



PRESIDIO CHAPEL BUILDING 130

Historic Structure Report

March 2012

Presidio
of San Francisco

PAGE & TURNBULL

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PART I: INTRODUCTION

INTRODUCTION

This Historic Structure Report (HSR) is part of an ongoing process to determine how to rehabilitate and expand the historic Presidio Chapel for use by the Interfaith Center at the Presidio. The report documents the history and development of the Presidio Chapel, provides an assessment of its existing conditions, identifies its character-defining features and describes appropriate approaches to the treatment of rehabilitating and adding to the property to reflect its historic significance while accommodating the interfaith community.

STUDY SUMMARY

Constructed in 1932 by the U.S. Army, the Presidio Chapel served as a site of religious worship for Protestant and Jewish congregations at the Presidio of San Francisco. Regular services were held there until the U.S. Army vacated the base in 1995. The Interfaith Center at the Presidio arose in response to the Presidio's conversion to a national park. One of the themes of the conversion was "swords into plowshares," and the San Francisco Interfaith Council assembled a coalition of interfaith organizations to discuss how a long-term interfaith peacemaking presence could fit into the Presidio. The Interfaith Center was incorporated in September 1995. Its March 1996 move into the Presidio Chapel united the chapel's historic use as an interfaith worship space with the Interfaith Center's mission to serve diverse faith traditions.

The Interfaith Center at the Presidio has operated the Presidio Chapel at the Presidio under a lease agreement since 1996. In 1999, a feasibility study was conducted to explore ways to bring the building up to code and program requirements. Since then, new program needs have developed: a desire for an interfaith gathering space, an office space better positioned to welcome visitors, exhibition space for the McDonald Windows, and exterior site development. The purpose of this study is to understand the historic significance of the Presidio Chapel and recommend appropriate rehabilitation options for retaining the property's historic character while accommodating the program needs of the Interfaith Center at the Presidio.

PURPOSE

This HSR is being prepared in anticipation of the Presidio Chapel's full rehabilitation and expansion, as anticipated by the Main Post Update to the PTMP. It satisfies a portion of the requirements for this work as stipulated in the Programmatic Agreement for the MPU. This HSR is based on the National Park Service publication: Preservation Brief 43: "The Preparation and Use of Historic Structure Reports."

The purpose, therefore, of this HSR is to fully document the Presidio Chapel and provide useful guidance for treatment and expansion of this building. This HSR is principally for the use of the Presidio Trust, Interfaith Center of the Presidio, and the parties to the Main Post Update Programmatic Agreement, as well as private contractors hired to perform any restoration, rehabilitation, preservation, and/or maintenance work involving the Presidio Chapel.

RECOMMENDATIONS FOR TREATMENT AND USE

The Presidio Trust and its preservation consultant, Page & Turnbull, have prescribed Rehabilitation as the appropriate treatment for the Presidio Chapel. This strategy is superior to the other options because it preserves the most significant character-defining features of the building, while simultaneously allowing for updates to serve the building's current use as the Interfaith Center at the Presidio. This report also considers the expansion of the Presidio Chapel to meet programmatic and accessibility objectives.

PROJECT DATA

This HSR was prepared for the Presidio Trust as part of the requirement of the Main Post Update Programmatic Agreement.

LOCATION

The Presidio Chapel (Building 130) is located at 130 Fisher Loop in the Presidio of San Francisco. The building sits on a north-facing terrace overlooking the Main Post to the east and the San Francisco Bay to the north. The terrace is shaded by a grove of large eucalyptus trees that form the eastern and southern edges of the site.

PROJECT INFORMATION

The client group – comprised of the Interfaith Center at the Presidio, the McDonald Trust, and the Presidio Trust – is investigating appropriate reuse, rehabilitation, and expansion strategies for the Presidio Chapel. This HSR provides the historical and architectural background necessary for rehabilitation planning.

PREVIOUS STUDIES

Page & Turnbull produced feasibility studies for the Presidio Chapel in 1999 and 2007. The 1999 study was conducted in order to determine appropriate accessibility upgrades for the facility. The 2007 study built upon the previous study and examined a larger proposed addition addressing accessibility concerns, code upgrades, and program expansion.

CURRENT HISTORIC STATUS

According to the Presidio of San Francisco National Historic Landmark District nomination, the Presidio Chapel (Building 130) is considered a historic building and a contributor to the Presidio of San Francisco National Historic Landmark District. The period of significance of the Presidio Chapel dates from its construction in 1932 until 1945. These dates are based upon the period of significance defined for the Presidio of San Francisco National Historic Landmark District.

METHODOLOGY

Page & Turnbull surveyed the Presidio Chapel and its immediate surroundings during site visits conducted in October 2009, September 2010, and February 2011. Page & Turnbull reviewed all known reports supplied by the Interfaith Center at the Presidio, the McDonald Trust, the Presidio Trust, and the National Park Service, and performed archival research at the Presidio Trust Library and the Park Archives. The intent of this document is to serve as a reference and guide for future project planning at the Presidio Chapel.

Concurrent to the production of this HSR, the Presidio Trust has produced drafts of the West of Main Parade Focused Cultural Landscape Report (CLR) and the Main Post Planning and Design Guidelines. These reports are intended to supplement the 2010 Main Post Update to the Presidio Trust Management Plan (MPU). To the extent feasible, concepts and recommendations from these three reports have been incorporated herein, but these reports should be referenced for more specific and detailed information.

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HSR was derived from sections of the 2007 study.

PART II. DEVELOPMENTAL HISTORY

A. HISTORICAL BACKGROUND AND CONTEXT

THE PRESIDIO OF SAN FRANCISCO

The Presidio of San Francisco is located at the northern point of the San Francisco peninsula. The land was originally a sparse, windswept sand dune. Only a few small camps of Native Americans occupied the area. In 1776, due to its strategic location at the Golden Gate, the Spanish established a small adobe post called the Presidio of San Francisco to control San Francisco Bay in the name of Spain. Mexico acquired the Presidio of San Francisco upon its independence from Spain in 1822. With Mexico concerned about the continuing encroachment of American settlers from the east, the Presidio was largely abandoned in 1835 to allow for a larger Mexican presence inland along transcontinental routes.

In the year following the American conquest of California in 1846, Mexico transferred control of the Presidio of San Francisco to the United States. The United States Army began a long series of developments during its occupation making the Presidio one of the United States' major West Coast military facilities. The base was decommissioned in 1994 and control transferred from the United States Army to the National Park Service. Congress established the Presidio Trust in 1996 to oversee the Presidio of San Francisco's new civilian use.

RELIGIOUS BUILDINGS AT THE PRESIDIO

Religious ceremonies have long been a continual part of the site occupied by the Presidio of San Francisco possibly as early as the Native American era. Upon the founding of the Presidio of San Francisco in 1776, Colonel Juan Bautista de Anza claimed the territory for Spain and erected a cross near Fort Point and buried a record of his explorations at its foot. A chapel was built soon after in the southeast corner of what is today known as the Main Post with the construction of the original Spanish adobe fortification, representing the importance of the Catholic Church in the settlement's social order. The first Mass in the territory was held on 15 June 1776 by Father Francisco Palou at the Presidio. Once under United States control, the Spanish chapel was replaced in 1864 by

a simple wood-frame gabled structure with a bell tower (Building 45), known as the "Chapel of Our Lady." It served as an interdenominational Post Chapel until construction of the new Post Chapel in 1931, and was nicknamed the "Ivy-Covered Chapel" because ivy once covered the front facade. The Chapel of Our Lady was designed with simple Carpenter Gothic elements, but was largely reconstructed in 1952 with an addition that wraps around the exterior. However, the original board and batten cladding is still evident in the bell tower and some upper portions of the exterior walls ("Chapels of the Presidio," n.d.).

By the turn of the century, the existing chapel was too small to support the growing Presidio community. The Army Appropriations Act of 1930-31 allocated \$40,000 for the construction of a new Post Chapel adjacent to the National Military Cemetery. Chaplain George F. Rixey planned and sponsored the erection of the new chapel, which would have a seating capacity of 220. Dedication of the Post Chapel took place on 4 August 1931, and construction was complete in 1932. In 1941, a chapel for the Coast Artillery was built at Fort Scott (Building 1389). Based on standardized "T-Series" plans, the Fort Scott chapel is identical to other religious buildings in nearby Forts Barry and Baker, and elsewhere in the country.

SPANISH COLONIAL REVIVAL STYLE

Historically rooted in the building traditions of early Spanish and Mexican settlers of California and other Spanish colonies during the eighteenth century, the Spanish Colonial Revival style was popular in California and the rest of the Southwest from the early 1900s to the 1920s, with variations on the style remaining popular today. The Mission Revival style was an earlier subset of the Spanish Colonial Revival style. It was rooted in regional interpretations of traditional Spanish, Indian, and Mexican design and construction techniques, which were indigenous to California. Not as ornate as its earlier Mexican prototypes, the Mission Revival style was characterized by low-pitched or flat roofs (often composed of thatch, clay tile or tar), thick masonry walls of adobe brick or stucco, multiple doorways, deeply recessed openings with multi-light windows, arcades, and sculpted parapets resembling the typical Espadaña or

belfry. The Mission Revival style was popular in California and much of the Southwest because it was derived from indigenous prototypes and was the result of a search for an idealized regional identity.

By the 1920s, the Mission Revival in California was joined by the more elaborate Mediterranean and Spanish Colonial Revival styles. Designers began combining the evolving Mission Revival style with Spanish and Moorish architectural features, including towers, balconies, and iron grillwork. California and the Mediterranean were easily conflated because of the similarity in climate and topography, as well as the presence of the pastoral and citrus economy and Spanish occupation. Occasionally, the Spanish Colonial Revival style was enhanced by Baroque ornamentation.

The Baroque style was originally developed in seventeenth-century Italy, and was used throughout Europe and European colonies during the seventeenth and eighteenth centuries. Many of Spain's colonial capitals in Mexico contain buildings, especially churches, ornamented with Baroque decoration. The Baroque was a more sculptural and theatrical interpretation of Renaissance architecture, and included opulent plaster, stucco, or marble ornament; large-scale frescoes; and dramatic central projections on the primary façade.

The Spanish Colonial Revival style was popular for commercial buildings, institutions, apartments and houses. In California, the Spanish Colonial Revival came into prominence after the Panama-California Exposition in San Diego in 1915. Popular between 1915 and the early 1930s, the Spanish Colonial Revival in San Francisco was characterized by smooth stucco walls, clay tile roofs, ceramic tiled entries, wrought iron grilles, towers, and balconies. The Presidio Chapel is a fine example of the Spanish Colonial Revival style, with direct references to the Spanish Baroque features that appeared in the architecture of the early Mission churches. According to the National Register of Historic Places Registration forms completed in October 1993, A chapel, constructed in 1932 and impressively situated on a hill southwest of the Main Parade Ground adjoining the National Cemetery, is also a major example of "Spanish Colonial Revival" design and exhibits a grand portal of particularly fine detailing derived from Spanish Baroque architecture (p. 7-54).

The U.S. Army adopted the Mission Revival and Spanish Colonial Revival styles for the design of many of its early twentieth century buildings at the Presidio, beginning at Fort Scott in 1910 and later spreading to other districts of the post. Completed in 1932, the Post Chapel was built of reinforced concrete following a basic basilica plan. The two-story chapel, with an attached three-story bell tower complete with a fine bronze bell, measures roughly 57' x 84' in plan. It features a low gable roof of clay tile. The stucco-finished walls are heavily textured with course trowel work. The stucco exterior, tiled roof, and deeply inset fenestration enhance the simplicity of the building's form. The only decoration occurs at the main entry featuring a terra cotta portal with Solomonic columns and broken pediment reminiscent of Spanish Baroque churches. On the first level, the frontispiece is decoratively supported by a pair of engaged columns on pedestals, which flank the doorway and have undulating shafts and composite capitals. The broad entablature breaks above the columns and has decorative relief panels. On the second level, a balcony and an arched stained glass window, with a highly embellished aedicule-like surround, rise above the first level entablature. Quatrefoil windows embellish the bell tower and arched stained glass windows depict military-religious themes and were dominated by various veterans' groups at the time of the chapel's construction. These windows were contributed by various veterans' organizations and eleven were designed by Willemina E. A. M. Ogterop, the first woman to join a glaziers' union west of the Mississippi. The interior of the chapel features redwood timber-truss ceilings and wrought iron chandeliers.

Building 130, now called the Presidio Chapel, is considered a historic building and a contributor to the Presidio of San Francisco National Historic Landmark District. With its Spanish Colonial Revival design and Baroque entryway, the Presidio Chapel is the most ornate building at the Presidio of San Francisco. It is also the most architecturally intact of the two existing chapels at the Main Post. The period of significance of the Presidio Chapel dates from its construction in 1932 until 1945. These dates are based upon the period of significance defined for the Presidio of San Francisco National Historic Landmark District.

DEPRESSION-ERA RELIEF PROGRAM MURAL

A notable artistic feature of the building is a large wall mural entitled “The Peacetime Activities of the Army” and located within the porch area on the chapel’s southeast side. The mural, painted in 1935 by Victor Mikhail Arnautoff and his assistants as a California Emergency Relief Administration (CERA) project, depicts a historical pageant relating to the founding of the Presidio. Born in Marinpol, Ukraine, Arnautoff immigrated to San Francisco in 1925. An apprentice of Mexican artist Diego Rivera, Arnautoff painted murals in Mexico’s National Palace and the Palace of Cortez at Cuernavaca. His work in San Francisco includes the murals at George Washington High School and those at Coit Tower, completed at the end of 1934 as part of a State Emergency Relief Administration project. The Presidio Chapel mural was sponsored by the Thirteenth U.S. Infantry under the State Relief Administration. It depicts events at the Presidio of San Francisco from its early Spanish settlement to the roles of the U.S. Army during peacetime. Saint Francis, the patron saint of the city, is featured at the center of the mural. To protect the artwork, the once open side porch, supported by sturdy piers with squared composite capitals, is now enclosed with aluminum sash and picture-type windows (National Register Nomination form, p. 7-128-129).



Main (north) facade.

B. CHRONOLOGY OF DEVELOPMENT AND USE

Physical construction, modification, and use of the structure is summarized in this section. The text should be based on historical documentation with corroboration from first-hand observation and materials analysis. Historical photographs and drawings illustrating site development and the construction history of the building are included in Appendix X.

SITE DEVELOPMENT

- 1932** The original site included a small paved parking lot to the west and a paved driveway around all sides. A narrow area of landscaping immediately surrounded the chapel. A triangular lawn was located to the north and was surrounded by Fisher Loop, constructed to link the chapel to Infantry Terrace (December 1930 Site Plan).
- 1940** At this time, the chapel was surrounded by low shrubbery on a narrow portion of landscaped ground (historic photograph).
- 1949** Building 135, the Non-Commissioned Officers and Enlisted Men's Club, was constructed in 1949. New roads are constructed, including a loop to the south of the club.
- 1950** Tall shrubs surrounded the chapel and vines were attached to the west side of the primary façade. A palm was located at the southeast corner of the building (historic photographs).
- 1951** The vines on the primary façade were removed (historic photograph).
- 1960** The surrounding shrubs had been trimmed back by this time (historic photograph).
- 1963** By 1963, the parking lot west of the chapel had been extended and the road was extended to an east gate of the cemetery. A chaplain's plaque was also installed in the triangular lawn area in front of the chapel in 1963 (24 July 1963 site plan).
- 1966** Ground improvements included moving the sarcococca on the east side, selectively pruning the English laurels at the front, installing stepping stones on the west side, and removing the shrubs from existing shrub beds at the southwest side and reseeding as lawn (30 August 1966 site plan).
- 1967** A new lawn area with sprinkler system is installed (February 1967 site plan).
- 1975** Adjacent to the chapel on the east side, a memorial garden was dedicated on 22 June 1975. (Main Post Chapel pamphlet, n.d.).
- 1979** The existing memorial garden patio was paved with tile (1979 drawing).
- 1986** A memorial to Vietnam veterans was dedicated adjacent to the memorial garden on 25 May 1986. Around the monument are the flags of the five branches of military service: Army, Air Force, Marines, Navy, and Coast Guard. The flags are placed at the monument on Sunday, holidays, funerals, special occasions, and upon request. On 21 September 1986, a POW/MIA flag was added ("Chapels of the Presidio," n.d.).

BUILDING DEVELOPMENT

- 1931-32** The Presidio Chapel was originally constructed at a cost of \$40,800 by the Works Progress Administration (NAER Inventory, August 1981). The chapel was dedicated on August 4, 1931 (Presidio Physical History Report, Building Inventory, 1992).
- 1933** By May of this year, at least some of the stained glass windows by Willemina E.A.M. Ogterop had been installed in the building. The “Loyalty” window was dedicated on May 14. The original windows in the building were multi-light wood sash windows (Presidio Physical History Report, Building Inventory, 1992). A bronze bell was purchased for \$407.20 and put into the bell tower (Presidio Physical History Report, Building Inventory, 1992).
- 1935** A 324-square foot wall mural entitled “The Peacetime Activities of the Army” was painted by Victor Arnautoff and assistants as a California Emergency Relief Administration project (Presidio Physical History Report, Building Inventory, 1992).
- 1930s** Chaplain George Rixey, one of the people who provided assistance in the planning and construction of the chapel, obtained standards from the different units who served at the Presidio, and displayed them in the chapel (Presidio Physical History Report, Building Inventory, 1992).
- 1940** Floor plans show a chaplain’s office, lavatory, and closet to the east of the chancel; a vestry room with lockers to the west; an altar at the very back of the chancel, against the wall; and an open cloister (mural room) with a concrete floor at the east side of the first floor. The basement plan reveals a boiler room at the north end, to the west of the tower stairway; a large Sunday school room at the center, three small rooms to the east, below the open cloister, which feature folding doors that divide them from the Sunday school room and from each other; a room to the southeast, below the chaplain’s office; a classroom with accordion folding doors to the south, below the chancel; and women’s and men’s restrooms to the southwest. All of the basement rooms featured concrete floors (1940 floor plans).
- ca. 1941** The building’s exterior cream color was applied at some point after 1941 (Presidio Physical History Report, Building Inventory, 1992).
- 1954** The sanctuary was completely renovated, including replacement of pews (new ones had simpler ends) and altar rail. (30 September 1953 photograph; 30 December 1954 photograph).
- ca. 1960** A canopy was installed at the front entrance. It was replaced several times in the following years (historic photographs).
- 1961** The cloister (mural room) was enclosed with aluminum-sash plate glass windows and fully glazed aluminum double doors to protect the mural. Also, glass was installed above the wainscot at the base of the mural to protect it. Carpet was installed in the former cloister (July 1961 elevation drawing; 3 November 1961 photograph).
- A new counseling room was constructed in the basement, just south of the boiler room. It included vinyl asbestos tile on the concrete floor, a rubber base, wood frame partition walls, and acoustical tile ceiling (May 1961 floor plan).
- The altar was moved toward the nave to make room for the choir. A grille with gates was constructed by Nelson Iron Works of San Francisco to serve as a chancel screen between the nave and the chancel (Presidio Physical History Report, Building Inventory, 1992).
- 1961** The chaplain’s office had moved from the first floor and was now located in the southeast room of the basement, next to the blower room (May 1961 floor plan).
- 1965-66** The chaplain’s office was moved to the center room at the south end of the basement, below the chancel, and partitioned off. In order to protect the mural, the cloister was enclosed with plate glass windows in aluminum frames and glass was installed above the wainscot below the mural. Renovations by the Post Engineers included the relocation of the altar and the installation of a wrought iron chancel screen (Presidio Physical History Report, Building Inventory, 1992).

- 1970** A handicap ramp was installed at the east façade (3 August 1970 site plan).
- 1973** New cabinetwork was installed in the sacristy on the first floor (28 March 1973 drawings).
- 1977** The historic standards, which since the 1930s had represented the different units that served at the Presidio, had deteriorated and were removed to the Presidio Army Museum for conservation (Presidio Physical History Report, Building Inventory, 1992).
The gutters and downspouts were replaced (21 January 1977 drawings).
The restroom at the southwest corner of the basement was converted to a kitchen. Kitchen cabinets with a range, range hood, and sinks were installed (13 September 1977 floor plan).
- 1978** The nave lights were rewired (3 August 1978 floor plan).
By this date, a second room had been constructed in the basement along the west wall, south of the boiler room. The folding doors at the northern-most of the three east rooms had also been replaced with solid partition walls, but the other two rooms on the east side still featured folding doors. (3 August 1978 floor plan).
- 1970s** The iron grille at the chancel was removed (Presidio Physical History Report, Building Inventory, 1992).
Lieutenant Beaugureau painted a depiction of Christ resurrecting from the tomb. The painting is in the stairwell leading up from the basement (Presidio Physical History Report, Building Inventory, 1992).
- 1983** The existing canopy frame at the front entrance was re-covered with new awning material (16 May 1983 drawing).
- 1984** The standards were replicated and replicas were placed in the chapel (Presidio Physical History Report, Building Inventory, 1992).
- 1996** Of the three small basement rooms on the east side, below the cloister, the south room had been converted to a hall by this time. The folding doors had been removed and replaced with partition walls and regular doors. The only original folding doors remained at the center of the three east rooms. The second room on the west side had been removed by this time and replaced with a counter (1996 floor plan).
- 1996-present** Building occupied by the Interfaith Center at the Presidio.

C. PHYSICAL DESCRIPTION

ARCHITECTURAL DESCRIPTION

Site

The Presidio Chapel is located on Fisher Loop at the Main Post of the Presidio of San Francisco. The building sits on a north-facing terrace overlooking the San Francisco Bay. The terrace is shaded by a grove of large eucalyptus trees that form the eastern and southern edges of the site. Fisher Loop is triangular in shape and encloses a triangular lawn north of the building. The site includes a rectangular paved parking lot to the west and a paved driveway around all sides of the chapel. A narrow area of landscaping, including lawn and shrubs, immediately surrounds the chapel.

A chaplain's plaque is located on the north side of the road from the primary entrance of the Presidio Chapel. A memorial garden is located east of the building, and includes a paved walkway and patio surrounded by foliage. A memorial to Vietnam veterans is located adjacent to the memorial garden.

Overall

Completed in 1932, the two-story building has a rectangular plan with a semi-circular apse at the south facade and an attached three-story bell tower complete with a bronze bell at the east facade. The building is Spanish Colonial Revival style with direct references to the Spanish baroque features that appeared in the architecture of the early Mission churches. Shed-roofed bump outs are located at the rear of both the east and west facades. The building measures roughly 57' x 84' in plan. The building is reinforced concrete with a low gable roof clad in mission tile. The stucco-finished walls are heavily textured with course trowel work and are capped by a simple molded cornice at the roofline. Typical windows include multi-light wood sash windows at secondary facades and the basement, quatrefoil windows at the bell tower, and arched stained glass windows at the clerestory.

Main (North) Façade

The main (north) façade features decorative terra cotta moldings that are concentrated at the main entry in the form of a mission-inspired Spanish baroque frontispiece. On the first level, the frontispiece is decoratively supported by a pair of engaged columns on pedestals, which flank the doorway and have undulating shafts and composite capitals. The broad entablature breaks above the columns and has decorative relief panels. On the second level, a balcony and an arched stained glass window, with a highly embellished aedicule-like surround, rise above the first level entablature.

Secondary (East) Façade

The east façade features a rear bump out; a central porch with square columns capped by a mission tile shed roof, and the bell tower. The east façade is accessed by brick stairs and a stucco-clad ADA compliant ramp with metal pipe railing. The porch was enclosed in the 1960s and features non-sympathetic paired glazed aluminum doors and storefront style windows. The clerestory of this façade features arched stained glass windows, and the rear bump out features a three-part window with stained glass.

Rear (South) Façade

The rear façade features a semi-circular apse with a simple cast-concrete corbel arch frieze at the cornice. The south façade features arched stained glass windows and three-light wood casement windows.

West Façade

The majority of the first floor level of the west facade is blank, with arched stained glass windows at the clerestory. The west façade is accessed by two concrete staircases with metal pipe railings, one accessing the first floor at the rear bump out and the second accessing the basement level. The entry at the first floor features a paneled wood door. The entry at the basement features a flush wood door with single light.

Interior

Chapel

The main space of the chapel is a rectangular hall with cream colored plaster walls, concrete tile floors stained in earth tones to give the appearance of primitive clay tiles, and capped by an exposed king post truss system and roof decking stained brown. The chapel space features wood pews, metal and marble plaques at the side and rear walls, and arched stained glass windows at the clerestory. The space features incandescent chandeliers in a rustic design.

The chapel terminates in a semi-domed chancel at the south wall. The chancel features a panel wood wainscot, plaster walls, carpeted floors, and stained glass clerestory windows. The chancel includes an altar, organ, and piano and is lit by incandescent wall sconces.

Cloister/Mural Room

The cloister is located at the east portion of the building and features carpeted floors, plaster walls, and a large mural by Victor Arnautoff showing the peacetime activities of the Army. The room features squared columns with decorative capitals, glazed aluminum paired doors and fixed windows, exposed roof decking, and non-historic chandeliers.

Basement

The basement level has undergone some remodeling to serve as office space. The space features plaster walls and ceilings, carpeted floors, exposed HVAC ducts and fluorescent lights. A single remaining set of historic folding doors are located in the central office on the east wall. An office semicircular in plan is stepped up from the remainder of the basement. A kitchenette and restroom are located in the southwest bump out. The kitchenette was a later alteration. An office adjacent to the boiler room was also a later addition.

MECHANICAL, ELECTRICAL, AND PLUMBING

Mechanical

The chapel was originally designed as a naturally ventilated building (i.e. there is no cooling installed in the building). The high thermal mass of the structure and the climate in the Presidio area make this building well-suited to a passive design approach to the mechanical comfort systems. It is recommended that all existing operable windows be preserved and repaired to allow for adequate natural ventilation. The chapel also includes a gas-fired furnace hot air heating system, where the hot air from the furnace is directed through exposed duct work through the basement of the chapel and enters in to the worship space through wall and floor grills.

The chapel has a gas-fired furnace hot air heating system, and the hot air is directed through exposed duct work in the basement to wall and floor grills on the main level. This existing heating system is not properly zoned and clearly not sufficient. A number of space heaters are presently being used as supplemental heat for the lower level common room and offices.

Electrical

The electrical system for the Presidio Chapel is provided and maintained by the Presidio Trust. The current electrical service is 200A, single phase, 120/240V.

The building is served from a utility transformer to the west of Fisher Loop and has its service entry and utility meters located at the north side of the building adjacent to the main entrance.

In the existing building, the entire electrical system within the building should be removed and new electrical systems as described below should be installed to serve the renovated building.

Plumbing

Toilet room: There is a toilet room located in the lower level; the plumbing fixtures are old and not handicap-accessible. In the upper level, there is also a toilet room with a water closet and a lavatory, also non-accessible.

A gas meter is located at ground level and in front of the building and serves the space-heating furnace and the domestic water heater.

Gutters and downspouts are provided for roof drainage. Downspouts terminate above grade. Area drains were provided in the light wells and were connected to the sanitary sewer. (Note: This is in violation of the present code.)

Sanitary waste from the building is connected to the main campus system. Per the tenant, the line backs up and needs to be replaced.

Per the Presidio Trust engineer, a 3/4" water meter serves the domestic water for the building.

There is only one water main. This main serves both the domestic demand and the site fire hydrants.

There is no automatic fire sprinkler provided.

CHARACTER-DEFINING FEATURES

Character-defining features of the Presidio Chapel include:

Site

- Shrubbery immediately surrounding the chapel
- Paved driveway surrounding the chapel on all sides
- Flat rectangular lawn area surrounding the chapel and ringed by concrete curbs
- Triangular-shaped road to the north, enclosing a triangular-shaped lawn
- Army chaplain's plaque on the north side of the drive, opposite the primary entrance
- Memorial garden paved with tile, located east of the chapel
- Memorial to Vietnam veterans, located adjacent to the memorial garden

Exterior

- Building form, shape, massing, materials
- Gable front oriented northeast
- Terra cotta portal/surround at doorway on front elevation, with engaged Solomonic paired columns, composite capitals, decorative urns, capped by a curved broken pediment with bear and mascarón (bear symbolic of California), Spanish motifs (floral, decorative) throughout
- Arched stained glass window as key feature in fenestration hierarchy of front entrance
- Paired multi-panel oak doors with cruciform panel pattern and original hardware
- Heavy textured stucco finish
- Bell tower on left of the building with additional cornice below openings for the bell

- Quatrefoil windows on each wall of the bell tower
- Red, barrel-shaped tile roof
- Arched stained glass clerestory windows in nave
- Cornerstone reading “1931”
- Brick front steps
- Simple cornices just below roofline except at gable ends
- Three-light casement windows in basement light wells

Interior

- Semi-dome of chancel
- Painted plaster walls
- Arched clerestory windows
- King post truss system supporting massive beams of roof structure
- Dark brown stain of structural timbers and roof decking
- Interior room configuration, particularly first floor
- Mural in cloister depicting “The Peacetime Activities of the Army”
- Scored concrete finish, interior stairs to basement
- Restrooms and plumbing fixtures (porcelain tile wainscoting, historic plumbing fixtures)
- Semi-circular plan and raised level of office at south wall in basement
- Concrete floors (in imitation of flagstone) stained in earth tones to give the appearance of primitive clay tiles
- Squared columns with decorative capitals in cloister and entrances to ancillary rooms off of chancel.
- Paneled oak wainscoting, heavy oak doors, and oak trim throughout the building’s main floor
- Pipe organ
- Historic folding partition doors in basement

D. EVALUATION OF SIGNIFICANCE

PRESIDIO OF SAN FRANCISCO NATIONAL HISTORIC LANDMARK DISTRICT

National Historic Landmarks are part of the National Register of Historic Places and represent properties with the highest level of significance to the history of the country. In 1935, the National Historic Landmarks program was established to identify and protect places possessing exceptional value in illustrating the nation's heritage. In 1966 when the National Historic Preservation Act authorized the National Register of Historic Places, the National Landmarks Program was incorporated into the National Register. National Historic Landmarks retain a distinctive designation as historically significant properties designated by the U.S. Secretary of the Interior for their ability to illustrate and interpret the history and culture of the United States. Managed by the National Park Service, the National Historic Landmarks Survey consists of approximately 2,400 properties that all retain a high degree of historical integrity. In comparison to the National Register of Historic Places, National Historic Landmarks only includes those properties that have direct national significance. All properties listed as a National Historic Landmark are automatically designated on the National Register.

In 1962, the Presidio of San Francisco National Historic Landmark District was designated as being significant under Criterion A (Event), Criterion C (Design/Construction), D (Information Potential) and Criterion Consideration G (Less than 50 Years). The Presidio is significant under Criterion A for its association with nearly two hundred years of military history. According to the nomination form, "From its establishment in 1776 as Spain's northernmost outpost of colonial power in the New World of the Western Hemisphere, the Presidio has served as a military reservation. It is one of the longest-garrisoned posts in the country and the oldest installation operating in the American West, having played a key role in Spain's exploration and settlement of the Borderlands, Mexico's occupation of the region from Texas to Alta California, and the United States' involvement not only in frontier expansion, but also in all major conflicts fought since the Mexican-American War of 1846-1848."

The Presidio is significant under Criterion C for its breadth of military architecture. According to the nomination form, "The Presidio's architectural inventory could well possess national significance as an outstanding collection of buildings and structures representing multiple periods and styles of defense-related construction from the mid-nineteenth century through the World War II period... In the architecture of the Presidio, the evidence of site-responsive planning and the widespread use of Spanish-derived styles appear to be innovative in terms of military construction."

The Presidio is significant under Criterion D for its collection of predicted archeological resources. The archeological resources included in this nomination include sites dating from 1776 to 1917. According to the nomination form, "Archeological features of the Presidio can provide, in concert with historic and other research, important contributions to the record of the Post's social, economic, and physical history, as well as to broader issues regarding Spanish colonial, Mexican and United States military culture and frontier adaptations."

The entire district's period of significance spans from 1776 to 1945 and includes historically significant sites, buildings, structures, objects, archaeological resources, road corridors, and landscape features. In 1993, a National Historic Landmark Update was completed. In 2008, a National Historic Landmark update addressing resources dating from 1946 through 1994 (when the Presidio became a National Park) was undertaken, and is still under review.

The Presidio Chapel (Building 130) is considered a historic building and a contributor to the Presidio of San Francisco National Historic Landmark District.

Individual Significance

In addition to contributing to the Presidio of San Francisco National Historic Landmark District, the Presidio Chapel appears individually eligible under Criterion C for embodying the distinctive characteristics of a type and period of construction, in this case the Spanish Colonial Revival style with Baroque elements. The Presidio Chapel is a well-preserved example of the style as applied to a military chapel. The building features typical Spanish Colonial Revival elements such as the low-pitched tile clad gable roof; thick masonry walls clad in stucco, and recessed openings with multi-light windows. The building's Baroque influence is concentrated at the main entry portal which features opulent ornament including mascarons, Solomonic columns, and vegetal motifs. The building embodies the distinctive characteristics of the Spanish Colonial Revival style with Baroque elements, and exhibits a level of architectural detail that is rare at the Presidio of San Francisco.

The period of significance of the Presidio Chapel dates from its construction in 1932 until 1945, the end of the Presidio of San Francisco's period of significance.

E. SIGNIFICANCE DIAGRAMS

This section provides an analysis of the relative zones of significance present at the Presidio Chapel. Utilizing accepted standards for the evaluation of historic resources, the major historical features have been identified and visually documented within a series of significance diagrams. The significance diagrams are included in Appendix X.

For the purposes of this analysis, Page & Turnbull surveyed the building, including all exterior façades and interior spaces, and evaluated their relative significance by categorizing them as “Significant,” “Contributing,” or “Non-Contributing.”

These categories are defined as follows:

Significant

Definition: Spaces, elements or materials characterized by a high degree of architectural significance and a high degree of historic integrity.

Description: Significant features of the Presidio Chapel are primarily composed of the building’s exterior, including its form, massing, and architectural details. Additional significant features include interior elements such as the chapel sanctuary and chancel on the first floor.

Preliminary Guideline: Significant exterior and interior features and materials should be retained and preserved, or where alterations have occurred, be restored. Deteriorated materials should be repaired rather than replaced. Where replacement is necessary due to extensive material deterioration or failure, replacement materials should match the original materials and forms.

Contributing

Definition: Elements characterized by a lesser degree of architectural significance, yet retain a high degree of historic integrity, or historically important, yet altered elements.

Description: Contributing features of the Presidio Chapel include the majority of the basement level, which has undergone some alterations. Historic doors and hardware are not specifically marked on the diagrams, but are also considered to be Contributing features.

Preliminary Guideline: Contributing elements should be retained wherever possible, but are not essential to the building’s ability to convey its overall significance. Where required, alterations and additions should be designed to be compatible with the existing elements and materials. New materials and assemblies at reconstructed areas should be similar to the original. Opportunities exist for Contributing elements (such as historic doors) to be salvaged and re-used elsewhere in the building.

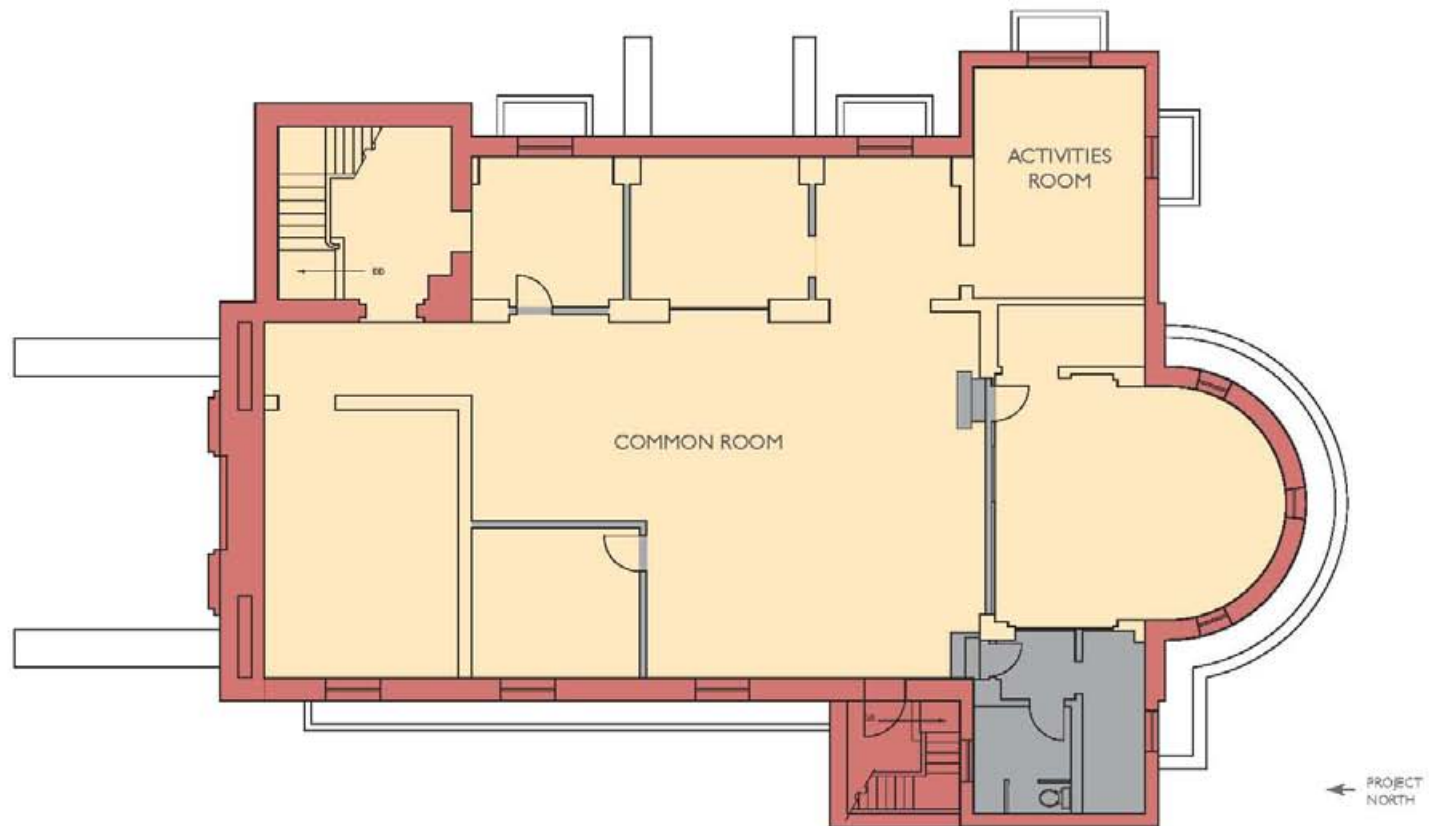
Non-Contributing

Definition: Non-Contributing elements are generally non-historic elements or elements that have been altered to the extent that their original character is absent.

Description: Non-Contributing features of the Presidio Chapel include the aluminum and glass enclosure and the ADA accessible ramp at the east façade, heavily altered interior spaces and features including partition walls and the kitchen and restroom in the basement, and the replacement pews in the chapel.

Preliminary Guideline: Non-Contributing elements are not specifically limited by preservation recommendations, except to note that the overall character of alterations to an historic building must meet the general requirements set forth in the Secretary of the Interior’s Standards for the Treatment of Historic Properties (Standards). While there are no specific recommendations for the treatment of Non-Contributing spaces, the building’s general organization should be retained.

BASEMENT PLAN



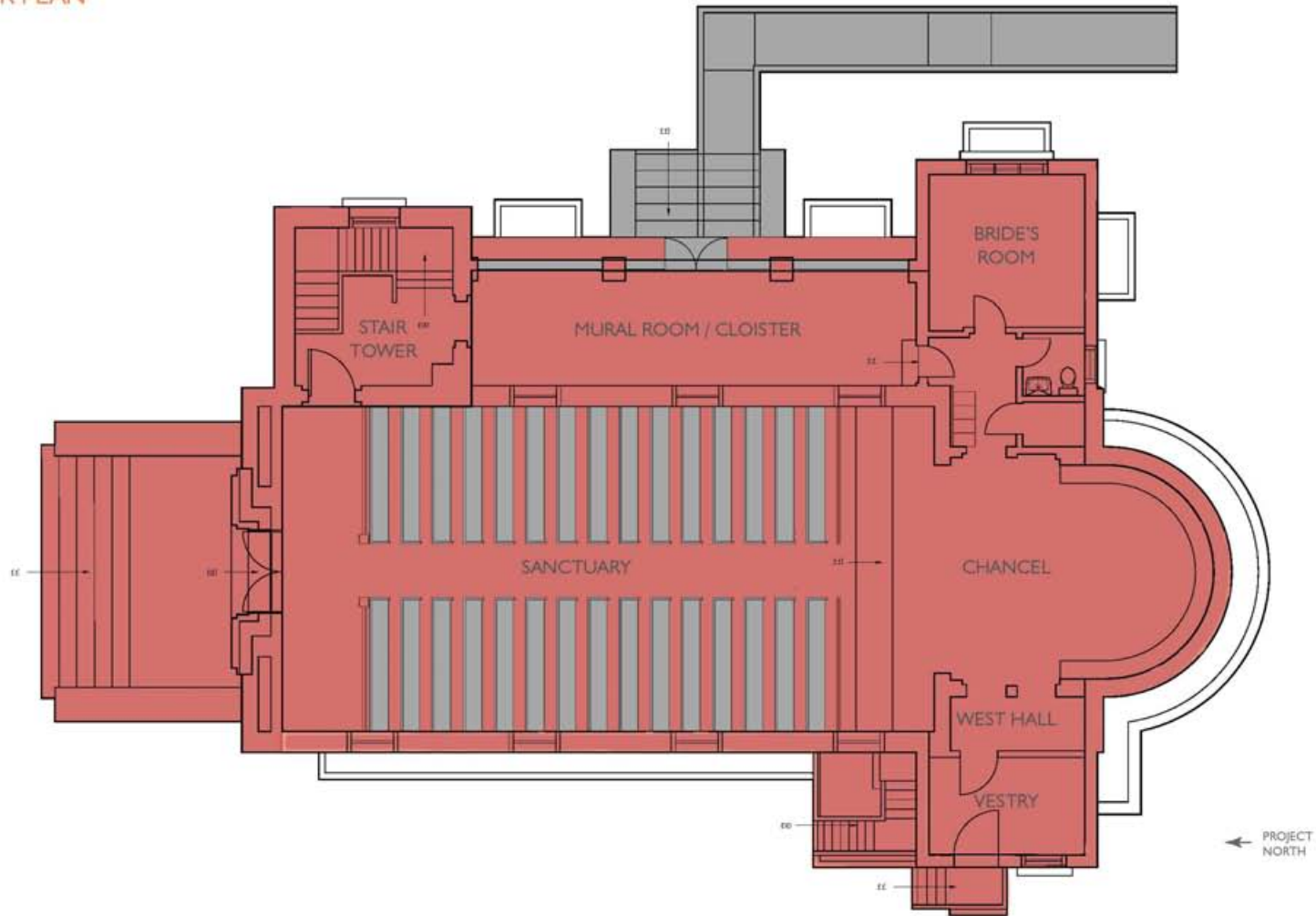
LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

FIRST FLOOR PLAN



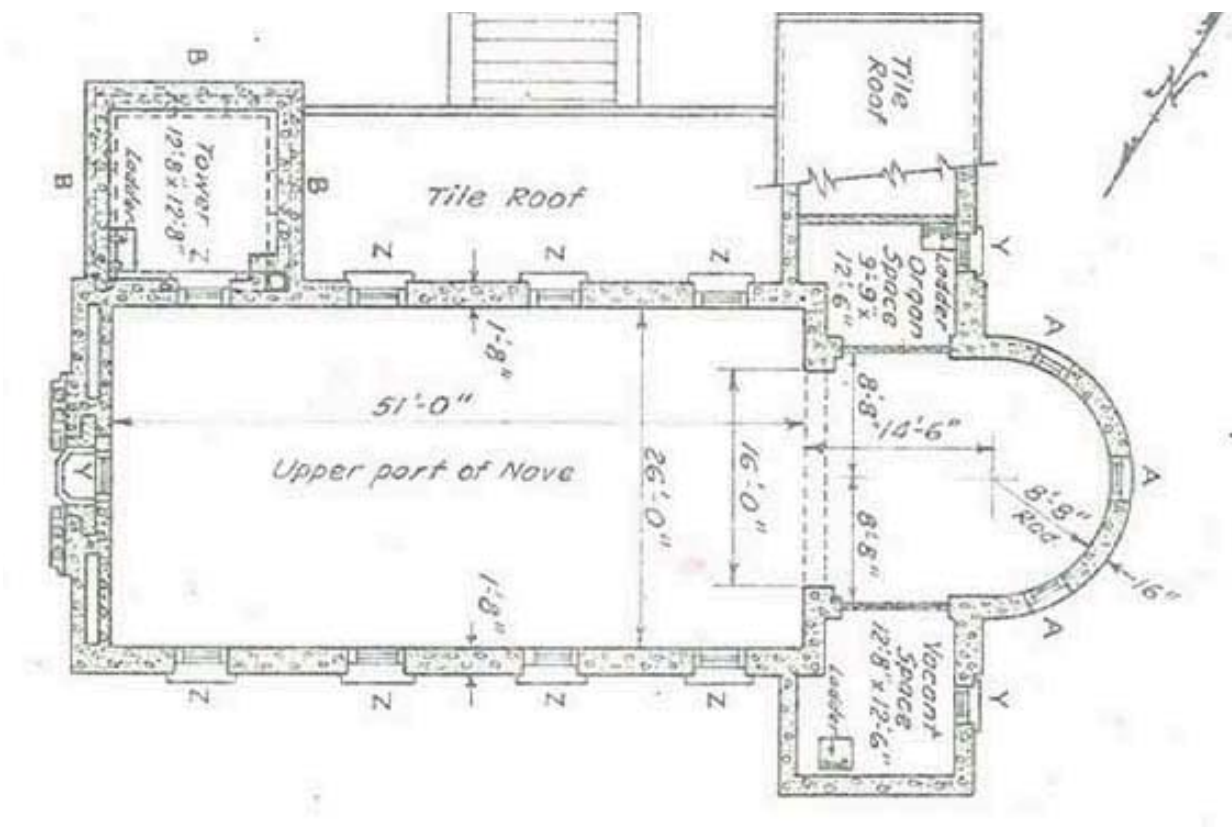
LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

BALCONY / BELL TOWER / ORGAN BLOWER ROOM PLAN



LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

NORTH ELEVATION



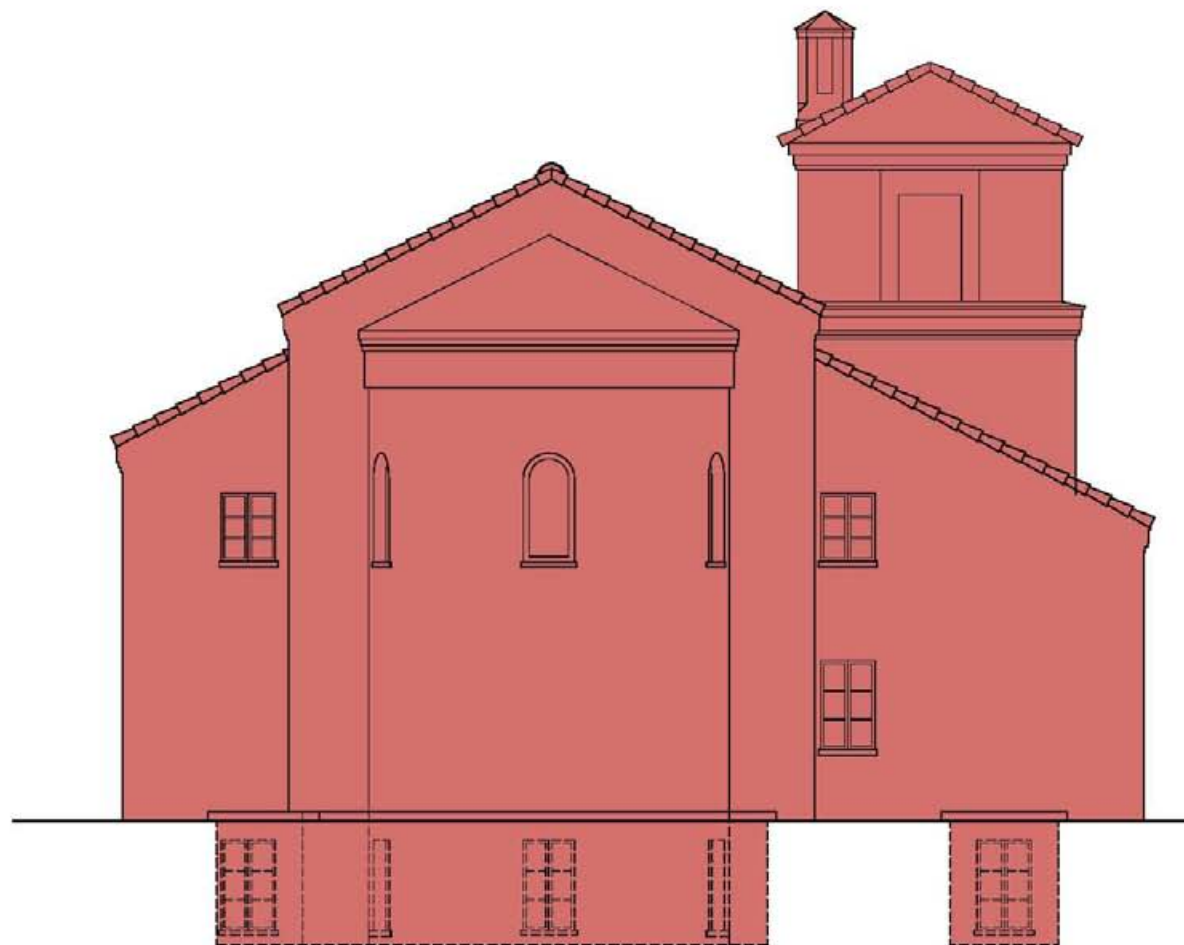
LEGEND

■ PRIMARY SIGNIFICANT

■ CONTRIBUTING

■ NON-CONTRIBUTING

SOUTH ELEVATION



LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

EAST ELEVATION



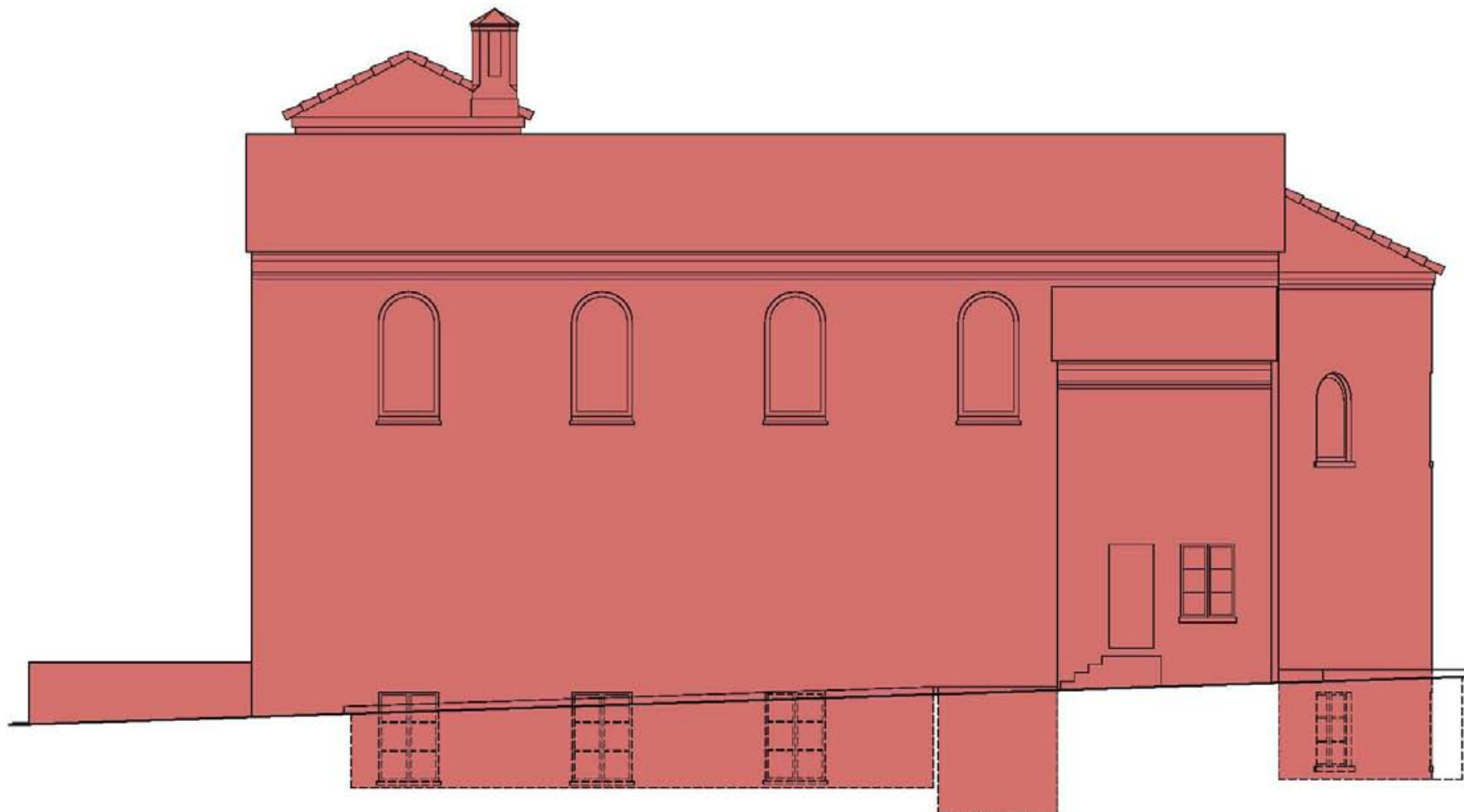
LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

WEST ELEVATION



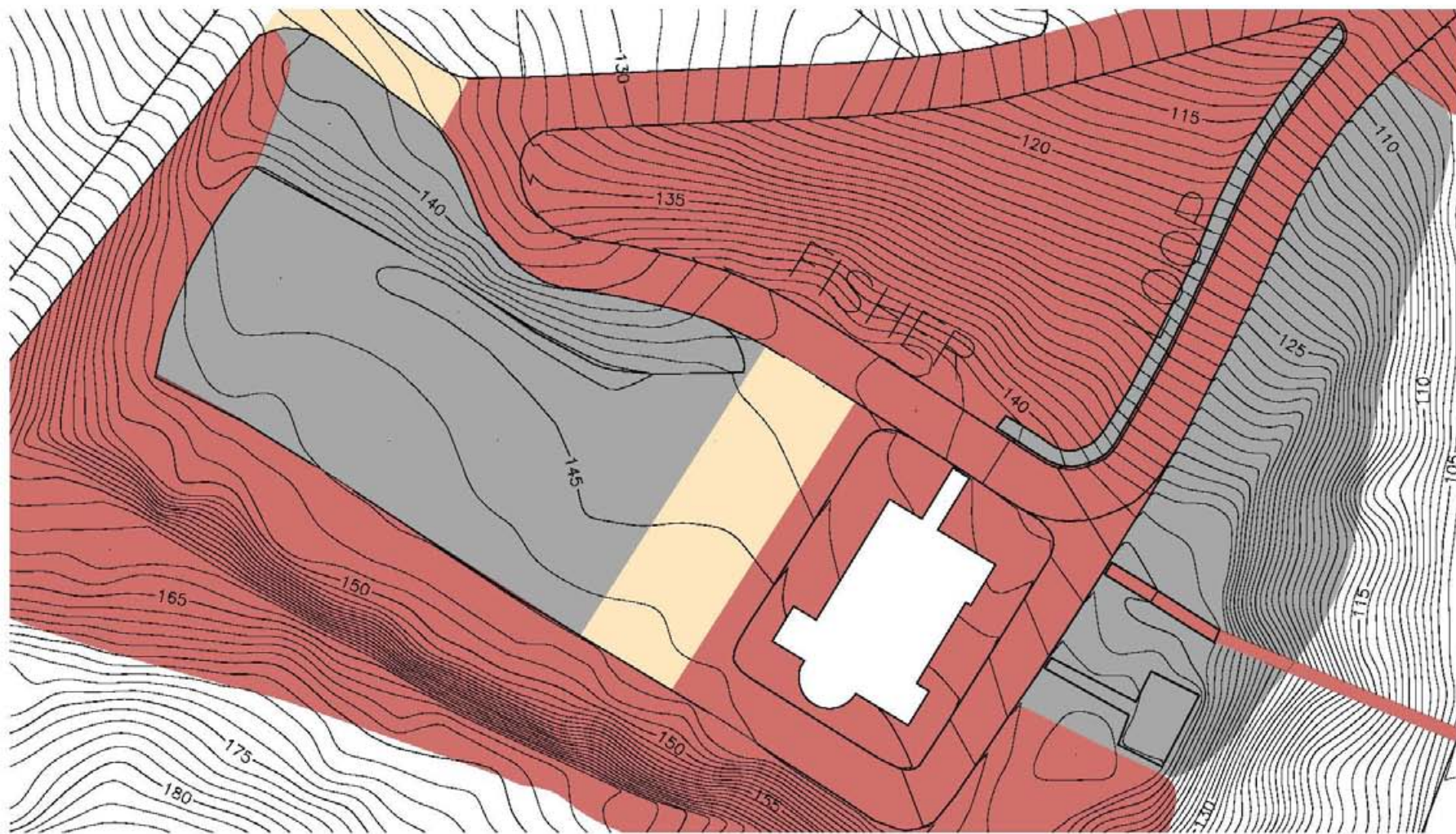
LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

SITE PLAN



LEGEND

PRIMARY SIGNIFICANT

CONTRIBUTING

NON-CONTRIBUTING

PART III.A: TREATMENT AND WORK RECOMMENDATIONS: REHABILITATION

This section is based on observations of the building as surveyed in September 2010 and February 2011. Architectural elements of the Presidio Chapel are categorized by exterior and interior materials and assemblies.

A. HISTORIC PRESERVATION OBJECTIVES

Three potential treatment options were considered:

1. **Preservation:** According to the Secretary of the Interior's Standards, the act of preservation is defined as "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project."
2. **Rehabilitation:** According to the Secretary of the Interior's Standards, 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."
3. **Restoration:** According to the Secretary of the Interior's Standards, restoration is defined as "the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project."

Rehabilitation is the recommended treatment option for the Presidio Chapel. Taken as a whole, this strategy is superior to the other options, because it preserves the most significant character-defining features of the building, while simultaneously allowing the building to better serve its new use as the Interfaith Center at the Presidio.

Understanding that the Presidio Chapel has experienced incremental alterations, our general recommendation is to preserve all remaining historic materials and features in important publicly accessible areas such as the sanctuary. In contrast, many non-public areas, such as the basement level offices and storage areas, have been altered and will undoubtedly continue to be upgraded in the future; the rehabilitation treatment option should allow for flexibility when dealing with these non-character-defining areas while preserving and restoring important ones.

The rehabilitation option should allow for compatible new additions that may be needed for programmatic or code-related reasons. A new addition may be preferable as part of the rehabilitation in order to minimize or avoid alterations to significant spaces in the historic building.

B. REQUIREMENTS FOR WORK

This section outlines applicable laws, regulations and functional requirements, which must be taken into account prior to any rehabilitation work at the Presidio Chapel. Codes and regulations pertain to the following issues: site, structural, mechanical, disabled access, human safety, fire protection, energy conservation and abatement of hazardous materials.

Code Requirements

Code requirements are primarily for accessibility, path of travel for exiting, and seismic strengthening. The Presidio Trust explicitly requires full upgrade to ABAG/UFAS standards, and the Interfaith Center has confirmed that this fits its own goals.

The International Building Code (IBC) and the State Historical Building Code (SHBC) are the codes that are applicable to this project.

Occupancy

The building is classified as Occupancy Group A, Division 3 (assembly) and Occupancy B (office space). There is no fire-rated separation required between these two occupancies. However, one-hour-rated construction separates the existing basement assembly area from the main floor.

Construction Type

The existing building is Type III construction. Without a fire separation, the entire building will be considered Type V (N-R).

Secretary of Interior's *Standards for the Treatment of Historic Properties: 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.

Sustainability Requirements

The Presidio Trust has set LEED Silver certification as a requirement for the Rehabilitation of Historic and Non-Historic Buildings, to provide a baseline for sustainable design and construction for all projects at the Presidio. The Presidio is striving to become a model of sustainability - designing for optimum efficiency, performance, and sensitivity will help the Presidio meet this challenge and ultimately become a place of learning and innovation.

Sustainable features of the proposed project must include:

- Rehabilitation to retain embodied energy of existing building
- Features are reused rather than replaced
- Addition designed for long-term flexibility and multiple use spaces
- Maximization of daylight and natural ventilation
- Materials selection based upon location and environmental impact of its production, recycled content, contribution to air quality, and life cycle
- Use of operable and energy-efficient windows
- Energy-efficient lighting
- Existing building with high thermal mass
- Waterless urinals and dual-flush toilets
- Point-of-use water heaters at lavatories
- Radiant heat and no air-conditioning
- Use of permeable exterior paving surfaces and reduction of surface runoff
- Water-efficient landscaping

Definitions and Terminology

The building elements conditions are described on a good/fair/poor/unknown rating system, defined as:

Good (G)

The building element / feature is intact, structurally sound, and performing its intended purpose. The component needs no repair or rehabilitation, but only routine or preventative maintenance.

Fair (F)

The building element / feature shows signs of aging and one or more of the following conditions is present:

- a) There are early signs of wear, failure, or deterioration though the component and its features are generally structurally sound and performing their intended purpose; or
- b) There is failure of a feature or component.

Poor (P)

The building element / feature shows signs of deterioration and one or more the following conditions is present:

- a) The features are no longer performing their intended purpose; or
- b) Features are missing; or
- c) Deterioration or damage affects more than 25% of the component; or
- d) The component or features show signs of imminent failure or breakdown.

Unknown (U)

The assembly or feature was not accessible for assessment or not enough information is available to make an evaluation.

The following are defined terminologies associated with deterioration at the Presidio Chapel:

Spalling is a common failure in which a small portion of the exterior facade, in this case concrete and cement plaster stucco, detaches itself and falls from the building. Spalling can be attributed to changes within the wall assembly, such as efflorescence or corrosion (rusting) of embedded steel elements, or minor deficiencies or defects within the original construction. Incipient spall refers to a condition in which the material is detached, but remains in place.

Delamination is a failure in which mechanically or adhesively bonded materials separate along the bonding plane. Commonly observed delaminations at the chapel are 1) between the paint and cement plaster stucco, resulting in peeling and blistered paint and 2) between the stucco or interior plaster and concrete wall. Our observations indicate that most of this delamination is due to water intrusion into the wall system.

Efflorescence occurs when soluble salts contained within the wall are dissolved by intruding water transported through the concrete and stucco/plaster. When the water evaporates, the salts are deposited on the surface. Sometimes, when the salts form below the surface of the material (cryptoflorescence), the embedded salts can create stresses leading to the failure of the material. For efflorescence to occur, a source of salt and water to transport it must be present. Natural salts are frequently found in the sand and stone aggregates used in concrete or stucco. Salts may also be introduced to the site through the soil or through fertilizers used on the adjacent plants and trees and fog off the bay. To arrest and correct this problem, either the source of the salts or moisture needs to be investigated and controlled.

Corrosion occurs as steel oxides (reacts with oxygen in the air). The rust byproduct of steel can occupy up to ten times the volume of the original material. If the steel is encased in another material, such as concrete, the expansive corrosion can result in material failure (cracking or spalling). The rate of corrosion of steel can be accelerated through the presence of salts, acids, or by galvanic action. Galvanic corrosion occurs when two or more dissimilar metals are brought into electrical contact through a conductor, in this case water. When a galvanic couple (the union of the two metals) forms, one of the metals becomes a cathode and corrodes more slowly than it would alone, while the second metal becomes an anode and corrodes more quickly than it would alone. At the Presidio Chapel, corrosion of steel reinforcement within the concrete wall has caused spalling in a single location beneath a window in the organ pipe chamber; also steel hangers and copper gutters are reacting due to improper insulating material and the presence of water to conduct electricity.

GENERAL RECOMMENDATIONS SUMMARY

This section of the HSR evaluates the building conditions to formulate and provide recommendations for the care and treatment of the building. General recommendations are provided to guide the design approach to rehabilitation. Recommendations for the treatment of common materials and building systems are also provided. This section will provide recommended rehabilitation treatments to be considered and further studied during the design process. It will also serve as a guide to standard practice for future maintenance, repair and replacement of historic materials as it is defined by the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation.

Exterior (See Existing Conditions drawings for locations)

Terra Cotta Ornament: Priority Low

- Gently clean and repoint as needed
- Provide new grout and/or sealant at all junctures where terra cotta meets exterior stucco
- Install low-profile drip edge over door transom

Stucco: Priority Medium

- Repair all areas of spalling and delamination (see drawings). Clean and repaint existing stucco.

Gutters and Flashing: Priority High

- Re-use existing gutters and downspouts where appropriate.
- Replace all attachments and hangers with a proper attachment system of compatible material.
- Tie downspouts to drain system routed away from building.
- Install new gutters and downspouts to control water infiltration, particularly at the chancel

Clay Tile Roofing: Priority High

- Remove existing roof tile. Label, stack, and reinstall according to roof orientation, following the installation of new sheathing, flashing, and vapor barrier. Inspect condition of decking and rafters, replacing rotten elements, as needed.

Bell Tower and Chimney Roofing (built-up roof system): Priority High

- Inspect existing roofing and patch or replace as needed.
- Install new caulking compound and flashing.

Wood Windows: Priority High

- Repair/replace bottom sills and sash rails as needed.
- Seal window frames.
- Restore to operability, refinish.
- Refinish existing hardware.
- Encourage operability to allow for natural ventilation.

Stained Glass Windows: Priority High

- Windows need to be releaded, grouted, and cleaned.

Concrete: Priority High

- A qualified structural engineer should assess the viability of the concrete and the condition of the rebar.

Drainage: Priority High

- Install a French drain system along the perimeter of the structure to ensure positive drainage away from the building.

Porches and Stairs: Priority Low

- Repair and repoint entry stairs.
- Install code compliant ramp and handrails.
- Clean cheek walls.
- Remove awning at the main (north) entry.

Interior

Pews and Existing Woodwork: Priority Low

- Clean and patch finish on existing doors, windows, wardrobes, closets, and pews to presentable appearance.

Flooring: Priority Medium

- Repoint existing joints as needed.
- Clean and seal colored concrete in sanctuary, chancel, and west hall.
- Replace existing, as needed, to match.

Wall and Ceiling Finishes: Priority Medium

- Patch and repaint existing plaster and paint as necessary.

Lighting: Priority Medium

See Lighting Section below

Hazmat: Priority Low

- Develop an operations and maintenance (O&M) program that addresses previous hazmat studies from 1989 and 2007.
- Lead paint and asbestos-containing materials are present on-site, but do not appear to be in danger of friability or health risk until construction/rehabilitation efforts are undertaken.

Mechanical, Electrical, Plumbing: Priority Medium

- Systems repairs and/or replacement shall be installed in the most sensitive manner possible. Final work shall be invisible to the extent possible.
- Replace or upgrade heating system. Coordinate distribution system to minimize impacts on historic character.
- Replace entire electrical system to a new three-phase 208/120V system.
- Correct code-deficient light well drainage to sanitary sewer.
- Correct sanitary waste line back-ups.
- The chapel has a gas-fired furnace hot air heating system, and the hot air is directed through exposed duct work in the basement to wall and floor grills on the main level. A new HVAC system using a combination of radiant floor heat and hydronic baseboard is recommended.
- Plumbing code violations need to be corrected.

RECOMMENDATIONS DOCUMENTATION, INVESTIGATION AND TESTING

Working within the framework of the recommended treatment approach, the authors of this report have outlined the following Recommendations for Rehabilitation to provide clear guidance to planned work and maintenance at the Presidio Chapel. These recommendations clarify the objectives for rehabilitation at the Presidio Chapel in order to protect and maintain the historic integrity of the facility.

Assessment and Documentation

Prior to undertaking repair and rehabilitation work that may affect historic landscapes and buildings, a survey should be undertaken to identify the extent of historic materials that may be affected by the proposed work. This survey should include the identification of historic materials and elements that will require removal, in part or in whole, and the extent to which such materials can be selectively removed and salvaged for reuse.

The following procedures should be followed whenever the removal or replacement of missing or seriously damaged or deteriorated historic materials, elements and assemblies is required:

- Complete photographic record documenting the existing conditions at all locations where existing historic materials and assemblies are required to be removed.
- Institute a plan for the removal and salvage of historic materials and assemblies, at a minimum indicating their sizes and locations, order of removal, schedule of removal, storage requirements, etc.
- Devise a method of tagging or marking to specifically identify each removed piece or element and its exact location so that reinstallation can occur.
- Prepare dimensioned drawings indicating where historic landscape features, building and structure materials and assemblies are to be removed and reinstalled or reconstructed.

- To the greatest extent possible, retain identified historic materials, elements, assemblies and equipment, repaired and reused in their original locations. Where replacement is unavoidable, replace the identified existing historic materials and assemblies “in-kind.” The phrase “in-kind” means the provision of materials and elements to exactly match the existing materials and elements to be replaced.
- Alternate materials are acceptable for the repair and replacement of identified historic materials and elements in concealed locations, as long as the new alternate material or element matches or exceeds the characteristics of the existing in all other respects.
- Maintenance and repair techniques and procedures require the testing of all proposed applications to determine the efficacy of the repairs and their compatibility with original materials. Repair materials and procedures should be carefully modified to best meet the requirements of each required repair application.
- Cleaning and repair materials and methods require careful modification of materials and solutions to insure that all repair work is compatible and consistent with and closely matches existing materials. Proposed products, materials, solutions and mixes must first be tested and analyzed to determine the best application for a given cleaning and/or repair application.

Further Investigation and Testing

- A detailed assessment of the stucco and its integrity, including sounding of surfaces to identify locations with incipient spall.
- Structural analysis of upper floors (bell tower and organ chambers) to determine the condition and integrity of walls affected by efflorescence, spalling, and corrosion.
- Remove the rotted lower bathroom door frame to determine the extent of deterioration, and if the rot is extensive, retain a structural engineer to evaluate its effect on the structural integrity of the wall.
- Retain a consultant to advise on the best types of moisture meters and/or hydrothermographs to monitor the moisture content of walls and spaces experiencing the greatest amount of deterioration due to moisture infiltration.
- Remove carpeting and inspect the condition of all tinted concrete floors, particularly in the sanctuary and chancel, as well as the cloister.
- Investigate various methods of protecting the mural, including various types of physical barriers, passive infrared barriers, or plexiglass protective covers.
- Conduct a survey by an environmental consultant to document all hazardous materials.
- Perform a finishes study.

C. PRESIDIO CHAPEL TREATMENT RECOMMENDATIONS:

This section of the HSR describes and evaluates conditions of identified historic building materials and elements, and provides recommendations for their primary care and treatment. The discussion of common materials issues will be organized by material/assembly and be placed at the end of this section.

SITE

The Presidio Chapel sits on a north-facing terrace overlooking the San Francisco Bay. The terrace is shaded by a grove of large eucalyptus trees that form the eastern and southern edges of the site. Fog from the bay, runoff from the slope above, and significant shading make the site a generally moist environment. Landscaping and volunteer vegetation further restrict evaporation.

The front façade faces north to the San Francisco Bay and the Golden Gate Bridge; more closely, Fisher Loop provides access to the chapel's entrance. A granite memorial across the road commemorates army chaplains. The building is flanked closely by a large eucalyptus grove on the south and east, divided by a driveway. A large parking lot adjoins the building on the west; the San Francisco National Cemetery lies beyond the parking lot. To the east, the driveway separates the building from the memorial garden, a patio surrounded by shrubs; a memorial to Vietnam veterans; and a path to stairs that lead to Infantry Terrace and the Main Parade Ground.

EXTERIOR

All exterior walls and some interior walls are of reinforced concrete with painted cement stucco finish. The walls are of varying thickness from 20 inches around the nave and bell tower, 16 inches at the curved walls around the chancel and below, and 12" at the tower. The ground (main) floor level structure consists of 6" reinforced concrete floor slabs spanning to 16"x20" concrete beams at approximately 12'-6" o.c., which are supported by interior and exterior concrete walls.

The north façade holds the building's primary entrance, which is used as the main visitors' entrance as well as for ceremonial processions. Decorative architectural terra cotta reflecting a Spanish Baroque style of architecture adorns the primary entry. A canvas awning is supported by a metal frame. This awning spans the distance from the door to the sidewalk over a series of brick-paved steps.

The east façade is massed in a rough U shape, with a room to the south, the bell tower to the north, and a recessed enclosed porch in the middle. The cloister was enclosed in 1961 with an unsympathetic metal and glass exterior partition intended to protect the decorative mural of the east wall. A wheelchair ramp was added to the east side of the building in 1970 and covers part of the original cloister stair. Narrow concrete light wells provide daylight to windows of the basement level and were intended to allow for natural ventilation as well.

The south side of the building is formed by the curving exterior wall of the chancel. A narrow, continuous light well at its base provides daylight and ventilation to the basement level.

The west façade consists of a monolithic wall with a projecting bay forming the west arm of the modified T shape. The primary wall surface is continuous from the roof plane to the basement light well. This surface is penetrated by a series of decorative stained glass windows approximately nineteen feet above grade and a series of light well windows extending 6 feet below grade. Additionally, a stair protrudes from the end of the projecting bay. Adjacent to the stair is a below-grade stairwell, which leads to the basement level entry door.

Condition

The exterior envelope is in good/fair condition. Most issues evident on the exterior elevations are relatively minor, though if left unmitigated they could potentially develop into serious conditions. Improper drainage as well as additional water-related damage are the primary causes of deterioration.

Issues & Recommendations

Preliminary structural analysis indicates that, even though the existing concrete walls have less than the minimum reinforcing steel required by code, given the number and thicknesses of the walls, the seismic shear stresses are very low. No strengthening of the existing concrete walls is proposed.

Stucco

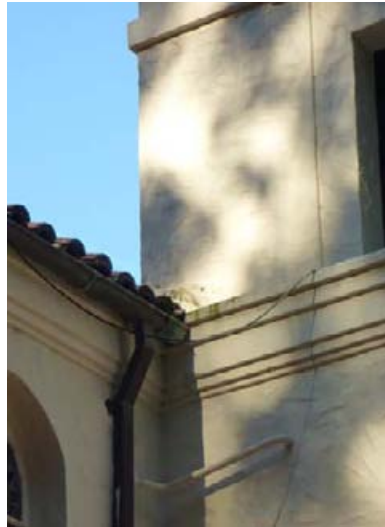
Stucco on the Presidio Chapel is worked to imitate plastered rubble masonry, a unique finish among Presidio buildings. Stucco is not a particularly permanent or long-lasting building material. Routine maintenance is required to keep it in good condition; poor original materials and techniques, conjoining materials of different expansion rates, settlement, seismic stresses, and biological growth can all cause cracking and/or failure of the stucco.

Condition

Although an in-depth sounding of the stucco was not possible, visual inspection showed the stucco to be in good condition with isolated areas of delamination and spalls. A primary cause of deterioration of stucco is the separation of the substrate and the stucco finish coating (delamination). When a mechanical detachment occurs in this way, the stucco surface will crack and/or spall.

Issues & Recommendations

At the Presidio Chapel, deterioration is seen in isolated areas at window



Example of stucco surface and staining at intersection between the main chapel and bell tower.

openings, the bell tower, and significant intersections of the building's massing. Often, deterioration patterns coincide with areas of improper roof and surface drainage as well as water intrusion. Concurrent with the delamination, staining also occurs on the building's façades. This staining is located beneath all window openings, at the tower, and areas of failed drainage. Organic staining is present also within close proximity to the ground-plane. Ferrous staining is also observed at the top of the stucco walls, caused by corroding metal flashing at the roof line.

Ideally, a comprehensive assessment of the stucco's integrity to identify locations of incipient spall should be undertaken. A detailed inspection of all elevations is recommended, noting locations where missing stucco, bulging or cracks, as well as punky or soft areas, exist.

Terra Cotta

Architectural terra cotta traditionally consists of molded units made from clay, grog (crushed bits of fired clay), and water. These masonry units, once fired and glazed, were traditionally set with full-depth mortar joints and mechanically keyed to a concrete structure with steel straps. At the Presidio Chapel, a Spanish Baroque style terra cotta door surround and entablature adorn the main (north) façade. The primary area of concern with architectural terra cotta is water intrusion into the hollow cavity of the masonry units.

Condition

At the Presidio Chapel, the decorative terra cotta door surround of the north façade is in good/fair condition and exhibits no out-of-plane movement (the principal visual sign of attachment failure). Currently, the terra cotta displays primarily aesthetic concerns, such as staining, associated with improper drainage and resulting in damage to the main door below.

Issues & Recommendations

Although this problem poses no direct safety hazard, if left unchecked, water intrusion to the steel attachment system could develop into a mechanical failure of the steel. The ornamental façade is subject to staining, organic growth, glaze



Terra cotta door surround; note stains, vines, and vegetative growth.

spall, and efflorescence of the joints; all conditions are associated with water infiltration. Presently, a number of plants have rooted in the mortar, which will further undermine the integrity of these joints allowing water to penetrate the hollow cavity. The plants and all visible pieces of the root system should be removed. Any deteriorated mortar should then be repointed in-kind.

The complicated geometries of the terra cotta surround provide many niches for water and moisture to collect in. The soffit above the main entry door is heavily stained at the mortar joints, suggesting water may be telegraphing down through the joints and hence onto the main entry door below. The heavy oak door, particularly the transom, is heavily streaked and stained with white residue from the terra cotta above. Furthermore, the upper-west corner of the transom's stile and rail are separating and delaminating. The simplest mitigation method is to repoint the terra cotta joints above and install a low-profile drip edge at the base of the entablature above the transom.



Cracking at base of terra cotta column.



Example of terra cotta mortar joint



Detail of main entry door; note white stains due to water telegraphing down through terra cotta joints above.



Roof condition, showing main chapel and shed roof extension.

Roofing

The clay tile roof of the Presidio Chapel appears to be part of the original construction, and given that a roof of this type will last 75 years or more, it is now nearing the end of its usable life. The existing roof structure is typically of wood-frame construction, including the high roof over the nave/sanctuary and the tower roofs. The high roof over the sanctuary consists of heavy timber trusses at approximately 12'-6" o.c., spanning the east-west dimension of the chapel supporting a system of purlins and rafters overlain by straight sheathing. Lower roofs of the vestry, office and stairs/bell towers typically consist of 2x rafters supporting straight sheathing. There is also tar and gravel built-up roofing within the bell tower.

Condition

Although the clay roof tile appears to be in good condition, the roof system—the general fastening of the clay tiles to the building substrate—is in fair/poor condition. The wood frame roof structure is similarly in good/fair condition, though some staining was observed. The built-up roof and flashing in the bell



Condition of chancel roof; note absence of gutters and downspouts.

tower is in poor condition. Debris, stains, and biological growth are present on many of the roof tiles.

Issues & Recommendations

In a cap-and-pan clay tile roof of this type, the caps are traditionally fastened with a single nail into a vertically-oriented two-by-four. Many of these nails have loosened over the life of the building, likely due to clattering of the tiles during severe wind. With ongoing wind chatter, tiles may eventually dislodge from the building and cause a threat to public safety as well as allowing water intrusion in the building. As an interim treatment, clay tiles need to be maintained and tightened. Cleaning is recommended. Ultimately, however, the chapel will need to be re-roofed, salvaging and reusing as many of the original clay tiles as possible (see below for common treatment of clay tile roofing). Asbestos-containing felt paper was used over the entire roof and must be handled appropriately during removal.

The built-up roofing, and in particular the flashing, within the bell tower and chimney has failed, allowing significant amounts of moisture to penetrate the interior walls. This roofing should be repaired as soon as possible and the flashing replaced. The built-up roof was found to contain asbestos and therefore it must be handled properly during removal.

In the one location where an exposed section of the roof structure could be viewed, the decking and rafters revealed extensive water stains and mildew. Depending upon the extent of mildew and rot, portions of the decking, and perhaps even the rafters, will need to be replaced when the building is re-roofed. Furthermore, preliminary calculations suggest that the existing straight wood sheathing at both the high (nave) roof as well as the lower tower roofs does not have adequate code-required capacity to transfer the wind or seismic forces to the interior and exterior concrete walls. See structural treatment recommendations below for a more detailed discussion.

Gutters & Flashing

The half-round copper gutters are hung with steel hangars that have been painted to provide a galvanic-insulating barrier. These steel hangars appear to be the remnants of a previous drainage system. The downspouts and some of the flashing of the Presidio Chapel is visibly newer and appears to have been replaced within the past fifteen years.

Condition

Physically, the gutters and downspouts are in fair condition, although the initial signs and symptoms of deterioration exist. As mentioned above, flashing within the bell tower is in poor condition.

Issues & Recommendations

A patterning to the copper patina of the gutters suggests that the paint barrier between the steel hangar and the copper gutters has deteriorated and is leading to galvanic corrosion. Corrosion of the copper gutter seams is also evident, suggesting that the gutters have reached the end of their useful life. This problem is currently not affecting the functioning of the gutters, but it will accelerate the deterioration of the system unless the dissimilar metals are separated.

Roof flashing in the bell tower and chimney has failed, allowing significant amounts of moisture to enter the building. The flashing needs to be repaired/replaced as soon as possible to prevent water infiltration, stucco delamination, and efflorescence within the bell tower rooms.



Typical gutter and downspout assembly.



Downspout boot entering cracked drop inlet; note corrosion at downspout and plumbing union.



Example of inadequate intersection of gutter and downspout.

Minor deterioration of the roof flashing elsewhere on the building, and improperly laid joints, have resulted in staining of the stucco façade adjacent to deteriorated roof elements. Additionally, an insufficient number of gutters and downspouts, as well as a relative lack of drop inlets, are causing staining and fungal/bacterial growth on the exterior stucco walls, and water is pooling at splash block locations.

Porches and Stairs

There are four sets of exterior stairs at the Presidio Chapel. At the main entry on the north façade, there are eight steps with an intervening landing. The stairs are brick and the landing is brick and concrete paving laid in a decorative pattern. Two concrete cheek walls, stuccoed to match the chapel, flank this staircase. The center aisle of this entry is covered by a canvas awning, and its steel pole structure serves as a handrail.

A second staircase and an adjoining noncontributing ramp are located at the east elevation. In this case, six brick-paved stairs with flanking stucco retaining walls rise to the cloister entry. Steel pipe railing is installed on top of these retaining walls. The east entry is covered by a small wood overhang.

A short staircase is located at the building's southwest corner, leading to the vestry. Four red-tinted concrete stairs with carved traction strips rise to this door with a landing at the top.

And finally, the fourth stair drops below grade from the west elevation, providing access to the basement rooms. Features of this stairway include fourteen steps, including two landings, and a steel pipe railing. These cast concrete steps are painted red and also possess carved traction strips at the nosing on each tread.

Condition

In general, the four entry stairs are in fair condition, each with their own moderate deficiencies. The non-compliant handrails and ramp are of most immediate concern to adequately address issues of safety and accessibility.



Mortar gaps at base of the main entry stairs.



Example of biological growth and staining on stucco retaining walls flanking the main entry.

Issues & Recommendations

The exterior landings at the front entryway are not currently large enough to comply with code. Handrails at the front stair should be made permanent and comply with all code requirements. The flanking stuccoed retaining walls are showing significant fungal growth and staining. Mortar in the brick staircase is also beginning to erode due to weathering and biological growth, and significant gaps are now present at the base of the stairs where they meet the concrete walkway. If not corrected in short order, erosion will begin to undermine the structural integrity of these stairs.

The exterior landings at the east side entryways are not currently large enough to comply with code and the ramp that covers part of the original stair also does not meet current code requirements for accessibility. The flanking cheek walls are similarly stained and exhibit fungal growth; although no significant gaps are evident and the mortar between the bricks appears sound. Steel pipe railing installed on top of these walls is also not code compliant; nor is the ramp, which should be demolished and a new code-compliant entry ramp or sloped walkway constructed in this or an alternate location.

The west side staircase leading to the vestry has cracked away from the building and settled. A non-code compliant steel pipe railing protects this stair.

The concrete stairwell down to the lower level entry shows signs of spalling, organic staining, as well as minor cracks within the stucco. Moisture wicking is also evident near the base of the stairwell, where water pools and the site drain is insufficient to accommodate the amount of water that collects in this space.

Window Wells

There are six window wells at the Presidio Chapel: two long wells around the chancel and west wall with four single window wells to the east and southeast corner of the building. All are constructed of reinforced concrete covered with painted stucco.

Condition

The window well structure appears to be in good/fair condition, affected only by staining and organic growth; however, drainage from these window wells is poor, which in turn effects the historic wood windows.

Issues & Recommendations

As is true for much of the building, correcting drainage problems and water infiltration is the biggest issue. Drainage from the window wells is reportedly poor, and some site drains are entirely clogged. Pooling water will not only rot and deteriorate the wood window sills and bottom rails, it will also seep into the concrete masonry and potentially affect the structural integrity of the concrete wall. Evidence of water infiltration is already visible along the concrete apron in the basement.

Windows

Wooden windows are highly susceptible to moisture intrusion and rot. Of the sixteen non-decorative wood windows at the chapel, eleven are located in basement light wells with poor drainage and low light. Many of these existing wood windows currently exhibit severe deterioration. Drainage and water intrusion issues in the exterior basement light wells have caused the majority of sills and bottom rails to rot and some joint separation was observed. Some of these windows are non-operable and sealed shut with a synthetic caulking as a “temporary” repair. See window schedule table for detailed condition assessment and treatment recommendations.

Window Condition Assessment Definitions:

- 0: Fair to good condition. The window needs only minor or routine maintenance, is intact, structurally sound, and performing its intended purpose. Some portions or pieces of stained glass may be slightly out of plane, but have no broken glass. Will likely need treatment within 15-years.

- 1: Fair condition: There are early signs of wear, failure or deterioration, though the window is generally structurally sound and performing its intended purpose; or there is failure of a single subcomponent of the window affecting less than 30% of the window. Some portions of stained glass are out of plane, but no broken glass. Needs treatment in the next 10-15 years
- 2: Poor condition: Deterioration or damage affects more than 30% of the window and cannot be simply repaired or adjusted. Stained glass is buckling and out-of-plane panels. Needs treatment within 5-10 years.
- 3: At risk of imminent failure: Deterioration or damage affects more than 50% of the window, or at risk of imminent structural failure. Stained glass has major buckling, potential water pathways, and/or glass at significant risk of breaking. Any storm or strong wind could damage stained glass windows to the point of needing immediate repair. Needs treatment within 1-5 years.

Window Type 1 – Lower Level Windows

Poor drainage and lack of sunlight at the basement light wells is exposing the windows to excessive amounts of moisture.

- Frame – Frames are in fair condition.
- Sash – Sashes are in fair/poor condition with rotted bottom rails and joint separation.
- Glazing – Glazing is generally in good condition.
- Hardware – Much of the original hardware is extant and in fair/good condition, though many of the casement adjusters/stays, surface bolt locks, and sash locks need minor repair and reconditioning to restore full operability.

Window Type 2 – Main Level Windows (see below for stained glass windows)

Generally in good condition, these windows are only deteriorating in cases where water collects on the sill.

- Frame – Frames are in good/fair condition.
- Sash – Sashes are in good/fair condition with some rotted bottom rails and joint separation.
- Glazing – Glazing is generally in good condition.
- Hardware – Much of the original hardware is extant, though many of the casement adjusters/stays, surface bolt locks, and sash locks need minor repair and reconditioning to restore full operability.

Window Type 3 – Stained Glass Windows (Main and Upper Level)

Stained glass windows are buckling, showing early signs of deterioration, and are at risk of glazing failure.

- Frame – Frames are in fair condition showing early signs of water infiltration.
- Sash – Most sashes are in good condition, though some are showing signs of deterioration due to water infiltration.
- Glazing – Glazing is in fair/poor condition due to buckling, and are at risk of failure.
- Hardware – Where hardware exists, all is original, and in good/fair condition.

Window Type 4 – Upper Level Windows (excluding stained glass)

Due to their relative inaccessibility and significant water infiltration, upper level windows and surrounding wall surfaces are severely deteriorated.

- Frame – Frames are in fair/poor condition due to major water infiltration.
- Sash – Sashes are in fair/poor condition due to water infiltration at the sill.
- Glazing – Glazing is generally in good/fair condition.
- Hardware – All of the original hardware is extant, though in fair/poor condition.

The following table should be used in conjunction with the windows scheduled in the drawings:

Types:

SG/4 = Leaded stained
Glass/Number of panels

WF = Wood framed
G = Clear glazed

O = Obscure glazed
D = Double hung

C = Casement
A = Awning

F = Fixed

Window Number	Type	Condition	Comments
LOWER			
001	WF,G,C	1	Needs minor repair to sill and bottom rail, repair/refinish hardware, needs paint.
002	WF,G,C	1	Needs minor repair to sill and bottom rail. Telephone cable penetrates frame. Needs paint.
003	WF,G,C	1-2	Immediate repair of bottom rail and sill – water damage and joint separation. Unpatched/unrepaired cable penetration worsens the situation. Immediate repair of dry rot in mullions. Needs paint.
004	WF,G,C	2	Has wire mesh in upper two lights as vent for boiler room. Sill and bottom rail rotted. Hardware corroded. Window sealed shut with caulking. Pipe penetration in right jamb should be recaulked. Needs paint.
005	WF,G,C	1	Minor rot of sill and bottom rail. Minor joint separation at bottom rail. Repair/refinish historic hardware. Needs paint
006	WF,G,C	1	Minor rot of sill and bottom rail. Needs paint
007	WF,O,D	0	Needs paint.
008	WF,G/O,D	0-1	Clear glass above; obscure glass below. Historic ventilation fan installed in upper center lite. Minor sill rot. Window inoperable. Needs paint.
009	WF,G,C	2	Immediate repair of bottom rail, upper rail, and sill – water damage and joint separation. Reglazing needed. Evidence of insect infestation. Corroded hardware. Needs paint.
010	WF,G,C	0-1	Minor repair needed for glazing compound. Needs paint
011	WF,G,C	1	Repair failing wood frame. Minor sill rot. Needs paint.
012	WF,G,C	2	Immediate repair of bottom rail, upper rail, and sill – water damage and joint separation. Repair/refinish historic hardware. Needs paint

Window Number	Type	Condition	Comments
MAIN FLOOR			
101	SG/3,C	3, 2, 2	Three-light window: left casement, fixed center, right casement. Left casement has significant buckling, needs immediate repair. Center fixed panel has existing minor repairs in the medallion that should be redone in studio. Right casement has a few broken pieces of glass in the diamond-patterned area and should be either leaded or replaced. Repair/refinish hardware.
102	SG/1, F	2-3	Buckling in center portion of panel
103	WF,C,G	2	Immediate repair of bottom rail and sill – water damage and joint separation. Window sealed shut and inoperable. Corroded hardware. Needs paint.
104	WF,C,O	1	Immediate repair of bottom rail and sill – water damage and joint separation. Reglazing needed. Repair/refinish historic hardware. Needs paint
CLERESTORY			
201	SG/4, A	3	Four-panel window, significant buckling in second from top panel. Window has renderings of Presidents McKinley and Roosevelt with mention of Cuba and USA
202	SG/4, A	3	Buckling of panels 1 and 4. Window honors Loyalty and Fortitude
203	SG/4, A	3	Panel 1 has significant buckling. Window honors American War Mothers
None assigned	SG/4, F	unknown	Not visible from the exterior and thus not evaluated by the stained glass conservator. Given its relatively protected position within the bell tower, the stained glass is likely in good condition. However, window may be under stress, because there is a structural settlement crack at the window's lower right.
204	SG/1, F	3	Window has geometric pattern, glazed with clear glass located in bell tower. Major water damage: rot, joint separation, delamination, cracking and efflorescence at frame. Window lead is corroded. Major efflorescence and spalling of surrounding plaster. Window faces imminent failure.
205	SG/1, F	3	Window has geometric pattern, glazed with clear glass located in bell tower. Major water damage: rot, joint separation, delamination, cracking and efflorescence at frame. Window lead is corroded. Major efflorescence and spalling of surrounding plaster. Window faces imminent failure.

Window Number	Type	Condition	Comments
206	SG/4	3	Major window in chapel over entrance. Large panels are significantly buckling. Would benefit from additional horizontal reinforcement bars. Window honors the Union
207	SG/4	2-3	Panel 1 is in poor condition with buckling. Window honors Disabled American Veterans World War
208	SG/4	3	Panels 1 and 3 have significant buckling. Window honors Women's Relief Corps
209	SG/4	2-3	Panels 1, 2, and 3 have buckling to significant buckling. Window honors American Legion
210	SG/4	2-3	All four panels are buckling or failing. Window has renderings of Lincoln and Grant
211	WF,C,G	3	Window faces imminent failure: frame separation, rotted mullions, rotted sill, corroded hardware. Major water damage below sill: efflorescence, spalling, and corrosion of metal reinforcement of surrounding plaster.
212	SG/1,F	1-2	Because of single-panel construction, there may be additional stress on reinforcing bars and window assembly. If a portion fails, entire window is more vulnerable than smaller panels. Dedicated to Hope
213	SG/1,F	3	Significant buckling and other portions in failure. Because of single-panel construction, current condition puts panel at risk of rapid failure. Dedicated to Love
214	SG/1,F	3	Cracked window frame and water damage to surrounding stucco. Significant buckling and other portions in failure. Because of single-panel construction, current condition puts panel at risk of rapid failure. Dedicated to God.
215	WF,C,G	Interior inaccessible: 1-3	Concealed behind organ pipes. Detailed inspection of window and interior stucco surface not possible. Exterior wood frame is deteriorated. CATV penetration needs to be recaulked

Good Condition: Protect & Maintain

Windows in good condition should be protected and maintained through routine maintenance. Windows should be made weather tight by re-puttying, and replacing or installing weather-stripping, as needed.

Fair Condition: Repair & Stabilize

Windows in fair condition require minor repair and stabilization of deteriorated elements, such as in-kind Dutchman repairs, reglazing, structural reinforcement, weather protection, or the correction of unsafe conditions, as required. Retain and reuse existing historic hardware wherever possible.

Poor Condition: Replace In Kind

Windows in poor condition need to be evaluated on a case-by-case basis to determine the extent of repairs needed: dutchman versus replacement in-kind. All new work should match the old in form and detailing. Retain and reuse existing historic hardware wherever possible.

DOORS

Of the four exterior doors, only the main north entry into the chapel is showing any significant signs of wear or deterioration. As a result of water pooling on the terra cotta entablature above, staining and chalky streaks are evident on the door's exterior. Water is obviously pooling above the transom header, causing separation of the stile and rail at the upper-west corner. Normal use has also started to take its toll on the door bottom that is heavily worn and lost much of its stain. Most of the interior doors appear to be original, or at least contain original hardware. Original hardware is a mix of Corbin knobs, door pulls, strike plates, thumb latches, and key escutcheons with Yale locks and door closers. There is a mix of ornate cruciform panel historic oak doors and ten-panel historic oak doors leading into public spaces, as well as historic and non-historic flush wood doors that lead to secondary spaces. Some of the existing historic doors are too narrow to meet code requirements, but may remain under the Historic Building Code; nevertheless, hardware on all doors in the path of travel for egress will need to be replaced with lever hardware. See door schedule for detailed condition assessment and treatment recommendations.

Door Condition Assessment Definitions:

- 0: Fair to good condition. The door needs only minor or routine maintenance, is intact, structurally sound, and performing its intended purpose.
- 1: Fair condition: There are early signs of wear, failure or deterioration, though the door is generally structurally sound and performing its intended purpose; or there is deterioration/failure affecting less than 30% of the door.
- 2: Poor condition: Deterioration or damage affects more than 30% of the door and cannot be simply repaired or adjusted.
- 3: At risk of imminent failure: Deterioration or damage affects more than 50% of the door, or at risk of imminent structural failure. Needs immediate treatment.

Door Type 1- Exterior Wood Doors

- Frame – Frames are in good/fair condition, needing only to be re-stained and selected minor repairs
- Door – Doors are generally in good condition, although the main front entry is in fair condition due to water staining and delamination
- Glazing – The glazing on the eastern storefront system is in good condition, as is the single lite at the basement entry
- Hardware – Historic hardware all appears to be in good condition, with the exception of the basement entry hinges that have some corrosion

Door Type 2 – Interior Historic Wood Doors

- Frame – Generally all of the door frames are in good condition, needing only minor touch-up.
- Door – Historic doors all appear to be in good/fair condition with minor wear and tear due to their age and use
- Glazing – Only the Boiler Room door is glazed, and the wire glass is in good condition.
- Hardware – All Yale and Corbin historic hardware is in good/fair condition, though a number of the original doorknobs have been replaced and some of the thumb latches will need to be reconditioned. New deadbolts were also added to several historic doors, given that the historic “skeleton keys” are now obsolete.

Door Type 3 – Interior Non-Historic Wood Doors

- Frame – Door frames are generally in good condition, but the lower level restroom frame is deteriorated and portions of it will need to be replaced.
- Door – Doors are in good/fair condition with minor wear and tear due to use.
- Glazing – n/a
- Hardware – All non-historic hardware is in good condition.

The following table should be used in conjunction with the windows scheduled in the drawings:

Types:

C = Cruciform-paneled
wood door
P = Paneled wood door

F = Flush wood door
O = Folding wood door
W = Wardrobe
A = Aluminum frame

G = Glazed
U = Unglazed

S = Single leaf
D = Double leaf

H = Historic door
N = Non-historic door

Door Number	Type	Condition	Comments
LOWER			
001	F, G, S, H	1	Basement entry door with single portal lite. Minor wear and tear, early signs of exterior water damage, rusting historic hardware. Brass plaque above window reads "Chaplain's Office."
002	F, U, S, N	0-1, 3	Door in good condition, minor wear and tear, wood split at upper corner. Lower door frame rotted; at risk of imminent failure.
003	F, U, S, N	0	Door is non-historic, but has historic glass doorknob, likely salvaged from another location. Glass doorknob exists nowhere else in the chapel.
004	F, U, S, N	0	Good condition.
005	F, U (vent), S, H	0-1	Organ blower room door with return air grill at bottom. Good condition, showing only minor wear and tear. Has historic hardware, modern deadbolt.
006	F, U, S, H	0-1	Good condition, showing only minor wear and tear. Has historic hardware, but modern doorknob and deadbolt.
007	F, U, S, N	0	Good condition.
008	O, U, multi- leaf, H	0-1	Only remaining historic folding door. Unused and concealed behind furniture. Missing some historic hardware.
009	F, U, S, N	0	Good condition.

Door Number	Type	Condition	Comments
010		0-1	Door in good condition, minor wear and tear. Has historic hardware, modern deadbolt.
011	F, U, S, H	0-1	Door in good condition, minor wear and tear. Has historic hardware.
012	W, U, D, H	0-1	Boiler hall wardrobe. Door in good condition, minor wear and tear. Needs paint. Has historic hardware.
013	P, G, S, H	1	Boiler room door. Large recessed wood panel below, wire glass lite above. Minor joint separation at top rail, minor damage to interior, needs paint. Has historic hardware, modern door knob.
014	F, U, D, H	1	Minor damage to left-hand leaf that comes in contact with the ashpit door – staining, water damage. Has historic hardware, modern deadbolt.
015	F, U, S, N	0	Good condition.
MAIN FLOOR			
101	A, G, D, N	0	Non-historic storefront door in mural room. Good condition.
102	C, U, S, H	0	Cruciform-paneled historic oak door. Has historic hardware.
103	C, U, S, H	0	Cruciform-paneled historic oak door. Has historic hardware.
104	C, U, D, H	1-2	Main chapel exterior door. Water damage on exterior, minor water damage on interior. Transom rotted and heavily streaked/stained with white terra cotta residue. Joint separation and delamination of transom. Needs refinishing, needs weatherstripping and door bottom/kick plate. Has historic hardware. Webcasting and computer equipment installed above interior door frame.
105	F, U, S, H	1	Major wear and tear to door bottom, minor joint separation, needs refinishing. Has historic hardware.
106	P/F, U, S, H	0-1	Vestry exterior door: flush on the interior, ten-panels on the exterior. Minor wear and tear on the interior. Needs refinishing. Has historic hardware.

Door Number	Type	Condition	Comments
107	F, U, S, H	0	Historic flush door to Chancel. Has historic hardware.
108	F, U, S, H	0	Bride's room closet door. Has historic hardware.
109	F, U, S, H	0	Historic restroom door. Has historic hardware, but with a nickel-plated arts-and-crafts style doorknob and plate on the interior; likely salvaged from another location.
110	P, U, S, H	0	Historic six-panel door into the bride's room. Has historic hardware.
111	P, U, S, H	0	Mural room door: flush on the interior, ten-panel on the mural room side. Has historic hardware.
CLERESTORY			
201	P, U, S, H	0	Five-panel wood door in organ pipe chamber. Painted on one side, unfinished on the other. Good condition. Missing doorknob.

Good Condition: Protect & Maintain

Doors in good condition should be protected and maintained through routine maintenance. Doors finish should be maintained through routine painting/refinishing and should be made weather tight by replacing or installing weather-stripping, as needed.

Fair Condition: Repair & Stabilize

Doors in fair condition require minor repair and stabilization of deteriorated elements, such as minor in-kind Dutchman repairs, joint separation repairs, and refinishing, as required. Retain and reuse existing historic hardware wherever possible.

Poor Condition: Replace In Kind

Doors in poor condition need to be evaluated on a case-by-case basis to determine the extent of repairs needed: dutchman versus replacement in-kind. All new work should match the old in form and detailing. Retain and reuse existing historic hardware wherever possible.

INTERIOR

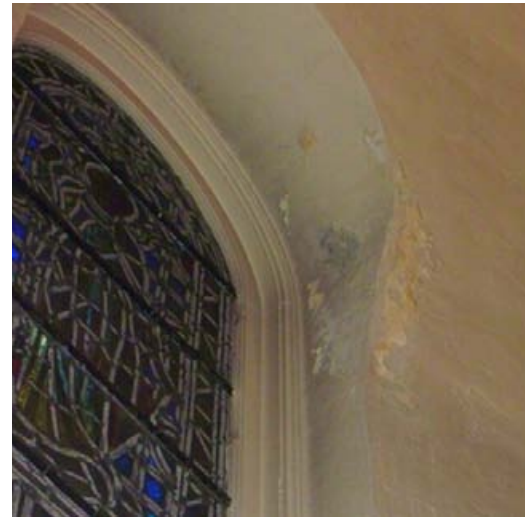
Since the building's construction in 1932, major alterations have been focused in the basement and service areas. These alterations are reflected in the amalgam of interior partition construction techniques and wall finishes of the lower level. By contrast, the main floor exhibits few alterations, particularly in the double-height sanctuary.

Although interior deterioration appears to be minor at this time, the primary concern is that spalling and corrosion may be indicative of a more serious water infiltration problem affecting the structural integrity of the building (see moisture infiltration treatment recommendations below). Visible damage from the building's 75 years of use is evident throughout the space. The physical stresses on the material over time have lead to deterioration of the tile floor, inoperability of some wood windows, ghosting of abandoned fluorescent lights, water damage to the plaster, and delamination of paint. Although each condition may not be severe unto itself (upper level water damage being an exception), it is important to view the cumulative affect of deterioration on the building.

PAINT AND PLASTER

Interior walls of the building envelope, and primary partition walls, are board-formed concrete with a painted gypsum plaster interior coating. The painted gypsum plaster is applied to a cementitious plaster coating. It is unclear how the plaster is adhered to the concrete substrate, although the system is likely wire mesh mechanically fastened to the concrete substrate.

The primary construction technique for interior partition walls are wood stud with gypsum-board sheathing with a gypsum plaster finish coat. This finish coat is painted a uniform white throughout the building. Secondary construction techniques of interior partition walls are terra cotta block and plywood infill. As previously mentioned, these partition walls exist in the basement and have been altered throughout the life of the building.



Paint delamination at chancel window.

When analyzing plaster, the primary signs of deterioration are cracking and delamination. Primary deterioration mechanisms of plaster include decaying lath, broken plaster keys, water penetration, and structural movement. Failure of this kind is exhibited in localized areas of the Presidio Chapel, although a detailed surface analysis of the plaster was not completed for this assessment.

Condition

Interior materials are generally in good condition, with water intrusion and paint delamination occurring in select locations.

The interior of the building is in remarkably good condition, considering its age. In general, water damage is infrequent and minor; though severe conditions exist in the upper level bell tower and organ pipe chambers. Some minor efflorescence and paint delamination exists and should be remediated.

Issues & Recommendations

Deterioration of the interior plaster coating is visible in the west basement "projection" that currently includes the kitchen and restroom, as well as upper rooms, including the bell tower and the organ pipe chambers above the vestry and restroom. In all cases, these rooms exhibit major water intrusion that has resulted in paint delamination, plaster spalling and efflorescence, and in some

cases, corrosion. There is also some staining and plaster cracks in the bell tower stairwell, bride's room, and bride's room hall.

Efflorescence is concentrated in areas of visible water intrusion. Efflorescence, the expansion of salts below the paint surface, may cause delamination of the finish coat. Although generally uncommon in the Presidio Chapel, efflorescence is visible adjacent to the Hope window in the chancel, along the concrete apron of the basement, at the union of the bell tower and sanctuary, within the bell tower, and in the organ pipe chambers above the vestry and the bride's room. To alleviate delamination caused by efflorescence, the transportation of water through the concrete must be mitigated.

In the case of the bell tower, the path of water can be traced from the chimney where flashing has presumably failed, all the way down to the lower level. Staining is evident at all levels of the tower, ultimately manifest at the ashpit door in the boiler room hallway. Water collecting at this lowest point has caused efflorescence and delamination. Repairs and/or replacement of the chimney flashing or chimney cap should alleviate the problem.

CONCRETE

Reinforced concrete masonry is the primary structural material at the Presidio Chapel. As such, steel reinforcing bars known as "rebar" are imbedded into the concrete to increase the tensile strength of the material. Lateral (wind or seismic) loads are resisted by the existing concrete walls acting as shear walls in combination with the wood roof sheathing and the concrete ground floor slabs acting as



Example of corrosion and spalling in organ pipe chamber.



Efflorescence and staining at ashpit door.



Water staining along chimney mass in bell tower.



Efflorescence and spalling in bell tower.

diaphragms. The walls are of varying thickness from 20 inches around the nave and bell tower, 16 inches at the curved walls around the sanctuary and below, and 12" at the other towers. The ground (main) floor level structure consists of 6" reinforced concrete floor slabs spanning to 16"x20" concrete beams at approximately 12'-6" o.c., which are supported by interior and exterior concrete walls. As with the walls, the primary floor structure is concrete. A concrete apron in the basement is tied to the foundation and provides a raised platform on which the apse rests. The floor of the main level is a 6½-inch reinforced concrete slab.

Condition

Based on our observations, the basic building structure appears to be in good condition, has been well maintained, and has performed well over its life, with little or no evidence of cracking, variations in floor levelness or settlements noted during our visit. No major deflection or deterioration of the concrete structural system was observed. With the exception of those locations noted above under "paint and plaster," the concrete walls are in good condition.

Issues & Recommendations

Corrosion of rebar causes cracking and spalling, a result of water transportation through the concrete. There is only one case of corrosion at the Presidio Chapel, and it appears to be limited to the upper level organ pipe chambers above the vestry. Efflorescence on the interior concrete surface suggests that water is being transported through the material and may be corroding the embedded steel. Although generally uncommon in the Presidio Chapel, this water movement is evident in minor occurrences of efflorescence and paint delamination adjacent to the Hope window in the chancel, along the concrete apron of the basement, at the union of the bell tower and sanctuary, within the bell tower, and in the organ pipe chambers above the vestry and the bride's room. To alleviate delamination caused by efflorescence, the transportation of water through the concrete must be stopped. A qualified structural engineer should assess the condition of the concrete.

CONCRETE FLOORS

The sanctuary, chancel, and recessed organ space feature concrete floor tiles stained in earth tones to give the appearance of rustic clay tile. According to historic drawings, the cloister also has concrete tile flooring or possibly a scored concrete floor. Remaining spaces have red-tinted concrete slab floors that are generally concealed by carpeting, but portions of this original flooring are visible in various closets and the organ blower room.

Condition

The concrete floor tiles in the sanctuary, chancel, and organ space are in fair/poor condition. The condition of the cloister floor is unknown due to the installed carpeting. Where visible, the original red-tinted concrete floors appear to be in good/fair condition albeit worn in places due to age and traffic.

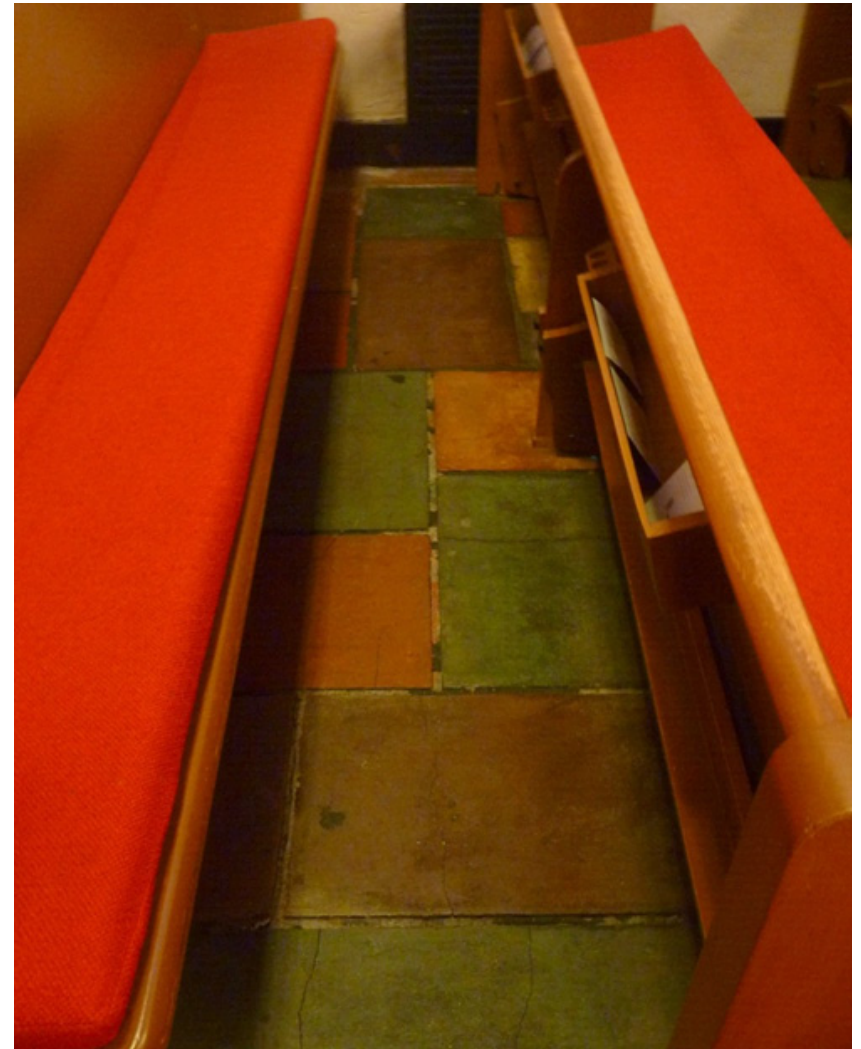
Issues & Recommendations

The stained cement floor tiles in the sanctuary, chancel, and organ space exhibit cracking, loss of setting grout, deterioration of the finish surface, and general spalling and loss of material. Tiles should be repointed, waxed, and possibly rebedded. Additional analysis is required to determine tile make, construction technique, and sealant requirements. All tiles should be salvaged and reused when possible. If new tile is necessary, tiles should match existing construction technique, material properties, polychromatic color scheme, and grout joint size. Focused attention should be paid to the tile in the next phase of the project in order to determine its materials composition, installation methods, etc., in order to specify the most appropriate repair treatment.

It may be desirable to re-expose the cloister floor in order to assess its condition and evaluate the feasibility of refinishing this concrete floor surface. For the remaining spaces, exposing the original red-tinted concrete floor is only recommended if the red tint is an integral color that will wear well under heavy foot traffic, and also of course, if carpeting is not needed for acoustical reasons.



Example of tinted concrete floor in closet.



Example of concrete tiles stained in earth tones to give the appearance of clay tile.

SANCTUARY AND CHANCEL

The main room of the chapel, including the nave and chancel, is a high-vaulted space that features cement floor tiles stained in earth tones to give the appearance of clay tile, non-historic wood pews, bronze and marble plaques at the side and rear walls memorializing deceased members of the armed services, paneled oak wainscoting in the chancel, squared columns with cast stone decorative capitals at the chancel entries accompanied by non-historic wall sconces, a total of twelve arched stained glass windows at the clerestory level, two arched organ pipe screens in the clerestory, four original rustic chandeliers with incandescent lights, and an exposed king post truss system and roof decking. The raised chancel is adorned with a central altar and wooden baldachin behind, pipe organ console, and the “steady flame of loyalty.” Entry to the chapel is provided through the main set of cruciform paneled double oak doors at the north end of the chapel. Additional doors lead to the bell tower stairwell through a single-leaf cruciform paneled oak door to the east, as well as an unadorned flush door leading from the chancel to the hall, bathroom, and bride’s room (an additional historic flush door leads to the vestry).



Mold and delamination on wood wainscoting in the chancel.

Condition

The sanctuary and chancel are in good condition with minor deterioration evident in the clear-coat finish on the doors and pews, mildew on chancel wainscoting, paint delamination at one of the chancel windows, and an antiquated electrical system in the baldachin. As noted under “Concrete Floors,” the cement floor tiles exhibit cracking, loss of setting grout, deterioration of the finish surface, and general spalling and loss of material. There are also some missing historic features that need to be addressed, and issues surrounding egress, accessibility, and lighting.

The organ is in good condition considering its mixed history, age, and environment, although a good deal of mold, due to dampness, and dust were found throughout. (See below for organ treatment recommendations.)

Issues & Recommendations

- As with the clear-coat doors, the pews of the primary worship space and wood wainscoting exhibit deteriorated finish and will need to be refinished.
- Efflorescence and paint delamination is notable around the southeast chancel window (window 214). The stained glass window is at risk of rapid failure (see stained glass treatment recommendations below) and the frame needs to be caulked and sealed to prevent further water infiltration. Exterior drainage from the roof above should also be corrected to eliminate additional water pouring around this window’s perimeter and sill.
- The wood wainscoting in the east half of the chancel has mildew and the clear-coat finish is delaminating as a result. Leaks around the stained glass window above are the likely source of moisture. Mildew may be gently cleaned from wood using a weak solution of Clorox and water or commercially available disinfectant without ammonia, and the wainscoting then refinished.
- There is a need for increased and energy efficient illumination in the sanctuary. See the treatment section below for specific lighting recommendations.
- Exit signs are required to be illuminated. The exit signs in the chancel do not meet this code requirement and must be replaced with approved illuminated exit signs, particularly if one or both are going to be designated as the alternate means of egress.



Main chapel entry transom with exit sign and webcasting equipment.



Example of unilluminated exit sign and cast stone capitals.

- Accessibility improvements are proposed for the building (discussed below under accessibility recommendations), but additional modifications will be required in order to provide wheelchair seating and assisted listening in the sanctuary.
- Electrical needs within this building demand that the electrical system be updated and rewired. In particular, the cloth-wrapped wire running to the baldachin needs to be replaced.
- With the advent of computer technology and web-casting, a couple of devices have been mounted above the main chapel entry. This equipment detracts from the historic character of the room, and it is thus recommended that the equipment and wires be properly obscured in a manner that still allows for their complete and flexible use, without adversely detracting from the chapel's historic character.
- According to historic documentation and photographs, as many as 27 flags from several units of the Armed Services hung in the Presidio Chapel until 1977. This custom of displaying such flags or banners in cathedrals and parish churches dates to medieval times. Reproduction flags continued to hang in the chapel until recently, and a plaque on the west wall of the chapel mentions this. If unit standards (flags) are no longer to be displayed at the chapel, then the noted plaque should be removed and perhaps replaced with an equally small plaque that briefly explains the history of the flags, noting that the originals are now part of the Presidio Army Museum collection.
- Approximately forty commemorative bronze plaques line the walls of the sanctuary. Proposed accessibility improvements will require that some of the plaques are relocated or reconfigured.

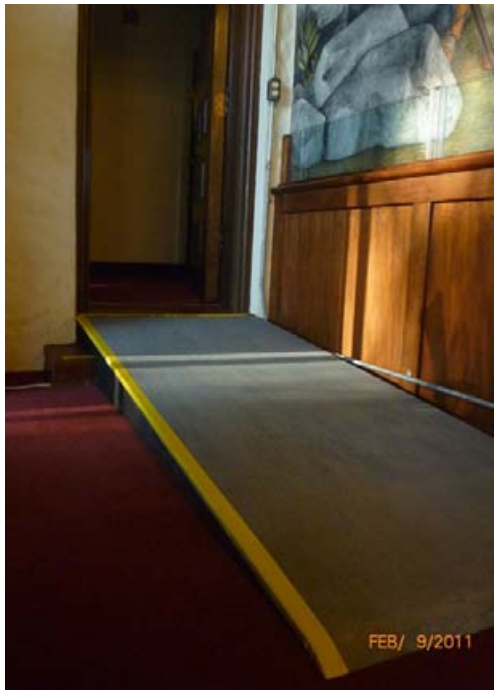


Example of bronze plaque in the sanctuary.

CLOISTER / MURAL ROOM

The cloister was originally an open cloister, enclosed with the existing storefront window and door system in 1961. This room features a scored concrete floor covered with carpet, paneled oak wainscoting, squared columns with cast stone decorative capitals, exposed roof decking, as well as non-historic chandeliers and a wall sconce that may possibly be original. A large mural depicting peacetime activities of the Army encompasses the entire west wall of the cloister. In addition to the storefront system, there are two historic oak doors leading from this room to the hall, restroom, and bride's room via

a wood ten-panel door; additionally, an elaborate cruciform paneled oak door leads north to the tower hall stairwell.



Temporary wood ramp in the mural room.

Condition

In general, finishes in the cloister are in good condition and do not exhibit any great degree of deterioration. However, notable alterations to this space have significantly changed its historic character.

Mural: The plaster is in excellent condition and is secure. The wall was sounded for voids and separations, and none were noted in areas the conservator could reach. Relatively recent damages

to the plaster include small scattered losses mostly due to abrasion, which expose the bright white of the plaster. The general appearance is that of a stable fresco in good condition. However, due to past restoration, it is not clear whether there has been any damage caused by leakage from the roof; there are no obvious signs of this and no recent signs of leakage are noted. (See below for mural condition and treatment recommendations.)

Issues & Recommendations

- As with the clear-coat doors, the wood wainscoting exhibits deteriorated finish and will need to be refinished.
- It is recommended that programmatic changes be made to mitigate the need for a ramp from the cloister into the bride's room hall. If accessible restrooms are constructed elsewhere in the building, as proposed, then this ramp may no longer be needed if alternate accommodations can also be made for use of the bride's room.
- Mural treatment recommendations are included in the Appendix, but in addition to mural restoration, a physical barrier, passive infrared barrier (or similar), or plexiglass protective cover is needed to prevent an outstretched hand from touching the fresco. A variety of methods should be researched and tested to determine the least intrusive method of protecting the mural.
- Remove the existing worn and sun-bleached carpeting. Investigate the condition of the scored concrete floor below, and evaluate the feasibility of restoring this floor. The historic character of this space, once an open cloister, would be enhanced should the concrete floor remain exposed.
- There is a need for historically compatible, increased light levels, energy efficient fixtures throughout the Presidio Chapel. See lighting assessment and treatment recommendations below.



Historic wall sconce in mural room.

- The non-historic storefront door and windows is an incompatible feature that should be replaced with a new glass enclosure with butt glazing, thereby restoring the historic feeling and association of an open cloister. Tinted UV glass or film shall also be installed in order to protect the mural from harmful UV radiation and provide a comfortable environment for human occupants. It is further recommended that UV decals be applied to the exterior of these windows to prevent bird collisions. UV decals of this type are virtually invisible to the human eye, yet render the glass visible to birds.
- Electrical needs within this building demand that the electrical system be updated and rewired. A new 3-phase 208/120V system is recommended (see Electrical below for detailed recommendations). Rewiring would have the added benefit of removing all surface-mounted conduit, as is found in this room, which detracts from the character and quality of this space.

BRIDE'S ROOM / CHAPLAIN'S OFFICE

The bride's room, historically the chaplain's office, is located at the building's southeast corner and includes a triptych stained glass window memorializing chaplains that served the Presidio of San Francisco. According to historic drawings, the bride's room has a concrete floor, now carpeted. Additional features include a built-in bookcase with glass doors, historic Hotpoint recessed wall heater, non-historic wood paneled walls, an historic wood panel door, and a non-historic chandelier. The historic Hotpoint wall heater was produced by Edison Electric Appliance Company, which was only in business under that name from 1912-1931.

Condition

Features and finishes of the bride's room are in good/fair condition; although the historic floor and wall surfaces are concealed by non-historic carpeting and wall paneling. Signature features of this room that should be retained include the stained glass window (see stained glass treatment recommendations), and the built-in bookcase, which should be refinished.



Ceiling crack in bride's room, caused because plaster has detached from the lath.

Issues & Recommendations

- A long crack running east-west across the ceiling of this room suggests that the historic plaster has detached from the lath, probably due to moisture infiltration from the walls and windows of the organ pipe chamber and ancillary room above. Once the source of the water is identified and corrected (see water infiltration treatment recommendations below), then the crack and adhesion can be repaired using Big Wally's Plaster Magic or similar product (see treatment recommendations below for repairs to interior plaster).
- It is recommended that the non-historic wood paneling be removed and the historic plaster walls be inspected for water damage; repaired as needed and restored.
- Electrical needs within this building demand that the electrical system be updated and rewired. Rewiring would have the added benefit of removing all surface-mounted conduit, such as appears in this room, which detracts from the character and quality of this space.



Historic Edison Electric Hotpoint wall heater.

- When a new HVAC system is installed, it is recommended that the historic Edison Electric Hotpoint wall heater be either reconditioned and restored to operability, or at the very least retained as a remnant of the building's historic fabric.
- It is recommended that programmatic changes be made to mitigate the need for a ramp from the cloister into the bride's room hall. If accessible restrooms are constructed elsewhere in the building, as proposed, then the ramp may no longer be needed if alternate accommodations can also be made for use of the bride's room.

MAIN LEVEL RESTROOM

This small restroom facility includes a wall-hung sink that is quite possibly original; white porcelain tile wainscoting, which is also likely original; along with a modern toilet, vanity mirror, and sheet vinyl flooring. A double-hung wood window with obscure glass is located on the south wall and a wood flush door with some original hardware (interior doorknob and thumb latch not original) provides access to the north. An iron painted access ladder is attached to the east wall, leading to a trapdoor in the ceiling, which accesses the organ pipe chamber. There is a single incandescent ceiling-mounted fixture in this room.

Condition

The restroom is in fair condition, exhibiting worn finishes and features that should either be refinished, repaired, or replaced in-kind.

Issues & Recommendations

- Some of the historic porcelain tiles have been patched as bathroom fixtures were moved/removed. It is recommended that all patched and cracked tiles be replaced to match historic tiles.
- Though not a requirement for rehabilitation, it is recommended that the existing non-historic toilet be replaced with one that is more water-conserving and historically compatible.
- Wear and tear on the non-historic sheet vinyl flooring has had a significant impact on the appearance of this



Note condition of worn vinyl flooring in upper level restroom.



Patched and broken porcelain tile wainscoting in upper level restroom.



Ferrous stains in historic porcelain sink.

space. Additional investigation should occur to determine the presence and condition of historic floor tile. Restore if possible, or install new concrete or ceramic tile flooring that is compatible but differentiated from the original and presents a more long-lasting wear surface. (It is presumed that original floor tile is under the vinyl but that its poor condition necessitated its covering.)

- The existing historic sink has heavy ferrous stains. The sink may be cleaned and the porcelain refinished, or an in-kind period fixture may be selected to replace the existing sink.
- This restroom is not accessible (turning radius not provided), but may be allowable as an exception for existing historic buildings (Section 1115E.1 of the California Historic Building Code) if accessible restrooms are constructed elsewhere in the building and deemed to be the main facility for all visitors. Utilizing the janitor's closet space to improve access is acceptable.

CHAPLAIN'S OFFICE HALL, WARDROBE, AND CLOSET

This short hall linking the cloister with the bride's room, restroom, and chancel remains much as it was originally, with the exception of carpeting on the floor, obscuring the original red-tinted concrete floor. Portions of the original concrete floor are visible within the janitorial closet and appear to be in good/fair condition albeit worn in places due to age and traffic. If the red tint is not an integral color, then it may be particularly undesirable to re-expose the historic flooring in areas where heavy traffic will wear away the tinted surface. Also, of course, carpeting adds a sound-deadening quality to this and other similarly carpeted spaces.

The original built-in wardrobe remains as originally constructed, and all of the doors in this hallway also appear to be original, as they all include original hardware. A single incandescent ceiling-mounted fixture lights this space, but ghosting of the former fluorescent fixture remains.

Condition

This secondary space retains much of its original historic character, and with the exception of a ceiling crack that may be illustrative of a larger problem, the features and finishes of this room appear to be in good condition, although the wardrobe closet should be repainted.

Issues & Recommendations

- There is a need for increased and energy efficient illumination throughout the Presidio Chapel. See lighting recommendations below for details.
- As with other doors, the wardrobe doors should be refinished and repainted.
- Adjacent to the light fixture, running east-west from the interior corner across the hall is a noticeable crack, which may suggest that the historic plaster has detached from the lath, probably due to moisture infiltration from the walls and windows of the organ pipe chamber and ancillary room above. Once the source of the water is identified and corrected (see water infiltration treatment recommendations below), then the crack and adhesion can be repaired using Big Wally's Plaster Magic or similar product (see below for plaster recommendations).

WEST HALL AND VESTRY (Also Known as the Groom's Room)

Historically, the organ sat in the recessed area on the west side of the chancel that now provides storage. Relocation of the organ into the chancel may likely have occurred in the 1960s or 70s during minor alterations of the chancel and choir area. Like the sanctuary and chancel, this west hall features cement floor tiles stained in earth tones to give the appearance of rustic clay tile, much of which is now obscured by carpeting. According to historic drawings, the vestry also has a concrete floor, now carpeted, which is probably similar in appearance to those in the chaplain's office hall and closet. The west hall features squared columns with cast stone decorative capitals at the chancel entry. Non-historic cabinets in the organ hall and vestry replaced the originals in 1973. With the loss of original cabinetwork, this leaves little to note as character defining features of the vestry, other than the original doors and windows, both of which include original hardware. The only other remaining historic element of the vestry is a wall-mounted iron ladder leading to a trapdoor in the ceiling.

Condition

Features and finishes of the west hall and vestry are generally in good condition.

Issues & Recommendations

- The vestry sink is not presently tied to the building's sewer system, but instead drains into a nearby downspout and thence to the parking lot. This arrangement is in clear violation of building code and plumbing code. If a sink is to remain in this location, then it must be tied to the domestic sewer system.
- As noted under "Concrete Floors" above, the cement floor tiles exhibit cracking, loss of setting grout, deterioration of the finish surface, and general spalling and loss of material. See concrete floor treatment recommendations below for detailed information.
- The existing location of the organ console provides good sight lines for accompanying weddings and is in a good vantage point for listening to the proper balance of the two organ chambers. Moving the console back to its original location in the west hall recess would be a negative from the organist's point of view.



Vestry sink; note sign that says "Sink drains into parking lot! Water only, please"



Vestry sink draining into copper downspout.

- The Interfaith Center has expressed a need for increased and energy efficient illumination throughout the Presidio Chapel (lighting treatment recommendations included below).

BELL TOWER

From basement to bell, the bell tower rises four stories, each of which will be discussed in turn. The two lower levels are finished spaces connected by an open stairwell. The upper two stories are accessible via wall-mounted iron ladders and trapdoors. Rising above the bell tower is a chimney, whose roof surface was inaccessible for inspection. The bell tower exhibits the greatest evidence of water infiltration, suggesting an immediate need for intervention before conditions worsen.

From the lower level, an open stairwell rises four flights with three intermediary landings. A 3" steel post supports the center of the stairwell. The stairs themselves are red-tinted concrete with carved traction strips at the nose. Yellow safety tape has also been added to each step. Handrails on interior stairs lack a necessary extension on both ends and are not of the proper height. The stair width is also less than required by code.

The lowest level floor is red-tinted concrete, a portion of which is still visible under the stairs, but the main floor spaces are carpeted. Beneath the stairs is a small closet accessible via a flush wood door with original hardware. Another flush wood door leads into the adjacent office to the south, which also features original hardware. Historically, a set of double doors (no longer extant) led from the bell tower into the boiler room hallway. This room is lighted by a modern fluorescent fixture mounted on the ceiling.

The main level of the bell tower has a concrete floor now covered with carpet; nevertheless the butt edge of this concrete slab is visible from the open stairwell. The main level bell tower is dominated by a stained glass window on the north wall commemorating the "Gold Star Mothers," and a large painting of Christ's Resurrection on the west wall. From this room, historic cruciform paneled oak



Section through bell tower.

doors lead into the cloister and chapel. A wall-mounted iron ladder rises to a trapdoor in the ceiling. Adjacent to the trapdoor hangs a non-historic incandescent chandelier, above which ghosting of a former fluorescent fixture is clearly evident.

The upper bell tower room accessible via the trap door is an unadorned space, featuring two geometric-patterned clear glass leaded windows to the north and east, as well as a single stained glass window overlooking the chapel to the west. The room has what appears to be tongue-and-groove painted wood floor with plaster walls and ceiling. The chimney mass rises at the southwest corner of this room.

The actual bell room is yet one story higher, accessible via an additional wall-mounted iron ladder; however, the trap door was missing at the time of inspection, leaving the bell tower

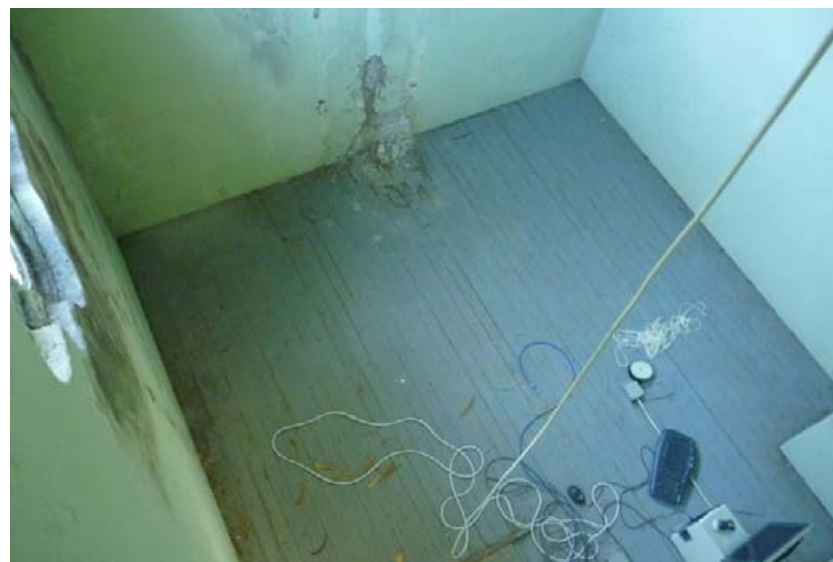
room open to the elements. The bell room is an unadorned space pierced by four unglazed openings and capped by a hipped roof with exposed decking. In addition to the historic bell, a series of horn loudspeakers take up the majority of this space, hanging from a constructed frame.



Lower bell tower stairwell; note height of handrail, 3" support post, and exit sign.



Horn-style loudspeakers in bell room; note condition of roofing and deteriorated wall surface.



View looking down into upper bell tower room; note deteriorated conditions throughout.



Deteriorated condition of roof flashing in bell room at the top of the bell tower.

Condition

The two lowest finished spaces of the bell tower are in good/fair condition with minor wear and deterioration of features and finishes. Given the degree of material failure and water infiltration of the two uppermost levels, they are deemed to be in poor condition.

Issues & Recommendations

- Handrails on interior stairs should be replaced or altered to extend beyond the top and bottom risers to meet access requirements. The height of interior stair handrails should be altered to comply with code.
- The existing stair width is too narrow to meet code requirements, but may remain as an original building element under the Historic Building Code.
- For both aesthetic and safety reasons, it is recommended that the stairs either be resurfaced or upgraded.
- The roofing, flashing, and/or sealant at the chimney cap has failed and significant amounts of water are pooling inside the chimney as well as along the chimney walls, leaving water streaks in the upper bell tower room and bell tower stairwell. Water infiltration, efflorescence, and plaster delamination is concentrated at the bottom of the chimney surrounding the ashpit door in the boiler room hall, but the source of the water clearly originates at the top of the chimney.
- The seals around both exterior windows have failed and water appears to be pooling on the sills, causing efflorescence, plaster delamination, and organic growth around and below both exterior windows. Efflorescence on the interior plaster surface suggests that water is being transported through the material, causing delamination of the finish coat, and may be corroding the embedded steel. To alleviate delamination caused by efflorescence, the transportation of water around the windows and through the concrete must be mitigated. A qualified structural engineer should assess the condition of the concrete. Once the source of the water is identified and corrected (see water infiltration treatment below), then the crack and adhesion can be repaired using Big Wally's Plaster Magic or similar product (see below for interior plaster treatment recommendations).
- Furthermore, the missing trap door has left the upper bell tower room open to the elements. So as not to exacerbate water infiltration problems further, the trap door should be replaced and properly sealed.

- Similarly, the bell room roof flashing and perimeter sealant appears to have failed, allowing further water infiltration, which may be contributing to the plaster staining and delamination in the room below. The built-up roofing in the bell tower was found to contain asbestos. Proper mitigation measures must be undertaken during any repair or re-roofing campaign. Nevertheless, the flashing and built-up roofing should be replaced.
- A typical stair-step stress or settlement crack appears at the lower right corner of the stained glass window in the upper bell tower room. The crack should be monitored and if no further movement is detected, then it is probably an old settlement crack that may merely be repaired in accordance with the flat plaster repair methods mentioned below. If, however, the crack is stress related, then the integrity of the window and structural tie between the bell tower and main chapel needs to be investigated by a qualified structural engineer and stained glass conservator.
- The Interfaith Center has expressed a need for increased and energy efficient illumination throughout the Presidio Chapel. In particular, there is a need to install a light fixture in the upper bell tower room in order to illuminate the stained glass window overlooking the chapel. See below for lighting assessment and treatment recommendations.

ORGAN PIPE CHAMBERS (East and West)

Accessible via iron ladders and trapdoors above the main level restroom and vestry, the organ pipe chambers contain the organ reservoir, wind chest, weights, and a whole series of organ pipes behind the arched pipe screens overlooking the chancel. Each of the small rooms features a single casement window looking south. The west organ pipe chamber window (window 211) was inoperable at the time of inspection due to rusting of the window latch, and the east organ pipe chamber window (window 215) is concealed behind the organ pipe construction and thus inaccessible for interior inspection. Both rooms have unfinished oak wood floors and rough painted plaster walls and ceilings. Interestingly, there is a smaller room under the shed roof portion of the east wing opens off the pipe chamber. A five-panel wood door separates these two rooms. This ancillary space also has a wood floor and unfinished board-form concrete walls and ceiling.



Organ pipe chamber window with spalled plaster and corrosion below.



View of organ pipe chamber.

Condition

These rooms are in poor condition, because they exhibit major water intrusion that has resulted in paint delamination, plaster spalling, efflorescence, and corrosion.

The organ system, including the pipes, is in good condition considering its mixed history, age, and environment; although a good deal of mold, due to dampness, and dust were found throughout. (See below for organ treatment recommendations.)

Issues & Recommendations

- The exterior window in the pipe room chamber above the vestry is experiencing significant water infiltration at the sill, causing efflorescence, plaster delamination, corrosion, and staining both around and below the casement window. Leaks into this space have been documented over time. Efflorescence on the interior plaster surface suggests that water is being

transported through the material, causing delamination of the finish coat and corroding the embedded steel. To alleviate delamination caused by efflorescence, the transportation of water through and around the windows and through the concrete must be mitigated. A qualified structural engineer should assess the viability of the concrete. Once the source of the water is identified and corrected (water infiltration treatment recommendations included below), then the crack and adhesion can be repaired using Big Wally's Plaster Magic or similar product (see below for plaster treatment).

- As noted above, Window 215 is concealed behind the organ pipes, but given the significant amount of water damage surrounding all other upper story windows, the integrity of this window and surrounding plaster is in question and needs to be inspected.
- Unlike the rest of the building, no smoke or heat detectors are installed in the ancillary room above the bride's room. Detectors need to be installed as the floor and organ equipment is constructed of combustible material.



Ancillary room off the organ pipe chamber; note unfinished concrete walls and ceiling, as well as the five-panel wood door.

LOWER LEVEL COMMON ROOM AND OFFICES

Historically, the lower level was primarily used as a Sunday school with three partitioned spaces to the east that now house an office, storage room, and childcare center alcove. Originally, these rooms were separated from the main room and from each other by wood folding doors. Through a series of remodeling efforts that occurred during the mid-20th century, all but one historic folding door was removed and the spaces infilled in order to provide office space for the staff. An additional office was constructed in 1961 adjacent to the boiler room at the northwest corner of the historic Sunday school room. In all cases, the new partitioned offices are accessed via non-historic wood doors. This lower level features plaster walls and ceiling, concrete floors now covered with carpet, exposed HVAC ducts, and fluorescent lights. Although some of these windows are now contained within the modern office spaces, originally four windows opened into the Sunday school room. The lower level entry door also opens into this space from the west. This historic flush wood door features original hardware and a single lite.

Condition

The lower level common room and adjoining offices are in good/fair condition. Cumulative impacts from the building's 75 years of use have resulted in some general wear and tear of this space, and several alterations to the basement level leaves few character defining features other than the historic windows and doors.

Issues & Recommendations

- The basement is not accessible, but an elevator and accessible toilet rooms are proposed for the new addition.
- The number of offices and computer work stations exceeds the limited number of electrical outlets. In order to meet the needs of a modern office space, most of the existing outlets are overloaded with outlet expanders and power strips. Electrical needs demand that the chapel's electrical system be updated and rewired. A new 3-phase 208/120V system is recommended (see Electrical below for detailed recommendations).
- The chapel has a gas-fired furnace hot air heating system, and the hot air is directed through exposed duct work. This existing heating system is not properly zoned and not sufficient. A number of space heaters are presently being used as supplemental heat for the lower level common room and offices. A new HVAC system using a combination of radiant floor heat and hydronic basement is recommended (see HVAC below for detailed recommendations).



Example of space heater in use in the basement level common room.

- Asbestos-containing duct tape, vinyl floor tile, tile mastic, leveling compound, and vibration damper cloth located in the basement rooms, though all were found to be of low friability rating and low potential for damage.

RAISED CLASSROOM/OFFICE/STAGE

Noted in historic drawings as a “classroom,” this raised space is presently used as an office. According to historic drawings, the raised classroom was once partitioned from the main space via a set of double folding doors, but these were removed by 1966, and the space infilled in order to create an office. The non-historic infill is pierced by a flush wood door and a picture window. Three concrete steps, which are presumably historic, rise to this non-historic door. Two additional doors enter this room: the eastern historic wood door leads to the organ pump room; and another door leads west to the restroom and kitchen. This western door lacks original hardware and appears to have been relocated during the kitchen renovation efforts in 1977.

Condition

The raised classroom is in good/fair condition. Cumulative impacts from the building's 75 years of use have resulted in some general wear and tear of this space, and several alterations to this room leaves few character defining features other than the historic windows and doors.

Issues & Recommendations

- Asbestos-containing duct tape, vinyl floor tile, tile mastic, leveling compound, and vibration damper cloth located in the basement rooms, though all were found to be of low friability rating and low potential for damage.
- The number of computer work stations and office equipment in this room is greater than the number of outlets. This should be corrected when a new electrical system is installed.
- The basement is not accessible, but an elevator and accessible toilet rooms are proposed for the new addition.

ORGAN PUMP ROOM

A small closet-like room adjacent to the raised classroom space, this room houses the chapel organ's pump and blower. The blower was manufactured in Hagerstown, MD by Möller Kinetic Blowers. M.P. Möller Pipe Organ Company was founded in 1875, produced its first electro-pneumatic action organ by 1919, and was the primary organ supplier for the U.S. Military prior to World War II. The historic door has been heavily reinforced on the interior with insulation and sound absorbing material encased with plywood, pierced only by a return air grille at the bottom. Additional features of this room include red-tinted concrete floor with plaster walls and ceiling.

Condition

The blower room is of adequate size and construction for its use, and is in fair condition due to the presence of a small ceiling crack and paint delamination at the southeast corner, which suggests moisture is entering the wall cavity from the restroom above.

Issues & Recommendations

- To facilitate proper operation of the organ blower unit, the return air vent at the bottom of the entry door should be uncovered to allow suitable ventilation.
- There is a small crack in the ceiling at the northeast corner of the room, and much of the plaster of the southeast wall has delaminated, suggesting moisture from the bathroom plumbing above is telegraphing into the wall cavity via the plumbing wall penetrations in this corner of the room.
- Asbestos-containing duct tape, vinyl floor tile, tile mastic, leveling compound, and vibration damper cloth are located in the basement rooms, though all were found to be of low friability rating and low potential for damage.

ACTIVITIES ROOM

Located at the southeast corner of the modified-T, this room presently houses Nature Nurture Daycare. The room features a concrete floor now covered with carpet, along with plaster walls and ceiling, exposed HVAC ducts, and fluorescent lights. Acoustic ceiling tiles have been added, and some modern hardware graces both historic windows and the door.

Condition

The activity room is in good/fair condition. Cumulative impacts from the building's 75 years of use have resulted in some general wear and tear of this space. The only character defining features of this room are the historic windows and door.

Issues & Recommendations

- The basement is not accessible, but an elevator and accessible toilet rooms are proposed for the new addition.
- There are many offices and computer work stations compared to the limited number of electrical outlets. In order to meet modern space needs, most of the existing outlets are overloaded with outlet expanders and power strips. This should be corrected when a new electrical system is installed.
- Asbestos-containing duct tape, vinyl floor tile, tile mastic, leveling compound, and vibration damper cloth are located in the basement rooms, though all were found to be of low friability rating and low potential for damage.

LOWER LEVEL KITCHEN AND RESTROOM

The kitchen and restroom are three steps above the main common room. Historically, this southwest corner was dedicated to both men's and women's restrooms, but in 1977, the women's room was converted into a galley kitchen with sink, range, and refrigerator. The former men's room was altered to accommodate a single stall unisex restroom and anteroom/corridor.



View of lower level restroom; note historic sink, cracked historic porcelain tile wainscoting, and double-hung window.



Historic Ilgette ventilation fan in kitchen window.



Rotted restroom door frame; also note asbestos floor tile.



Delaminated paint on kitchen ceiling.

All indications suggest that the porcelain tile wainscoting, toilet stall, and janitor sink are original, but the historic vinyl tile flooring has since been replaced; although it appears some of the original vinyl may still exist in the restroom corridor. Portions of the original tile wainscoting also remain in the kitchen area. A single window opens into each space: the kitchen and restroom, both of which were non-operable at the time of inspection, but the kitchen window has an electric Ilgette ventilation fan, which may possibly be original. No such accommodations have been made for the restroom, which presently lacks suitable ventilation; nevertheless, even the kitchen vent was capped on the exterior and rendered unusable at the time of inspection. The effects of moisture infiltration is clearly evident in the kitchen, where the entire ceiling is afflicted with peeling paint; and in the restroom, where the door frame has irreparably rotted.

Condition

Primarily as a result of poor ventilation, moisture infiltration, and building code issues, the lower level kitchen and restroom are in fair condition.

Issues & Recommendations

- Building code requires ventilation in kitchens and bathrooms. Operable windows typically suffice, but at the time of inspection, neither window was operable. Repairs to both windows are highly recommended, and the feasibility of installing vents should be investigated.
- Dutchman repairs are recommended for the rotted bathroom door frame. Before repairs are undertaken, the source of the water must be identified. If the door frame has rotted because of pooling water and/or moisture collecting in the bathroom as a result of poor ventilation, then this may be corrected by the installation of a bathroom vent and greater janitorial vigilance. However, it is not beyond the realm of possibility that water infiltration from the upper organ chamber room has telegraphed through the floor structure and into the wall cavity of the bathroom below. The right-hand-side of this non-historic door frame should be removed and moisture content of the wall cavity investigated before any further action is taken. Should significant amounts of moisture and/or rot be located in the wall cavity, then a qualified structural engineer should assess the viability of the concrete and ceiling framing.

- The non-historic bathroom door is showing signs of heavy wear and tear, and should be replaced.
- Some of the historic porcelain tiles have been patched as bathroom fixtures were moved/removed. It is recommended that all patched and cracked tiles be replaced in-kind.
- Paint delamination afflicts the entire west end of the kitchen ceiling. This was likely caused by applying multiple layers of incompatible paint that failed to bond properly, and moisture infiltration, either due to poor ventilation or leaks from the organ pipe chamber above, is separating the various incompatible paint layers. Once the source of the water is identified and corrected (see below for water infiltration treatment recommendations), then the ceiling may be scraped and repainted.
- Asbestos-containing duct tape, grout, vinyl floor tile, tile mastic, leveling compound, and vibration damper cloth are located in the basement rooms, though all were found to be of low friability rating and low potential for damage.

BOILER ROOM AND HALL

The boiler room resides at the northwest corner of the lower level adjacent to a short hallway. The hallway terminates to the north at a built-in wardrobe closet, and to the south with a set of historic double-doors leading into the lower level common room. The door into the boiler room is an historic wood door with a large recessed panel below and wire glass lite above. The boiler room itself is utilitarian in nature with numerous exposed pipes, conduit, and ducts. The room features a concrete floor, exposed clay masonry walls to the south and east with board-formed concrete walls to the north and west. A single casement window in poor condition opens into the boiler room along the west wall, the upper most lites of which have been replaced with wire screen to provide increased ventilation. Aside from the window, no evidence of water infiltration is immediately apparent within the boiler room.



Boiler room walls: board form concrete and clay tile.



Efflorescence and staining from ashpit door.

Condition

As a utilitarian space, the boiler room is in good condition, with only the window showing any signs of deterioration. Most of the boiler room hallway features and finishes are also in good condition, but the extensive delamination and efflorescence around the ashpit door is illustrative of a larger water infiltration problem originating at the top of the chimney and bell tower.

Issues & Recommendations

- The roofing, flashing, and/or sealant at the chimney cap has failed and significant amounts of water is pooling inside the chimney as well as along the chimney walls. Water infiltration, efflorescence, and plaster delamination is concentrated at the bottom of the chimney surrounding the ashpit door in the boiler room hall, but the source of the water clearly originates at the top of the chimney. Efflorescence on the interior plaster surface suggests that water is being transported through the material, causing delamination of the finish coat, and may be corroding the embedded steel. To alleviate delamination caused by efflorescence, the transportation of water through the concrete must be mitigated. A qualified structural engineer should assess the viability of the concrete. Once the chimney cap and flashing is repaired, then the plaster can be repaired using Big Wally's Plaster Magic or similar product (see treatment of common materials below for repairs to interior plaster).



Impact damage to interior corners of boiler room hall.

- As with other doors, the wardrobe doors should be refinished and repainted.
- A notable amount of damage has occurred to the two interior corners between the boiler room hall and the bell tower. It is recommended that the plaster be repaired and unobtrusive corner protectors be installed to protect the plaster from further impacts.
- Asbestos-containing duct tape and grout was located in the boiler room, though all were found to be of low friability rating and low potential for damage.

CONCLUSION

The vast majority of deterioration within the Presidio Chapel is moisture-related. Improper drainage around the building foundation; and failure of weatherproofing around windows, doors, and roof flashing is causing water penetration, which in some locations is severe. On the exterior, water damage is manifest as staining and fungal/bacterial growth, which may conveniently help identify locations where water is likely entering the wall system. Window wells and the west stairwell present further drainage challenges that must be corrected in order to preserve the integrity and operability of historic wood windows and doors. Although much of the deterioration is easily reparable, the cumulative effect of water infiltration from the roof all the way down to the foundation could be illustrative of a larger problem that will certainly become critical if not adequately addressed.

Water penetration on the exterior is manifest as deterioration of interior surfaces and finishes. Areas of primary concern include the Hope Window in the chancel and wood wainscoting below, basement ashpit door, and basement concrete apron, as well as serious water infiltration within the bell tower and organ pipe chambers. Minor surface deterioration, including worn interior wood surfaces, past installations of fluorescent lights, damaged mortar joints between chapel floor tiles, exposed electrical conduit, and general wear and tear after 75-years of use leaves an appearance of improper care.

Implementation of water infiltration mitigation measures, appropriate repairs to exterior stucco and interior plaster, as well as the establishment of a cyclic maintenance program will alleviate general deterioration at the chapel and improve the building's overall appearance. Additional enhancement of lighting, climate control, electrical systems, and accessibility will further improve the chapel's usability, comfort, and convenience for visitors and employees. Conservation of historic stained glass windows and the mural will crown the entire rehabilitation effort by improving the historic feeling and association of the Presidio Chapel.

D. SPECIFIC RECOMMENDATIONS FOR REHABILITATION

Focused element-specific analysis and recommendations were beyond the scope of this HSR, but the building was investigated by expert engineers and conservators as part of the 2007 Feasibility Study. Recommendations from that study regarding specific systems and features of the existing building are summarized in this section and denoted with an asterisk for each sub-section.

WATER INFILTRATION TREATMENT RECOMMENDATIONS

Water infiltration is the leading cause of damage to historic buildings, causing erosion, corrosion, rot, and ultimately failure of materials, finishes, and eventually structural failure. Of the five most common sources of moisture infiltration (above-grade exterior moisture, below grade exterior moisture, leaky pipes and mechanical equipment, household use and climate control, and maintenance/construction activity), the Presidio Chapel appears to be afflicted by three of the five, each of which will be discussed in turn.

Above grade exterior moisture generally enters a building through deteriorated exterior materials, such as faulty roofs or gutters/downspouts, cracks in walls, and open joints around windows and doors; all of which may be corrected through repair or in-kind replacement of the deteriorated building elements. In some cases, absorbent masonry structures may also become saturated during heavy rains or when gutters overflow, thereby permitting moisture to penetrate the interior. Vines or other vegetative grown on or immediately adjacent to a structure can also cause undue moisture when roots erode mortar joints, or simply hold moisture against the building and its foundation. At the Presidio Chapel, all such conditions exist: the roofing substrate has reached the end of its useful life, resulting in minor roofing failure as evidenced by mildew stains and mold seen on some rafters below; deteriorating gutters and roof flashing, particularly in the bell tower, but there is also notable ferrous staining and biological growth at gutter and downspout unions; open joints around upper story windows are allowing water infiltration; and given the naturally moist environment of the Presidio coupled with surrounding vegetation, heavy shading, and soil type, these conditions are causing sustained building dampness.

Proper handling of surface runoff is one of the most important measures of controlling below grade ground moisture. When the soil is saturated at the base of a building, either due to significant annual rainfall or infrequent heavy rains, the moisture will wet foundations and crawl spaces, find its way through cracks, and enter basements. This moisture will also generally rise up within a wall cavity, called rising damp, and eventually deteriorate the wall structure and interior finishes. Broken drop inlets, subsurface drain pipes, and sprinkler/irrigation lines can further exacerbate the problem. Any subsurface penetration of the foundation wall for sewer, water, or other piping/conduit, can also be a path of travel for increased moisture inside the building and wall cavity. Surface runoff can be controlled through positive re-grading of the site, properly capturing and disposing downspout water away from the building, installing a French drain around the perimeter, and reducing splash-back against the foundation and lower walls. It is recommended that a French drain be installed at the Presidio Chapel, excavation for which will present an ideal opportunity to inspect and repair any openings or deterioration of drop inlets, foundation penetrations, and below-grade cracks.

Given the age of the structure and existence of original plumbing system, it is likely that some pipes are leaking, although the only visible evidence of this is in the organ blower room. Older water and sewer pipes are subject to natural corrosion over time, and uninsulated cold water pipes in walls and ceilings often allow condensation to form. Slow leaks at plumbing joints, often hidden inside walls and ceilings, can ultimately rot interior framing and lead to the decay of structural members.

As has been established, the Presidio Chapel is afflicted by multiple sources of water penetration and moisture infiltration. It is usually advantageous to eliminate one potential source of moisture at a time, beginning with the most obvious/easiest solutions first, before moving onto more invasive methods. Furthermore, the introduction of simultaneous major mitigation methods can inadvertently setup new dynamics of moisture transfusion. Following the preservation standards outlined in "Preservation Brief 39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings," the following successive sequence of treatments to arrest water infiltration is recommended for the Presidio Chapel.

Level I: Recommended Immediate Treatment

- Inspect and clean gutters and downspouts. Seal gutter seams. Repair/patch deteriorated roofing and roof flashing. Install new chimney cap, if necessary. Flush downspout boots and drop inlets. Reposition splash blocks to limit splash-back.
- Trim back or remove vegetation that is touching the building.
- Repair damaged stucco surfaces and repoint terra cotta mortar joints
- Eliminate cracks or open joints in all doors and windows, particularly in the upper clerestory level. Caulk or repoint around all openings. Install weatherstripping as needed.
- Purchase a series of dehumidifiers for basement spaces, especially the bell tower, lower level bathroom, and organ blower room. Additional dehumidifiers in the vestry and bride's room may also be beneficial.

Level II: Intermediary Treatment

- Install attic vents in unexposed ceiling cavities of each of the shed roof bump-outs.
- Replace gutters and downspouts, as necessary; and add additional gutters and downspouts at the chancel, being sure to extend the downspout leader at the south side of the main roof. Downspouts need to terminate at appropriate drop inlets or splash blocks.
- After consulting with a professional, install moisture meters and/or hydrothermographs to determine moisture content of those walls and spaces experiencing the greatest amount of deterioration due to moisture infiltration.
- Add exhaust fans in both bathrooms, or ensure both restroom windows remain operable.

Level III: Treatment coinciding with implementation of building rehabilitation and new addition

- Replace roof (retaining as many historic clay tiles as possible), including any damaged/rotted substrate. This also includes all roof flashing.
- Conduct all repairs, dutchmans, replacement in-kind, and restoration plans outlined above for windows and doors. In particular, replace all rotted and water damaged wood window sills.
- Install French drain around building perimeter, coinciding with all necessary repairs to window wells and associated drains, including the stairwell drain at the basement entry. This will likely entail replacing and rerouting said drains into the French drain system.
- Repoint brick stairs at main chapel and cloister entries.
- The new HVAC system must be designed to reduce humidity and condensation, provide for adequate air flow, and protect as best as possible from the negative moisture transfusion. A new zoned system, with appropriate transition insulation, will further assist in the control of unwanted moisture.

STRUCTURAL RECOMMENDATIONS*

A walkthrough survey of the existing Presidio Chapel building was conducted on April 4, 2007 to assess the existing structure as well as the implications of constructing a proposed 2-story addition to the west side of the existing building. One architectural plan drawing and no structural drawings were available for review from the original construction. No selective demolition, exploratory foundation pits, or materials testing were undertaken as part of the review. Additional information regarding existing structural system assumptions was obtained from the prior December 1999 Feasibility Study.

Based on the proposed architectural plans and sections provided, a limited amount of preliminary structural calculations was completed to estimate the seismic lateral loads on both the existing building and the proposed addition, and to assist in evaluation of both the existing structure and the structure of the proposed addition.

A seismic joint is proposed between the existing building and the new addition in order to take advantage of the seismic assessment criteria of the 2001 State Historic Building for the existing chapel structure. The new addition assessment was based on the requirements of the 2003 International Building Code for new buildings.

A summary of observations and conclusions follows.

Existing Presidio Chapel Building Description

The existing building is a 2-story concrete bearing/shear wall building, including a full basement, of approximately 6800 square feet. The building was constructed in 1931 and completed in 1932.

The existing roof structure is typically of wood-frame construction, including the high roof over the nave/chapel and the tower roofs. The high roof over the sanctuary consists of heavy timber trusses at approximately 12'-6" o.c., spanning the east-west dimension of the chapel supporting a system of purlins and rafters overlain by straight sheathing. Lower roofs of the vestry, office and stairs/bell towers typically consist of 2x rafters supporting straight sheathing. The three towers also have several intermediate floor levels consisting of wood-frame joists and straight sheathing. All exterior walls and some interior walls are of reinforced concrete (based on the prior 1999 report), varying in thickness from 20 inches around the nave and bell tower, 16 inches at the curved walls around the sanctuary and below, and 12" at the other towers.

The ground (main) floor level structure consists of 6" reinforced concrete floor slabs spanning to 16"x20" concrete beams at approximately 12'-6" o.c., which are supported by interior and exterior concrete walls. No information was available regarding the existing foundations, but they are assumed to be conventional isolated and continuous concrete spread footings.

Lateral (wind or seismic) loads are resisted by the existing concrete walls acting as shear walls in combination with the wood roof sheathing and the concrete ground floor slabs acting as diaphragms.

Based on the walkthrough observations, the basic building structure appears to be in good condition, has been well-maintained, and has performed well over its life, with little or no evidence of cracking, variations in floor levelness or settlements noted during the visit.

Code Considerations

A preliminary seismic analysis of the Presidio Chapel building was completed based on the known structural information. This analysis was based on the lateral load regulations of Section 8-706 of Chapter 34, Division II – State Historic Building Code. The seismic lateral force level required by this section for evaluation of existing historic buildings is equivalent to 75% of the 1995 California Building Code (1994 Uniform Building Code) seismic force level.

Although a seismic strengthening of the existing chapel structure is not triggered based on the proposed remodeling, a preliminary analysis indicates that there are several structural deficiencies that it would be prudent to address at the time the proposed remodeling work is done.

The structural items reviewed and the deficiencies noted, as well as the proposed strengthening to address these deficiencies, are as follows:

A. Inadequate Roof Diaphragm Capacity. The existing straight wood sheathing at both the high (nave) roof as well as the lower tower roofs does not have adequate capacity to transfer the code-required wind or seismic forces to the interior and exterior concrete walls based on preliminary calculations. New plywood roof diaphragms are proposed as part of the new remodeling at the main roof as well as all tower roofs and intermediate floor levels and the cloister low roof. All new roof diaphragm nailing shall be assumed to be 10d at 2-1/2" o.c. at all diaphragm boundaries and continuous panel edges and 4" o.c. at all other panel edges.

B. Inadequate Roof Diaphragm Connections. The existing straight wood sheathing roof diaphragms (and intermediate floor diaphragms in the towers) are not adequately attached to the existing concrete walls to transfer the code required seismic forces to the walls in-plane or to brace the walls out-of-plane. New bracing members, bolted connections, blocking, and strapping are proposed at the perimeter of all of the wood roof and intermediate floor diaphragms for connecting the diaphragms to the existing walls.

C. Inadequate Roof Diaphragm Collector Capacity. Preliminary analysis indicates that, in addition to the above, in order to further reduce the roof diaphragm shears, new collectors are required to tie the high roof diaphragm to the tower roof diaphragms at the south wall of the bell tower and the north walls of the office and vestry towers. This is proposed to be accomplished by anchoring the existing trusses that are almost in line with these walls.

D. Existing Concrete Shear Walls. Preliminary analysis indicates that, even though the existing concrete walls have less than the minimum reinforcing steel required by code, given the number and thicknesses of the walls, the seismic shear stresses are very low. No strengthening of the existing concrete walls is proposed as part of the remodeling, except for localized strengthening to support gravity loads in areas where new wall openings are proposed. This will need to be confirmed based on more detailed engineering analysis in a later phase of the project.

For preliminary proposed strengthening details related to these deficiencies, see the 2007 Feasibility Study.

Conclusions – Existing Chapel Structure

In general, based on limited site observations, the building has performed well over its life, including in past earthquake events. However, based on observations and preliminary structural calculations and considering the age of the building and the existing details of construction, the existing structure does not comply in several aspects to the lateral (wind or seismic) force requirements of the 2001 California State Historic Building Code. The strengthening work that is recommended to improve the overall seismic safety and performance of the building is as outlined above. Extreme care should be taken to develop a seismic strengthening solution that has minimal impact on the historic architecture. All work shall be invisible to the extent possible.

MECHANICAL RECOMMENDATIONS*

Improvements to the mechanical systems for the Presidio Chapel should provide a comfortable, healthy environment with low energy cost and minimal architectural impact. The moderate local climate makes natural ventilation using operable windows an effective mechanism for cooling and ventilation. Open doors and mechanical ventilation provide additional outside air when necessary.

The building's heating needs should be met by replacing the existing forced air system with a natural gas-fired boiler serving perimeter baseboard radiators, tempering mechanical supply air, and heating a radiant floor in the lower level core areas.

Design Criteria

Location: San Francisco, CA
Latitude: 37.62°N
Elevation: 16ft

Outside Design Conditions

Summer: 78°F DB/62°F WB
Evaporative Design: 63°F WB/75°F DB
Winter: 39°F DB

Based on the ASHRAE Handbook, 2001, Fundamentals 1% cooling dry bulb design data and 99% heating design data.

Exhaust Air

Toilets
12 Air Changes per hour (ACH) exhaust.

Supply

Supply air will meet the minimum ventilation requirements outlined in Title 24 for each space as outlined below through the use of operable windows, or if necessary, mechanical ventilation.

Assembly Spaces:

0.50 cfm per square foot or 15 cfm per person, whichever is greater

Activities / Office / Workroom:

0.15 cfm per square foot or 15 cfm per person, whichever is greater

Reception / Bride / Chancel / Mural / Library:

0.50 cfm per square foot or 15 cfm per person, whichever is greater

All Other Areas:

0.15 cfm per square foot or as required by code

Codes and Standards

The HVAC systems should be designed in accordance with the following codes and standards:

- California Mechanical Code 2005 (UBC-derived)
- Title-24 Non-Residential Energy Code
- National Fire Protection Association (NFPA), latest edition.
- City of San Francisco Code
- SMACNA, Duct Construction Standards

Climate Analysis

This figure from the National Climatic Data Center, describes average daily maximum and minimum temperature in San Francisco County.

Due to very moderate peak temperatures, natural ventilation can provide comfortable cooling for the majority of all annual hours. Cool nights, even in the summer months, make this San Francisco building well-suited for night-flushing of daytime loads. The chapel structure provides effective thermal mass that can absorb heat from summer days after being cooled at night.

Key Concepts

Natural Ventilation: Moderate summer conditions encourage the application of natural ventilation strategy in the building. The proposed design would allow cross-ventilation through the entrances and operable windows along the perimeter. High-level openings could be explored with the architects to explore the possibility of stack-driven ventilation in low wind conditions.

Night-time Flushing: Consistently cool nights during summer months and the high thermal mass in the chapel make night flush effective. Heat absorbed by the building during the day is released at night via convection. As a result, the building can absorb a large amount of heat gain the following day before space temperature begins to rise.

Radiant Floor Heating: Radiant floor heating is an efficient energy delivery mechanism that encourages occupant comfort over a wider range of room temperature. Radiant systems decouple the conditioning and ventilation requirements of a space, affording greater control over thermal comfort and indoor air quality. This report recommends radiant heat for proposed new additions and for portions of the basement floor at the existing building.

Hydronic Baseboard Heating: Hydronic baseboard heating is an energy efficient strategy for space heating. These radiators warm the space by convection and have an additional radiative warming effect on people near each radiator. Hydronic baseboard heating can be easily separated into multiple heating zones, which helps save on heating costs.

Indoor Design Operating Modes & Comfort

Space	HVAC Operating Mode		Air Temperature		Humidity
LEVEL BASEMENT					
Main floor	Cooling: Mechanical Ventilation	Heating: Hydronic Radiant Floor	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Library	Cooling: Natural Ventilation	Heating: Hydronic Radiant Floor	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Children Activities	Cooling: Natural Ventilation, Ceiling fan	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Office/Workroom	Cooling: Natural Ventilation, Ceiling fan	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Catering Kitchen	Cooling: Natural Ventilation	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Electrical/ Mechanical/Other	-none-		uncontrolled		uncontrolled
Toilets	Mechanical Exhaust		uncontrolled		uncontrolled
Janitor	Mechanical Exhaust		uncontrolled		uncontrolled
LEVEL CHAPEL					
Chapel Seating	Cooling: Mechanical Ventilation	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Chancel	Cooling: Natural Ventilation	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Reception	Cooling: Natural Ventilation, Ceiling Fan	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Bride’s Room	Cooling: Natural Ventilation, Ceiling Fan	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Office	Cooling: Natural Ventilation, Ceiling Fan	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled
Mural Room	Cooling: Natural Ventilation	Heating: Hydronic Baseboard Radiator	74°F +/- 4°F	68°F +/- 4°F	uncontrolled

Indoor design temperature reflects ASHRAE Standard 55 standard comfort and adaptive comfort criteria stated in its 2004 revision. Adaptive comfort widens the band of temperature and humidity conditions that occupants find comfortable when they have the ability to control their thermal environment (using operable windows or louvers).

Radiant floors used for heating are designed with ASHRAE comfort recommendations in mind. Based upon extensive experimentation, ASHRAE recommends that the floor temperature stays between 66-85°F to maintain the percentage of people dissatisfied within the acceptable 10% limit (see figure below).

Heating Hot Water

Heating hot water for the hydronic heating system should be provided through a natural gas-fired boiler. The natural gas should be supplied through the central natural gas line connected to the building. The boiler should be located in the mechanical room in the basement floor. Heating hot water should be supplied to two discrete primary system circuits.

The first system loop should service the hydronic baseboard radiators throughout the building. The second circuit should supply the radiant floor at the lower level. The two circuits should have control and isolation valves for operation and maintenance.

Radiant Heating System

½" PEX tubing, ¾" manifold tube. 245 ft x 7 loops (12" spacing) = 1,715 ft of tubing, 79°F water temperature, 10°F loop temperature loss, 1.8 gpm, 0.9 ft head loss.

The radiant heating system should require a plenum space above the existing concrete floor of the lower level, in some locations only. The architectural implications of this would need to be resolved in the next design phase.

Ventilation System

Required outdoor ventilation and cooling should be provided by natural ventilation through operable windows except for the main chapel space and the basement assembly. In these spaces, the AHU in the basement mechanical room should supply required ventilation air. The AHU should contain a heating coil for tempering cold supply air but should contain no cooling coil. Duct work distribution and its affect on the architecture would need to be resolved as design development proceeds.

The heating system should operate without the use of fans by inducing buoyancy airflow, effectively distributing heat to locations of concentrated load. Baseboard radiators should be sized such that operable windows may be cracked to provide necessary outside air during heating months.

Equipment Schedule

AHU: Air Handling Unit, 4000 cfm @ 2.5" esp, 3 hp supply fan

Boiler: Condensing Type Boiler, Raypak Hi-Delta 302B, 252,000 Btu/h output, 120V, 1 phase

HWP-1: Heating Hot Water Pump, Baseboard Radiators, B&G 90 1AA, 30 gpm, 50 ft head, 1.5 hp

HWP-2: Heating Hot Water Pump, Radiant Floor, 5GPM @ 20 feet head

EF: Exhaust Fan, Greenheck SWB-207-5, 700 cfm @ 1" esp, 1/2 hp

Baseboard Radiators: Baseboard fin/tube radiators. Custom cabinet 1-1/4" tube, 4 41/4" fins two row high, Vulcan, Armstrong or equal.

Relief Vent: Gravity Vent serving basement & chapel assembly spaces w/ backdraft damper

ELECTRICAL RECOMMENDATIONS

Codes and Regulations

The electrical installation shall comply with the following codes and standards:

- International Building Code (IBC)
- California Code of Regulations (CCR) Title 24 Energy Regulations
- National Fire Protection Association (NFPA)
- Illuminating Engineering Society of North America (IESNA)
- Applicable local codes and ordinances

Electrical Service

There are currently two options being discussed with the Presidio Trust to obtain a new electrical service:

- Option 1 – Install a new 3 phase 208/120V transformer and provide 3-phase 4-wire secondary feed to the building.
- Option 2 – Extend the existing primary conduit from the existing transformer to the utility yard located south of the building and locate a new 3-phase 208/120V transformer allowing for shorter secondary conductor runs to the building.

There are currently two options for the location of the building service entry:

- Option 1 – Existing service entry location to remain at the south entrance. This will require a new underground duct bank for feeders to the electrical room.
- Option 2 – Relocate the service entry to the utility yard located north of the building. This will require a new underground duct bank for feeders to the electrical room.

Design Loads

The electric service should be designed on the basis of an estimated demand load density criteria, mechanical loads, project document requirements, projected building service loads, and electrical code criteria.

The following is a summary of the preliminary load estimation for the building. This load summary will be updated as additional information is received.

ITEMS	VA/SQ/FT	SQ.FT.	kVA
Lighting			
Offices/Library	1.2	2757	3.3
Circulation	0.8	1617	1.3
Chancel/Main Room	1.6	1864	3.0
Support	1	1211	1.2
Kitchen	1.2	143	0.2
Receptacle Power			
Offices	5	2757	13.8
Circulation	0.6	1617	1.0
Chancel/Main Room	2	1864	3.7
Support	2	1211	2.4
Kitchen	15	143	2.1
HVAC/Plumbing			20.0
Elevator			10.1
External Lighting			3.0
Subtotal			65.1
Allow 15% margin			9.8
TOTAL			74.9

Electrical Power Distribution

The electrical room located at the lower level should contain distribution boards, panel boards, and necessary lighting control equipment.

The building power distribution should be at 208Y/120V via cable feeders in conduit and will be distributed as follows:

Dedicated feeder/ distribution panel for the following:

- Lighting
- Office/Assembly receptacles
- HVAC loads
- Branch Circuit Wiring

Heating, ventilation and air conditioning systems, plumbing and fire protection systems:
208V, 3-phase, 3-wire, 60 hertz for motors $\frac{3}{4}$ horsepower and larger and 120V, 1-phase 2-wire, 60 hertz for motors less than $\frac{3}{4}$ horsepower

General purpose receptacles:
120V, 60 hertz

Lighting

Refer to Lighting Consultant's narrative. Conduit routing and its architectural impact would need to be coordinated as design development proceeds.

Separate neutrals for each circuit should be provided to all receptacle branch circuits. No facility should be provided for power systems other than 480/277V and 208/120V AC, 3-phase, 4-wire, 60 Hz.

Grounding

The building should be grounded through code-required ground rods and ground electrodes. All feeders and branch circuit wiring should be provided with insulated ground wire sized in accordance with code.

All grounded busses from distribution boards and panelboards should be connected at a central ground bus in the electrical room.

A ground bus should be provided in the telecom closet and should tie into the central grounding system with a #6 minimum size ground conductor.

PLUMBING RECOMMENDATIONS

Codes and Standards

The plumbing systems should be designed in accordance with:

- International Plumbing Code (IPC)
- National Fire Protection Association (NFPA)

General

The plumbing systems should include the following:

- Domestic Cold Water
- Domestic Hot Water
- Sanitary Waste and Vent
- Storm Drainage
- Sprinkler and Fire Suppression Systems

Domestic Cold Water

The building water main should be connected to the campus main. A new water meter should be located per Presidio of San Francisco requirements.

The required minimum 35 PSI water pressure at the most remote system point should be provided to satisfy the demand for domestic hot and cold water.

Waterless urinals should be used in the men's restroom and low-flow faucets should be provided for all lavatories. Dual flush wall-hung or floor-mounted toilets should be installed in all restrooms. Potable domestic cold water should be distributed to all plumbing fixtures.

Domestic Hot Water

Domestic hot water should be generated using a gas-fired, storage-type water heater for the kitchen. Electric tankless point-of-use water heaters should be used for toilet room lavatories. Hot water should be distributed to all lavatories, sinks, and janitor closets at a maximum of 120F. Hot water piping should be provided with a pipe temperature maintenance system.

Sanitary Waste and Vent

A complete gravity sanitary waste and vent system should be provided in accordance with the International Plumbing Code throughout the building and terminate with a connection to campus main. It is assumed that the invert elevation of the existing sanitary sewer main is deep enough to accept the flow from the project without the use of sewage ejectors.

Storm Drainage

A building storm drainage system should be provided that is separate from the sanitary system, complete with roof drains, overflow drains, and primary rainwater leaders. The storm water system would discharge by gravity. The storm drainage system should be designed to 2" per hour rainfall intensity. A sub-surface drainage system should be provided if required, depending on soil test boring report. The hillside drains across the parking lot during heavy rains. Manage stormwater runoff within the building site whenever possible. Best management practices should be used to reduce runoff from impervious surfaces.

Natural Gas

Natural gas should be provided to the building. The gas piping should be connected to the existing gas meter located at the front of the building and distribute to space heating boilers, domestic water heaters, and the kitchen. A proposed alternate gas meter location would be at the back of the project adjacent to the new Mechanical room.

Sprinkler and Fire Water System

The building should be provided with an automatic fire sprinkler system throughout.

The system criteria should be established by the bid documents. The final system should be designed by the contractor in accordance with NFPA 13 Installation of Sprinklers Systems, with all areas being protected.

Materials

Water Services: Water piping material should be type L copper for above grade and type K copper for underground

Sprinkler: Mild steel with welded, threaded, or grooved-type mechanical couplings

Sanitation: Cast iron no-hub pipe with no-hub couplings for sanitary systems

Natural gas: Schedule 40, black steel, threaded

Water Closets: Vitreous china, siphon jet, wall-hung or floor-mounted, low-flow, white, with Dual Flush valve, and open front toilet seat

Urinal: Waterless, wall hung

Lavatory: Vitreous china, white, counter-mounted with battery-powered sensor operated with mixing valve

ACCESSIBILITY RECOMMENDATIONS

Existing

Some doors are too narrow to meet code requirements. The exterior landings at the front and east side entryways do not have level landings large enough to comply with code. Handrails at the front stair are temporary. Handrails on interior stairs lack a necessary extension on both ends. Interior stair handrails also do not meet code requirements as to their height, and stair width is less than required by code.

The wheelchair ramp was added at the east side of the building in 1970. This ramp covers part of the original stair and does not meet current code requirements for accessibility. The basement is not accessible to wheelchairs. The two toilet rooms do not meet accessibility requirements. The building also

lacks wheelchair seating and assisted listening in the worship space, as well as special parking spaces.

Recommendations

The Interfaith Center at the Presidio wishes to upgrade the building to meet code requirements and to better serve the Center's functional needs. Code requirements are primarily for accessibility and seismic capacity. Some of these items could be acceptable through the Historic Building Code, which does not require existing buildings to be upgraded to meet all accessibility requirements. However, some noncompliant items must be addressed: the Presidio Trust policy explicitly requires full upgrade to ADA standards, and the Interfaith Center has confirmed that this fits its own goals.

Doors

Some doors too narrow to meet code requirements may remain under the Historic Building Code. In some circumstances, offset hinges may be used to slightly increase openings at narrow door locations. Hardware on all doors in the path of travel must be replaced with lever hardware.

Stairs

The exterior landings at the front and east side entryways must have level landings large enough to comply with code. Handrails at the front stair should be made permanent and comply with all code requirements. Handrails on interior stairs should be replaced or altered to extend beyond the top and bottom risers to meet access requirements. The height of interior stair handrails should be altered to comply with code, but narrow interior stair width can be justifiably kept as an original building element under the Historic Building Code.

Ramps

The wheelchair ramp on the east side of the building should be demolished and a new code-compliant entry ramp should be constructed with the new west addition.

General Access

The basement should be made accessible to wheelchairs with an elevator in the proposed addition. Proposed renovations to the lower level would add two toilet rooms that meet accessibility requirements. The building also lacks wheelchair seating and assisted listening in the worship space. Redrawing the parking lot would create special parking spaces for persons with disabilities.

ACOUSTICS RECOMMENDATIONS

Paoletti Associates, Inc., prepared a report in 1999, and little has changed since then. The text of their recommendations is included here for reference purposes only; there has been no coordination of those recommendations with the design scheme at this point in the project. It will be necessary to engage an acoustical consultant to expand and update their recommendations as the proposed project proceeds.

Acoustical Report

Prepared by Paoletti Associates, Inc.
1999 Feasibility Study

The chapel hosts worship and contemplation. These conditions require close control of intruding noise from outdoors, isolation from adjacent spaces and building systems (plumbing, heating, etc.), and control of sound quality within the chapel and lower-level spaces. Some acoustical compromises may be needed, however, to minimize changes to the architectural appearance of the chapel, including reliance upon natural ventilation and placement of speech amplification equipment as inconspicuously as possible.

Criteria

Chapel - desirable reverberation time (occupied) - 1.6 to 1.8 seconds
Minimum background noise level - RC 20 to 25 (For serious recording use - RC 15 to 20)

Library - reverberation time - under 1.0 second

Background noise level - RC 25 to 30

Gathering Space, Offices - reverberation time - under 0.8 second

Background noise level - RC 30 to 35

Gathering Space

For acoustical separation of the gathering space from the chapel above, we recommend installation of a suspended gypsum board ceiling over the entire area with as deep a cavity as possible and with a layer of 3-1/2" thick fiberglass building insulation above the ceiling (see Figure 1). This ceiling, in conjunction with the floor slab above, should provide adequate noise separation between the two spaces for all except very loud music or other amplified sounds. We do not see a need for resilient isolators in the suspension system unless heavy footfalls or other impact sounds are anticipated in the chapel. For control of activity noise in the gathering space, a sound-absorbing layer is needed on the underside of the gypsum board ceiling, such as a mineral fiber acoustic tile having a Noise Reduction Coefficient (NRC) of at least 0.65 to 0.70. Alternatively, if the floor is carpeted, a less absorptive ceiling finish could be considered (e.g. NRC of 0.50 to 0.55).

Library

For the library under the chancel, we recommend complete replacement of the wall separating it from the gathering space. This wall should extend full height from slab to slab, with no doors or other openings, and should comprise 3-1/2" steel studs with at least three layers of gypsum board (i.e. 2 + 1) and 3-1/2" fiberglass batts in the stud cavity. All edge joints should be caulked airtight with a silicone sealant. For control of sound intrusion from the chapel above, a suspended gypsum board ceiling, as noted for the meeting room, is required. Sound-absorbing treatment, which must control focusing of sound reflections as well as reverberation, would be most effective on the walls. It should consist of a 1"-thick sound-absorbing material such as Armstrong "Soundsoak 85" (i.e. NRC at least 0.80) between table and door heights on most of the curved wall surface. A carpeted floor is also recommended.

Offices, Corridors etc.

For most of the remaining occupied spaces, either a carpeted floor or a suspended acoustic ceiling should provide adequate control of occupancy sounds. Room-to-room sound isolation can be attained by use of a full-height partition as noted for the library, but a single layer of gypsum board each side should meet most office privacy needs.

Blower Room

For the blower room, the wall on the activity room side should be full-height steel studs with double 5/8" gypsum board each side, 3-1/2" fiberglass batts in the cavity, and all joints caulked airtight (see Figure 2). It is important to avoid any contact between the blower unit and the walls, and the entire blower-motor system should be resiliently supported on neoprene isolators such as Mason Industries type ND selected for a static deflection of 0.50 inches. On the door side, the infill wall should be the same stud construction. The door should have a sound isolation rating of at least STC 40 with heavy-duty, adjustable-edge gaskets and grout-filled steel frame. Suitable doors are supplied by Krieger, Overly and others (see Sweets). The only ventilation to this room should be via an acoustically-lined duct, preferably from outdoors. For the ceiling of the blower room, a 1-1/2" to 2" thick layer of fiberglass board with a density of at least 3 lbs. per cubic foot (i.e. not batt insulation) should be installed on the ceiling. This could be either a finished material such as Armstrong "Nubby" or an industrial fiberglass board such as supplied by Johns-Mansville, MBI, and others.

Interior Acoustical Treatment of Chapel

For the nave, we recommend keeping changes to a minimum because the present acoustical quality of this space is known and liked. We recommend that events other than worship and celebration be accommodated by the installation of a suitable speech amplification system but that these be considered secondary in acoustical importance. For the chancel, however, we recommend incorporation of some shaping modifications which could be either added onto the existing surfaces or recessed into these surfaces to enhance scattering and diffusion and to improve sound projection from chancel to nave. Figure 3 shows a possible modification of the chancel wall surfaces. It would be desirable acoustically to either revise the quarter-sphere form of the chancel or at least to modify its acoustical characteristics by adding sound-absorbing panels to provide alternating reflective and absorptive surfaces. This is indicated on our sketch and could be incorporated into the architectural design of the apse.

For the organ grilles, we recommend removing the existing screens. They could be replaced by a less obtrusive, highly transparent-to-sound fabric such as a loudspeaker grille cloth, or you may wish to work with the organ builder on developing facade pipes to make the organ a more positive element in the design.

E. RECOMMENDATIONS FOR TREATMENT OF COMMON MATERIALS

TREATMENT OF EXTERIOR STUCCO

Protection, Maintenance and Investigation

When cracks or openings in the stucco are first identified, repairs should be undertaken as early as possible to limit moisture intrusion into the wall assembly. Periodic inspection and consistent maintenance is essential to preserving and prolonging the useful life of masonry. By its very nature, stucco can be a somewhat fragile exterior coating, and for this reason consistent monitoring and maintenance is necessary to preserve the integrity of historic stucco. Maintaining the paint coating and repairing minor cracks will greatly reduce the occurrence of larger problems.

Repair

At the first sign of hairline and minor cracks, it is recommended that they be filled with paint or whitewash. Larger cracks and minor spalls can be filled with a slurry of thinned stucco that matches the composition of the existing stucco. If large sections of stucco are spalling or experiencing complete loss of stucco coating, then the cause of this deterioration must first be identified and corrected, then the stucco will have to be chemically analyzed to determine the formula of its components, and then patched.

Replacement

If large sections of stucco must be replaced, then the existing stucco should be sampled and chemically analyzed. The replacement stucco should match the proportions of the existing stucco to ensure compatibility between materials.

References

See “Preservation Brief 22: The Preservation and Repair of Historic Stucco” for historic stucco materials.

TREATMENT OF CONCRETE

Protection, Maintenance, and Investigation

Concrete surfaces should be monitored regularly for signs of water intrusion. If cracks or seepage are noted on the interior, it is imperative that the concrete be sealed on the exterior to limit moisture intrusion.

Repair

Because concrete is typically a structural material, its condition should be assessed by a structural engineer and any required repairs should be conducted by a qualified contractor who has experience working with historic buildings.

Replacement

Replacement concrete should be formulated to match the visual and physical characteristics of the original material. A chemical analysis of the existing concrete should be conducted to determine its component makeup, aggregate characteristics and physical properties, such as compressive and tensile strength and water vapor permeability. To ensure an effective repair, the new concrete patch must match the physical characteristics of the original material. In cases where the concrete finish is exposed, then the replacement material should also visually match the color, texture, and finish of the existing concrete.

References

See “Preservation Brief 15: Preservation of Historic Concrete, Problems and General Approaches” for historic concrete materials requirements.

TREATMENT OF ARCHITECTURAL TERRA COTTA

Protection, Maintenance and Investigation

All stone masonry, including mortars, should be inspected periodically. Sources of water intrusion should be identified and eliminated.

Remove and analyze samples of the existing mortars to be replaced or repaired. New mortars shall match the composition, appearance and joint profile of the existing mortars. Mortar analysis shall include the determination of material proportions, composition and strengths.

Cleaning

The general consensus among preservation professionals is that cleaning terra cotta can be risky and may sometimes produce devastating effects. The objective for cleaning historic materials is not to reach 100 percent clean, but closer to 75 or 80 percent. The following methods for cleaning should be avoided:

- Abrasive Cleaners and Sandblasting: Abrasive cleaning for terra cotta, especially with glazed surfaces should not be considered.
- Strong Acids (particularly fluoride based acids): Many commercially available chemical cleaners contain hydrofluoric acid which can etch the glaze of the terra cotta very seriously, removing most of the surface sheen. Use of acids may deteriorate mortar and “liberate” salts within the masonry system producing efflorescence.
- Alkaline Cleaners: May cause little or no damage to the glaze, but if absorbed into the masonry material can cause efflorescence.
- High Pressure Water: Water seepage into masonry wall may cause rusting of metal anchoring.
- Use of metal bristle brushes.

Cleaning campaigns should begin with testing the gentlest means possible and may require several mock-ups prior to selection of the proper technique. A combination of hand scrubbing with a stiff nylon brush and a minimum of water washing is the most conservative approach and least harmful to the material. Depending on the level of soiling a low-pressure wash (100 to 400 psi) may be sufficient to remove soiling. A natural organic detergent may prove useful as well.

Biological Material Removal and Cleaning

Completely remove plant and biological growth from surfaces of stone and mortar. Carefully remove plants, creepers, and vegetation by cutting at roots and allow them to desiccate prior to removal. Remove loose soil or debris from open masonry joints. Use manual removal methods (brushing, washing) to the greatest extent, reserving the use of biocides for areas where manual means prove insufficient. When cleaning, only use natural or nylon bristle brushes. Wire brushes will scratch the substrate and leave traces of metal that will corrode and discolor the masonry.

Crack Repairs

Cracking of the terra cotta is usually caused by underlying conditions, most commonly corrosion of steel anchoring and structural support systems. As discussed in the Existing Conditions section, further investigation of this condition is required before a specific repair can be designed. In general, the procedure for repair of terra cotta cracks includes:

- Inspection of terra cotta for underlying conditions;
- Repair of any underlying conditions and stabilization of the masonry unit;
- Repointing and finishing with a coating system. Cracks from 1/32 inch to 1/8 inch in width should be routed out and filled with a proprietary flexible epoxy crack sealant for masonry;
- Hairline cracks should be periodically monitored to ensure that they are not expanding and do not require immediate treatment.

Mortar Repair

Repointing of cracked and deteriorated mortar joints is the first step in mitigating water infiltration into the wall system. Because joints in terra cotta need to “breathe,” pointing joints with sealant is not recommended.

Recommendation for pointing of joints includes:

- Removal of deteriorated mortar without damaging surrounding terra cotta;
- Selection of pointing mortar that matches the existing mortar in color and texture. Mortar that is soft and lime-based (weaker than the surrounding terra cotta) will allow for expansion and contraction of the terra cotta;
- Installation of mortar to match surrounding mortar.

Replacement

Replacement of the terra cotta units may be necessary when large pieces or whole units are missing. The Secretary of the Interior’s *Standards for Rehabilitation* states:

“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.”

Although substitute materials are one option, replacement with new terra cotta to match the existing is preferred in order to comply with the Standards. Cost and time constraints associated with fabrication of new terra cotta may require exploration of substitute materials. Substitute materials may include glass fiber reinforced concrete (GFRC) and pre-cast concrete. In both cases of replacement in-kind or use of substitute materials, the replacement material should be visually compatible. Additionally, it is of great importance that the replacement materials contain properties similar to the existing terra cotta, for example compressive strength and expansion/contraction coefficient. Due to the complexities of this type of repair, the process should be carefully monitored and include testing of existing and replacement materials, mock-ups, shop drawings and full scale submittal samples.

TREATMENT OF CLAY TILE ROOFING

Protection, Maintenance and Investigation

A regularly scheduled inspection and maintenance program is necessary to prolong the life of clay tile roofs, which if maintained properly may last seventy-five to 100-years. Broken or missing tiles, or leaks on the interior of the building, are clear indicators that roof repairs are needed. As with all roofing types, routine inspection should also include the flashing, gutters and downspouts, and well as the roofing system membrane.

Biological Material Removal and Cleaning

The approach to cleaning of the roof tiles and removal of biological growth should be consistent with the recommendations of the previous section. (See Treatment of Architectural Terra Cotta on page 85.)

Repair

Minor repairs may simply be corrected by replacing a few individual tiles. Larger leaks or failure of a portion of the roofing system may necessitate not only roofing repairs, but also repairs to structural roofing members, wood sheathing, felt or roofing paper, or possibly vertical roof battens that have been compromised as a result of water damage. If the problem appears limited to gutters and flashing in disrepair, repair or replacement will probably require temporary removal of some of the adjacent tiles to gain access to them. Clay roofing tiles oftentimes outlast their fastening systems, which may rot, rust, or loosen over time. Although it is unusual that all of the clay tiles on a roof need to be replaced due to material failure, it is not uncommon for old tile roofs to be completely stripped in order to relay tiles with new fastenings and battens. When the fastening system has failed, all of the roof tiles must be removed and reattached with new corrosion resistant fasteners. When removing tiles, they should be surveyed and numbered, indicating the location of each tile in order to relay them in the original pattern.

Replacement of Individual Tiles

It can be quite difficult to replace a single clay tile without breaking neighboring tiles. A broken tile should be carefully removed with a slate ripper or hacksaw blade inserted under the tile to cut the nail or nails holding it in place. Once removed, nail a piece of double thickness copper stripping to the sheathing below the tile, and then the new replacement tile can be slipped into position and secured in place by bending the copper strip up with a double thickness of the copper over the tile. A slate hook or “tingle” can be used in the same way.

Replacement of whole roofing system

A full-scale roof replacement may be required if significant water leaks are found on the interior. Replacing an entire clay roof offers an opportunity to inspect and repair the roof substrate as well. When replacing a clay tile roof, it is still recommended that as many of the original tiles be retained and reused as possible.

References

See “Preservation Brief 30: The Preservation and Repair of Historic Clay Tile Roofs.”

TREATMENT OF WOOD DOORS AND WINDOWS

Protection, Maintenance and Investigation

All wood doors and windows should be inspected regularly to assess their physical condition. Identify areas of water penetration to determine required weatherproofing repairs. Determine condition of all caulks, putties, and sealants. Examine areas of paint failure and areas of deteriorated wood to determine the depth of damage. Identify areas of fungal and bacterial growth.

Inspect door and window operation to determine damaged or deteriorated jams, thresholds, sills, hardware, weather-stripping, etc. Undertake a systematic

evaluation of door hardware related to the provision of access. Identify historic hardware conditions and define alternative alteration strategies. Inspect glass materials to determine extent of breakage.

Repair

Wood door and window maintenance, repair and alteration work, including work related to historic hardware, should be undertaken by persons experienced with the restoration of architectural woodwork, including wood doors and windows, and historic hardware. Replacement parts and units should be manufactured by persons with prior experience providing reproduction doors, windows, and hardware. The use of epoxy also requires special skills and precautions. Epoxy work must be undertaken by persons with prior, documented experience with their application.

To the greatest extent possible, retain, repair and reuse existing wood doors, windows and hardware in their original locations or, where replacement is unavoidable, provide repair and replacement materials, including wood, metal, glass, screen, etc., to match the existing materials to be replaced and/or like materials adjacent. Existing material characteristics to be matched include wood species, cut and grain; forms, shapes and details; sizes and dimensions; alignment; location; type of operation; color (unless otherwise indicated) and finishes.

Thoroughly clean and dry all materials prior to repairing. Repairs should be made using the carpentry methods exhibited in the original woodwork, including all exposed nails, fasteners, etc. Install new wood trim and moldings to replace damaged, deteriorated, or missing trim pieces. New pieces should exactly match the original. Remove deteriorated areas of paint and wood to reach sound wood material. Treat all deteriorated and wet areas with a fungicide. Apply a waterproofing preservative to all bare wood. Treat minor areas of rot with biocide and allow to dry thoroughly.

Repair moderately deteriorated or damaged wood surfaces and elements by removing affected areas of wood and replacing with new wood pieces to match,

and/or by using wood repair materials such as epoxy fillers and consolidants. New work should match the existing materials and elements or, where missing, should match like materials and elements at similar doors and windows adjacent.

At areas of minor rotting of painted wood, impregnate area with low-viscosity wood conservation epoxy. Apply wood filler or epoxy consolidant to holes, gaps, gouges, or areas that must be rebuilt to achieve original profile. Sand wood to achieve a smooth, paintable surface, which is indistinguishable from the original wood in texture and profile. Sand all areas of raised grain.

In order to meet energy conservation goals, new and replacement glass, weather-stripping, caulking and sealants, etc., may be provided if required modifications do not alter the appearance or details of identified historic wood doors and windows.

Note that only missing or broken glass should be considered for replacement.

Adjust and repair existing hardware exhibiting minor operational deficiencies. Provide new hardware parts and elements to replace seriously damaged or missing hardware. Replace broken glass with new glass to match the type and thickness of the existing. Also match metal types used in hardware or finishes. Retain or salvage original hardware when possible.

Replacement

Replace door and window parts damaged beyond repair or missing. New work should match the existing materials and elements. When these elements are missing, documentation should be consulted to inform the selection of replacements. In the absence of photographic or written documentation of the missing elements, adjacent doors and windows within the structure may serve as a model for the replacement. Replace incompatible doors and windows with new or salvaged doors and windows to match the historic originals. Install new window and door elements, such as hardware and weather-stripping, so as to minimally disturb historic elements. Where possible, place new elements in concealed locations.

Door and window accessory elements (screen windows, hardware, etc.) should be consistent throughout contiguous areas of the building. Where replacement of such elements is required, provide an overall program of replacement so that all such elements match one another. In some circumstances, offset hinges may be used to slightly increase openings at narrow door locations.

When cleaning window materials, use water, de-ionized or soft, and warm (if windows do not include painted colors or decoration); diluted neutral detergent, and soft cloths. Cleaning stubborn films, deposits, etc., should be undertaken only after further professional evaluation.

Use finish-grade wood for replacement of wood door and windows, and portions thereof. Use clear, fine-grain wood matching or equal to existing wood materials to be replaced. Wood used for replacement sash and sills shall be treated with a water-repellent preservative prior to its installation.

Remove and reuse existing undamaged glass at replacement doors and windows to the fullest extent possible. If an original door or window is extensively damaged and taken out of service, salvage and stockpile elements such as glass and hardware for future repair of other doors and windows. Provide new, matching glass to replace broken units. Where required by code, replace existing damaged or missing glass with new clear tempered glass.

Provide replacement hardware to match the equivalent existing door and window hardware. When new hardware is necessary to meet accessibility requirements, it should be compatible with the designs and materials of historic original hardware.

References

See “Preservation Brief 9: The Repair of Historic Wood Windows.”

TREATMENT OF STAINED GLASS WINDOWS

Protection, Maintenance and Investigation

The amount of cleaning, repair, or restoration recommended for a stained glass window depends upon the condition, quality, and significance of the glass, as determined by a stained glass professional. Minor cracks, sagging, and oxidation are part of the character of historic leaded glass, and require no treatment. More extensive cracks, major bulges (generally, more than 1" [38mm]), and similar signs of deterioration may require more significant intervention.

Cleaning

Dirt, soot, and dust can build up on both sides of the glass as a result of pollution, smoke, and oxidation. Gentle routine cleaning will remove harmful deposits, while also providing an opportunity to inspect the condition of each window. The type of cleaner to use depends on the glass. Water alone should be tried first (soft water is preferable). If water alone is insufficient, the next step is to use a non-ionic detergent. Most unpainted art glass can be treated with acetone, ethanol, isopropyl alcohol or mineral spirits to remove yellowed coatings or grime in cases where gentler methods have failed. Acidic, caustic, or abrasive cleaners should never be used, nor should common household glass cleaners, which contain ammonia that can adversely react with the putty or metallic comes. All residue leftover from the cleaning solutions must then be removed with a non-ionic detergent, and the glass rinsed with water. Painted glass must never be cleaned before the stability of the paint is confirmed, and only then with great caution.

Repair

It is essential to properly maintain the window regardless of the type of glazing. Routine painting and caulking, and periodic replacement of the glazing compound, will go a long way towards preserving wood window frames, and masonry frames should be kept well pointed and caulked to prevent moisture from corroding the steel armature and anchors within.

A very common-but extremely harmful-practice in the American stained glass industry is performing major window repairs in place. A window cannot be properly repaired or restored in place if it is bulging or sagging far out of plane, if over 5% to 10% of the glass is broken, or if solder joints are failing.

Leaded windows will generally outlast several generations of waterproofing, but when the waterproofing has failed, the window should be removed from the opening and waterproofed on a bench. Sealants (e.g., putties, caulks, and silicones) are used to seal the leaded panel against the sash, and to seal any open joints around the window frame. Some sealants release acetic acid as they cure, which can harm lead, and thus should never be used. The appropriate type of sealant will be determined by a professional, as it depends upon the types of materials to be bonded and on the desired appearance and longevity of the window.

Repairs/Replacement of glass

Glass cracks will enlarge over time as the contacting edges grind against each other whenever the window is subject to vibration, thermal expansion and contraction, and other forces such as building movement. Therefore, it is important to repair cracks across important features as soon as they are detected, and while a clean break remains. There are several techniques used to repair broken glass, each of which differ in terms of strength, reversibility, and visual effect, and the appropriate repairs must be selected on a case-by-case basis by a restoration specialist.

Minor repairs, such as replacing a few isolated pieces of broken glass, can be performed in place as a reasonable stop-gap measure. This work, typically called a "drop-in," "stop-in," or "open-lead" repair, entails cutting the came flange around the broken piece of glass at the solder joints, folding it back to repair or replace the old glass, and resoldering the joints. Repairing a zinc came window is not as easy. Zinc comes are too stiff to open up easily, so they must be cut open with a small hack saw and dismantled until the broken area is reached.

References

See "Preservation Brief 33: The Preservation and Repair of Historic Stained and Leaded Glass."

TREATMENT OF CAST STONE COLUMNS AND CAPITALS

Protection, Maintenance and Investigation

As with all building elements, cast stone features should be routinely inspected to identify the need for cleaning or minor repairs. Cast stone may sometimes be cleaned with the same alkaline pre-wash/acid afterwash chemical cleaning systems used to clean limestone and other calcareous natural stones.

Repair

Areas of isolated spalls from rusting reinforcement bars or anchors, or in cases of erosion, it is oftentimes best to make repairs in-situ, or make no repairs at all. Weathered cast stone often results in a patina that does not warrant large-scale replacement, unless severe cement matrix problems or rusting reinforcement bars have caused extensive scaling or spalling. Severe rusting on small decorative features, such as balusters, may signal carbonation (loss of alkalinity) of the matrix. Where carbonation of the matrix has occurred, untreated reinforcement will continue to rust. Replacement may be an acceptable approach for exposed and severely deteriorated features, such as hand railings, roof balustrades, or wall copings, where disassembly is unlikely to damage adjacent construction. Conversely, small areas of damage should generally be repaired with mortar “composites,” or left alone.

Drilled holes, mechanically damaged corners, and occasional spalls from rusting reinforcement bars and anchorage are oftentimes repairable. Small “composite” repairs to damaged masonry units can be made with mortar formulated to match the original material, and may be successfully undertaken by a skilled mason.

Replacement

Individual cast stone units, which are subject to significant amounts of moisture and exhibit spalling or reinforcement deterioration, may require replacement. Fortunately, a number of companies custom manufacture precast concrete units.

References

See “Preservation Brief 42: The Maintenance, Repair, and Replacement of Historic Cast Stone.”

TREATMENT OF INTERIOR PLASTER

Causes of Plaster Cracks

Stresses within a wall can create stress cracks, which appear as diagonal lines, usually originating at a door or window frame, but they can appear anywhere in the wall. Overloading and structural movement (especially when combined with rotting lath, rusted nails, and/or poor quality plaster) can cause plaster to detach from its lath. When the mechanical bond between the plaster and lath is broken, plaster becomes loose or bowed. If repairs are not made, especially to ceilings, the plaster will delaminate, leaving large holes in the plaster surface.

Conversely, horizontal cracks are often caused by lath movement. Wood lath absorbs moisture from the air, causing it to expand and contract as humidity rises and falls. As a related condition associated with moisture infiltration, nails holding the lath may rust or loosen, or structural movement in the wood framing behind the lath may cause a seam to open. In addition to problems caused by movement or weakness in the structural framework, plaster durability can be affected simply by poor materials or workmanship.

Plaster applied to a masonry wall is particularly vulnerable to water damage if the wall is constantly wet. When salts from the masonry substrate come in contact with water, they migrate to the surface of the plaster, appearing as efflorescence. The source of the moisture must be eliminated before re-plastering any such damaged areas.

Sources of Water Damage

Moisture problems occur for several reasons. Interior plumbing leaks are common, as are roof leaks or failure of gutters/downspouts. Dampness at the foundation level, caused by poor site drainage, failed downspouts, or improperly positioned splash blocks, will dampen exterior walls and may cause water to wick up into the above-grade walls. In all cases, water then travels through the masonry and manifests itself as damaged interior plaster. Coatings applied to the interior are not effective over the long run. The moisture problem must be mitigated on the exterior.

Repairing Cracks

Hairline cracks in wall and ceiling plaster are not a serious cause for concern as long as the underlying plaster is in good condition. They may be filled easily with a common all-purpose drywall joint compound and repainted. For cracks that reopen with seasonal humidity change, the crack should be widen slightly first and then filled with a quick setting joint compound, followed by a second plaster coat, and third coat on the surface that is textured and painted to match the surrounding surface.

When cracks appear as a result of structural movement, repairs first need to be made to the structure before undertaking plaster repairs. Then, the plaster on each side of the crack should be removed to a width of about 6 inches down to the lath. The debris is cleaned out, and metal lath applied to the cleared area, leaving the existing wood lath in place. The metal lath usually prevents further cracking. The crack is patched with an appropriate plaster in three layers (i.e., base coats and finish coat). If a crack seems to be expanding, a structural engineer should be consulted.

Plasterers generally use ready-mix base-coat plaster for patching, especially where large holes need to be filled. The ready-mix plaster contains gypsum and aggregate in proper proportions. The plasterer only needs to add water. Another mix plasterers use to patch cracks or small holes, or for finish-coat repair, is

a “high gauge” lime putty (50 percent lime; 50 percent gauging plaster). This material will produce a white, smooth patch. It is especially suitable for surface repairs.

In cases where plaster has detached from the lath, Big Wally’s Plaster Magic is a professional grade adhesive that was designed to reunite historic plaster to its lath. It works as an interior and exterior adhesive and bonds most common building materials. For plaster reattachment: drill 3/16” holes through plaster to the lath. Spray conditioner into holes to coat the plaster on the reverse and the lath, then inject adhesive into the same holes. Clamp with screws and clamps through some of the holes to bring the plaster gently back to its original plane. Remove the screws and clamps after the adhesive has set, and then fill the drill holes with ready-mixed joint compound or plaster, and finish surface as desired.

Replacement

Partial or complete removal may be necessary if plaster is badly damaged, particularly if the damage was caused by long-term moisture problems.

Replastering old wood lath: Each lath strip is re-nailed and chunks of old plaster are first cleaned out, then the old dry lath must be thoroughly soaked before applying the requisite three coats of plaster. If new metal lath is first installed over the old wood lath, many moisture and bonding problems can be avoided and the historic lath can be retained. Ceiling repairs should still be sprayed with water, unless a vapor barrier is placed between the wood and metal lath.

Replastering over new metal lath: An alternative to reusing the old wood lath is to install galvanized metal lath. When lathing over open joists, cover joists with kraft paper or similar vapor barrier.

References

See “Preservation Brief 21: Repairing Historic Flat Plaster Walls and Ceilings.”

TREATMENT OF STAINED CONCRETE FLOORS

Protection, Maintenance, and Investigation

Clean concrete floors regularly and re-seal on a periodic basis to protect against the high wear to which these floors are subject. Provide regular maintenance of painted concrete floor surfaces, including removal of cracked and peeling paint, reapplication of new compatible paint, and regular cleaning.

Repair

Where stained concrete floor colors have faded, the existing floor surface finishes should be stripped, and the floor should be carefully ground to remove previous stains. Apply new penetrating concrete stains to match the original, unfaded colors. New stains and colors should be tested on a relatively hidden area of concrete prior to general use. Stain materials should be applied by qualified personnel who have experience in concrete treatments of this type. After staining treatment, floors should be sealed and protected from traffic until new colors and finishes have cured completely.

In cases of minor cracks, they may be filled and repaired using epoxy, which should match the characteristics of the existing concrete, including color and texture.

Replacement

No replacement work is recommended for historic tinted concrete floor slabs. If the condition of the concrete floor warrants replacement, and it is not feasible to cover or resurface the historic concrete floor, then the entire concrete slab may be removed and replaced in-kind using modern construction methods.

TREATMENT OF INTERIOR ORNAMENTAL METALS

Protection, Maintenance and Investigation

The majority of the ornamental metals used in the Presidio Chapel are found in the door and window hardware. Before undertaking any repair or replacement efforts, the type of metal, its finish, and assembly methods should be examined and documented.

Cleaning/Refinishing

To remove unwanted paint from ornamental metals and historic door/window hardware, first brush all peeling and loose paint from the surface using a still natural bristle brush; do not use wire brushes. Then, apply a thixotropic/alkaline formulation paint stripper approved for removing paint coatings from ornamental metal work, such as “Sure Klean 509 Paint Stripper.” Allow stripper to remain on the surface as recommended and then brush or rinse with water and blot dry.

To clean and polish unpainted ornamental metal surfaces and apply a new clear finish, first apply a chemical cleaner such as “SureKlean 887 Stainless Steel Cleaner. Sponge or rinse with clean water to remove chemical and loosened dirt. Polish in accordance with industry standards, and then apply protective lacquer finish, as needed.

Replacement

Ornamental metal replacement materials must match existing metal to be replaced in shape, thickness, type of metal and finish. Many of the manufactured hardware items may be available from the original supplier or as a quality reproduction.

References

See the U.S. General Services Administration’s Historic Preservation Technical Procedures for Ornamental Metalwork.

PART III.B: TREATMENT AND WORK RECOMMENDATIONS: NEW CONSTRUCTION

PURPOSE

This section deals specifically with the probability that, in order to provide universal access to the historic Chapel per code requirements, additions to the building will be necessary and desirable. The elevated ground floor, multiple level changes on each floor, and the lack of public circulation and support spaces in the existing building will dictate that new construction must provide the solutions to disabled access, vertical circulation, toilet counts and other functional challenges. Likewise, parking, accessibility, pedestrian circulation, and exterior program needs will trigger new interventions to the site and exterior of the building. These upgrades are needed regardless of use and program.

This section summarizes prerequisites regarding new construction and presents two alternative approaches to realization of the ultimate rehabilitation treatment. Alternatives A and B are presented in both text and graphic form. A Matrix Analysis addresses the adequacy of each solution in terms of impact on historic materials, effect on historic character, compliance with policy, and other management objectives.

PREVIOUS DOCUMENTATION

There are several sources that are important references when determining appropriate treatment recommendations for new additions to the site and architecture of the Presidio Chapel. Preservation Brief #14: New Exterior Additions to Historic Buildings: Preservation Concerns summarizes the nation's best practices in this area and has recently been updated. Specific to the Presidio and to the West of the Main Post cluster area are the following documents:

Main Post Update to the Presidio Trust Management Plan (November 2010)
The Secretary of Interior's Standards for the Treatment of Historic Properties: Standards for Rehabilitation
Main Post Planning & Design Guidelines (January, 2011)
West of Main Parade Focused Cultural Landscape Report (CLR) (April 2011)

All of the above-mentioned documents have been referenced, and relevant portions of them are summarized in the Appendix. (In general, most Presidio Trust guidelines are summarized verbatim; however, redundant or duplicative statements have been edited for better clarity). Additionally, the 2007 Presidio Chapel Feasibility Study provides information that clarifies the program needs of the current tenant; this information serves as the basis for the development of Alternative Treatments that are analyzed herein.

PRE-REQUISITE RECOMMENDATIONS:

PRESERVATION BRIEF #14: NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS: PRESERVATION CONCERNS

Preservation Brief #14, originally written in 1986, was updated in August of 2010 to expand and update design guidelines on the subject of new additions to historic buildings. The Brief provides guidance on when and how additions should be considered. It states that new additions are acceptable only when altering non-significant spaces in the historic building cannot accomplish the desired goals. Of utmost importance is that the character of the historic building must be preserved. Establishing the period of significance and determining what is significant about the building is necessary in order to understand what new interventions are appropriate. While the Brief emphasizes caution regarding new additions, it also recognizes that a historic building is not frozen in time and that changes can be made without compromising its historical significance. Of primary emphasis is that the addition must always be subordinate to the historic building. Additions should not confuse the public by making it difficult to understand what is new from what is historic. Preservation Brief #14 provides guidance about how an addition to the Presidio Chapel can be successfully achieved:

- Maintain the primacy of the historic building
- Respect the architectural expression of the historic building type
- Retain the essential form and integrity of the historic building

- Preserve character-defining features
- Take design cues from, but do not copy, the historic building
- The new addition should be differentiated from the historic building but compatible
- Keep volumes separate. Utilize hyphens or connectors as the link from new to old
- Minimize loss of historic fabric. Place the addition where the least amount of historic fabric and features will be impacted
- There should be minimal change to the primary elevation
- The addition should be inconspicuous from public view
- Utilize existing openings
- Respect historic landscape features
- Preserve the historic building's form in relationship to its site and setting
- The new addition should be harmonious with the historic building in scale, proportion, materials and color

MAIN POST UPDATE

According to the Main Post Update to the Presidio Trust Management Plan (March 2010) prepared by the Presidio Trust, in order to comply with the Secretary of the Interior's Standards, an addition to the Post Chapel:

- Rehabilitation of the historic chapel will minimize alterations that affect the building's character-defining materials, features, and spaces.
- The addition will be located only on the west side of the existing chapel sanctuary to avoid the primary east and north facades.
- The maximum height of the new construction will be lower than the window sills of the existing chapel's sanctuary windows.
- The addition will be designed so that its massing, material palette, and color are compatible with the existing building. The addition will be pulled back from the front facade of the historic chapel, and will be clearly subordinate to the existing chapel.

ADDITIONAL PRESIDIO TRUST REQUIREMENTS

The Presidio Trust has a Programmatic Agreement with Consulting Parties that establishes a preservation approach to changes to the Presidio's built environment. These documents contain numerous guidelines and/or recommendations that are both general and specific to the Presidio Chapel. This HSR incorporates these recommendations in Part II: Treatment Recommendations: Rehabilitation as well as in this section when relevant. A summary of this information can be found in the Appendix, and in the Conformance Checklist at the end of this section.

SITE PLAN

PRESIDIO CHAPEL

The Presidio Chapel (Building 130) is located on Fisher Loop, west of the Presidio Theatre and across from the Golden Gate Club (Building 135). It consists of a simple church sanctuary with smaller spaces surrounding it, and a low tower at its northeast corner.

An addition to the Presidio Chapel (see Figure 20) will provide new exhibition gallery and meeting space, accessible public restrooms, and an elevator to make the basement accessible. The Presidio Chapel addition's size will be a maximum of 4,000 square feet on two floors and will connect to both the chapel's sanctuary and its existing basement.

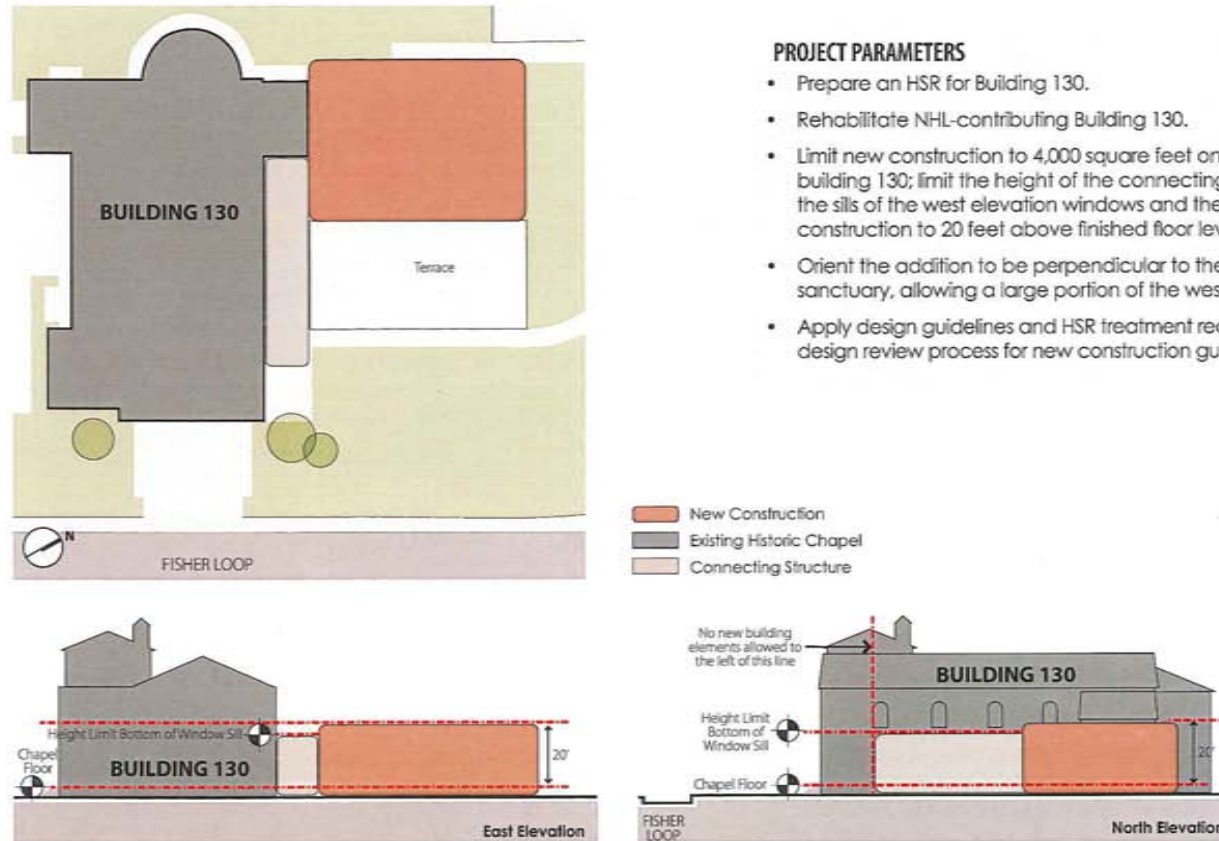


FIGURE 17: CONCEPTUAL SITE PLAN FOR THE PRESIDIO CHAPEL

Site plan diagram from the Main Post Update to the Presidio Trust Management Plan (March 2010)

TREATMENT RECOMMENDATIONS: SITE DESIGN (BOTH ALTERNATIVES)

The proposed design utilizes the ample spaces to the east, behind the building, and in front of the chapel to create a variety of gathering spaces. The green space to the east will contain several different spaces to accommodate intimate gatherings and large group events. The bronze plaques currently in the Memorial Garden and the Vietnam veterans' memorial will be reused as part of the new east area design. A circular gathering area will also provide orientation to compass points and may accommodate temporary fire ceremonies. The space behind the building will be reconfigured to hold a meditation area and sensory-based vegetation to create a more natural link with the eucalyptus grove while continuing to provide access to the east side of the building from the parking lot. The meditation area may contain a foot-washing area to accommodate needs of several religious traditions and provide a soothing water element for all.

The parking lot will be reconfigured to better direct traffic and enlarge the landscape. The proposed site plan adds clarity and convenience to the ADA access route. The current ADA accessible entrance is located at the east side of the building, which means wheelchair users and others must navigate from the parking lot on the west side around the back of the building to enter. The proposed plan locates the accessible entrance at the west side of the building, adjacent to the parking lot, and at the same entry that pedestrians will use on a daily basis.

The proposed site plan eliminates the service road on the south and west sides of the chapel but will reference it in plan, using curblines and material changes. ADA and service access currently located on the south side of the building will be relocated to the west side adjacent to the parking lot. Catering, delivery, and other services will access the building by a rear entrance to the addition. A trash enclosure will be located near the southwest corner of the building and house a dumpster, recycling containers, and unsightly utility equipment such as backflow preventers, etc.

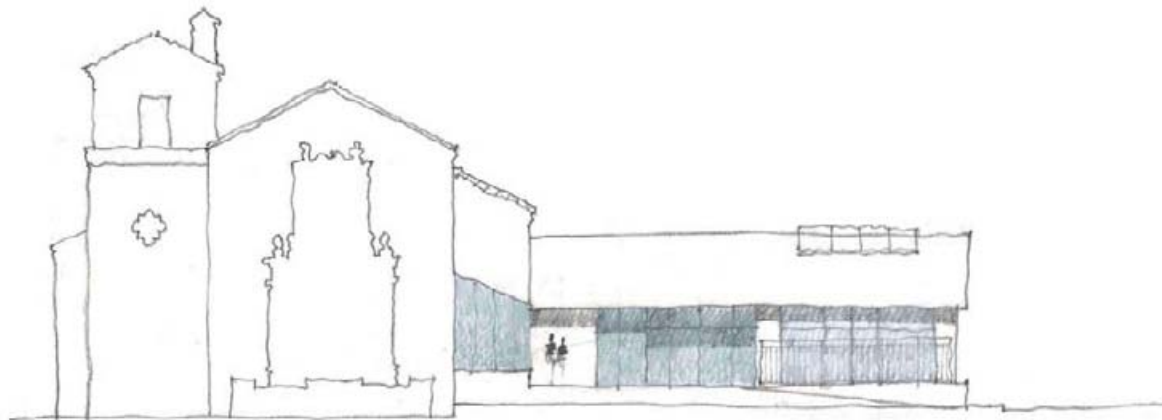
The building's proximity to the San Francisco National Cemetery could be addressed with an extension of the existing sidewalk on the north side of Fisher Loop down the hill to the west. An existing metal gate will provide a connection to the cemetery.

TREATMENT RECOMMENDATIONS: ALTERNATIVE A

Under this Alternative the new west wing will be 3,852 gsf on two levels. Its major spaces are an entry and corridor that connect directly to the historic sanctuary and provide ADA access to the existing building; a gallery/reception space which will hold many of the glass art pieces of the McDonald Windows collection; offices; and an open stairwell which leads to program and support spaces below. Accessibility issues due to multiple floor levels at the lower floor have been resolved.

The lower level has been upgraded to house the Interfaith Commons as a multi-purpose and gathering area for the non-pewed faiths that may not be comfortable in the sanctuary above. This space connects directly to the outside by a generous new landing and stairway that lead up to the landscaped gardens and terrace on the east side of the building. The new addition will be designed to be compatible with the historic architecture.

The form of this addition involves two pieces: the transparent, shed roofed 'connector' that is referenced in the 2010 Main Post Update Project Parameters; and a gable roofed wing containing most project program needs, placed at right angles to the main sanctuary in plan.

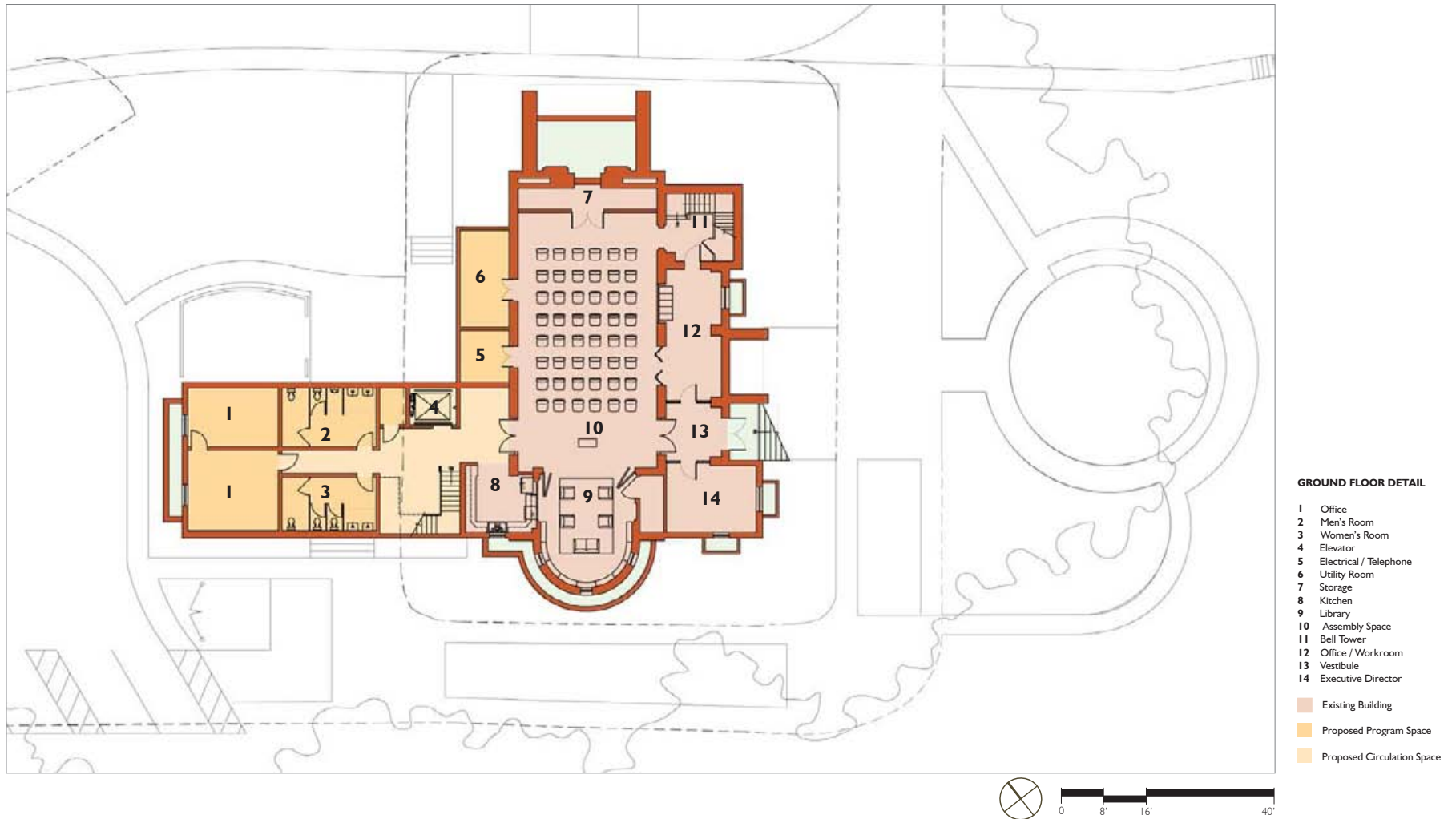


Alternative A North Elevation Sketch

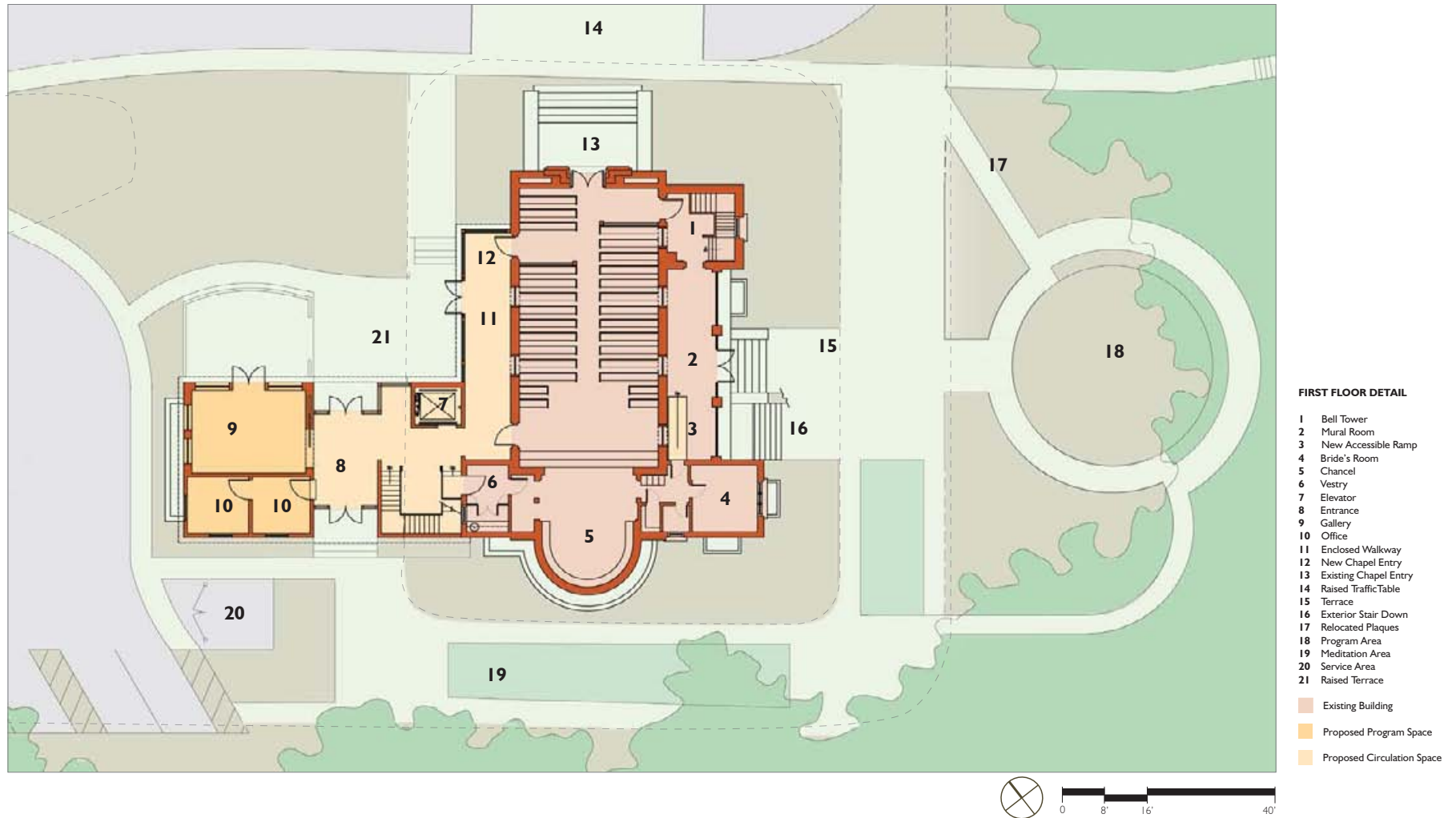
SCHEME A - SITE PLAN



SCHEME A - GROUND FLOOR PLAN



SCHEME A - FIRST FLOOR PLAN



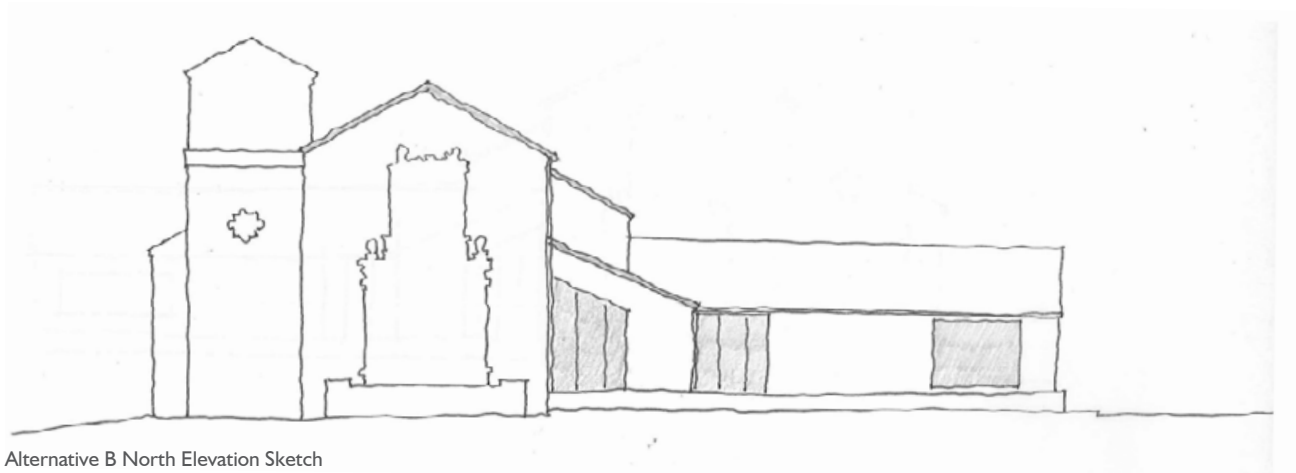
TREATMENT RECOMMENDATIONS: ALTERNATIVE B

Alternative B is similar in program description to Alternative A. Gross square footage of the addition on two levels is 3,832. Parking spaces in this scheme are reduced from 53 to 48, as they are in Alternative A.

The main physical difference here is that spaces provided west of the transparent 'connector' are shed roofed in slopes that match the slope of the front gable of the existing Chapel. The bulk of added program space is again in a wing that is placed at right angles to the sanctuary in plan.

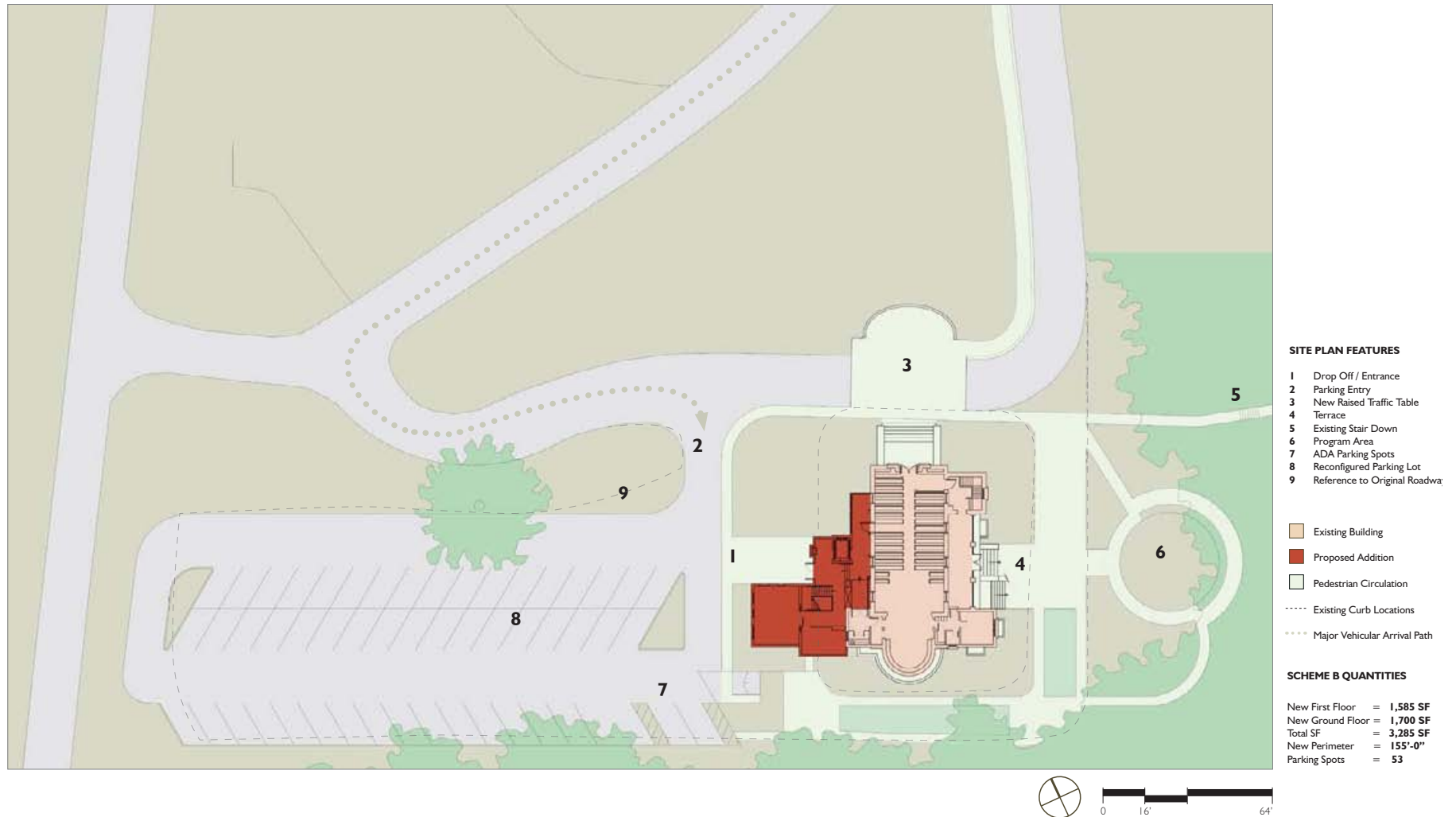
SITE

In the site plan, however, the main entry faces west, not north. It is therefore much more directly seen and accessed from parking. This configuration prevents utilizing outdoor space next to the Gallery as an outdoor garden. All access to the west side of the building comes through the one entry.

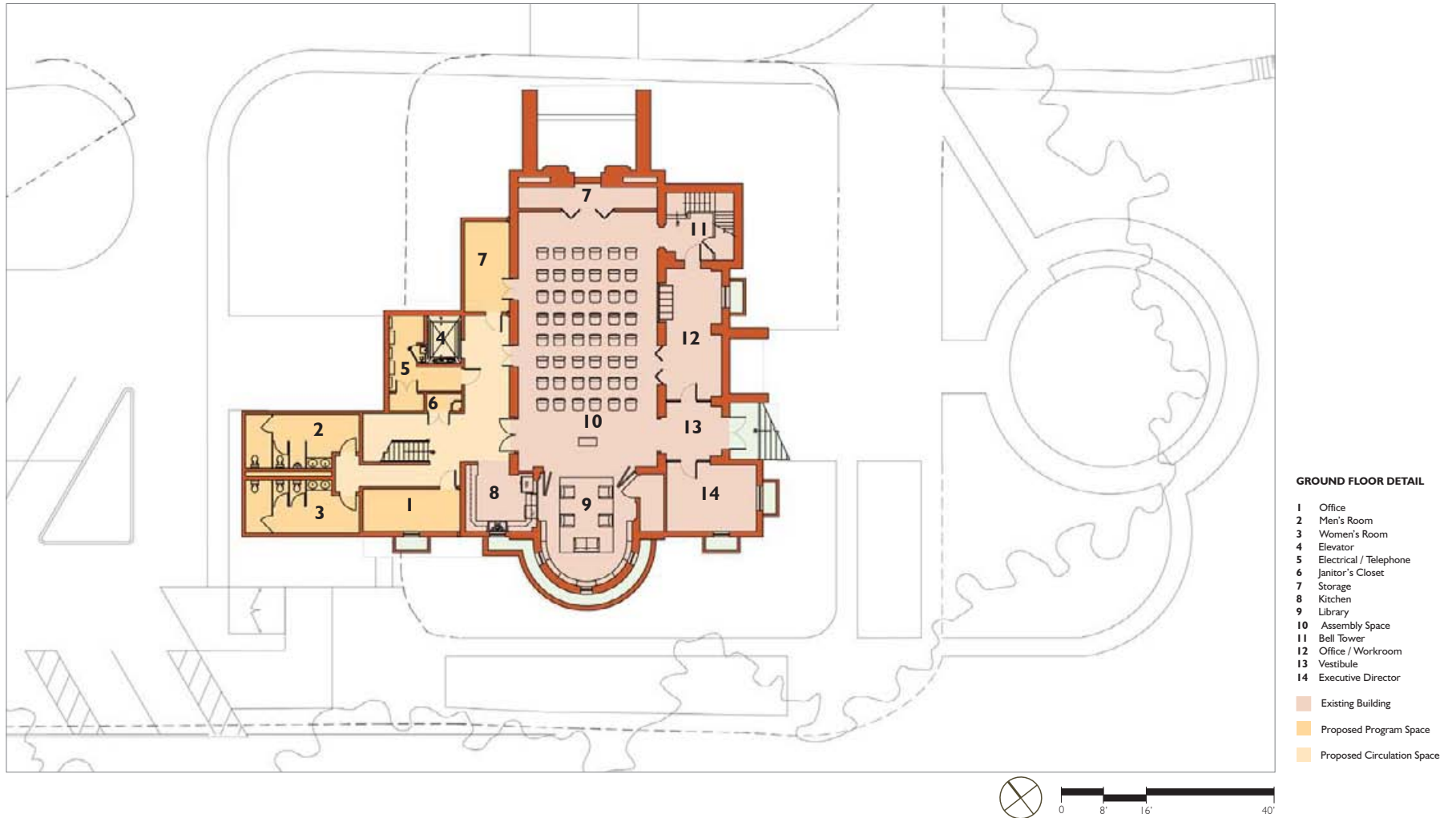


Alternative B North Elevation Sketch

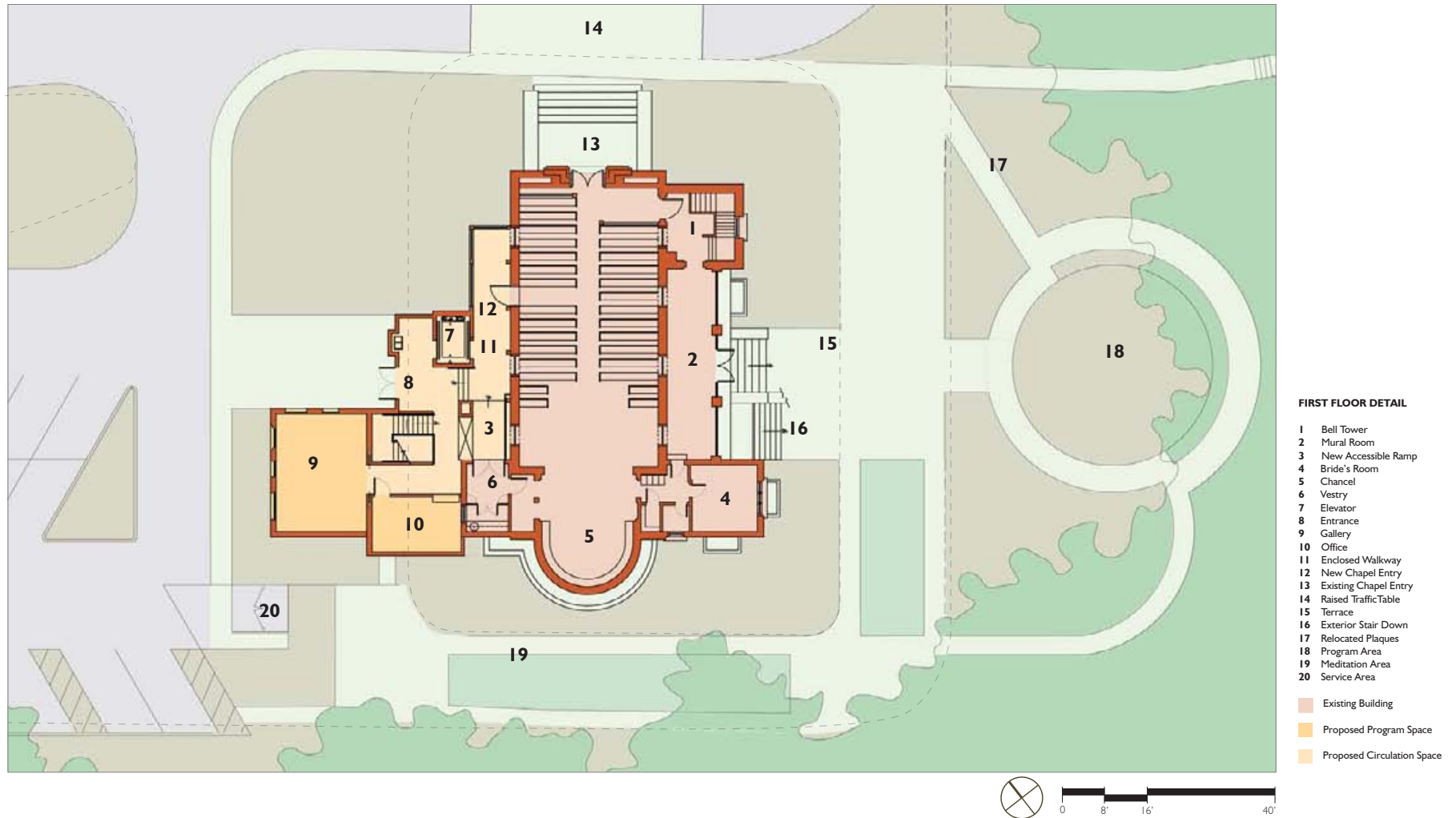
SCHEME B - SITE PLAN



SCHEME B - GROUND FLOOR PLAN



SCHEME B - FIRST FLOOR PLAN



RE-USE OPTIONS

BUILDING

As mentioned above, in order to rehabilitate the Presidio Chapel so that it serves the basic needs of its occupants, it may be necessary to add on to the historic building. The building is small and specialized, with primary spaces that are large, character-defining, and difficult to alter or sub-divide without adverse effects to the architecture or circulation patterns. The sanctuary and its chancel are the focal points of the building and must be treated with the utmost respect; additions to the chapel should not impact this important spatial relationship, nor the axial/processional nature of the space. The building should be used for its intended purpose, or for activities that are compatible with the character of the sanctuary, chancel, and mural room. These should always be the most important spaces in the building and new spaces that are added should not compete with them.

The main entry to the historic building is currently accessed by monumental steps to a short landing which opens directly to the sanctuary, which seats 150 people. This main level is elevated almost 3 feet above grade. Steps and a landing on the west side open into the vestry room, which leads to the chancel and a restroom and bride's room beyond. These spaces are 1 foot higher than the main level and should also be accessible to the disabled.

As a place to gather and/or worship, it is important that access to all major spaces is provided. Disabled access to the sanctuary space is paramount, and should be provided as close to the original entry as possible, so that the processional functions of the sanctuary are not disturbed and are experienced consistently by all. The accessible entry should be located on the west side of the building where disabled parking will be provided. Disabled access to the chancel level should be from the new addition, or via a ramp in the mural room or sanctuary.

Access to the sanctuary may be provided by punching a door opening in the west wall. This should be thoughtfully considered: alignment with clerestory windows may impact the bronze plaques on the west wall as well as spatial symmetry, and alignment with the east door may also impact the plaques. Both options affect the location of existing pews.

The basement level is accessed via two sets of steep stairs: an exterior stair on the west side of the sanctuary, and an interior stair in the tower area. Neither stairs meet current code. The building has no circulation corridors. A new addition will need to provide code-compliant stairs and an elevator, since neither new stairs, nor an elevator, can be inserted into the existing building without major impacts to historic fabric. Additionally, the addition should provide adequate circulation on both levels of the building so that occupants can circulate independently from the large gathering spaces.

Like the main level, the basement is on two levels: the south and southeast portions of the basement are 1 foot higher than the primary spaces. Unless the addition can resolve this challenge with ramps, a new multi-stop elevator will be needed in order to allow disabled access to both basement floor levels. Alternatively, the floors of the secondary spaces (restrooms and semi-circular study) could be reconstructed flush with the primary spaces: this was the original design intent, as shown on the original floor plans. A subsurface investigation should be performed to assess the feasibility of this more space-efficient approach.

RECOMMENDATIONS FOR RE-USE AND BUILDING ADDITION(S)

- Maintain the historic use of the chapel as a place for worship or gathering if at all possible

- Provide disabled access to the sanctuary as close to the main entry as practical, in order for the space to be experienced in a historically appropriate and functional manner
- Code-compliant solutions for an accessible entry, vertical circulation, and adequate restrooms should be part of the building addition rather than part of the rehabilitation of existing spaces.
- Locate the accessible entry on the west side of the building where disabled parking will be provided.
- Disabled access to the chancel level should be from the new addition, or via a ramp in the mural room or sanctuary.
- Reconfigure the existing parking lot to provide for disabled parking.
- Allow adequate circulation routes in the new addition that do not disrupt gatherings when other parts of the facility (e.g. offices or the kitchen) are in use.
- Resolve multi-level access on both levels via ramps and/or elevator. Investigate subsoil conditions and consider modifications in the basement that provide a single floor level.
- Because of the large gathering space downstairs, a new elevator should also provide service access to the basement in addition to disabled access.

SITE

For information about the history of the site, refer to the Presidio West of the Main Post Cultural Landscape Report (CLR). Figure A.16 of the CLR shows that the site has changed only a little since its original construction. Modifications (after the period of significance) include enlargement of the parking lot west of the building which impacted the sense of enclosure of the eucalyptus forest to the south, the installation of a Memorial Garden and terrace to the east, and a minor connection to the national cemetery. The most significant changes in the area occurred along the slope between Fisher Loop and Infantry Terrace, where the once-open character has filled in as a forested area that isolates the Presidio Chapel from the Main Post where it was once visible as a beacon on the hill.

Existing Conditions

Although it is a historic condition, the building is currently surrounded by asphalt and encircled by roadways that divide and isolate the chapel from its surroundings. The current site does not reflect the building's primary function of hosting events.

The front of the building is the primary façade. The focal point of ceremonial entrances and exits, it also has a strong visual connection to the Bay. Currently, people congregate in front of the building before or after events. The crowd often spills over into the street, creating a situation dangerous for pedestrians and drivers attempting to enter or exit the parking lot. The current ADA accessible entrance is located at the east side of the building, which means wheelchair users and others must navigate from the parking lot on the west side around the front or back of the building to enter. The existing parking lot has spaces for 53 vehicles. There are no handicapped-accessible parking spaces, and there are no bike racks in the area. The only site furnishings are a few xx benches in the Memorial Garden. Site lighting is isolated to the post-mounted streetlight where Fisher Loop meets the parking lot. Emergency access from Fisher Loop and the parking lot appear to be sufficient, but this assumption should be reviewed with the fire department. Currently, the national cemetery is visible across the parking lot, but no physical connection exists even though there is an existing metal gate at the edge of the cemetery.

RECOMMENDATIONS FOR SITE ALTERATION(S)

- Retain contributing small-scale features per the CLR. See page xx of the CLR.
- Address landscape treatment recommendations per the CLR.
- Reconfigure the parking lot to better direct traffic and enlarge the landscape
- Maintain the current number of spaces (53) if possible. Provide three accessible parking spaces as required by law.

- Redesign the memorial garden to meet program needs, as it is outside of the period of significance.
- Respect the curb-line of the historic roadway loop to the south and east, while addressing an improved building/site relationship if desired by the program
- Resolve conflicts between pedestrians and vehicles
- Define a more formal gathering space at the main entry to the chapel, taking advantage of the extraordinary view.
- Service and delivery should access the building via the new addition rather than the historic building
- Provide space for a trash dumpster, recycling containers, and screen them from view
- Provide screening for unsightly utility equipment such as backflow preventers, etc.
- Consider an extension of the existing sidewalk on the north side of Fisher Loop down the hill to the west, or otherwise connect to the cemetery.

IMPACTS OF AN ADDITION ON EXISTING HISTORIC FABRIC OF THE CHAPEL BUILDING:

Care in design should be addressed to:

- Roof form, including material, slope, overhang and detail;
- Respect for existing fabric;
- Retaining the primacy of existing clerestory windows on east and west walls;
- Maintaining existing openings;
- Resolution of entry into the sanctuary for the disabled as well as other worshippers,
- Maintaining existing materials or providing new materials that relate to and are compatible with them.

NEW PROGRAM REQUIREMENTS

The Interfaith Center of the Presidio (ICP) has operated the Presidio Chapel under a lease agreement since 1996. The ICP arose in response to the Presidio's conversion to a national park. One of the themes of the conversion was "swords into plowshares," and the San Francisco Interfaith Council assembled a coalition of interfaith organizations to discuss how a long-term interfaith peacemaking presence could fit into the Presidio. The Interfaith Center was incorporated in 1995; its 1996 move into the Presidio Chapel united the Chapel's historic use as an interfaith worship space with the Interfaith Center's mission to serve diverse faith traditions.

Since its incorporation, the Interfaith Center has embarked on a variety of projects. It offers the public an interfaith newsletter and monthly potlucks. It has sponsored an international Interfaith Sacred Space Design Competition, published an interfaith songbook, and accepted stewardship of the San Francisco Airport chapel. It has collaborated with the Pacific School of Religion, Dominican University, and the Guild for Psychological Studies to present workshops and classes. It hosts a children's classroom in one of the downstairs room of the Chapel. Its most active program is to host wedding ceremonies at the chapel.

As the ICF has evolved, new program needs have developed: a desire for an interfaith gathering space, office space better positioned to welcome visitors, exhibition space for the McDonald Windows (see below), and exterior site development. Additionally, the building should be improved to a level higher than routine maintenance in order to retain its appeal for weddings and rental activities. The mural, the organ, and the stained glass windows are all in need of attention (see respective sections). The pews and other fixtures would benefit from refinishing or additional polish. Improvements such as these may allow for increased rental fees that could be used to sustain a regular maintenance program.

SPACE NEEDS SUMMARY

Upgraded Sanctuary

The sanctuary should be upgraded to better serve as a space for weddings and other events. Upgrades should include new carpet and seat cushions, refinished pews, refurbished organ, improved acoustics, and improved lighting.

Interfaith Gathering Space

Interfaith dialogue seeks to recognize and respect different ways of celebrating the sacred. Cooperation, tolerance, and mutual respect are key in interfaith relationships at both the individual and institutional levels. Above all, an interfaith space should provide openness: physical openness for practical flexibility and symbolic openness to welcome all spiritual seekers. The existing sanctuary is appropriate for Judeo-Christian activities but not for all religions. The downstairs gathering space, or outdoor areas, could be designed to accommodate other faith traditions.

Space needs draw from the Interfaith Sacred Space Design Competition held in 2004, for which spatial needs and preferences were gathered for twelve major religious traditions. Primary gathering spaces should accommodate the needs and (as far as possible) preferences of these faith groups and be inclusive and welcoming to members of emerging religions and seekers with no religious affiliation.

Orientation. Four of the twelve religions surveyed need geographic orientation: several according to cardinal directions, and Islam and Sufism to Mecca. Structural or decorative elements indicating cardinal directions and/or Mecca might be combined with the Baha'i preference for a nine-sided structure.

Water. Five of the twelve religions use water as a necessary element in their rites. Islam and Sufism, Shinto and Japanese religions, and Sikhism need water to ceremonially wash their hands and/or feet. Zoroastrianism requires a source of pure water, and Christians use water for ceremonial anointing. Groups should be able to access water in the kitchen, the bathrooms, and an outdoor meditation garden. A specially-designed foot-washing area in the outdoor meditation garden might meet this need, although an area near the building entry is most desirable.

Place for shoes. Three religious traditions need a place to put shoes upon entering the space. A shelf or shelves in or near the interfaith gathering space could suffice.

Display space. Though some religions cannot have images or objects displayed, such displays are essential for other traditions. Unornamented wall niches or small shelves may work to display removable objects; a neutral movable altar could double as a space for displays and incense-burning.

Incense and fire. At least two religions must have the ability to burn incense and have an open flame. As mentioned above, wall niches and/or an altar could meet these needs. These functions could also occur in an outdoor gathering area.

Access to the natural environment. Two of the religious traditions surveyed require access to the natural environment. It is possible to include stairs from the basement to the outdoors on the east side of the building, where the site could be improved to facilitate group gatherings.

McDonald Windows

From 1944-45, U.S. Army Chaplain Frederick McDonald served in Europe with Omar Bradley's High Command. During that time, Chaplain McDonald collected stained glass fragments from damaged or destroyed church windows. Remembered Light – Glass Fragments from World War II incorporates the fragments into 25 works of art by 13 artists who show the beauty, strength, and terror in the human condition.

The Interfaith Center is a place where both beauty and horror are recognized. The McDonald Windows eloquently speak to these elements of the human experience, to the effects of war and the hope for peace and reconciliation. The Windows will be permanently housed in a proposed addition to the Main Post Interfaith Chapel.

The works of art – for the most part windows, with a few sculptural pieces – should be well incorporated into the space to give the exhibit a feeling of belonging and permanence. The windows may be set into walls or backlit. It is not necessary to put all the windows in one space; however, the critical mass tells the story best. The pieces' sequence is crucial to understanding Bradley's march through Europe.

A video viewing area or audio tour that tells the story of Fred McDonald and the McDonald Windows is desired.

The design phase of the project will need to identify where and which each art piece will be located in the building. The 2007 Feasibility Study provides dimensional information for each piece. For a more detailed account of the McDonald Windows, refer to <http://www.interfaith-presidio.org/mcdonald/story.htm>.

Library

The ICP aims to create interfaith learning environments and resources. A critical component of this goal is space in which to discuss and learn about other faiths. To meet this need, the office at the south end of the basement level could be converted to a library. Its interesting shape would be more conducive to such a semi-public space rather than as a private office.

Upgraded Mural Room

The space is currently being used as an office; if this continues, the space should be furnished in a way that feels more like a clubroom/study, so that it can double as a lounge/gathering space after office hours.

As mentioned in Part II, the Mural Room should provide a more aesthetic setting for the Victor Arnautoff mural with more architecturally appropriate windows and doors and less clutter. The storefront windows and doors, installed in 1961, should be replaced with something more in keeping with the historic character of the building, and better protection should be provided for the mural.

Circulation

It is important that circulation patterns can support movement throughout the facility when large gatherings are happening in the large spaces of the existing building and the new addition. The new addition should resolve the circulation and programmatic conflicts that currently exist on both levels.

Kitchen

An expanded catering kitchen will make the Interfaith Center a more hospitable place for a variety of events and groups. A kitchen intended as a space for caterers to store and reheat food would not need the costly hood ventilation system required in more extensive restaurant-level kitchens. The desired kitchen would not have the capacity to do stovetop cooking or frying but should be a very suitable space for preparing and serving catered food.

Recommended equipment:

- Catering ovens, also called “heating cabinets” or “holding cabinets”
- Washing area, with a Hobart or Jackson commercial dishwasher/sanitizer; three stainless steel sinks for hand-washing, prep, and dishwashing (3 compartments); and stainless steel sideboards
- One or two stainless steel work tables, 6-8’ long and at least 30” wide
- Ice machine
- Refrigerator/freezer

Offices

The Interfaith Center needs two or more offices and a workroom to be installed in the lower level. Assumptions are that the small spaces with windows on the east wall can be restored and used for this purpose.

Additionally, at least one office on the ground floor will enable Interfaith Center staff to welcome and monitor visitor activity in the Chapel. This office should be near a main entrance if at all possible.

Toilets

The existing facility, with only one toilet on each level, is woefully inadequate for group activities that occur regularly in the Interfaith Center. New men’s and women’s toilet rooms must be provided. Code research suggests that the following fixtures are needed: one toilet and lavatory per gender, one drinking fountain, and one service sink. The desired program includes three toilets and two lavatories per gender and one service sink. A drinking fountain should also be needed. The new toilet rooms should meet all accessibility requirements.

Storage

Expanded storage must accompany the projected expansion of activity in the lower level. Storage for chairs and other furniture such as folding tables will need to be provided.

Outdoor Space

Though the chapel enjoys a prominent site with proximity to the natural landscape and fine views of the Bay, the current site plan fails to take advantage of these benefits. The Interfaith Center seeks to better integrate the building with its surroundings and extend the building’s function as a gathering space into the grounds through pathways, terraces and gardens. As part of an improved main entry, an overlook would add a site element that emphasizes the view of the Bay and serves as a backdrop for wedding photos.

There is the desire to utilize the ample spaces to the east, behind the building, and in front of the chapel to create a variety of gathering spaces. The green space to the east should contain several different spaces to accommodate intimate gatherings and large group events. The bronze plaques currently in the Memorial Garden and the Vietnam veterans’ memorial should be reused as part of a new east area design. A circular gathering area could provide orientation to compass points and may accommodate temporary fire ceremonies for particular faiths. The space behind the building could be reconfigured to hold a meditation area and sensory-based vegetation to create a more natural link with the eucalyptus grove while continuing to provide access to the east side of the building from the parking lot. The meditation area might contain a foot-washing area to accommodate needs of several religious traditions and provide a soothing water element for all.

ADA and service access currently located on the south side of the building should be relocated to the west side adjacent to the parking lot. Other important service-related functions such as catering, deliveries, recycling, and trash pick-up should be located near the parking lot and/or secondary entries to the building.

The building's proximity to the San Francisco National Cemetery should be recognized. Currently, the cemetery is visible across a parking lot, but no physical connection exists. Though the building's function as an interfaith center makes the link to a traditional cemetery less obvious, the acknowledgment of the life cycle found in most faith traditions makes a link important.

Sustainability

A sustainability objective of LEED® Silver should be set. Presidio Trust guidelines for sustainability should be followed.

MATRIX ANALYSIS

This Matrix Analysis compiles all currently known guidelines and/or requirements regarding changes to the Presidio Chapel.

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
Secretary of the Interior's <i>Standards for the Treatment of Historic Properties: Standards for Rehabilitation</i>	Standard 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.	✓	✓
	Standard 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.	✓	✓
	Standard 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.	✓	✓
	Standard 4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.	N/A	N/A
	Standard 5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.	✓	✓
	Standard 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.	✓	✓
	Standard 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.	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
	Standard 8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.	✓	✓
	Standard 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.	✓	✓
	Standard 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.	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
Preservation Brief #14: New Exterior Additions to Historic Buildings: Preservation Concerns	Maintain the primacy of the historic building	✓	✓
	Respect the architectural expression of the historic building type	✓	✓
	Retain the essential form and integrity of the historic building	✓	✓
	Preserve character-defining features	✓	✓
	Take design cues from, but do not copy, the historic building	✓	✓
	The new addition should be differentiated from the historic building but compatible	✓	✓
	Keep volumes separate. Utilize hyphens or connectors as the link from new to old	✓	✓
	Minimize loss of historic fabric. Place the addition where the least amount of historic fabric and features will be impacted	✓	✓
	There should be minimal change to the primary elevation	✓	✓
	The addition should be inconspicuous from public view	✓	✓
	Utilize existing openings	✓	✓
	Respect historic landscape features	✓	✓
	Preserve the historic building's form in relationship to its site and setting	✓	✓
	The new addition should be harmonious with the historic building in scale, proportion, materials and color	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
Main Post Planning & Design Guidelines: New Construction	Rely on massing and building form, rather than on applied decoration, to give buildings their distinct identity.	✓	✓
	Clearly differentiate new construction from the existing historic buildings and do not copy them.	✓	✓
	... Scale and dimensions of new building elements must respond sensitively to the scale of the building being added to...	✓	✓
	Respect the massing of surrounding roof forms when developing new roofs. Roofs should be simple and direct...	✓	✓
	Develop an exterior color palette that complements the range of colors predominant in the Main ...	✓	✓
	... Select building materials that are compatible with the existing buildings.	✓	✓
	Design new construction and building rehabilitation projects in conjunction with the Leadership in Energy and Environmental Design (LEED) rating system. At a minimum, each building project must be certified at the LEED Silver level.	✓	✓
	Locate any proposed roof-mounted sustainable features such as photo-voltaic panels, solar hot water heating, and green roofs carefully to avoid being conspicuous and detracting from the historic Main Post setting.	✓	✓
	Exploit existing building features that promote energy conservation, such as operable windows, roof vents, natural daylighting, etc.	✓	✓
	Irrigate new and existing landscapes with reclaimed water to be supplied by the Presidio. Reuse building gray water if possible.	✓	✓
	Disconnect the building's gutters and downspouts from the Presidio's storm water system whenever possible to discharge into the ground.	✓	✓
	Limit new construction to 4000 square feet.	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
	Maintain the alignment of the historic Fisher Loop. Traffic may be removed from some or all of these road surfaces, but their curb alignment should be retained in the landscape.	✓	✓
	Maintain the open spaces to the north and east of the chapel as landscaped areas.	✓	✓
	Orient the addition to be perpendicular to the west wall of the sanctuary, allowing a large portion of the west wall to be visible.	✓	
	Design the addition so that its scale and massing relates to the existing chapel. Ensure that the new addition is differentiated from the existing historic building but compatible with it.	✓	✓
	Develop a lightweight and transparent connecting structure that visually separates the addition from the historic chapel. Do not allow the height of the connecting structure to extend beyond the chapel's west window sills. Allow the chapel's west wall to read.	✓	✓
	Use a gable or a flat roof that is compatible with the historic chapel. If a pitched roof is selected, conform to the slope of the existing chapel roof.	✓	✓
	Design the new addition to include punched openings, roof overhangs, and other architectural features that relate to the historic chapel.	✓	✓
	Limit the architectural detailing of the addition so it does not compete with the existing main chapel facade. Allow the existing decorative terra-cotta detailing to continue to be the building's dominant visual characteristic.	✓	✓
	Avoid removal of historic features or structures. Avoid changes to the historic interior that would damage historic fabric or historic interior volumes. Consider removal of non-historic features such as the entry canopy and accessible ramp.	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
Main Post Planning & Design Guidelines: LandscapeDesign new landscapes to be compatible with the existing historic landscapes.	✓	✓
	Identify existing heritage plants and protect them.	✓	✓
	Follow the Presidio's approved plant list when making plant selections.	✓	✓
	Design landscapes that can be easily maintained and incorporate best green practices.	✓	✓
	Incorporate the placement of site utility equipment such as transformers, backflow preventers, irrigation controllers, etc into site planning from the beginning of a project. They should be located out of view as much as possible, away from open spaces, road corridors or important landscape features.	✓	✓
	The size and location of trash storage and collection areas should be reviewed with the Presidio waste and salvage coordinator.	✓	✓
	Comply with applicable fire codes to provide emergency vehicle access.	✓	✓
	Manage vehicular movement, such as passenger drop-off and deliveries and loading, in such a way to minimize traffic disruption...	✓	✓
	... Exterior bike racks should be provided for building visitors.	✓	✓
	Use paving materials that are compatible with the palette of paving types. Comply with Presidio requirements for concrete color for paving, curbs and sidewalks.	✓	✓
	Manage stormwater runoff within the building site whenever that is possible. Best management practices should be used to reduce runoff from impervious surfaces.	✓	✓
	Avoid light pollution and light trespass in designing exterior lighting.	✓	✓
	Respect the layout of the original landscape and driveway patterns around the Presidio Chapel and design new landscapes that retain these elements.	+/-	+/-

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
West of Main Post Focused Cultural Landscape Report	<p>Maintain and protect historic trees and plant materials to allow them to reach the end of their natural lives. When historic plant materials must be removed because they have reached the end of their life spans, or because their size and structure creates a safety hazard, remove them and replace them in-kind whenever possible. If a substitute species is being considered instead of an in-kind replacement, the substitute species must have the same character as the original being replaced. It must be similar in terms of type, form, shape and scale.</p> <p><i>(Note: much of the original plant material around the Chapel has been replaced. Conduct a plant analysis to determine what is original)</i></p>	✓	✓
	<p>Retain small-scale site features, such as manhole covers, fire hydrants, boot scrapers, stone landscape elements, etc. If replacement of these features becomes necessary, introduce new features that reflect the size, scale, texture, and color of the feature being replaced.</p> <p><i>(Note: see CLR table 2 on page 40 for a summary of small scale features that should be retained and preserved)</i></p>	✓	✓
	<p>Conform to the Presidio Trust standards when replacing streetlights and street signs. When introducing new elements such as street furniture, and way finding and directional signage, conform to the Presidio Trust and Tenant standards.</p>	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
	New site features are allowed as part of a landscape rehabilitation, but they must be located so as not to damage historic features or to compromise the integrity of an area.	✓	✓
	Locate new surface parking in low-integrity areas (such as former building pads) or areas lacking significant landscape features.	✓	✓
West of Main Post Focused Cultural Landscape Report: Specific Treatment Recommendations	Recommendation D1 Retain the historic plants that are noted on the Plant Inventory. Introduce replacement plants that are compatible with the historic plant palettes.	✓	✓
	Recommendation D3 Retain the historic row of trees lining the National Cemetery fence and reinforce this row by adding new trees of the same species.	Not in scope	Not in scope
	Recommendation D4 Retain the historic width and alignment of Fisher Loop. Re-establish missing historic edges on curbs. Limit curbcuts and driveway cuts.	✓	✓
	Recommendation D6 Retain the historic width and alignment of the driveway on the south and east sides of the Presidio Chapel. If the driveway must be altered for functional reasons, mark its original width in the new paving or landscape material.	✓	✓
	Recommendation D7 Retain the concrete stairs.	✓	✓
	Recommendation D8 Maintain openness of open sloping open space.	✓	✓
	Recommendation D9 Retain historic specimen trees.	✓	✓
	Recommendation D10. Retain parking lot and improve its functionality and appearance.	✓	✓
	Recommendation D11. Consider removal of non-historic trees from the area between Fisher Loop and Infantry Terrace to re-establish views.	✓	✓

Standards and Guidelines	Specific Recommendation or Requirement	Scheme A	Scheme B
West of Main Post Focused Cultural Landscape Report: Contributing Landscape Features to be preserved	The concrete staircase on the slope east of the Chapel, connecting the Chapel side yard to Infantry Terrace below.	✓	✓
	The triangular sloping lawn north of the Chapel surrounding all three sides by Fisher Loop, with a concrete sidewalk on its eastern edge.	✓	✓
	Trees either singly or in groups in the triangular lawn or east of it, in the area between Fisher Loop and Infantry Terrace.	✓	✓
	Historic forest sections south and west of the Chapel.	✓	✓
	The system of sidewalks east of the building.	✓	✓
	The sloping lawn area that wraps the building's north and east side, extending from the building to the Infantry Terrace/Sheridan Avenue curb.	✓	✓
	Trees in this lawn located north and east of the building close to the road.	✓	✓

PART IV: APPENDIX

A. RECOMMENDATIONS FOR TREATMENT OF SPECIAL FEATURES

ORGAN RECOMMENDATIONS*

Description and Value

This is a two-manual and pedal pipe organ of 14 voices/16 ranks plus chimes. It is built on the electric-pneumatic action system. The pipework is located in two expressive chancel chambers, the console is in the chancel and the blower is in the basement office area below the Swell chamber. Special features of the instrument include a 73 note compass for several Swell stops and three 16' stops including an open metal flue and a reed. The instrument is not the work of a single builder, but rather an accumulation of parts by the M.P. Möller Co. of Hagerstown, Maryland mixed with pipes and parts of unknown provenance. It is, therefore, a hybrid instrument without a brand name. The present day replacement value of this instrument, if it were to be built as a unit by a reputable builder, is \$386,000. This includes installation and tonal finishing labor but does not include shipping, hoisting, transportation, and local living expenses of builder personnel, preparation of the building to house the organ, electrical hook-up of blower, lights, etc., California sales tax, or local permits and fees. We suggest adding a 20% factor to cover these items.

Condition

The organ was in good condition considering its mixed history, age, and environment. A good deal of mold, due to dampness, and dust were found throughout. Two ivory key coverings were missing from the console. The Crescendo light was not operating. The Tremulant was not operating. Pedal note 32 was silent on all stops. The Pedal 16' Gemshorn note 3 and 8' Bass Flute note 29 were silent. The Swell Salicional note 67 and Voix Celeste notes 68, 69 and 72 were silent. The Swell 4' Flute notes 64 through 73 and 2' Nazard

notes 57 through 61 were silent. The entire Great 2' Super Octave was silent as were the Chimes. The organ is quite well in tune considering the extremely cold temperature. Tonal regulation, especially in the 16' octave of the Trumpet and the 2' Swell Principal, was uneven as might be expected in an organ of this age.

Suitability

This is a very nice typical American church organ that fits the building well acoustically and seems fully capable of providing the character of music necessary for chapel functions. It has many attractive tone qualities and enough variety to provide a good range of accompaniment and solo effects. Since it is fully under expression, it has a fine dynamic range as well. All in all, this instrument has a pleasant and helpful musical personality.

Specific Concerns

As part of this survey all of the organists and Jan Chaffee were interviewed to determine if there were any special problems that needed to be addressed. Items presented by members of the project team were also discussed.

- *Blower Noise.* The blower is a Möller Kinetic unit with a single-phase motor. The day of the visit it was making quite a racket due to a loose motor cover plate (now fixed). That brought it into its normal mode, which is still noisier than most modern blowers but quieter than some of the old heavy-duty units. In other words, this blower is about average in noise production. It is in a very nice blower room of adequate size and construction and draws its air from a normally conditioned space in the office area below the chapel. From a technical point of view, this blower is perfectly fine and should give excellent service for many years. People who use the building on a regular basis report that noise is not a major problem, as the adjoining office is seldom in use when the organ is on. When the office is occupied, the noise should not be so distracting as to warrant a large expenditure to correct it.

However, if it must be silenced, there are two solutions: one is to move the blower to another location; and the other is to install a modern silent blower. Moving the blower room would be a very expensive proposition because of the need to provide a large soldered sheet metal wind conductor between the new location and the organ chambers. A blower room of adequate size with good air supply will have to be provided, and of course the blower will have to be moved and reinstalled. The organ builder's part of the work would cost about \$3,500. If a new blower is desired, allow a budget of \$14,000 plus electrical hook-up by a licensed electrician.

- *Console Location.* All interviewed people prefer the console in its present position. It provides good sight lines for accompanying weddings and is in a fine vantage point for listening to the proper balance of the two organ chambers. Moving the console back to its original location would be a negative from the user's point of view.

The real problem with the console is its light finish. The console can be refinished. This requires disconnecting it, removing it to the finish shop, removing or masking all component parts that are not to be refinished, stripping off the old finish, applying the new finish, reassembling and testing the console, transporting it back to the chapel and reconnecting it. A budget estimate for this work is \$13,000.

Note: If refinishing is desired, it would be very wise to consider renovating the console while it is disconnected. Renovating the console is something that will be necessary in the future (see below) and it would be far more efficient to do all the work at once.

Environment

The best thing that could be done for this instrument is to improve its environment. The cool, dank atmosphere is a serious problem for many instruments located in the damper parts of San Francisco. The mold located throughout this instrument, particularly on leather, has been noted above. In

addition, moisture can cause malformation of the delicate Pitman valves in the wind chest, oxidation of metal parts, problems with electrical cable and contacts, etc. Installation of low-power baseboard heaters in both organ chambers and the blower room is recommended, and a Damp Chaser unit should be installed in the console to maintain all areas of the organ at a minimum temperature of 65 degrees. Further, the window opening into the Great chamber should be sealed and insulated. Keeping the temperature thus stabilized will not only help prevent mold and mildew but will help with tuning by keeping the chamber relatively near the temperature that will be achieved during use of the organ when the building is occupied.

There was some evidence of leakage in the Great organ chamber and possibly also in the Swell. It is imperative that the building renovation take care of all ceiling and side-wall leakage. Any direct water contact with organ parts assures their destruction.

The final environmental problem that must be addressed is improving work lighting in the organ chambers. They should be bathed in very bright fluorescent light to make service work and tuning easy and safe. An investment in good chamber lighting always pays off in better organ maintenance.

These environmental upgrades should be budgeted. The organ consultant can provide additional information as needed.

Organ Repair/Renovation

To correct the problems mentioned in the condition report will be a straightforward proposition involving some intensive repair work. The repair work is roughly estimated to cost between \$8,000 and \$13,000, depending on how much tonal regulation is desired.

It is important to note that this instrument is in immediate need of complete renovation due to age. It is impossible to guess exactly when, but generally the leather and other perishable parts on a pipe organ last 50 to 60 years in the Bay

Area – sometimes more, sometimes less. When these parts start giving out, the organ exhibits dead notes and notes that play all the time (ciphers) as well as other malfunctions. An organ can operate for a long time with these problems, but an artistic result becomes harder and harder to obtain. The work is inevitable, but the timing is somewhat flexible. For example, if funds are extremely tight, this work can probably be put off for several years. On the other hand, if a good deal of work is to be done on the organ (such as console refinishing) and if the building is to be disturbed to a great extent requiring disassembly of parts of the organ to gain access for building renovation work, then it might be very wise to consider rebuilding the organ during the time of construction. Doing work when the organ is already partially or fully dismantled would be most efficient.

The only sensible way to make this decision is to wait until all other elements of the building renovation project are determined to see how they might impact the organ. Renovation of the console and its related electrical system while the console is refinished is estimated at \$35,000. When the console is renovated, it should be modernized; this work is figured into the above estimate. Modernization will provide many advantages: multiple-combination action memories, elimination of the requirement for air in the console, optional record/playback capability, and a transposer, among many other advances in playing aids made possible by modern technology. A rough budget estimate for renovation of the balance of the instrument is \$100,000.

One more important element must be addressed along with a renovation. That is the improvement of layout and design of the Swell organ chamber. The Great chamber is beautifully laid out for good service and tonal egress, etc. The Swell chamber, on the other hand, has some problems. It was obviously put together in bits and pieces using parts that were not custom-designed to fit the room. Therefore, it is difficult – and, in some cases, impossible – to access certain parts of the instrument for routine maintenance. One egregious example is the solid-state relay equipment, which lies on its back on the floor underneath the Swell manual wind chest, making both the chest and relay very difficult to service. The proper approach in renovating this part of the organ is to take everything out of the chamber, redesign it (in many cases with new wind chests and other component parts), and reinstall it in a thoroughly professional manner. At the

same time, some discreet tonal changes could be made to improve the musical performance. Major tonal concerns in the Swell are: The 8' Flute unified to 4 and 2 pitches is rather full and thick in quality, not as buoyant and pleasing as it might be. The 2' flute is really a principal not very well voiced. The 16' Trumpet extension is exceptionally buzzy and very slow in speech. In the Great, the Dulciana and its Celeste might be a bit bigger in tone and volume. The 4' Octave is flutey in quality and could be improved by being made a bit brighter. The 4' Swell flute borrowed into the Great does not seem to be too useful. It would be far better to add an independent 4' Flute in the Great where there is plenty of space available. A budget figure of \$65,000 is suggested to make these important improvements.

Recommendations Summary

1. Improve organ chamber heating and lighting.
 2. Decide whether or not to reduce blower noise.
 - If relocation of the blower is made necessary by other aspects of the building renovation program or if it is the preferred solution, budget \$3,500 for the organ builder's portion of the work.
 - If a new blower is desired, budget \$14,000.
 3. If the console is to be refinished, decide between two alternatives as follows:
 - Refinish the console, estimate \$13,000.
 - Refinish, renovate and upgrade the console, estimate \$48,000.
 4. Decide an approach to organ renovation (all parts except console).
 - Minimum remedial program, budget up to \$13,000.
 - Full renovation, budget \$100,000.
- Full renovation including redesign of the Swell chamber and tonal improvements, budget \$165,000.

STAINED GLASS RECOMMENDATIONS*

Existing Conditions

The stained glass windows of the main chapel are approaching the end of the life cycle of the connective materials. All of the windows exhibit problems ranging from out-of-plane portions to severe buckling, and several windows are in failure with severe buckling and deterioration of metals. There is very little, if any, broken glass, but this is a real threat with such severe warping and bending.

Over time, the materials of leaded glass windows are naturally susceptible to deterioration that affects structural integrity, waterproofing capacity, and the quality of light transmission. Among the causes of window deterioration are oxidation, wind pressures, gravity loads, and airborne particulates.

Oxidation of the lead and soldered joints weaken the structural integrity of supports for the glass pieces. Over time, a layer of oxidized material develops on the surface of the metals due to continued atmospheric exposure. Since the Presidio is located in a marine environment, additional corrosion of the metals may be caused by airborne salts.

Varying wind pressures cause flexing of the panels, which leads to fatigue of the lead, joints, and connections to supports. The flexing and oxidation combine to deteriorate the cementitious water-caulking material, thus opening pathways for water infiltration to the interior and adversely affecting the frames, structure and finishes of the chapel.

The structural integrity of the windows is affected by gravity loads on lead, a pliable metal that, although supported, stretches and bends over time.

Environmental airborne particulates collect on the exterior surfaces, and residues from oil and wax fumes accumulate on the interior surfaces. These accumulated materials greatly reduce the amount and quality of light coming into the chapel and may cause the exterior surface to become pitted over an extended period of time. Lower light volume and quality can make the art content of the windows difficult to distinguish, and the colors may be perceived as dull.

Currently there is no known vandalism to the windows. Unexpected openings from vandalism may weaken the surrounding connections, create a direct path for water, and make neighboring windows difficult to see due to adjacent bright areas. Some urban churches install transparent plastic shields outside stained glass windows to prevent damage from vandalism.

Recommendations

It should be a priority to have the windows releaded, grouted and cleaned in the next ten years. The most severely deteriorated windows should be restored immediately. This could prevent breaking of glass, material damage to the structure and finishes of the building, and diminution of the chapel's aesthetics. Most of the windows will require restoration by the end of this decade due to increasing fragility.

If financially feasible, it would be most efficient to restore all the windows at once when the general contractor's scaffolding and site protection are in place. Restoration at this time would also take advantage of on-site construction personnel who would have the skills and materials available to address any hidden building fabric issues that may be revealed during the removal of the windows. Additionally, with the building expansion and the addition of a suite of new windows, presenting the stained glass windows as unifying elements of the building would contribute to a successful project.

Restoration should be undertaken before a majority of the windows begin to significantly fail. Restoration work should include documentation of existing conditions, removal of panels to a stained glass studio for cleaning, installation of temporary infill panels of glass or other weatherproof materials, releading, grouting, and preparation for reinstallation. Panels should be reinstalled in original locations, securely attached to the building structure and installed to be waterproof.

An opinion verbally delivered by Reflections Studios in 1999 stated that the windows should be releaded within 20 years. This report supports that recommendation.

Stained Glass Window Recommendations and Evaluation

Recommendations

If work is postponed for ten to fifteen years, windows most at risk face significant damage to the panels and the building fabric, resulting in more extensive repairs. Other windows will continue to deteriorate and become more at risk of failure. With postponement beyond the building project, the opportunity to use in-place construction scaffolding and personnel would also be lost.

1. Restore failing windows
Fully restore the three windows in the apse. For each window, budget \$8,900 for restoration and \$600 for additional paint restoration if needed (to be determined upon closer inspection).
2. Restore windows at risk
Fully restore windows at risk. These are the windows in the clerestory and several on the main floor. For each clerestory window, budget \$13,100 for restoration and \$750 for additional paint restoration if needed (to be determined upon closer inspection).

Fully restore main floor windows (101, 102). For this group, budget \$12,850 for restoration and \$500 for additional paint restoration if needed (to be determined upon closer inspection).
3. Refurbish two windows in bell tower. These will require restoration but not relighting.

MURAL CONSERVATION AND TREATMENT RECOMMENDATIONS*

Title: Presidio Mural
 Artist: Victor Arnautoff, 1935
 Subject: Early history of California, religion, and activities of the army in 1935, occupied with development of science, radio, and engineering of the Golden Gate Bridge
 Location: East portico wall, now enclosed
 Patron: SERA, State Emergency Relief Administration
 Medium: Buon fresco
 Size: 10'4" x 35' 5 1/2" (+/- 1/2" each dimension), above wooden wainscoting

The conservator examined the mural under normal ambient daylight and 500w tungsten photographic light. Magnification was provided by a 1.75x head loupe, and access was supplied by an eight-foot ladder. Glass shields at the bottom edge of the mural were left in place during the examination, as was a large desk at the center of the wall. Most of the mural surface was accessible, with the exception of the center and the top two to three feet.

Support

The mural has all the characteristics of buon fresco. Traditionally, there is an arriccio (scratch layer) over which is laid one or more finish coats (the intonaco). It is not known whether or not a sinopia drawing (typically in red earth) exists on the arriccio, but it is presumed to be. Photographic archives of frescoes in process at Coit Tower, finished the previous year, show the sinopia layer in the work of the artists there. Arnautoff and some of the assistants listed on this fresco worked at Coit Tower; they likely constructed this fresco in the same way. There are no losses to the fresco that reveal the stratification and thickness of the plaster layers.

The intonaco is very well prepared, and giornate (joins in the plaster corresponding to the day's work) are well-planned and –executed (see photo at right). The intonaco is trowelled to a smooth finish, and exhibits typical variation in surface porosity. This is due to some localized uneven richness of lime or sand, and/or the direction of the trowel, creating a kind of nap in the surface.

The account written in the Presidio Mural brochure states the fresco was painted in 42 days, so there may be as many as 42 giornate, depending upon the contribution of assistants working at the same time.

Marks on the surface of the mural indicate that the method of design transfer was by incision (bottom right). The mural was first sketched on paper (the “cartoon”), and the design was copied by tracing the outlines of forms through the cartoon onto the wet plaster, leaving indentations in the plaster for the artist to follow as a guide. As typically seen in fresco, some of the finished work does not follow exactly the lines made from the cartoon; some changes of design are inevitably made by the artist as he paints freehand. Most incisions in this fresco are barely visible, as they match closely the painted outlines of the forms; the incision lines are only visible in strong raking light.

Condition

The plaster is in excellent condition and is secure. The wall was sounded for voids and separations, and none were noted in areas the conservator could reach.

There are areas of the fresco which exhibit a surface sheen uncharacteristic of the fresco medium. Some of this is due to prior restoration, but some may be due to burnishing of the surface by years of hand rubbing or accidental swiping over the surface (see sheen at top left, with graffiti).

Relatively recent damages to the plaster include small scattered losses mostly due to abrasion, which expose the bright white of the plaster (middle left). Old losses are more difficult to locate, as explained in the section “Past Restoration.”

Paint Film

The artist is known to have trained and worked in the fresco medium prior to this commission, and the mural has all the attributes of true fresco. The pigments are chosen from a limited palette of colors, mostly mineral/earth colors, stable in the high alkalinity of lime plaster. Pigments would have been ground in water and applied directly to small sections of wet plaster, only large enough for one day's work. The stability of the painting comes from the carbonation of lime, which occurs as a consequence of drying in the presence of carbon dioxide. This chemical change continues for many years, and the fresco becomes more stable with age. No obvious areas of secco (dry application of pigment with a binder) are noted, however, it is always possible that some reinforcement of color may have been applied (either deliberately or inadvertently), after the plaster dried.

Condition

The general appearance is that of a stable fresco in good condition. However, a great deal of past restoration is noted. Since the fresco appears to have been well-crafted, restoration was probably due to losses and alteration of the surface caused not by inherent instability of the medium or weathering, but by careless and/or malicious mischief attributable to people (see photo at bottom left). Small scattered losses on the far right of the fresco (which is behind the door, when it is opened) may have been caused by the flagpoles now stored on the opposite side of the room; the height of the flags is suspiciously similar to the height of the damages (see damages in photos to the left).

Due to past restoration, it is not clear whether there has been any damage caused by leakage from the roof; there are no obvious signs of this. No recent signs of leakage are noted.

Surface Films

The painting surface appears relatively clean, and colors are not noticeably altered. There is, however, a light coating of dust, along with cobwebs and some insect nests. The bottom edge of the fresco, protected by short glass panels set an inch or so off the fresco surface, collects a great deal of dust (right).

Past Restoration

Under strong specular lighting conditions, numerous past restorations are identified. Graffiti and loss are scattered throughout the lower three to four feet of the mural, but these conditions taper off higher up, at areas harder to reach from ground level. Considering that the fresco was originally exterior to the building, this is not unexpected, since it was subject to unsupervised handling 24 hours per day for many years.

Past restoration probably included some localized cleaning, but the extent of this is largely unknown. The upper portions do not appear to have been solvent-cleaned. Most obvious is the repair and repainting of areas damaged by aforementioned abrasions, impact, and graffiti (see photos below). Some of the repairs are so well-disguised that the amount of repaint is difficult to ascertain.

Previous restoration to Coit Tower was extensive, and was done by an artist who had experience working with Diego Rivera. The hand of this person was probably here, since the type, extent, and quality of the repairs is very similar. The repaints are probably Liquitex acrylic emulsion paints, which impart a very soft sheen to the surface and are somewhat more “muddy” and opaque (see photo at bottom, second from the right). The translucency of true fresco, due largely to the optical brightness of the underlying plaster, is very difficult to simulate in another medium. The areas of repaint, done in a very skillful, striated pattern, blend well into the original surface but lack the luminosity of true fresco (photo at bottom right).

While the abundance of repaint goes beyond standards of practice today and the restorer’s use of acrylic emulsion is not the medium of choice, it takes a skilled eye to ascertain the repaint from the original. In that regard, the past restoration has served an important function for many years (this was probably done in the late 1960s or early 1970s), it is reversible, and it has integrated the design so that the mural can be enjoyed.

Recommended Treatment

Considering the limits of funding, this conservator sees no value in changing the restoration work done years ago to reintegrate the mural design. There is not enough benefit in removing overpaints, minimizing (or localizing) the areas of damage, and repairing them again. In the future, the choice to re-work the old repairs remains. Re-treatment would produce some improvement, as it would uncover more of the original surface that has the optical properties of true fresco. However, the full extent of damage (now unknown) would be exposed, and the effort to conserve and restore the surface properly would be expensive, time-consuming, and require superior professional skills.

The mural should be surface-cleaned to remove the dust, cobwebs and foreign debris. Any deep losses of plaster should be compensated with compatible (non-salt-forming) filler, and all losses should be inpainted to reintegrate the design. Inpainting should be limited to areas of loss only. If any old repairs are not well-matched in color or sheen, these should be altered with further inpainting, but only to the extent this can be simply and economically done.

What is most needed is the repair of damages sustained after the last restoration. This includes a number of small scattered losses, which expose the bright white color of the plaster. Pigment loss disturbs the three-dimensional illusion of space in the mural, and draws attention to the vulnerability of the mural surface. Losses invite new losses: lack of maintenance is not only an eyesore but encourages a mindset of apathy, which is a danger to any public work of art.

Review of the barrier system is in order. The small glass panels at the bottom of the fresco have certainly protected the surface, but they do not go far enough if the room is to accommodate more people, especially if food or drinks are to be carried through the room. The width of the room is only eight feet between the columns and the fresco, nine feet to the windows. A barrier should keep an outstretched hand from touching the fresco. Review of barriers designed for Coit Tower and the Beach Chalet frescoes may be helpful.

The white color of the walls is not flattering to the fresco, as it sets a standard of brightness which causes the fresco to appear dirty. The warm beige color that is integral to the original stucco and the context in which the artist actually painted is a better choice. Changing the wall paint to this color will cause the standard of brightness to be within the white areas of the fresco itself, actually helping the fresco to appear cleaner and brighter.

Cost

In 2007, the cost of treatment to surface-clean the fresco and to mitigate current damages is in the range of \$3,400-3,700. This would include a CD of digital images before and after treatment, and a brief report of processes and materials used.

LIGHTING RECOMMENDATIONS*

The chapel's lighting system is a mix of original lighting and obvious additions that compete with the clean lines of the architecture. Since the chapel hosts many types of functions, the lighting needs to be multi-functional as well. While it is important for the historic lighting to remain, additional layers of illumination should be added to offer the capacity for varying levels of illumination.

The main floor of the chapel should remain as close to the original design as possible; the new lighting scheme will preserve historically significant light fixtures while upgrading them to present UL (Underwriters Laboratories) standards and adding features to make them less glaring. The lower level and addition should have high-quality variable lighting that is compatible with the historical look of the sanctuary without mimicking it.

This report will address the four functions of light: Decorative, Ambient, Accent, and Task. Decorative lights, such as the existing chandeliers, are the architectural jewelry that provide visual sparkle and help create secondary ceiling lines to help humanize the scale of the various spaces. Ambient light is indirect illumination that is bounced off the ceiling line to help eliminate shadowing; it softens the shadows on people's faces and work surfaces. Accent light highlights art and architectural elements to help add depth and dimension. Task light provides good illumination for work surfaces, storage areas, and restrooms. These four functions will be layered together to create a lighting design that is both inviting and functional. Natural lighting elements are also addressed.

See 2007 Feasibility Study for suggested lighting figures noted in this report by the letter E.

Main Chapel

Decorative/Natural

The stained glass windows are small and dense; they offer little additional lighting during the day and no illumination after dark. The six existing chandeliers do not provide enough illumination for this relatively dark space. From below, the fixtures clearly show the incandescent lamps through the glass bottom.

Several measures should be taken to improve the chandeliers. A white opal acrylic disc could be layered on top to soften the lamp imaging. The A-lamps will be replaced with screw-in dimmable compact fluorescent lamps (CFLs) such as those offered by TCP (Technical Consumer Products), which makes a CFL that produces 75 watts worth of illumination for 24 watts worth of power consumption, is incandescent in color quality, lasts 10,000 hours as opposed to 750 hours for a standard incandescent A-lamp, and is dimmable using a standard incandescent dimmer. The flame-tip lamps will be replaced with a long-life (10,000-hour) cold-cathode lamp to cut down on power consumption and costly maintenance.

The chandeliers are currently on two switches, with one controlling the candles and the other controlling the lights within. This arrangement would stay the same, but both circuits would be dimmable. These fixtures could also be hung slightly lower to facilitate re-lamping with a standard-size ladder.

There are also two existing sconces flanking the pulpit. They are not original to the building and have been electrified using Wiremold. They are too underscaled to be effective in the chapel, but they could be reused in another location if the design team feels that they should be retained.

Ambient

The main chapel ceiling is a beautiful element that falls virtually into darkness. A layer of dimmable indirect lighting on the chapel ceiling would create a much more inviting space and allow visitors to enjoy the beauty of the ceiling detailing. Indirect lighting could be created by adding subtle, shielded indirect lighting on top of the existing beams that run parallel to the floor. This solution would require maintenance of these fixtures.

A more easily accessible solution would be to install custom indirect, opaque wall sconces that are of a period or industrial style which would be mounted below the insets under the stained glass windows.

Task/Accent

The pulpit area is illuminated with a two-headed fixture mounted at the apex of the arch. This fixture is glaring, unattractive, and presents considerable expense to replace burned-out bulbs. A pair of three-headed luminaries mounted on the back side of the arch provides additional lighting.

A two-circuit track system would offer accent light, task light, ambient light and theatrical effects. Each circuit can be dimmed and controlled separately for maximum flexibility, and the system can easily be adjusted or re-lamped from a standard 8' or 10' ladder.

Cloister / Mural Room

Decorative/Natural

Poorly-installed wiring in the cloister visually detracts from both the architecture and the art. The three chandeliers are not original to the building and interfere with the viewing of the mural. These should be removed. There is one wall sconce that is original to the building, although the glass has been replaced with a 1960s amber-patterned glass. Refurbishing the existing sconce and replacing the glass with a frosted version would visually tie the fixture to the chandeliers in the chapel. The windows offer a good level of natural light during the day but would be replaced with a UV-inhibiting glass or augmented with a UV-filtering film.

Accent/Ambient

The mural is illuminated by a light channel that uses expensive, short-lived incandescent lamps. These produce UV and heat detrimental to the mural. The mural would be best illuminated by bouncing a series of indirect light sources off the ceiling. This will eliminate glare and reduce the possibility of fading from the effect of UV light coming from a light source aimed directly at the art. The indirect light sources would be mounted above the capitals of the columns located on the opposite side of the room, with wiring running discreetly along the lower edge of the header above the windows. This uplighting would also show off the dramatic beamed ceiling while adding a subtle layer of inviting ambient light.

Lower Level

Decorative/Natural

Presently there are a series of glaring fluorescent fixtures with noisy magnetic ballasts. These are not dimmable.

Because this area has no original fixtures, the lighting can be designed from a clean slate. While the upstairs is very church-like, the lower level (and the new gallery addition) can be more universally appealing. Once the overhead

ducts (Figure 10) and non-essential walls are removed, there would be a clean beamed ceiling that lends itself to both indirect cove lighting running on each side of the concrete beams and a series of dimmable decorative light sources running between the beams. Getting power to the center of the coffers could be accomplished with a pancake junction box and then covering the wiring to the junction box with a thin layer of sheetrock. This sheetrock would also offer some sound absorption qualities.

Along the east wall of the building are two rooms and a foyer that leads to the upper level. Presently the foyer has windows that allow some natural light into the space. The center area is for storage and has no natural light but has a beautiful set of original doors hidden behind a set of bookcases that were in a natural wood or grained finish when first installed. The third space serves as an office. The office space is illuminated using a series of dated fluorescent ceiling fixtures. The children's activity room has utilitarian fluorescents as well.

The plywood infill wall that separates the office from the storage area should be removed to allow natural light into the former separate storage space.

A set of frosted or textured glass doors and sidelights should be added to separate the foyer from the main gathering space. This would allow some privacy for functions in the main room when other activities are happening in the classroom, office and on the upper level. An additional two sets of frosted glass doors should be installed leading from the foyer into the children's activity room and the combined office and storage space.

The library/office space should be illuminated using a series of wall sconces mounted on the bookcase supports that provide both a decorative light source as well as an indirect light source. Ceiling fixtures should also be added.

Accent

There is no existing accent light.

This lower corridor area connects to the upper level of the new addition via the stairs or elevator. Here, as in the main gallery space, accent lighting may highlight

the McDonald Windows. As above, the main accent lighting will come from a track system for maximum flexibility. A continuation of the track system is recommended for the main gathering space to offer flexible accent light for the movable art, if desired, or anything that might need highlighting along the walls of the space.

Task

The library and the children's activity room should have desktop illumination and strong general illumination so that the children or adults using these spaces will have good shadowless light whether they are working at desks or on the floor.

Restrooms

Decorative/Natural

There are no decorative or natural lighting schemes proposed for the restrooms.

Task

There is presently no specific task light.

Lights should be mounted on either side of the mirror to cross-illuminate people's faces. The traditional fixture above the mirror casts hard shadows on faces.

Ambient

A fixture or series of fixtures should be mounted in the center of the ceiling to provide general illumination. The luminaire should be semi-flush to the ceiling so that it can provide ambient illumination. There is no reason for public toilets to be harsh and uninviting.

Exit/Emergency Lighting

We suggest that the emergency lighting be tied into the exit signage. The proposed unit has very clean lines that draw little attention to the emergency lighting.

Exterior

Decorative

The front stairs currently are flanked by two unattractive short lanterns that are not in keeping with the character of the building.

These fixtures should be replaced with taller period lanterns in scale with the building's proportions. Another pair of lanterns should be added at the entrance to the new addition. These should be fitted with long-life, low-wattage fluorescent lamps with the color quality of incandescent lamps. The glass should be frosted to visually link them to other decorative fixtures and reduce maintenance needs.

Accent

Existing uplights were discovered on either side of the front stairs, indicating that the building is currently up-lit at sundown and at night. This is a beautiful façade and should be illuminated with low-wattage, long-life, shielded accent lights that would throw a soft illumination onto the front façade.

Task

New outside areas such as the program area, terrace, overlook, raised traffic table, and ADA parking would require pathway lighting and low-level area lighting. Low-profile, marine-grade pathway lights are recommended.

Decorative/Natural

As part of the new addition, this space could be illuminated with the latest technology without the constraints of existing construction. A series of skylights are planned for the corridor ceiling, which will promote energy-efficiency while taking advantage of natural light to illuminate the stained glass.

Decorative lighting is less important in the gallery space: the art is the decorative element. Decorative pendants should hang in the entry to help draw people in and create a sense of welcome. A series of sconces would help lead visitors to the lower level via the skylit staircase.

Accent

The layout and permanency of the displays is still in the design phase, but a track system will play an important role. A 2-circuit recessed track will offer maximum flexibility in the corridor and gallery. The skylight light wells above the corridor will be deep enough to allow the track to be mounted on the inside walls. In the entry, square recessed adjustable low-voltage fixtures will provide accent lighting, because the displays here will be more permanent than in the main gallery and lower-level display spaces.

Ambient

During the day, natural daylight should provide a good level of ambient light. A series of architecturally integrated sconces should be installed to provide much-needed indirect ambient light after dark. These should be recessed into the high wall side of the sloped ceiling.

B. MAIN POST PLANNING & DESIGN GUIDELINES, excerpt

2.C.4 PRESIDIO CHAPEL

2.C.4.a Maintain the alignment of the historic Fisher Loop. Traffic may be removed from some or all of these road surfaces, but their curb alignment should be retained in the landscape.

2.C.4.b Maintain the open spaces to the north and east of the chapel as landscaped areas.

2.C.4.c Design the addition so that its scale and massing relates to the existing chapel. Ensure that the new addition is differentiated from the existing historic building but compatible with it.

2.C.4.d Develop a lightweight and transparent connecting structure that visually separates the addition from the historic chapel. Do not allow the height of the connecting structure to extend beyond the chapel's west window sills. Allow the chapel's west wall to read; strive for an overall feeling of openness in its design.

2.C.4.e Use a gable or a flat roof. If a pitched roof is selected, make sure the slope is compatible with the roof of the historic chapel.



Figure 2-FF
Presidio Chapel, c1945.

2.C.4.f Design the new addition to include punched openings, roof overhangs, and other architectural features that relate to the historic chapel.

2.C.4.g Limit the architectural detailing of the addition so it does not compete with the existing main chapel facade. Allow the existing decorative terra-cotta detailing to continue to be the building's dominant visual characteristic.

2.C.4.h Avoid removal of historic features or

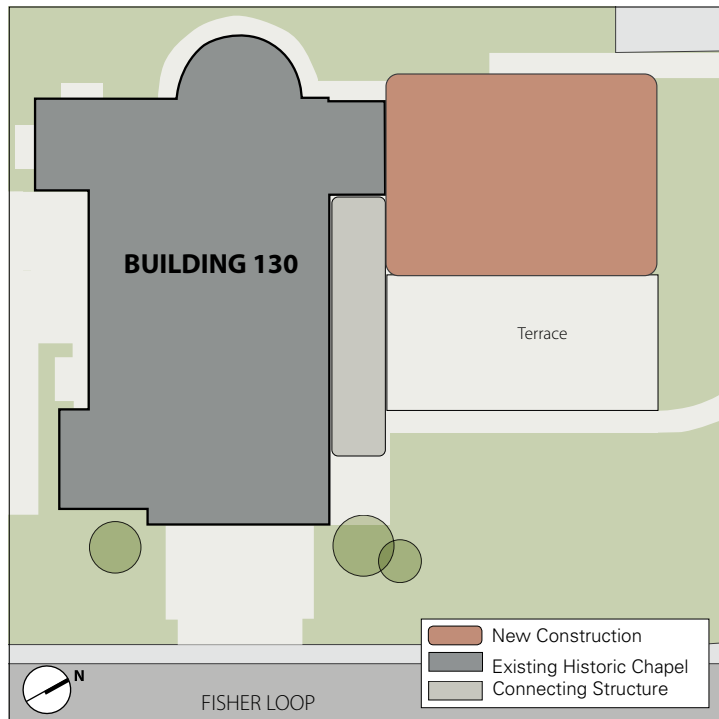
structures. Avoid changes to the historic interior that would damage historic fabric or historic interior volumes. Consider removal of non-historic features such as the entry canopy and accessible ramp.

2.C.4.i Use compatible building materials that respect the color and texture of the adjacent historic theater and surrounding historic buildings.

2.C.4.j Follow treatment recommendations in HSR developed for the building.



Figure 2-GG
Photo of Presidio Chapel. Addition would be located on the west side of the chapel, but would not block the existing windows.



2010 MAIN POST UPDATE PROJECT PARAMETERS

- Prepare an HSR for Building 130.
- Rehabilitate NHL-contributing Building 130.
- Limit new construction to 4,000 square feet on the west of Building 130; limit the height of the connecting structure to the sills of the west elevation windows and the height of new construction to 20 feet above finished floor level.
- Orient the addition to be perpendicular to the west wall of the sanctuary, allowing a large portion of the west wall to be visible.
- Apply design guidelines and HSR treatment recommendations; follow the PA-MPU design review process for new construction.

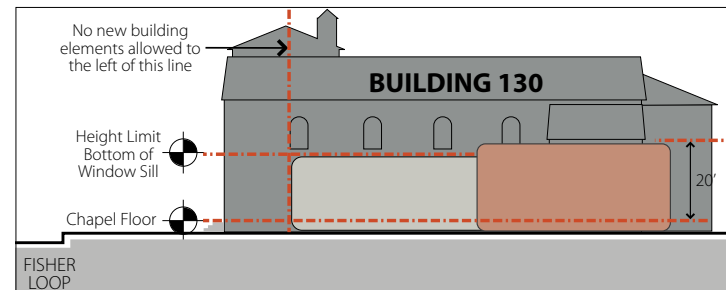
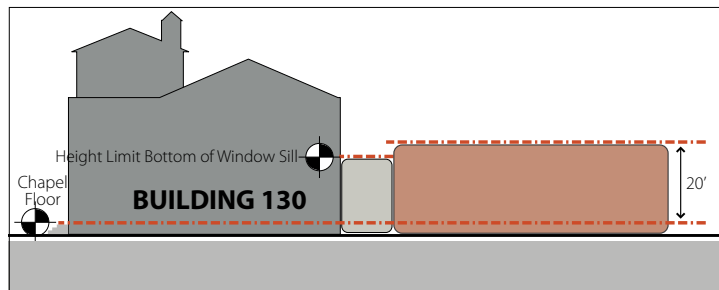


Figure 2-HH
Conceptual site plan for the Presidio Chapel.

C. WEST OF MAIN PARADE FOCUSED CULTURAL LANDSCAPE REPORT, excerpt

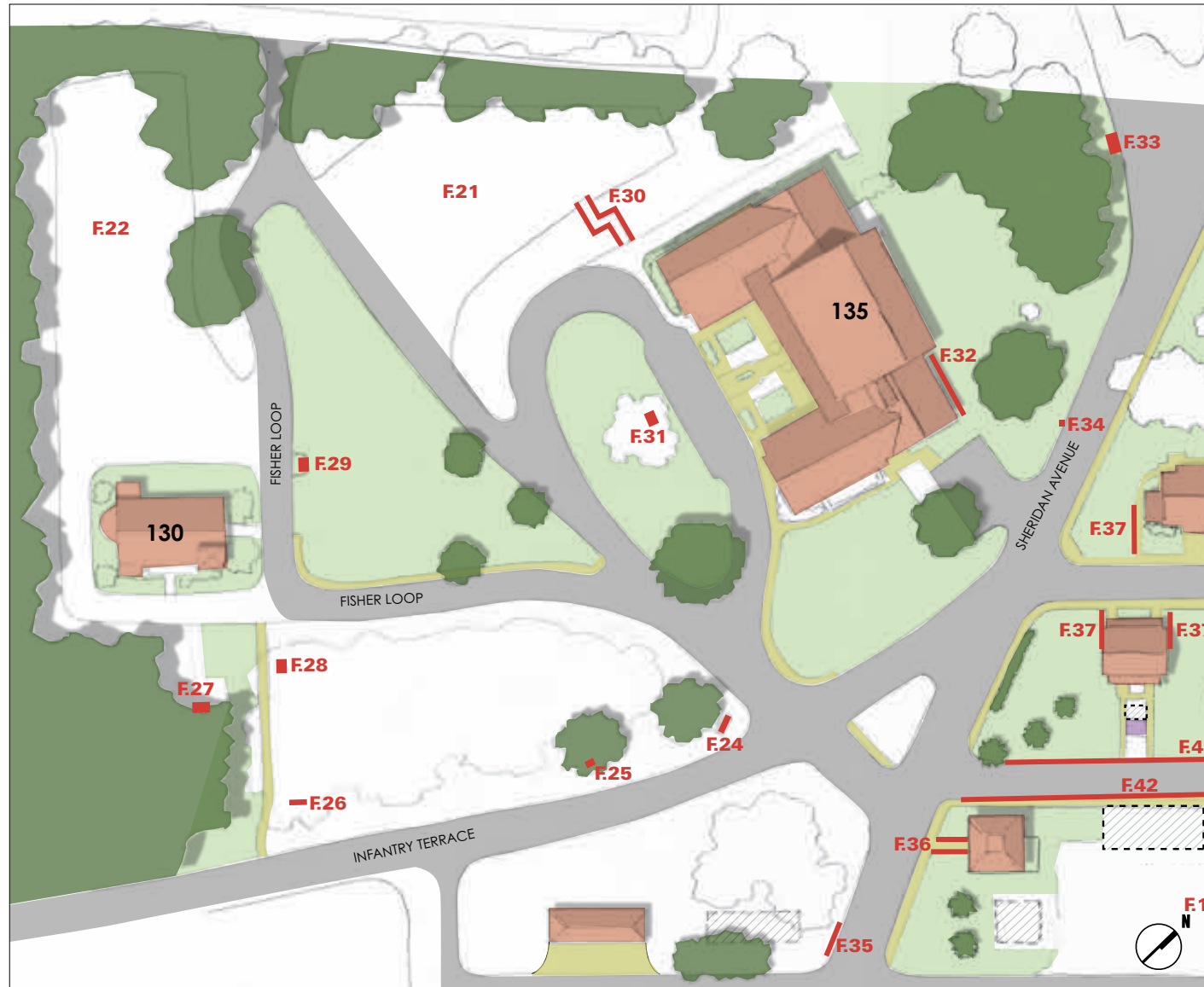










Figure C-22
Contributing landscape
features - Presidio Chapel and
Golden Gate Club.


EXTANT HISTORIC FEATURES

-  Road corridor
-  Sidewalk/paved surfaces
-  Historic buildings
-  Foundation planting/lawn areas
-  Trees, palms and hedges

NON-HISTORIC OR MISSING FEATURES

-  Buildings from the end of the Period of Significance (1945) now non-extant
-  Tree planting from after 1945
-  Non-contributing buildings and additions

SMALL SCALE FEATURES

-  F.23 Both historic and non-historic small scale features (see Table 2 on page 40)

Note: Contributing landscape features are shown in color. Areas without integrity and/or not significant are in white.

Contributing Landscape Features

- A concrete staircase on the slope east of the Chapel, connecting the Chapel side yard to Infantry Terrace below.
- The triangular sloping open space north of the Chapel surrounding all three sides by Fisher Loop, with a concrete sidewalk on its eastern edge.
- Trees either singly or in groups in the triangular open space or east of it, in the area between Fisher Loop and Infantry Terrace.
- Historic forest sections south and west of the Chapel.
- The oval lawn panel south of the Golden Gate Club, including the asphalt driveway that surrounds it, and a cluster of trees at its southeast edge.
- The system of sidewalks east of the building.
- The sloping lawn area that wraps the building's north and east side, extending from the building to the Infantry Terrace/Sheridan Avenue curb.
- Trees in this lawn located north and east of the building close to the road.
- In the entry courtyard, the central walkway leading to the front door, the concrete walk parallel to the driveway, and the oval shaped planter area defined by a rounded curb.
- Panoramic views to the bay from the Golden Gate Club.

PART 2. TREATMENT



This chapter provides treatment recommendations for the West of Main Parade cluster area, based on the four separate sub-areas that make it up. The primary treatment strategy for the Presidio at large and this cluster area in particular is rehabilitation. Rehabilitation is defined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The treatment recommendations which follow take into account the period of significance for the area and the integrity of the features that remain from that time period.

General Treatment Recommendations:

- Maintain and protect historic trees and plant materials to allow them to reach the end of their natural lives. When historic plant materials must be removed because they have reached the end of their life spans, or because their size and structure creates a safety hazard, remove them and replace them in-kind whenever possible. If a substitute species is being considered instead of an in-kind replacement, the substitute species must have the same character as the original being replaced. It must be similar in terms of type, form, shape, and scale.
- Avoid disturbing known or predicted archaeological resources.
- Retain small-scale site features, such as manhole covers, fire hydrants, boot scrapers, stone landscape elements, etc. If replacement of these features becomes necessary, introduce new features that reflect the size, scale, texture, and color of the feature being replaced.
- Conform to the Presidio Trust standards⁶ when replacing streetlights and street signs. When introducing new elements such as street furniture, and way finding and directional signage, conform to the Presidio Trust standards.
- New site features are allowed as part of a landscape rehabilitation, but they must be located so as not to damage historic features or to compromise the integrity of an area.
- Locate new surface parking in low-integrity areas (such as former building pads) or areas lacking significant landscape features.
- Where required by accessibility standards, the quantity and locations of ramps, curb cuts and ADA loading zones on historic roads to achieve universal access should have minimal impact on the historic scene and should be the minimum required to meet accessibility standards.

⁶ DRAFT Design Review & Permitting Process, Prepared for the Presidio Trust by Swinerton Management & Consulting, Inc., October 2009 (as an update to the Draft Tenant Handbook, 2007); DRAFT Presidio Landscape and Civil Standards, 2011.

Presidio Chapel and Golden Gate Club



Figure D-1
The Golden Gate Club.

Specific Recommendations

- D1 Retain the historic plants that are noted on the Plant Inventory. Introduce replacement plants that are compatible with the historic plant palettes.
- D2 Retain the existing Monterey Cypress trees north and east of the Golden Gate Club and reinforce this grouping by adding new trees of the same species.
- D3 Retain the historic row of trees lining the National Cemetery fence and reinforce this row by adding new trees of the same species.
- D4 Retain historic width and alignment of Fisher Loop. Re-establish missing historic edges on curbs. Limit curbcuts and driveway cuts.
- D5 Retain the historic width and alignment of the circular driveway in front of the Golden Gate Club, especially the oval shape of the interior planted island.
- D6 Retain the historic width and alignment of the driveway on the south and east sides of the Presidio Chapel.
- D7 Retain the concrete stairs.
- D8 Maintain openness of open sloping open space.
- D9 Retain historic specimen trees.
- D10 Retain parking lot and improve its functionality and appearance.
- D11 Consider removal of non-historic trees from the area between Fisher Loop and Infantry Terrace to re-establish views.



Figure D-2
Specific recommendations - Presidio
Chapel and Golden Gate Club.

D. HISTORIC FLOOR PLANS AND SECTION

