

U.S. Naval Air Station Moffett Field
Building 24 Re-Use Guidelines
Final

Moffett Federal Air Field, California
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prepared for
NASA/Ames Research Center
Moffett Federal Air Field, California

prepared by
Architectural Resources Group
Architects, Planners & Conservators, Inc.
San Francisco, California

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Introduction

The Guidelines for Rehabilitating Buildings on Shenandoah Plaza have been prepared to assist NASA Ames professional staff, tenants and their consultants in rehabilitating structures on the historic Navy base. The guidelines are intended to be a design aid in determining acceptable alterations, additions, and repairs for preserving the character of the existing buildings. They are based upon *The Secretary of the Interior's Standards for Rehabilitation*.

The Rehabilitation Guidelines of this study are particularly concerned with identifying intact historic fabric at each building and establishing parameters for rehabilitation work for building re-use.

I. Executive Summary

The ambulance garage, Building 24, was constructed in 1933 immediately behind Building 23 as a support structure for the dispensary. The building is in excellent condition. With the exception of the garage doors, Building 24 has had little alteration. This building and its location is significant to Shenandoah Plaza and should therefore remain. With minor life safety and code improvements, Building 24 could continue in its current use as an office space.

II. Methodology

Building 24 was inspected by Architectural Resources Group (ARG) in December of 2001, for historically and architecturally significant features.

During the on-site inspection, the team photographed the building and gathered information from the following repositories:

1950 Navy Docks & Yards Micro Film
Engineering Documentation Center
Ames Imaging Library

From the various repositories the following documents were utilized as the primary sources of information:

The 1994 National Register of Historic Places Nomination Form for the US Naval Air Station Moffett Field Central Historic District;
The Department of the Navy, Bureau of Yards and Docks Record Drawings dated 1934 (reprinted from microfilm);
Aerial photographs dating from 1931 through 1944 (as well as a current aerial).



III. Building Summary

Location: Building 24, Shenandoah Plaza
South Akron Road

Area: US Naval Air Station Moffett Field - Central Historic District

Date of Construction: 1933

Historic Structure: Yes

Historic Use: Garage

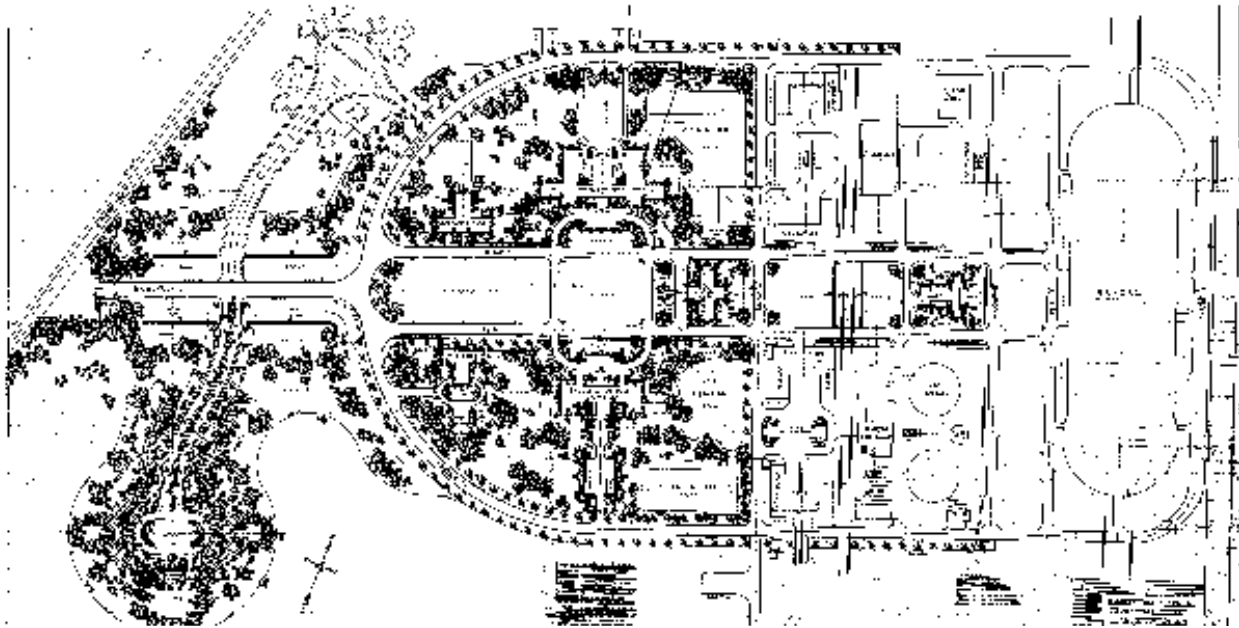
Current Use: Office

Hazard Level: Ordinary

Number of Floors: 1 story

1st Floor: 1,357 sq. ft.

Exterior Materials: Concrete with integral colored stucco
Built-up Roofing



Construction Frame: Poured-in-place, reinforced concrete slab on grade, walls, beams and roof
IV. Site Evaluation

A. Historical Background of Shenandoah Plaza

Sunnyvale Naval Air Station was commissioned on April 12, 1932. The formality and hierarchy of the base and building designs are prime examples of military base design. In order to understand the significance of the buildings individually, one needs to consider them in the larger context as they relate to the site and to each other. All of the buildings surrounding Shenandoah Plaza are constructed in the Spanish Colonial Revival Style and are all contributing buildings to US Naval Air Station Moffett Field Central Historic District.

A series of smaller buildings housing support facilities for the main buildings were also constructed in the Spanish Colonial Revival Style. The detailing is simplified yet complimentary to the main buildings. Buildings 21 & 22 were constructed as garages and are located behind Building 20. They mirror each other about the primary axis of Building 20. Building 24 was constructed as an ambulance garage and is located behind Building 23 along its primary axis.

For the purpose of this report we concur with the National Register nomination form that the Period of Significance for these structures is 1930-1935 and 1942-1946, which corresponds to the period of Navy occupation.

B. Recommendations/ Rehabilitation Guidelines

Although Shenandoah Plaza was originally designed with provisions for future additions, proposals for additions to the structures at this time must be very carefully considered with the integrity of the historic district in mind. Additions to the building should be considered comprehensively for the entire district as opposed to being considered on a building by building basis. Additions should be designed in concert with the intent of the original site plan to be symmetrically located relative to each structure and relative to the overall complex. All additions should be carefully designed to not destroy existing historic

materials. The new work should be differentiated from the original, yet be compatible with the historic materials, features, size, scale and proportion, and massing.

Additions of ramps and other site features should be sensitive to the context of the historic district. The additions of ramps to accommodate building access should be designed with minimal visual impact, preferably as walkways with minimal slope. Landscape features such as plantings, lawns, walkways and streets should be preserved in the same manner as the buildings. Just as the buildings should be in keeping with the *The Standards*, the landscaping and site features should be in keeping with *The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes*.

V. Architectural Evaluation

A. Description

Building 24 was constructed along the primary north/south axis behind Building 23 as the ambulance garage. The building is subdivided into three bays. The center bay is emphasized by a raised parapet suggestive of a mission style espadana. The interior of the building 24 has been altered from the original bare concrete finishes into offices with gypsum board wall finish, suspended acoustical ceiling tiles and carpet flooring. The original garage doors have been removed and the openings in each bay have been infilled with stucco wall construction, and a man-door.

The exterior features of the building are simple, utilitarian and include integrally-colored cement plaster, a projecting base, 4 pane horizontal-pivoting windows, and an articulated parapet. The exterior remains mostly as it appeared during the period of significance. With the exception of the removal of the original garage doors and the exterior stucco being painted, there are no other visible exterior alterations.

Building 24 is in good condition overall. The doors and windows are in need of repair. With the exception of limited code compliance issues, and seismic upgrades, the building could be re-occupied with relatively little alteration.

B. Areas of Historical Significance

The building has been surveyed and evaluated for areas of historical and architectural significance and the features have been categorized into levels of descending importance: significant, contributing, tertiary, and non-contributing.

In considering alterations and rehabilitation efforts for the building's reuse, the areas of greatest significance should be dealt with in the most careful manner. See the floor plans and list of Character-Defining Features for additional information. The following is a definition of each level of importance and the features of the building included in each category.

1. Significant Character-Defining Features: These features are the most important, both architecturally and historically, without which the building would lose its distinctive character. Alteration or removal of these features should be avoided.

The following are significant features of Building 24:

Exterior walls, fenestration, parapet

2. Contributing Features: Contributing features are important elements which contribute to the under-

standing of the original design. Alteration or removal of these features may be necessary for programmatic or building system requirements. However, removal should be minimized and where necessary mitigated.

The following are tertiary features of Building 24:

No contributing features have been identified at this time.

3. Tertiary Features: Tertiary Features are original elements of the building which are of a lower importance relative to the understanding of the original design. Alteration or removal of these features, if necessary, would have a limited affect on the integrity of the building.

The following are tertiary features of Building 24:

Interior exposed concrete walls, beams, floor and ceiling

4. Non-Contributing Features: Non-Contributing features are areas of the building which have been remodeled or where additional alteration would not affect the original integrity of the building. Removal of the non-contributing features may be beneficial to the historic integrity of the building.

The following are tertiary features of Building 24:

Infill construction in the original garage door openings, gypsum board wall finishes and suspended ceilings

C. Conservation Responsibilities

The following materials require special care and treatment in their maintenance and rehabilitation:

Integral color stucco on the exterior

D. Recommendations/ Rehabilitation Guidelines

Any alterations to the significant character-defining features should be approached carefully and sensitively, following *The Secretary of the Interior's Standards for Rehabilitation*. *The Standards* define Rehabilitation as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values." Alteration of significant character-defining features will require consultation with the California Office of Historic Preservation.

The spatial relationships of the buildings on the plaza are significant to the historic character of the district. The relationship of Buildings 24 to the other structures on the plaza has contributed to the evolution of the historic district. Maintaining these relationships is important in protecting the Historic District and National Register status of Moffett Field.

Buildings 24 is in good physical condition, and the original exterior appearance remains. The construction of more sensitively designed fenestration in the exterior garage door openings is suggested. The exterior appearance is the significant feature of this structure and should be maintained. Its Location contributes to the contextual role as a support structure for Building 23 and in relation to the site and vehicular access. It contributes to the overall historic character of Shenandoah Plaza.

The building's continued use for office functions is appropriate. Re-use of the building could be accomplished with relatively little alteration as outlined in Section VI, below.

Restoration of the historic exterior color scheme is suggested as a long term goal for the district, along with the other buildings in the district, which are all an integral-colored stucco. This original finish has been painted many times. As it is not known what the original color scheme was, a complete analysis should be performed on the integrally-colored stucco and other exterior components. Consideration should be given to removing paint and restoring the original integrally-colored stucco finish.

VI. Fire Rating/Life Safety Evaluation

A. Description

Building 24, constructed in 1933, is a one-story unsprinklered building. The building has a gross floor area of 1,357 square feet and consist of slab on grade, concrete exterior walls, and a concrete roof slab. The building was reviewed for general code compliance with the provisions of the 1998 California Building Code (CBC).

The building is currently classified as B occupancy and Type II-N construction. The following review is based on the same occupancy. If a change in occupancy or mixed occupancies is proposed, further detailed code analysis will be required.

Means of Egress Identification: Section 1003.2.8.2 of the CBC requires exit signs to be located along the path of exit travel and within the exit. Section 1003.2.8.4 requires exit signs to have an intensity of five foot candles.

Means of Egress Illumination: Section 1003.9 of the CBC requires emergency exit path illumination to have an intensity of one foot candle at floor level.

Door Landings: CBC section 1003.3.1.6.1a requires a level landing on each side of an exit door. The landing should be 48 inches in length away from the direction of door swing (see CBC section 1133B.2.9.2) and 60 inches in length in the direction of door swing. CBC section 1133B.2.4.2 requires the level landing to extend 18 inches beyond the latch side of the door at all interior exit doors and 24 inches beyond the latch side of the door at all exterior exit doors.

Restrooms: CBC section 2902.3 requires at least one watercloset be provided where persons are employed or conveniently in a building adjacent on the same property.

C. Recommendations

California's State Historical Building Code (SHBC) shall be used in conjunction with the California Building Code as stated in section 8-102.1: "These regulations are applicable for all issues regarding building code compliance for qualified historical buildings or properties. These regulations are to be used in conjunction with the regular code to provide alternatives to the regular code to facilitate the preservation of qualified historical buildings or properties. These regulations shall be used whenever compliance with the regular code is required for qualified historical buildings or properties."

Means of Egress Identification: Provide code compliant means of egress identification.

Means of Egress Illumination: Provide code compliant means of egress illumination.

Door Landing: Provide code compliant landings at all exit doors.

Restrooms: Construction of restrooms in Building 24 is not recommended. Section 2902.3 of the CBC allows for use of restrooms in an adjacent structure.

VII. Disabled Accessibility

The building was reviewed for general compliance with the provisions of the 1998 California Building Code.

A. Requirements

Site Access: Section 1127.1 of the CBC requires the site to be designed to provide access to all building entrances and ground floor exits. CBC section 1129.1 requires accessible parking to be provided. Currently, no accessible parking nor an accessible path of travel to all building entrances/exits exists.

Building Access: See door landings under Fire Rating/Life Safety Evaluation.

Door Hardware: Section 1133b.2.5.1 requires all door hardware to be operable with a single effort and without requiring the ability to grasp the opening hardware.

B. Recommendations/ Rehabilitation Guidelines

California's State Historic Building Code (SHBC) shall be used in conjunction with the California Building Code as stated in section 8-102.1: "These regulations are applicable for all issues regarding building code compliance for qualified historical buildings or properties. These regulations are to be used in conjunction with the regular code to provide alternatives to the regular code to facilitate the preservation of qualified historical buildings or properties. These regulations shall be used whenever compliance with the regular code is required for qualified historical buildings or properties."

Site Access: Provide code compliant accessible parking. Provide access to all building entrances/ground floor exits.

Door Hardware: Provide code compliant door hardware at all doors which will be used for entrance and egress in the design of the re-use.

Restroom: Provide access to restrooms in Building 23.

VIII. Energy Conservation

A. Description

The historic structure has inherent energy-conserving features. Monolithic concrete floors, and thick concrete walls both contribute to the effectiveness of passive climate control for the building.

B. Recommendations/ Rehabilitation Guidelines

As historic building, Building 24 is exempt from energy code requirements, however measures to reduce energy consumption and provide for user comfort are recommended. These may include ceiling insulation, and exterior wall insulation where the walls are opened during construction. The existing steel sash windows are historic features and they should be repaired and weather-stripped rather than replaced.

IX. Hazardous Materials Evaluation

A. Description

Benchmark Environmental Engineering performed an Asbestos Hazardous Emergency Response Act (AHERA) style asbestos survey and a lead-based paint survey on Building 24. Asbestos was found in the composition roofing and lead was found on the following building components: wall (interior and exterior), doors, door molding, downspouts, windows, window sills, building trim, and electrical box. For further detail refer to the report, dated August 27, 2001, produced by Benchmark.

X. Mechanical and Electrical Systems

The mechanical and electrical systems were not inspected as part of this report. It is assumed that the rehabilitation and reuse of Building 24 will entail all new mechanical and electrical systems.

All new mechanical and electrical systems will need to be designed with care to preserve the character of significant materials and spaces identified in this report.

XI. Structural System

Buildings 24 is single-story with slab on grade. The exterior walls are reinforced concrete walls with stucco-exterior finish coat. The roof/ceiling are concrete slab with reinforced concrete beams.

The buildings appear to be in excellent condition. In the course of design for rehabilitation and reuse, they should be analyzed for seismic and gravity load deficiencies and strengthened as necessary. Strengthening provisions should be designed with care to preserve significant materials and spaces.

Shenandoah Plaza Historic District
Building 24 Re-Use Guidelines
Moffett Federal Air Field, California

1. Character Defining Features

Shenandoah Plaza Historic District
 Building 23

XII. Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Exterior				
1931 (original building)				
Roof				
Tile Roof				
Hipped form				
Collection Boxes				
Antennas				
Original Flue & Vents				
Cap @ flue				
Cap @ vent				
Stucco- integral color				
Grille work				
Flashing @ Flue & Vent				
Sheet Metal Flue				
Cladding				
Stucco- integral color				
Banding course				
Base				
Foundations Vent				
Entries				
Primary-The primary entrance is centered on the northern elevation.				
Arches				
landings w/ inset quarry tile				
cheek walls				
Wall mounted lantern fixtures				
Ambulance- the ambulance entry is on the symmetrical axis of the building off of the ambulance drive through				
Arches				
Covered Drive Through				
Windows				
Double-hung, 6/6, recessed with projecting sill				
casement				
Surrounds- Above Primary Entrance				
Integral Screens				
Basement with Bars				
Doors & Frames				
Primary (Door & Frame)				
Transom				
Ambulance (Door & Frame)				
Transom				
Emergency Exit with Exit Stairs				
1935 Addition				
Roof				
Flat roof				
Cladding				
Stucco- integral color				
Banding course				
Base				
Entry				
Main entry (see 1931 Ambulance entry)				
Rear exit				
Windows				

Significance Rating:
 S=Significant
 C=Contributing
 T=Tertiary
 N=Non-contributing

Condition Rating:
 G=Good
 F=Fair
 P=Poor

Shenandoah Plaza Historic District
 Building 23

XII. Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Double-hung, 6/6, not recessed, no projecting sill				
Doors & Frames				
Main entry (Ambulance entry)				
Rear exit				
1940 & 1941 Addition				
Roof				
Tile Roof				
Hipped form				
Collection Boxes				
Antennas				
Original Flue & Vents				
Cap @ vent				
Stucco- integral color (painted over)				
Grille work				
Flashing @ Vent				
Cladding				
Stucco- integral color				
Banding course				
Base				
Entries				
Secondary- secondary entrances are at the north facade of the east & west wing additions				
Ornamental Surround				
Landings & Stairs				
Railings				
Windows				
Double-hung, 6/6, recessed with projecting Sill				
Integral Screens				
Basement w/ metal bars				
Doors & Frames				
Secondary transom				
Post 1952 Addition				
Roof				
Flat roof				
Cladding				
Stucco- integral color (painted over) to Match Original				
Base				
Windows				
Double-hung, 6/6, not recessed, no projecting sill				
Doors & Frames				
Exit Door				
Interior				
Basement -1931, 1940 & 1941				
Unable to gain access- Condemned due to hazardous mold.				
First Floor - 1931				
Flooring (1st & 2nd floor)				
Terrazzo flooring & base				

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Shenandoah Plaza Historic District
 Building 23

XII. Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Terrazzo border and base with resilient tile (checked pattern)				
Vitreous tile and base				
Carpeting				
Walls (1st & 2nd floor)				
Plaster				
Wainscot				
Gypsum				
Doors & Frames (1st & 2nd floor)				
Door				
Transom				
Frame				
Hardware				
Door				
Frame				
Hardware				
Window Features (1st & 2nd floor)				
Trim & Casing				
Hardware spring-loaded double-hung devices				
Ceiling (Lobby & Corridors) (1st & 2nd floor)				
Suspended Acoustical Ceiling				
Applied Ceiling Tile				
Ceiling (Rooms) (1st & 2nd floor)				
Suspended Acoustical Ceiling				
Suspended Plaster Ceiling				
Toilet & Shower (1st & 2nd floor)				
Tile Flooring				
Threshold				
Tile Wainscot				
Partitions with hardware				
Shower stall				
Pipe Railings and Fittings				
Doors				
Door closers				
Lavatories				
Accessories				
First Floor - 1935				
Flooring				
Carpet				
Integrally colored concrete				
Walls				
Concrete w/ plaster finish				
Interior plaster partitions				
Doors & Frames				
Door				
Frame				
Hardware				
Window Features				
Trim & Casing				
Hardware spring-loaded double-hung devices				
Ceiling				
Suspended Acoustical Ceiling				

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Shenandoah Plaza Historic District
 Building 23

XII. Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Suspended perforated metal ceiling				
First Floor - 1940				
Flooring				
Carpet				
Asphalt Tile				
Walls				
Plaster				
Gypsum Board				
Doors & Frames				
Door (flush)				
Transom				
Frame				
Hardware				
Door (solid core)				
Frame				
Hardware				
Window Features				
Trim & Casing				
Hardware spring-loaded double-hung devices				
Ceiling				
Suspended Acoustical Ceiling				
First Floor - 1941				
Flooring				
Carpet				
Walls				
Gypsum				
Doors & Frames				
Door (solid core)				
Frame				
Hardware				
Window Features				
Trim & Casing				
Hardware spring-loaded double-hung devices				
Ceiling				
suspended Acoustical Ceiling				
First Floor - Post 1941 Addition				
Flooring				
Walls				
Doors & Frames				
Window Features				
Ceiling				
Stair				
Ornamental rails, balusters, newel post				
Stringer				
Treads & Risers				
Flooring				

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Condition Rating:

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Shenandoah Plaza Historic District
 Building 23

XII. Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Second Floor - 1931				
Doors & Frames (1st & 2nd floor)				
Door (solarium)				
Trim & Casing				
Frame				
Hardware				
Window Features (1st & 2nd floor)				
casement (solarium)				
Hardware- hand crank				
Trim & Casing				
Second Floor - 1940 & 1941				
Flooring				
Carpet				
Walls				
Gypsum				
Doors & Frames				
Door (solid core)				
Frame				
Hardware				
Window Features				
Trim & Casing				
Hardware spring-loaded double-hung devices				
Ceiling				
suspended Acoustical Ceiling				






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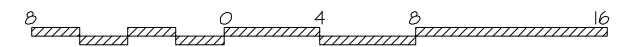
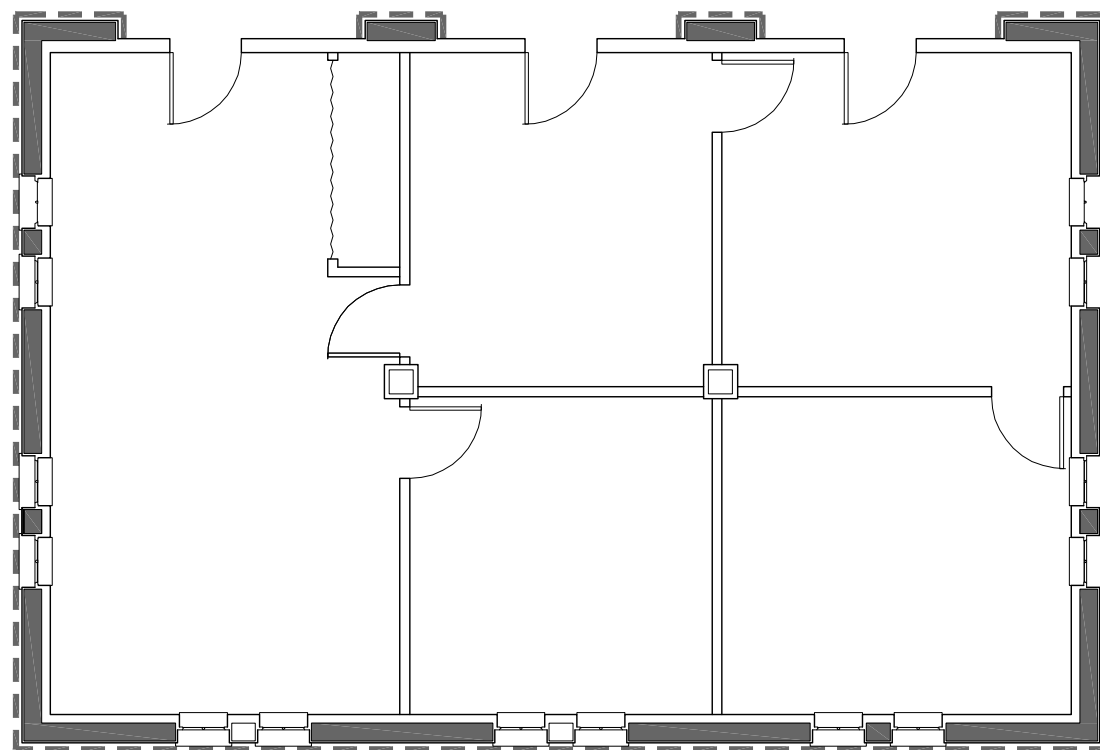
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Shenandoah Plaza Historic District
Building 24 Re-Use Guidelines
Moffett Federal Air Field, California

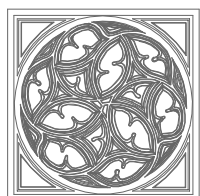
2. Historic Significance Plans

LEGEND

- SIGNIFICANT 
- SIGNIFICANT EXTERIOR WALL SURFACE 
- CONTRIBUTING 
- TERTIARY 
- NON-CONTRIBUTING 



AREAS OF HISTORICAL SIGNIFICANCE



ARCHITECTURAL
RESOURCES GROUP

Architects, Planners & Conservators, Inc.



BUILDING 24
US Naval Air Station Historic District
Shenandoah Plaza
Sunnyvale, California
00114.01

1.31.02

Shenandoah Plaza Historic District
Building 24 Re-Use Guidelines
Moffett Federal Air Field, California

3. Current Conditions Photographs (2002)

U.S. Naval Air Station Moffett Field
Buildings 24 Re-Use Guidelines



Front Elevation, Building 24
December 13, 2001

U.S. Naval Air Station Moffett Field
Building 24 Re-Use Guidelines



Side Elevation, Building 24
December 13, 2001



Side and Rear Elevation, Building 24
December 13, 2001



Typical Window, Building 24
December 13, 2001



Interior, Building 24
December 13, 2001



Typical Radiator, Building 24
December 13, 2001



Typical Interior, Building 24
December 13, 2001