

U.S. Naval Air Station Moffett Field
Building 21 & 22 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
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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 two garages, identified as Building 21 and 22, were constructed in 1933 immediately behind Building 20 as support structures for the officers in residence there. The garages remain essentially unaltered since the time of construction and therefore the historic integrity of the location, setting, design, material, workmanship, feeling, and association is excellent. They are also in excellent physical condition. With minor improvements for compliance with the building code and to provide access for the disabled, the buildings are readily adaptable to new uses.

II. Methodology

The buildings which comprise a portion of the US Naval Air Station Moffett Field- Central Historic District (#17, #20, #21, #22, #23) were inspected by a team from Architectural Resources Group (ARG) in August 1999 and June 2000, for the historically and architecturally significant features of each building. Building #25, also in the District, had a cursory inspection due to hazardous materials restrictions. Building 19 will not be reviewed at this time. Members of the NASA/Ames staff, as well as US Navy Public Works Department, attended the tours of the building and provided insight to the evolution and transformation of the buildings over the past 68 years.

In addition to on-site inspection, the team also photographed the buildings and used the following repositories to gather documents for additional information:

DMJM - Engineering Documentation Center (Building 17 Only)

DMJM - Facilities Planning Office (Building 17 only)

NASA – Facilities Planning Office

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);

Existing Conditions CAD Floor Plans dated August 1999 (Building 17, 20, 23, 25);

Aerial photographs dating from 1931 through 1944 (as well as a current aerial).



III. Building Summary

Location:	Building 21 & 22, 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:	Storage
Hazard Level:	Moderate/High
Number of Floors:	1 story
1st Floor:	2,293 sq. ft. per building
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. Critical to the understanding of the buildings individually is to understand them in their larger context as they relate to one another. All of the buildings surrounding Shenandoah Plaza are constructed in the Spanish Colonial Revival Style and are contributing buildings to US Naval Air Station Moffett Field Central Historic District.

A series of smaller buildings which housed 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 are located behind Building 20 and mirror each other about the primary axis of Building 20. Building 24 is located behind Building 23 along its primary axis as well.

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.

Landscape features such as the plantings south of and flanking the driveway entrance to the complex, walkways and streets, should be preserved in the same manner as the buildings.

V. Architectural Evaluation

A. Description

Building 21 & 22 are organized along the primary north/south axis of Building. The buildings are identical floor plans with each building subdivided into nine bays for a total of 18 bays. Seven of the nine bays are equally divided with two equal yet larger bays at each end. These end bays are emphasized by a raised parapet suggestive of a mission style espadana. Currently the spaces are separated by wire fencing which extends to the bottom of the concrete beams. The finish of the interior is exposed board-formed concrete throughout.

The exterior features of each building includes integrally-colored cement plaster, a projecting base, horizontal sliding doors with integral person-doors, 4 pane horizontal-pivoting windows, and an articulated parapet. The exterior remains as it appeared during the period of significance. There are no visible alterations to the buildings from the exterior except for the painting of the exterior stucco.

Building 21 and 22 are in good shape 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 renovation or repair.

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 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:

- Exterior walls, fenestration, parapet
- Doors and frames

2. **Contributing Features:** Contributing features are important elements which contribute to the understanding 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.

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:

- Wire fencing
- 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. In some cases, removal of the non-contributing features may be beneficial to the historic integrity of the building.

No non-contributing features have been identified at this time.

C. Conservation Responsibilities

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

- Integral color stucco

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*. These *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.

Spatial relationships on the plaza play a significant role in the historic character of the district. The relationship of Buildings 21 & 22 to the other structures on the plaza has an effect on one's ability to understand the evolution of the historic district. Maintaining these relationships is important in protecting the Historic District and National Register status of Moffett Field.

Buildings 21 and 22 are in good physical condition, and the exteriors remain in their original configuration. The exteriors are the significant features of these structures and should be maintained, particularly in respect to their contextual role as support structures for Building 20. They contribute significantly to the overall historic character of Shenandoah Plaza.

The building's continued use as garage/utility functions is recommended. 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 recommended as part of the rehabilitation of the two buildings, 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 prior to the next coating application. Consideration should be given to removing paint and restoring the original integrally-colored stucco finish.

VI. Fire Rating/Life Safety Evaluation

A. Description

Building 21 & 22, constructed in 1933, are one-story unsprinklered buildings. The building each have a gross floor area of 2,293 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 buildings are currently classified as U-1 occupancy and Type III-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.

B. Requirements

Occupancy

Based on Table 5-B of the CBC, the buildings are in compliance with all area and height requirements.

Egress/Exiting

Exit Doors: CBC Section 1003.3.1.3 requires doors to be not less than 3' in width and 6'-8" in height. Currently, the existing doors do not meet the width requirement. Section 1003.3.1.2 does not allow for horizontal sliding doors to be used as the required exit doors if the occupant load is 10 or greater.

C. Recommendations/ Rehabilitation Guidelines

Egress/Exiting

Exit Doors: If the buildings are left with an open plan, one code compliant exit door for each is required. As there are nine identical garage doors, rehabilitation of one door to meet the egress requirements is recommended. If the floor is subdivided, a code compliant exit will be required for each subdivision.

VII. Disabled Accessibility

A. Requirements

Site Access: Currently, the building meets all site access requirements.

Building Access: See the Egress/Exiting section under Fire Rating/ Life Safety Evaluation.

Door Hardware: Section 1003.3.1.8 requires all doors to be “openable without use of a key or any special knowledge or effort.”

Restrooms: Currently the building does not have or require restrooms.

B. Recommendations/ Rehabilitation Guidelines

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. If the existing garage doors are not used for entrance or egress, they should be fixed in a closed position.

Restroom: If a change in a occupancy is proposed and a restroom is required, the restroom will have to meet CBC requirements for accessibility.

VIII. Energy Conservation

A. Description

Currently the buildings do not have any mechanical, electrical or plumbing systems. The historic structure has inherent energy-conserving features. Monolithic concrete floors throughout the building, thick concrete walls, and axial orientation to the cardinal points all contribute to the effectiveness of passive climate control for the building.

B. Recommendations/ Rehabilitation Guidelines

As historic buildings, Building 21 and 22 are 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

Although a hazardous materials report has not yet been completed, signs posted around the building indicate that several types of historic material and finishes are known to contain asbestos and that other

hazardous materials exist in the building.

B. Recommendations/ Rehabilitation Guidelines

It is recommended that a complete hazardous materials assessment be performed.

X. Mechanical and Electrical Systems

Buildings 21 and 22 do not currently have any mechanical or electrical systems. It is assumed that the rehabilitation and reuse of Building 21 and 22 will entail the addition of 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 21 and 22 are both single-story with slab on grade. The exterior walls of both are reinforced concrete walls with stucco-exterior finish coat. The roof/ceiling are concrete slab with reinforced concrete beams running east/west.

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.

Shenandoa Plaza Historic District
Building 17 Re-Use Guidelines
Moffett Federal Air Field, California

1. Character Defining Features

Shenandoah Plaza Historic District
 Building 21 22

Character-Defining Features				
Elements	Material	Significance	Condition	Comments
Exterior				
Roof Line				
Flat roof	Tar & Gravel	T	G	
Scuppers	Copper	T	G	
Collection Boxes & Rain Leaders	Copper	T	G	
Cladding				
Stucco- integral color		C	G	(painted over)
Parapet Profile	Stucco	C	G	
Base	Concrete	C	G	
Windows				
4 pane horizontal pivoting	Metal/ Glass	S	G/P	
Doors & Frames				
garage doors	Wood/ Glass	S	F/P	(sliding w/integral man door)
frame	Wood	C	G	
trim & casing	Wood	C	G	
Hardware (latch)	Metal	C	G	
Hardware (track)	Metal	T	G	
Interior				
Flooring				
Concrete		T	G	
Walls				
Interior face of exterior wall	Unfinished Concrete	T	G	
Division of bays	Metal chainlink	T	G	
Window Features				
Trim & Casing		C	G	
Hardware	Metal	S	G/F	
Ceiling				
Unfinished Concrete		T	G	

Significance Rating:

- S=Significant
- C=Contributing
- T=Tertiary
- N=Non-contributing






Condition Rating:

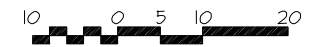
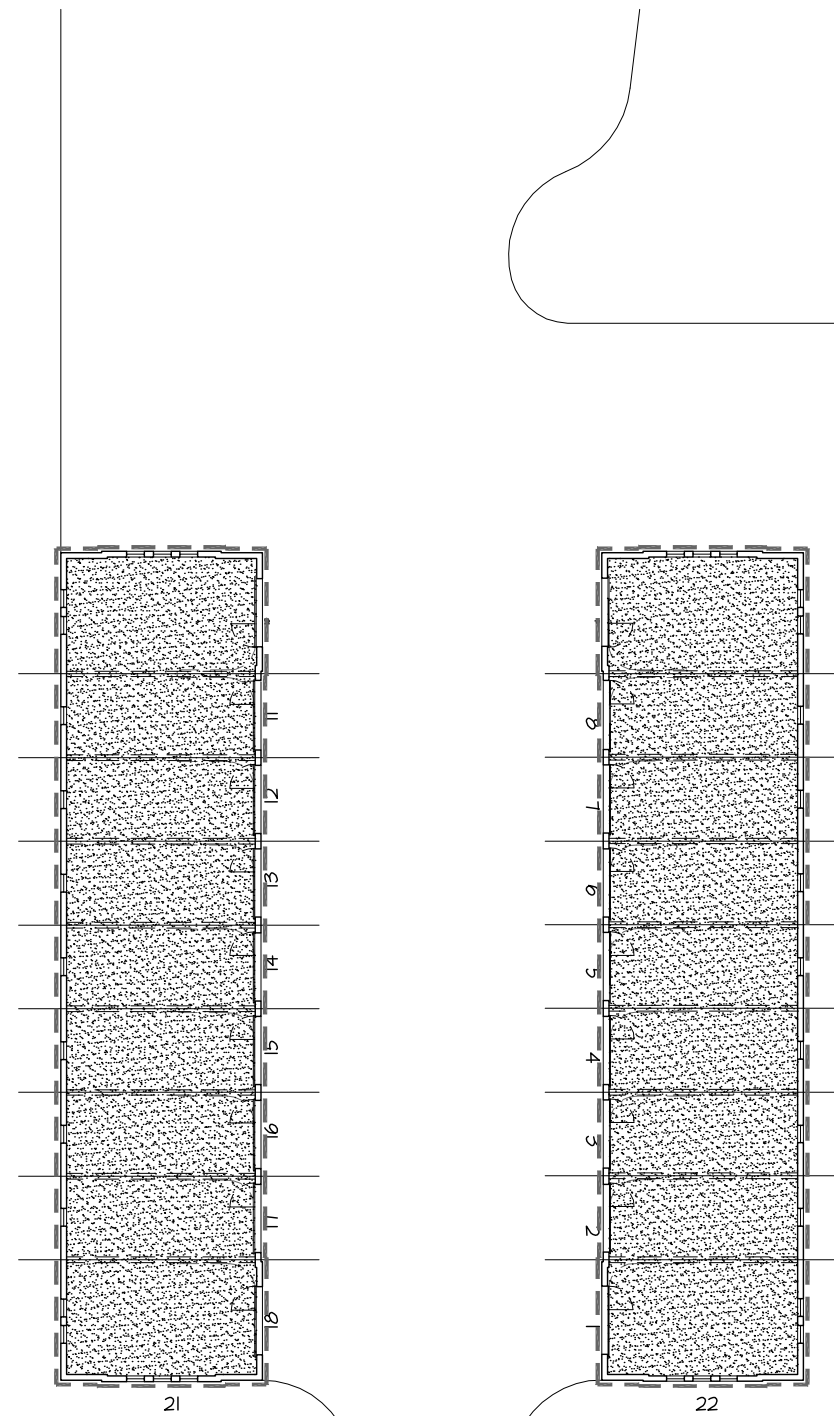
- G=Good
- F=Fair
- P=Poor

Shenandoa Plaza Historic District
Building 17 Re-Use Guidelines
Moffett Federal Air Field, California

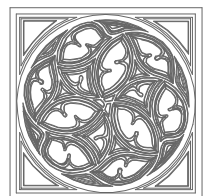
2. Historical Significance Plans

LEGEND

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

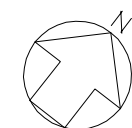


AREAS OF HISTORICAL SIGNIFICANCE



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00114

10.23.00

Shenandoa Plaza Historic District
Building 17 Re-Use Guidelines
Moffett Federal Air Field, California

3. Current Condition Photographs (2000)



*Buildings Viewed from the North
Building 21 & 22
Moffett Field*



*North Facade
Building 21
Moffett Field*



*North Facade
Building 22
Moffett Field*



*West Facade
Building 22
Moffett Field*



*East Facade
Building 21
Moffett Field*



*East Facade
Building 22
Moffett Field*



*Man Door within Sliding Garage Door
Building 21 & 22
Moffett Field*



*Sliding Garage Door
Building 21 & 22
Moffett Field*



*Typical Parapet Detail at Larger End Bays
Building 21 & 22
Moffett Field*



*Detail of Door Track
Building 21 & 22
Moffett Field*



*Detail of Door Hardware
Building 21 & 22
Moffett Field*