, become rehabilitation problems: replacement brick that is pulling free, cement stucco that is cracking and spalling, or a cement or bituminous repairs that are not visually compatible with the original material.

Alteration damage: Alteration damage has occurred as a result of the installation of such building additions as signs, screens, marquees or bird proofing. These installations often necessitated the boring of holes or cutting of the glazed architectural terra-cotta to anchor these additions to the building frame beneath. As the anchoring or caulking deteriorated, or as these elements were removed in subsequent renovation

work, these holes have become significant sources of water-related damage to the glazed architectural terra-cotta system.

Deterioration Inspection and Analysis

Certain deterioration in glazed architectural terra-cotta may be on the building surface and patently obvious to the casual observer—crazing, spalling, deterioration of mortar joints. Other deterioration may be internal or within the masonry system and hard to determine—deterioration of anchoring, deterioration behind the glaze, crumbling of internal webbing. *Prima facie*, “first inspection,” examination may indicate surface deterioration problems while not revealing others. This demonstrates one of the most frustrating aspects of dealing with deteriorated glazed architectural terra-cotta: that there are two systems or levels of deterioration, one which is visible and the other which is not.

Material failure in glazed architectural terra-cotta is necessarily complex. For this reason, it is generally advised that the examination and repair of this material should be the responsibility of an experienced professional. Few restorationists have experience in the inspection, repair and replacement of glazed architectural terra-cotta. This is certainly never the province of the amateur or the most well-intentioned but inexperienced architect or engineer. There are some methods of internal and external inspection and analysis which are relatively simple to the trained professional. Other methods, however, are expensive, time consuming, and only in the experimental stage at this writing. These all generally preclude the use of anyone but an experienced professional.

Preliminary cleaning: Before a terra-cotta building is analyzed for deterioration, it is often advisable, but not always necessary, to clean the surface of the material. This is particularly true when the material has been exposed to the vicissitudes of heavy urban pollution. While most building materials are cleaned for “cosmetic” purposes, the cleaning of glazed architectural terra-cotta for the purpose of inspection and analysis may be advised. Dirt on glazed architectural terra-cotta often hides a multitude of problems. It is only with cleaning that these problems become obvious. Recommended cleaning procedures are covered later in the report.

Methods of inspection:

Prima facie analysis is the unit by unit, first-hand, external inspection of the glazed architectural terra-cotta building surface. Special note of all visible surface deterioration (staining, crazing, spalling, cracking, etc.) should be made on elevation drawings. Binoculars are often used where cost, height, or inaccessibility prevent easy inspection. However, much deterioration may go unnoticed unless scaffolding or window-washing apparatus is used in a true “hands on” inspection of each unit of the façade.

Tapping, a somewhat inexact method of detection of internal deterioration is, nevertheless, the most reliable inspection procedure presently available. Quite simply, tapping is the striking of each unit with a wooden mallet. When struck, an undamaged glazed architectural terra-cotta unit gives a pronounced ring, indicating its sound internal condition. Conversely, deteriorated units (i.e., units which are failing internally) produce a flat, hollow sound. Metal hammers are never to be used, as they may damage the glazed surface of the unit. Extensive experience is the best teacher with this inspection method.

Infrared scanning is only in the experimental stage at this time, but its use seems to hold great promise in locating deteriorated internal material in terra-cotta. All materials emit heat—heat which can be measured in terms of infrared light. While infrared light cannot be seen by the human eye, it can be measured by infrared scanning. Infrared photography, a kind of infrared scanning, has been of particular use in detecting sources of heat loss in buildings in recent years.

Broken or loose internal terra-cotta pieces have a less firm attachment to the surrounding firm or attached pieces and, therefore, have different thermal properties, i.e., temperatures. These temperature differences become evident on the infrared scan and may serve as a fair indication of internal material deterioration in terra-cotta.

Sonic testing has been successfully used for some time to detect internal cracking of concrete members. In the hands of an experienced operator, there are conditions where it can detect internal failure in glazed architectural terra-cotta. Sonic testing registers the internal configuration of materials by penetrating the material with sound waves and reading the patterns that "bounce back" from the originating source of the sound. Readings at variance with those from undeteriorated material might indicate collapsed webbing or pools of water in the interior of the terra-cotta unit.

Metal detection is a nondestructive and generally useful way of locating the position of internal metal anchoring. Metal detectors indicate the presence of metals by electro-magnetic impulses. These impulses are transmitted onto an oscilloscope where they may be seen or they are converted to sound patterns which may be heard by the operator. Original drawings are eminently useful in predicting where internal metal anchoring should be. Metal detectors can confirm that indeed they are still there. Without original drawings, the contractor or architect can still locate the metal anchoring, however. No reading where an anchor would be expected could indicate a missing anchor or one that has seriously deteriorated. The information produced by metal detection is, at best, only rough. However, it is the most viable way of locating the internal metal anchoring without physically removing, thus irreparably damaging, the glazed architectural terra-cotta units themselves.

Laboratory analysis may be carried out on samples of removed original material to find glaze absorption, permeability or glaze adhesion, or to evaluate material for porosity. These tests are useful in determining the present material characteristics of the historic glazed architectural terra-cotta and how they may be expected to perform in the future.

Maintenance, Repair and Replacement

Deterioration in glazed architectural terra-cotta is, by definition, insidious in that the outward signs of decay do not always indicate the more serious problems within. It is, therefore, of paramount importance that the repair and replacement of deteriorated glazed architectural terra-cotta not be undertaken unless the causes of that deterioration have been determined and repaired. As mentioned before, one of the primary agents of deterioration in glazed architectural terra-cotta is water. Therefore, water-related damage can be repaired only when the sources of that water have been eliminated. Repointing, caulking and replacement of missing masonry pieces are also of primary concern. Where detailing to conduct water in the original design has been insufficient, the installation of new flashing or weep holes might be considered.

Where stress-related or structural problems have caused the deterioration of glazed architectural terra-cotta, the services of a structural engineer should be sought to mitigate these problems. This may include the installation of relieving joints, shelf angles or flexible joints. In any case, stress-related and structural deterioration, like water-related deterioration, must be stopped before effective consolidation or replacement efforts may begin.

Cleaning: The successful cleaning of glazed architectural terra-cotta removes excessive soil from the glazed surface without damaging the masonry unit itself. Of the many cleaning materials available, the most widely recommended are water, detergent, and a natural or nylon bristle brush. More

stubborn pollution or fire-related dirt or bird droppings can be cleaned with steam or weak solutions of muriatic or oxalic acid.

A note of caution: Any acids, when used in strong enough solutions, may themselves deteriorate mortar and "liberate" salts within the masonry system, producing a situation called efflorescence. For further information on this situation, refer to: "Preservation Briefs 1: The Cleaning and Waterproof Coating of Masonry Buildings," Heritage Conservation and Recreation Service, Department of the Interior, Washington, D.C.

Commercial cleaning solutions may be appropriate but probably are not necessary when water and detergent will suffice. There are, however, certain cleaning techniques for glazed architectural terra-cotta which are definitely *not* recommended and which would damage the surface of the material. These include: all abrasive cleaning measures (especially sandblasting), the use of strong acids (particularly fluoride-based acids), high-pressure water cleaning and the use of metal bristle brushes. All of these techniques will irreparably harm the glaze in one fashion or another and subsequently expose the porous tile body to the damaging effects of water.

It is important to remember that glazed architectural terra-cotta was designed to be cleaned cheaply and easily. This, in fact, was one of its major assets and was much advertised in the selling of the material early in this century.

Waterproofing: The covering of crazed glazing (see Fig. 5) with waterproof coatings is the subject of an on-going controversy today. The question involves whether or not the micro-cracks conduct substantial amounts of water into the porous tile body. Tests indicate that the glaze on new unexposed terra-cotta is itself not completely waterproof. Some testing also indicates that most crazing on historic glazed terra-cotta does not substantially increase the flow of moisture into the porous tile body when compared to new material. Excessive and serious crazing is, however, an exception and the coating of those areas on a limited scale may be wholly appropriate.

In an effort to stem water-related deterioration, architects and building owners often erroneously attribute water-related damage to glaze crazing when the source of the deterioration is, in fact, elsewhere: deteriorated caulking, flashing, etc. The waterproof coating of glazed architectural terra-cotta walls may cause problems on its own. Outward migration of water vapor normally occurs through the mortar joints in these systems. The inadvertent sealing of these joints in the whole-sale coating of the wall may exacerbate an already serious situation. Spalling of the glaze, mortar, or porous body will, more than likely, result.

Repointing: Repointing of mortar which is severely deteriorated or improperly or infrequently maintained is one of the most useful preservation activities that can be performed on historic glazed architectural terra-cotta buildings. On-going and cyclical repointing guarantees the long life of this material. Repointing should always be carried out with a mortar which has a compressive strength (measured in p.s.i.) *lower* than the adjacent masonry unit. Hard (Portland cement) or coarsely screened mortars may cause point loading and/or prevent the outward migration of the water through the mortar joints, both of which ultimately damage the terra-cotta unit. Repointing with waterproof caulking compounds or similar waterproof materials should never be undertaken because, like waterproof coatings, they impede the normal outward migration of moisture through the masonry joints. Moisture then may build sufficient pressure behind the waterproof caulk and the glaze on the terra-cotta to cause damage to the unit itself.

Repair of glaze spalling: Glaze spalling is also a highly culpable source of water-related deterioration in glazed archi-

textural terra-cotta. It is important to coat or seal these blistered areas (see Fig. 6) and to prevent further entry of water into the system by this route. All loose or friable material should be removed. This may be done easily by hand; chisels or similar small tools are most effective. The exposed material is then painted over. At this time, no permanently effective reglazing materials are available. However, there are several acrylic-based proprietary products and masonry paints which can be used effectively to protect these exposed areas, thus preventing the entry of water. These materials are effective for 5 to 7 years and can be reapplied. They also can be tinted to approximate closely the original glaze color.

Repair of minor material spalling: Minor material spalling, where visual or cosmetic considerations are negligible, should be treated in a manner similar to glaze spalling damage. That is, areas where small portions of the body and glaze have spalled and which are far removed from close scrutiny (i.e., detailing on entablatures, upper story windows, etc.) are best remedied by painting with a masonry paint or an acrylic-based proprietary product. Units on which material spalling is easily observed (on the street level, door surrounds, etc.), and on which visual integrity is a consideration, may be better replaced. Patching is not appropriate. Stucco-like or cementitious build-ups are difficult to form satisfactorily, safely and compatibly in situ to replace missing pieces of glazed architectural terra-cotta. Cementitious repairs never satisfactorily bond to the original material. The differential expansion coefficients of the two materials (the repair and the original) preclude a safe, effective and long-term attachment.

Repair of major spalling: Glazed architectural terra-cotta units, which have spalled severely thereby losing much of their material and structural integrity in the wall, should be replaced. Partial in situ repair will not be long lasting and may, in fact, cause complicated restoration problems at a later date. Appropriate methods of replacement are discussed at a later point in this report.

Temporary stabilization: Stabilization measures are necessary when deterioration is so severe as to create a situation where pieces of glazed architectural terra-cotta may fall from the building. This is a particular concern with greatly exposed detailing: cornices, balconies, balustrades, urns, columns, buttresses, etc. Restoration work on these pieces is expensive and often must be carried on over a period of time. Unstable terra-cotta pieces are often removed or destroyed in lieu of such measures. This is particularly true in areas of heavy traffic-related vibrations or in earthquake zones. There are, however, less severe measures which may be employed on a temporary basis. Substantial success has been achieved in securing unstable glazed architectural terra-cotta pieces with metal strapping and nylon net (Fig. 11). While these measures should not be seen as permanent preservation solutions, they do offer temporary alternatives to the wanton destruction of significant glazed architectural terra-cotta detailing in the name of public safety and local code compliance.

Repair of addition and structural damage: Holes, sign anchors, slots for channel steel, or structural cracking in the surface of glazed architectural terra-cotta cladding should be permanently sealed with a material that will expand with the normal dynamics of the surrounding material, yet effectively keep water out of the system. Any one of a number of commercially available waterproof caulking compounds would be appropriate for this work. Holes and static (nonmoving) cracks may be caulked with butyl sealants or acrylic latex caulks. For dynamic (moving or active) cracks, the polysulfide caulks are most often used, although others may be safely employed. It is, however, important to remember that these waterproof caulking compounds are not viable repointing materials and should not be used as such.

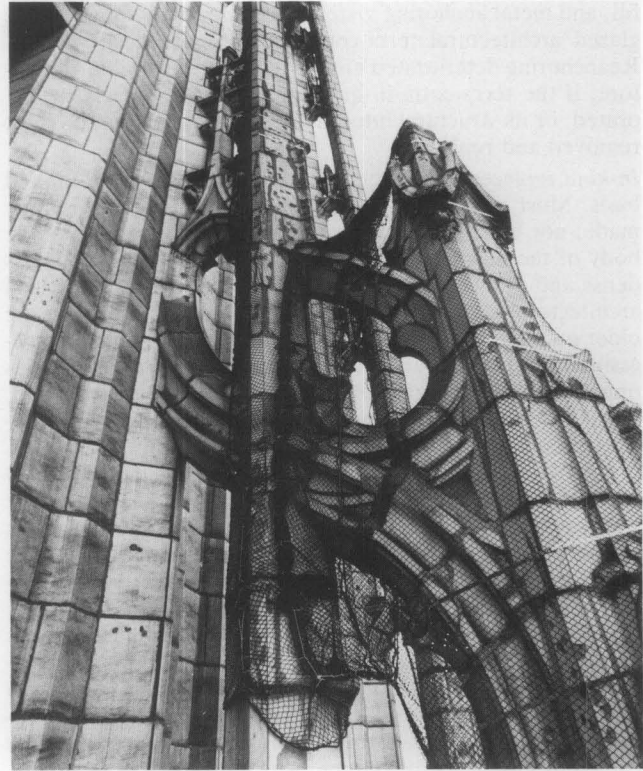


Figure 11. Temporary Stabilization Measures. Falling glazed architectural terra-cotta detailing has become a source of concern, particularly in dense urban areas and locations of high seismic activity. Nylon netting and metal strapping, while not seen as permanent preservation measures, do offer a temporary alternative to the removal of these elements.

Temporary replacement: Temporary replacement measures should be implemented when missing units are scheduled to be replaced but work cannot be undertaken immediately. Lengthy delivery time, prorating of work or seasonal considerations may postpone replacement work. Severe deterioration should at least be ameliorated until work can begin. Temporary repointing, removal and saving of undamaged units to be reset later, or the temporary installation of brick infill to retard further deterioration might be considered.

Removing earlier repairs: Removing earlier repairs may be necessary when the work has either deteriorated or has become visually incompatible. Cementitious stucco, caulking with black bituminous compounds or brick repair work may become structurally or visually unstable or incompatible and should be removed and properly rehabilitated.

Replacement of glazed architectural terra-cotta: Replacement of severely spalled, damaged, or missing glazed architectural terra-cotta elements is always difficult. Certainly, in-kind replacement is advisable, but it has a number of drawbacks. Stone, fiberglass, and precast concrete are also viable choices, but like in-kind replacement, also have their inherent problems.

Several notes on replacement: When replacing glazed architectural terra-cotta, all of the original deteriorated material should be completely removed. Half bricks or similar cosmetic replacement techniques are not advised.

—When possible and where applicable, replacement units should be anchored in a manner similar to the original. Both structural and visual compatibility are major considerations when choosing replacement materials.

—Removing and reanchoring damaged glazed architectural terra-cotta is an extremely difficult if not impossible task. The complexity of the interlocking system of masonry units, back-

fill, and metal anchoring system precludes the removal of the glazed architectural terra-cotta unit without destroying it. Reanchoring deteriorated units is likewise impossible. Therefore, if the terra-cotta in question is loose, severely deteriorated, or its structural integrity in serious question, it is best removed and replaced.

In-kind replacement is possible today, but only on a limited basis. Most new glazed architectural terra-cotta is machine made, not hand made as the original. Thus, the porous tile body of the new material tends to be more uniform but less dense and often not as durable. The glaze on the new glazed architectural terra-cotta tends to be thinner than that on the older material and subsequently more brittle. Machine processing has also produced a glaze that is uniform in color as opposed to historic glazes which were slightly mottled and, therefore, richer. Visual compatibility is an important consideration when replacing in-kind.

Only a fairly limited inventory of in-kind pieces is presently available for replacement such as plain ashlar blocks and the simpler details such as cappings and sills. When deterioration severely damages the more ornate pieces (urns, cartouche work, balusters, etc.) either expensive hand casting or alternative materials must be sought. There is a tendency today to replace damaged ornamental work with simpler, cheaper and more readily available units. This decision *cannot*, however, be supported, as the removal of this work inevitably diminishes the character and integrity of the building. Another major consideration in choosing in-kind replacement is the question of delivery time, which is often quite lengthy. If new glazed architectural terra-cotta is chosen as a replacement material, the architect or building owner should plan far in advance.

Stone may be a suitable replacement material for damaged glazed architectural terra-cotta. Its durability makes it highly appropriate, although the increase in weight over the original hollow units may be of some concern. The fact that historic glazed architectural terra-cotta was glazed in imitation of stone, however, may make the choice of stone as a replacement material a fortuitous one. Metal anchoring may be accommodated easily in the carving. Cost, however, is the major drawback in stone replacement, particularly where rich detailing must be carved to match the original.

Fiberglass replacement is a viable alternative, particularly when rich and elaborate ornamentation has to be duplicated. Casting from original intact pieces can produce numerous sharp copies of entablatures, moldings, balusters, voussoirs, etc. Anchoring is easily included in casting.

Significant drawbacks in using fiberglass replacement are color compatibility, fire code violations and poor weathering and aging properties. The appropriate coloring of fiberglass is exceedingly difficult in many instances. Painting is often unsatisfactory, as it discolors at a rate different than that of the historic glazed original. While fiberglass casting is lighter than the original units and, therefore, of great interest in the rehabilitation of buildings in areas of high seismic activity, many fire code requirements cannot be met with the use of this material.

Precast concrete units show great promise in replacing glazed architectural terra-cotta at this writing. Precast concrete units can, like fiberglass, replicate nuances of detail in a modular fashion; they can also be cast hollow, use light-weight aggregate and be made to accommodate metal anchoring when necessary. Concrete can be colored or tinted to match the original material with excellent results. It is cost effective and once production is in process, precast concrete can be produced quickly and easily.

Experience shows that it is advisable to use a clear masonry coating on the weather face of the precast concrete units to guarantee the visual compatibility of the new unit, to prevent

moisture absorption, to obtain the proper reflectivity in imitation of the original glaze and to prevent weathering of the unit itself. Precast concrete replacement units are presently enjoying great use in replicating historic glazed architectural terra-cotta and show promise for future rehabilitation programs.

Once the replacement material is selected (new glazed architectural terra-cotta, stone, precast concrete, or fiberglass), it must be reanchored into the masonry system. Original metal anchoring came in numerous designs, materials and coatings ranging from bituminous-coated iron to bronze. While most of these anchors are no longer available, they may be easily replicated in large quantities either in the original material when appropriate or out of more durable and available metals such as stainless steel.

Since the masonry backfill is already in place in the historic building, the new replacement unit with anchoring may simply be fitted into the existing backfill by boring a hole or slot for anchor and bedding the anchor and the unit itself in mortar. When replacing historic glazed architectural terra-cotta which originally employed metal anchoring, it is important to replace that anchoring when replacing the unit. Serious problems may result if anchoring is omitted in restoration when it was used originally. It is erroneous to assume that mortar alone will be sufficient to hold these replacement pieces in place.

Summary

Today, many of this country's buildings are constructed of glazed architectural terra-cotta. However, many of these are in a state of serious deterioration and decay. Glazed architectural terra-cotta was, in many ways, the "wonder" material of the American building industry in the late 19th century and during the first decades of the 20th century. New technology and methods of rehabilitation now hold promise for the restoration and rehabilitation of these invaluable and significant resources. Restoration/rehabilitation work on glazed architectural terra-cotta is demanding and will not tolerate half-way measures. Today's preservation work should equal the spirit, attention to detail, pride in workmanship and care which characterized the craftsmanship associated with this widely used, historic masonry material.

Suggested Further Readings

- "Recipes for Baked Earth." *Progressive Architecture*, (November, 1977).
- McIntyre, W.A. *Investigations into the Durability of Architectural Terra Cotta*. Special Report 12. London: Department of Scientific and Industrial Research, Building Research Station, 1929.
- Prudon, Theodore H.M. "Architectural Terra-Cotta: Analyzing the Deterioration Problems and Restoration Approaches." *Technology and Conservation*, Vol. 3 (Fall, 1978). pp. 30-38.
- Prudon, Theodore H.M. *Terra Cotta as a Building Material, A Bibliography*. Ottawa, Ontario: Association for Preservation Technology, 1976.

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