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Los Angeles Unified School District Design Guidelines and Treatment Approaches for Historic Schools

Prepared for:

Los Angeles Unified School District
Office of Environmental Health and Safety

Prepared by:

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January 2015

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I. INTRODUCTION

The provisions of the California Environmental Quality Act (CEQA) include the loss of character-defining features and, as a consequence, historic integrity among the significant adverse impacts to historic resources. Under CEQA, for qualifying projects, should the potential exist for an adverse impact to historic resources, it is necessary to conduct further environmental review and study, including impacts analyses and the preparation of mitigation measures and project alternatives.

Through the use of design guidelines, however, owners of historic properties have an effective tool for designing and implementing projects that avoid significant adverse impacts to historic resources. This is the goal of the *LAUSD Design Guidelines and Treatment Approaches for Historic Schools:* to recommend approaches for modernization and upgrade projects that also avoid significant adverse impacts to LAUSD's many historically significant schools. The guidelines presented in this document draw upon a thorough understanding of (1) LAUSD's history and property types; (2) best practices in historic preservation and CEQA, including application of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (SOI Standards hereafter); and (3) the projects currently being planned for LAUSD's campuses districtwide.[1]

The point-of-departure for this study's recommendations are the SOI Standards. The SOI Standards are the industry-recognized guidelines for fostering the preservation, rehabilitation, and maintenance of historic properties. Pursuant to CEQA, the SOI Standards are also recognized as generally mitigating adverse impacts to historic resources to a less-than-significant level. Therefore, projects complying with the SOI Standards are eligible under CEQA for a Categorical Exemption from further environmental review. In this way, these guidelines provide a tool for streamlining environmental review and preventing delays in project implementation, while also protecting historic resources. Not all projects that depart from the SOI Standards automatically result in adverse impacts. But SOI Standards conformance generally ensures that alterations to a historic resource will not result in a loss of historic integrity.

Rather than providing prescriptive solutions, design guidelines offer general approaches for identifying significant features and maintaining, repairing, and treating historically significant features and materials in such a way that the resource's historic integrity remains intact. The basic principles of the SOI Standards are to identify, retain, and preserve the features and materials that convey the significance of historic properties.

All historically significant properties present different opportunities and constraints for carrying out upgrade projects, and therefore most projects must be studied on a case-by-case basis. However, these general approaches and guidelines offer LAUSD a sound first step for ensuring that much-needed modernization projects to LAUSD assets result in minimal impacts to historic resources. This manual is intended to be used in tandem with the districtwide procedural guidelines prepared by PCR Services Corporation and included the 2014 LAUSD Program EIR.

[1] Weeks, Kay D., and Anne E. Grimmer. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings (Washington, D.C.: National Park Service, 1995).

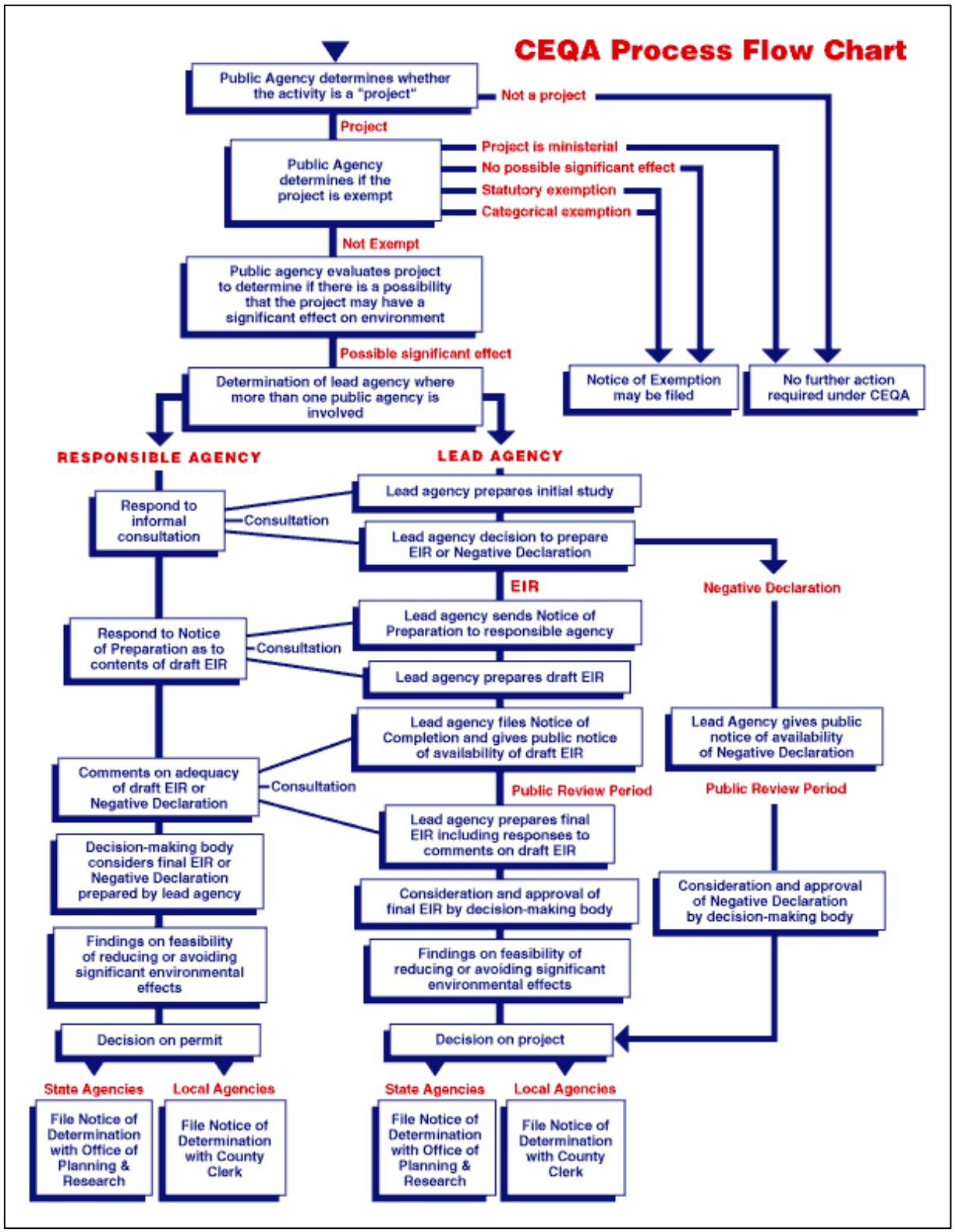


Figure 1. The upper right-hand corner of this CEQA flow chart illustrates the expedited path for environmental review for projects qualifying for a Categorical Exemption, such as the exemption offered through documented compliance with the SOI Standards. Source: California Environmental Quality Act Statute and Guidelines, 2013.

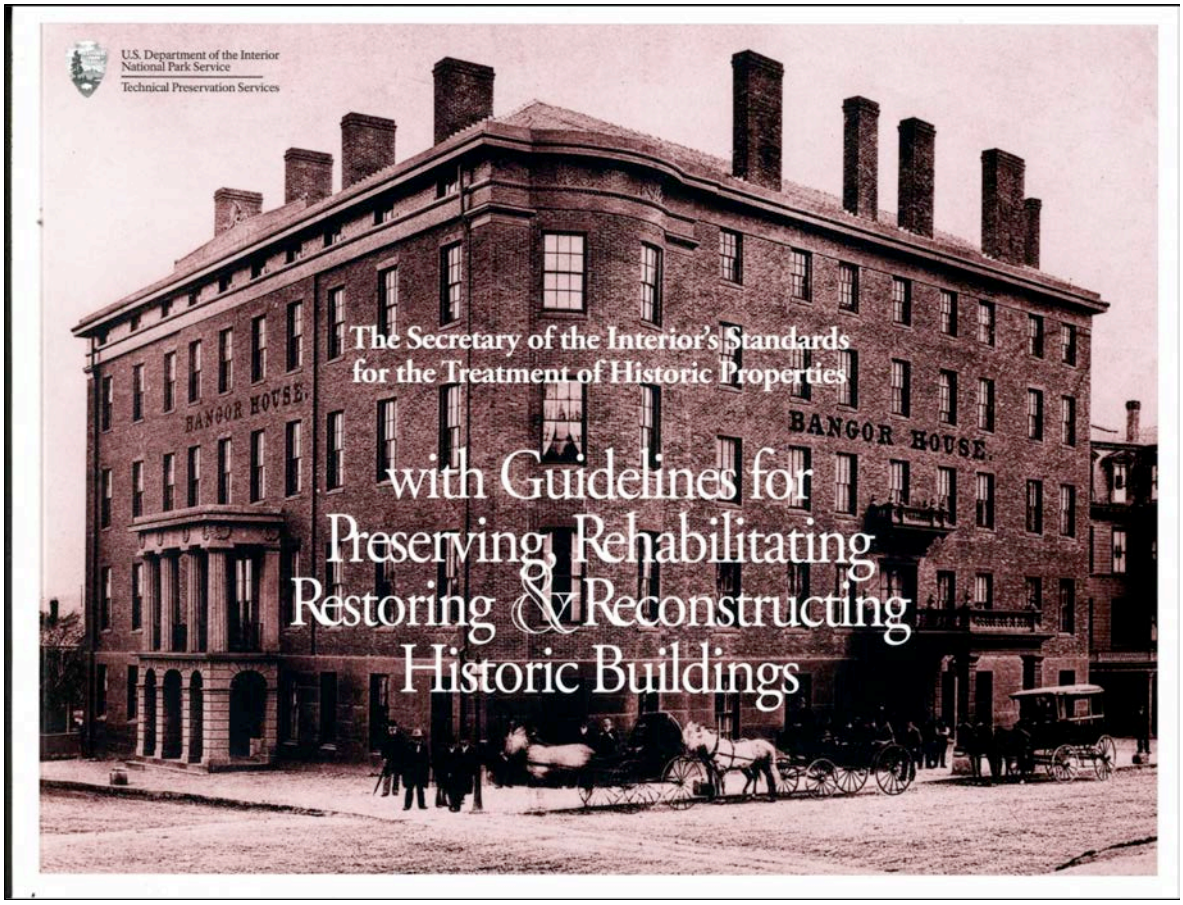


Figure 2. Under CEQA, a Categorical Exemption is possible for projects complying with the Secretary of the Interior's Standards for the Treatment of Historic Properties. *Source: National Park Service, Department of the Interior.*

Project Background

With nearly 800 campuses and a geographic span of over 700 square miles, LAUSD is the second largest public school system in the United States. Since its founding in 1872, the district has commissioned, designed, and acquired a remarkable collection of buildings, campuses, and facilities. Extant properties range from the wood-framed schoolhouse of the late nineteenth century to superblock campuses displaying Mid-Century Modern and post-Modern architectural styles.

As of November 2014, nearly 150 LAUSD schools have been identified as eligible for federal and/or state-level landmark designation. In addition, LAUSD campuses have also been found eligible as historical resources through the City of Los Angeles Office of Historic Resources undertaking, SurveyLA. In advance of district-wide modernization, LAUSD commissioned a comprehensive Historic Context Statement, a 55-campus historic resources survey, and the preparation of procedural guidelines to ensure compliance with CEQA. This study represents the final step in this project. In July 2014, LAUSD was recognized for this effort, receiving an award from the California Preservation Foundation for the *Los Angeles Unified School District Historic Context Statement, 1870 to 1969*. The *LAUSD Design Guidelines and Treatment Approaches for Historic Schools* draws upon the Historic Context Statement and complements the CEQA/NEPA Procedural Guidelines being prepared concurrently by PCR Services Corporation.

Project Team

Debi Howell-Ardila, senior architectural historian with SWCA Environmental Consultants, served as the principal author and lead architectural historian for the *LAUSD Design Guidelines and Treatment Approaches* study. Leslie Heumann, who conducted LAUSD's original districtwide survey in 2001-2004, served as project advisor. Sketches and input were provided by James McLane, AIA, associate principal at Architectural Resources Group. Gwenn Godek of the LAUSD Office of Environmental Health and Safety and Margarita Wuellner of PCR Services Corporation served as project administrators. The study also benefited from the input of LAUSD Facilities Services Division (FSD) staff members and Linda Dishman and Adrian Scott Fine, executive director and director of advocacy, respectively, of the Los Angeles Conservancy.

Study Contents

The *LAUSD Design Guidelines and Treatment Approaches* study consists of seven sections:

Section I, Introduction
Section II, Project Planning and Implementation: General Guidelines
Section III, Recommended Approaches: School Features and Components
Section IV, Recommended Approaches: School Upgrade and Modernization Projects
Section V, Overview of Principal Typologies, Property Types, Styles, and Character-Defining Features
Section VI, Conclusion
Section VII, National Park Service Technical Assistance: Select References

In addition to outlining the necessary steps for planning projects for historic schools, Section II incorporates observations about the SOI Standards for Rehabilitation. General and project-specific recommendations for treatments are presented in Sections III and IV. Section III includes recommendations according to school features and components, including: (1) architectural and ornamental detailing; (2) roof forms and features; (3) façade treatments; (4) site design and landscape features; interior spaces and features. Section IV presents guidelines according to project types, including: (1) window upgrades; (2) HVAC upgrades and installation; (3) ADA Compliance and Access; (4) Hazardous Materials Abatement; (5) Fire and Life Safety; (6) Seismic Upgrades; (7) Additions and New Construction; (8) Mechanical Systems Placement and Installation.

Additional guidance for project design involving historically significant LAUSD schools is provided in the 2013 *California Historical Building Code* (CHBC), which follows this study as Appendix A. As codified in Section 8 of the *California Code of Regulations, Title 24*, the CHBC offers flexibility for code requirements and "requires enforcing agencies to accept solutions that are reasonably equivalent to the regular code (as defined in Chapter 8-2) when dealing with qualified historical buildings or properties."[2] The CHBC

> is intended to provide solutions for the preservation of qualified historical buildings or properties, to promote sustainability, to provide access for persons with disabilities, to provide a cost -effective approach to preservation, and to provide for the reasonable safety of the occupants or users. [3]

[2] *California Code of Regulations, Title 24*, California Historical Building Code, Section 8-101.2. (Washington, DC: International Code Council, 2013), p. 1.
[3] Ibid, p. 1.

As defined in *California Health and Safety Code Section 18955*, historical buildings and properties qualifying for use of the CHBC include

> Any building, site, object, place, location, district or collection of structures, and their associated sites, deemed of importance to the history, architecture or culture of an area by an appropriate local, state or federal governmental jurisdiction. This shall include historical buildings or properties on, or determined eligible for, national, state or local historical registers or inventories, such as the National Register of Historic Places, California Register of Historical Resources, State Historical Landmarks, State Points of Historical Interest, and city or county registers, inventories or surveys of historical or architecturally significant sites, places or landmarks. [4]

As shown in Appendix A, the CHBC offers guidance and alternatives for projects involving Fire Protection, Means of Egress, Accessibility, Structural Regulations, Archaic Materials and Methods of Construction, Mechanical, Plumbing and Electrical Requirements, and Qualified Historical Districts, Sites and Open Spaces. Pursuant to Section 18954 of the California Health and Safety Code, the state or local enforcing agency "shall administer and enforce the provisions of the CHBC in permitting repairs, alterations and additions necessary for the preservation, restoration, reconstructions, rehabilitation, relocations or continued use of a qualified historical building or property." [5] Applications of the CHBC to qualifying LAUSD properties should be carried out on a case-by-case basis in conjunction with a qualified historic preservation professional.

Additional federal-level guidance is provided to LAUSD project planners and architects through technical bulletins and briefs published by the Technical Preservation Services division of the National Park Service Department of the Interior. The *Preservation Briefs* offer detailed, material-specific guidelines and recommendations; an annotated list of *Preservation Briefs* most applicable to LAUSD projects follows in Section VII, National Park Service Technical Assistance: Select References.

In addition, the series entitled *Interpreting the Secretary of the Interior's Standards for Rehabilitation* offers case studies covering a range of project scenarios. A summary of topics covered in the ITS series includes: New Additions (ITS No. 3), Adding New Openings (ITS No. 14), Interior Finishes (ITS No. 19), Adding New Openings on Secondary Elevations (ITS No. 21), Adding New Entrances to Historic Buildings (ITS No. 22), Windows: Selecting New Windows to Replace Non-Historic Windows (ITS No. 23), Corridors: Installing New Systems in Historic Corridors (ITS No. 24), Entrances and Doors: Entrance Treatments (ITS No. 26), Corridors: Corridors in Historic School Buildings (ITS No. 40), Modifying Historic Interior Railings to Meet Building Code (ITS No. 46), Rooftop Additions on Mid-Size Historic Buildings (ITS No. 47), Installing New Systems in Historic Buildings (ITS No. 51), Designing New Additions to Provide Accessibility (ITS No. 53). A list of ITS Bulletins most applicable to LAUSD properties is included in Section VII.

[4] *California Code of Regulations, Title 24*, California Historical Building Code, Section 8-101.2. (Washington, DC: International Code Council, 2013), p. 4.
[5] Ibid, p. 1.

II. Project Planning and Implementation: General Guidelines

All historic buildings offer unique opportunities and constraints for implementing successful projects. The critical first step for project planning is always the same, however: identifying contributing properties and their character-defining features in conjunction with a qualified architectural historian. Equally important for LAUSD staff are determinations of non-eligibility, since additional flexibility, both in terms of project design and CEQA review, exists for properties that are not "contributing" (eligible for listing) and are therefore not considered historic resources under CEQA.

Early planning is the key to avoiding adverse impacts to historic resources. The project that successfully avoids impacts to historic resources is a creative one, designed with an eye toward achieving project objectives while also retaining historically significant features. Although no one recipe exists for project design, the following guidelines and review process will allow for successful project implementation and minimal impacts to historic resources. The SOI Standards offer four "treatments" for historic properties: preservation, rehabilitation, restoration, and reconstruction. For most, if not all LAUSD projects, rehabilitation is appropriate treatment. Rehabilitation accommodates changes and upgrades and does not require the sometimes expensive and time-consuming process of returning a historic property to a particular moment in time.

A. Planning and Designing Projects for Historic Schools: Three Phases

Early input from a qualified historic preservation professional will result in better project design, the avoidance of significant adverse impacts to historic resources, and a smoother environmental clearance process. Generally, three concise rounds of input by a qualified historic preservation professional will be required; the preservation professional will consult with the project team as necessary and document each review in a memorandum that will form part of the administrative record necessary for demonstrating CEQA compliance.

Phase 1: Commission Character-Defining Features Memorandum for the Record (MFR)

The first step for projects involving a historically significant school is to identify which buildings, structures and features are eligible for listing (and therefore contributing elements) and which elements are ineligible (and noncontributing). More flexibility exists for modifications or removal of noncontributing elements. In this way, concise data on the historic school and its significant and nonsignificant features is the most critical information for LAUSD as project planning begins.

For campuses including identified historic resources, LAUSD will commission a ***brief, focused*** Character-Defining Features MFR from a qualified architectural historian (as defined below). The memo will include:

1. 1-2 pages maximum: Brief campus history, including information on development/construction chronology; data to include primary and secondary sources, such as LAUSD Pre-Planning Surveys, historic aerial maps and photographs, as well as visual inspections;

2. 1 page maximum: Information on eligibility findings (date of evaluation, criteria, and theme of significance); data sources to include the 2001-2004 and/or 2014 LAUSD Historic Resources Survey, City of Los Angeles Office of Historic Resources SurveyLA data, LAUSD Historic

Resources Inventory Database, and/or California Historic Resources Inventory, as well as previously prepared Department of Parks and Recreation Forms documenting LAUSD campuses;

3. Identification and documentation of contributing and noncontributing buildings, structures, objects, and elements of the historic campus (including Arc-GIS shape files mapping results for ease of use by LAUSD); this assessment to include contributing landscaping/site design features and/or artwork if present as well as brief descriptions of each contributing (eligible) element;

4. Identification and brief documentation and description of primary and secondary character-defining elevations of each eligible building, structure, object, and feature;

5. Depending on the project, the Character-Defining Features MFR can identify and document primary and secondary character-defining materials, design details, and features on the exterior and interior potentially impacted by the project, as supplementary data provided prior to schematic design review as requested by LAUSD. The specific data provided in the Character-Defining Features MFR will be determined by LAUSD on a case-by-case basis.

6. Depending on the project, Phases 1 and 2 can be combined by LAUSD as needed.

Phase 2: SOI Standards Compliance and Schematic Design Review: Preliminary and Final Phases

- Task: Using baseline data of the Character-Defining Features MFR, project objectives and design options will be studied by qualified architectural historian and/or historic architect in the preliminary schematic design phase; this phase will also include a brief site-walk with LAUSD FSD staff and historic preservation professional.
- Purpose: Selection of optimal project options to fulfill project objectives and to ensure compliance with SOI Standards; site walk will clarify primary and secondary character-defining features, spaces, and elevations potentially affected by project.
- Work Product: MFR by qualified architectural historian and/or historic architect documenting selected design option and project compliance with SOI Standards. This memo will also identify any aspects of the proposed project that are not in compliance and make recommendations to bring these aspects into compliance.

Phase 3: Design Development or 50-percent Construction Drawings

- Task: Review of construction drawings by qualified architectural historian and/or historic architect at 50% construction drawings stage. As needed, this stage can also include a site visit.
- Purpose: Providing input on details of project design and guidance for any issues that needed to be resolved following schematic review.
- Work Product: MFR by qualified architectural historian and/or historic architect summarizing project review and SOI Standards compliance.

B. Professional Qualification Standards for Historic Preservation Professionals

To ensure CEQA compliance and an adequate administrative record, the historic resource analysis and preservation tasks described in this document must be completed by qualified historic preservation professionals. These requirements draw on the National Park Service Department of the Interior's *Secretary of the Interior's Standards and Guidelines: Professional Qualifications Standards*. This section summarizes the standards and roles for historic preservation professionals assisting LAUSD in upgrades and modifications to historic LAUSD campuses:

- **Qualified Architectural Historian:** Meets/exceeds the Secretary of the Interior's Professional Qualifications Standards for architectural history and possesses a minimum of eight years of experience (preferably including evaluations of school buildings and campuses)

  Role and responsibilities: Historic resource evaluations; determinations of contributing and noncontributing buildings, structures, and objects, as well as primary and secondary character-defining features; schematic plan review and SOI Standards conformance review. Assistance with applications of the State Historic Building Code to projects carried out on qualifying schools.

- **Qualified Historic Architect:** Meets/exceeds the Secretary of the Interior's Professional Qualifications Standards for historic architecture and possesses a minimum of eight years of experience (preferably including work on school buildings and campuses).

  Role and responsibilities: Project-level schematic and construction plan review and SOI Standards conformance review; provision of technical specifications and input on projects involving upgrades and modifications to historic campuses. Assistance with applications of the State Historic Building Code to projects carried out on qualifying schools.

C. Construction Process

The construction process at a historic property must incorporate the following best practices. (1) Protect adjacent historic features, materials and finishes during construction. (2) Document appearance before, during and after construction to the extent necessary to inform the design and provide evidence for the environmental compliance process. (3) Job site decision tree: Change orders to be reviewed by qualified historic preservation professional or by a project team member fully versed in the requirements affecting historic resources. (4) No changes shall be made to project plans during construction without input from qualified historic preservation professional or team member.

Before construction process, if appropriate to the project, the qualified architectural historian and/or historic architect will provide CSI specifications for architectural features or materials requiring specific restoration, removal, or storage requirements. This will include detailed, clear instructions on maintaining and protecting in place relevant features in accordance with best practices and standards.

D. SOI Standards: Overview and Principal Ideas

1. Identify and prioritize character-defining features and spaces in the project area (primary and secondary features as well as elevations, on exterior and interior). Additional flexibility exists for features, spaces, and elevations that are of secondary importance rather than primary importance.
2. Retain, preserve and repair where possible.
3. Where necessary, replace in-kind to match existing in materials, finishes, and details.
4. New features/additions should be compatible but differentiated from historic fabric; do not use conjectural evidence to re-create missing historic features.
5. It is possible that individual portions of project program may deviate from SOI Standards but the overall project can be determined to be in compliance. While the recommended approach will always favor the retention of historically significant elements, project objectives may at times require the removal of historic fabric. The effect of such removal on the historic integrity of the resource must be determined by a qualified architectural historian on a case-by-case basis.
6. The Rehabilitation standards do not necessarily entail the replacement of missing historic features that would be required for a Restoration.

E. Overall Process and Procedures

In order to ensure that LAUSD's goal for protecting and maintaining its historically significant properties is realized, modernization and upgrade projects should generally follow these guidelines:

- Upgrade, modernization and new construction projects for schools identified as historic resources for the purposes of CEQA will conform with the SOI Standards to the maximum extent practicable;
- Master planning initiatives for schools identified as historic resources under CEQA shall be subject to environmental review and evaluation by a qualified historic preservation professional to ensure that potential negative impacts to historic resources are avoided through conformance with the SOI Standards and LAUSD cultural resource policies and procedures;
- Some modernization projects might include elements that do not conform with the SOI Standards, but the project overall might not result in significant adverse impacts to historic resources and might therefore be acceptable; such cases must be studied on a case-by-case basis;
- In cases where modernization of LAUSD's significant historic resources cannot be feasibly undertaken in conformance with the SOI Standards and significant adverse effects to historic resources result, the district shall, through the environmental review process, in conjunction with a qualified historic preservation professional, develop and implement mitigation measures to reduce adverse impacts. Mitigation monitoring will include consultation with a qualified historic preservation professional.

III. School Features and Components

The following sections present feature-specific recommendations for the major components of historic schools. These include: (1) Architectural and Ornamental Detailing; (2) Roof Forms and Features; (3) Façade Treatment; (4) Site Plan and Landscaping Features; and (5) Interior Spaces and Features. (Windows are discussed in Section IV.)

The *Design Guidelines and Treatment Approaches for LAUSD's Historically Significant Schools* focuses on the "character-defining features" of schools that are eligible for national, state, or local landmark listing and are therefore historic resources under CEQA. Character-defining features are the distinctive physical elements, materials, details, and characteristics that convey the significance of a historic building. Character-defining features must be identified and retained in order to ensure that a historic resource continues to convey the reasons for its significance. Section V includes additional information on the character-defining features typical of LAUSD campuses and school buildings.

EXAMPLES OF ARCHITECTURAL AND ORNAMENTAL DETAILING

Figures 3. and 4. Art Deco detailing, Huntington Park High School (1936). Source: Leslie Heumann and Associates and SAIC for LAUSD.


Figures 5. and 6. From classical to modernist architectural detailing: San Fernando Middle School (1916) and Narbonne High School (1956). Source: LAUSD.


Figures 7. and 8. Mid-Century Modern details: stack-bond brick veneer, Fernangeles Elementary School (left), and patterned tile at classroom entries, Chatsworth High School (right). Source: LAUSD, 2014.

ARCHITECTURAL AND ORNAMENTAL DETAILING

Contributing architectural details should be identified, retained and preserved. Such details might include ornament made of wood, brick, concrete, tile, stone or metal. Decorative treatments and elements also might include polychromatic or patterned brick or tile; string-courses or corbelling; decorative window or roof eave treatments; railings; or quoining.

Such architectural details convey the significance of a given architectural style or era of school building and should be maintained, repaired where possible, or replaced in-kind if necessary.

Recommended Approaches, Architectural and Ornamental Detailing:

- Where deteriorated or missing, architectural details should be repaired or replaced, to the extent feasible, to match originals (based on physical and/or documentary evidence)
- Significant architectural details should not be obscured, covered, or destroyed
- Any new elements added to character-defining spaces should be compatible with the style, size, scale, materials, finishes, and detailing of the historic property overall
- Repairs/Maintenance: periodically clean and re-finish to match existing architectural features that show signs of deterioration (such as deteriorating wood or metal with signs of corrosion)
- Clean and prepare surfaces using the gentlest methods possible, in order to avoid damaging historic materials

Figures 9. and 10. Decorative brick work and detailing, Burroughs Middle School and John Marshall High School. Source: SWCA Environmental Consultants, 2014.

EXAMPLES OF ROOF FORMS AND FEATURES


Figures 11. and 12. Roof brackets and exposed rafter tails, Morningside Elementary School (1915, left). Wide, unadorned cantilevered eaves, Leapwood Elementary School (1962, right). Source: LAUSD.

Figures 13. and 14. Modernist roof treatments: extended, trellis-like eaves, Colfax Avenue Elementary School (1950, left). Zig-zag roofline, Palisades High School (1963, right). Source: LAUSD, 2014 (left), SWCA Environmental Consultants (right).


Figures 15. and 16. Mid-Century Modern roof treatments: flat roof with no eaves combined with cantilevered projections, Fernangeles Elementary School (left) and roof cut-out/skylight at Castle Heights Elementary School (1951, right). Source: LAUSD, 2014.

ROOF FORMS AND FEATURES

Character-defining roof features include the roof shape and form, height, pitch, eave treatments, as well as a variety of decorative features such as rafter tails and brackets, cupolas, towers, and dormers. Sheathing materials, such as clay tile, slate, wood, or metal, as well as their profile and patterns, might also be character defining. Features to identify, document and retain include the height/massing, form (e.g., flat, gabled, hipped), and eave treatment (e.g., wide overhanging cantilevers or shallow eaves with decorative elements). The character-defining features of arcade or covered walkway roofs should also be documented and considered in project planning.

Recommended Approaches, Roof Forms and Features:

- Historic roof features should be reinforced and repaired where possible.
- If historic materials are extensively deteriorated or missing, replace in-kind or with compatible substitute materials, selected in conjunction with a qualified historic preservation professional; replacements should match existing appearance (dimensions, profile/patterning, texture, and color). If using identical materials is not technically or economically feasible, select a compatible substitute material replicating the appearance of the original (in terms of dimensions, profile/patterning, texture, and color).
- To replicate missing features, design of replacement features should be based on physical/documentary evidence; avoid using conjectural evidence.
- For projects with components on or around roofs, avoid obstructing, covering, or damaging important roof features or adversely impacting roof detailing and design.
- The juncture of the roofline and exterior wall is an important part of the building's appearance. Running conduit beneath eaves near this juncture should be avoided. It is preferable to run conduit along the building's base and conceal the lines behind landscaping, where possible.

Figure 17. Shallow closed eaves and hipped-and-gable roof, clad in clay tiles, Point Fermin Elementary School, Administration Building (1917–1925; remodeled 1936). Source: LAUSD, 2010.

FAÇADE TREATMENTS

Most historically significant LAUSD school buildings, in particular for signature buildings such as administration buildings, auditoriums, or main classrooms, will include façade treatments that uniquely denote their architectural style or era. Such treatments might include smooth stucco sheathing for 1920's Spanish Colonial Revival or 1930's Streamline Moderne styles, polychromatic, patterned brick for period-revival styles, or combinations of brick, steel, stucco, windows, and wood for Mid-Century Modern style postwar schools. Doors and framing are also important aspects of the façade's appearance; this can include doors themselves, as well as transoms, sidelights, thresholds, or pilaster, entablatures or other decorative framing elements. (Windows, also an important element of many school facades, are discussed in Section IV.)

Even for buildings of the same style, much variation exists. As previously noted, the first step is to identify and document character-defining features and elevations. This will allow for successful retention, maintenance or sensitive in-kind replacement of important features. Where portions of exterior materials, cladding and other elements must be replaced, new materials should match the existing to the maximum extent possible; re-creations should be based on physical or documentary evidence of the original.

Recommended Approaches, Façade Treatments:

- For wood: deteriorated wood siding or elements should be repaired by patching or piecing in, or through consolidation with individual pieces. Wood features that are exposed to the elements, such as beams or rafter tails, can be treated with preservatives to prevent deterioration.
- For masonry: deteriorated masonry can be repaired by patching or piecing in, or through consolidating individual masonry units. Ensure that new mortar matches the existing in color, texture, strength, and width/profile of the joints. Clean masonry surfaces using the gentlest means possible, such as low-pressure water, gentle detergents, and natural bristle brushes.

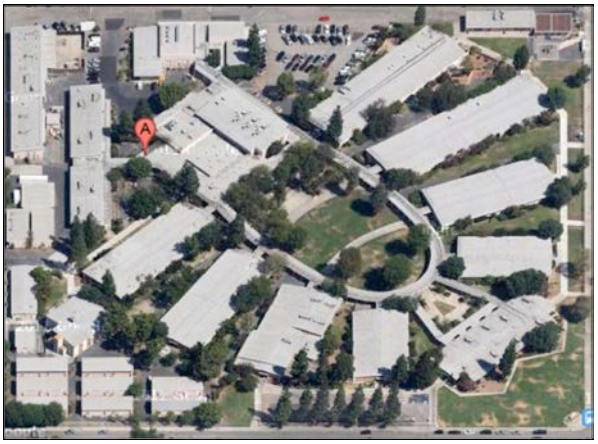
Figure 18. Generous expanses of fenestration, at times reaching the roofline, are typical of Mid-Century Modern schools; Grover Cleveland Senior High School (1959/1960). Source: LAUSD, 2014.

Recommended Approaches, Façade Treatments (continued)

- For brick/masonry: identify mortar and joints and repoint where evidence exists of deterioration. This might include cracks, chipping, and erosion of mortar. Duplicate original mortar in width and joint profile, as well as color, texture, and strength.
- For stucco: where necessary, deteriorated stucco should be removed and reapplied to match the existing in texture, thickness, and color.
- Where there is extensive deterioration of original character-defining features, in-kind replacement may be appropriate. Widespread replacement is only recommended when the original fabric is deteriorated beyond repair. New materials should match the originals as closely as possible.
- If a material was originally not painted, such as stained wood, brick, stucco, or tile, the material should remain unpainted. The original finish/treatment is considered a character-defining feature.
- Removal of incompatible alterations from the past and restoration of original materials and features are encouraged. Restoration of original features should be based on documentary evidence.
- Repaint masonry, wood, and metal if these surfaces were originally painted and if they are in need of re-finishing. Preparation of surfaces, including the removal of paint, should be carried out with the gentlest means possible. The use of electric sanders, chisels, or chemical strippers is not recommended. Harsh methods can result in damage to historic materials and fabric.

Figures 19. and 20. Façade treatments of Hollywood High School (left) and Eagle Rock Elementary School (right). Source: SWCA Environmental Consultants (left), LAUSD (right).

EXAMPLES OF CHARACTER-DEFINING SITE PLAN DESIGN AND LANDSCAPE FEATURES




Figures 21. and 22. Circular spoke-like plan and extensive network of stylized arcades, Chatsworth High School (1963). Source: LAUSD, 2010.


Figures 23. and 24. Spiral plan and landscaped courtyards of Narbonne High School (1956). Source: LAUSD, 2012.


Figures 25. and 26. Character-defining site plan features of the postwar finger-plan school often include axial classroom wings, lined with open courtyards and connected by arcades. 156th Street Elementary School (left) and Daniel Webster Middle High School (right). Source: LAUSD, 2014.

SITE PLAN DESIGN AND LANDSCAPE FEATURES

Unified campus design and site planning, including the purposeful integration of buildings with landscaping and outdoor spaces, has been the cornerstone of LAUSD school planning ideals since the Progressive Era. With the objective of providing students with ample opportunities for viewing and enjoying outdoor courtyards, recreational and gathering areas, LAUSD campuses and classrooms have become increasingly integrated into outdoor spaces through the decades. Beginning in the 1930s and taking root in the postwar period, the norm became spreading out the campus in one-story buildings, arranged on axis, connected by outdoor corridors, and oriented toward designed courtyards and landscape. As a consequence, one important character-defining feature of many historically significant postwar schools includes the site plan itself, including the spatial configuration of buildings and outdoor spaces.

For these campuses, buildings, circulation corridors (such as arcades), outdoor spaces (such as courtyards and gathering areas), and landscaped features are highly representative of LAUSD design ideals of their era. The identification and documentation of these features by a qualified architectural historian represents a critical starting point for master planning projects, or for projects that seek to reconfigure buildings and/or structures or to remove original site plan features, arcades, courtyards, landscaping, or hardscaping.

Recommended Approaches, Site Plan Design and Landscape Features:

- Identify and maintain significant spatial relationships between buildings and landscaping. Building plans often intentionally created spaces for courtyards. New construction should not interrupt designed open spaces; identify alternative areas for new construction and additions.
- Identify opportunities to remove underutilized, nonoriginal/temporary buildings currently occupying areas originally designed as open space.

Figures 27. and 28. Arcades, one- to two-story classrooms, looking out onto landscaped courtyards, and ample outdoor spaces are among the signature LAUSD ideals for the postwar school. Chatsworth Senior High School (1963, left) and Leapwood Elementary School (1962, right). Source: LAUSD, 2014.

Figures 29. and 30. Topanga Elementary School (1953/1955). Source: LAUSD, 2014.

Recommended Approaches, Site Plan Design and Landscape Features (continued)

- Should it be necessary to replace character-defining hardscaping, such as original walkways, planters, or benches, replace in-kind and to match original in appearance and in use.
- New paving should be compatible with existing historic paving in terms of materials, patterning and design, color, and overall spatial relationships—axial, curving, etc.—with neighboring features. Vary the color and size of mortar to distinguish new areas from historic areas of hardscaping.
- Work should be undertaken in such a way that, if removed in the future, the integrity of the property and its environment would not be impaired.
- Identify opportunities to add landscaping; new landscape features should be compatible with scale and style of the campus overall. Protect and maintain significant plantings and landscaping.
- Irrigation: Installation and placement should be planned to result in the least possible impact to original hardscaping/landscaping features.
- Not recommended: replacing planting or trees with hardscaping, such as concrete or asphalt. Retain uses of outdoor spaces and landscaping/hardscaping features.


Figures 31. and 32. Outdoor assembly areas, Webster Middle High School (left) and Grover Cleveland Senior High School (right). Source: LAUSD, 2014.

INTERIOR SPACES AND FEATURES

Character-defining interior features and spaces might range from public reception areas and lobbies, in particular in administration buildings and auditoriums, to staircases, hallways and corridors, classrooms, entrances, and restroom facilities. To avoid potential adverse impacts to character-defining interior spaces, important materials, design features, and finishes that comprise these spaces should be identified, documented and considered in upgrade projects involving interiors.

Recommended Approaches, Interior Spaces and Features:

- Early in the process, a qualified architectural historian should identify and document, in digital photography and an MFR, primary and secondary character-defining features on interior spaces. This information will provide the data necessary to evaluate potential project impacts to significant interior spaces.
- Character-defining features might include: windows with variations in glazing, wall materials, finishes, and detailing; doors and related features; baseboards, molding and framing; porcelain water fountains, etc.
- For projects involving identified character-defining interior features, avoid removing, obstructing, or damaging significant spaces, materials, finishes, and detailing.


Figures 33. and 34. Character-defining interiors: Marshall High School Administration Building, lobby (left) and Venice High School WPA mural by Grace Clements and Helen Lundeberg. Source: ICF Jones & Stokes for LAUSD, 19 December 2008, "John Marshall High School Historical Resources CEQA Analysis for Fire Alarm System Upgrade Project" and 13 July 2009, "Venice High School HVAC Project CEQA Analysis."

IV. Recommended Approaches: Upgrade and Modernization Projects

1. WINDOW REHABILITATION

Fenestration is one of the most important character-defining features for a historic building. Contributing elements might include the window type, its glazing and opening size and shape, framing materials, profile and thickness of framing and muntins, as well as decorative molding or detailing.

A common misconception is that historic windows cannot be brought up to today's energy efficiency standards. However, in projects involving windows that are principal character-defining features, options for meeting energy efficiency requirements through project design should be explored, including quantifying/improving performance standards of historic materials or other features. The California Historical Building Code offers flexible, performance-based standards for meeting code requirements while also retaining important character-defining features of historically significant schools (the California Historical Building Code follows this document as Appendix A).

Preferred Approaches, Window Rehabilitation:

- A qualified architectural historian should identify and document character-defining window features early in project planning process, in order to plan for their retention.
- Identify, retain, repair, and preserve character-defining windows and their functional and decorative features. This includes window location and size, frame materials and design, sash types, muntin patterns, profile, and thickness, glazing, and sills, as well as paneled or decorative jambs/molding.
- If possible, retain or re-use existing hardware. Should replacement be necessary, match new hardware to existing in terms of basic stylistic detailing, materials, and finishes.
- Repair window frames and sash by patching, splicing, consolidating, or reinforcing. Depending on condition of materials, this might include in-kind replacement with compatible substitute materials; substitutes should match appearance of originals.


Figures 35. and 36. Classroom windows at Topanga Elementary School (1953) and Leapwood Elementary School (1962). Source: LAUSD, 2014.


Figures 37. and 38. Expanses of windows often mark the locations of classrooms inside. Baldwin Hills Elementary School (1949, left), and Orville Wright Middle High School (1948, right). Source: LAUSD, 2014.

Alternative Approaches, Window Rehabilitation:

- Where repair is not technically or economically feasible, replace windows in-kind, taking care to match originals in opening size/shape, single pane or divided lights (with true divided lights replaced in-kind), materials and treatment, configuration, type, framing (profile and thickness), and decorative detailing.
- Should replacement of an entire window be necessary, match original in materials, sash, and pane configuration, profile and thickness, as well as other design details.
- Secondary elevations and non-character-defining windows offer the best options for window replacement.
- Where windows must be replaced, sample window and project design should be reviewed by qualified architectural historian and/or historic architect.
- Retain original opening size and shape, as well as original window frames, detailing, and depth of recessing within wall plane.

Not Recommended, Window Rehabilitation:

- Wholesale / large-scale replacement of windows is not recommended. Pursue alternative, performance-based standards through the State Historic Building Code, which offers flexibility on energy standards for qualifying buildings.
- Avoid double-glazing or tinting. For improved energy efficiency, investigate use of thermal coated glass. Maintain appearance/function of original.
- The use of faux muntins to simulate true divided-light windows is not recommended.
- Replacement of original wood- or steel-frame windows with dual-pane vinyl windows is not recommended. Pursue performance-based standards through the State Historic Building Code, which offers flexibility on energy standards for qualifying buildings.

Figure 39. Removing inoperable HVAC units and returning windows to original use can greatly enhance a historic school building. Image on left shows HVAC unit currently in place at Castle Heights Elementary School; image on right simulates the building's appearance following replacement of HVAC unit. Source: Architectural Resources Group, 2014.

Project Scenarios, Window Rehabilitation:

- HVAC installation: Avoid removing windows or transom lights to accommodate HVAC components.
- Window Mounted Air Conditioning Units: In cases where air-conditioning units replaced original windows (but units are now inoperable), consider removing out-of-date components and restoring original windows to match existing (in terms of materials, framing, function, openings, and glazing).
- Energy efficiency: Window frames in need of maintenance/repair are often the unseen source of energy loss. Investigate energy efficiency improvements through repairs to window frames, replaced/upgraded weather stripping, insulation, or use of interior blinds as alternative to replacement of original windows.
- Security: Should installation of security grilles be necessary, avoid damage to historic window surrounds and framing.
- Seismic Upgrades: Shear wall needed? Avoid removing character-defining windows on primary elevations where possible. Rework interior plan to avoid large-scale removal of windows. Use interior bracing or, if necessary, shotcrete for added seismic stability.
- Painting: Preparation work should use the gentlest, least invasive means possible (see Hazardous Materials section for information on lead paint removal). Remove damaged or deteriorated paint only to the next sound layer of paint using the gentlest method possible. Study and use compatible paint coating systems; it is preferable to paint with colors that are historically appropriate to the period and style. Do not paint window frames that were not originally painted (i.e., stained wood, brick, or masonry, etc.).

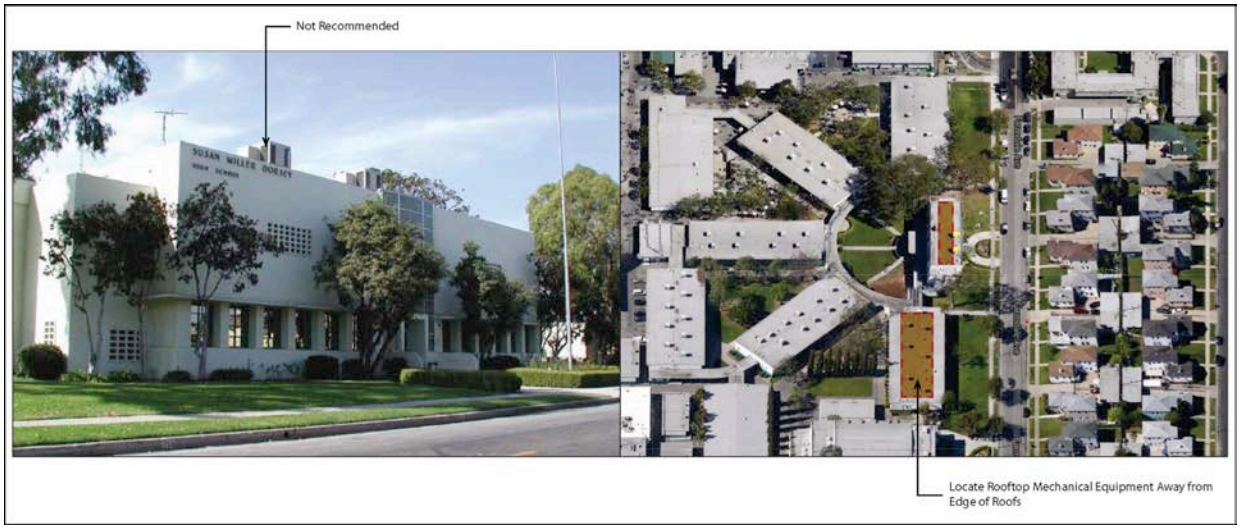
2. HVAC UPGRADES AND INSTALLATION

If not carefully designed and planned, HVAC upgrades and installation can impact a variety of character-defining features. The placement of ductwork, registers, vents, and units can change the appearance of important interior spaces as well as the exterior. Early project review by a qualified architectural historian or preservation professional will help avoid visual impacts to character-defining spaces and features and therefore minimize impacts to historic resources.

Recommended Approaches, HVAC Upgrades and Installation:

- Early in the process, a qualified architectural historian should identify and document, in digital photography and an MFR, primary and secondary character-defining elevations and features.
- Explore options for placing and installing HVAC components on secondary elevations or out-of-the-way spaces.
- Anticipate and plan for placement and installation of HVAC components that avoids damage or obstruction of character-defining features or visual impacts to character-defining spaces and materials.
- If a new HVAC system is required, identify and pursue alternatives for installation that result in the fewest possible changes to the building's floor plan, exterior elevations, and historic fabric.
- Avoid obstructing, removing, or damaging historic materials and features to the maximum extent feasible.
- If the interior of classrooms and hallways includes important character-defining features, including artwork, care should be taken to not destroy, remove, or obstruct these features in the course of installing supply and return air ducts.


Figures 40. and 41. For historically significant buildings, rooftop set-back of HVAC units helps mitigate visual impacts. Colfax Avenue Elementary School (left) and Kester Avenue Elementary School (right). Source: LAUSD, 2014.



Figures 42. and 43. Where possible, locate rooftop mechanical equipment away from edge of roof to minimize visual impacts. Susan Miller Dorsey High School, Los Angeles. Source: LAUSD and Architectural Resources Group, 2014.

Recommended Approach, HVAC Upgrades (continued)

- Re-use existing paths and systems to the maximum extent feasible for ductwork, registers, and intake/exhaust paths.
- Ductwork should be routed, configured, and treated to create minimal visual impacts to character-defining features and spaces. Ductwork and registers should be painted to match surrounding walls in texture and color.
- Registers: Re-use existing where possible; for placement of registers on ceilings/walls, avoid removal or obstruction of historic features. If installed on ceiling between beams, center registers or follow basic design configuration to make new registers as compatible with existing historic fabric as possible.
- Alternatives to drop ceilings include: (1) use of well-designed soffits to enclose ductwork; if soffits are created, leave adequate space so as not to interrupt views in and out of neighboring windows; (2) use of existing beams or features to conceal ductwork; (3) leaving ductwork exposed is often an effective approach; ductwork should be sensitively placed, designed, and painted to match existing.
- Drain line: should be covered and painted to match the surrounding surfaces; and placed in an out-of-the-way area with limited visibility.
- For energy efficiency improvements, calculate the performance standards of existing rooms and spaces, including wall thickness and materials, roof eaves or porticos, as well as interior features such as blinds or shades.
- Where possible, identify opportunities to remove inoperable HVAC units and restore original features (for example, remove inoperable HVAC systems from in-filled windows and restore window to match existing).

Not Recommended, HVAC Upgrades:

- Avoid the removal or in-filling of existing windows for HVAC components. Should it become necessary as the only feasible solution, avoid removal or infill window on a primary elevation and retain original window opening dimensions, casing, and detailing, such as light divisions.
- Do not obscure, obstruct, or destroy original artwork, such as murals, or features, such as molding, ceiling beams, or windows, in the installation of HVAC components.
- Not recommended to install drop ceiling (i.e., lowering the ceiling height to enclose new systems) to hide HVAC components. Should drop-ceilings offer the only feasible solution, leave a minimum of 12-18" between drop ceiling and neighboring windows. Explore option/feasibility of leaving ductwork exposed as alternative.

Recommended Locations of HVAC Components:

- Group system components in areas with similar systems already installed; explore secondary elevations and/or use of utility sheds for installation of new units.
- Vertical runs of ductwork: install in areas where ducts will not obscure, destroy, or damage character-defining features (such as inside of closets, wall cavities, service rooms, or corners). Horizontal and vertical placement: align components—soffits, ducts, registers, or vertical vents—with planes/configuration of walls.
- Interior installation: Identify hidden, out-of-the-way spaces (attics, basements, crawl spaces, closets, utility spaces) for placement and installation of HVAC components.
- Exterior installation: If roof installation offers the best alternative, attempt to set back unit to avoid visual impacts to the roofline, particularly as perceived from the public right-of-way, to the maximum extent practicable. For roof installation, where possible, install behind existing parapets or features that conceal the unit from the street view.

Figures 44. and 45. In this assembly hall, ducts and vents were placed and installed as unobtrusively as possible to avoid adverse impacts to many important character-defining interior features. Source: ICF Jones & Stokes, 13 July 2009, "Venice High School HVAC Project CEQA Analysis."

Figures 46. and 47. Where possible, removing inoperable HVAC units and restoring windows to match originals enhances the appearance of historically significant LAUSD buildings. Source: LAUSD and Architectural Resources Group, 2014.

Recommended Locations for HVAC Components (continued):

- Exterior: Should exterior/ground-level installation provide the best design option, select a secondary elevation for installation of units or a utility shed, as determined in conjunction with qualified architectural historian. Consider screening by landscaping or other means.
- One-story building: Avoid roof placement if possible. If roof placement offers best option, set back HVAC unit to minimize visual impacts. If decorative parapet or roof feature is present, place unit behind the feature to conceal it from view.
- Two-story building: If set back from roof's edge, toward center, and not visible from street, roof placement offers a good alternative for placement of HVAC unit.
- Rooftop installation of exhaust vents is an acceptable alternative; vents should be as inconspicuous and set back as possible. Avoid visibility from the street-level view.
- For exhaust vents, the building base often provides a good location for an exhaust vent. Should this solution offer the preferred design, the exhaust vent should be located on a secondary elevation, screened, and concealed with landscaping.
- Drain lines: vertical venting may be provided for by a small chase, installed in an out-of-the-way corner, to be selected in conjunction with qualified architectural historian.

Recommendations for Installation Process:

- Avoid making new penetrations or openings on exterior walls by utilizing existing outlets, openings, and paths.
- Using existing vents and wall openings is ideal. New vents should be painted or finished to match existing similar features.
- Where wall penetrations are necessary, patch, repair and finish to match existing.

3. AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE AND ACCESS

Given the variability of historic buildings and the importance of achieving ADA compliance as well as CEQA compliance, projects should generally be considered on a case-by-case basis in conjunction with a qualified historic preservation professional. These guidelines offer a starting point for project design that achieves ease of access while also protecting historically significant schools.

Recommended Approach, ADA Compliance and Access:

- Utilize State Historic Building Code to achieve ADA compliance while also retaining important character-defining features and meeting historic preservation goals.
- Review by qualified architectural historian and/or historic architect will identify opportunities to achieve project objectives while avoiding impacts to character-defining features and elevations.
- Identification of primary and secondary character-defining features and buildings by a qualified architectural historian should include significant site plan design and landscape features.
- Install ADA ramps, lifts, and elevators in such a way that character-defining features, spaces, and finishes are preserved. Consider alternatives and options such as locating ramps, lifts, elevators in secondary or non-character-defining spaces.
- In planning for ADA-accessible path of travel, install/modify access ramps in such a way that character-defining features, materials, spaces and finishes are preserved.
- In planning for path of travel, avoid removing historic site features, such as hardscaping, landscaping, setbacks, plantings. Explore alternative locations for path of travel that do not result in the removal/destruction of character-defining features. Signage: design signage to be compatible with historic scale and style; avoid removing, damaging or obstructing character-defining features.

Figures 48. and 49. If ADA-compliant access cannot be accommodated at primary entrance without damage to character-defining features, consider using the California Historical Building Code and its alternatives for ADA-compliant access on secondary entrances. Install ADA-accessible ramps in a way that allows for ease of access while also limiting visual obstruction of important character-defining spaces and features to the maximum extent feasible. Source: LAUSD, 2014.

Recommended Approach, ADA Compliance and Access, Circulation Issues:

- Door widths: Should it be necessary to widen the opening of an original character-defining door, explore options for reducing overall impacts.
- Hardware: Replacement of historic hardware might be necessary to achieve ADA compliance. Should historic hardware be removed and replaced, match finishes for compatibility with existing hardware.
- Handrails: Explore options for retaining original handrails while installing ADA-compliant handrails (parallel handrails, handrails on opposite site of corridor, etc.). Should it be necessary to remove historic handrail, document the historic feature and finish the new material to match existing.
- Auditorium Seating and Stage Access: In the case of character-defining interior spaces/seating in auditoriums, identify best project options for ADA seating access and stage ramps or lifts in conjunction with qualified architectural historian and/or historic architect.
- Elevators: Best locations should be explored on a case-by-case basis, according to project needs, the character of significant interior spaces, and availability of secondary interior or exterior spaces, in conjunction with a qualified architectural historian and/or historic architect. One option for elevator placement includes closet spaces that occupy the same location on multiple stories.
- Ramps: In terms of design and scale, ensure that access ramp is appropriately styled and scaled to historic building and finishes are matched to existing. The ramp and railing should be sited and installed in such a way that minimal removal or obstruction of historic materials and features occurs.
- In conjunction with qualified historic preservation professional, if installation of ramp on primary elevation would negatively impact the integrity of the historic resource, explore options for ramp installation on equal, secondary entrance.

Figures 50. and 51. The decorative, monumental entrances of some historic schools pose design challenges for ADA compliance; with input by a qualified preservation professional, careful project design, and applications of the California Historical Building Code where appropriate, solutions can be identified that achieve project objectives while also preserving historic resources. Morningside Elementary School (1915, left) and Marshall Senior High School (right). Source: LAUSD.

ADA Compliance and Access, Restrooms:

- A qualified architectural historian should identify and document, in digital photography and an MFR, character-defining features early in project planning process, in order to plan for their retention.
- In upgrades for ADA accessibility, where possible, retain original character-defining features and materials (i.e., original tile, floors, marble partitions, etc.).
- Where intact character-defining features are present in historic bathrooms but project requires removal and replacement, explore overall project options for retaining at least one example of a historic bathroom.
- New bathroom should follow/exhibit compatibility with the character of the school.

4. HAZARDOUS MATERIALS ABATEMENT

The identification and abatement of hazardous materials, whether in lead paint or asbestos-containing materials, must be carried out by a qualified specialist in hazardous material identification and abatement.

Recommended Approaches, Hazardous Materials Abatement:

- Where required, hazardous materials abatement should be carried out using methods that are the least invasive but also effective.
- Before any abatement work begins, a qualified architectural historian will photograph/document project area, note primary and secondary character-defining features; qualified architectural historian and/or historic architect will provide input on carrying out abatement project, from beginning to conclusion, with the least possible impact to historically significant features.
- In addition to documenting character-defining features directly impacted by the project, the qualified architectural historian will identify and document features in surrounding areas to plan for and avoid any impacts or damages that could occur in the course of the abatement process.

Not Recommended, Hazardous Materials Abatement:

- The use of power sanders or chisels for the removal of paint.
- The use of high-pressure cleaning for character-defining concrete or hardscaping.

Project Scenarios, Hazardous Materials Abatement:

- A qualified architectural historian should identify and document, in digital photography and an MFR, character-defining features early in project planning process, in order to plan for their retention.
- Lead-based paint: The preferred treatment for lead-based paint is to encapsulate, if possible. An acceptable method for lead-based paint abatement is to remove by the gentlest means possible.
- Asbestos abatement (in linoleum flooring, siding, original ductwork). Should specialist determine that asbestos is present and in need of removal, ensure that all steps of abatement project are planned to avoid damage, removal, or destruction of original historic materials and features. Patch and match existing.
- Plan and consider each step of the project from beginning to conclusion. Does linoleum flooring need to be removed? If so, will this necessitate the removal of character-defining baseboards, chair railings, or other features?

5. FIRE & LIFE SAFETY UPGRADES (1-HOUR CORRIDORS, STAIRWELLS, SPRINKLER AND ALARM SYSTEMS)

Recommended Approach, Fire & Life Safety Upgrades:

- A qualified architectural historian should identify and document, in digital photography and an MFR, character-defining features early in project planning process, in order to plan for their retention.
- Early in the process, identify alternatives for achieving project objectives while avoiding removal or damage to historic materials to the greatest extent possible. Traditional approaches to achieving one-hour corridors, for example, such as removal of interior corridor classroom doors and transom windows, will require alternative actions where those features are character defining.
- Emergency egress hardware: if upgrade involves the removal of original hardware, select hardware components that are compatible in terms of style and materials with historic hardware; finish new hardware with compatible finishes/colors.
- Fire alarms, interior and exterior, interior fire-sprinkling: Re-use existing conduit, runs, and wall penetrations for installing new components and wiring, unless the existing components where inappropriately located. If inappropriately located, consider relocating more compatibly with historic elements and repairing or replacing in kind any significant features that had been previously damaged or removed.
- Lighting: new or supplemental. To the extent possible, place new fixtures in unobtrusive location. New lighting should be compatible in design, scale, and detailing but should not present a false historic appearance. Avoid removing historical materials and features in the installation of new lighting; following installation, where necessary, patch and repair to match existing.
- Signage: ensure that new signage is compatible with the school's historic character in terms of style and scale. Avoid the removal of historic fabric, including landscaping/hardscaping.

Figures 52. and 53. Re-use existing conduit connections and wall penetrations wherever possible. Source: ICF Jones & Stokes for LAUSD, 19 December 2008, "John Marshall High School Historical Resources CEQA Analysis for Fire Alarm System Upgrade Project."

Project Scenarios, Fire & Life Safety Upgrades: 1-hour corridors

- In project design, one size doesn't fit all. Each project site will present different opportunities and constraints to achieve project objectives. Study alternatives in conjunction with a qualified historic architect and/or architectural historian; incorporate a number of available options in order to achieve the required 1-hour life safety objective for corridors.
- Balance available options for upgrades, including sprinklering (partial or full), alarm systems, special fire-retardant paint.
- To the extent possible, retain original doors and transoms. Transoms may need to be secured shut to achieve objectives.

6. SEISMIC UPGRADES

Recommended Approaches, Seismic Upgrades:

- A qualified architectural historian should identify and document important character-defining features of the project area (in terms of overall character and design composition) that should be considered in the planning of seismic upgrades.
- Early in the project planning process: in conjunction with a qualified historic preservation professional and structural engineer with demonstrable experience in historic preservation, identify opportunities and alternatives for achieving upgrade goals while limiting visibility of seismic improvements, to the greatest extent possible.
- In design of seismic upgrades, installation and placement, avoid removal or destruction of historic materials and features.
- If exterior bracing is determined to be an appropriate solution, look for opportunities to place on non-significant or secondary elevations, in particular for elevations visible from the public right-of-way. Consider how the bracing will be attached to the historic building, avoiding unnecessary damage and removal of historic features and fabric and leaving as much of the character-defining design visible as possible.
- In order to avoid interrupting the rhythm and design of exterior, explore options to place seismic bracing on the building interior rather than exterior.
- Exterior bracing: If exterior bracing is necessary, attempt to incorporate design elements that are compatible with the character of the building.
- Exposed bracing that strikes a bold, structural tone might be appropriate for certain styles and building types. Other building types/styles may call for more subtle bracing elements.
- Alternatives: shotcrete applied to interior walls can provide additional structural support. If shotcrete is used, the historic window and wall configuration should be duplicated as much as possible, and features such as window casing, window depth, and baseboards carefully considered. Finishes should be compatible with surrounding historic fabric and finishes.
- Windows and shear wall: try not to remove character-defining windows as part of shear wall construction. Flexibility exists depending on the relative importance of the window or feature (whether primary or secondary character-defining features or elevations).
- If it becomes absolutely necessary to remove windows in the course of seismic bracing, identify and document, in conjunction with qualified architectural historian, which windows provide the best options for removal that minimizes impacts to the historic resource.
- Not recommended: infill of windows with visible concrete masonry units (CMUs), indiscriminate use of anchor bolts on primary exteriors, removal of historic features such as cornices that could be safely braced and anchored to the building.

Figures 54. and 55. If needed, identify secondary elevations for the placement of storage sheds and/or additions. Burton Avenue Elementary School, Panorama City. Source: LAUSD and Architectural Resources Group, 2014.

7. ADDITIONS AND NEW CONSTRUCTION

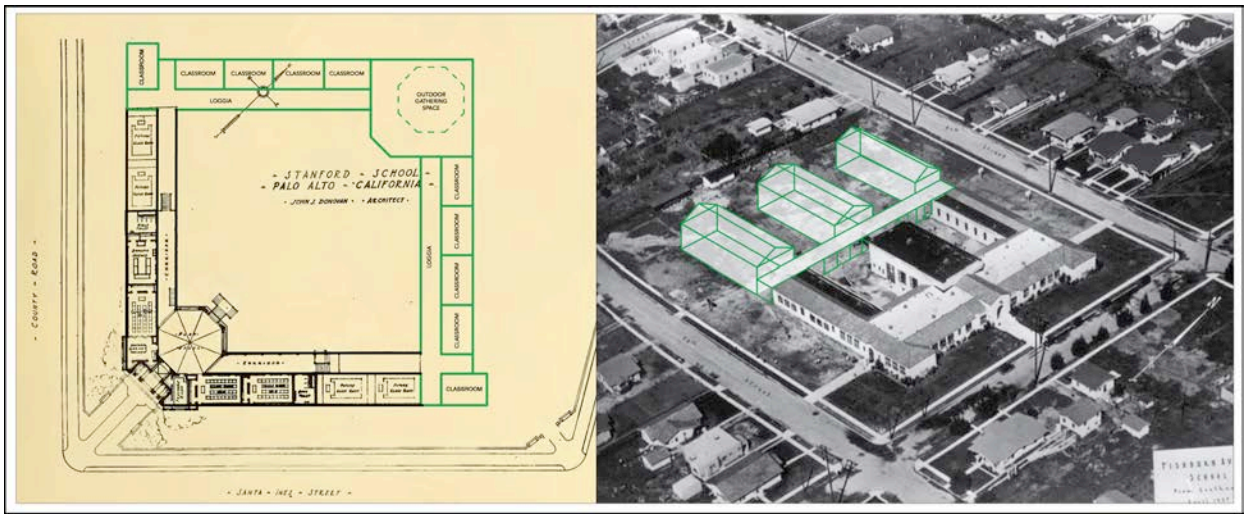
Recommended Approaches, Additions and New Construction:

- Early in the process, consult a qualified architectural historian to review project plans and identify best options for expanding buildings or adding new space that minimize impacts to historic resources, including campus buildings and associated site design and landscaping features.
- The qualified architectural historian will identify and document important features that should be considered in the design of building additions and new construction. These features include building siting/placement, size, scale/height, roofline character and features, features/elements defining horizontal lines of buildings, windows (type, opening types and sizes, rhythm/placement), exterior wall planes and receding/projecting planes and spaces, materials, and style.
- New additions should be compatible with but differentiated from historically significant properties and site features.
- Incorporate design elements such as set-backs or hyphens in order to delineate old and new construction.
- Maintain the roofline of historic buildings and structures.
- Where possible, identify opportunities for removing underutilized/temporary buildings that interrupted the original site plan. These can include U-shaped, L-shaped, H-shaped buildings designed to create courtyards and outdoor areas. Restore original layout where possible.

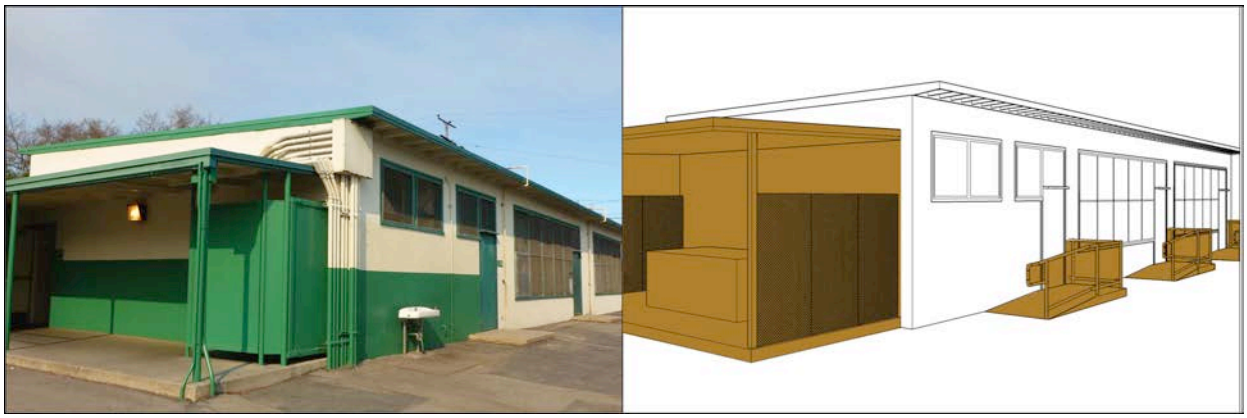
Not Recommended, Additions and New Construction:

- In general, avoid adding additional, higher stories to historically significant buildings; identify opportunities for increasing building footprint or expanding elsewhere rather than adding stories.

- Additional stories may sometimes be appropriate if they can be set back on the roof so as to minimize visibility and impact.
- Avoid creating a stylistic carbon copy of original historic building; make the new construction compatible but differentiated. Modern (i.e., current) design can be appropriate if it is contextually sensitive, in terms of placement, massing, scale, materials, etc.
- Additions and new construction should avoid overwhelming the historic resource, in terms of both scale and design.



Figures 56. and 57. When planning new construction or additions, consider the important character-defining features of the extant site plan and maintain open spaces and indoor-outdoor connections where feasible. Source: LAUSD and Architectural Resources Group, 2014.



Figures 58. and 59. Identify secondary elevations for the placement and installation of mechanical equipment and storage sheds. Avalon Gardens Elementary School. Source: LAUSD and Architectural Resources Group, 2014.

8. MECHANICAL SYSTEMS: PLACEMENT AND INSTALLATION

Recommended Approach, Mechanical Systems:

- Attempt to limit visibility of mechanical equipment installed on exterior perimeter walls or beneath the roof.
- Where possible, identify secondary elevations for the placement and installation of mechanical equipment.
- For fastener installation, use expanses of grout or mortar rather than brick, stone, tile, or masonry for drilling or wall penetrations.
- Identify and use existing fasteners, attachments, or wall penetrations to the maximum extent feasible.
- Following drilling or installation/removal of wall mounts/fasteners, repair surrounding surfaces immediately to match existing in color, finish, profile, thickness and strength.
- Conduit: generally acceptable to mount conduit on easily repairable surfaces; these can include plaster, grout, non-decorative painting, etc.

Not Recommended, Mechanical Systems:

- Avoid drilling into any area of brick, stone, masonry, or tile. Choose area of grout or mortar for installation of fasteners.

V. Themes of Significance, Architectural Styles, and Character-Defining Features

According to CEQA, significant adverse impacts will result if a historic resource is altered to such a degree or in such a way that it loses integrity and the ability to convey the reasons for its significance. The first step to avoiding this outcome is (1) identifying the character-defining features that lend the historic resource its significance and (2) planning for the retention, rehabilitation, and/or sensitive replacement of such features. While all projects and historic resources are different, character-defining feature identification is the first step to successfully upgrading, repairing, and maintaining a historic resource.

The following sections outline the character-defining features for schools and campuses representing the four principal eras of LAUSD school design: (1) 1910-1933: Period-Revival Era of Open-Air Schools; (2) 1933-1945: Post-Long Beach Earthquake Schools; (3) 1933-1945: Early experiments in the Modern, Functional School Plant; and (4) 1945-1969: Postwar expansion and the Modern, Functional School Plants.

Contributing properties might include administration buildings, auditoriums, classrooms, gymnasiums and recreational fields, multipurpose rooms, shops, cafeterias, as well as designed landscape and site features, site plan, arcades and other outdoor circulation corridors. Depending on the school and campus, contributing features of a historically significant building can include a range of aspects and characteristics, from the overall site plan and massing of the buildings, to architectural details and ornament.

Specific character-defining features of the architectural styles typical of LAUSD schools follow. These include the eras of period eclecticism in the 1920's, the 1930's advent of Art Deco/Streamline Moderne and PWA Moderne styles, as well as pre- and post-World War II Modernism. The style most typical among postwar schools are variations of Mid-Century Modernism/Regional Modernism.

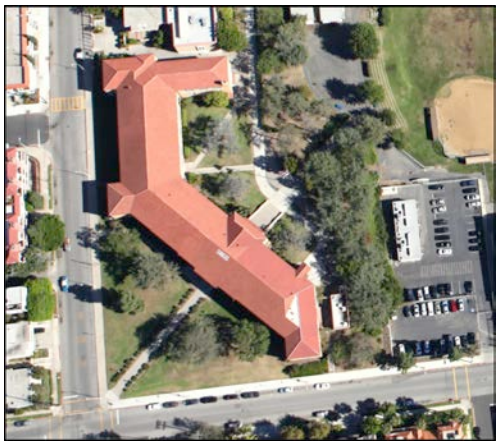
Figure 60. John Burroughs Middle School (1922). This Renaissance Revival–style school is one of the most intact 1920s schools in the district. Source: LAUSD, 2011.

Theme: LAUSD | Pre–1933 Long Beach Earthquake School Plants, 1910–1933

This theme reflects an important period for Los Angeles schools. First, it occurred after the Progressive Education Movement had triggered widespread reform of school design throughout the United States. This resulted in a more differentiated, expansive school plant, with program-specific buildings and classrooms. Second, this period occurred before a statewide overhaul of school building codes after the 1933 Long Beach earthquake.

This period also began as the 1920s ushered in a school building boom and period-revival golden age in Southern Californian architecture. The importance placed on public education was expressed through beautifully designed school buildings, often created by the region's leading architects. Campus design became more unified, with elaborate approaches and entrances. The advent of more grand entrances, as well as the incorporation of separate auditoriums, sited for ease of public access, reflected a growing sense that public education was a community affair.

Replacing the big-block school, with internal corridors, was a generally lower-massed, spread-out campus. In some examples, designers replaced hallways with covered outdoor walkways. Building plans also evolved, as the traditional rectangular plan took on adjacent wings, in H-shaped, T-shaped, or U-shaped buildings that facilitated the creation of sheltered outdoor spaces and patios. Lower massing was particularly common for elementary schools. Because most pre-1933 schools were substantially remodeled following the Long Beach earthquake, intact examples from this era are relatively rare. It is common to find 1920s-era schools that were remodeled following the earthquake; such schools might exhibit the building plans and configurations typical of the 1920s but with 1930s PWA Moderne and Streamline Moderne detailing.




Figures 61. *and* 62. *The expansive plan and Renaissance Revival-style of University High School (1924). Source: LAUSD, 2011.*

Character-Defining Features | Buildings/Structures:

- Articulated buildings plans, facilitating the creation of outdoor spaces (often T-shaped, E-shaped, U-shaped, and H-shaped plans)
- Generally low massing, usually one to two stories (with two to three stories more common for middle and senior high schools)
- Includes designed outdoor spaces, such as courtyards and patios, adjacent to classroom wings
- Exteriors usually lined with rows of grouped windows, including wood-framed multilight windows; expanses of windows often mark the location of classrooms
- Designed in popular period-revival styles of the era (including Spanish Colonial Revival, Renaissance Revival, Mediterranean Revival, and Collegiate Gothic)
- Often designed by prominent architects of the era

Character-Defining Features | Campus/District:

- Emphasis on a more spread-out site plan, with designed outdoor spaces
- More varied collection of buildings, differentiated by function and use (rather than a single building with all functions inside)
- Might include an elaborate administration building, usually the focal point of the campus, as well as classroom wings, auditoriums, gymnasiums, and outdoor recreation areas
- Middle or senior high schools might include a gymnasium designed in the style of the campus overall


Figures 63. and *64. Post–Long Beach Earthquake school: H-shaped plan and Mission Revival style of Reseda Elementary School (1936). Source: U.S. Dept. of Agriculture, historicaerials.com (left) and LAUSD (right).*

Theme: LAUSD | Post–1933 Long Beach Earthquake Schools, 1933–1945

Following the 1933 Long Beach earthquake, state and city legislation regarding school building codes and practices shifted the character of LAUSD schools and campuses. Requirements of the Field Act (1934), such as maintaining one-story massing for elementary schools and no more than two stories for junior and high schools, mirrored reforms already under way. Classroom wings continued to be designed for connections to the outdoors, with L-, H-, U-, and T-shaped buildings accommodating sheltered courtyard and patio spaces. Continuing another trend under way in the 1920s, campuses displayed an increasingly unified site design, with sheltered corridors moving the hallways outdoors.

The advances of the Progressive Education Movement also continued to shift school plant design. Campuses were increasingly differentiated, with administration buildings, auditoriums and gymnasiums, separate classroom, shop, and specialty wings, and cafeterias. Adequate indirect lighting and ventilation were provided through the use of generous bands of windows, including multilight sashes, casements, and clerestories. Stylistically, these buildings were less ornamental than their 1920s period-revival counterparts. An emphasis was placed on traditional Southern Californian styles, such as the Spanish Colonial and Mission Revival. Other styles included Streamline Moderne, Art Deco, and Late Moderne. Much post-earthquake reconstruction was funded through the Public Works Administration (PWA), and many schools exhibit PWA Moderne styles.

Figure 65. Reseda Elementary School, 1936. The spare Mission Revival style was in keeping with the post-Field Act requirement for one-story massing and the post–Long Beach Earthquake trend to design in the "traditional Southern Californian" mode. Source: LAUSD.

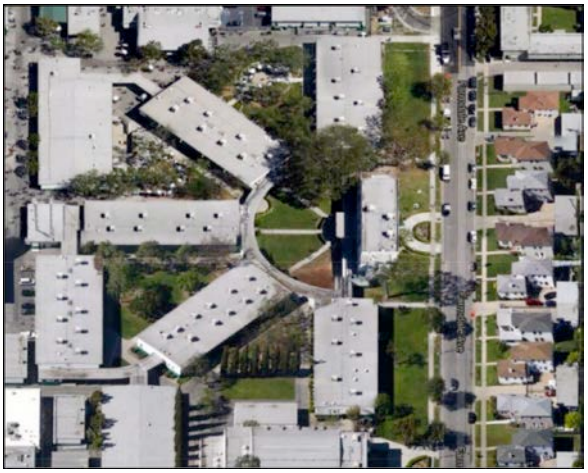

Figures 66. and *67. Hollywood High School (1935), shown in 1939 (left) and 2002 (right). Source: LAPL Photo Collection (left) and LAUSD (right).*

Character-Defining Features | Buildings/Structures:

- One-story massing for elementary schools; up to two stories for middle and senior high schools; reinforced concrete, steel- or wood-frame construction
- Classroom wings designed for access and views to outdoors—with variations including L-, H-, T-shaped plans; generous expanses of windows, including steel- and wood-framed windows, awning and hopper casements, and clerestories
- More streamlined and less ornamental than 1920s period-revival styles; emphasis on "traditional Southern Californian" styles; styles can also include PWA Streamline Moderne, Art Deco, Late Moderne, and proto-modern styles
- May have been partially or fully funded through the WPA (also referred to as the Public Works Administration, or PWA); WPA projects may include significant interior artwork such as murals, paintings and sculpture; may have been designed by a prominent architect of the period

Character-Defining Features | Campus/District:

- Unified site plan consisting of buildings and structures designed and sited according to their use; plentiful designed outdoor and landscaped spaces, for outdoor study, recreation and dining
- Might have connecting sheltered corridors throughout campus; expansive site plan
- Varied collection of buildings, differentiated by function and use (rather than a single building with all functions inside); might include an administration building, near the campus entrance, made to serve as the focal point of the campus
- Campus often composed of groupings of classroom wings, auditoriums, gymnasiums, cafeterias, and outdoor recreation and dining areas; middle or senior high schools might include a gymnasium designed in the style of the campus overall



Figures 68. and *69. Susan Miller Dorsey High School (1937) and its inventive site plan. Source: LAUSD (left) and Google Maps, 2013 (right).*

Theme: LAUSD | Early Experiments in the Modern, Functionalist School, 1933–1945

Although this category shares general characteristics with the preceding theme (Post–1933 Long Beach Earthquake Schools), it is distinguished by an experimental approach to school design that emerged during the Great Depression. Such schools reflect the most avant-garde ideas of the era and the beginning of modern, functionalist school design.

Stylistically, the proto-modernist school need not be purely "modern" in the sense of lacking any ornamental detailing. The significant changes reflected a philosophy that went a step further than did the schools of the 1920s in designing for function and integrating school buildings with exterior spaces. During the postwar construction boom, many of the same ideas that characterized these experimental schools became the norm.

The notable differences between the two themes relate to scale, site plan, and functional, child-centered design. The proto-modernist school has an explicitly domestic scale, with low ceilings and lack of monumental design or massing. These schools generally exhibit a decentralized campus design, with a strong geometric patterning applied to the site plan. Classroom wings generally consist of one-room-deep rectilinear buildings, lined with adjacent patios and landscaping. Building plans clearly express their function, with (usually) one-story massing, generous expanses of glazing, window sizes and configurations tailored to sun patterns and doors opening directly onto patio areas and courtyards. The preferred typology was the early version of the "finger-plan" school, with rectilinear classroom wings extending from a central axis.

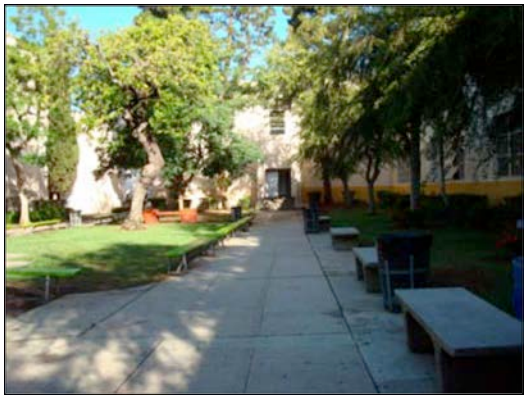


Figure 70. Modernist master Richard Neutra's Emerson Middle School (1937–1940). Source: LAUSD, 2011.

Character-Defining Features | Buildings/Structures:

- One-story massing for elementary schools; up to two stories for middle and senior high schools
- Usually reinforced concrete, steel- or wood-frame construction, clad in cement/stucco
- Classrooms are often single- or double-loaded finger-like wings, arranged along a central axis or semicircle
- Classrooms open directly onto patios/play areas through glass doors or movable walls
- Varying elevations might display differentiated window sizes and configurations, in order to tailor interior light to sun patterns and create cross-lit classrooms
- Windows are plentiful and include steel- and wood-framed multilight windows, in double-hung sashes, awning and hopper casements, clerestories, and fixed panes
- Displays an informal, nonmonumental scale and spare ornamental program
- Stylistically modern; might display influence of Late Moderne or PWA Streamline Moderne
- May have been partially or fully funded through WPA, 1935 to 1943; WPA projects may include significant interior artwork such as murals, paintings and sculpture
- May have been designed by a prominent architect of the period

Figure 71. Corona Avenue Elementary School (1935). Source: USC Digital Archive.

Character-Defining Features | Campus/District:

- A unified, nonmonumental, nonhierarchical site plan
- Displays inventive site plan incorporating buildings, landscaped courtyards, and circulation corridors into a unified campus design
- Swaths of landscaped patios and terraces adjacent to classroom wings; designed outdoor spaces, including patios, courtyards
- Use of outdoor corridors, with simple canopy supports and posts or *pilotis*, form links between classrooms and other buildings

Figure 72. Emerson Junior High (now Middle) School, Richard Neutra, 1937, Los Angeles. This school is extant and located on Selby Avenue near Santa Monica Boulevard in west Los Angeles. Source: Julius Shulman Archives, J. Paul Getty Trust, Getty Research Institute.

Figures 73. and *74. Condensed finger-plan of Baldwin Hills Elementary School. Axial classroom wings, one-story massing, swaths of landscaping and patios. Source: Getty Research Institute, Shulman Archives (left), Google Maps, 2013 (right).*

Theme: LAUSD | Educating the Baby Boom: The Postwar Modern Functionalist School Plant, 1945–1969

By the 1950s, many of the design ideas considered experimental in the 1930s had matured and become the national standard for schools. Stylistically, schools might include some historicist detailing reflecting popular styles (such as Colonial Revival). But, overall, a unified campus design, building types and plans that accommodated a high degree of indoor-outdoor integration, ample outdoor spaces, and sheltered corridors marked the typology as the mature version of the functionalist school plant. The priority remained the creation of a domestic scale for schools. Campuses displayed a one-story massing for elementary schools, and up to two stories for middle and high schools. Site plans, which often featured a decentralized, pavilion-like layout, lacked the formality and monumentality that characterized earlier eras of school design.

School types expressive of these ideals include the finger-plan (1940s–1950s) and cluster-plan (1950s), and variations on their basic themes. Combinations of these basic forms, which flexed according to available lot size and school enrollment, are also evident.

For LAUSD, the postwar years brought another round of reform as well as unprecedented expansion. Given the postwar classroom shortage, many campuses were constructed quickly, from standardized plans used district-wide, in designs that convey some of these ideas. The most intact and well-designed campuses among these, though, uniquely represent this era of reform and the midcentury modern school.

Figure 75. Orville Wright Middle School (1948–1952). Source: LAUSD, 2012.

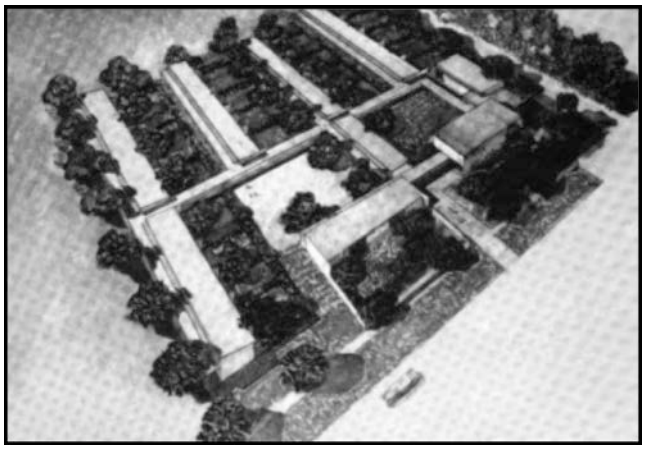

Figures 76. and *77. One-story massing and double-loaded axial classrooms, lined by landscaped courtyards, Grover Cleveland Senior High School (1959). Source: LAUSD, 2014.*

Character-Defining Features | Buildings/Structures:

- Building plans and site design clearly express their function; classroom wings often exhibit one-story "finger-like" wings, arranged on an axis
- Easily identifiable indoor-outdoor spaces, connections to classrooms through the incorporation of patios, courtyards, and outdoor canopied corridors
- One-story massing, particularly for elementary schools; up to two to three stories for junior and high schools
- Building types and plans expressive of postwar ideals in school design; these can include (1) finger-plan schools (usually in 1940s through 1950s); (2) cluster-plan schools (beginning in 1950s); and (3) variations and combinations of these typologies clearly expressive of the ideals for informality, indoor-outdoor connections, and zoned planning for the site
- Varying elevations might display differentiated window sizes and configurations, in order to tailor interior light to sun patterns and create cross-lit/cross-ventilated classrooms

Character-Defining Features | Campus/District:

- Unified campus design includes most or all of the following attributes: lack of formality and monumentality; low massing (usually one stories for classrooms and up to two stories for auditoriums/multipurpose rooms); strong geometric ordering of buildings and outdoor spaces; decentralized, pavilion-like layout; rational, function-driven site design; buildings extend across the site; buildings are oriented to outdoor spaces (courtyards, patios, outdoor areas), purposeful indoor-outdoor integration
- Automobile traffic/drop-off areas separated from campus; linked to interior via extended canopied corridors; buildings often turn inward, toward green spaces and courtyards, lawns
- Outdoor corridors, sheltered beneath simple canopies, forming links between the buildings of the campus




Figures 78. and *79. Neutra's conceptual sketch of Kester Avenue Elementary School and the current aerial view. Source: McCoy,* Neutra *(left) and LAUSD Kester Avenue Elementary School Pre-Planning Survey, 2011 (right).*

Character-Defining Features | Campus/District (continued):

- Classrooms often consist of a series of axial, modular units; an informal, domestic scale for the buildings and campus might be especially evident in elementary schools
- Swaths of patios, terraces, and plantings adjacent to and alternating with buildings
- Generous expanses of windows, including steel- and wood-framed multilight windows, in awning and hopper casements, clerestories, and fixed panes
- Flat roof or broken-plane roof often used for lighting and acoustical issues
- Modular design, with a rhythmic, asymmetrical but balanced composition
- Usually displays a modern design idiom, usually either regional modernist (with use of native materials such as stone, brick, and wood siding and/or framing), International Style modernist, or, by the early 1960s, Late Modern (more expressive and sculptural); may have been designed by a prominent architect of the period
- Often associated with postwar suburbanization/growth near major employment centers (such as San Fernando Valley & southwest Los Angeles)
- Often built in residential neighborhoods on large expanses of land, with swaths of land devoted to landscape design and playing fields (in particular for high school campuses)

Figure 80. Orville Wright Middle School (1948-1952). Source: Getty Research Institute, Julius Shulman Archive.

ARCHITECTURAL STYLES

Beaux-Arts Classicism & Neo-Classical Revival

Early twentieth-century buildings brought a new architectural vocabulary to LAUSD school design. The monumentalism and motifs of Beaux Arts Classicism accommodated a new scale for school building of two and three stories. This scale was demanded by expanding enrollment and a need for increased capacity and rooms differentiated by grade level and curriculum.

Figure 81. Neo-Classical school design: San Fernando Middle School (1916). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Beaux Arts Classicism and Neo-Classical Revival styles were especially favored by designers following the lead of McKim, Mead and White and other prominent national firms. The impressive porticos, with classical orders and colossal columns, advertised the importance placed on public education. Primarily of masonry construction, most of these schools fell victim to the 1933 Long Beach Earthquake. The San Fernando Middle School Auditorium, constructed as part of a 6-year high school in 1916, is one of the few remaining examples of this era.

Typical Character-Defining Features:

- Monumental scale
- Formal, symmetrical design composition
- Smooth stone, masonry, or concrete exteriors (often scored to resemble masonry)
- Elaborated entrance, often featuring portico with columns
- Classical detailing, such as use of gables and entablature, columns, and pilasters
- Multilight grouped windows with wood surrounds


Figure 82. Detail, San Fernando Middle School (1916). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Indigenous Revival Styles and the Era of Historic Eclecticism

As of 2013, a substantial number of LAUSD's historic school buildings were constructed between the early 1920s and World War II. These schools reflect the eclectic menu of revival styles popular at the time for a range of building types. Period-revival styles seen in LAUSD schools include Italian Renaissance Revival, Collegiate Gothic Revival, and Tudor Revival. In addition, for Southern California's emerging architectural profession and academy, this era brought a new emphasis on the region's indigenous architectural traditions and a desire to infuse design with local character. Indigenous revival styles that rose in popularity during this period included, most notably for LAUSD public schools, the Spanish Colonial and Mission Revival. Designers expressed regional character and flavor by relating buildings to the outdoors, with one-story schools easily opened to exterior spaces, and by providing open loggias and arcades for circulation.

Where present, architectural styling and details are generally most clearly expressed in the campus's public buildings, such as the auditorium or administration building, and at primary entrances to buildings or classroom wings.


Figures 83. and 84. Renaissance Revival Style: Joseph Le Conte Middle School, Edgar Cline (1922). Source: LAUSD Le Conte Middle School Pre-Planning Survey, 2012 (left) Leslie Heumann & Associates and SAIC for LAUSD (right).


Figures 85. and 86. Northern Italian Renaissance: Hamilton Senior High School Administration Building, John C. Austin & Frederick C. Ashley, (1931). Source: LAUSD Hamilton Senior High School Pre-Planning Survey, 2010 (left) Leslie Heumann & Associates and SAIC for LAUSD (right).

Mission Revival and Spanish Colonial Revival

Beginning with efforts to restore California's missions in the late nineteenth century, Southern Californian architects began looking toward regional history for stylistic cues. The region's climate and Hispanic heritage figured prominently in these new directions. The Mission Revival vocabulary, most popular between 1890 and 1920, drew inspiration from Southwestern missions. Identifying features include curved parapets and red tiled, low-pitched roofs. Arches were used liberally, and wall surfaces commonly displayed smooth stucco. The Spanish Colonial Revival flourished between 1915 and 1940, reaching its apex during the 1920s and 1930s. This movement was catalyzed by architect Bertram Goodhue's 1915 designs for Panama-California Exposition in San Diego.

The Spanish Colonial Revival style became one of the most popular idioms for a range of building types. Architects and builders embraced the style, which was employed for many LAUSD schools. The rise in popularity of the Spanish Colonial Revival style also coincided with the move toward more child-scaled schools, with lower massing and open, expansive campuses. With its emphasis on arcaded corridors and patios, the style fit the school reform movement particularly well.

Figure 87. Post-earthquake Mission Revival Style: Reseda Elementary School (1936). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Spanish Colonial Revival buildings tend to be asymmetrical and sheathed with smooth stucco. Roofs generally consist of gabled, gabled and flat, and (less commonly) hipped roofs, clad in red clay tiles. Arched openings, whether for windows, doors, or gates, are a textbook feature. Secondary materials—including wood, wrought iron, and polychromatic tile—provide decorative accents. Windows are generally wood framed or metal, with molded wood surrounds or lintels.

Figure 88. Late example of Spanish Colonial Revival: Verdugo Hills High School (1948). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Typical Character-Defining Features:

- Stucco-clad walls (usually smooth finish); might have brick or cast stone
- Asymmetrical design; incorporation of exterior patios and courtyards
- Use of towers, turrets, or cupolas
- Low-pitched gabled or hipped roof covered in red clay tiles or flat roof with parapet wall
- Shallow eaves or deeper eaves, lined with exposed carved wood brackets
- Arched openings for windows, doors, and use of arcades
- Secondary materials can include wrought iron, polychromatic tile, and cast stone

Renaissance Revival Style

In the late nineteenth and early twentieth centuries, the Renaissance Revival style began as a fairly literal translation of sixteenth-century Italian *palazzi* into two- and three-story buildings. The style evolved into one of the most popular of the 1920s, in particular for midrise office buildings. McKim, Mead, and White designed some of the United States' most elegant expressions of the revival during its earlier years.

Renaissance Revival buildings in Southern California are generally sheathed in brick or stucco. Facades are symmetrical or highly regular and divided into bays by the fenestration pattern or by piers, which are often treated as columns with bases and capitals. Variations in surface finishes, fenestration, and level of detail visually distinguish each section, creating a horizontal emphasis that is reinforced by prominent belt courses. A cornice, set above a frieze and/or architrave, traditionally tops a Renaissance Revival building. Windows on top stories are often distinguished from lower stories by different surrounds and configuration.

Figure 89. El Sereno Middle School, originally Woodrow Wilson High School (1937). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Typical Character-Defining Features:

- Rectangular massing
- Brick, stucco, and concrete, with trim of terra cotta or cast stone and bases of granite or masonry
- Horizontal emphasis; differentiated treatment of stories
- Symmetry and regularity
- Brick, stucco, or concrete exterior, often scored to resemble masonry
- Gabled and/or hipped roof, often sheathed in clay tiles
- Linear fenestration pattern
- Belt courses and cornices
- Classical detailing
- Cast stone or terra cotta architectural ornament

Figure 90. University High School (1924). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Gothic Revival / Collegiate Gothic

Popularized by writers and art critics such as John Ruskin (1819–1900), the English Gothic Revival movement looked back to and idealized the preindustrial Medieval era as a more pure and moral golden age, for society as well as for architecture. First popularized for religious buildings and for school buildings—the "Collegiate Gothic"—the style began appearing in the Los Angeles area in the late 1800s. Few buildings were constructed locally in this style, and even fewer remain.

Most extant Collegiate Gothic schools in Los Angeles were constructed during the height of the period-revival era. In the 1930s, in school design, the style fell out of favor as more up-to-date architectural idioms began emerging. The 1933 Long Beach earthquake, and then the 1934 Field Act, hastened the need for widespread school repairs and new construction, which accelerated the stylistic shift during this period.

Gothic Revival schools share the same emphasis on verticality that characterizes other applications of the style. The emphasis on the vertical is often expressed through the use of uninterrupted piers or attached ornament, which extend from the ground to the roof. The style also makes liberal use of mullions, towers, spires, and pinnacles. Windows are arranged in vertical channels of glass, sometimes topped with pointed arches. Brick and concrete were the materials of choice, often accented by cast stone.

Figure 91. John Marshall High School, George Lindsey, architect (1931). Source: Heumann & Associates and SAIC for LAUSD.

Typical Character-Defining Features:

- Concrete or brick exterior
- Emphasis on the vertical axis
- Attenuated windows and openings
- Use of full-length columns or pilasters
- Steeply gabled roof
- Liberal use of cast stone or terra cotta ornament and sculptural detailing
- Stylized openings, with Tudor, pointed, or round arches
- Windows and doorways outlined with archivolts and topped with decorative crowns
- Windows with mullions

Figures 92. and 93. Huntington Park High School, Administration Building (1936). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Art Deco

As architects and designers began exploring alternatives to historic revival styles, one of the earliest modern alternatives was Art Deco. The term grew out of the 1925 exposition in Paris showcasing the "nouveau," or new directions in design and decorative arts, at the *Le Musé des Arts Decoratifs*.

The idiom is highly decorative but rejects copying or adapting historical revival styles. Instead, ornamentation draws on geometric and foliate patterns and motifs, such as zigzags and chevrons, light, and color. Primarily in use between the 1920s and 1930s, the style was used most often in commercial, industrial, and institutional buildings.

Typical Character-Defining Features:

- Emphasis on verticality through building massing;
- Applied exterior features and ornament
- Use of stylized, geometric motifs and decorative features, such as zigzags and chevrons
- Generally features smooth stucco- or concrete-clad wall surfaces
- Often features towers or other elements projecting beyond the roofline
- Often features steel-frame casement and fixed windows

Figure 94. PWA Moderne with Art Deco influence: Florence Nightingale Middle School (1937-1939). Source: Heumann & Associates and SAIC for LAUSD.

Figure 95. Streamline Moderne: Thomas Jefferson High School, Stiles O. Clements (1933). Source: LAUSD.

Streamline Moderne | Moderne

The Streamline Moderne became a popular style during the Great Depression and World War II period. Its clean lines and minimalist ornament both celebrated the modern machine-age and signaled the period of austerity triggered by the Great Depression. Compared with its more ornamental predecessor, the Art Deco style, Streamline Moderne is more restrained in its ornamental program and emphasizes the horizontal rather than the vertical. This is achieved through incorporating bands of windows, decorative raised or grooved horizontal lines, flat canopies with banded fascia, and narrow coping at the roofline. Other characteristics include smooth wall surfaces, usually clad in stucco, glass block or porthole windows, and rounded corners. Reference to aerodynamic design is a signature of the style.

Compared with the Streamline Moderne, Moderne (also called Art Moderne) buildings also tend to be horizontal in emphasis but more clean-lined and rectilinear in their massing and detailing. Moderne designs are generally characterized by flat roofs, smooth stucco exteriors, and use of metal casement windows that often meet at the corners of the building.

Typical Character-Defining Features:

- Horizontal emphasis, massing, and accents, such as moldings and continuous sill courses
- Smooth stucco or concrete exterior finish
- Curvilinear/rounded wall surfaces, corners, and features
- Recessed windows with no surrounds
- Flat or nearly flat roof

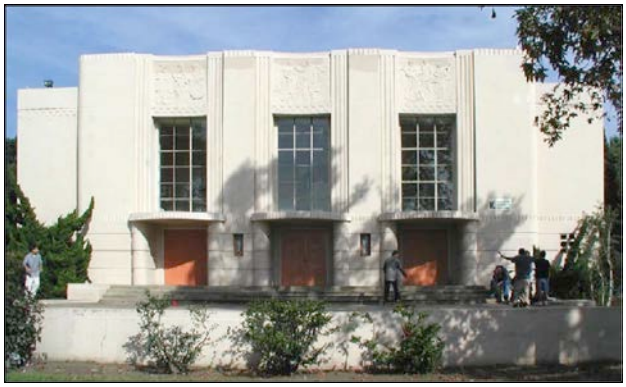


Figure 96. Moderne: Venice High School (1935-1937). Source: Leslie Heumann & Associates and SAIC for LAUSD.

Figures 97. and 98. Hollenbeck Middle School (1936, left) and Hollywood Union High School (1934/1935, right). Source: Leslie Heumann & Associates and SAIC for LAUSD.

PWA Moderne

Created by the National Industrial Recovery Act, the Public Works Administration (PWA) was founded within a few months of the March 1933 Long Beach Earthquake. Following widespread damage to Los Angeles public schools in the wake of the earthquake, much school reconstruction work was funded by the PWA. Consequently, a substantial number of Los Angeles public schools either built or remodeled during this time exhibit some degree of PWA Moderne styling. Also referred to as "Stripped Classicism," the PWA Moderne often incorporates elements of a number of styles, including Classical Revival, Spanish Colonial Revival, Art Deco, and Streamline Moderne.

Compared with the Streamline Moderne, the PWA Moderne was more formal and symmetrical in its overall design, with less emphasis on curvilinear shapes and horizontality. This style is found throughout the United States, particularly for institutional buildings funded through the PWA. Although the PWA program was terminated in 1943, buildings continued to display these stylistic features.

Typical Character-Defining Features:

- Emphasis on the vertical axis
- Symmetrical, formal design composition and massing
- Smooth wall surfaces, generally exhibiting stucco, concrete, and/or polished stone (rarely includes brick exterior elements)
- Usually displays a flat roof
- Piers, often fluted or reeded, separating recessed window channels
- Incorporation of shallow relief panels and interior murals

Figure 99. PWA Moderne meets Spanish Colonial Revival style: Canoga Park High School Auditorium (1939). Source: Leslie Heumann & Associates and SAIC for LAUSD.


Figures 100. and 101. Emerson Middle School, Richard Neutra, architect (1937-1940). Source: LAUSD.

Early Modernism | International Style (Pre-1945)

This style coincides with the emergence of modernism in Los Angeles, at a time when the idiom was still experimental and practiced by a small group of architects and designers. Many of these same ideas became the norm in the postwar period, but during the pre-1945 years, the ideas remained very unique and experimental. The City of Los Angeles Office of Historic Resources describes this stylistic theme as follows:

> With precedents in Europe dating to the first decades of the twentieth century, Los Angeles was one of the first American centers of the International Style due in large part to the import of ideas by Viennese expatriates Rudolph Schindler and Richard Neutra. Although never catching on as a widely-accepted style for domestic architecture, the International Style was embraced and regionalized by a number of Los Angeles architects and designers who established a formidable local Modernist tradition.
>
> Rudolph Schindler came to Los Angeles from Austria in 1920 to oversee construction on the Barnsdall House (Hollyhock House) for the office of Frank Lloyd Wright. Fellow Austrian Richard Neutra came to Los Angeles at Schindler's urging in 1925. Schindler, Lloyd Wright and Neutra and the architects of the so-called "Second Generation" architects continued to design buildings in Los Angeles in the postwar years; however, by this time the work of these architects and their protégés took on an expression of a more regional modernism (see Mid-Century Modernism).[6]

Typical Character-Defining Features:

- Horizontal emphasis; use of simple, geometric volumes; smooth, unadorned wall surfaces, often sheathed in stucco or concrete
- Flat or nearly flat roof, often with cantilevered eaves
- Use of corner and casement windows, often with steel frames
- Windows generally set flush with the wall plane, with minimal trim or surrounds
- Continuous bands of windows emphasize the horizontal axis

[6] These descriptions are drawn and adapted from the City of Los Angeles Office of Historic Resources guidelines for evaluating modern resources in Los Angeles. Excerpts in this passage were drawn from: Architectural Resources Group, n.d., "Pre-War Modernism," prepared for the City of Los Angeles Office of Historic Resources.


Figures 102. and 103. On left, Fernangeles Elementary School (1954), Sun Valley. On right, Parmlee Avenue Elementary School (1962), southeastern Los Angeles. Source: LAUSD, 2014.

Mid-Century Modernism / Regional Modernism (Post-1945)

Mid-Century Modernism, or Regional Modernism, represents a middle ground between the formal, machine-age aesthetic of the International Style and a regional idiom reflecting local precedent and identity. In the postwar period through the 1960s, as practiced in Southern California, Mid-Century Modernism took its cues from the region's first-generation modernist architects such as Richard Neutra, Rudolph Schindler, Gregory Ain, Frank Lloyd Wright, and Harwell Hamilton Harris. In the postwar period, second-generation practitioners such as Raphael Soriano, Whitney Smith, and A. Quincy Jones, among many others, established Los Angeles as a center for innovative architectural design and culture.

Mid-Century Modernism is characterized by an honest expression of structure and function, with little applied ornament. Aesthetic effect is achieved through an asymmetrical but balanced, rhythmic design composition, often expressed in modular post-and-beam construction. Whether wood or steel, post-and-beam construction allowed for open floor plans, ease of expansion, and generous expanses of glazing to heighten indoor-outdoor integration. Infill panels of wood or glass are common, with glazing often extending to the gable. Buildings are generally one to two-stories, with an emphasis on simple, geometric forms.

Capped with low-pitched gabled or flat roofs, a Mid-Century Modern building often displays wide eaves and cantilevered canopies, supported on spider-leg or post supports. Sheathing materials vary, with wood, stucco, brick and stone, or steel-framing and glass. Windows are generally flush-mounted, with metal frames. This style was seen in postwar institutional and commercial buildings, as well as residences, from 1945 until circa 1975, when Title 24 restrictions on the use of glass curtailed the expansive glazing that characterizes the style.

Figure 104. Pacoima Middle School, Administrative Building (1955), Wilmington. Source: LAUSD Pacoima Middle School Pre-Planning Survey, 2010.

Figures 105. and 106. Dodson Middle High School (1960). Source: LAUSD, 2014.

Typical Character-Defining Features:

- Horizontal design composition and massing; use of modular design; generally one to two stories
- Simple, geometric volumes; exterior materials include stucco, brick, or concrete
- Flat or shed roof, often with wide, cantilevered overhangs
- Aesthetic qualities derive from use of simply treated materials and excellent craftsmanship
- Direct expression of structural systems, often in wood or steel post-and-beam
- Lack of historicizing ornament
- Generous expanses of fenestration, including bands of grouped multilight windows
- Extensive use of sheltered exterior corridors, with flat or slightly sloped roofs supported by posts, piers, or pipe columns

Mid-Century Modernism | Expressionistic/Organic Subtype:

- Combines sculptural forms with basic geometric volumes
- Curved, sweeping wall surfaces
- Expressionistic roof forms, including butterfly, folded plate or barrel vault roof forms


Figures 107. and 108. Orville Wright Middle School (left), Palisades Charter High School (right). Source: LAUSD.

VI. Conclusion

This study represents a first step in developing procedures and guidelines that are tailored to LAUSD's need to efficiently design and implement modernization and upgrade projects while also protecting historic resources. The goal is to offer LAUSD a sound approach that is grounded in the *SOI Standards* and best preservation practices. In this way, use of the *LAUSD Design Guidelines and Treatment Approaches for Historic Schools* will help LAUSD staff retain and protect the district's many historically significant schools while also facilitating compliance with CEQA, specifically through application of the *SOI Standards* and the avoidance of significant adverse impacts to historic resources.

However, the *LAUSD Design Guidelines and Treatment Approaches for Historic Schools* is also intended to be a living document. As LAUSD continues implementing districtwide modernization, the design guidelines lend themselves to amendment and expansion as needed, in conjunction with a qualified historic preservation professional. In this way, development of the *LAUSD Design Guidelines and Treatment Approaches for Historic Schools* represents a preliminary—but critically important—first step, in order to equip LAUSD staff with the resources and guidelines they will need as they design projects while also ensuring LAUSD's continuing stewardship of its many historically significant assets.

VII. National Park Service Technical Assistance: Select References

National Park Service, US Department of the Interior, Technical Preservation Services, Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Series
Available at: http://www.nps.gov/tps/standards/applying-rehabilitation/standards-bulletins.htm.
Titles include:
New Additions (ITS No. 3)
Exterior Doors (ITS No. 4)
Exposed Interior Brick (ITS No. 5)
Interior Finishes (ITS No. 7)
Interior Alterations (ITS No. 8)
Porches (ITS No. 9)
Stair Tower Additions (ITS No. 10)
School Buildings: Interior Alterations to School Buildings to Accommodate New Uses (ITS No. 11)
School Buildings: Rehabilitation and Adaptive Reuse of Schools (ITS No. 12)
Adding New Openings (ITS No. 14)
Loading Door Openings (ITS No. 16)
New Additions (ITS No. 18)
Interior Finishes (ITS No. 19)
Adding New Openings on Secondary Elevations (ITS No. 21)
Adding New Entrances to Historic Buildings (ITS No. 22)
Windows: Selecting New Windows to Replace Non-Historic Windows (ITS No. 23)
Corridors: Installing New Systems in Historic Corridors (ITS No. 24)
Interior Finishes: Altering the Character of Historically Finished Interiors (ITS No. 25)
Entrances and Doors: Entrance Treatments (ITS No. 26)
Awnings: Adding Awnings to Historic Storefronts and Entrances (ITS No. 27)
Interior Features: Retaining Distinctive Corridor Features (ITS No. 31)
Roofing Materials: Slate Roof Treatments (ITS No. 32)
Secondary Elevations: Alterations to Rear Elevations (ITS No. 33)
Rooftop Additions (ITS No. 36)
Alterations without Historical Basis (ITS No. 38)
Site and Setting: Changes to Historic Sites (ITS No. 39)
Corridors: Corridors in Historic School Buildings (ITS No. 40)
Incompatible Alterations to the Setting and Environment of a Historic Property (ITS No. 41)
Subdividing Significant Historic Interior Spaces (ITS No. 44)
Modifying Historic Interior Railings to Meet Building Code (ITS No. 46)
Rooftop Additions on Mid-Size Historic Buildings (ITS No. 47)
Installing New Systems in Historic Buildings (ITS No. 51)
Incorporating Solar Panels in a Rehabilitation Project (ITS No. 52)
Designing New Additions to Provide Accessibility (ITS No. 53)
Alterations without Historic Basis (ITS No. 56)

National Park Service, US Department of the Interior, Technical Preservation Services, Preservation Briefs

The NPS Preservation Briefs provide guidance on preserving**,** rehabilitating, and restoring historic buildings. These publications offer extensive guidance for recognizing and addressing common preservation issues and problems prior to beginning work. Available at: http://www.nps.gov/tps/how-to-preserve/briefs.htm
Titles include:
Preservation Brief 1, "Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings."
Preservation Brief 2, "Repainting Mortar Joints in Historic Masonry Buildings."
Preservation Brief 3, "Conserving Energy in Historic Buildings."
Preservation Brief 4, "Roofing for Historic Buildings."
Preservation Brief 6, "Dangers of Abrasive Cleaning to Historic Buildings."
Preservation Brief 7, "The Preservation of Historic Glazed Architectural Terra-Cotta."
Preservation Brief 9, "The Repair of Historic Wooden Windows."
Preservation Brief 10, "Exterior Paint Problems on Historic Woodwork."
Preservation Brief 12, "The Preservation of Historic Pigmented Structural Glass (Vitrolite and Carrara Glass)."
Preservation Brief 13, "The Repair and Thermal Upgrading of Historic Steel Windows."
Preservation Brief 15, Preservation of Historic Concrete: Problems and General Approaches."
Preservation Brief 16, "The Use of Substitute Materials on Historic Building Exteriors."
Preservation Brief 17, "Architectural Character - Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character."
Preservation Brief 18, "Rehabilitating Interiors in Historic Buildings - Identifying Character-Defining Elements."
Preservation Brief 19, "The Repair and Replacement of Historic Wooden Shingle Roofs."
Preservation Brief 21, "Repairing Historic Flat Plaster- Walls and Ceilings."
Preservation Brief 22, "The Preservation and Repair of Historic Stucco."
Preservation Brief 23, "Preserving Historic Ornamental Plaster."
Preservation Brief 24, "Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches."
Preservation Brief 28, "Painting Historic Interiors."
Preservation Brief 29, "The Repair, Replacement, and Maintenance of Historic Slate Roofs."
Preservation Brief 30, "The Preservation and Repair of Historic Clay Tile Roofs."
Preservation Brief 31, "Mothballing Historic Buildings."
Preservation Brief 32, "Making Historic Properties Accessible."
Preservation Brief 33, "The Preservation and Repair of Historic Stained and Leaded Glass."
Preservation Brief 34, "Applied Decoration for Historic Interiors: Preserving Historic Composition Ornament."
Preservation Brief 35, "Understanding Old Buildings: The Process of Architectural Investigation."
Preservation Brief 36, "Protecting Cultural Landscapes."
Preservation Brief 37, "Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing."
Preservation Brief 38, "Removing Graffiti from Historic Masonry."
Preservation Brief 39, "Holding the Line: Controlling Unwanted Moisture in Historic Buildings."
Preservation Brief 40, "Preserving Historic Ceramic Tile Floors."
Preservation Brief 41, "The Seismic Retrofit of Historic Buildings: Keeping Preservation in the Forefront."
Preservation Brief 42, "The Maintenance, Repair and Replacement of Historic Cast Stone."

Appendix A
California Historical Building Code

2013 CALIFORNIA HISTORICAL BUILDING CODE

California Code of Regulations
Title 24, Part 8

California Building Standards Commission

Effective Date: January 1, 2014
(For Errata and Supplements, see History Note Appendix)

2013 California Historical Building Code
California Code of Regulations, Title 24, Part 8

First Printing: July 2013

ISBN 978-1-58001-457-9

Published by

International Code Council
500 New Jersey Avenue, NW, 6th Floor
Washington, D.C. 20001
1-888-422-7233

PRINTED IN THE U.S.A.

PREFACE

This document is the 8th of 12 parts of the official triennial compilation and publication of the adoptions, amendments and repeal of administrative regulations to *California Code of Regulations, Title 24,* also referred to as the *California Building Standards Code*. This part is known as the *California Historical Building Code*.

The *California Building Standards Code* is published in its entirety every three years by order of the California legislature, with supplements published in intervening years. The California legislature delegated authority to various state agencies, boards, commissions and departments to create building regulations to implement the State's statutes. These building regulations, or standards, have the same force of law, and take effect 180 days after their publication unless otherwise stipulated. The *California Building Standards Code* applies to occupancies in the State of California as annotated.

A city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions. Findings of the local condition(s) and the adopted local building standard(s) must be filed with the California Building Standards Commission to become effective and may not be effective sooner than the effective date of this edition of the *California Building Standards Code*. Local building standards that were adopted and applicable to previous editions of the *California Building Standards Code* do not apply to this edition without appropriate adoption and the required filing.

Should you find publication (e.g., typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833–2936

Phone: (916) 263–0916
Fax: (916) 263–0959

Web Page: www.bsc.ca.gov

ACKNOWLEDGEMENTS

The 2013 California Building Standards Code (Code) was developed through the outstanding collaborative efforts of the Department of Housing and Community Development, the Division of State Architect, the Office of the State Fire Marshal, the Office of Statewide Health Planning and Development, the California Energy Commission, the California Department of Public Health, the California State Lands Commission, the Board of State and Community Corrections, and the California Building Standards Commission (Commission).

This collaborative effort included the assistance of the Commission's Code Advisory Committees and many other volunteers who worked tirelessly to assist the Commission in the production of this Code.

Governor Edmund G. Brown Jr.

Members of the California Building Standards Commission

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For questions on California state agency amendments, please refer to the contact list on he following page.

PART 8 CONTAINS ALTERNATIVE REGULATIONS FOR QUALIFIED HISTORICAL BUILDINGS

The *California Historical Building Code* (CHBC) is unique among state regulations. The authoring of the original CHBC required state agencies promulgating regulations for building construction to work in harmony with representatives of other design and construction disciplines. The result was a totally new approach to building codes for historical structures, which maintains currently acceptable life–safety standards.

These regulations are also unique in that they are performance oriented rather than prescriptive. The provisions of the CHBC are to be applied by the enforcing authority of every city, county, city and county, or state agency in permitting repairs, alterations and additions necessary for the preservation, rehabilitation, relocation, related construction, change of use or continued use of a qualified historical building.

The authority for use of the CHBC is vested in Sections 18950 through 18961 of the Health and Safety Code. Section 18954 states, "The building department of every city or county shall apply the provisions of alternative building standards and building regulations adopted by the CHBC Board pursuant to Section 18959.5 in permitting repairs, alterations and additions necessary for the preservation, restoration, rehabilitation, moving or continued use of an historical building or structure. A state agency shall apply the alternative building regulations adopted by the CHBC Board pursuant to Section 18959.5 in permitting repairs, alterations and additions necessary for the preservation, restoration, rehabilitation, moving or continued use of an historical building or structure."

However, be aware that in order to use the CHBC, the structure under consideration must be qualified by being designated as an historical building or structure. Section 18955 states, "For the purposes of this part, a qualified historical building or structure is any structure or collection of structures, and their associated sites deemed of importance to the history, architecture or culture of an area by an appropriate local or state governmental jurisdiction. This shall include structures on existing or future national, state or local historical registers or official inventories, such as the National Register of Historic Places, State Historical Landmarks, State Points of Historical Interest, and city or county registers or inventories of historical or architecturally significant sites, places, historic districts or landmarks."

The regulations of the CHBC have the same authority as state law and are to be considered as such. Liability is the same as for prevailing law.

The intent of the CHBC is to save California's architectural heritage by recognizing the unique construction problems inherent in historical buildings and by providing a code to deal with these problems.

HISTORICAL PREFACE

The background of the *California Historical Building Code* can be traced to December 1973, when the State Department of Parks and Recreation published the California History Plan, Volume I, in which Recommendation No. 11 was proposed by the then California Landmarks Advisory Committee (later to become The State Historical Resources Commission). This proposal expressed a need for a new building code to meet the intent of protecting the public health and safety and also retain "enough flexibility to allow restoration of a Historic feature while still retaining its Historic integrity." No. 11 of this History Plan supported this need by stating that ". . . restoration . . . is frequently made difficult by unnecessarily rigid interpretation of building . . . codes."

In March of 1974, the Landmarks Committee by resolution recommended that the Director of the State Department of Parks and Recreation and the State Architect initiate a study to develop this needed code. These two officials accepted this concept and jointly called a statewide meeting in Sacramento on May 14th of that year. Attending were representatives from both the public and private sectors, such as members of the building industry, design professions, local and state building officials, and others interested in this problem.

Out of this open conference, a steering committee was formed to explore in depth the ways and means of implementing the new historical building code concept. This ad hoc committee was chaired by a representative from the California Council, American Institute of Architects and composed of a comprehensive cross section of the professional organizations and government agencies concerned with design and code enforcement.

Meetings began late in 1974 and continued into early 1975. By April of that year, a legislative subcommittee of the ad hoc group drafted a sample bill for the proposed code and requested that it be carried by Senator James R. Mills, President Pro Tempore of the Senate. After further development and refinement, the enacting legislation to create the authority for the code and an advisory board to prepare regulations to implement it (SB 927, Mills) was supported by both the legislature and the public. It was signed by the governor in September 1975, and became effective January 1, 1976.

The members of the advisory board, which were required by law to include local and state building officials, individuals from the building industry and design professions, as well as representatives from city and county governments, were appointed and held their first session in Sacramento, February 24, 1976. This Board's duties included the preparation of code regulations and the review of specific historic building cases, when officially requested by governing bodies.

Several of the Board's members were a part of the original ad hoc steering committee and thus provided a continuity and smooth transition from the inception of the code's philosophy to its pragmatic implementation in these performance–oriented regulations.

The first comprehensive regulations were codified in August and October 1979, after years of careful deliberation. Those regulations allowed all jurisdictions to utilize them at their discretion in replacing or modifying details of prevailing prescriptive codes.

Changes made in law in 1984 and 1991, and to the code, make the application of the *California Historical Building Code* statutes and regulations applicable for all agencies and at the discretion of the owner for local jurisdictions when dealing with qualified historical buildings.

These current performance regulations were adopted by the Board on June 23, 1998, and approved by the California Building Standards Commission on December 12, 2013.

CALIFORNIA CODE OF REGULATIONS, TITLE 24

California Agency Information Contact List

Board of State and Community Corrections

www.csa.ca.gov ..... *(916) 445-5073*
Local Adult Jail Standards
Local Juvenile Facility Standards

California Building Standards Commission

www.bsc.ca.gov ..... *(916) 263-0916*

California Energy Commission

www.enregy.ca.gov ..... ***Energy Hotline*** *(800) 772-3300*
Building Efficiency Standards
Appliance Efficiency Standards
Compliance Manual/Forms

California State Lands Commission

www.slc.ca.gov ..... *(562) 499-6312*
Marine Oil Terminals

California State Library

www.library.ca.gov ..... *(916) 654-0266*

Department of Consumer Affairs:

Acupuncture Board
www.acupuncture.ca.gov..... *(916) 515-5200*
Office Standards

Board of Pharmacy
www.pharmacy.ca.gov..... *(916) 574-7900*
Pharmacy Standards

Bureau of Barbering and Cosmetology
www.barbercosmo.ca.gov ..... *(916) 952-5210*
Barber and Beauty Shop,
and College Standards

Bureau of Electronic and Appliance Repair,
Home Furnishings and Thermal Insulation
www.bearhfti.ca.gov ..... *(916) 999-2041*
Insulation Testing Standards

Structural Pest Control Board
www.pestboard.ca.gov..... *(800) 737-8188*
Structural Standards

Veterinary Medical Board
www.vmb.ca.gov ..... *(916) 263-2610*
Veterinary Hospital Standards

Department of Food and Agriculture

www.cdfa.ca.gov
Meat & Poultry Packing Plant Standards (916) 654-0509
Dairy Standards (916) 654-0773

Department of Housing and Community Development

www.hcd.ca.gov..... *(916) 445-9471*
Residential- Hotels, Motels, Apartments,
Single-Family Dwellings; and
Permanent Structures in Mobilehome &
Special Occupancy Parks

(916) 445-3338
Factory-Built Housing, Manufactured Housing &
Commercial Modular

Mobilehome- Permits & Inspections
Northern Region–(916) 255-2501
Southern Region–(951) 782-4420

(916) 445-9471
Employee Housing Standards

Department of Public Health

www.dph.ca.gov..... *(916) 449-5661*
Organized Camps Standards
Public Swimming Pools Standards

Department of Water Resources

www.dwr.ca.gov..... *(916) 651-9676*
Gray Water Information

Division of the State Architect

www.dgs.ca.gov/dsa..... *(916) 445-8100*

Access Compliance

Structural Safety

Public Schools Standards
Essential Services Building Standards
Community College Standards

State Historical Building Safety Board
Alternative Building Standards

Office of Statewide Health Planning and Development

www.oshpd.ca.gov..... *(916) 654-3139*
Hospital Standards
Skilled Nursing Facility Standards &
Clinic Standards

Permits (916) 654-3362

Office of the State Fire Marshal

osfm.fire.ca.gov ..... *(916) 445-8200*
Code Development and Analysis
Fire Safety Standards
Fireplace Standards
Day Care Centers Standards
Exit Standards

HOW TO DETERMINE WHERE CHANGES HAVE BEEN MADE

Symbols in the margins indicate where changes have been made or language has been deleted.

| This symbol indicates that a change has been made.

> This symbol indicates deletion of language.

TABLE OF CONTENTS

CHAPTER 8-1
ADMINISTRATION

Note: The *California Historical Building Code*, Part 8 of Title 24, governs for all qualified historical buildings or properties in the State of California.

SECTION 8-101
TITLE, PURPOSE AND INTENT

8-101.1 Title. These regulations shall be known as the *California Historical Building Code* and will be referred to herein as "the CHBC."

8-101.2 Purpose. The purpose of the CHBC is to provide regulations for the preservation, restoration, rehabilitation, relocation or reconstruction of buildings or properties designated as qualified historical buildings or properties (Chapter 8-2). The CHBC is intended to provide solutions for the preservation of qualified historical buildings or properties, to promote sustainability, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users. The CHBC requires enforcing agencies to accept solutions that are reasonably equivalent to the regular code (as defined in Chapter 8-2) when dealing with qualified historical buildings or properties.

8-101.3 Intent. The intent of the CHBC is to facilitate the preservation and continuing use of qualified historical buildings or properties while providing reasonable safety for the building occupants and access for persons with disabilities.

SECTION 8-102
APPLICATION

8-102.1 Application. The CHBC is applicable to all issues regarding code compliance for qualified historical buildings or properties. The CHBC may be used in conjunction with the regular code to provide solutions to facilitate the preservation of qualified historical buildings or properties. The CHBC shall be used by any agency with jurisdiction and whenever compliance with the code is required for qualified historical buildings or properties.

1. The state or local enforcing agency shall apply the provisions of the CHBC in permitting repairs, alterations and additions necessary for the preservation, restoration, reconstruction, rehabilitation, relocation or continued use of a qualified historical building or property when so elected by the private property owner.
2. **State agencies.** All state agencies shall apply the provisions of the CHBC in permitting repairs, alterations and additions necessary for the preservation, restoration, rehabilitation, safety, relocation, reconstruction or continued use of qualified historical buildings or properties.

8-102.1.1 Additions, alterations and repairs. It is the intent of the CHBC to allow nonhistorical expansion or addition to a qualified historical building or property, provided nonhistorical additions shall conform to the requirements of the regular code. See Chapter 8-2.

8-102.1.2 Relocation. Relocated qualified historical buildings or properties shall be sited to comply with the regular code or with the solutions listed in the CHBC. Nonhistorical new construction related to relocation shall comply with the regular code. Reconstruction and restoration related to relocation is permitted to comply with the provisions in the CHBC.

8-102.1.3 Change of occupancy. For change of use or occupancy, see Chapter 8-3, Use and Occupancy.

8-102.1.4 Continued use. Qualified historical buildings or properties may have their existing use or occupancy continued if such use or occupancy conformed to the code or to the standards of construction in effect at the time of construction, and such use or occupancty does not constitute a distinct hazard to life safety as defined in the CHBC.

8-102.1.5 Unsafe buildings or properties. When a qualified historical building or property is determined to be unsafe as defined in the regular code, the requirements of the CHBC are applicable to the work necessary to correct the unsafe conditions. Work to remediate the buildings or properties need only address the correction of the unsafe conditions, and it shall not be required to bring the entire qualified historical building or property into compliance with regular code.

8-102.1.6 Additional work. Qualified historical buildings or properties shall not be subject to additional work required by the regular code, regulation or ordinance beyond that required to complete the work undertaken. Certain exceptions for accessibility and for distinct hazards exist by mandate and may require specific action, within the parameters of the CHBC.

SECTION 8-103
ORGANIZATION AND ENFORCEMENT

8-103.1 Authority. The state or local enforcing agency, pursuant to authority provided under Section 18954 of the Health and Safety Code, shall administer and enforce the provisions of the CHBC in permitting repairs, alterations and additions necessary for the preservation, restoration, reconstruction, rehabilitation, relocation or continued use of a qualified historical building or property.

8-103.2 State enforcement. All state agencies pursuant to authority provided under Section 18954 and Section 18961 of the Health and Safety Code shall administer and enforce the CHBC with respect to qualified historical buildings or properties under their respective jurisdiction.

8-103.3 Liability. Prevailing law regarding immunity of building officials is unaffected by the use and enforcement of the CHBC.

SECTION 8-104
REVIEW AND APPEALS

8-104.1 State Historical Building Safety Board (SHBSB). In order to provide for interpretation of the provisions of the CHBC and to hear appeals, the SHBSB shall act as an appeal and review body to state and local agencies or any affected party.

8-104.2 SHBSB review. When a proposed design, material or method of construction is being considered by the enforcing agency, the agency chief, the building official or the local board of appeals may file a written request for opinion to the SHBSB for its consideration, advice or findings. In considering such request, the SHBSB may seek the advice of other appropriate private or public boards, individuals, or state or local agencies. The SHBSB shall, after considering all of the facts presented, including any recommendation of other appropriate boards, agencies or other parties, determine if, for the purpose intended, the proposal is reasonably equivalent to that allowed by these regulations in proposed design, material or method of construction, and it shall transmit such findings and its decision to the enforcing agency for its application. The Board may recover the costs of such reviews and shall report the decision in printed form, copied to the California Building Standards Commission.

8-104.2.1 State agencies. All state agencies with ownership of, or that act on behalf of state agency owners of, qualified historical buildings or properties, shall consult and obtain SHBSB review prior to taking action or making decisions or appeals that affect qualified historical buildings or properties, per Section 18961 of the Health and Safety Code.

8-104.2.2 Imminent threat. Where an emergency is declared and a qualified historical building or property is declared an imminent threat to life and safety, the state agency assessing such a threat shall consult with the SHBSB before any demolition is undertaken, per Section 18961 of the Health and Safety Code.

8-104.3 SHBC appeals. If any local agency administering and enforcing the CHBC or any person adversely affected by any regulation, rule, omission, interpretation, decision or practice of the agency enforcing the CHBC wishes to appeal the issue for resolution to the SHBSB, either of these parties may appeal directly to the Board. The Board may accept the appeal only if it determines that issues involved are of statewide significance. The Board may recover the costs of such reviews and shall make available copies of decisions in printed form at cost, copied to the California Building Standards Commission.

8-104.4 Local agency fees. Local agencies, when actively involved in the appeal, may also charge affected persons reasonable fees not to exceed the cost of obtaining reviews and appeals from the Board.

SECTION 8-105
CONSTRUCTION METHODS AND MATERIALS

8-105.1 Repairs. Repairs to any portion of a qualified historical building or property may be made in-kind with historical materials and the use of original or existing historical methods of construction, subject to conditions of the CHBC. (See Chapter 8-8.)

8-105.2 Solutions to the *California Historical Building Code*. Solutions provided in the CHBC, or any other acceptable regulation or methodology of design or construction and used in whole or in part, with the regular code, or with any combination of the regular code and the CHBC, shall be allowed. The CHBC does not preclude the use of any proposed alternative or method of design or construction not specifically prescribed or otherwise allowed by these regulations. Any alternative may be submitted for evaluation to the appropriate enforcing agency for review and acceptance. The enforcing agency may request that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding such solutions. Any alternative offered in lieu of that prescribed or allowed in the CHBC shall be reasonably equivalent in quality, strength, effectiveness, durability and safety to that of the CHBC.

SECTION 8-106
SHBSB RULINGS

8-106.1 General. Rulings of the SHBSB (i.e., formal appeals, case decisions, code interpretations and administrative resolutions, etc.) that are issues of statewide application are required to be submitted to the California Building Standards Commission in printed form. These rulings may be used to provide guidance for similar cases or issues.

CHAPTER 8-2
DEFINITIONS

SECTION 8-201
DEFINITIONS

For the purpose of the CHBC, certain terms and phrases, words and their derivatives shall be construed as specified in this chapter. Additional definitions and/or terms may appear in the various other chapters relative to terms or phrases primarily applicable thereto. Any reference to "authority having jurisdiction" does not necessarily preclude the appellate process of Section 8-104.3.

ADDITION. A nonhistorical extension or increase in floor area or height of a building or property.

ALTERATION. A modification to a qualified historical building or property that affects the usability of the building or property, or part thereof. Alterations include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historical restoration, changes or rearrangement of the structural parts or elements, and changes or rearrangements in the plan configuration of walls and full-height partitions.

BUILDING STANDARD. Any guideline, regulation or code that may be applied to a qualified historical building or property.

CHARACTER-DEFINING FEATURE. Those visual aspects and physical elements that comprise the appearance of a historical building or property, and that are significant to its historical, architectural and cultural values, including the overall shape of the historical building or property, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment.

CULTURAL RESOURCE. Building, site, property, object or district evaluated as having significance in prehistory or history.

DISTINCT HAZARD. Any clear and evident condition that exists as an immediate danger to the safety of the occupants or public right of way. Conditions that do not meet the requirements of current regular codes and ordinances do *not,* of themselves, constitute a distinct hazard. Section 8-104.3, SHBC appeals, remains applicable.

ENFORCING AGENCY, Authority Having Jurisdiction, Local Agency with Jurisdiction. An entity with the responsibility for regulating, enforcing, reviewing or otherwise that exerts control of or administration over the process of gaining permits, approvals, decisions, variances, appeals for qualified historical buildings or properties.

EXIT LADDER DEVICE. An exit ladder device is a permanently installed, fixed, folding, retractable or hinged ladder intended for use as a means of emergency egress from areas of the second or third stories. Unless approved specifically for a longer length, the ladder shall be limited to 25 feet (7620 mm) in length. Exit ladders are permitted where the area served by the ladder has an occupant load less than 10 persons.

FIRE HAZARD. Any condition which increases or may contribute to an increase in the hazard or menace of fire to a greater degree than customarily recognized by the authority having jurisdiction, or any condition or act which could obstruct, delay, hinder or interfere with the operations of firefighting personnel or the egress of occupants in the event of fire. Section 8-104.3, SHBC appeals, remains applicable.

HISTORICAL FABRIC OR MATERIALS. Original and later-added historically significant construction materials, architectural finishes or elements in a particular pattern or configuration which form a qualified historical property, as determined by the authority having jurisdiction.

HISTORICAL SIGNIFICANCE. Importance for which a property has been evaluated and found to be historical, as determined by the authority having jurisdiction.

IMMINENT THREAT. Any condition within or affecting a qualified historical building or property which, in the opinion of the authority having jurisdiction, would qualify a building or property as dangerous to the extent that the life, health, property or safety of the public, its occupants or those performing necessary repair, stabilization or shoring work are in immediate peril due to conditions affecting the building or property. Potential hazards to persons using, or improvements within, the right-of-way may not be construed to be "imminent threats" solely for that reason if the hazard can be mitigated by shoring, stabilization, barricades or temporary fences.

INTEGRITY. Authenticity of a building or property's historical identity, evidenced by the survival of physical characteristics that existed during the property's historical or prehistorical period of significance.

LIFE-SAFETY EVALUATION. An evaluation of the life-safety hazards of a qualified historical building or property based on procedures similar to those contained in NFPA 909, *Standard for the Protection of Cultural Resources, Appendix B, Fire Risk Assessment in Heritage Premises.*

LIFE SAFETY HAZARD. See Distinct Hazard.

PERIOD OF SIGNIFICANCE. The period of time when a qualified historical building or property was associated with important events, activities or persons, or attained the characteristics for its listing or registration.

PRESERVATION. The act or process of applying measures necessary to sustain the existing form, integrity and materials of a qualified historical building or 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-related work to make properties functional is appropriate within a preservation project.

QUALIFIED HISTORICAL BUILDING OR PROPERTY. As defined in Health and Safety Code Section 18955 as "Qualified Historical Building or Property." Any building, site, object, place, location, district or collection of structures, and their associated sites, deemed of importance to the history, architecture or culture of an area by an appropriate local, state or federal governmental jurisdiction. This shall include historical buildings or properties on, or determined eligible for, national, state or local historical registers or inventories, such as the National Register of Historic Places, California Register of Historical Resources, State Historical Landmarks, State Points of Historical Interest, and city or county registers, inventories or surveys of historical or architecturally significant sites, places or landmarks.

RECONSTRUCTION. The act or process of depicting, by means of new construction, the form, features and detailing of a nonsurviving site, landscape, building, property or object for the purpose of replicating its appearance at a specific period of time.

REGULAR CODE. The adopted regulations that govern the design and construction or alteration of nonhistorical buildings and properties within the jurisdiction of the enforcing agency.

REHABILITATION. The act or process of making possible a compatible use for qualified historical building or property through repair, alterations and additions while preserving those portions or features which convey its qualified historical, cultural or architectural values.

RELOCATION. The act or process of moving any qualified historical building or property or a portion of a qualified historical building or property to a new site, or a different location on the same site.

REPAIR. Renewal, reconstruction or renovation of any portion of an existing property, site or building for the purpose of its continued use.

RESTORATION. The act or process of accurately depicting the form, features and character of a qualified building or property as it appeared at a particular period of time by the 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.

STRUCTURE. That which is built or constructed, an edifice or a building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

TREATMENT. An act of work to carry out preservation, restoration, stabilization, rehabilitation or reconstruction.

CHAPTER 8-3
USE AND OCCUPANCY

SECTION 8-301
PURPOSE AND SCOPE

8-301.1 Purpose. The purpose of the CHBC is to provide regulations for the determination of occupancy classifications and conditions of use for qualified historical buildings or properties.

8-301.2 Scope. Every qualified historical building or property for which a permit or approval has been requested shall be classified prior to permit issuance according to its use or the character of its occupancy in accordance with the regular code and applicable provisions of this chapter.

SECTION 8-302
GENERAL

8-302.1 Existing use. The use or character of occupancy of a qualified historical building or property, or portion thereof, shall be permitted to continue in use regardless of any period of time in which it may have remained unoccupied or in other uses, provided such building or property otherwise conforms to all applicable requirements of the CHBC.

8-302.2 Change in occupancy. The use or character of the occupancy of a qualified historical building or property may be changed from or returned to its historical use or character, provided the qualified historical building or property conforms to the requirements applicable to the new use or character of occupancy as set forth in the CHBC. Such change in occupancy shall not mandate conformance with new construction requirements as set forth in regular code.

8-302.3 Occupancy separations. Required occupancy separations of more than one hour may be reduced to one-hour fire-resistive construction with all openings protected by not less than three-fourths-hour fire-resistive assemblies of the self-closing or automatic-closing type when the building is provided with an automatic sprinkler system throughout the entire building in accordance with Section 8-410.4. Doors equipped with automatic-closing devices shall be of a type which will function upon activation of a device which responds to products of combustion other than heat.

Required occupancy separations of one hour may be omitted when the building is provided with an automatic sprinkler system throughout.

8-302.4 Maximum floor area. Regardless of the use or character of occupancy, the area of a one-story qualified historical building or property may have, but shall not exceed, a floor area of 15,000 square feet (1393.5 m^2) unless such an increase is otherwise permitted in regular code. Multistory qualified historical buildings (including basements and cellars) shall be in accordance with regular code requirements.

Exception: Historical buildings may be unlimited in floor area without fire-resistive area separation walls:

1. When provided with an automatic sprinkler, or
2. Residential occupancies of two stories or less when provided with a complete fire alarm and annunciation system and where the exiting system conforms to regular code.

8-302.5 Maximum height. The maximum height and number of stories of a qualified historical building or property shall not be limited because of construction type, provided such height or number of stories does not exceed that of its historical design.

8-302.5.1 High-rise buildings. Occupancies B, F-1, F-2 or S in high-rise buildings with floors located more than 75 feet above the lowest floor level having building access may be permitted with only the stories over 75 feet provided with an automatic fire sprinkler system if:

1. The building construction type and the exits conform to regular code, and
2. A complete building fire alarm and annunciation system is installed, and
3. A fire barrier is provided between the sprinklered and nonsprinklered floors.

8-302.6 Fire-resistive construction. See Chapter 8-4.

8-302.7 Light and ventilation. Existing provisions for light and ventilation which do not, in the opinion of the enforcing agency, constitute a safety hazard may remain. See Section 8-303.6 for residential requirements. See Section 8-503 for Escape or Rescue Windows and Doors.

SECTION 8-303
RESIDENTIAL OCCUPANCIES

8-303.1 Purpose. The purpose of this section is to provide regulations for those buildings designated as qualified historical buildings or properties and classified as occupancies. The CHBC requires enforcing agencies to accept any reasonably equivalent to the regular code when dealing with qualified historical buildings and properties.

8-303.2 Intent. The intent of the CHBC is to preserve the integrity of qualified historical buildings and properties while maintaining a reasonable degree of protection of life, health and safety for the occupants.

8-303.3 Application and scope. The provisions of this section shall apply to all qualified historical buildings used for human habitation. Those dwelling units intended only for display, or public use with no residential use involved, need not comply with the requirements of this section.

8-303.4 Fire escapes. See Chapter 8-5.

8-303.5 Room dimensions. Rooms used for sleeping purposes may contain a minimum of 50 square feet (4.6 m^2) floor area, provided there is maintained an average ceiling height of 7 feet (2134 mm). Other habitable rooms need only be of adequate size to be functional for the purpose intended.

8-303.6 Light and ventilation. Windows in habitable rooms shall have an area of 6 percent of the floor area, or 6 square feet (0.56 m^2), whichever is greater. Windows in sleeping rooms shall be openable (see Section 8-503). Residential occupancies need not be provided with electrical lighting.

8-303.7 Alteration and repair. The alteration and repair of qualified historical buildings or properties may permit the replacement, retention and extension of original materials and the continued use of original methods of construction, provided a life-safety hazard is not created or continued. Alterations and repairs shall be consistent with the CHBC.

The amount of alterations and repairs is not limited, provided there is no nonhistorical increase in floor area, volume or size of the building or property.

8-303.8 Exiting. See Chapter 8-5.

CHAPTER 8-4
FIRE PROTECTION

SECTION 8-401
PURPOSE, INTENT AND SCOPE

8-401.1 Purpose. The purpose of this chapter is to provide for fire protection of qualified historical buildings or properties. The CHBC requires enforcing agencies to accept any reasonably equivalent to the regular code when dealing with qualified historical buildings or properties.

8-401.2 Intent. The intent of the CHBC is to preserve the integrity of qualified historical buildings or properties while maintaining a reasonable degree of fire protection based primarily on the life safety of the occupants and firefighting personnel.

8-401.3 Scope. This chapter shall apply when required by the provisions of Section 8-102.

SECTION 8-402
FIRE-RESISTIVE CONSTRUCTION

8-402.1 Exterior wall construction. The fire-resistance requirement for existing exterior walls and existing opening protection may be satisfied when an automatic sprinkler system designed for exposure protection is installed per the CHBC. The automatic sprinklers may be installed on the exterior with at least one sprinkler located over each opening required to be protected. Additional sprinklers shall also be distributed along combustible walls under the roof lines that do not meet the fire-resistive requirement due to relationship to property lines as required by regular code. Such sprinkler systems may be connected to the domestic water supply on the supply-main side of the building shut-off valve. A shut-off valve may be installed for the sprinkler system, provided it is locked in an open position.

8-402.2 One-hour construction. Upgrading an existing qualified historical building or property to one-hour fire-resistive construction and one-hour fire-resistive corridors shall not be required regardless of construction or occupancy when one of the following is provided:

1. An automatic sprinkler system throughout. See Section 8-410.2 for automatic sprinkler systems.
2. An approved life-safety evaluation.
3. Other alternative measures as approved by the enforcing agency.

8-402.3 Openings in fire-rated systems. Historical glazing materials and solid wood unrated doors in interior walls required to have one-hour fire rating may be approved when operable windows and doors are provided with appropriate smoke seals and when the area affected is provided with an automatic sprinkler system. See Section 8-410 for automatic sprinkler systems.

SECTION 8-403
INTERIOR FINISH MATERIALS

New nonhistorical interior wall and ceiling finish shall conform to the provisions of the regular code. Existing nonconforming materials used for wood lath and plaster walls, see Section 8-404.

Exception: When an automatic sprinkler system is provided throughout the building, existing finishes shall be approved.

SECTION 8-404
WOOD LATH AND PLASTER

Wood lath and plaster walls may be considered in accordance with codes, standards and listings published prior to 1943 whereby a wood stud wall assembly with gypsum or lime plaster on hand split or sawn wooden lath obtains a one-half-hour fire-resistive rating. This rating may be increased for interior walls to as much as one hour by filling the wall with mineral fiber or glass fiber.

SECTION 8-405
OCCUPANCY SEPARATION

See Chapter 8-3.

SECTION 8-406
MAXIMUM FLOOR AREA

See Chapter 8-3.

SECTION 8-407
VERTICAL SHAFTS

Vertical shafts need not be enclosed when such shafts are blocked at every floor level by the installation of not less than 2 full inches (51 mm) of solid wood or equivalent construction installed so as to prevent the initial passage of smoke and flame. Automatic sprinkler systems or other solutions may be considered on a case-by-case basis, in lieu of enclosure of vertical shafts and stairwells.

SECTION 8-408
ROOF COVERING

Existing or original roofing materials may be repaired or reconstructed subject to the following requirements:

1. The original or historical roofing system shall be detailed or modified as necessary in order to be capable of providing shelter while preserving the historical materials and appearance of the roof.
2. Wooden roof materials may be utilized where fire resistance is required, provided they are treated with

fire-retardant treatments to achieve a Class "B" roof covering rating. Wood roofing in state designated Urban Wildland and High Fire Zones shall be permitted when installed in class "A" assemblies.

3. Jurisdictions that prohibit wood roofing materials for application as roof coverings and roof assemblies shall submit documentation for the adoption. Express Terms, statement of reasons and minutes of the action by the adopting authority Health and Safety Code, Section 18959(f).

SECTION 8-409
FIRE ALARM SYSTEMS

Every qualified historical building or property shall be provided with fire alarm systems as required for the use or occupancy by the regular code or other approved alternative.

SECTION 8-410
AUTOMATIC SPRINKLER SYSTEMS

8-410.1 Every qualified historical building or property which cannot be made to conform to the construction requirements specified in the regular code for the occupancy or use, and which constitutes a distinct fire hazard (for definition of "distinct hazard," see Chapter 8-2), shall be deemed to be in compliance if provided with an automatic sprinkler system or a life-safety system or other technologies as approved by the enforcing agency. ("Automatic" is defined in the regular code. Sprinkler System is defined in this section.)

8-410.2 When required by the CHBC, an automatic sprinkler systems is defined by the following standards (for nonhazardous occupancies).

1. Buildings of four stories or less: NFPA 13R, 2002 edition.
2. For floors above the fourth, NFPA 13, 2002, SFM amended edition.
3. Buildings with floors above 75 feet, NFPA 13, 2002 edition.
4. When the building is free standing or with property line separation, two floors and 1500 sf per floor or less, NFPA 13D, 2002 Edition.
5. For exterior wall and opening protection. As required by this section.

   Exception: When the automatic sprinkler systems are used to reach compliance using this code, in three or more occasions, the system shall be NFPA standard 13D shall be increased to NFPA 13R Standard, or NFPA 13R standard shall be increased to a NFPA 13 standard.

8-410.3 Automatic sprinkler systems shall not be used to substitute for or act as an alternate to the required number of exits from any facility. (See Chapter 8-5 for exiting requirements.)

8-410.4 An automatic sprinkler system shall be provided in all detention facilities.

SECTION 8-411
OTHER TECHNOLOGIES

Fire alarm systems, smoke and heat detection systems, occupant notification and annunciation systems, smoke control systems and fire modeling, times egress analysis and modeling, as well as other engineering methods and technologies may be accepted by the enforcing agency to address areas of nonconformance.

SECTION 8-412
HIGH-RISE BUILDINGS

Qualified historical buildings having floors for human occupancy located more than 75 feet above the lowest floor level having building access shall conform to the provisions of the regular code for existing high-rise buildings as amended by the CHBC.

CHAPTER 8-5
MEANS OF EGRESS

SECTION 8-501
PURPOSE, INTENT AND SCOPE

8-501.1 Purpose. The purpose of this chapter is to establish minimum means of egress regulations for qualified historical buildings or properties. The CHBC requires enforcing agencies to accept reasonably equivalent alternatives to the means of egress requirements in the regular code.

8-501.2 Intent. The intent of these regulations is to provide an adequate means of egress.

8-501.3 Scope. Every qualified historical building or portion thereof shall be provided with exits as required by the CHBC when required by the provisions of Section 8-102.

SECTION 8-502
GENERAL

8-502.1 General. The enforcing agency shall grant reasonable exceptions to the specific provisions of applicable egress regulations where such exceptions will not adversely affect life safety.

8-502.2. Existing door openings and corridor widths of less than dimensions required by regular code shall be permitted where there is sufficient width and height for the occupants to pass through the opening or traverse the exit.

8-502.3 Stairs. Existing stairs having risers and treads or width at variance with the regular code are allowed if determined by the enforcing agency to not constitute a distinct hazard. Handrails with nonconforming grip size or extensions are allowed if determined by the enforcing agency to not constitute a distinct hazard.

8-502.4 Main entry doors. The front or main entry doors need not be rehung to swing in the direction of exit travel, provided other means or conditions of exiting, as necessary to serve the total occupant load, are provided.

8-502.5 Existing fire escapes. Existing previously approved fire escapes and fire escape ladders shall be acceptable as one of the required means of egress, provided they extend to the ground and are easily negotiated, adequately signed and in good working order. Access shall be by an opening having a minimum width of 29 inches (737mm) when open with a sill no more than 30 inches (762mm) above the adjacent floor, landing or approved step.

8-502.6 New fire escapes and fire escape ladders. New fire escapes and fire escape ladders which comply with this section shall be acceptable as one of the required means of egress. New fire escapes and new fire escape ladders shall comply with the following:

1. Access from a corridor shall not be through an intervening room.
2. All openings within 10 feet (3048 mm) shall be protected by three-fourths-hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than one-hour fire-resistive construction.
3. Egress from the building shall be by a clear opening having a minimum dimension of not less than 29 inches (737 mm). Such openings shall be openable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall not be more than 30 inches (737 mm) above the floor, step or landing of the building or balcony.
4. Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.79 kN/m^2) and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 72 degrees with a minimum width of 18 inches (457 mm). Treads shall not be less than 4 inches (102 mm) in width, and the rise between treads shall not exceed 10 inches (254 mm). All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot (729.5 N/m^2) of railing.
5. Balconies shall not be less than 44 inches (1118 mm) in width with no floor opening other than the stairway opening greater than $^5/_8$ inch (15.9 mm) in width. Stairway openings in such balconies shall not be less than 22 inches by 44 inches (559 by 1118 mm). The balustrade of each balcony shall not be less than 36 inches (914 mm) high with not more than 9 inches (287 mm) between balusters.
6. Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with less than 4 units vertical in 12 units horizontal (33.3 percent slope). Fire escape ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds (445 N) placed anywhere on the rung. All ladders shall be at least 15 inches (381 mm) wide, located within 12 inches (305 mm) of the building. Ladder rungs shall be $^3/_4$ inch (19.1 mm) in diameter and shall be located 12 inches (305 mm) on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches (762 by 838 mm).

   The length of fire escapes and exit ladder devices shall be limited to that approved by the building official based on products listed by a recognized testing laboratory.
7. The lowest balcony shall not be more than 18 feet (5486 mm) from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground.

8. Fire escapes shall not take the place of stairways required by the codes under which the building was constructed.
9. Fire escapes shall be kept clear and unobstructed at all times and maintained in good working order.

SECTION 8-503
ESCAPE OR RESCUE WINDOWS AND DOORS

Basements in dwelling units and every sleeping room below the fourth floor shall have at least one openable window or door approved for emergency escape which shall open directly into a public street, public way, yard or exit court. Escape or rescue windows or doors shall have a minimum clear area of 3.3 square feet (0.31 m^2) and a minimum width or height dimension of 18 inches (457 mm) and be operable from the inside to provide a full, clear opening without the use of special tools.

SECTION 8-504
RAILINGS AND GUARDRAILS

The height of railings and guard railings and the spacing of balusters may continue in their historical height and spacing unless a distinct hazard has been identified or created by a change in use or occupancy.

CHAPTER 8-6
ACCESSIBILITY

SECTION 8-601
PURPOSE, INTENT AND SCOPE

8-601.1 Purpose. The purpose of the CHBC is to provide alternative regulations to facilitate access and use by persons with disabilities to and throughout facilities designated as qualified historical buildings or properties. These regulations require enforcing agencies to accept alternatives to regular code when dealing with qualified historical buildings or properties.

8-601.2 Intent. The intent of this chapter is to preserve the integrity of qualified historical buildings and properties while providing access to and use by persons with disabilities.

8-601.3 Scope. The CHBC shall apply to every qualified historical building or property that is required to provide access to persons with disabilities.

1. Provisions of this chapter do not apply to new construction or reconstruction/replicas of historical buildings.
2. Where provisions of this chapter apply to alteration of qualified historical buildings or properties, alteration is defined in *California Building Code* (CBC), Chapter 2, Definitions and Abbreviations. 202 – A. Alter or Alteration.

8-601.4 General application. The provisions in the CHBC apply to local, state and federal governments (Title II entities); alteration of commercial facilities and places of public accommodation (Title III entities); and barrier removal in commercial facilities and places of public accommodation (Title III entities). Except as noted in this chapter.

SECTION 8-602
BASIC PROVISIONS

8-602.1 Regular code. The regular code for access for people with disabilities (Title 24, Part 2, Vol. 1, Chapter 11B) shall be applied to qualified historical buildings or properties unless strict compliance with the regular code will threaten or destroy the historical significance or character-defining features of the building or property.

8-602.2 Alternative provisions. If the historical significance or character-defining features are threatened, alternative provisions for access may be applied pursuant to this chapter, provided the following conditions are met:

1. These provisions shall be applied only on an item-by-item or a case-by-case basis.
2. Documentation is provided, including meeting minutes or letters, stating the reasons for the application of the alternative provisions. Such documentation shall be retained in the permanent file of the enforcing agency.

SECTION 8-603
ALTERNATIVES

8-603.1 Alternative minimum standards. The alternative minimum standards for alterations of qualified historical buildings or facilities are contained in Section 4.1.7(3) of ADA Standards for Accessible Design, as incorporated and set forth in federal regulation 28 C.F.R. Pt. 36.

8-603.2 Entry. These alternatives do not allow exceptions for the requirement of level landings in front of doors, except as provided in Section 8-603.4.

1. Access to any entrance used by the general public and no further than 200 feet (60 960 mm) from the primary entrance.
2. Access at any entrance not used by the general public but open and unlocked with directional signs at the primary entrance and as close as possible to, but no further than 200 feet (60 960 mm) from, the primary entrance.
3. The accessible entrance shall have a notification system. Where security is a problem, remote monitoring may be used.

8-603.3 Doors. Alternatives listed in order of priority are:

1. Single-leaf door which provides a minimum 30 inches (762 mm) of clear opening.
2. Single-leaf door which provides a minimum $29^{1}/_{2}$ inches (749 mm) clear opening
3. Double door, one leaf of which provides a minimum $29^{1}/_{2}$ inches (749 mm) clear opening.
4. Double doors operable with a power-assist device to provide a minimum $29^{1}/_{2}$ inches (749 mm) clear opening when both doors are in the open position.

8-603.4 Power-assisted doors. Power-assisted door or doors may be considered an equivalent alternative to level landings, strikeside clearance and door-opening forces required by the regular code.

8-603.5 Toilet rooms. In lieu of separate-gender toilet facilities as required in the regular code, an accessible unisex toilet facility may be designated.

8-603.6 Exterior and interior ramps and lifts. Alternatives listed in order of priority are:

1. A lift or a ramp of greater than standard slope but no greater than 1:10, for horizontal distances not to exceed 5 feet (1525 mm). Signs shall be posted at upper and lower levels to indicate steepness of the slope.
2. Access by ramps of 1:6 slope for horizontal distance not to exceed 13 inches (330 mm). Signs shall be posted at upper and lower levels to indicate steepness of the slope.

SECTION 8-604
EQUIVALENT FACILITATION

Use of other designs and technologies, or deviation from particular technical and scoping requirements, are permitted if the application of the alternative provisions contained in Section 8-603 would threaten or destroy the historical significance or character-defining features of the historical building or property.

1. Such alternatives shall be applied only on an item-by-item or a case-by-case basis.
2. Access provided by experiences, services, functions, materials and resources through methods including, but not limited to, maps, plans, videos, virtual reality and related equipment, at accessible levels. The alternative design and/or technologies used will provide substantially equivalent or greater accessibility to, and usability of, the facility.
3. The official charged with the enforcement of the standards shall document the reasons for the application of the design and/or technologies and their effect on the historical significance or character-defining features. Such documentation shall be in accordance with Section 8-602.2, Item 2, and shall include the opinion and comments of state or local accessibility officials, and the opinion and comments of representative local groups of people with disabilities. Such documentation shall be retained in the permanent file of the enforcing agency. Copies of the required documentation should be available at the facility upon request.

   Note: For commercial facilities and places of public accommodation (Title III entities).

Equivalent facilitation for an element of a building or property when applied as a waiver of an ADA accessibility requirement will not be entitled to the Federal Department of Justice certification of this code as rebuttable evidence of compliance for that element.

CHAPTER 8-7
STRUCTURAL REGULATIONS

SECTION 8-701
PURPOSE, INTENT AND SCOPE

8-701.1 Purpose. The purpose of the CHBC is to provide alternative regulations to the regular code for the structural safety of buildings designated as qualified historical buildings or properties. The CHBC requires enforcing agencies to accept any reasonably equivalent alternatives to the regular code when dealing with qualified historical buildings or properties.

8-701.2 Intent. The intent of this chapter is to encourage the preservation of qualified historical buildings or structures while providing standards for a minimum level of building performance with the objective of preventing partial or total structural collapse such that the overall risk of life-threatening injury as a result of structural collapse is low.

8-701.3 Application. The alternative structural regulations provided by Section 8-705 are to be applied in conjunction with the regular code whenever a structural upgrade or reconstruction is undertaken for qualified historical buildings or properties.

SECTION 8-702
GENERAL

8-702.1 The CHBC shall not be construed to allow the enforcing agency to approve or permit a lower level of safety of structural design and construction than that which is reasonably equivalent to the regular code provisions in occupancies which are critical to the safety and welfare of the public at large, including, but not limited to, public and private schools, hospitals, municipal police and fire stations and essential services facilities.

8-702.2 Nothing in these regulations shall prevent voluntary and partial seismic upgrades when it is demonstrated that such upgrades will improve life safety and when a full upgrade would not otherwise be required.

SECTION 8-703
STRUCTURAL SURVEY

8-703.1 Scope. When a structure or portion of a structure is to be evaluated for structural capacity under the CHBC, it shall be surveyed for structural conditions by an architect or engineer knowledgeable in historical structures. The survey shall evaluate deterioration or signs of distress. The survey shall determine the details of the structural framing and the system for resistance of gravity and lateral loads. Details, reinforcement and anchorage of structural systems and veneers shall be determined and documented where these members are relied on for seismic lateral resistance.

8-703.2 The results of the survey shall be utilized for evaluating the structural capacity and for designing modifications to the structural system to reach compliance with this code.

8-703.3 Historical records. Past historical records of the structure or similar structures may be used in the evaluation, including the effects of subsequent alterations.

SECTION 8-704
NONHISTORICAL ADDITIONS AND NONHISTORICAL ALTERATIONS

8-704.1 New nonhistorical additions and nonhistorical alterations which are structurally separated from an existing historical building or structure shall comply with regular code requirements.

8-704.2 New nonhistorical additions which impose vertical or lateral loads on an existing structure shall not be permitted unless the affected part of the supporting structure is evaluated and strengthened, if necessary, to meet regular code requirements.

Note: For use of archaic materials, see Chapter 8-8.

SECTION 8-705
STRUCTURAL REGULATIONS

8-705.1 Gravity loads. The capacity of the structure to resist gravity loads shall be evaluated and the structure strengthened as necessary. The evaluation shall include all parts of the load path. Where no distress is evident, and a complete load path is present, the structure may be assumed adequate by having withstood the test of time if anticipated dead and live loads will not exceed those historically present.

8-705.2 Wind and seismic loads. The ability of the structure to resist wind and seismic loads shall be evaluated. Wind loads shall be considered when appropriate, but need not exceed 75% of the wind loads prescribed by the regular code. The evaluation shall be based on the requirements of Section 8-706.

8.705.2.1 Any unsafe conditions in the lateral-load-resisting system shall be corrected, or alternative resistance shall be provided. When strengthening is required, additional resistance shall be provided to meet the minimum requirements of the CHBC. The strengthening measures shall be selected with the intent of meeting the performance objectives set forth in Sectio 8-701.2. The evaluation of structural members and structural systems for seismic loads shall consider the inelastic performance of structural members and their ability to maintain load-carrying capacity during the seismic loadings prescribed by the regular code.

8.705.2.2 The architect or engineer shall consider additional measures with minimal loss of, and impact to, historical materials which will reduce damage and needed repairs in future earthquakes to better preserve the historical structure in perpetuity. These additional measures shall be presented to the owner for consideration as part of the rehabilitation or restoration.

SECTION 8-706
LATERAL LOAD REGULATIONS

8-706.1 Seismic forces. Strength-level seismic forces used to evaluate the structure for resistance to seismic loads shall be based on the *R*-values tabulated in the regular code for similar lateral-force-resisting systems including consideration of the structural detailing of the members where such *R*-values exist. Where such *R*-values do not exist, an appropriate *R*-value shall be rationally assigned considering the structural detailing of the members.

Exceptions:

1. The forces need not exceed 0.75 times the seismic forces prescribed by the regular code requirements.
2. For Occupancy Category I, II or III structures, near-fault increases in ground motion (maximum considered earthquake ground motion of 0.2 second spectral response greater than 150 percent at 5 percent damping) need not be considered when the fundamental period of the building is 0.5 seconds in the direction under consideration.
3. For Occupancy Category I or II structures, the seismic base shear need not exceed 0.30W.
4. For Occupancy Category III or IV structures, the seismic base shear need not exceed 0.40W.

8-706.1.1 When a building is to be strengthened with the addition of a new lateral force resisting system, the *R* value of the new system can be used when the new lateral force resisting system resists at least 75 percent of the building's base shear regardless of its relative rigidity.

8-706.1.2 Unreinforced masonry bearing wall buildings shall comply with the *California Existing Building Code* (CEBC), Appendix Chapter A1, 2010 Edition, and as modified by the CHBC. Alternative standards may be used on a case-by-case basis when approved by the authority having jurisdiction. It shall be permitted to exceed the strength limitation of 100 psi in Section A108.2 of the CEBC when test data and building configuration supports higher values subject to the approval of the authority having jurisdiction.

8-706.1.3 All deviations from the detailing provisions of the lateral-force-resisting systems shall be evaluated for stability and the ability to maintain load-carrying capacity at the expected inelastic deformations.

8-706.2 Existing building performance. The seismic resistance may be based upon the ultimate capacity of the structure to perform, giving due consideration to ductility and reserve strength of the lateral-force-resisting system and materials while maintaining a reasonable factor of safety. Broad judgment may be exercised regarding the strength and performance of materials not recognized by regular code requirements. (See Chapter 8-8, Archaic Materials and Methods of Construction.)

8-706.2.1 All structural materials or members that do not comply with detailing and proportioning requirements of the regular code shall be evaluated for potential seismic performance and the consequence of non-compliance. All members that would be reasonably expected to fail and lead to collapse or life threatening injury when subjected to seismic demands shall be judged unacceptable, and appropriate structural strengthening shall be developed.

8-706.3 Load path. A complete and continuous load path, including connections, from every part or portion of the structure to the ground shall be provided for the required forces. It shall be verified that the structure is adequately tied together to perform as a unit when subjected to earthquake forces.

8-706.4 Parapets. Parapets and exterior decoration shall be investigated for conformance with regular code requirements for anchorage and ability to resist prescribed seismic forces.

An exception to regular code requirements shall be permitted for those parapets and decorations which are judged not to be a hazard to life safety.

8-706.5 Nonstructural features. Nonstructural features of historical structure, such as exterior veneer, cornices and decorations, which might fall and create a life-safety hazard in an earthquake, shall be evaluated. Their ability to resist seismic forces shall be verified, or the feature shall be strengthened with improved anchorage when appropriate.

8-706.5.1 Partitions and ceilings of corridors and stairways serving an occupant load of 30 or more shall be investigated to determine their ability to remain in place when the building is subjected to earthquake forces.

CHAPTER 8-8
ARCHAIC MATERIALS AND METHODS OF CONSTRUCTION

SECTION 8-801
PURPOSE, INTENT AND SCOPE

8-801.1 Purpose. The purpose of the CHBC is to provide regulations for the use of historical methods and materials of construction that are at variance with regular code requirements or are not otherwise codified, in buildings or structures designated as qualified historical buildings or properties. The CHBC require enforcing agencies to accept any reasonably equivalent alternatives to the regular code when dealing with qualified historical buildings or properties.

8-801.2 Intent. It is the intent of the CHBC to provide for the use of historical methods and materials of construction that are at variance with specific code requirements or are not otherwise codified.

8-801.3 Scope. Any construction type or material that is, or was, part of the historical fabric of a structure is covered by this chapter. Archaic materials and methods of construction present in a historical structure may remain or be reinstalled or be installed with new materials of the same class to match existing conditions.

SECTION 8-802
GENERAL ENGINEERING APPROACHES

Strength values for archaic materials shall be assigned based upon similar conventional codified materials, or on tests as hereinafter indicated. The archaic materials and methods of construction shall be thoroughly investigated for their details of construction in accordance with Section 8-703. Testing shall be performed when applicable to evaluate existing conditions. The architect or structural engineer in responsible charge of the project shall assign allowable stresses or strength levels to archaic materials. Such assigned strength values shall not be greater than those provided for in the following sections without adequate testing, and shall be subject to the concurrence of the enforcing agency.

SECTION 8-803
NONSTRUCTURAL ARCHAIC MATERIALS

Where nonstructural historical materials exist in uses which do not meet the requirements of the regular code, their continued use is allowed by this code, provided that any public health and life-safety hazards are mitigated subject to the concurrence of the enforcing agency.

SECTION 8-804
ALLOWABLE CONDITIONS FOR SPECIFIC MATERIALS

Archaic materials which exist and are to remain in qualified historical buildings or structures shall be evaluated for their condition and for loads required by this code. The structural survey required in Section 8-703 of the CHBC shall document existing conditions, reinforcement, anchorage, deterioration and other factors pertinent to establishing allowable stresses, strength levels and adequacy of the archaic materials. The remaining portion of this chapter provides additional specific requirements for commonly encountered archaic materials.

SECTION 8-805
MASONRY

For adobe, see Section 8-806.

8-805.1 Existing solid masonry. Existing solid masonry walls of any type, except adobe, may be allowed, without testing, a maximum ultimate strength of nine pounds per square inch (62.1 kPa) in shear where there is a qualifying statement by the architect or engineer that an inspection has been made, that mortar joints are filled and that both brick and mortar are reasonably good. The shear stress above applies to unreinforced masonry, except adobe, where the maximum ratio of unsupported height or length to thickness does not exceed 13, and where minimum quality mortar is used or exists. Wall height or length is measured to supporting or resisting elements that are at least twice as stiff as the tributary wall. Stiffness is based on the gross section. Shear stress may be increased by the addition of 10 percent of the axial direct stress due to the weight of the wall directly above. Higher-quality mortar may provide a greater shear value and shall be tested in accordance with Appendix A, Chapter A1 of the *California Existing Building Code* (CEBC) 2010 edition, and as modified by the CHBC.

8-805.2 Stone masonry.

8-805.2.1 Solid-backed stone masonry. Stone masonry solidly backed with brick masonry shall be treated as solid brick masonry as described in Section 8-805.1 and in the 2009 IEBC, provided representative testing and inspection verifies solid collar joints between stone and brick and that a reasonable number of stones lap with the brick wythes as headers or that steel anchors are present. Solid stone masonry where the wythes of stone effectively overlap to provide the equivalent header courses may also be treated as solid brick masonry.

8-805.2.2 Independent wythe stone masonry. Stone masonry with independent face wythes may be treated as solid brick masonry as described in Section 8-805.1 and the CEBC, provided representative testing and inspection verify that the core is essentially solid in the masonry wall and that steel ties are epoxied in drilled holes between outer stone wythes at floors, roof and not to exceed 4 feet (1219 mm) on center in each direction, between floors and roof. A reinforcing element shall exist or be provided at or near the top of all stone masonry walls.

8-805.2.3 Testing of stone masonry. Testing of stone masonry shall be similar to the 2010 CEBC requirements

for brick masonry, except that representative stones which are not interlocked shall be pulled outward from the wall and shear area appropriately calculated after the test.

8-805.3 Reconstructed walls. Totally reconstructed walls utilizing original brick or masonry, constructed similar to original, shall be constructed in accordance with the regular code. Repairs or infills may be constructed in a similar manner to the original walls without conforming to the regular code.

SECTION 8-806
ADOBE

8-806.1 General. Unburned clay masonry may be constructed, reconstructed, stabilized or rehabilitated subject to this chapter. Alternative approaches which provide an equivalent or greater level of safety may be used, subject to the concurrence of the enforcing agency.

8-806.2 Moisture protection. Provisions shall be in-place to protect adobe structures from deterioration due to moisture penetration. Adobe shall be maintained in reasonably good condition. Particular attention shall be given to moisture content of adobe walls. Unmaintained walls or ruins shall be evaluated for safety based on their condition and stability. Additional protection measures may be appropriate subject to the concurrence of the enforcing agency.

8-806.3 Height to thickness ratio. Unreinforced new or existing adobe walls shall meet these criteria need not be evaluated for out of plane failure. Where existing dimensions do not meet these conditions, additional strengthening measures, such as a bond beam, may be appropriate. Existing sod or rammed earth walls shall be considered similar to the extent these provisions apply.

1. One-story adobe load-bearing walls shall not exceed a height-to-thickness ratio of 6.
2. Two-story adobe buildings or structures' height-to-thickness wall ratio shall not exceed 6 at the ground floor and 5 at the second floor, and shall be measured at floor-to-floor height when the second floor and attic ceiling/roof are connected to the wall as described below.

8-806.4 Nonload-bearing adobe. Nonload-bearing adobe partitions and gable end walls shall be evaluated for stability and anchored against out-of-plane failure if necessary.

8-806.5 Bond beam. Where provided, a bond beam or equivalent structural element shall be located at the top of all adobe walls, and at the second floor for two-story buildings or structures. The size and configuration of the structural element shall be sufficient to provide an effective brace for the wall, to tie the building together and to connect the wall to the floor or roof.

8-806.6 Repair or reconstruction. Repair or reconstruction of wall area may utilize unstabilized brick or adobe masonry designed to be compatible with the constituents of the existing adobe materials.

8-806.7 Shear values. Existing adobe may be allowed a maximum strength level of twelve pounds per square inch (82.7 kPa) for shear.

8-806.8 Mortar. Mortar may be of the same soil composition as that used in the existing wall, or in new walls as necessary to be compatible with the adobe brick.

SECTION 8-807
WOOD

8-807.1 Existing wood diaphragms or walls. Existing wood diaphragms or walls of straight or diagonal sheathing shall be assigned shear resistance values appropriate with the fasteners and materials functioning in conjunction with the sheathing. The structural survey shall determine fastener details and spacings and verify a load path through floor construction. Shear values of Tables 8-8-A and 8-8-B.

8-807.2 Wood lath and plaster. Wood lath and plaster walls and ceilings may be utilized using the shear values referenced in Section 8-807.1.

8-807.3 Existing wood framing. Existing wood framing members may be assigned allowable stresses consistent with codes in effect at the time of construction. Existing or new replacement wood framing may be of archaic types originally used if properly researched, such as balloon and single wall. Wood joints such as dovetail and mortise and tenon types may be used structurally, provided they are well made. Lumber selected for use and type need not bear grade marks, and greater or lesser species such as low-level pine and fir, boxwood and indigenous hardwoods and other variations may be used for specific conditions where they were or would have been used.

Wood fasteners such as square or cut nails may be used with a maximum increase of 50 percent over wire nails for shear.

SECTION 8-808
CONCRETE

8-808.1 Materials. Natural cement concrete, unreinforced rubble concrete and similar materials may be utilized wherever that material is used historically. Concrete of low strength and with less reinforcement than required by the regular code may remain in place. The architect or engineer shall assign appropriate values of strength based on testing of samples of the materials. Bond and development lengths shall be determined based on historical information or tests.

8-808.2 Detailing. The architect or engineer shall carefully evaluate all detailing provisions of the regular code which are not met and shall consider the implications of these variations on the ultimate performance of the structure, giving due consideration to ductility and reserve strength.

SECTION 8-809
STEEL AND IRON

The hand-built, untested use of wrought or black iron, the use of cast iron or grey iron, and the myriad of joining methods that are not specifically allowed by code may be used wherever applicable and wherever they have proven their worth under the considerable span of years involved with most qualified historical buildings or structures. Uplift capacity should be evaluated

and strengthened where necessary. Fixed conditions or midheight lateral loads on cast iron columns that could cause failure should be taken into account. Existing structural wrought, forged steel or grey iron may be assigned the maximum working stress prevalent at the time of original construction.

SECTION 8-810
HOLLOW CLAY TILE

The historical performance of hollow clay tile in past earthquakes shall be carefully considered in evaluating walls of hollow clay tile construction. Hollow clay tile bearing walls shall be evaluated and strengthened as appropriate for lateral loads and their ability to maintain support of gravity loads. Suitable protective measures shall be provided to prevent blockage of exit stairways, stairway enclosures, exit ways and public ways as a result of an earthquake.

SECTION 8-811
VENEERS

8-811.1 Terra cotta and stone. Terra cotta, cast stone and natural stone veneers shall be investigated for the presence of suitable anchorage. Steel anchors shall be investigated for deterioration or corrosion. New or supplemental anchorage shall be provided as appropriate.

8-811.2 Anchorage. Brick veneer with mechanical anchorage at spacings greater than required by the regular code may remain, provided the anchorages have not corroded. Nail strength in withdrawal in wood sheathing may be utilized to its capacity in accordance with code values.

SECTION 8-812
GLASS AND GLAZING

8-812.1 Glazing subject to human impact. Historical glazing material located in areas subject to human impact may be approved subject to the concurrence of the enforcing agency when alternative protective measures are provided. These measures may include, but not be limited to, additional glazing panels, protective film, protective guards or systems, and devices or signs which would provide adequate public safety.

8-812.2 Glazing in fire-rated systems. See Section 8-402.3.

TABLE8-8A
STRENGTH VALUES FOR EXISTING MATERIALS

EXISTING MATERIALS OR CONFIGURATIONS OF MATERIALS[1]	STRENGTH LEVEL CAPACITY x14.594 for N/m
1. Horizontal diaphragms[2]	
1.1 Roofs with straight sheathing and roofing applied directly to the sheathing	300 lbs per foot for seismic shear
1.2 Roofs with diagonal sheathing and roofing applied directly to the sheathing	750 lbs per foot for seismic shear
1.3 Floors with straight tongue-and-groove sheathing	300 lbs per foot for seismic shear
1.4 Floors with straight sheathing and finished wood flooring with board edges offset or perpendicular	1,500 lbs per foot for seismic shear
1.5 Floors with diagonal sheathing and finished	1,800 lbs per foot for seismic shear
2. Crosswalls[2,3]	
2.1 Plaster on wood or metal lath	Per side: 600 lbs per foot for seismic shear
2.2 Plaster on gypsum lath	550 lbs per foot for seismic shear
2.3 Gypsum wallboard, unblocked edges	200 lbs per foot for seismic shear
2.4 Gypsum wallboard, blocked edges	400 lbs per foot for seismic shear
3. Existing footings, wood framing, structural steel and reinforcing steel	
3.1 Plain concrete footings	f'_c = 1,500 psi (10.34 MPa) unless otherwise shown by tests[3]
3.2 Douglas fir wood	Allowable stress same as D.F. No. 1[3]
3.3 Reinforcing steel	f_t = 40,000 lbs per square inch (124.1 N/mm^2) maximum
3.4 Structural steel	f_t = 33,000 lbs per square inch (137.9 N/mm^2) maximum

[1]Material must be sound and in good condition.
[2]Shear values of these materials may be combined, except the total combined value shall not exceed 900 pounds per foot (13,140 N/m).
[3]Stresses given may be increased for combinations of loads as specified in the regular code.

TABLE 8-8B
STRENGTH VALUES OF NEW MATERIALS USED IN CONNECTION WITH EXISTING CONSTRUCTION

NEW MATERIALS OR CONFIGURATIONS OF MATERIALS	STRENGTH LEVEL CAPACITY[1]
1. Horizontal diaphragms[2]	
1.1 $^{15}/_{32}$ inch minimum plywood sheathing fastened directly over existing straight sheathing with edges of plywood located on center of individual sheathing boards and fastened with minimum #8x $1^{1}/_{4}$ inch wood screws or nails with helical threads 0.13 inch min. diameter and $1^{1}/_{4}$ inch min. length at 4 inch centers all panel edges and 12 inch centers each way in field.	1,500 lbs per foot
1.2 Same plywood and attachments as 1.1 fastened directly over existing diagonal sheathing.	1,800 lbs per foot
1.3 $^{3}/_{8}$ inch plywood sheathing fastened directly over existing straight or diagonal sheathing with ends and edges on centers of individual sheathing boards and fastened with #6 wood screws or nails with helical threads 0.13 inch minimum diameter and $1^{1}/_{4}$ inch min. length at 6 inch centers tall panel edges and 12 inch centers each way in field.	900 lbs per foot
2. Shear walls: Plywood sheathing applied directly over wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing	100 percent of the value specified in the regular code for shear walls
3. Crosswalls: (special procedure only)	
3.1 Plywood sheathing applied directly over wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing	133 percent of the value specified in the regular code for shear walls
3.2 Drywall or plaster applied directly over wood studs	100 percent of the values in the regular code
3.3 Drywall or plaster applied to sheathing over existing wood studs	50 percent of the values specified in the regular code
4. Tension bolts	
a. Bolts extending entirely through unreinforced masonry walls secured with bearing plates on far side of a three-wythe-minimum wall with at least 30 square inches (19 350 mm^2) of area[4,5]	5,400 lbs (24,010 N) per bolt[6] 2,700 lbs (12,009 N) per bolt for two-wythe walls[6]
b. All thread rod extending to the exterior face of the wall installed in adhesive[9]	3,600 lbs (16,014 N) per bolt
5. Shear bolts Bolts embedded a minimum of 8 inches (203 mm) into unreinforced masonry walls and centered in a $2^{1}/_{2}$-inch-diameter (63.5 mm) hole filled with dry-pack or nonshrink grout. Through bolts with first 8 inches (203 mm) as noted above and embedded all thread rod as noted in Item 4.b[5,7,9]	$^{1}/_{2}$ inch (12.7 mm) diameter = 1050 lbs (4671 N)[6] $^{5}/_{8}$ inch (15.9 mm) diameter = 1500 lbs (6672 N)[6] $^{3}/_{4}$ inch (19 mm) diameter = 2250 lbs (10,008 N)[6]
6. Infilled walls Reinforced masonry infilled openings in existing unreinforced masonry walls. Provide keys or dowels to match reinforcing.	Same as values specified for unreinforced masonry walls
7. Reinforced masonry Masonry piers and walls reinforced per the regular code	Same as values specified in the regular code[8]
8. Reinforced concrete Concrete footings, walls and piers reinforced as specified in the regular code and designed for tributary loads	Same values as specified in the regular code[8]

[1]Values are for strength level loads as defined in regular code standards.
[2]Values may be adjusted for other fasteners when approved by the enforcing authority.
[3]In addition to existing sheathing value.
[4]Bolts to be $^{1}/_{2}$-inch (12.7 mm) minimum diameter.
[5]Other bolt sizes, values and installation methods may be used provided a testing program is conducted in accordance with regular code standards. Bolt spacing shall not exceed 6 feet. (1830 mm) on center and shall not be less than 12 inches (305) mm) on center
[6]Other masonry based on tests or other substantiated data.
[7]Embedded bolts to be tested as specified in regular code standards.
[8]Stresses given may be increased for combinations of loads as specified in the regular code.
[9]Adhesives shall be approved by the enforcing agency and installed in accordance with the manufacturer's recommendations. All drilling dust shall be removed from drilled holes prior to installation.

CHAPTER 8-9
MECHANICAL, PLUMBING AND ELECTRICAL REQUIREMENTS

SECTION 8-901
PURPOSE, INTENT AND SCOPE

8-901.1 Purpose. The purpose of the CHBC is to provide regulations for the mechanical, plumbing and electrical systems of buildings designated as qualified historical buildings or properties. The CHBC requires enforcing agencies to accept any reasonable equivalent solutions to the regular code when dealing with qualified historical buildings or properties.

8-901.2 Intent. The intent of the CHBC is to preserve the integrity of qualified historical buildings or properties while providing a reasonable level of protection from fire, health and life-safety hazards (hereinafter referred to as safety hazards) for the building occupants.

8-901.3 Scope. The CHBC shall be applied in conjunction with the regular code whenever compliance with the regular code is required for qualified historical buildings or properties.

8-901.4 Safety hazard. No person shall permit any safety hazard to exist on premises under their control, or fail to take immediate action to abate such hazard. Existing systems which constitute a safety hazard when operational may remain in place, provided they are completely and permanently rendered inoperative. Safety hazards created by inoperative systems shall not be permitted to exist. Requirements of the regular code concerning general regulations shall be complied with, except that the enforcing agency shall accept solutions which do not cause a safety hazard.

8-901.5 Energy conservation. Qualified historical buildings or properties covered by this part are exempted from compliance with energy conservation standards. When new nonhistorical lighting and space conditioning system components, devices, appliances and equipment are installed, they shall comply with the requirements of Title 24, Part 6, *The California Energy Code*, except where the historical significance or character-defining features are threatened.

SECTION 8-902
MECHANICAL

8-902.1 General. Mechanical systems shall comply with the regular code unless otherwise modified by this chapter.

8-902.1.1 The provisions of the CHBC shall apply to the acceptance, location, installation, alteration, repair, relocation, replacement or addition of any heating, ventilating, air conditioning, domestic incinerators, kilns or miscellaneous heat-producing appliances or equipment within or attached to a historical building.

8-902.1.2 Existing systems which do not, in the opinion of the enforcing agency, constitute a safety hazard may remain in use.

8-902.1.3 The enforcing agency may approve any alternative to the CHBC which would achieve equivalent life safety.

8-902.2 Heating facilities. All dwelling-type occupancies covered under this chapter shall be provided with heating facilities. Wood-burning or pellet stoves or fireplaces may be acceptable as heating facilities.

8-902.3 Fuel oil piping and tanks. Fuel oil piping and tanks shall comply with regular code requirements except that the enforcing agency may waive such requirements where the lack of compliance does not create a safety or environmental hazard.

8-902.4 Heat-producing and cooling equipment. Heat-producing and cooling equipment shall comply with the regular code requirements governing equipment safety, except that the enforcing agency may accept alternatives which do not create a safety hazard.

8-902.5 Combustion air.

8-902.5.1 All fuel-burning appliances and equipment shall be provided a sufficient supply of air for proper fuel combustion, ventilation and draft hood dilution.

8-902.5.2 The enforcing agency may require operational tests for combustion air systems which do not comply with applicable requirements of the regular code.

8-902.6 Venting of appliances.

8-902.6.1 Every appliance required to be vented shall be connected to an approved venting system. Venting systems shall develop a positive flow adequate to convey all combustion products to the outside atmosphere.

8-902.6.2 Masonry chimneys in structurally sound condition may remain in use for all fuel-burning appliances, provided the flue is evaluated and documentation provided that the masonry and grout are in good condition. Terra cotta chimneys and Type C metallic vents installed in concealed spaces shall not remain in use unless otherwise mitigated and approved on a case-by-case basis.

8-902.6.3 The enforcing agency may require operational tests for venting systems which do not comply with applicable requirements of the regular code.

8-902.7 Ducts.

8-902.7.1 New ducts shall be constructed and installed in accordance with applicable requirements of the regular code.

8-902.7.2 Existing duct systems which do not comply with applicable requirements of the regular code and do not, in the opinion of the enforcing agency, constitute a safety or health hazard may remain in use.

8-902.8 Ventilating systems.

8-902.8.1 Ventilating systems shall be installed so that no safety hazard is created.

8-902.8.2 Grease hoods and grease hood exhaust systems shall be furnished and installed in accordance with applicable requirements of the regular code. Existing systems which are altered shall comply with the regular code.

8-902.9 Miscellaneous equipment requirements.

8-902.9.1 The following appliances and equipment shall be installed so that no safety hazard is created: warm air furnaces, space heating equipment, vented decorative appliances, floor furnaces, vented wall furnaces, unit heaters, room heaters, absorption units, refrigeration equipment, duct furnaces, infrared radiant heaters, domestic incinerators, miscellaneous heat-producing appliances and water heaters.

8-902.9.2 Storage-type water heaters shall be equipped with a temperature- and pressure-relief valve in accordance with applicable requirements of the regular code.

SECTION 8-903
PLUMBING

8-903.1 General. Plumbing systems shall comply with the regular code unless otherwise noted.

8-903.1.1 The provisions of the CHBC shall apply to the acceptance, location, installation, alteration, repair, relocation, replacement or addition of any plumbing system or equipment within or attached to a historical building.

8-903.1.2 Existing systems which do not, in the opinion of the enforcing agency, constitute a safety hazard may remain in use.

8-903.1.3 The enforcing agency may approve any alternative to these regulations which achieves reasonably equivalent life safety.

8-903.2 Residential occupancies.

8-903.2.1 Where toilet facilities are provided, alternative sewage disposal methods may be acceptable if approved by the local health department. In hotels, where private facilities are not provided, water closets at the ratio of one for each 15 rooms may be acceptable.

8-903.2.2 Toilet facilities are not required to be on the same floor or in the same building as sleeping rooms. Water-flush toilets may be located in a building immediately adjacent to the sleeping rooms. When alternative sewage disposal methods are utilized, they shall be located a minimum distance from the sleeping rooms or other locations as approved by the local health department.

8-903.2.3 Kitchen sinks shall be provided in all kitchens. The sink and countertop may be of any smooth nonabsorbent finish which can be maintained in a sanitary condition.

8-903.2.4 Hand washing facilities shall be provided for each dwelling unit and each hotel guest room. A basin and pitcher may be acceptable as adequate hand washing facilities.

8-903.2.5 Hot or cold running water is not required for each plumbing fixture, provided a sufficient amount of water is supplied to permit the fixture's normal operation.

8-903.2.6 Bathtubs and lavatories with filler spouts less than 1 inch (25.4 mm) above the fixture rim may remain in use, provided there is an acceptable overflow below the rim.

8-903.2.7 Original or salvage water closets, urinals and flushometer valves shall be permitted in qualified historical buildings or properties. Historically accurate reproduction, nonlow-consumption water closets, urinals and flushometer valves shall be permitted except where historically accurate fixtures that comply with the regular code are available.

8-903.3 Materials. New nonhistorical materials shall comply with the regular code requirements. The enforcing agency shall accept alternative materials which do not create a safety hazard where their use is necessary to maintain the historical integrity of the building.

8-903.4 Drainage and vent systems. Plumbing fixtures shall be connected to an adequate drainage and vent system. The enforcing agency may require operational tests for drainage and vent systems which do not comply with applicable requirements of the regular code. Vent terminations may be installed in any location which, in the opinion of the enforcing agency, does not create a safety hazard.

8-903.5 Indirect and special wastes. Indirect and special waste systems shall be installed so that no safety hazard is created. Chemical or industrial liquid wastes which may detrimentally affect the sanitary sewer system shall be pretreated to render them safe prior to discharge.

8-903.6 Traps and interceptors. Traps and interceptors shall comply with the regular code requirements except that the enforcing agency shall accept solutions which do not increase the safety hazard. Properly maintained "S" and drum traps may remain in use.

8-903.7 Joints and connections.

8-903.7.1 Joints and connections in new plumbing systems shall comply with applicable requirements of the regular code.

8-903.7.2 Joints and connections in existing or restored systems may be of any type that does not create a safety hazard.

8-903.8 Water distribution. Plumbing fixtures shall be connected to an adequate water distribution system. The enforcing agency may require operational tests for water distribution systems which do not comply with applicable requirements of regular code. Prohibited (unlawful) connections and cross connections shall not be permitted.

8-903.9 Building sewers and private sewage disposal systems. New building sewers and new private sewage disposal systems shall comply with applicable requirements of the regular code.

8-903.10 Fuel-gas piping. Fuel-gas piping shall comply with the regular code requirements except that the enforcing agency shall accept solutions which do not increase the safety hazard.

SECTION 8-904
ELECTRICAL

8-904.1 General. Electrical systems shall comply with the regular code unless otherwise permitted by this code, or approved by the authority having jurisdiction.

8-904.1.1 The provisions of the CHBC shall apply to the acceptance, location, installation, alteration, repair, relocation, replacement or addition of any electrical system or portion thereof, the premise wiring, or equipment fixed in place as related to restoration within or attached to a qualified historical building or property.

8-904.1.2 Existing systems, wiring methods and electrical equipment which do not, in the opinion of the enforcing agency, constitute a safety hazard may remain in use.

8-904.1.3 The enforcing agency may approve any alternative to the CHBC which achieves equivalent safety.

8-904.1.4 Archaic methods that do not appear in present codes may remain and may be extended if, in the opinion of the enforcing agency, they constitute a safe installation.

8-904.2 Wiring methods.

8-904.2.1 Where existing branch circuits do not include an equipment grounding conductor and, in the opinion of the enforcing agency, it is impracticable to connect an equipment grounding conductor to the grounding electrode system, receptacle convenience outlets may remain the nongrounding type.

8-904.2.2 Ground fault circuit interrupter (GFCI) protected receptacles shall be installed where replacements are made at receptacle outlets that are required to be so protected by the regular code in effect at the time of replacement. Metallic face plates shall either be grounded to the grounded metal outlet box or be grounded to the grounding-type device when used with devices supplied by branch circuits without equipment grounding conductors.

8-904.2.3 Grounding-type receptacles shall not be used without a grounding means in an existing receptacle outlet unless GFCI protected. Existing nongrounding receptacles shall be permitted to be replaced with nongrounding or grounding-type receptacles where supplied through a ground fault circuit interrupter.

8-904.2.4 Extensions of existing branch circuits without equipment-grounding conductors shall be permitted to supply grounding-type devices only when the equipment grounding conductor of the new extension is grounded to any accessible point on the grounding electrode system.

8-904.2.5 Receptacle outlet spacing and other related distance requirements shall be waived or modified if determined to be impracticable by the enforcing agency.

8-904.2.6 For the replacement of lighting fixtures on an existing nongrounded lighting outlet, or when extending an existing nongrounding lighting outlet, the following shall apply:

1. The exposed conductive parts of lighting fixtures shall be connected to any acceptable point on the grounding electrode system, or
2. The lighting fixtures shall be made of insulating material and shall have no exposed conductive parts.

   Exception: Lighting fixtures mounted on electrically nonconductive ceilings or walls where located not less than either 8 feet (2438 mm) vertically or 5 feet (1524 mm) horizontally from grounded surfaces.

8-904.2.7 Lighting load calculations for services and feeders may be based on actual loads as installed in lieu of the "watts per square foot" method.

8-904.2.8 Determination of existing loads may be based on maximum demand recordings in lieu of calculations, provided all of the following are met:

1. Recordings are provided by the serving agency.
2. The maximum demand data is available for a one-year period.

   Exception: If maximum demand data for a one-year period is not available, the maximum demand data shall be permitted to be based on the actual amperes continuously recorded over a minimum 30-day period by a recording ammeter connected to the highest loaded phase of the feeder or service. The recording should reflect the maximum demand when the building or space is occupied and include the measured or calculated load at the peak time of the year, including the larger of the heating or cooling equipment load.
3. There has been no change in occupancy or character of load during the previous 12 months.
4. The anticipated load will not change, or the existing demand load at 125 percent plus the new load does not exceed the ampacity of the feeder or rating of the service.

CHAPTER 8-10
QUALIFIED HISTORICAL DISTRICTS, SITES AND OPEN SPACES

SECTION 8-1001
PURPOSE AND SCOPE

8-1001.1 Purpose. The purpose of this chapter is to provide regulations for the preservation, rehabilitation, restoration and reconstruction of associated historical features of qualified historical buildings, properties or districts (as defined in Chapter 8-2), and for which Chapters 8-3 through 8-9 of the CHBC may not apply.

8-1001.2 Scope. This chapter applies to the associated historical features of qualified historical buildings or properties such as historical districts that are beyond the buildings themselves which include, but are not limited to, natural features and designed site and landscape plans with natural and man-made landscape elements that support their function and aesthetics. This may include, but will not be limited to:

1. Site plan layout configurations and relationships (pedestrian, equestrian and vehicular site circulation, topographical grades and drainage, and use areas).
2. Landscape elements (plant materials, site structures other than the qualified historical building, bridges and their associated structures, lighting, water features, art ornamentation, and pedestrian, equestrian and vehicular surfaces).
3. Functional elements (utility placement, erosion control and environmental mitigation measures).

SECTION 8-1002
APPLICATION

8-1002.1 The CHBC shall apply to all sites and districts and their features associated with qualified historical buildings or qualified historical districts as outlined in 8-1001.2 Scope.

8-1002.2 Where the application of regular code may impact the associated features of qualified historical properties beyond their footprints, by work performed secondarily, those impacts shall also be covered by the CHBC.

8-1002.3 This chapter shall be applied for all issues regarding code compliance or other standard or regulation as they affect the purpose of this chapter.

8-1002.4 The application of any code or building standard shall not unduly restrict the use of a qualified historical building or property that is otherwise permitted pursuant to Chapter 8-3 and the intent of the *State Historical Building Code*, Section 18956.

SECTION 8-1003
SITE RELATIONS

The relationship between a building or property and its site, or the associated features of a district (including qualified historical landscape), site, objects and their features are critical components that may be one of the criteria for these buildings and properties to be qualified under the CHBC. The CHBC recognizes the importance of these relationships. This chapter shall be used to provide context sensitive solutions for treatment of qualified historical buildings, properties, district or their associated historical features, or when work to be performed secondarily impacts the associated historical features of a qualified historical building or property.

APPENDIX A

CHAPTER 8-1

When modification must be made to qualified historical buildings and properties, the CHBC is intended to work in conjunction with the United States Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings and the Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.

CHAPTER 8-6

TABLE 1—PROVISION APPLICABILITY

	Title II Public Entities	Title III Private Entities	Title III Barrier Removal
SECTION 8-601 PURPOSE, INTENT, SCOPE **8-601.1 Purpose.** The purpose of the CHBC is to provide alternative regulations to facilitate access and use by persons with disabilities to and throughout facilities designated as qualified historical buildings or properties. These regulations require enforcing agencies to accept alternatives to regular code when dealing with qualified historical buildings or properties. **8-601.2 Intent.** The intent of this chapter is to preserve the integrity of qualified historical buildings and properties while providing access to and use by people with disabilities. **8-601.3 Scope.** The CHBC shall apply to every qualified historical building or property that is required to provide access to people with disabilities. 1. Provisions of this chapter do not apply to new construction or reconstruction/replicas of historical buildings. 2. Where provisions of this chapter apply to alteration of qualified historical buildings or properties, alteration is defined in *California Building Code* (CBC), Chapter 2, Definitions and Abbreviations. 202 – A. Alter or Alteration. **8-601.4 General application.** The provisions in the CHBC apply to local, state and federal governments (Title II entities); alteration of commercial facilities and places of public accommodation (Title III entities); and barrier removal in commercial facilities and places of public accommodation (Title III entities). Except as noted in this chapter.	Applies	Applies	Applies
SECTION 8-602 — BASIC PROVISIONS **8-602.1 Regular code.** The regular code for access for people with disabilities (Title 24, Part 2, Vol.1, Chapter 11B) shall be applied to qualified historical buildings or properties unless strict compliance with the regular code will threaten or destroy the historical significance or character-defining features of the building or property. **8-602.2 Alternative provisions.** If the historical significance or character-defining features are threatened, alternative provisions for access may be applied pursuant to this chapter, provided the following conditions are met: 1. These provisions shall be applied only on an item-by-item or case-by-case basis. 2. Documentation is provided, including meeting minutes or letters, stating the reasons for the application of the alternative provisions. Such documentation shall be retained in the permanent file of the enforcing agency.	Applies	Applies	Applies

(continued)

TABLE 1—PROVISION APPLICABILITY—continued

	Title II Public Entities	Title III Private Entities	Title III Barrier Removal
SECTION 8-603 — ALTERNATIVES			
8-603.1 Alternative minimum standards. The alternative minimum standards for alterations of qualified historical buildings or facilities are contained in Section 4.1.7(3) of ADA Standards for Accessible Design, as incorporated and set forth in federal regulation 28 C.F.R. Pt. 36.	Applies	Applies	Applies
8-603.2 Entry. These alternatives do not allow exceptions for the requirement of level landings in front of doors, except as provided in Section 8-603.4. 1. Access to any entrance used by the general public and no further than 200 feet (60 960 mm) from the primary entrance. 2. Access at any entrance not used by general public but open and unlocked with directional signs at the primary entrance and as close as possible to, but no further than 200 feet (60 960 mm) from, the primary entrance. 3. The accessible entrance shall have a notification system. Where security is a problem, remote monitoring may be used.	Applies	Applies	Applies
8-603.3 Doors. Alternatives listed in order of priority are: 1. Single-leaf door which provides a minimum 30 inches (762 mm) of clear opening. 2. Single-leaf door which provides a minimum 29 1/2 inches (749 mm) clear opening. 3. Double door, one leaf of which provides a minimum 29 1/2 inches (749 mm) clear opening. 4. Double doors operable with a power-assist device to provide a minimum 29 1/2 inches (749 mm) clear opening when both doors are in the open position. **Exception:** Alternatives in this section do not apply to alteration of commercial facilities and places of public accommodation (Title III entities).	Does not apply	Does not apply	Applies
8-603.4 Power-assisted doors. Power-assisted door or doors may be considered an equivalent alternative to level landings, strikeside clearance and door-opening forces required by regular code.	Applies	Applies	Applies
8-603.5 Toilet rooms. In lieu of separate-gender toilet facilities as required in the regular code, an accessible unisex toilet may be designated.	Applies	Applies	Applies
8-603.6 Exterior and interior ramps and lifts. Alternatives listed in order of priority are: 1. A lift or a ramp of greater than standard slope but no greater than 1:10, for horizontal distances not to exceed 5 feet (1525 mm). Signs shall be posted at upper and lower levels to indicate steepness of the slope. 2. Access by ramps of 1:6 slope for horizontal distance not to exceed 13 inches (330 mm). Signs shall be posted at upper and lower levels to indicate steepness of the slope.	Applies	Applies	Applies

(continued)

TABLE 1—PROVISION APPLICABILITY—continued

	Title II Public Entities	Title III Private Entities	Title III Barrier Removal
SECTION 8-604 — EQUIVALENT FACILITATION Use of other designs and technologies, or deviation from particular technical and scoping requirements, are permitted if the application of the alternative provisions contained in Section 8-603 would threaten or destroy the historical significance or character-defining features of the qualified historical building or property. 1. Such alternatives shall be applied only on an item-by-item or case-by-case basis. 2. Access provided by experiences, services, functions, materials and resources through methods including, but not limited to, maps, plans, videos, virtual reality and related equipment, at accessible levels. The alternative design and/or technologies used will provide substantially equivalent or greater accessibility to, and usability of, the facility. 3. The official charged with the enforcement of the standards shall document the reasons for the application of the design and/or technologies and their effect on the historical significance or character-defining features. Such documentation shall be in accordance with Section 8-602.2, Item 2, and shall include the opinion and comments of state or local accessibility officials, and the opinion and comments of representative local groups of people with disabilities. Such documentation shall be retained in the permanent file of the enforcing agency. Copies of the required documentation should be available at the facility upon request. **Note:** For commercial facilities and places of public accommodation (Title III entities). Equivalent facilitation for an element of a building or property when applied as a waiver of an ADA accessibility requirement will not be entitled to the Federal Department of Justice certification of this code as rebuttable evidence of compliance for that element.	Applies	**Waivers** If a builder applies for a waiver of an ADA accessibility requirement for an element of a building, he or she will not be entitled to certification's rebuttable evidence of compliance for that element. This limitation on the certification determination should be noted in any publication of Chapter 8-6 if certification is granted.	Applies

Notes: The regular code for Chapter 8-6 is contained in Title 24, Part 2, Vol.1, Chapter 11, which contain standards for new construction. Provisions of this chapter may be used in conjunction with all other provisions of the regular code and ADA regulations.

HISTORY NOTE APPENDIX

CALIFORNIA HISTORICAL BUILDING CODE
(Title 24, Part 8, California Code of Regulations)

For prior history, see History Note Appendix to the *California Historical Building Code,* 2010 Triennial Edition, effective January 1, 2011.

1. Editorial correction to Chapter 8-8, Section 8-812, Tables 8-8A and 8-8B. Include missing tables in 2007 annual code adoption supplement.

2. SHBSB 01/10 – Repeal and amend Chapters 8-7 and 8-8 of the 2010 *California Historical Building Code*, CCR, Title 24, Part 8 regulated by the State Historical Building Safety Board, effective on July 1, 2012.

3. Repeal the 2010 *California Historical Building Code*, CCR, Title 24, Part 8 and adopt the 2013 *California Historical Building Code*, CCR, Title 24, Part 8 approved by the Building Standards Commission on December 12, 2012. Published on July 1, 2013 and effective on January 1, 2014.