

POST-WAR MODERN / MIMo



*Design
Guidelines*

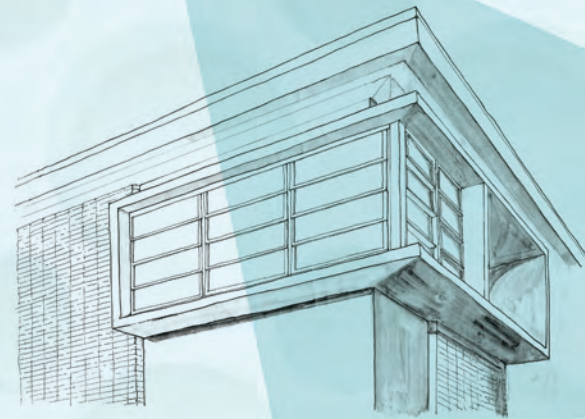


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Introduction

Miami Modern, better known as MiMo, is a style of architecture from the Post World War II era (1945 to mid-1960s) that originated in Miami and Miami Beach as a local adaptation of the various modernist architectural movements that flourished in other parts of the world.

MiMo buildings responded to the subtropical climate and the booming resort economy, adding glamour, fun, and material excess to otherwise stark, minimalist, and efficient styles. The predominant types of MiMo buildings in Miami Beach are the glamorous resort hotels (such as the Fontainebleau, Eden Roc and Deauville) and the modest garden style apartments and tourist lodgings that housed the burgeoning middle-class population. Both types feature playful MiMo architectural features like acute angles, delta wings, sweeping curved walls, and soaring pylons.



MiMo architecture returned to the international spotlight in 2002 with the exhibition entitled, “Beyond the Box: Mid-Century Modern Architecture in Miami and New York.”

POST WORLD WAR II
Decades of deprivation during the Great Depression and wartime had left Americans dreaming of a carefree life and a better world for themselves and their children. Consequently, the United States—wealthy, strong and influential—emerged as a global power following World War II. Miami Beach played a significant role as a training site and redistribution center for the U.S. Army-Air Forces during the Second World War. Many veterans who had trained as recruits in Miami Beach returned here after their tour of duty to vacation or to make their home, often with their brides.

America redirected its enormous industrial capacity from the defense economy back to the domestic economy following the war. There was no longer a perceived need for rationing, conserving and recycling. It was an age of exuberance and abundance. The McCarthy Era and the beginning of the Cold War fostered the championing of capitalism and the celebration of the American way. A thriving economy gave rise to a growing middle class able to purchase a home and fulfill the American dream. Luxury items suddenly began to flood the market and became affordable to the masses for the first time.

NEW MODERN SOCIETY

New electric appliances and gadgets with push buttons began to invade many households. Air conditioning was introduced as a novel modern convenience that tremendously added to the comforts of living in Florida and most importantly allowed for a year-round economy. Architects at last were freed from having to adapt their buildings to the hot, humid climate.

However, the technological advance with the greatest impact on America was the television. Forever changing mass communications and entertainment, the television appeared in nearly every household. Programs often portrayed harmonious, happy families living perfect lives in beautiful homes, and these characters became society icons. Rock-and-roll, brought directly into homes on the radio or television, emerged as mainstream pop music for happy-go-lucky, fun-loving American teenagers. It was an age of innocence.

The automobile increased its role as the main mode of transportation because of highly efficient, rapid mass production systems and the development of new technologies. Radical new car designs responded to this age of exuberance. Together these factors produced highly desirable and dependable automobiles that were affordable to much of America's rapidly expanding middle class.

Gasoline was plentiful and affordable. As a result, people became more mobile. They were better able to afford a home and fulfill the American dream. They were also

able to afford travel, and began to drive to more and more distant vacation destinations across America as the nation greatly upgraded its highway system. Leisure became a reality for more people. Automobile manufacturers very successfully promoted the sales of these truly new personal vehicles with slogans like "See the USA Today in Your Chevrolet."

The advent of the jet passenger plane in 1957 made air travel tremendously faster, more comfortable, and eventually within the financial reach of the upper-middle class. Gradually, the burgeoning seaside resort of Miami Beach became the ultimate high-status vacation destination, synonymous with glitz and glamour.

It was the beginning of the Space Age. The first Sputnik was launched in 1957. Rivalry with the U.S.S.R. led to the space race. Futuristic, flamboyant, fun design elements showed up in cars, furniture, and buildings. Automobiles sprouted wings and depicted rocket motifs. The small globe with protruding antennae reminiscent of the Sputnik became a common design detail.



DESIGN ELEMENTS

From about 1945 to the mid-1960's, the widely popular MiMo style was applied to hotels, apartment houses, commercial buildings and single-family homes throughout Miami Beach.

MiMo style buildings generally made extensive use of plate glass, poured concrete and special materials such as glass mosaic tile, architectural screen block, crab orchard stone, as well as expansive use of high-grade marble, and rare hardwoods on the public interiors. They often mixed two or more textured surfaces together (i.e. stucco with stone, brick, or tile, as well as contrasting smooth and patterned stucco surfaces). The style featured such dramatic elements as accordion-like folded plane roofs and walls, acute angles or subtle angles, dynamic parabolas, delta wing shapes, sweeping curved walls, and soaring pylons.

Other commonly occurring design elements and materials were added to the MiMo architectural vocabulary. They included brise-soleils, architectural accents with exotic themes, and often wall sculptures in relief, brick or stone faced feature areas. Cast concrete decorative panels were displayed with geometric patterns. There was a

remarkable use of architectural screen block in a wide variety of design patterns lending itself so well to natural air flow in this tropical environment. Architect Morris Lapidus further expanded the architectural language of this style when he made popular "cheese holes," "woggles," and "beanpoles."

HOUSING

The low-scale apartment houses in the MiMo style commonly featured floor plans that were reorganized from interior double-loaded corridors (a central corridor with rooms on each side) to open air corridors or catwalks on one side or more. Single-block massing remained a dominant characteristic, but new functional exterior elements profoundly impacted on the design. Overhanging roof plates and projecting floor slabs became typical of the new style along with paired or clustered pipe columns.

Roofs were generally flat; however, low-pitched roofs with flat tile or barrel tile also were utilized. Rounded or "soft" eaves were often incorporated into both roof types. Varied roof angles and delta wings often added visual interest to the apartment buildings in this style.





Symmetrical open staircases with decorative railings became significant exterior design features. The railings served as the ornamentation or “jewelry” of the building; they highlighted the open air corridors, balconies, and staircases. Railing designs commonly included ribbon, diamond, geometric, floral, and swag patterns. Other typical railing materials were metal mesh panels and cast concrete screen block in elaborate patterns.

Additional design elements of the MiMo style frequently incorporated into low-scale apartment houses included: brick or stone faced wall panels and built-in planters as well as applied masonry sculptural elements denoting marine and nautical themes.

MiMo apartment buildings were often arranged to create a common garden court. These courts are formed by mirroring two identical bar-shaped buildings. One type of mirrored garden apartments features two-story buildings joined at the front by a proscenium or chalet style roof which frames the court providing a dramatic sense of entry.

HOTELS

Striking MiMo-style hotels often featured expansive glass curtain walls, cantilevered asymmetrical roofs, leaping arches, dramatic fin walls, floating planes, architectural bridges, and grand entrance porte cocheres. Bold neon signs or logos sometimes graced primary Façades in order to catch the eye of passing motorists. “Sky signs” were sometimes mounted on rooftop features or on parapet walls.

Color was an essential ingredient of signage. The fenestration (a building’s arrangement, proportion, and design of windows and doors) was often highlighted with boxed windows, as well as continuous ribbon windows and eyebrows. The hotels often took on exotic or futuristic forms, using architecture as advertising in an effort to outdo one another in attracting business.

This new MiMo-style architecture celebrated the satisfaction of announcing that the Post-World War II era in Miami Beach and America had truly “arrived.”



NEW CONSTRUCTION

Miami Beach’s neighborhoods and commercial districts reflect the City’s long history of architectural innovation and progressive design. New infill construction plays a major role in preserving this tradition.

From the early Mediterranean Revival estates and resort hotels along the city’s shoreline to the Depression Era Art Deco hotels of South Beach to the later fantastical Post-World War II hotels of Mid Beach and North Beach and finally the whimsical Post-War Modern structures that comprise much of the city’s building stock north of 63rd Street, this ever-changing continuum of architectural styles and tastes is what gives the city its richly diverse character. These Post War Modern / MiMo Design Guidelines are meant to foster the creative freedom necessary to expand upon the design traditions of this unique period of architecture, while also preserving and maintaining the special scale and quality of our neighborhoods. New buildings, which are often referred to as “infill buildings” should be differentiated from older neighboring buildings in terms of architectural design, while the scale, rhythm, height and setbacks, as well as the location of windows, doors and balconies should bear some relationship to neighboring buildings and maintain a strong semblance of compatibility.

One of the most appealing features of the neighborhoods and commercial districts of Miami Beach is their low, pedestrian-oriented scale. The scale and height of the buildings, their orientation to the street and their relationship with each other all contribute to taking advantage of South Florida’s quality of natural daylight and magnificent blue skies while enriching the overall tropical character of the neighborhoods.

SCALE

While new construction may vary in scale (and particularly height) from the surrounding area, this new construction should complement the existing urban streetscape to the greatest extent possible. When a proposed new building is substantially larger than the existing buildings surrounding it, the scale of the new structure should be visually reduced by breaking up the façade and overall building mass into elements that proportionally reflect the adjacent building masses and build upon rather than contradict the established urban character of the neighborhood.

HEIGHT

New construction which is significantly taller than surrounding buildings overwhelms and negatively impacts the character of the neighborhood. Similarly, a low new building built between much taller structures may interrupt the rhythm of the street wall and also have a negative impact. Building heights for new construction should be no more than one-third taller than the height of surrounding buildings, whenever possible. If greater height is necessary, the excess height should be set substantially set back from the street to let in light and air and minimize adverse visual incompatibility.

RHYTHM AND SPACING

Miami Beach neighborhoods are generally platted in 50-foot-wide lots or multiples thereof, and buildings were generally constructed at 40 feet in width with 10 feet of spacing between buildings. The massing of new

construction should follow the rhythm and spacing of buildings in the existing urban streetscape to the greatest extent possible, except where the spacing between buildings may be required to be larger.

SETBACKS

A character-defining element of any neighborhood is the siting of buildings and how each building relates to the street and the buildings around it. Setbacks (the distance from the property line to the building) help create a unified rhythm along the street and may vary slightly from neighborhood to neighborhood. If setbacks dictated by Zoning Code require a new building to be set back substantially more than surrounding structures, a variance from the Zoning Board of Adjustment may (and usually should) be requested so that the established street wall of the neighborhood is maintained (see diagram).

VIEW CORRIDORS

Views of historically or aesthetically significant structures, spaces and landscape features – including views to the water - play a major role in defining the character of a neighborhood and greatly impact the way in which the city is experienced by its residents and visitors. Every effort should be made to situate a new building so that important view corridors are maintained and enhanced.

DIRECTIONAL EMPHASIS

MiMo residential buildings in Miami Beach were predominantly horizontal structures in their primary design emphasis, sometimes accented with limited but strong vertical features. This horizontal design emphasis was for climatic reasons as well as by esthetic choice. Wide overhanging roof eaves, catwalks and banded windows all contributed to the horizontal directional emphasis, while at the same time helping to control the effects of both sun and rain. The form and directional emphasis (horizontality vs. verticality) of the surrounding existing buildings should be respected when designing a new infill building so that the new structure does not dramatically and adversely alter the quality and character of the existing street or neighborhood

DEFINED POINT OF ENTRY

While very few MiMo period buildings had off street parking, low-level garage parking in new multifamily residential structures solves an essential need to fulfill the parking requirements of the buildings' residents, and is often required to be provided on the site; consequently, there is a tendency to use the parking garage entrance as the only entrance to the building. This leaves the ground floor of such new structures as a utilitarian, non-habitable car storage areas without a clearly defined pedestrian entrance into the building. It also leaves both residents and their guests to transverse the parking garage in search of the pedestrian entrance. This can occur even though the Zoning Code requires that for new buildings the part of the parking garage which fronts onto a street,

or streets, must have an active-use buffer zone (such as an enclosed and air-conditioned entrance lobby, gallery, study, or similar) which blocks views into the parking area from the street. Nevertheless, often the pedestrian visitor entrance to the building or to individual rear apartments is through the vehicular entrance to the garage. All new multi-family residential building, whether they have a parking garage on the lower-level or not, should have a clearly defined and attractive, street-side pedestrian entrance.

ARCHITECTURAL STYLE

Since the City of Miami Beach was founded in 1915, each passing decade has left its mark on the urban fabric of the city, mostly in the form of buildings. These buildings reflect their period of construction. By their materials, design and style they communicate the tone, atmosphere, taste, and priorities of their era, and allow us to perceive the evolution of our city. For these reasons, new buildings should reflect their own period of construction in terms of design and materials while maintaining a high level of compatibility with the surrounding neighborhood in terms of scale, form, massing, and fenestration patterns. Additionally, if located within a National Register or Local Historic District the design for new construction should maintain a high level of compatibility with the massing, size, scale, and architectural features of existing historic structures to protect the historic integrity of the environment. Literal interpretation of past architectural styles is strongly discouraged.



ADDITIONS

New additions to McMe architecture should be modern in design but compatible with the original architecture.

The overall design of an addition to an existing structure encompasses scale, proportion, composition and detail. Only a carefully executed balance of these elements can result in a successful and compatible addition.

Any new addition to an existing building should be constructed so that there is the least possible loss of original materials and so that character-defining features are not obscured, damaged or destroyed.

BUILDING MATERIALS AND STYLE

While new construction may vary in scale, new additions should be compatible with the design and materials of the existing building, but sufficiently differentiated so as not to confuse the old with the new. A careful analysis of the design of the existing building should result in a complementary addition.

- The design of a new addition should be architecturally compatible with the character of the original building. Drawing design inspiration from the organization of details, materials, and forms from the original architecture can make an appropriate addition more easily achievable.
- A new addition should be clearly distinguishable from the original architecture. It should reflect the social spirit and construction technology of its own time. Literal interpretation of past architectural styles is strongly discouraged.
- The overall configuration of a new addition should be compatible with the original building in terms of scale, form and the arrangement of its massing. The height, width and depth of a new addition should not overwhelm or architecturally compete with the original structure nor obscure or block important views of significant architecture district.
- All new additions should be constructed so that there is the least possible loss of original materials.
- A new addition should be constructed of high quality and durable materials.

LOCATION AND SCALE

One of the most appealing features of the residential neighborhoods of Miami Beach is their low, pedestrian-oriented scale. The scale and height of the buildings, their orientation to the street and relationship with each other all contribute to the overall character of the neighborhood. New additions should be designed to reflect and enhance the existing scale of the existing structure and the surrounding neighborhood.

Overall Scale

- New additions to existing buildings should be of a size and scale which does not overwhelm the existing structure or interrupt the rhythm of the street.

Building Height

- Building heights for additions should relate to the height of the existing structure and surrounding buildings.

Building Form

- The form of an addition and its relationship to the form of the existing building will have a great impact on the success of the addition. The directional emphasis of the existing building should be respected when designing a new addition so that the new construction does not negatively impact the character of the existing structure.

Location

- A new addition should be placed at a location that minimizes its visibility from the street. Original courtyards should not be filled in with new additions. New additions should not enclose the open end of a courtyard.
- Any addition to the front façade of an existing structure is strongly discouraged unless it is the reconstruction of an original design feature that has been removed.

Roof-Top Additions

- Where structurally and architecturally feasible, a new rooftop addition or multi-story rooftop addition may be considered if it can be designed and located in a manner where it is set back largely out of view from pedestrians, as seen from the opposite side of the adjacent street.
- A new rooftop addition should not remove significant original architectural features from the roof level of the original building, such as crests, special parapet features, fins, cupolas, historic signage, or similar types of architecturally significant elements, which would diminish or destroy the building’s original architectural integrity.
- The design of a new rooftop addition should be differentiated from the original building in a complementary way. All rooftop mechanical equipment, both existing and proposed, should be screened from view.

MAINTAINING VIEW CORRIDORS

Views of historically or aesthetically significant structures, spaces and landscape features play a major role in defining the character of a neighborhood and greatly impact the way in which the city is experienced by its residents and visitors.

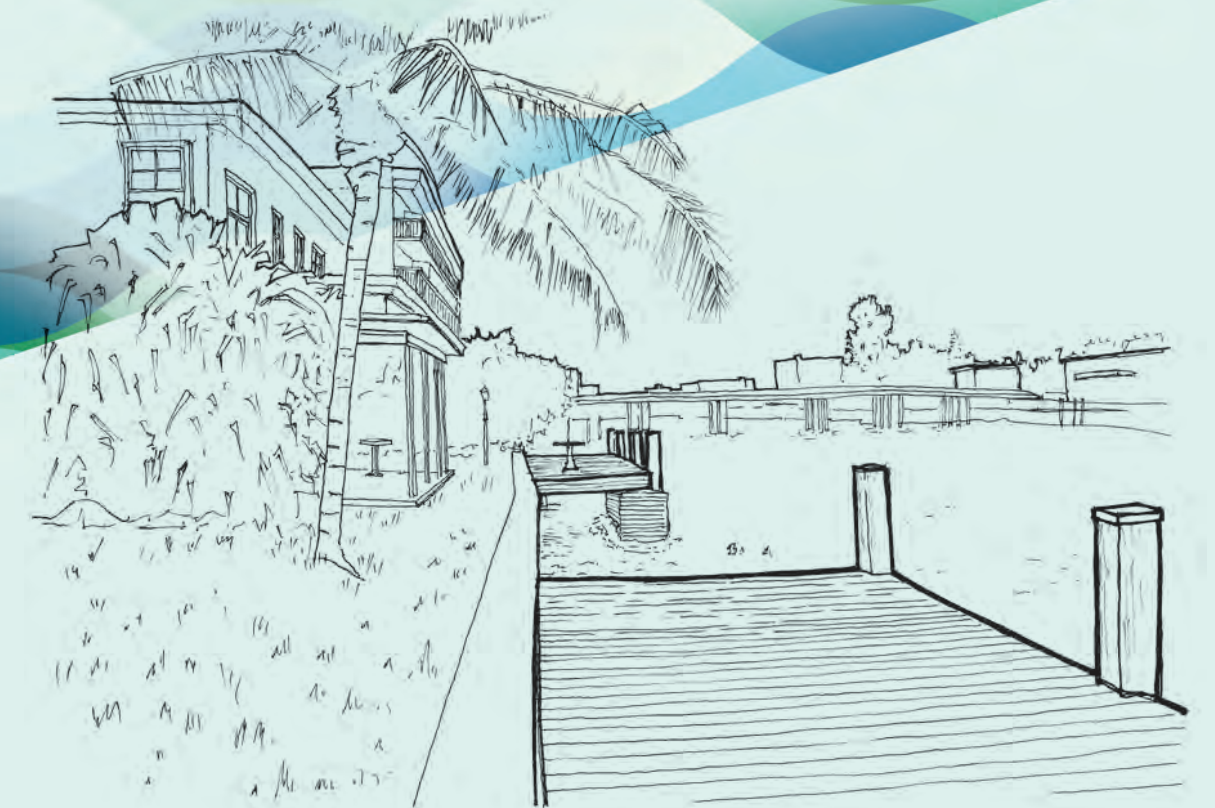
- Every effort should be made to site a new addition so that important view corridors are maintained and enhanced.



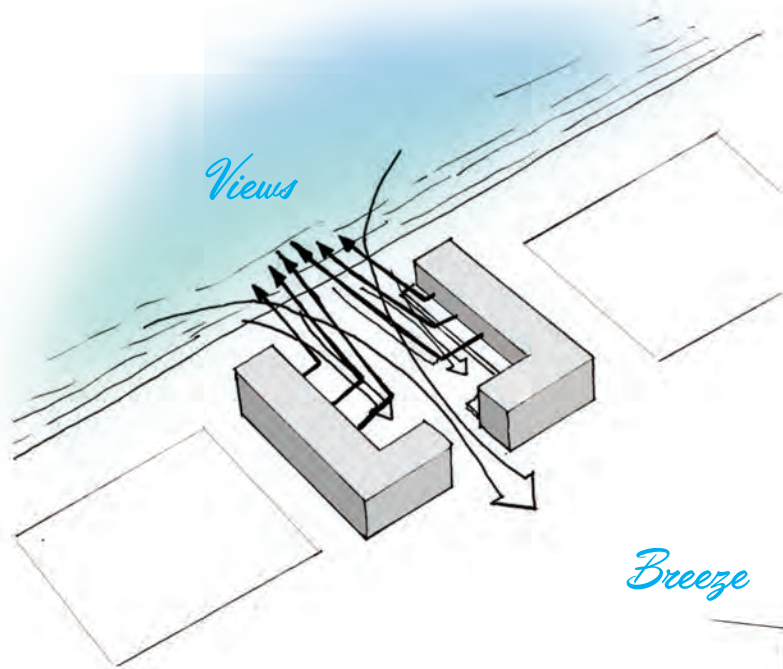
WATERFRONTS

With the ocean, bay, inland waterways and canals, Miami Beach has miles of waterfront property in a lush subtropical environment.

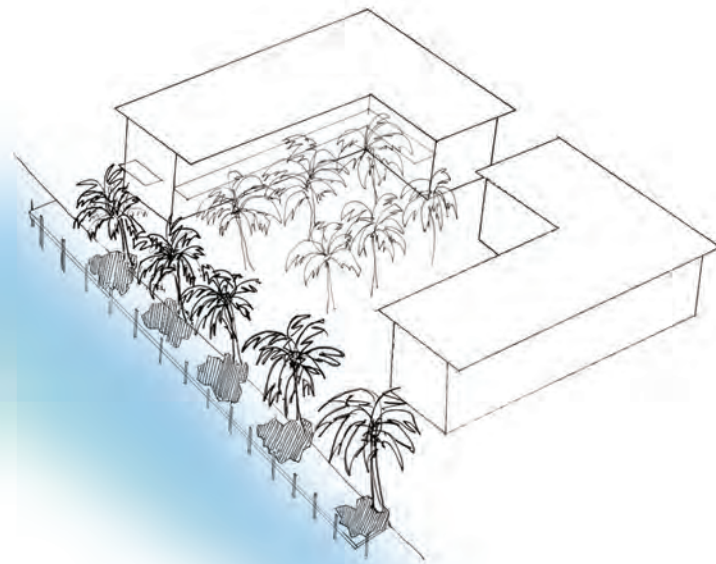
Waterfront living always has been part of Miami Beach's allure, and waterfront properties are among the most desired and valuable real estate in the city. MiMo apartment buildings are ideal waterfront structures because their small scale and their intermittent courtyards allow all residents, as well as the neighborhood, to enjoy the proximity of the water. The following guidelines provide direction on how to best take advantage of a property's waterfront location, while enhancing its image from the waterway.



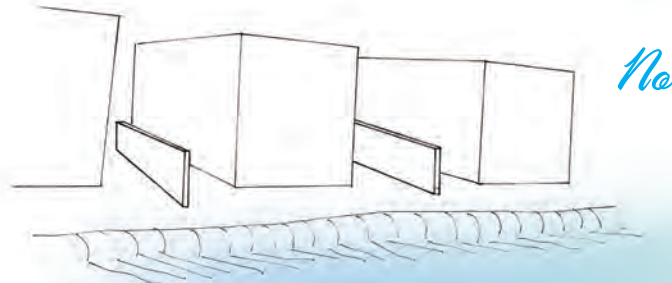
- 1 Optimizing breeze, sunlight and view corridors to the water are essential design considerations when improving a waterfront property.



- 2 Palms, appropriate canopy trees and low scale tropical vegetation should be planted to provide shade and encourage outdoor activity in areas adjacent to the waterfront. Avoid dense vegetation that would block views and breezes from the water.

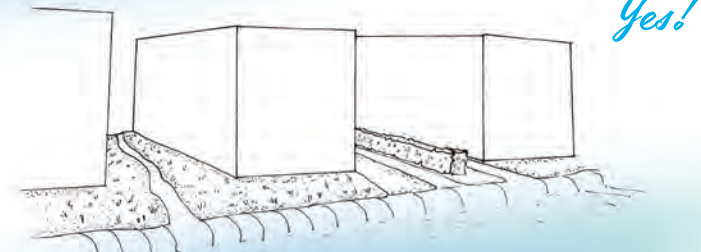


Breeze



FENCES AND WALLS OBSTRUCT VIEWS AND CREATE UNUSABLE SPACES BETWEEN BUILDINGS.

- 3 Ground cover, appropriate canopy trees and low-scale landscaping and small pathways are the best devices for beautifying the area between neighboring waterfront properties. Most adjacent properties will benefit from a single large landscaped space without physical dividers. If a divider is needed, the best selection is a low hedge which does not block view, light and breeze corridors.

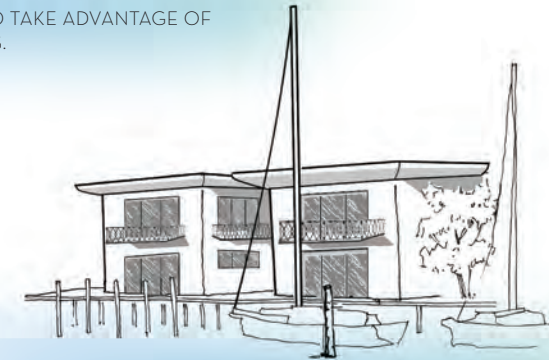


LOW HEDGES, PATHWAYS DELINEATE PROPERTIES WITHOUT BLOCKING VIEWS.

- 4 Waterfront buildings should take advantage of their location. Many waterfront buildings seem to turn their backs on the water with only small windows and largely blank walls. It may be helpful to open up the waterfront side of a building with more glass and doors accessing new balconies, terraces and patios. Such alterations must be respectful of the architecture of the building and will likely require approval by the Design Review Board or the Historic Preservation Board, as applicable.



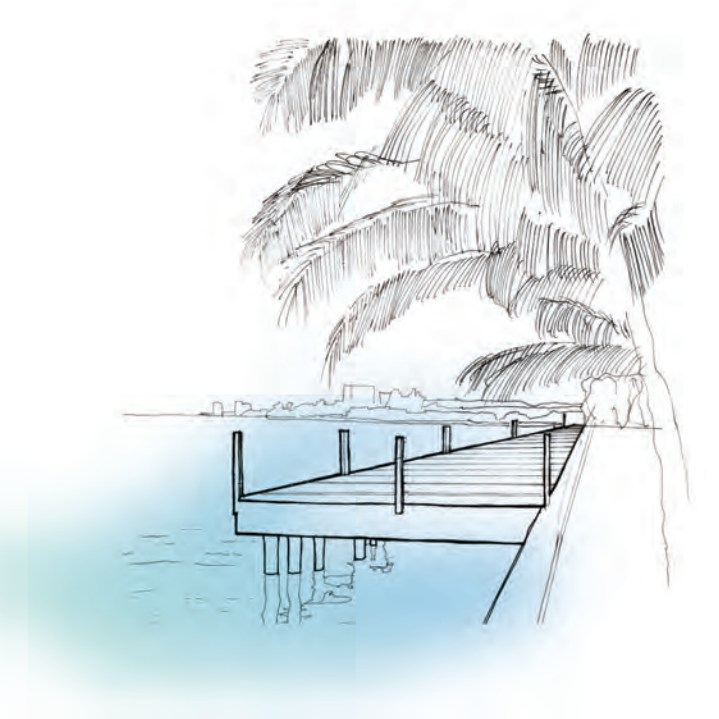
SOME BUILDINGS FAIL TO TAKE ADVANTAGE OF THE WATERFRONT VIEWS.



ADDING BALCONIES AND ENLARGING WINDOWS AND DOORS CREATE AMENITIES FOR RESIDENTS AND ADD VALUE TO THE BUILDING.

- 6 All docks and seawalls should be well maintained as they are highly visible from the waterway, neighboring properties and bridges.

- 5 Docks expand and enhance the usable waterfront area, as well as provide expanded views and recreational opportunities. Wood is best for the construction of docks because it is the material most commonly associated with residential waterfront environments, provides a cool walking surface, and can be easily repaired. Recycled plastic substitutes for wood decking may provide the appearance and benefits of wood with even less maintenance.



- 7 Storage and mechanical equipment should not be located along the waterfront. If existing, it should be relocated or screened from view.

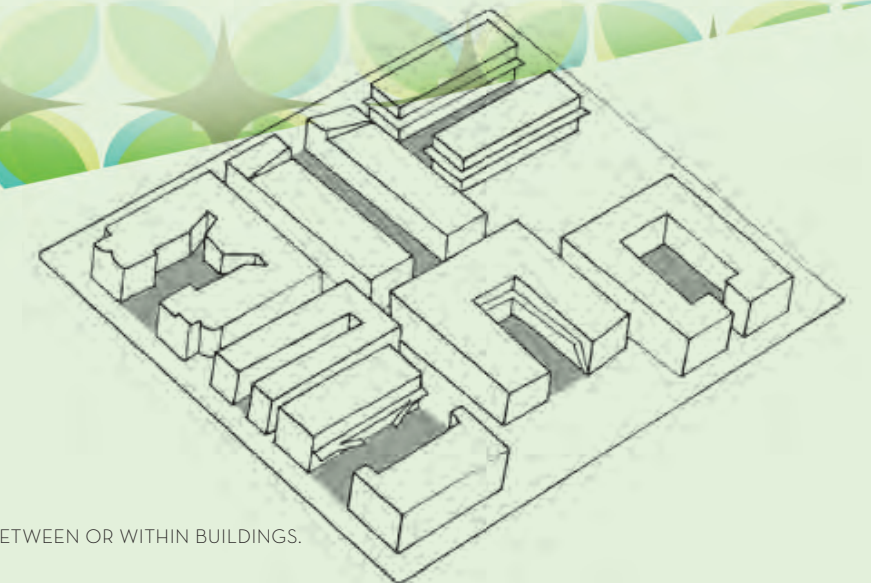
COURTYARDS

Post-War Modern residential architecture in Miami Beach is characterized by courtyards formed by the space between buildings.

These courtyards are functional both as circulation systems and as beautiful gardens. Indeed, these courtyards may significantly enhance the quality of residential life when they are properly landscaped and maintained. Courtyard spaces are formed within a single building that wraps around an outdoor space on two or more sides or by pairs of individual buildings that face each other. In some cases, adjacent buildings are separately owned but create a common courtyard space between them.

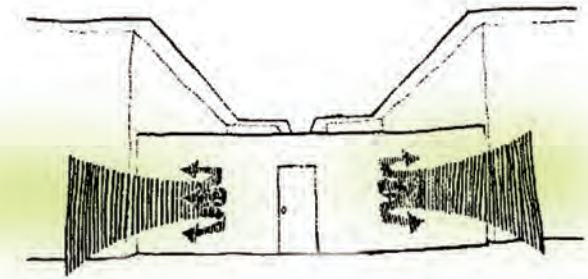
Although frequently of the same general shape and size, each courtyard is unique in its arrangement of landscaping, paving and furnishings. Some have special features, such as a grand staircase, a fountain, or a framed view of the waterfront or golf course. They provide very desirable common outdoor living space for the residents, as well as a desirable transition from the public sidewalk to semi-private community space.

The following guidelines provide direction on how to best take advantage of courtyard spaces while enhancing the architecture of the building and the neighborhood.



COURTYARDS HAPPEN BETWEEN OR WITHIN BUILDINGS.

- 1 It is important that the open end(s) of courtyards remain transparent and porous to allow for natural breezes to enter and cross through.



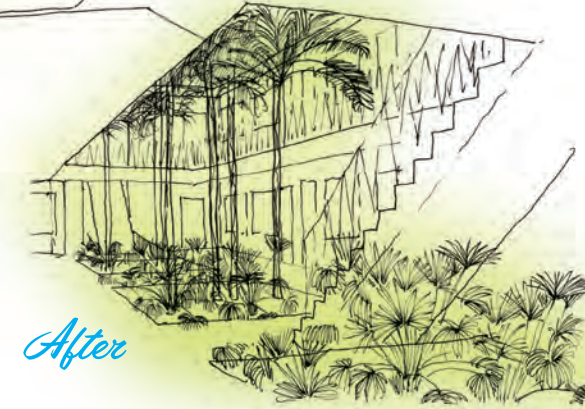
ENCLOSING COURTYARDS PREVENTS AIR FROM CIRCULATING.



OPEN COURTYARDS ALLOW BREEZES TO PASS THROUGH.



Before



After

AS SEEN IN THESE BEFORE AND AFTER IMAGES, THE INTRODUCTION OF PLANT MATERIAL CAN TURN AN OVERHEATED, BARREN COURTYARD INTO A FRESH, INVITING GARDEN.

- 2 It is beneficial to contract the services of a professional Landscape Architect or designer to design courtyard areas, whenever feasible.

- 3 Extensive paving reflects heat from the sun and raises the temperature of the surrounding buildings. Large paved areas also reduce the surface area available to absorb rainfall. These negative effects can be lessened by limiting paved areas to a minimum, such as pathways and sitting areas. Pervious material, such as concrete pavers, can be useful to improve drainage and promote plant growth. The architecture and character of the surrounding buildings should be considered when selecting both paving material and pattern.

- 4 A variety of tropical vegetation works best in courtyard environments. Canopy trees and palms provide shade and filtered light. Low scale tropical vegetation provides interest and defines space. It is important that vegetation be scaled to fit the space inside a courtyard without overwhelming it. Care should be taken to select trees and palms that will provide filtered shade without growing too tall or too dense to allow light and air into the courtyard.

Not Recommended



BARREN COURTYARD.

Recommended



ONE LEAFY CANOPY TREE RATHER THAN TWO MAY BE MORE IN SCALE WITH THIS SPACE.

Recommended



MEDIUM SIZE PALMS PROVIDE THE RIGHT AMOUNT OF FILTERED SHADE IN THIS EXAMPLE.

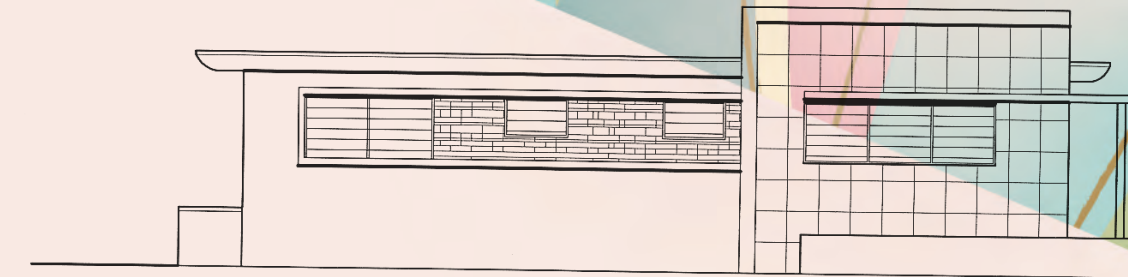
- 6 Owners of adjacent buildings are encouraged to create common space and courtyards between buildings and to avoid fencing along internal side and rear property lines. Residents of both properties will benefit from a pleasing, more functional outdoor environment.

- 7 Roofing over courtyards fundamentally alters the building's relationship to its surroundings, eliminates natural light and ventilation sources to many units and increases the area of enclosed space. This type of alteration would require approval from the Design Review Board or Historic Preservation Board, as applicable, and is discouraged.

RAISED PLANTERS

Raised planters are often key character defining elements of MiMo buildings that are integrated into the architecture.

Many MiMo buildings were designed to highlight the transition between the building and the ground by the use of low masonry walls that form raised planters. When landscaped properly, these planters seem to raise the ground to meet the building and soften its edges. These long, low projections at the base of the building echo the horizontal projections of the catwalks and overhanging flat roofline, giving balance and unity to the entire building mass. Retaining them, utilizing them, and maintaining them in good condition, along with any built-in outdoor seating, enhances the appearance of the building.



PLANTERS WERE DESIGNED AS PART OF MIMO ARCHITECTURE AND FULLY INTEGRATED INTO THE STRUCTURES

1

Raised planters should be viewed as a key character defining feature of MiMo buildings. As such, they should not be altered or removed.

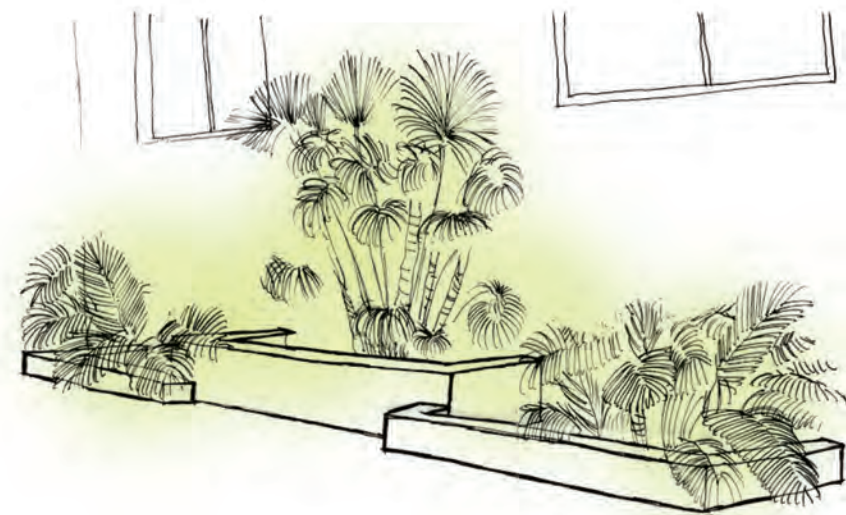
2

Plant materials should be carefully selected and maintained to fit the size of the planter. If allowed to grow too large, plant roots may cause severe cracks in the walls of the planters. Cracked or damaged planters may be repaired by carefully removing the overgrown roots and restoring the planter walls as necessary. Faulty irrigation in planters should be repaired or new irrigation provided.

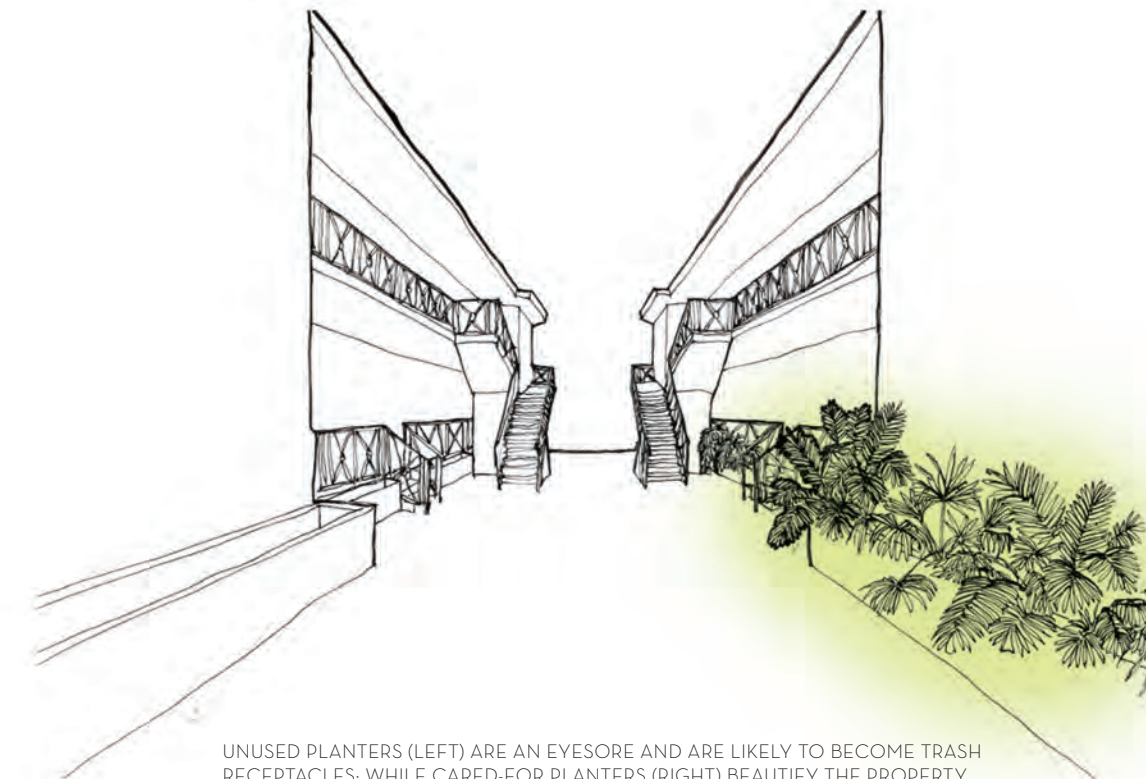
3

Shallow depth planters can create challenging conditions for healthy plant growth. Care should be taken to select plant materials that are well-suited for each planter's size, sun exposure and moisture. When selecting new

plant material, it is best remove the soil from test areas to check whether there is an impervious surface under the planter that would prevent drainage or root growth below ground level.



PLANTERS HELP DEFINE INDIVIDUAL ENTRANCES, PROVIDE BUFFERS FOR WINDOWS AND ADORN THE PERIMETER OF THE BUILDING.



UNUSED PLANTERS (LEFT) ARE AN EYESORE AND ARE LIKELY TO BECOME TRASH RECEPTACLES; WHILE CARED-FOR PLANTERS (RIGHT) BEAUTIFY THE PROPERTY.

OPEN-AIR CORRIDORS

Open air corridors are unique to Post War and MiMo design, taking advantage of the tropical climate and replacing dark interior corridors of earlier design periods.

Open-air corridors, also known as catwalks, are a fundamental characteristic of Post-War Modern buildings. Art Deco style buildings were built with interior circulation with apartments entered from both sides of a central corridor. Like their Art Deco predecessors, the transitional style buildings of the 1940s were built with interior circulation, but the central double-loaded corridor was replaced with side yard entry vestibules and staircases, each of which served 2 ground floor and 2 second floor apartments. This change was an important step in the development of tropical residential design in Miami Beach. It allowed each apartment to have exterior walls on two opposite sides if the building, thereby providing excellent cross-ventilation, as well as enhanced natural daylight.

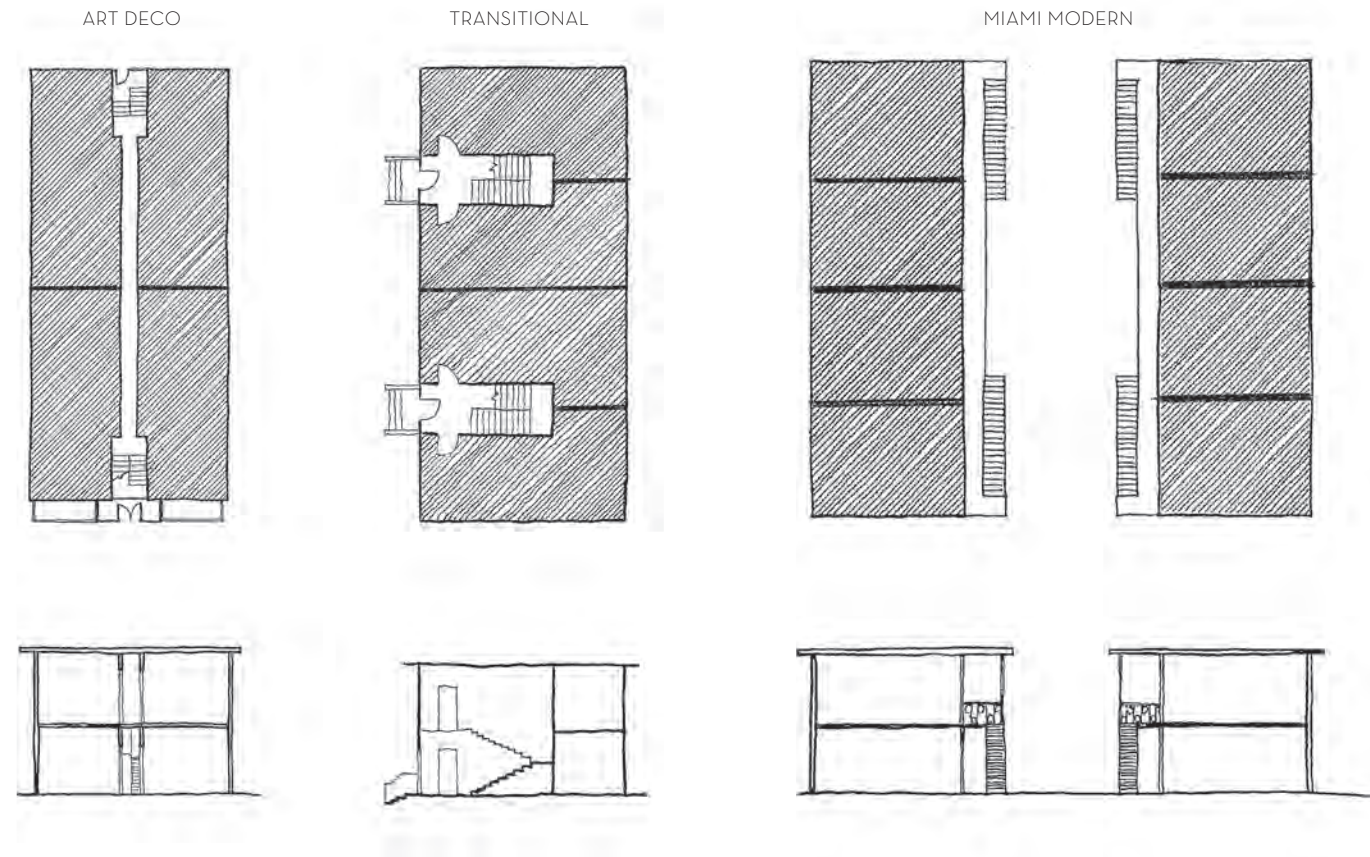
In MiMo style buildings from the 1950s and early 1960s, circulation corridors were removed from the interior almost entirely and relocated to the exterior. Entrance to the apartments was now gained via open-air corridors and outdoor staircases. Additionally, the width of open-air corridors effectively created a three-dimensional façade with depth and shadows along which intricate railing designs and elaborate breeze blocks could be displayed.

Balconies, although less common in MiMo apartment buildings, provide a similar expression of horizontal plains, shadows and decorative railings that form distinguishing features of the architecture.



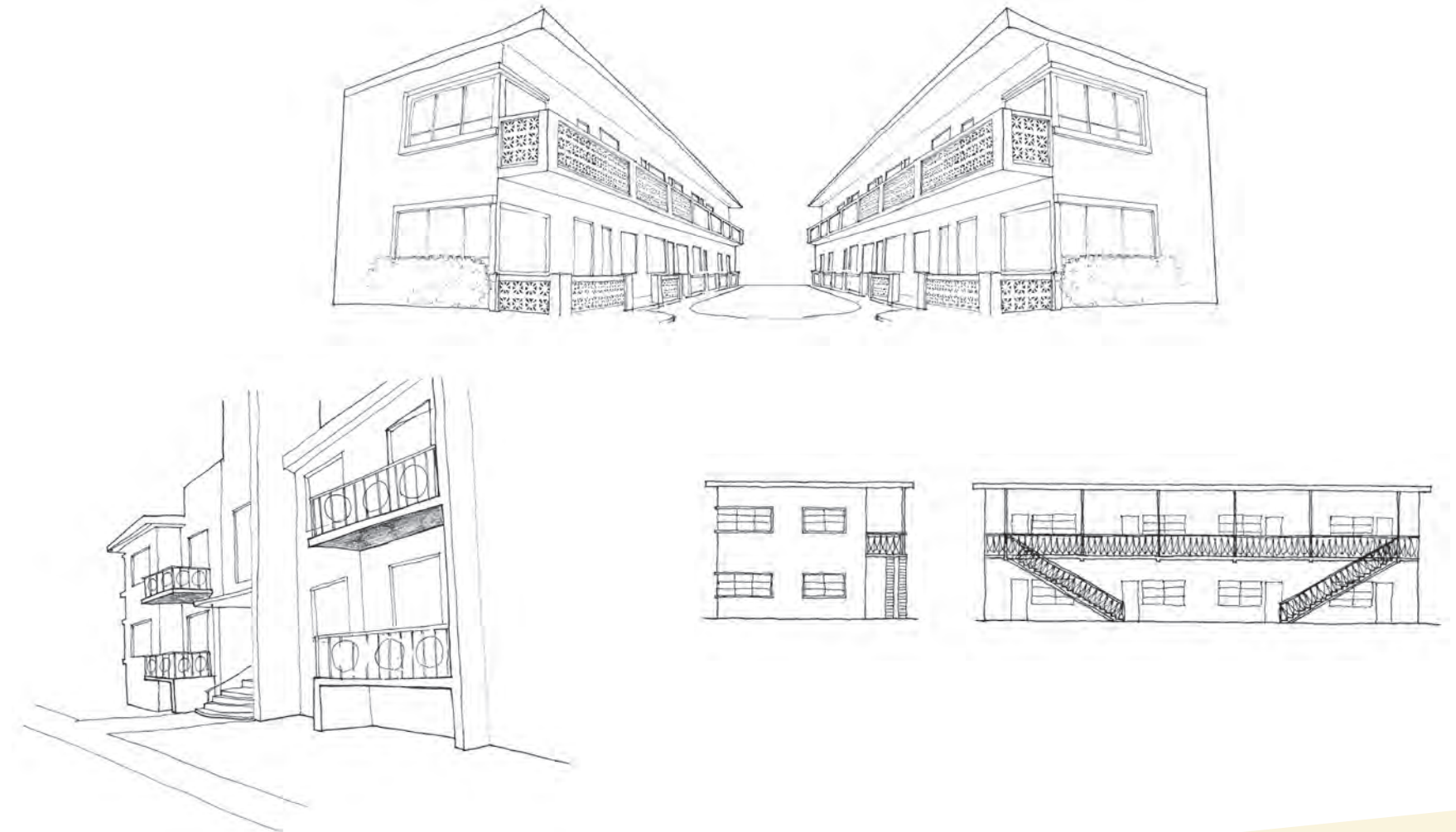
- Open-air corridors and staircases are intrinsic to the character of MiMo buildings; and, therefore, it is essential that they are maintained, featured and enhanced in a manner complementary to the character and architecture of the building.

EVOLUTION OF CORRIDORS AND STAIRCASES IN MID-CENTURY RESIDENTIAL BUILDINGS:



- Enclosing or demolishing existing staircases, open-air corridors or balconies removes the natural indoor/outdoor lifestyle of these buildings. It also substantially alters the architectural design, pattern, rhythm and play of light and shadow which these elements create. Since balconies and open-air corridors were never intended for use as interior space their enclosure produces narrow indoor areas which are minimally usable and could produce future water leakage. If approval of the removal or enclosure of original staircases, open-air corridors or balconies is desired, each application will be reviewed by Design Review or Historic Preservation staff on a case-by-case basis. Addition or alteration of exterior staircases, open-air corridors, balconies or similar features may be permitted on a case-by-case basis. Planning Department staff may approve minor alterations on elevations facing an interior courtyard or interior side or rear lot line.

THREE DIFFERENT CORRIDOR EXAMPLES:



RAILINGS*

McMo architecture, for reasons of economy following World War II, was a generally minimalist architectural style utilizing functional exterior elements, such as railings, to bolster the architecture and provide character defining detail. Hence, railings were imaginatively created in a wide host of patterns and materials to aesthetically dramatize this minimalist style.

During the postwar period (1945-1965), almost one thousand apartment buildings were built in Miami Beach. Most of these were one- to three-story garden apartment buildings, and the majority were designed with unit entrances via exterior corridors or private terraces. The resulting exterior stairways, corridors and balconies were primary building features. Their metal and concrete railing systems were in many cases the single most impactful exterior feature of the buildings. The railings, often quite decorative, functioned as differentiators for the vast stock of midcentury buildings.

Miami Beach's mid-century garden apartment buildings were a regional adaptation of Postwar Modern architecture popular throughout the US. This regional variant, often referred to locally as Miami Modern (or MiMo), contributes greatly to the identity of Miami Beach. In fact, Postwar Modern garden apartment building out-number Art Deco and Mediterranean Revival buildings in the city. Further, the vast concentration of these building in certain neighborhoods has generated at least one new local historic district, as well as two new districts on the National Register of Historic Places.

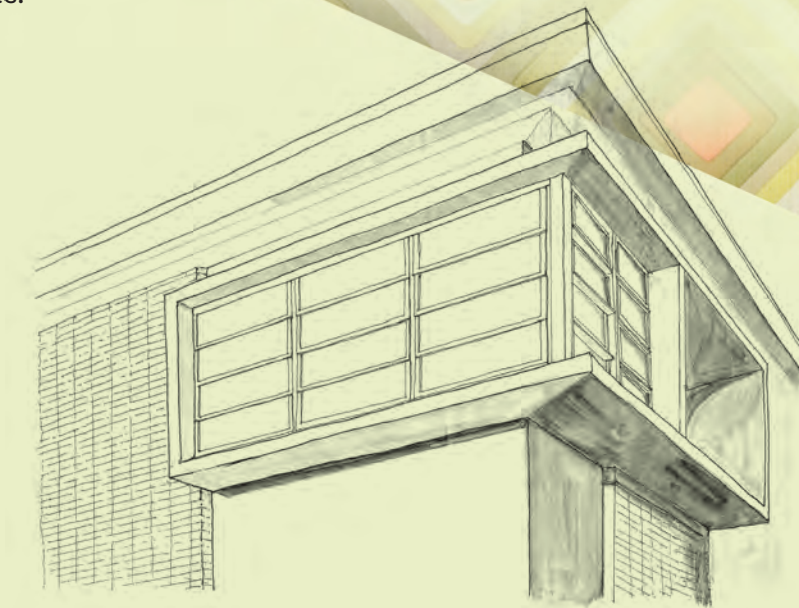
*For detailed railing guidelines please refer to Appendix A.

WINDOWS

Often referred to as the “eyes of the building,” windows are among key design elements of any building. They form lines, bands, rhythms and patterns; they create mass and void, positive and negative, heavy and light contrast.

Post-War Modern buildings featured a variety of window configurations and types. During this imaginative period, architects found new ways to wrap windows around building corners, flaunting new structural systems that eliminated the need for major corner columns. The size of window openings increased as compared to earlier styles. Eyebrows were still popular, but new window surrounds, known as boxed windows, expanded the window vocabulary. Casement windows continued to be utilized and new types such as jalousie (individual horizontal panes of glass) and awning windows were introduced. The arrangement and design of windows (fenestration) on most MiMo buildings formed a strong horizontal pattern, particularly on primary façades.

The following guidelines offer direction on how window replacement, repair, and maintenance can be accomplished with optimal results.

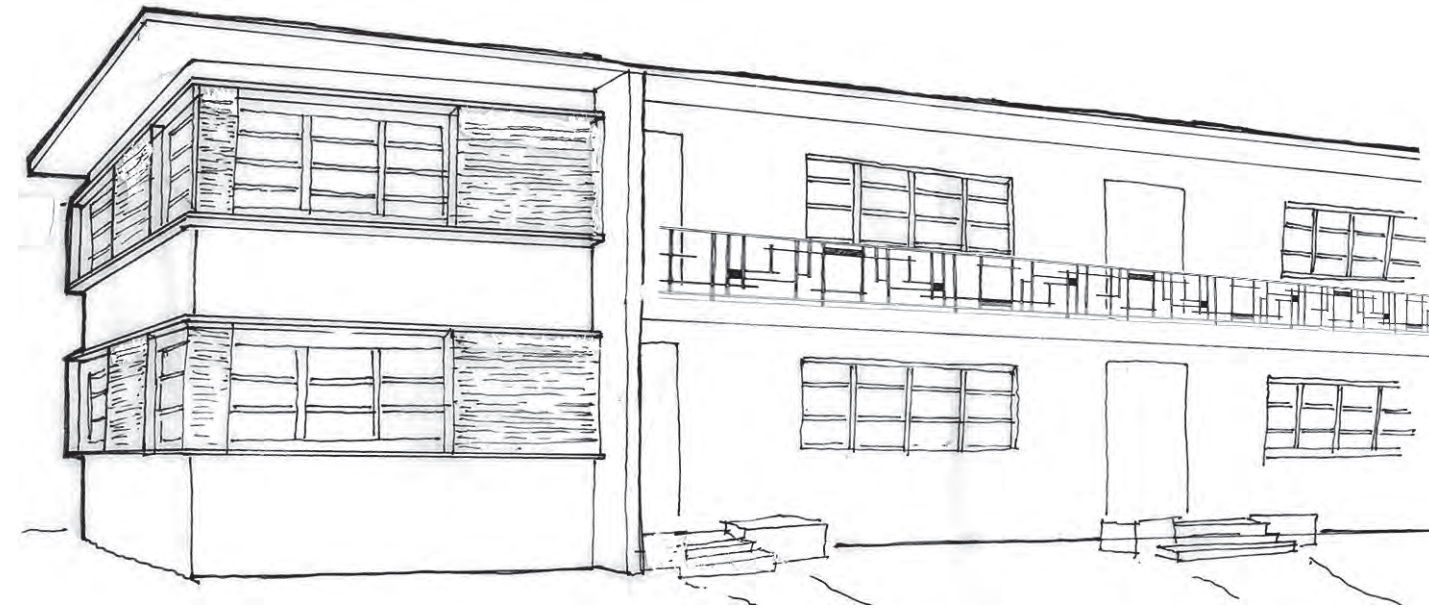


CORNER WINDOW GROUPING SURROUNDED BY A WINDOW BOX.

1

Post-War Modern buildings feature two or more individual windows grouped together side-by-side to form longer openings to allow for increased light and air. The horizontal lines formed by the window groupings were often accentuated by contrasting bands of color, contrasting materials such as stone or brick, and/or raised concrete bands which stretch across the façade to tie together several window groupings. More exaggerated raised concrete window surrounds, known as boxed windows, were sometimes

flared or tapered for an aerodynamic effect. Removing, obscuring, plastering or otherwise altering the appearance of window surrounds significantly impacts the overall design of the building. Proposals for new window surrounds will be considered on a case-by case basis and will be more successful if inspired by the architecture of the building and the design of the window.



2

Consistency of window types gives a building a harmonious appearance. Generally, replacement windows should all be the same style, except when the original building design called for more than one window style or in conjunction with an approved master plan.

3

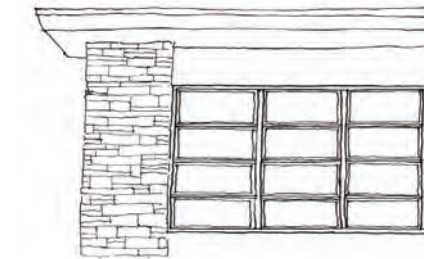
Whenever windows must be replaced, hurricane impact windows are strongly recommended as they do not require shutters. For hurricane shutters, removable aluminum panels are the preferred solution because they have the least visible impact on the facade. Accordion shutters and roll-down shutters that are permanently mounted on the window surrounds may create a significant adverse alteration and will be reviewed on a case-by-case basis.

4

Retaining and refurbishing original windows is normally the preferred solution for rehabilitation of historic buildings. But when that is not possible, it is important that replacement windows replicate original window patterns and finishes to the greatest extent possible or desirable within the Florida Building Code. Window replacement on Historic Sites or on properties within one of the City's designated Historic Districts will require the original microfilm drawings of the building to determine the original window pattern and finish. This material is available at the City's Building Department. If no evidence of the original windows exists, the design of the building is the best guide to ascertain the best replacement. The following guidelines provide direction in the selection and installation of replacement windows that will retain the design intent of the originals.



A JALOUSIE WINDOWS



B AWNING WINDOWS



C CASEMENT WINDOWS

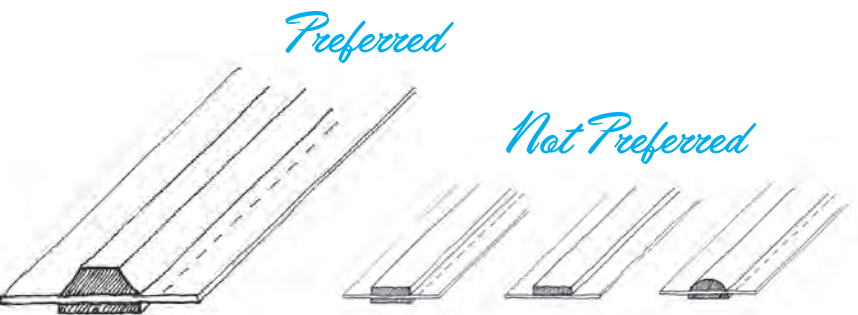
A Jalousie windows are no longer permitted by the Florida Building Code and may require replacement with more energy-efficient and secure window types. Single-panel casement or horizontal slider windows offer the most compatible alternatives to jalousie windows because jalousies, aside from the outer window frame, have no prominent horizontal or vertical structural members or muntins. The width of each window panel should approximate the width of each original jalousie window.

B The type of awning window typically found in MiMo buildings has multiple horizontal panels of glass, hinged at the top so that each panel swings outward. This type of window is no longer manufactured, thus replacement windows must seek to replicate the appearance of the original windows in the closed position. Replacements that best maintain this characteristic are casement or horizontal slider windows with horizontal muntins applied to the glass. Single-hung windows may be substituted, but with horizontal muntins to match the original configuration. Successful replacements will pay close attention to replicating the placement and dimensions of the vertical mullions.

C Original casement windows are best replaced with new casement windows. However, other types, such as fixed or horizontal sliders with the same configuration may be considered.

D The creative use of mullion and muntin patterns is an effective method of reflecting the original design of the windows. Special attention should be given to the difference in thickness between the vertical mullions that provided structural support and the thinner frames visually separating each panel of glass. Window muntins are applied to a continuous panel of glass to give the appearance of true muntins that supported smaller panes of glass in earlier window styles. Applied muntins must be permanently affixed to both sides of the window. Interior muntins may be flat in profile while exterior muntins should be a truncated pyramid or semi-circular in profile.

E Colonial style and similar replacement windows with vertical muntins are incompatible with the original intentions of Post-War Modern architecture.



D APPLIED WINDOW MUNTIN STYLES

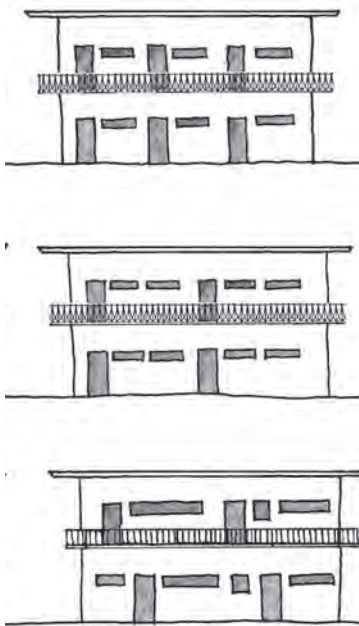
Not Recommended



E THE VERTICAL MUNTINS IN COLONIAL STYLE WINDOWS DIVIDE THE GLASS INTO PARTITIONS WHERE THE VERTICAL DIMENSION IS GREATER THAN THE HORIZONTAL DIMENSION; WHEREAS POSTWAR MODERN BUILDINGS ALMOST ALWAYS FEATURED WINDOWS WITH HORIZONTALLY ORIENTED PANELS OF GLASS.

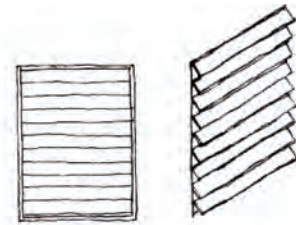
5 Dark or reflective window tinting gives an odd coloration to the glass. Minimal tinting to meet energy codes or other regulatory requirements may be acceptable if compatible with the architectural character of the building. Such proposals will be considered on a case-by-case basis and may be referred to the Design Review Board or the Historic Preservation Board, as applicable.

6 Because they constitute so much of the identity of the building, retaining the original size and configuration of window openings is essential. This is especially true for principal façades and character-defining architectural features such as boxed windows or special window arrangements at building corners. Exceptions to this standard may be changes to window configurations on waterfront façades, courtyard elevations and/or interior side yard elevations. Any such modifications should respect the character and predominant horizontal lines that are typical of MiMo architecture, and be in conjunction with a comprehensive design for substantial rehabilitation of the building. Plans for such projects will be reviewed on a case-by-case basis, and may be referred to the Design Review Board or the Historic Preservation Board, as applicable.

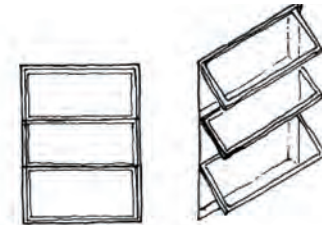


ORIGINAL

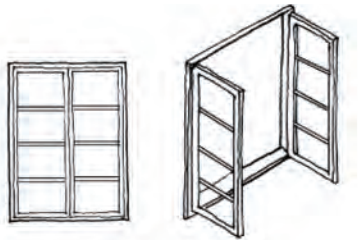
JALOUSIE WINDOW



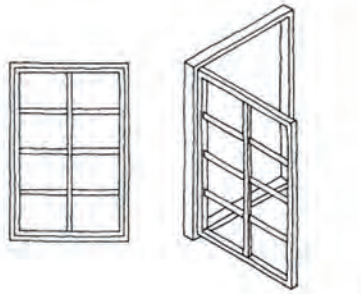
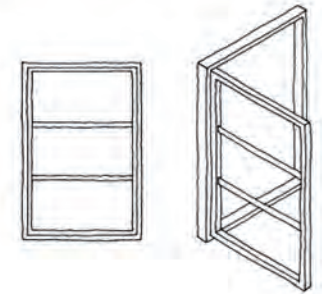
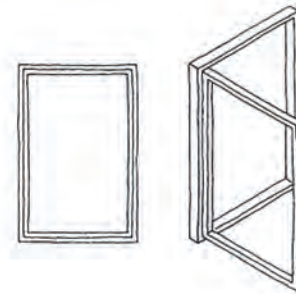
AWNING WINDOW



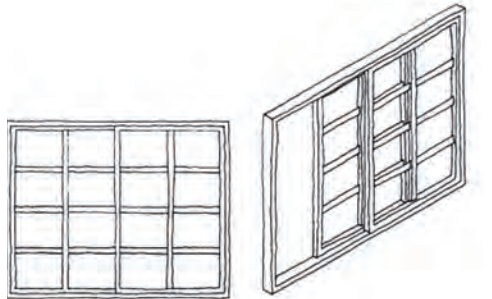
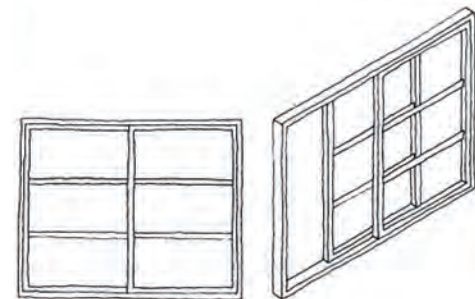
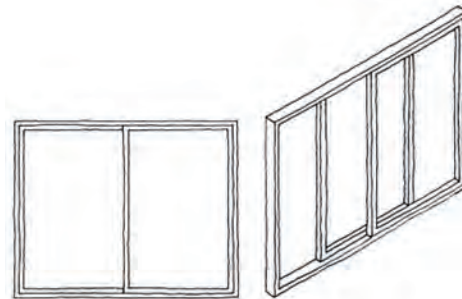
CASEMENT WINDOW



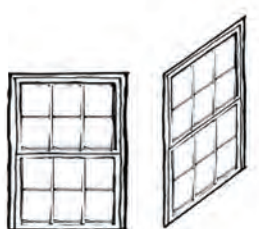
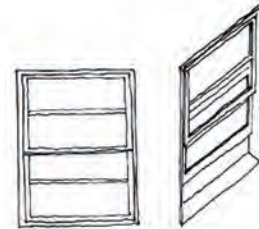
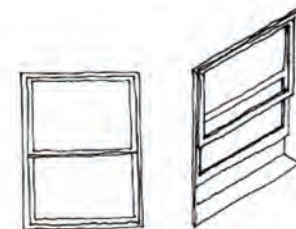
MOST SUCCESSFUL REPLACEMENT



SUCCESSFUL REPLACEMENT



UNSUCCESSFUL REPLACEMENT



DOORS

Doors must be carefully designed and placed in MiMo buildings to work in concert with windows.

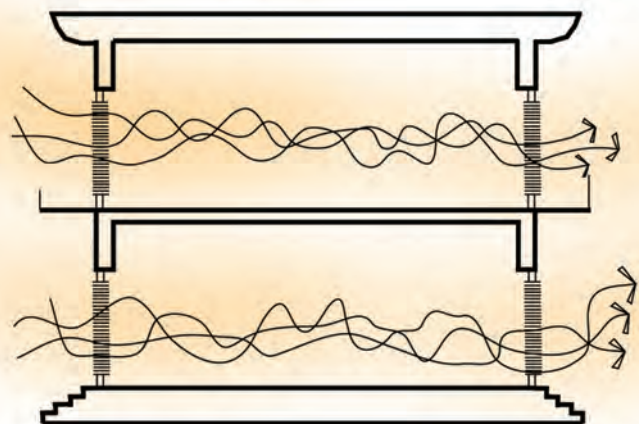
Unlike earlier styles of architecture that featured one elaborate front entrance door, MiMo buildings usually present many exterior doors with access to individual apartments. Together with the windows, the doors help to compose the façade. They create mass and void, positive and negative, heavy and light. Post-War Modern buildings introduced many identical, simple doors on the same façade, allowing the repetition and simplicity of the arrangement to embellish the façade. Another innovation introduced with MiMo doors was their active participation in the cross-ventilation and natural lighting system of the building. Many MiMo buildings originally had jalousie doors which had thin louvers of glass which allowed both light and fresh air into the building.

Doors are an essential component of the identity of MiMo buildings and, therefore, special care must be employed when the need to replace them arises. The following guidelines offer direction on how door replacement, repair, and maintenance can be accomplished with optimal results.



1

The doors original to a building were designed to create special patterns of mass to void, and light to heavy. In order to recapture some of those intended effects and preserve the beauty of a building, it is important that replacement doors replicate original styles and finishes to the greatest extent possible within the Florida Building Code. The following guidelines provide direction in the selection and installation of replacement doors that will retain the design intent of the originals.



WITH THE GLASS LOUVERS OPEN ON BOTH SIDES OF THE BUILDING, THE BREEZES PENETRATE AND CROSS-VENTILATE THE INTERIOR SPACES.

2

Door frames were typically very simple in MiMo buildings. Decorative door surrounds should not be added to embellish the façade except where inspired by the architecture of the building and the original design of the door.

3

Because they constitute much of the identity of the building, eliminating, increasing, decreasing in size, or completely filling in original door openings is detrimental to the image of the building, especially on principal façades.

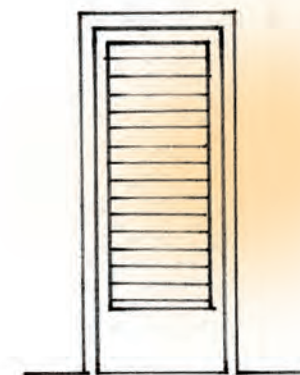
A The replacement door should replicate the original door design, wherever feasible, particularly on façades facing a street.

B The current use of air-conditioning has reduced the importance of ventilation from jalousie doors, but the advantages of natural lighting remain. Jalousie doors may be replaced with more energy-efficient and secure door types, at the discretion of the property owner. If a different type of replacement door is desired, it is best when it is simple in design and replicates the original frame and mullion pattern. Generally, single-pane French doors are the best replacement for buildings that originally featured jalousie doors. French doors with a minimum 10-inch high bottom rail and 4-inch wide top and side stiles are the most like the original jalousie doors. Horizontal muntons may also help to attain the desired proportions. Colonial style doors with raised panels or arched fanlights are not appropriate on Post-War Modern buildings

C Consistency of door types gives a building a harmonious appearance, except when the original building design called for more than one door style or in conjunction with an approved comprehensive plan for the building.

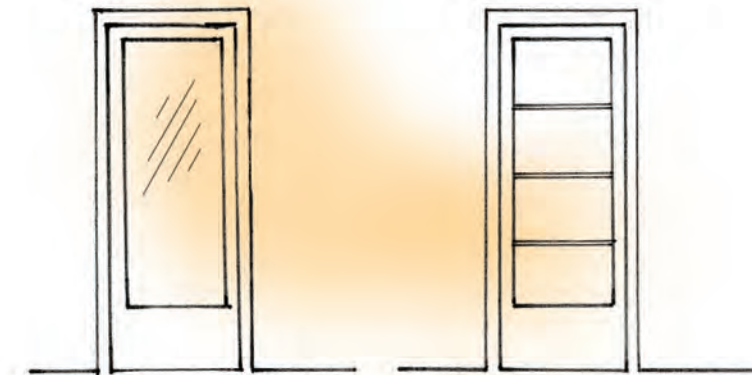
D A unified façade benefits from consistent door and window glazing. Whenever additional privacy is needed, obscured, sandblasted or other similar finish glass may be practical.

Original



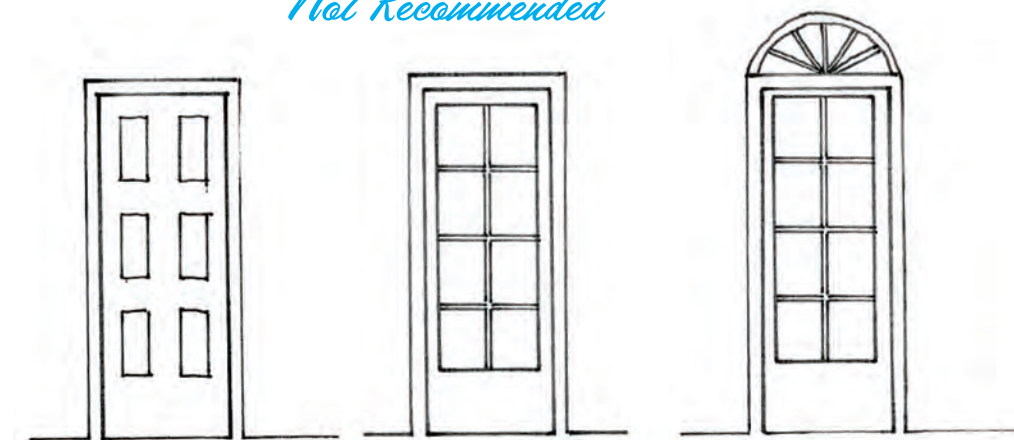
ORIGINAL JALOUSIE DOOR

Recommended



RECOMMENDED REPLACEMENT FOR JALOUSIE DOOR

Not Recommended



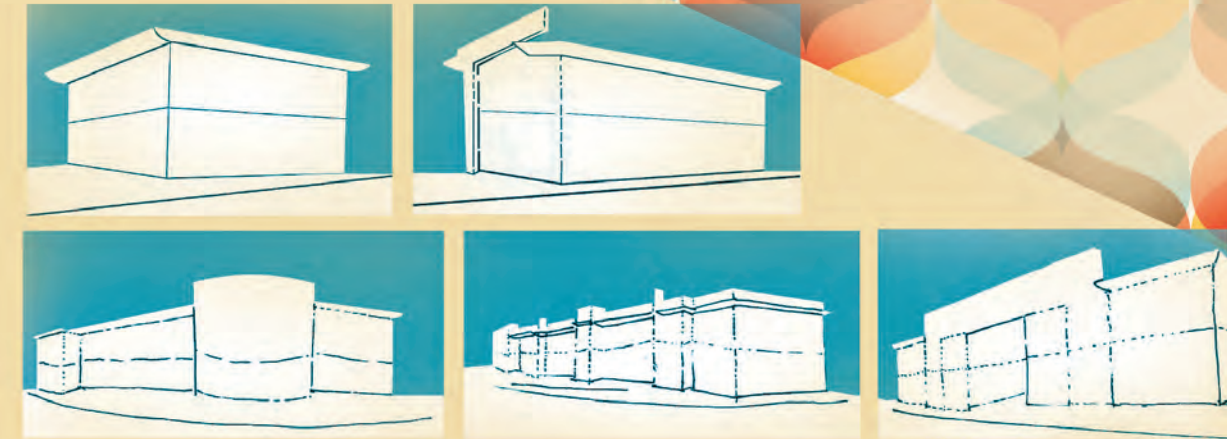
COLONIAL STYLE DOORS NOT RECOMMENDED FOR MIMO BUILDINGS

ROOFING

MiMo buildings often incorporate dramatic rooflines.

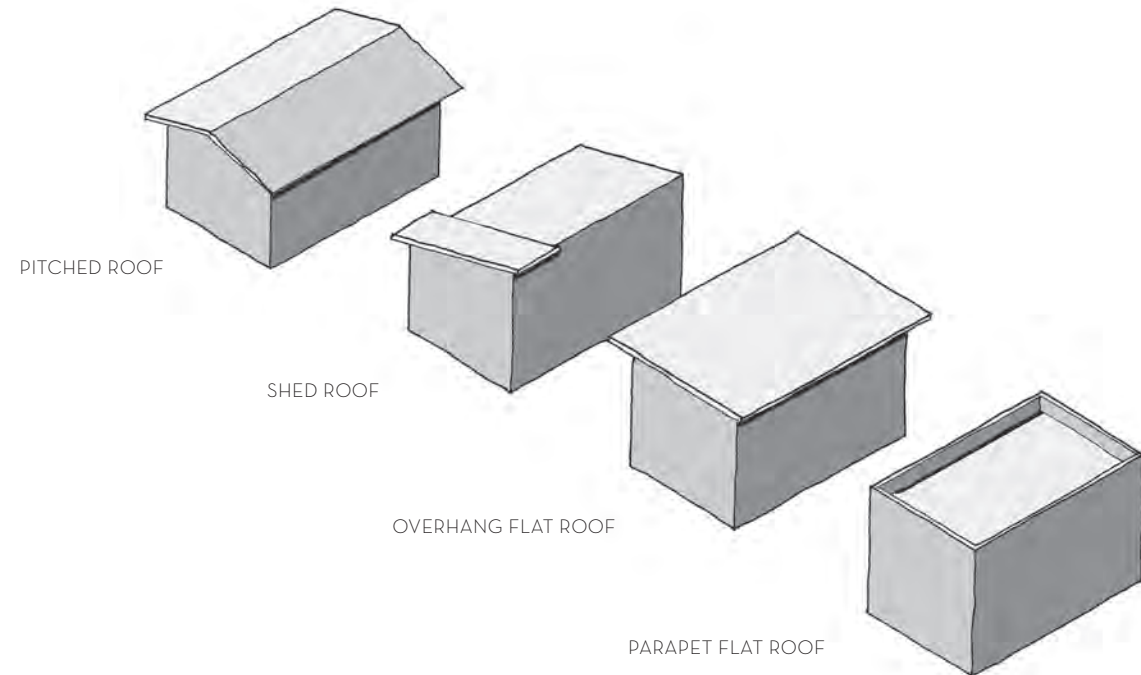
The roof creates the outline of the building against the sky. MiMo buildings feature remarkable rooflines and roof styles, ranging from theatrical prosceniums to subtle gables and from soaring shed roofs to elegant overhangs, all of which contribute to the special character of the small-scale buildings. Because the roof is the crowning element of the building, roofing material should be carefully selected when repairing, upgrading or adding on to MiMo buildings.

The following guidelines provide suggestions for proper maintenance and replacement of roofing materials. In general, all roof material should be selected to complement the unique architecture of the building, and since the roof provides protection from the intense tropical sun and damaging effects of water infiltration, it should be well maintained at all times and repaired promptly.



1

MiMo buildings often utilize dramatic roof shapes, such as angled roofs overlapping each other or forming a grand open triangle. Rounded or “soft” eaves are another special character defining feature. These features afford strong interest and identity of style to the building and, therefore, should always be respected and maintained when replacing or repairing roofs or roofing material.

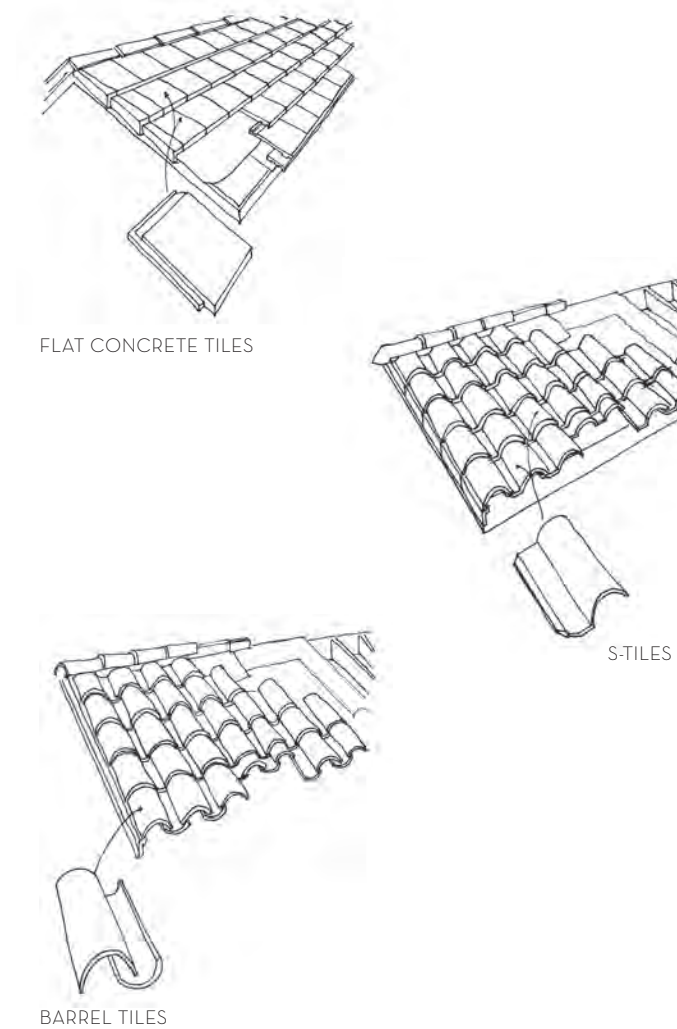


2

Most MiMo structures feature flat roofs either behind the spectacular roofline or for the entire roof. These roofs are commonly constructed with bituminous built-up roofing material, sometimes with decorative, soft-colored, gravel-impregnated surface, or simple light grey asphalt roll roofing which runs the length of the building in overlapping four- to five-foot strips. Ideal replacements for these roofing materials are with same or similar materials as permitted by Florida Building Code.

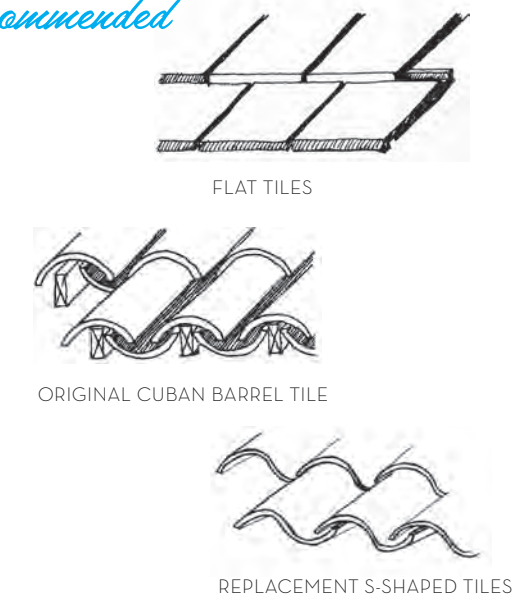
3

Transitional modern buildings prior to 1950 commonly had pitched roofs that were clad with barrel tile or flat cement tile. These same materials are ideal for repairs or replacement of these roofing systems, as they will produce the best aesthetic and thermal insulating results.



- A** When the use of original individual barrel tiles is prohibitively expensive, replacement with a modern continuous S-shaped tiles may be considered..
- B** Metal replacement barrel tiles, sometimes referred to as metal Pan Tile should not be used.
- C** It bears remembering that any roofing material used on gabled, shed or pitched roofs is highly visible from the street and will dramatically impact the appearance of the building.
- D** Asphalt shingles shall not be used to replace original barrel or flat tiles.

Recommended



Not Recommended



BUILDING FINISH MATERIALS

The MiMo design period incorporates a broad range of new finish materials reflecting changing times, technologies and tastes.

MiMo structures utilize changes in building finish material as a playful design tool. Much like the two-toned furniture and automobiles of the 1950s, MiMo buildings used contrasting materials to create and highlight their strong geometric forms. Smooth, solid-colored stucco is ingeniously contrasted against rough, unevenly colored stone or brick. These differences in material are used to highlight details like window bands and catwalks. Since finish materials constitute such an essential component of MiMo's architectural identity, they contribute greatly to the appearance of Post-War Modern structures in Miami Beach.

The following guidelines provide direction for the proper maintenance, repair and replacement of exterior building finish materials.

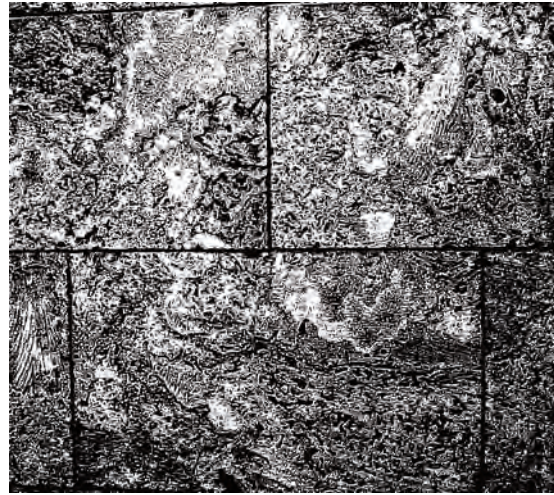


1

Applied exterior finishes such as tile, brick and stone are a important decorative feature of MiMo buildings. Removing or otherwise altering these materials is extremely detrimental to the image and architectural identity of the building. In addition, painting original surface materials such as tile, stone or brick destroys their architectural purpose and irreparably damages them.



QUARRY STONE



FLORIDA KEYSTONE (CORAL STONE)

2

When the replacement of materials is necessary, it is important that the new material be carefully matched to the original. The following guidelines address various materials more specifically:



A BANDED STUCCO



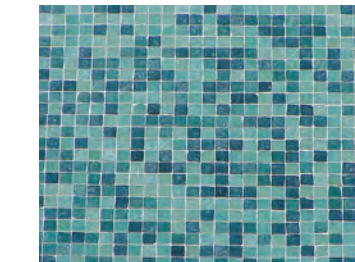
B SLUMP BRICK



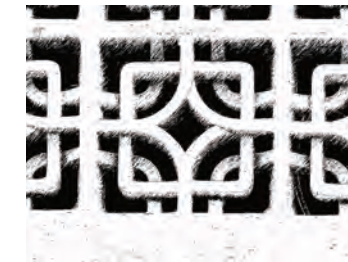
C STONE



D BRICK WITH MORTAR DETAIL



E TILE



F BREEZE BLOCK

A Stucco - It is important when repairing stucco to match the texture of the original stucco finish. Changing the pattern and texture of the stucco, even slightly, will stand out significantly.

B Brick - Special consideration should be given to matching the color, texture, dimensions and bonding pattern to the original material.

C Stone - Special consideration should be given to matching the durability, composition, porosity, color, texture, size and profile of the original. If possible, stone from the original quarry source should be used. Generally, it is best to avoid the use of artificial stone for repairs. Owners of stone buildings will benefit from seeking expert advice prior to any work.

D Mortar - Replacement mortar should not be stronger than the original mortar as damage to the original brick or stone may occur. Attention should be paid to matching mortar color, content and profile to that of the original material.

E Tile - Size, color, finish, reflectivity and sheen of the original material are important considerations when seeking replacement tiles.

F Breeze block - Replacement breeze block pieces should match the dimensions, location, material, color and design of the original. Several private businesses will create molds to replicate original breeze block patterns. Infilling of breeze block openings is strongly discouraged.

- 3 Well-maintained and clean exterior surface materials improve the appearance of any property but even more so of MiMo buildings.
- 4 It is best not to undertake sandblasting and other cleaning methods, such as chemical washes, that will damage exterior building materials and features. Any surface cleaning of structures should be done by the gentlest means possible and under the guidance of a qualified professional.
- 5 Building finishes are often altered, sometimes more than once, to “update” a building’s appearance. These alterations have taken the form of applied materials such as aluminum or wood siding, ceramic tile, and stone or brick veneers which conceal original façades and finishes. These finishes rarely are successful over time, making the building appear more dated than it was before. The appearance of MiMo buildings can be improved greatly if new façades, metal and wood siding and veneers are removed and the original building surface is restored.
- 6 In some cases, where a secondary elevation such as an interior courtyard or a waterfront façade is to be enhanced, the addition of building surface materials such as stone veneer, brick, stucco, or breeze block may be appropriate. It is important that these materials reflect their own period of construction in terms of design and construction while maintaining a high level of compatibility with the existing architecture of the building. Directly imitating existing material usually results in an applied look and detracts from the appearance of the building.
- 7 Using color and lighting to complement natural materials and highlight architectural forms and details is very appropriate.
- 8 Initial investment in higher quality building materials can save later maintenance costs and will result in a more attractive building. Permanent, durable building materials ensure quality and lasting performance.
- 9 The following materials are detrimental to the image of the buildings and should not be used: dark-tinted or reflective glass, wood siding, aluminum siding, shingles, shakes, plastic panels, Styrofoam, E.F.I.S. (Exterior Foam Insulation Systems), or any other foam products. When such materials have been applied to existing structures, they should be removed and the original surface materials restored, whenever possible.



PAINT COLORS

Paint colors in the MiMo design period were vivid, highly unique and dramatically discernible from earlier periods of design.

Exterior color contributes greatly to the image of a building. Color serves to highlight features, differentiate forms, enhance contrasts and even disguise defects. At the same time, the colors of individual buildings create the color palette of the city or neighborhood. Throughout the years, the City of Miami Beach has gone through striking visual transformations due to changes in building color. As tastes have changed through the years, so have the palettes and the color combinations selected by building owners.

Post-War Modern architecture typically employed white and light tones much like Art Deco and Streamline Moderne did. Sometime around the 1970s, the white and light tones were replaced with browns and yellows. In the 1990s, pastel tones came into popularity. The new millennium finds many property owners looking to return to more authentic color palettes, and we are experiencing a return to whites and light tones original to so many buildings. Such tones are highly desirable in our sub-tropical climate and accentuate the intrinsic elegance of our architecture.



1 All exterior painting requires a Building Permit and color approval from the Planning Department. If the chosen color cannot be approved by staff, it must be approved by the Design Review Board or the Historic Preservation Board, as applicable. Note that an application to repaint a building the same color may not be approved if the color is not considered compatible with the architecture.

2 High and semi-gloss paints are shiny and distracting and therefore detract from the appearance of the building. Satin or matte finishes are more elegant and allow the light to bounce back from surfaces in a natural manner, which allows for good perception of the architectural form.

3 Flat white or varying shades of white are the best at enhancing Post-War Modern architectural forms and are highly characteristic and desirable in a tropical marine environment. White shades also create an appropriate background for different materials, such as brick and stone, which are used as geometric architectural features on MiMo structures.

4 Light pastel colors may enhance MiMo buildings if used appropriately. Dark tones, glaring bright colors, and colors commonly described with terms such as neon, fluorescent, day-glow, iridescent and similar terms are brash and detract from the appearance of the building and the neighborhood. Such colors may be appropriate in some instances when used as accents or trim but must be approved by the Design Review Board or Historic Preservation Board, as applicable.

5 Some colors popular during the Post-War Modern period are often brighter and more intense than those allowed. If an applicant wishes to return a MiMo structure to its original color and the color is brighter or more intense than would typically be permitted, a paint analysis or other documentation of the original color must be submitted. Paint analysis involves the examination of small chips of paint with their substrate (stucco, wood, etc.) from various exterior surfaces of the building. A specialist identifies the earliest paint color present in the samples and assigns a standard numbered color based on the Munsell color system, which can then be matched by a paint company. This form of analysis may be used in order to identify a historically accurate and/or appropriate color scheme for the building.

6 In buildings that feature special materials such as stone, brick or tile surfaces, it is important to select the paint color of stucco surfaces adjacent to stone or tile surfaces for compatibility with and enhancement of the stone, brick or tile. The painting of stone, brick or tile surfaces irreparably damages the surfaces and eliminates the contrast and the geometrical play they were intended to create. Where stone, brick or tile surfaces have been painted, they should be carefully stripped, when determined technically feasible, using appropriate masonry conservation practices.

7 Highlighting architectural forms and details with color enhances the appearance of the building; however, creating forms and details that are not present detracts from the building's original design. Architectural murals and other trompe l'oeil may be appropriate for blank walls of a particular building and will be considered on a case-by-case basis by the Design Review Board or Historic Preservation Board, as applicable.

8 Painting original natural finished wood, metal, or aluminum features including, but not limited to, doors, door and window frames, railings and fences is strongly discouraged.

9 Often eyebrows, roof eaves, window boxes and other decorative features are painted a contrasting color to emphasize their lines. Traditionally, only the outer edge of the feature was painted, while the remainder was painted to match the building. This color pattern is very effective because it enhances the lines of the building.

10 It is important that the color relationship of adjacent buildings be considered when selecting a color palette.

11 The best colors for roof tiles and pitched roof finishes are white, terra-cotta or natural earth tones. Black or dark grey may be appropriate when cement tile is used. Alternative colors must be approved by the Design Review Board or Historic Preservation Board, as applicable.

12 Security bars and hurricane shutters are less noticeable when painted to match the window mullions and surrounds or a neutral shade.

13 Fences and gates are less noticeable when painted in recessive colors such as black, dark grey, dark, green or other dark neutral shades, depending on the material of the fence or gate and the architecture and color of the building.

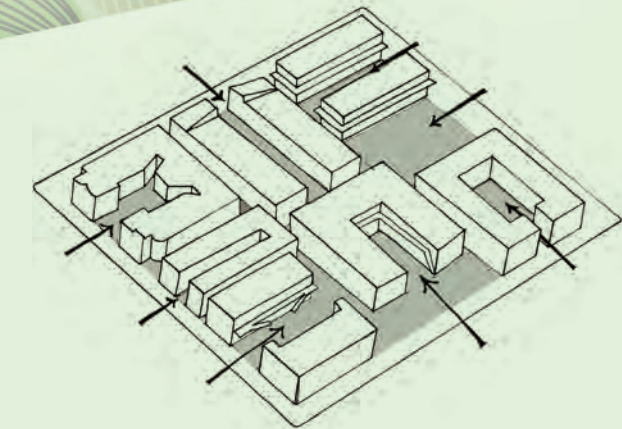


HEDGES, WALLS AND FENCES

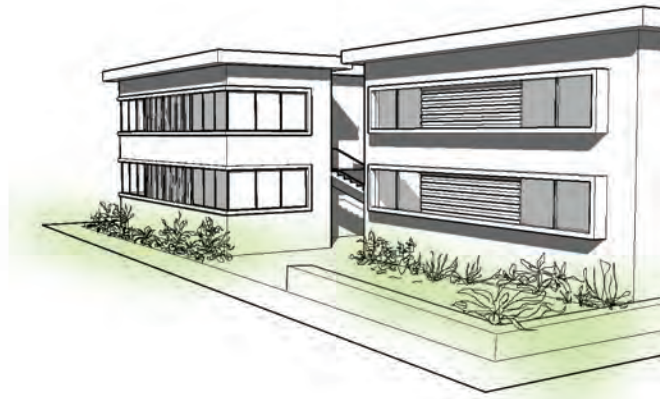
Hedges, walls and fences were often incorporated as integral design elements in MiMo architecture, delineating hierarchies of outdoor spaces.

Mid-century apartment buildings are constantly being improved to provide a better quality of life for residents. This is clearly visible in the desire of residents to enjoy the outdoor spaces surrounding buildings. The introduction of perimeter fences, gates, walls and hedges is the most common method for defining and securing private open space. However, introducing these elements without fully reviewing their implications often detracts from the neighborhood experience by dividing already tight spaces, visually blocking the openness of the street and encroaching on narrow public sidewalk space.

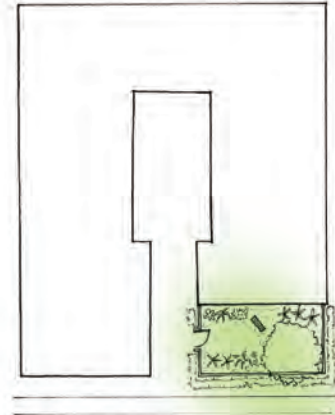
MiMo buildings often were designed to feature semi-private outdoor areas located away from the street within side yards and interior courtyards, effectually incorporating outdoor living space by using the building footprint to define the space. This highly desirable arrangement also provided for effective security by creating a single access point into the building's common outdoor areas. The side and front yards, however, became narrow, often only five to ten feet. As a result, side and front yards are often isolated from the activity of the building and site. It is for this reason that decisions to introduce any boundary elements such as fences, walls and hedges to further secure outdoor areas must be made with great care. The amount of outdoor space available and how that space lends itself to be used and enjoyed are essential considerations that will guide any decisions to a satisfactory outcome. These guidelines provide direction on how to best take advantage of and enhance any usable open space while creating a pleasant neighborhood and pedestrian experience.



- 1 Fencing in narrow perimeter yards of ten feet or less, does not create efficient usable outdoor space and detracts from the pedestrian experience of the neighborhood. If demarcating elements are desired to distinguish between the public sidewalk and the private property, the best suited and attractive devices are ground covers, shrubs and low hedging.

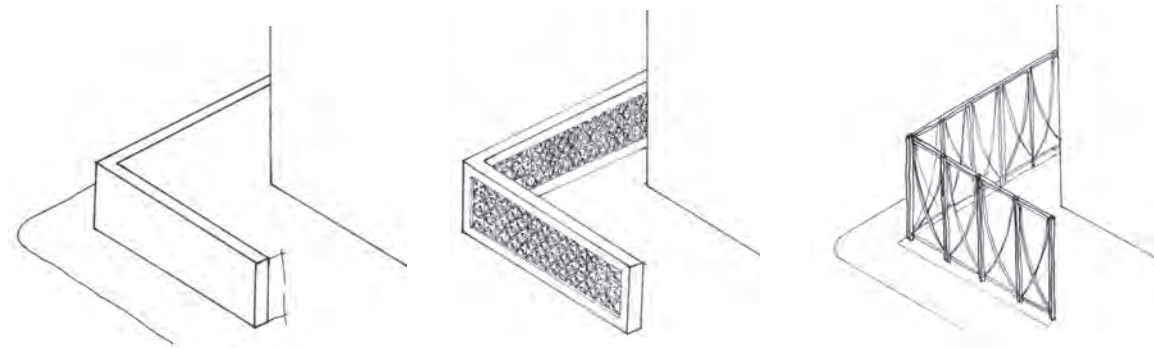


- 2 Fencing in the front yard does not benefit the residents when individual units in a property are accessed through an interior courtyard or side yard, and no direct access exists from any individual unit to the front yard. This is especially true when the setback is less than 15 feet. If the setback is more than 15 feet, the best method to demarcate the area is a combination of low hedge material (up to 42 inches in height).

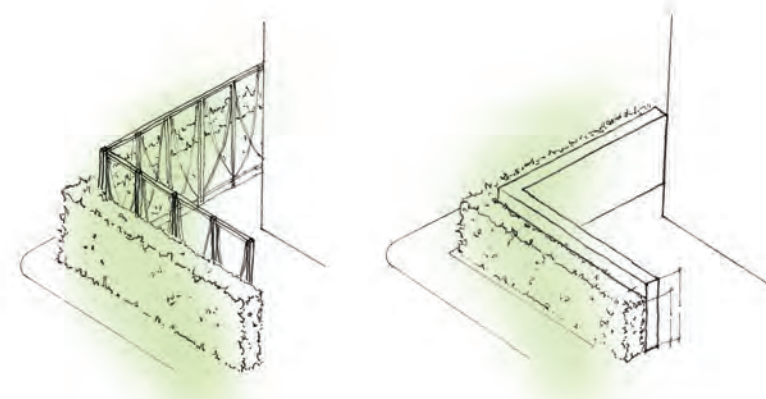


ENCLOSED GARDENS MAY BE APPROPRIATE WHERE THERE ARE LARGER FRONT YARD SETBACKS.

- 3 Fences and walls are more successful when they are designed to be compatible with the architectural character of the building, as well as the design of railings, planters and other site features. Otherwise they may overwhelm the architecture of the building. If a building features a special material, such as breeze block, brick or stone, a low wall, no higher than 36 inches, built of a similar or compatible material could be effective and may even enhance the look of the property.



- 4 It is very worthwhile to buffer fences and walls with plants and shrubs especially if facing the street. Fences, walls and hedges should be set back from the property line a sufficient distance to avoid encroachment on the public sidewalk. Generally this means that plant materials should be installed at least 18" - 24" from the property line, depending upon the mature size of the species.

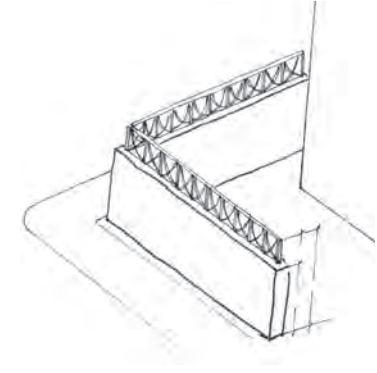


- 6 Special care should be taken with the design of gates and fencing that enclose a courtyard or that otherwise attach or align with the main façade of a building. Introducing a new fencing elements that would compete with the design of the façade could dramatically affect the architectural quality of the building.



NEW FENCE AND GATE ENCLOSING THE COURTYARD SHOULD BE OF APPROPRIATE DESIGN AND MATERIALS.

- 5 Solid walls taller than 36 inches obscure visibility to the street, as well as from the street, impede infiltration of breezes, and create locations where intruders may hide. If a 42-inch fence is desired, adding transparent elements, such as ironwork, above the 36-inch height avoids all of these drawbacks while effectively introducing new textures and interest to the streetscape. If hedges, fences or walls are kept low and semi-transparent, they will deter intruders from using them as hiding spots.



- 7 The residents of adjacent buildings can benefit greatly by the creation of a common outdoor space between the buildings without dividing fences along the property line. Cooperation between adjacent property owners and condominium associations is worthwhile so that gates may be shared and common outdoor space is efficiently used and pleasantly landscaped with trees, plants, footpaths and seating areas.

- 8 Regular trimming and conditioning of hedges and other landscape border materials is important to maintain the appearance of the property.

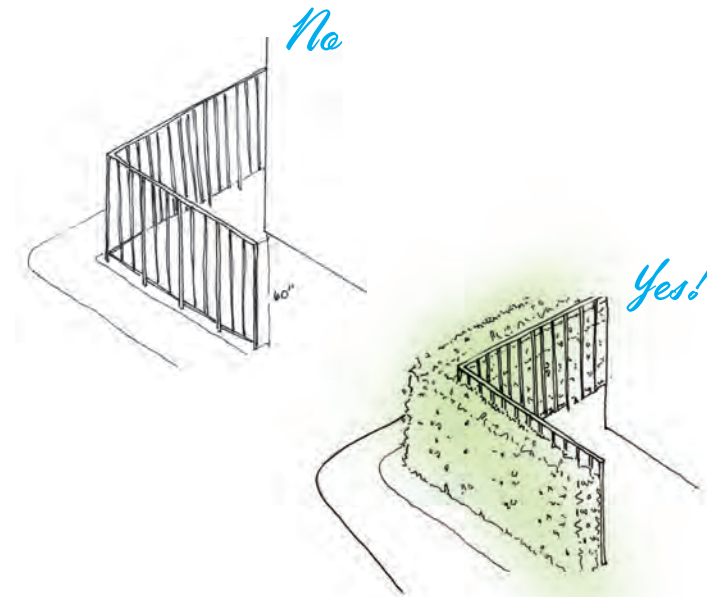
9

When a primary building façade faces the service side of another building, visual screening through living fences such as a hedge or other dense plantings is a useful tool to minimize the visual impact of service areas. In most cases, trees and other tall plant materials succeed in turning an otherwise unpleasant view into a welcome and attractive vista, while providing enough sense of privacy and intimacy to encourage residents to enjoy the greenery.



10

Simple vertical picket fences do not work well with the design of MiMo architecture. However, if used, finishing the fencing in black or dark green as well as buffering it with landscape material will help it recede from the building and fade into the background.



11

Chain-link fencing seriously detracts from a neighborhood and can often make it feel less safe. It is not permitted by Code in the front yard or facing a public street. If it is used in side or back yards, it is recommended that it be vinyl-coated black or dark green and buffered with landscape material so it will blend into the background.

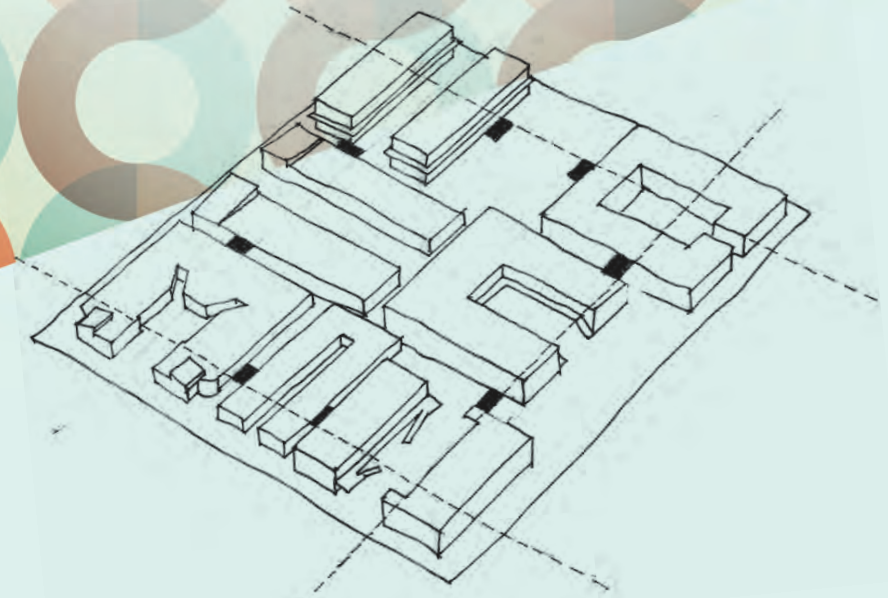
12

Solid wood fencing used for side yards can be very claustrophobic and can have a negative impact on the appearance of the neighborhood. If used, it should not be visible from the street and an open picket or shadow box design is preferred, painted a neutral color compatible with the field color of the building.

SERVICE GARBAGE DELIVERY AREAS

The compact nature of MiMo building sites makes the careful placement of service and trash storage areas a critical consideration.

The relatively narrow spaces between buildings in Miami Beach's older multifamily neighborhoods present interesting challenges for providing safe and effective service areas. Outdoor space for building services may be needed for air conditioners, laundry equipment, utility meters, storage of garbage and recycling containers, etc. Waste hauler trucks and delivery vehicles need space to service these buildings. Alleys offer the best opportunities for service access, but they do not exist in many neighborhoods, especially in North Beach. The following guidelines provide direction on how to best locate and arrange these services areas so that their impact on adjacent properties and sidewalks, as well as neighboring streets, waterways and beachfronts, is minimal.



1

It is important to either locate the service areas within the building or structure, when feasible, or to enclose them completely. Service areas should be located where they are not visible from streets, waterways, beachfronts, sidewalks and adjacent properties. This will minimize any negative impact on the neighborhood and adjacent properties.



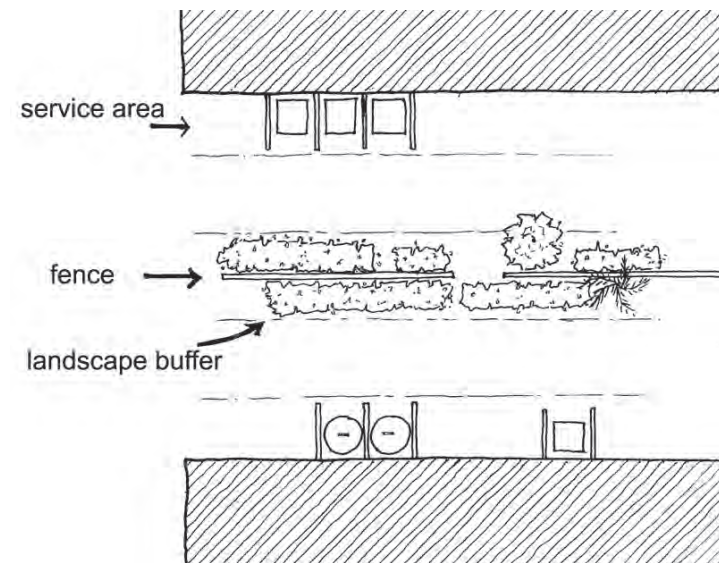
PREFERRED: SERVICE EQUIPMENT CONCEALED FROM VIEW WITH DECORATIVE MATERIALS



NOT RECOMMENDED

2

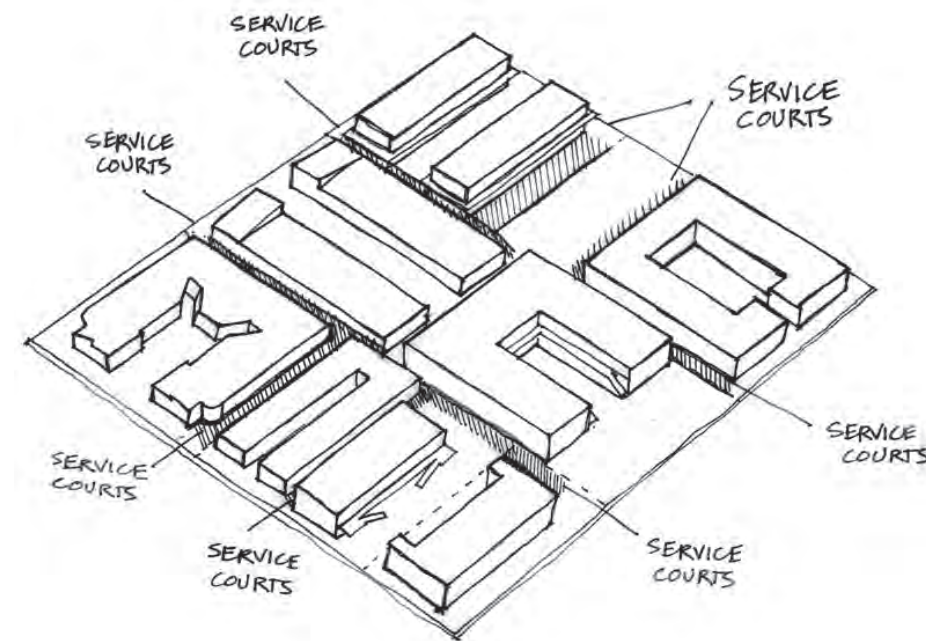
In instances where a service area faces the primary building façade of another building, landscape dividers such as hedges or other dense plantings are helpful to minimize the visual impact on the other property.



PARTIAL ENCLOSURES MAY BE ACCEPTABLE WHEN ACCESSIBILITY IS LIMITED.

3

When feasible, adjacent property owners or condominium associations may benefit from combining their respective service areas so that minimal space will be required.



4

Driveways and loading spaces associated with exterior service areas should be located so that any vehicle using such space does not hinder the use of travel lanes, walkways, public or private streets or adjacent properties.

5

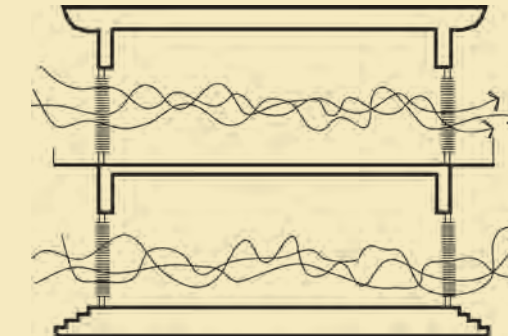
Vehicles or materials should not be stored in exterior service areas.

A/C MECHANICAL AND ELECTRICAL EQUIPMENT

MiMo architecture took full advantage of the non-air conditioned tropical environment of South Florida; modern lifestyles demand air conditioning. This creates challenges to select and place this new equipment.

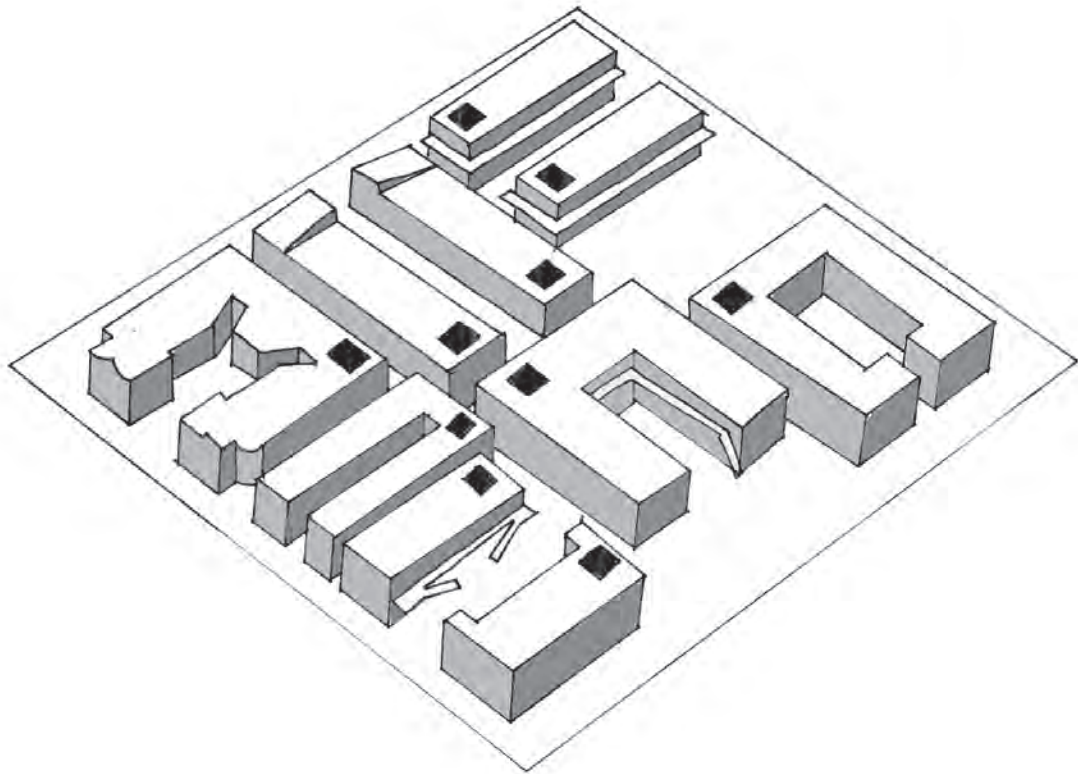
Air-conditioning was first used to cool a printing plant in Brooklyn, New York, in the year 1902. It was a great innovation for industries such as tobacco, film and textile which benefited from the ability to control temperature and humidity in their manufacturing processes. In 1924, cooling systems began to be used for human comfort in department stores and in movie theaters, and soon systems suitable for hotel and residential use were marketed. However, the impact of the Great Depression and World War II dampened the initial vigor of the industry, and so in the Post-War Modern Era very few buildings had the luxury of air-conditioning.

MiMo buildings in tropical Miami Beach dealt with the heat by relying on ingenious systems of cross-ventilation. Open-air corridor systems allowed individual units access to breezes on both sides of the unit, which interior corridors could not do previously. Ventilation was achieved by the use of jalousie and awning doors and windows. However, air-conditioning has evolved greatly since then, and property owners of today have many different alternatives in cooling interior residential spaces. These guidelines are intended to aid in the selection and in the proper installation methods of the available systems



In general, all air-conditioning, mechanical and electrical equipment should be designed and located to minimize any negative visual impact or other nuisances to neighboring streets, adjacent buildings, sidewalks, beachfronts and waterways. Every effort should be made to locate all such equipment away from primary façades.

Ideally, it should be located towards the rear of the building, where it is least disruptive, or mounted on the roof. Equipment mounted on the roof should be located in an area where it cannot be seen from street level. Large equipment, whether roof or ground mounted, should be screened or enclosed with an architectural treatment that is compatible with the design of the building and respects the required setbacks. The screening should also conceal it from the view of surrounding buildings. In some cases, a line-of-sight study may be required to demonstrate that the equipment will not be visible from the street.



AIR CONDITIONING EQUIPMENT:

- 1

Central air-conditioning should be used throughout the building whenever feasible. When retrofitting a building with central air-conditioning, special care should be taken to conceal ductwork within existing interior walls or through soffits and plenums. Also special care should be taken to integrate all new equipment, ductwork and vents sensitively, without damaging or removing original architectural detail or material.
- 2

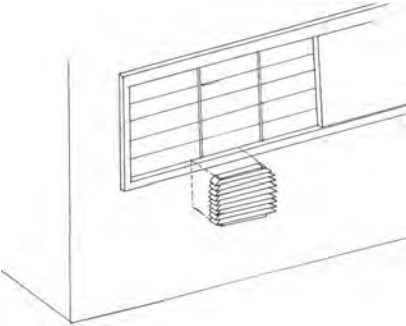
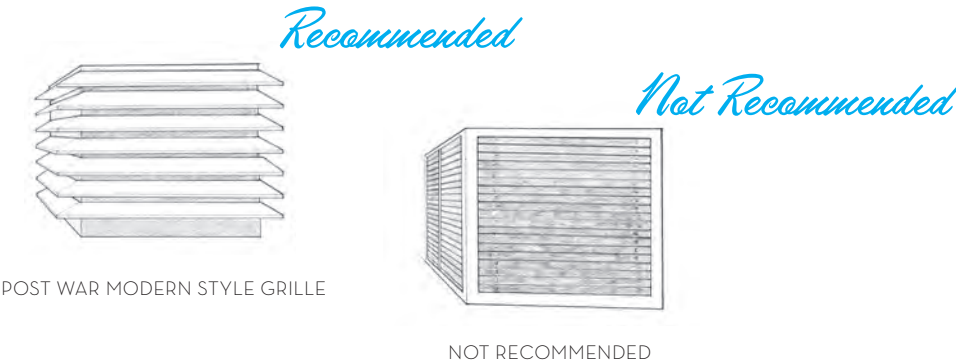
Exterior, through-the-wall or through-the-window air-conditioning units often have a negative impact on the appearance of a building. Whenever possible they should be replaced with central air-conditioning.



- 3

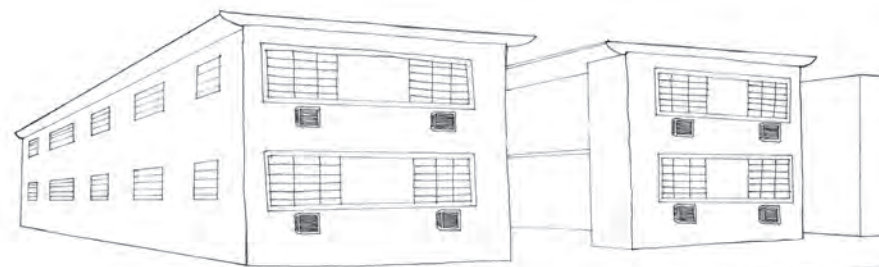
Existing exterior units should be covered with a grille that does not to exceed the size of the unit. The unit and grill should be finished in a neutral color compatible with that of the building.
- 4

Flush-mounted exterior air-conditioning units are an improvement over window or projecting units; however, they should be installed only on side or rear building elevations not facing a street. The grille should be flush to the exterior building wall and painted the same color. Such units will be reviewed and approved on a case-by-case basis.



- 5 Original wall-mounted air-conditioning units may be replaced with more attractive flush-mounted units; however, conversion to central air-conditioning is normally advantageous and encouraged. Original construction documents verifying the originality of wall units may be required when an owner opts to retain them as they clearly degrade the appearance of the building and street.

Not Recommended



WALL-MOUNTED AIR-CONDITIONING UNITS DETRACT FROM THE PRIMARY FAÇADE.

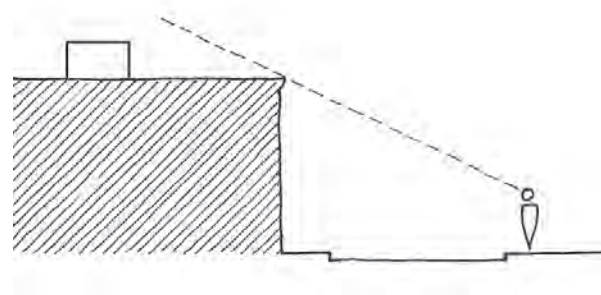
Recommended



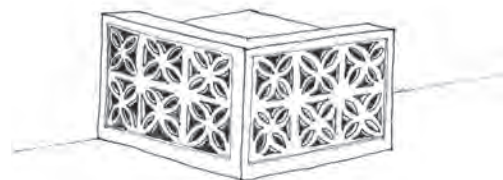
PREFERRED OPTION: AIR-CONDITIONING UNITS FACING THE INTERIOR SIDE YARD

OTHER MECHANICAL AND ELECTRICAL EQUIPMENT:

- 6 Elevator and stair towers, because of their height and bulk can often have a significant impact on the appearance of a building. Whenever possible, these towers should be set back from the edge of the roof so that they are not visible from the street.



- 7 Ventilation equipment, fire safety equipment such as back-flow preventers, and other such devices located on the ground level should be placed in side and rear yards so that they are not visible from the street. When possible, they should be screened with landscape material or other screening device that complements the design of the structure and its landscape.



- 8 Electrical and utility connections should be located away from front façades and façades facing the street. Electrical connection equipment should be grouped into one location preferably toward the rear of the structure. All conduits, junction boxes or other associated utility casings attached to the structure should be painted to match the field color of the building.

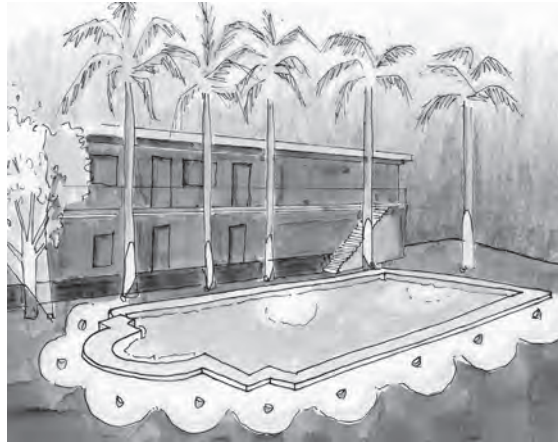
LIGHTING

In the MiMo design period following World War II, most lighting was internalized; new lighting technologies afford opportunities for highlighting the dramatic architectural features of the MiMo design.

In an urban environment, appropriate levels of street and building lighting persuade pedestrians to walk outside after dusk. In addition, appropriate and effective lighting techniques are a useful instrument in establishing a city's image and enhancing the appearance and visibility of an individual property. Well designed lighting creates moods, adds interest and improves safety, while being considerate of not disrupting its surroundings. Residential properties, landscape features and works of art benefit from a well designed lighting system. Additionally, lighting is necessary for providing a safe and secure nighttime environment.



- 1 Attractive or unique architectural details on buildings can be enhanced with well designed and appropriate architectural or accent lighting. Additionally, trees and other landscape features, such as pool decks and recreation areas, benefit from appropriate accent lighting.



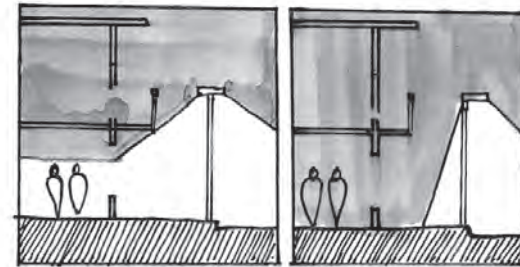
- 2 It is unnecessary to provide intense, glaring illumination to attract attention to a property. Lighting is more effective when the illuminated object is highlighted, but the beam of light itself is invisible. In some cases, a lighting level lower than adjacent buildings, but with carefully placed highlights and hidden spotlights, is more dramatic and striking.



- 3 Entrances, walkways and other circulation systems are successfully identified using enhanced lighting.



- 4 Sometimes reflected light unwittingly overflows into neighboring properties where it may be bothersome. For this reason, light levels in residential areas should be carefully controlled to avoid any negative impact on adjacent properties.



- 5 Generally, white light is most effective for surface lighting on buildings. Soft colored lighting may be considered on a case-by-case basis if it complements the architectural design of the building without overwhelming it.

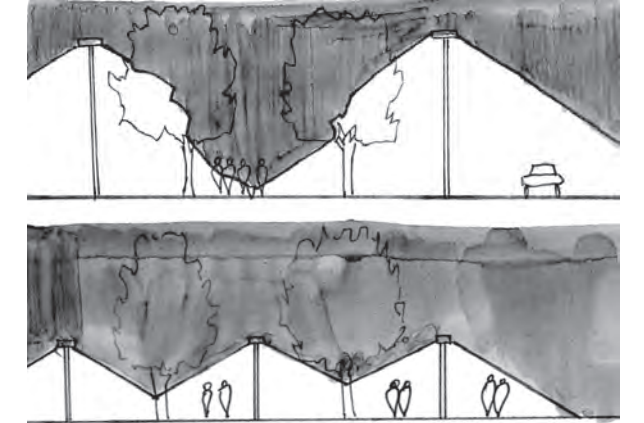
- 6 Designers of Post-War Modern buildings strived to achieve simplicity in their lines and geometry, as well as a balance of proportion, while very intentionally rejecting the emulation or interpretation of styles of the past. For this reason, when choosing light fixtures, it is important to consider how the fixtures complement the architecture of the building. In general, fixtures inspired by other historical styles or periods, such as Victorian, Colonial or Classical undermine the character of Post-War Modern buildings because they are inspired by styles that Post-War Modern buildings consciously avoided, and so they detract from the image of the building.

- 7 The type of light source also requires careful attention. Lighting sources appropriate for a parking lot may not be appropriate for a courtyard or an open-air corridor, and vice versa. There are many lighting types available, for example fluorescent, iron oxide, mercury vapor, and incandescent, and they all generate different colors, intensities and patterns of light. Lighting should be selected to complement the character of the building or space it illuminates.

- 8 Back-lit awnings are not permitted by City Code. Lighting to illuminate the sidewalk may be installed under opaque awnings and will be considered on a case-by-case basis. Refer to the Awnings and Canopies chapter for additional information.

- 9 In order to promote an environment of safety, alleys and service yards should be illuminated at appropriate levels during nighttime hours.

- 10 All parking areas are required by Code to be sufficiently illuminated to provide a safe and functional environment. Pedestrian-scale light masts allow the illumination of the surface of the parking lot but do not create overflow into adjacent properties, and therefore they are ideal for this task. Tall lighting masts are contrary to urban residential uses because they create lighting overflow.



- 11 Security lights should be carefully placed and directed to avoid negative impact on adjacent window, properties, sidewalks and streets.

- 12 Poorly maintained lighting detracts from the appearance of a property and creates safety and security problems. Proper maintenance of lighting fixtures and sources maintains the image of properties and neighborhoods.

SIGNS

The MiMo design period generated striking new signage designs which remain essential to defining the unique character of this era of architecture.

Signs on Post-War Modern residential buildings were often intended to create a sense of drama. The letters that spelled out the name of a building were sometimes used as a graphic decorative device and became a significant design feature of the architecture.

These guidelines address the design and installation of new signs for multi-family Post-War Modern residential buildings, as well as the re-creation and restoration of original and existing signs. Throughout the City of Miami Beach, all signs, including temporary signs, must conform to the applicable signage requirements of the City Code.

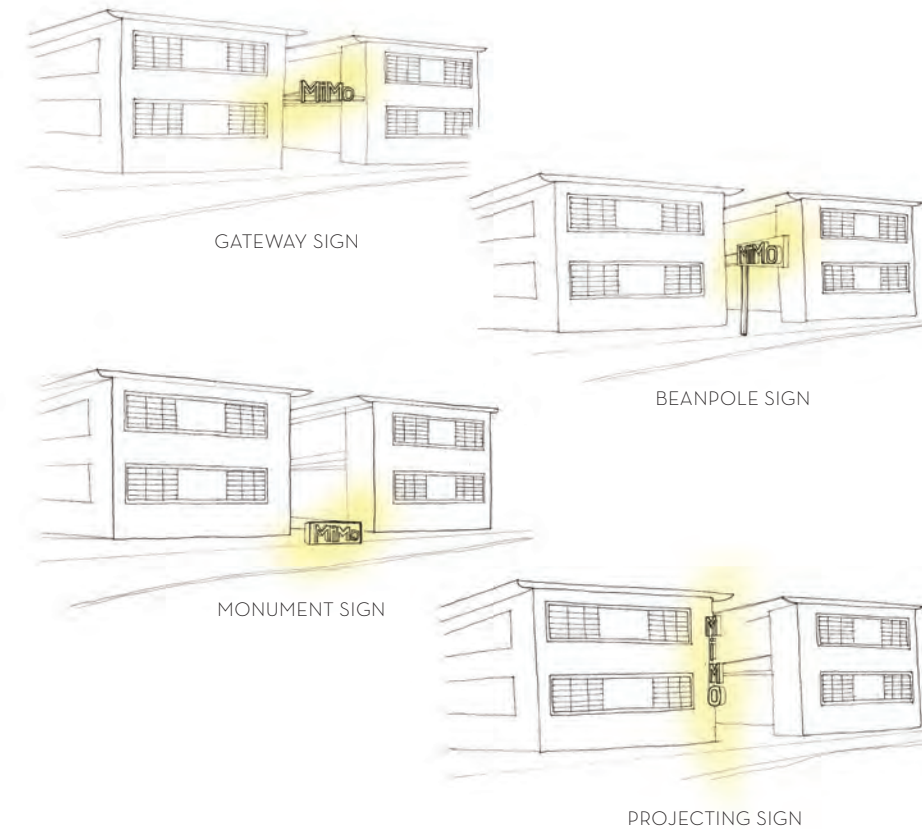


- 1 Post-War Modern multi-family residential buildings may benefit from well designed signs to identify them, as long as these signs are designed and placed in a manner that complements the building.
- 2 Many Post-War Modern building façades contain architectural elements whose purpose is to frame or otherwise highlight signs. If such elements exist, utilizing them will enhance the image of the building.
- 3 Obscuring architectural detailing with new signs distorts the proportions and geometries of the façade and, therefore, is detrimental to the image of the building.
- 4 Mounting new signs on significant original materials such as stone or brick is potentially damaging to the material and, therefore, to the integrity of the building. This should only be done with special care to prevent damaging the material.

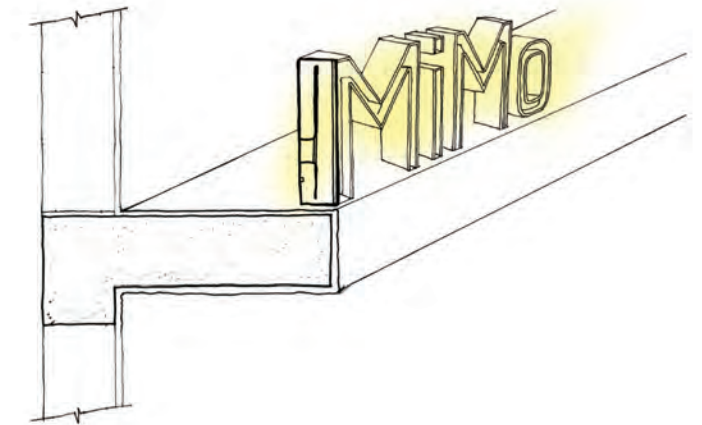
- 5 Back-lit channel letters individually mounted have the least negative impact on MiMo architecture. Open face channel letters with exposed neon will be considered on a case-by-case basis.



- 6 The retention and restoration of existing original signs lends historical identity to a building and is highly desirable.
- 7 Original MiMo signs often were integrated carefully into the design of the building and were sometimes placed over architectural gateways. The re-creation of original signs is encouraged when documentation of the original signage is available. These signs may include existing original wall signs, freestanding gateway signs, projecting signs, monument signs, and pole signs that can be documented as original. Reviews of such signs are on a case-by-case basis. Considerations include the quality, size and location of the sign and its relationship to the design of the building.



- 8 Mounting signs directly to the building surface creates a more unified façade. Signs mounted on or in front of electrical raceways often introduce a bulky and awkward element that rarely is complimentary to the structure. Discreet raceways will be considered on a case-by-case basis if an alternative installation system is not feasible.
- 9 Constructing signs of durable, permanent materials imparts quality to the building. Plastic and foam materials devalue the building. Plastic panels or other types of background devices are distracting and devalue the quality of the sign and the building.
- 10 Signage proposed to be located on a building eyebrow will be evaluated on a case-by-case basis.



Glossary



ACUTE ANGLES Close relatives of the boomerang, acute angles were inspired by delta-winged military jets that broke speed records in the 1950s. Just as streamlining evoked mighty locomotives and nautical designs in the 1930s, the acute angle and the delta-wing shape became icons of speed in the post-war period. The motif was employed in two dimensions as a decorative element and to give buildings a dynamic, futuristic look.

AGGREGATE STONES, pebbles, or colored gravel in cement, left untreated for texture or polished mirror-smooth, used to surface walls, floors, and paving.

ALUMINUM Postwar budgets and advanced engineering and construction methods allowed for the use of this wonder material with a high strength-to-weight ratio. Plate glass windows and doors were trimmed in aluminum. Through the electrochemical process of anodizing, protective and decorative coatings were added. Gold anodized aluminum was often used in sun grilles.

ARCHITECTURE PARLANTE Architecture imbued with symbolism to communicate its function. Also known as programmatic architecture.

ASYMMETRY In a clean break with the past, Modernism rejected Beaux Arts ideals of balance, symmetry, and hierarchy, which pervaded Art Deco design. Modern engineering made irrelevant the centuries-old reliance on Classical orders in aesthetic compositions and elevations. In plan, asymmetry expressed the American desire for informality and individuality.

BAROQUE The lush ornamentation, lavish materials, and awe-inspiring interior space of late Renaissance architecture provided inspiration for architect Morris Lapidus and subsequently his colleagues in pursuit of Miami Beach pleasure domes.

BEANPOLES Debuted in the interiors of architect Morris Lapidus, thin metal rods used as decoration and for space modulation in interior and exterior spaces. They often projected from built-in planters in all manner of balconies, lobbies, stairways, and porches.

BOOMERANGS The boomerang shape, an aerodynamic curve with primitive connotations, became shorthand for speed. The boomerang's nationwide popularity in the post-war era made it ubiquitous in MiMo, appearing in two- and three-dimensional forms in apartment buildings, supermarkets, and motels.

BOXED WINDOWS After World War II, Art Deco eyebrows were elongated into both horizontal and vertical decorative elements, often framing compositions of windows and slump brick panels. The boxes, or frames, were frequently flared or tapered for an aerodynamic effect.

BRISE-SOLEILS A fixed or movable device, such as fins or louvers, designed to block the direct entrance of sun rays into a building. Le Corbusier was the first to design these louvered screens as an integral part of a building, not only for climate control, but also to give depth and richness to the normally flat surface of the typical modern façade. The pattern of vertical and horizontal compartments creates a different set of rhythms from those produced by the alternation of wall and window which the brise-soleil conceals. In South Florida, brise-soleils were executed in masonry, metal, and even wood.

BUILT-IN PLANTERS In Prairie houses, Frank Lloyd Wright often employed successively smaller planters at the bases of exterior walls and corners to anchor the structure to the landscape and create a graduation from the architectural to the natural.

CANTED WINDOWS Extending beyond the typical Modernist use of glass, post-war architects often tilted glass walls outward from the base, usually seen in motel lobbies, storefronts, gas stations, and fast-food restaurants.

CANTILEVER A beam or other projection that is unsupported at its projecting end. Cantilevering shows off structural innovation and contributes to asymmetrical design. In the International Style, cantilevering made possible projecting canopies and balconies, also called tray balconies. Shallow masonry cantilevers, a MiMo ornamental device, evolved from eyebrows typical of 1930s Tropical Art Deco architecture.

CATWALKS A cost-saving device compared with enclosed corridors, exposed, cantilevered exterior corridors were a basic ingredient of two-story motels, residential apartment-motels, and schools throughout South Florida. Sometimes called galleries, the open-air passageways provided a greater sense of independence to individual units.

CHALET STYLE A close cousin to the bold gables of Frank Lloyd Wright's Prairie Style houses, the Swiss chalet style distilled the image of domesticity into a gabled front façade with a prominent, long-eaved roof. Multi-unit MiMo apartment-motels were often consolidated under a symbolic unifying gable roof, an expression of the American dream of a home of one's own.

CHEESE HOLES Round holes of various sizes used in interior and exterior walls, which added visual interest in an organic and Modernist way.

CLERESTORIES Narrow window bands set close to the roofline that let in natural light and emphasize airy structural compositions. Clerestories were a common feature in Wrightian residences and were also adopted by MiMo architects for their Modernist appeal.

COMPRESSED ARCHES Vertically squeezed or horizontally squashed semicircular arches, forming roofs or canopies, were a popular device borrowed from Brazilian Modernism, which disapproved of emphasizing entryways.

CONCRETE BLOCK AND STUCCO Readily available, mass-produced concrete block became the standard South Florida building material from the 1920s onward. Stucco, an inexpensive fine plaster, was used to coat exterior block walls and was molded into decorative features. South Florida's fantasy architecture from Mediterranean Revival to MiMo futurism was often simply stucco "icing" on a standard "cake" of concrete block. In MiMo architecture, stucco was molded into myriad abstract relief patterns to harness the abundant sunshine for ornamental effect.

CONCRETE CANOPIES Thin concrete roofs, which often projected outward toward a driveway, street, or parking lot, were commonly used to shelter building entrances. Minimalist canopies with an uplifting sweep or jaunty zigzag celebrated arrival at elegant MiMo apartment buildings.

CRAB ORCHARD STONE Quarried in the Cumberland Plateau of eastern Tennessee, this hard sandstone became a defining decorative material in MiMo from the hotels of Miami Beach to the campus of the University of Miami. The popularity of the stone, which comes in shades of tan, buff, blue gray, and pink, was partly inspired by Wright's reliance on natural materials in his domestic architecture. The use of natural stone in the



rec room of the House of the Future at the 1939–40 New York World’s Fair strengthened the association of natural stone with leisure, informality, and the good life.

CURTAIN WALL CONSTRUCTION A non-structural exterior wall, usually of plate glass, steel, or aluminum, hung on the structural frame. Developed in cool, cloudy Northern European climates, glass curtain walls required shading with grilles, screen block, and louvers in South Florida.

CUTOUTS The simple device of perforating eaves with circular or square openings hinted at the structural potential of modern materials and provided visual interest. Roof cutouts were usually paired with a corresponding planter to allow plants to grow through the openings. A palm tree piercing a perforated eave is a classic MiMo touch.

DECORATIVE RAILINGS Railings along catwalks in motels and motel-apartments were frequently among the few opportunities for ornamentation, and appeared in imaginative, abstract geometric and curvilinear compositions. North Beach is particularly rich in decorative railings.

DELTA WINGS Inspired by the advancement in aviation following World War II, the delta wing shape appeared in MiMo architecture as a whimsical design element. During the 1950s the delta wing was used on several aircraft to increase speed. When viewed from above, the delta wing shape resembles a triangle.

EGGCRATE FAÇADES The square or rectangular grid created by exposed edges of concrete floors and walls projecting outward from the building wall. Shallow modules provided shade to windows and a place to anchor brise-soleils, while deeper recesses are often used for terraces.

EXPOSED CONCRETE In keeping with the Modernist tenet of the exterior expression of structure and materials, exposed concrete was used extensively by Le Corbusier, Oscar Niemeyer, and Marcel Breuer. The material was common in late MiMo, reaching high points in the Miami Marine Stadium and the Kendall campus of Miami-Dade College.

EYEBROWS An example of styling in MiMo architecture, cantilevered sunshades over individual windows and doors in 1930s Tropical Art Deco evolved into continuous, horizontal cantilevers and vertical elements of varying depths.

FLOATING PLANES The concept of defining space with a hovering, seemingly immaterial appearance was made possible due to advancements in building materials. Reinforced concrete offered a homogenous coherence and horizontal spreads of considerable dimensions. This new architectural design technique was influenced by The De Stijl art movement and imitated the free-floating lines and planes of a Mondrian work. The first internationally recognized building which defined volume with the use of floating planes was the Barcelona Pavilion designed by Ludwig Mies van der Rohe for the 1929 International Exposition in Barcelona, Spain. The use of floating planes was also embraced by Frank Lloyd Wright who influenced many architects following World War II who sought to create dramatic, monumental spaces.

FLOATING STAIRCASES Flights of stairs without risers or sideboards, often cantilevered from a wall so that the treads seem to float without support, embody the space-age aspirations of the era and can be found in MiMo residences to offices.

FOLDED PLANES Inspired by the iconic roof of the U.S. Air Force Academy Chapel in Colorado Springs, Colorado,

concrete planes, folded into origami-like configurations, create a wealth of light and shadow effects. Used as a purely ornamental device, folded planes appear in commercial MiMo architecture.

HYPERBOLIC PARABOLOIDS Square and circular planes were warped into eye-catching topical shapes. MiMo architects enthusiastically adopted the popular 1950s motif of acute hyperbolic parabolic curves, showcased in the extraordinary roof of the now-demolished Best Western Marina Inn and Yacht Harbor in Fort Lauderdale or the daringly engineered canopy of the demolished Diplomat Hotel in Hollywood, Florida.

INTERIOR AND EXTERIOR BLENDING Continuity of interior and exterior space is characteristic of Modernist design in all climes, but South Florida’s mild weather was especially conducive to the concept, most notably in the homes of Igor B. Plevitzky and the Coconut Grove School of architects (Alfred Browning Parker, Rufus Nims, Kenneth Treister, George Reed, et al.).

INTERIOR SPACE MODULATION Modern construction and engineering freed architects from reliance on load-bearing walls, allowing for voluminous interiors unbounded by walls and traditional room proportions. Drawing on his expertise in store design, Morris Lapidus pioneered the use of multiple floor levels to create subtle spatial transitions in his hotel interiors. Other space modulation devices include tray ceilings, banks of beanpoles, cheesehole walls, faux support columns, and ancillary enclosed volumes like reception desks and banks of elevators.

INTERSECTING PLANES The mastery of man over materials was celebrated with masonry, stone, and glass planes that magically

seemed to intersect and interpenetrate, in canopies that penetrate glass lobby walls and entire façade compositions.

JALOUSIES Operable, narrow glass louvers were ubiquitous before air-conditioning, because of their ability to maintain ventilation during rainy weather. Jalousies of frosted glass simultaneously provided privacy and were used in a full range of sizes from small bathroom windows to long, floor-to-ceiling arrangements. The West Laboratory School at the University of Miami was the acme of jalousie construction.

KEYSTONE A form of oolitic limestone, or oolite, quarried in Florida’s Middle Keys, hence its name. Readily available, easy to carve, and textured with fossilized sea life, Keystone was used extensively in Mediterranean Revival and Tropical Art Deco structures. It was used less frequently after the war, almost invariably in random ashlar. Miami oolite, which makes up the South Florida coastal ridge, is a softer, more porous type and is commonly given the misnomer coral rock.

LETTERING Certain typefaces on building signs, especially a round, upward-slanting script style, imparted a sense of carefree, casual 1950s living. Other motifs included sans serif letters, slanting italicized letters, and use of upper and lower cases.

LOUVERS An assembly of angled, overlapping blades or slats, set vertically or horizontally, which may be fixed or adjustable. Originally louvers were designed for window and door openings to admit air and sunlight to varying degrees and to exclude rain. A common feature of Subtropical Modern homes, wooden louvers, modeled after the operable wooden louvers from Cuba known as persianas, very likely inspired jalousie windows. In Modern architecture, louvers became elaborate design elements in their own right. Fixed vertical louvers,



in metal or masonry, were used to block direct sunlight and to create colonnade-like shadows, as in the Collins Avenue Façades of the Seville and Golden Sands hotels, and in Temple Menorah.

MARINE IMAGERY MiMo buildings continued the Tropical Art Deco tradition of depicting aquatic images but in more abstract forms, like the gradations of sea green mosaic tile representing the ocean’s depths on the façade of the Eden Roc hotel. Representations of sea life, such as mermaids, dolphins, sea horses, and seashells, were common in MiMo residences and grand resorts, as well as in MiMo motels especially in Fort Lauderdale.

METAL GRILLES Sometimes custom-made in an abundance of finely detailed designs, grilles were used in a similar manner as concrete brise-soleils and louvers: to block sunlight. A ubiquitous feature of MiMo office buildings until they were made obsolete by reflective thermal glass, metal grilles were sometimes used simply for decorative effect.

MOSAIC TILE Glass tile, primarily from Italy, and ceramic tile rank with crab orchard stone as a common MiMo decorative material. Mosaic tile made a splashy debut in the full-height panels on the façade of the Eden Roc hotel, and was later used to give color and sparkle to spandrels, public interior spaces, fountain basins, bathrooms, and other features.

MURALS Reflecting the popularity of the abstract, billboard-sized murals in Mexico City, large exterior murals appeared in and on MiMo architecture after 1960. The tile murals of the Bacardi USA building are one of the finest examples of Latin American influence on MiMo. At the Alexander condominium-hotel, Charles F. McKirahan employed a Polynesian-style

full-height mural to give the narrow end of the building a strong presence on Collins Avenue.

PEDESTAL AND SUPERSTRUCTURE Large Modernist buildings are often composed of a tower or superstructure atop a broad base. Pedestal-and-tower buildings were usually office buildings, but architects of resorts adapted the configuration, which was subsequently copied around the world and known as the Miami Beach hotel type. In resorts, the wide pedestal was appropriate for housing lobbies, ballrooms, and meeting halls.

PILOTIS Another adaptation of the International Style, cylindrical concrete support columns that raised building masses above open ground levels and created areas of shade often used for parking.

PLATE GLASS Thick sheets of high-quality glass were cast in broad plates and used in storefronts and hotel and motel lobbies. Steel-skeleton construction allowed for a generous use of glass, which became a hallmark of the International Style and a universal Modernist expression. In South Florida, a truly modern use of glass was not widely achievable until the MiMo period.

POPULUXE A term coined by the architectural critic Thomas Hine, referring to the flamboyant decorative style of the 1950s and 1960s, which employed bright colors and futuristic contours to impart a sense of luxury to mass-produced consumer items from appliances and cars to Miami Beach resorts.

PORTE COCHERE In MiMo resorts, the driveway drop-off area becomes a dramatic ornamental device. In some

hotel and even condominium exteriors, elaborate, fanciful porte cocheres were the only break from otherwise purely Modernist designs.

PROSCENIUM A façade frame which connects and projects above the roofline of two adjacent buildings.

PYLONS MiMo commercial and apartment buildings frequently employed vertical masonry panels as the centerpiece of a façade of intersecting planes and volumes. Pylons were also the preferred location for automobile-scale signage. Reflecting the popularity of Wright’s Fallingwater, pylons were often clad in crab orchard stone or slump brick.

RANDOM ASHLAR PATTERN Paving or masonry consisting of stones cut into squares and rectangles of various sizes, or a faux version of this.

RIBBON WINDOWS Horizontal window bands were another earmark of the International Style, with its non-load-bearing walls. Ribbon windows appear in MiMo-style offices, hotels, and institutional buildings. Banded windows imparted a strong Modernist character to hotels like the Fontainebleau and were shaded with sun-protection devices in Subtropical Modernist buildings.

ROMAN BRICK Distinctively thinner and longer than conventional brick, roman brick was favored by Frank Lloyd Wright for its horizontality and fine texture, and became popular in the 1950s. Most roman brick in MiMo architecture is actually slump brick.

ROUNDED EAVES An easily distinguishable characteristic of MiMo apartment-motels and houses, thick, rounded eaves



were used to impart a sense of fullness to otherwise spare, rectilinear structures and to emphasize a sense of shelter.

SAWTOOTHED FLOOR PLATES MiMo hotel architects often designed floor plates with rooms set on the angle of a sawtooth, so that rooms facing north and south would have ocean views.

SCREEN BLOCK Mass-produced, cast-concrete block, also known locally as “breeze block,” was used in an imaginative variety of geometric and organic patterns to create stunning abstract compositions like the all-screen-block façade of the TechnoMarine Building on Biscayne Boulevard and NE 29 Street, and Wahl Snyder’s McArthur Engineering Building at the University of Miami.

SCREENING Subtropical Modernists fully integrated mesh screening into their residential designs as they adapted the open Modernist houses of semi-arid California to humid, mosquito-ridden South Florida.

SHED ROOFS Wright brought the long, sloping shed roof, a feature of what Vincent Scully identified as the Shingle Style, back into the American mainstream with his design for Taliesin West. The shed roof became shorthand for modern American domesticity and can be found in countless MiMo houses and motels.

SLUMP BRICK Synthetic slumped brick was a ubiquitous decorative material in MiMo. The inexpensive concrete product came in a range of sizes, textures, and colors. Brick imagery balanced Modernism with a sense of tradition and domesticity.



SPACE-AGE IMAGERY A number of MiMo landmarks capitalized on space-age imagery, such as the University of Miami’s Pick Music Library, with its extending pods like those on a lunar landing module, and the Pepsi-Cola Bottling pavilion, with its spiraling floating staircases, a vision straight out of the 1953 film The War of the Worlds. Toward the end of the MiMo era, the television cartoon series The Jetsons reflected and parodied the period fascination with the future.

SPANDRELS Panels placed between the window head of one floor and the windowsill of the floor above. MiMo spandrels were often clad in glass mosaic tile or textured, painted stucco.

TEXTURED STUCCO Inexpensive stucco lent itself to the creation of textures and abstract decorative relief in the abundant Miami sunshine.

TRAY BALCONIES Cantilevered balconies with concrete parapets (low walls, usually formed by the projection of a wall above a flat roof) are used for their sculptural form in MiMo hotels and residences.

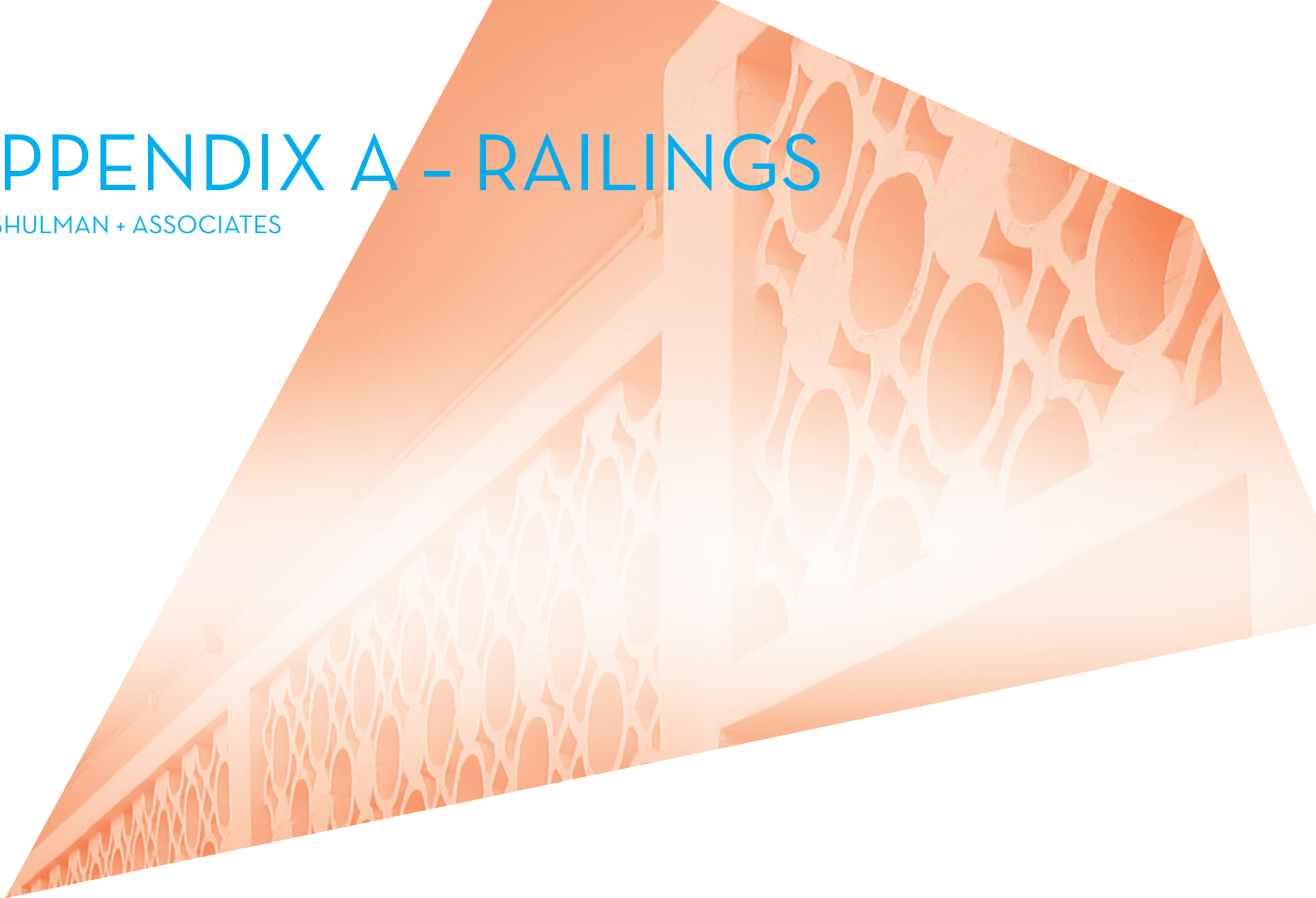
WOGGLES Biomorphic kidney shapes popular in postwar design usually appeared as ceiling coves or trays for indirect lighting.

This Glossary is adapted, with permission from the author, from “MiMo: Miami Modern Revealed” by Nash, Eric P., and Robinson Jr., Randall. Chronicle Books, San Francisco, 2004.



APPENDIX A – RAILINGS

BY: SHULMAN + ASSOCIATES



STATEMENT OF PROBLEM

Remediation, restoration or replacement of the original mid-century railings has been identified as a high priority for the City of Miami Beach. Miami Beach’s highly corrosive environment, along with normal wear and tear, occasional storms and infrequent maintenance, takes its toll on metal, concrete and wood railings. Many existing metal railings display high levels of rust deterioration, causing structural instability and unsightly staining of adjacent materials. This is especially evident at the base of posts where the metal comes into contact with concrete and standing water.

In addition, many postwar railing systems do not meet current ADA and Building Codes, such as height, rejection rules, railing gripability and structural tolerances. For instance, many older guardrails rise to three feet high, whereas three foot six inches is currently required. While older railing systems are often very open, contemporary building codes

require that guardrails be designed so that a four inch sphere cannot pass through any point below three feet. Contemporary codes also carefully prescribe the cross section of handrails. Existing rails may require redesign and modification or replacement during re-certifications, changes of use or substantial improvements equaling more than 50% of the value of the building to bring the buildings up to code.

Finally, current fabrication methodologies and changes in manufacturing technology and methods have made pure replication of the historic railings cost prohibitive. Materials such as aluminum, more suited to this corrosive environment have different properties from the original steel or iron railings, and so exact replication of member sizes becomes difficult.



STRUCTURAL DAMAGE



POOR REMEDIATION TECHNIQUES



LARGE OPENINGS



POOR ADAPTATION TECHNIQUES



POOR MAINTENANCE



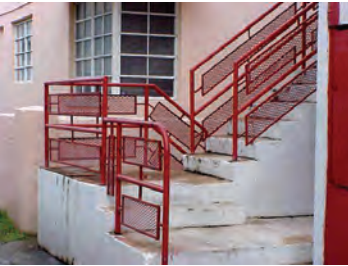
REPAIRS USING INCORRECT MATERIALS

RAIL TYPOLOGIES

Although the designs and styles are simply too numerous to design replacement railings for each within this document, a summary of some common groups is described here to help identify each type and provide an understanding of the design intent for each type.

A Metal Bar with Mesh

The mesh railings are often framed much like a simple pipe rail, but are infilled with a horizontally proportioned panel of expanded metal mesh, delicately supported on fine bracing members offset from the corners of the panel.



RAIL TYPOLOGIES

B Metal Bar

Historically, these designs were wrought iron which is a ductile material with a high tensile strength, and can be easily shaped when hot or cold by either hammering or rolling. It is relatively good at withstanding corrosion, however Miami Beach’s harsh seaside conditions test the limits, and without suitable maintenance and repairs to portions of iron exposed to the elements, substantial damage can quickly occur. Wrought iron can be heat welded quite easily, that is, fused together by hammering or pressure if brought together at an appropriately high heat. It can also be drill bolted or riveted, however heat welded is by far the most typical joining technique displayed in the existing Mimo railings on Miami Beach.

Vertical bars were usually square in section, or in the case of the Ribbon designs, were flat rectangular sections.

Handrail profiles were typically rectangular metal bar stock, with many of the more decorative profiles added at a later date.

i Ribbon: Typically these railings are comprised of a flat metal bar stock, folded and curved between a flat bar stock bottom rail and handrail, and presenting the narrow side to the façade. This results in an exceptionally thin visible profile. These designs were more difficult to adapt, since they were quite sparse and once compliant with the 4” rejection rule, became far too dense and when viewed from even a slight angle, became too opaque. These designs would be more suitably modified using a secondary layer of mesh or glass behind to provide code compliance.



ii Vertical Picket with Enhancements: This style varies greatly, however the underlying concept exhibits a repetitive vertical picket, sometimes straight and sometimes twisted, broken up with a detailed elements typically located between two pickets.



RAIL TYPOLOGIES

iii Appliqué: Appliqué railings are typically a simple vertical picket railings, with plate metal attached either between the railings or applied directly to the front of the pickets. The proportion of the size of the applied plate versus the picket is important to note, and are typically quite small.



iv Geometric: Many of the designs display a range of diagonal striping, diamonds, 'x's and grids. These typically straight bar stock show much promise for adaptability to the current codes, however the density of the members and the profile of the stock using contemporary materials can diminish the success of the final product if not carefully designed.



RAIL TYPOLOGIES

v Curves and Circles: Similar to the geometric, however with curved bar stock between the bottom rail and the handrail. These are often very difficult to adapt since they are typically very open in the design and very light. Studies attempting to adapt these were typically unsuccessful, suggesting that in order to be code compliant a secondary mesh or glass element be employed.



vi Pipe: Common, but often forgotten, the simple pipe rail is typically simply 3 horizontal rails, with curved corners transitioning the handrail to become the newel post. These are difficult to adapt without completely modifying the design, since the spacing between the bars is too wide. Details must be concentrated on, since new pipe rail fittings typically have a male/female type connection, which does not match many of the historic conditions.



RAIL TYPOLOGIES

C

Precast Concrete

Less common, but appearing on many of the buildings from this period, was the use of pre-cast concrete balusters, some using smaller panels cast almost like oversized concrete masonry units (CMU) spanning between the deck and a concrete hand rail. Others appear to have been cast as entire baluster units, incorporating the newel posts, handrails and spinals or rails in one element approximately 6-8’ long.



D

Modular Concrete Breezeblock

Typically still in good condition, the concrete breezeblock railings tied in to the screens, providing an abstract frieze and casting an intricate play of shadows across the facades. Many of the designs are no longer in fabrication, however most already comply with the current code 4” rejection rules, so are easily adaptable and fabricators are available to provide custom designs to match the existing blocks.



RAIL TYPOLOGIES

E

Wood

Closely related to the metal bar stock railings, these metal framed railings used redwood slats for intermediate rails, and often had wide sloping handrails.



CRITERIA

In this document, we explore three principle approaches to working with original non-conforming railing systems: restore/adapt; replicate/adapt; and contemporary interpretation.

1

Restore/Adapt

Preservation may be appropriate if the original historic railings are essentially intact. Proof of the original appearance, such as photographs or drawings, is helpful in understanding the original configuration of the rails, and the extent of any changes over time. Restoration and/or adaptation is generally preferred to a wholesale removal and replacement of the existing railings; every attempt should be made to explore this methodology.

Repair and minor replacement of small portions of a railing being restored should faithfully replicate the original, using exact materials, member profiles, sections, sizes and attachment details. Minor modifications may also be possible to enable restoration of the existing original handrail, such as the addition of an intermediate member, or a glass panel behind, which may satisfy current code requirements.

When railings are original, less stringent standards are often applied, such as allowance for a 6” rejection rule rather than the 4” rejection applied to new railings. A full code analysis of the railing should be completed prior to determination that it warrants replacement.

2

Replicate/Adapt

Should a railing be unsuitable for restoration due to severe deterioration, or if the original railings have been subsequently replaced with a less historically appropriate railing, replication of the original would be preferred. Historic photos and/or drawings may provide a resource for the design of the replicated railings and all efforts should be made to provide a historically accurate replication of the original. After restoration, faithful replication and adaptation would be the next most preferred methodology for railing replacement.

If feasible, materials matching the original should be used. However, if appropriate alternatives are able to faithfully replicate the original materials they may be considered. For example, aluminum railings are often used to replace steel railing, since the material is less prone to corrosion and requires less ongoing maintenance. However, the replicate must be able to match the profiles, sizes and finishes of the original to be considered a true replication. As described for restore/adapt, minor modifications to enable faithful replication may be possible to correct minor code non-compliance issues.

CRITERIA

3

Contemporary Interpretation of the Original Railing

Should a railing be both significantly deteriorated and unsuitable for adaptation to meet current codes, a contemporary interpretation may be considered an appropriate methodology for railing replacement. Interpretation of the design of various historic modern railing systems is discussed in Appendix A, as a number of case studies have brought into focus various strategies for achieving the historic intent of the design without necessarily requiring a true replica of the original. Design input from the City of Miami Beach Planning Department should be sought in order to select an appropriate interpretive design solution. Note that for the purposes of receiving Historic Preservation tax credits, contemporary interpretation is not recommended.

4

Prevention and Maintenance

The City of Miami Beach considers original postwar railing systems a design and historic preservation resource. Building owner(s) are requested to pay attention to providing proper maintenance, timely repair and constant care for these important resources. Repairs and maintenance should be completed with the proper supervision, correct and thoughtful details and quality workmanship.

5

Understanding of the whole

Railing systems are holistic in nature, and every part contributes to the overall aesthetic and often structural integrity of the whole. A particular detail evident in many postwar railing systems illustrates the point. In many locations, the newel post of the railing extends from the deck to the underside of the eaves, providing additional structural integrity and minimizing the need to a large diameter post or additional structural bracing. Such details are important to the design of the railings, and should be retained or replicated.


DESIGN STRATEGIES

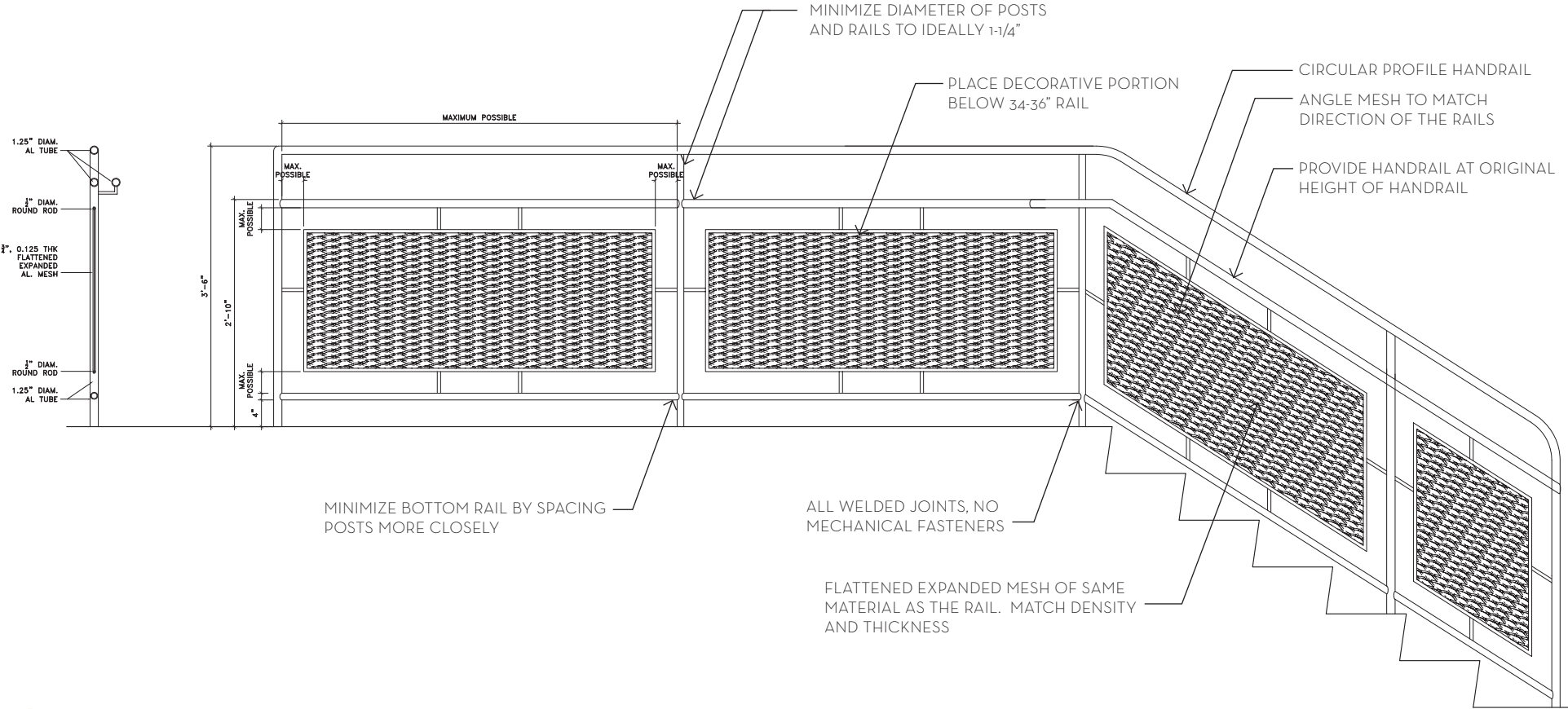
The design studies were divided into typologies based on materiality groups described previously, rather than style, allowing for further discussion on the fabrication and installation constraints, while also addressing some overall design strategies able to be implemented across the board to adapt the railings to meet current codes.

A

Mesh in Frame

In order to maintain the overall horizontal proportions of this rail type, it is important to provide the mesh panel only below the 34-36" high rail, then float a second rail above. This strategy is important for any horizontally oriented rail design since the span of the horizontal rails is often limited to 4-5' maximum. The mesh itself should be a flattened expanded metal to minimize sharp edges, and the size of the openings should be carefully matched to the original.






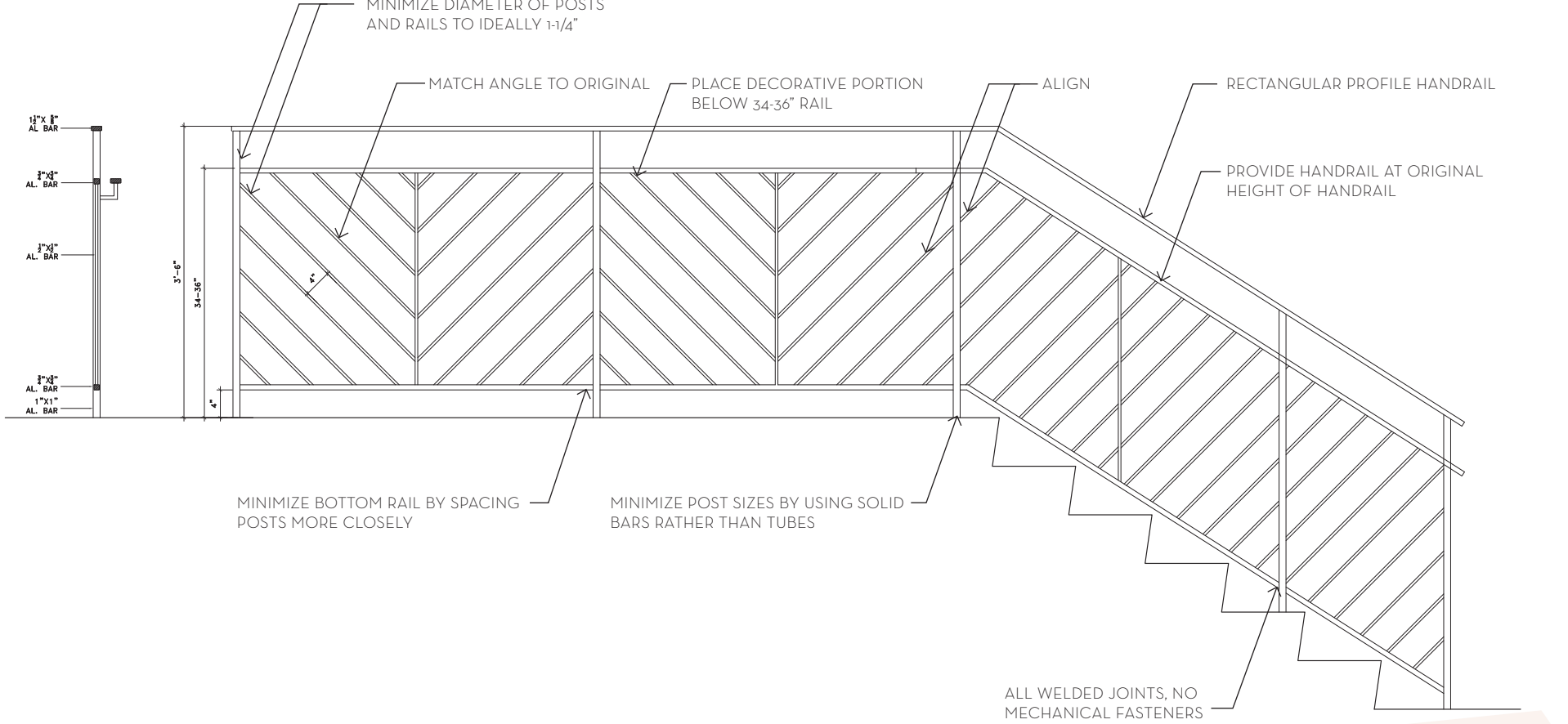
DESIGN STRATEGIES

B

Metal Bar - Angle

The diagonal design is a simple adaptation of a standard picket rail design, however it is important to note the proportions of the members, and the fact that the diagonals do not extend past the 34-36" high rail, to keep the denser part of the railing at the historically lower height. All other structural members should be kept to a minimum profile, and rectangular bars used for all handrails.

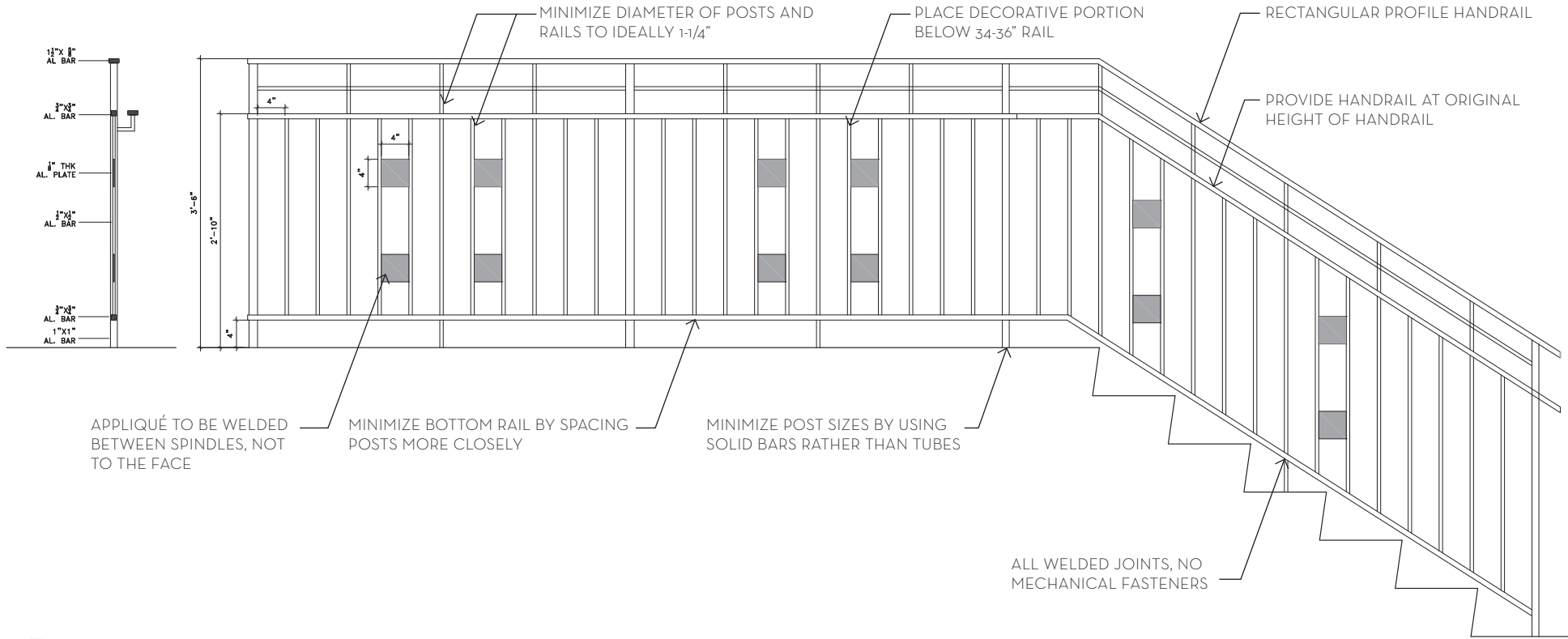




DESIGN STRATEGIES

B Metal Bar - Appliqué

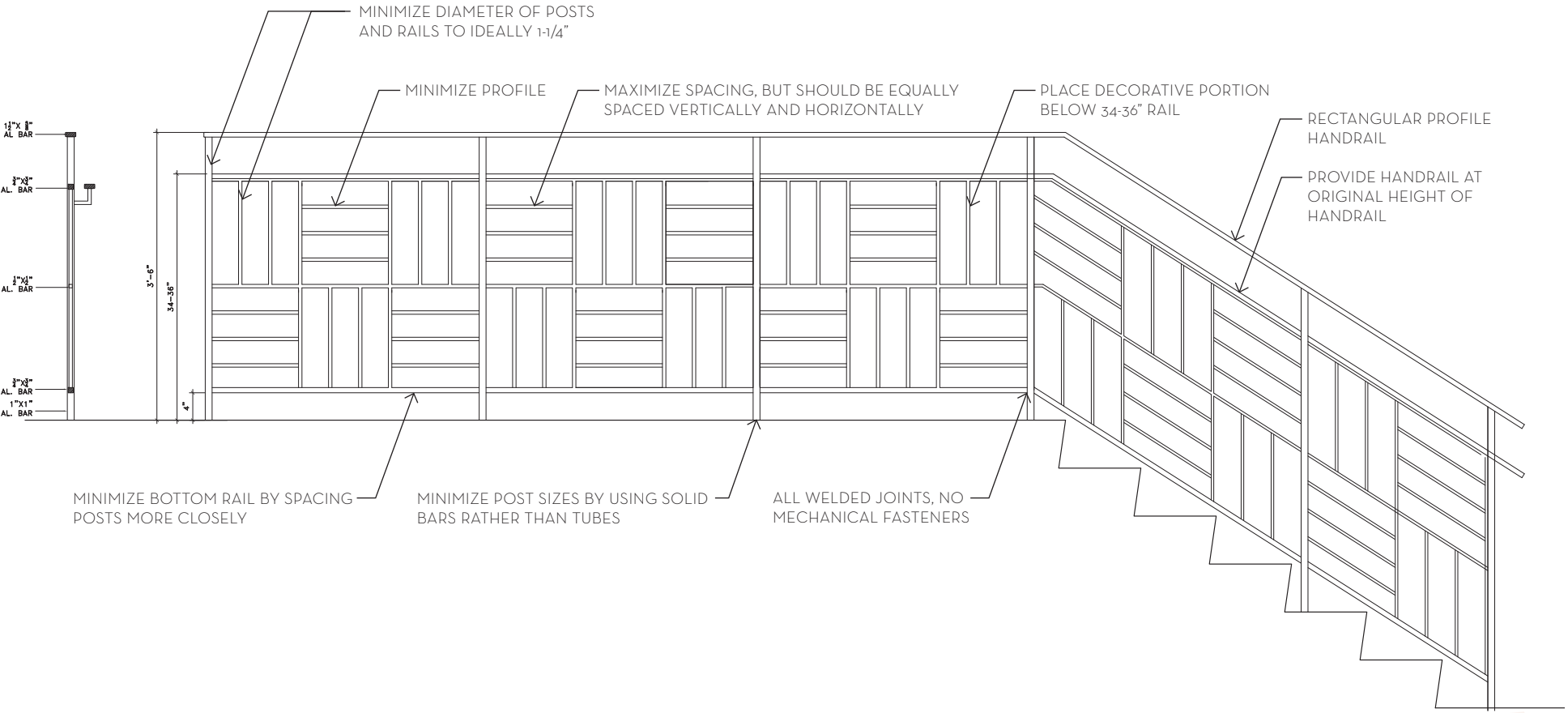
Applique designs are widely varied, however in principle, the applique should not be so large as to dominate the open/solid proportions of the original, and the attachment method to the pickets should match the existing design. The spacing of the applique in the original should be carefully noted, and the bars minimized in size as much as possible.



DESIGN STRATEGIES

B Metal Bar - Split

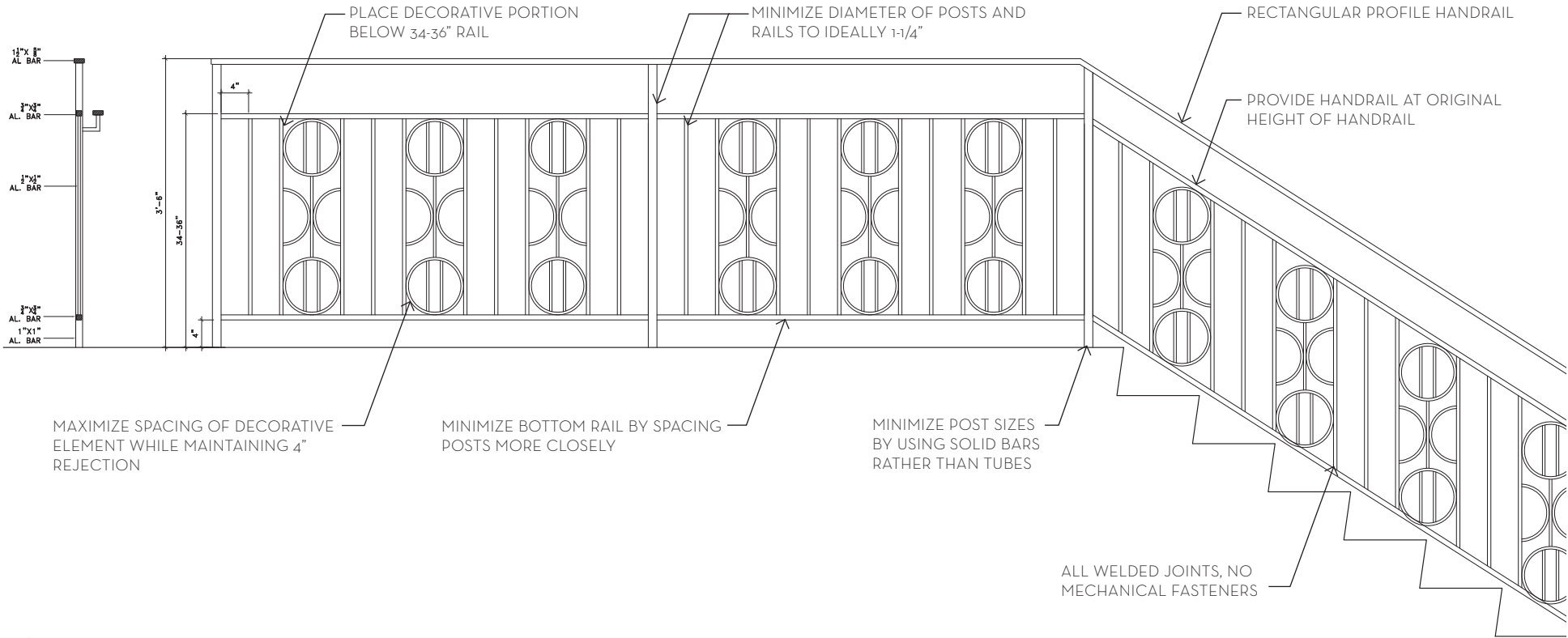
This design, while not common, was easily adapted to a number of design types, since the smaller rectangular opening allowed for the density of the original to remain while still providing for the 4" rejection as required by code.



DESIGN STRATEGIES

B Metal Bar - Circles

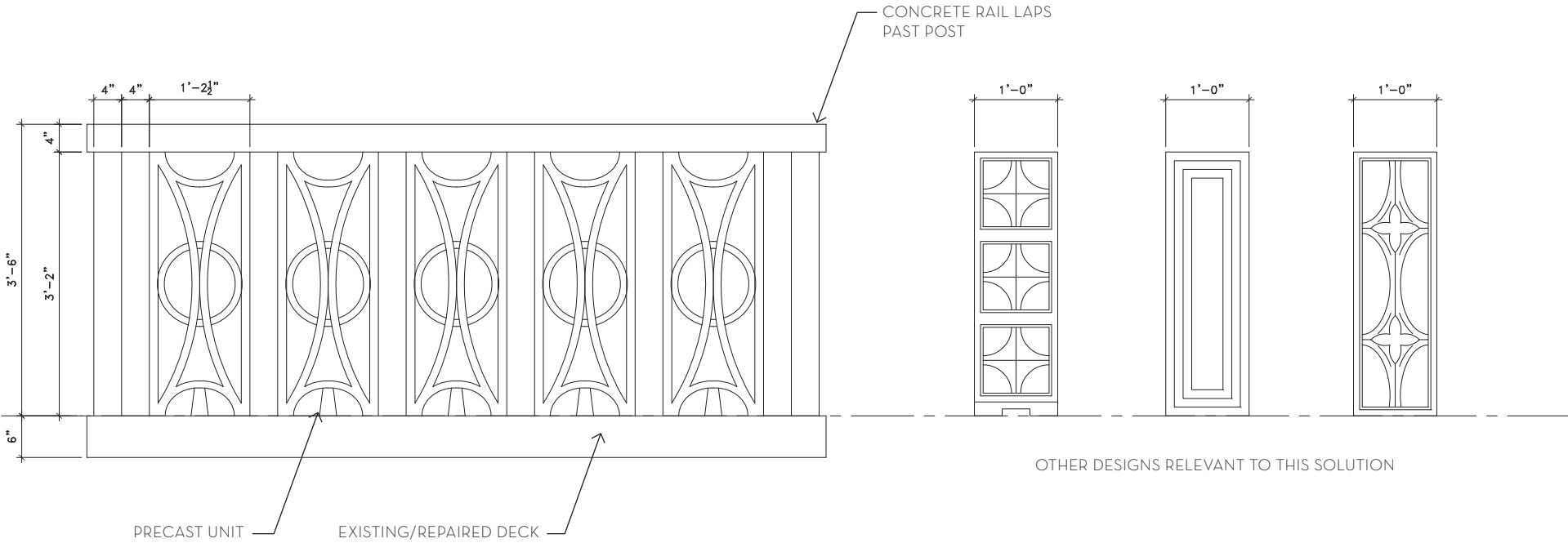
Circles are the hardest type to adjust to meet current codes. Here, the scale of the circles was kept similar to the original by only continuing the design to the 34-36" rail height. In addition, separate intermediate bars were added to the circles.



DESIGN STRATEGIES

C Precast Concrete

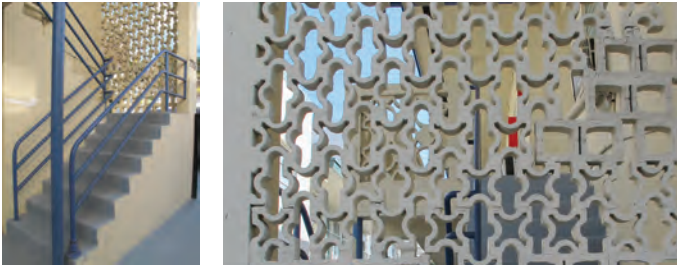
Precast concrete balustrades are currently difficult to source, however since these are modular units, they can be cast similar to breezeblock. To meet the current codes, units may need to be cast larger than the existing to maintain the same proportions and yet meet 42" in height. Due to increased structural standards, lightweight concrete may need to be considered.



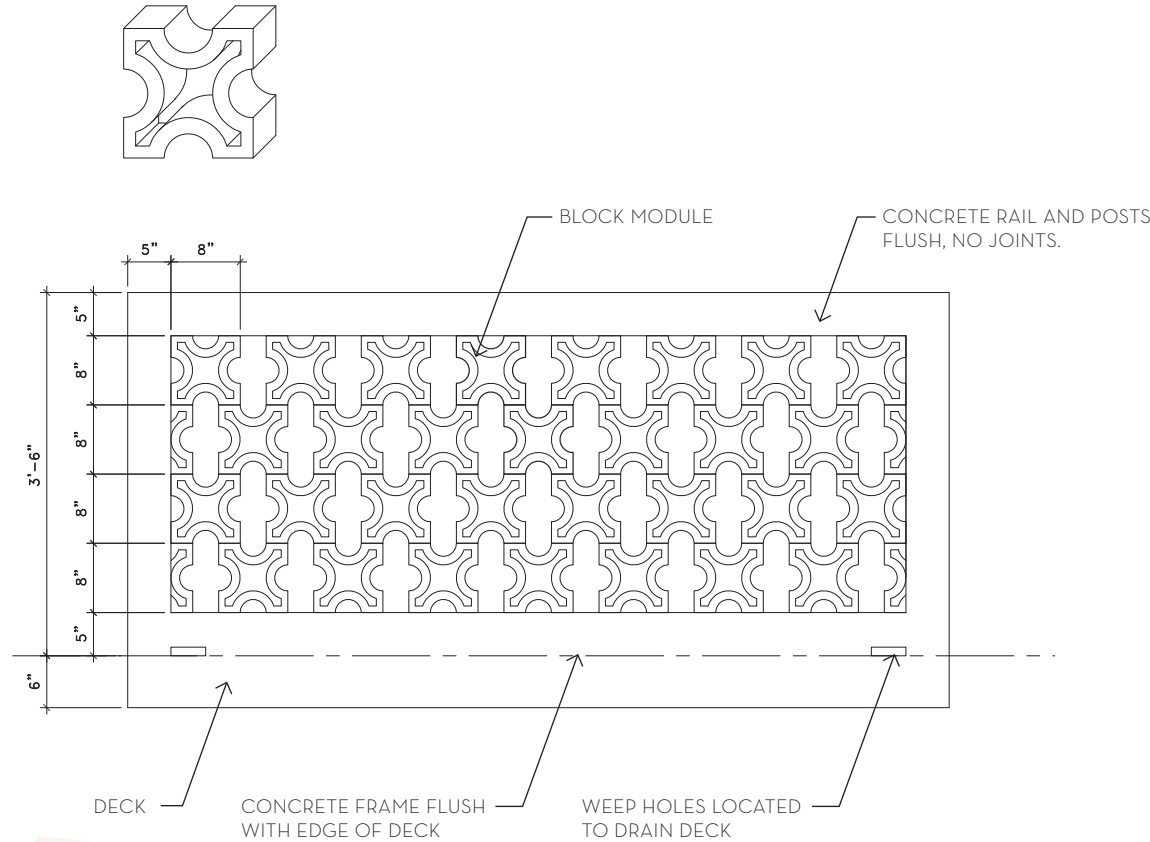
DESIGN STRATEGIES

D Modular Concrete Breezeblock: 8" x 8" Type

One of the smaller modules, 8"x8", formed open sided designs laid in an offset pattern. These formed different shaped openings between the blocks. They were used in both balustrades and screen walls. Although difficult to obtain, infill with any other block results in a poor version of the original.



SUITABLE BLOCK TYPE
DESIGN COURTESY OF LHP GROUP INC. MIAMI



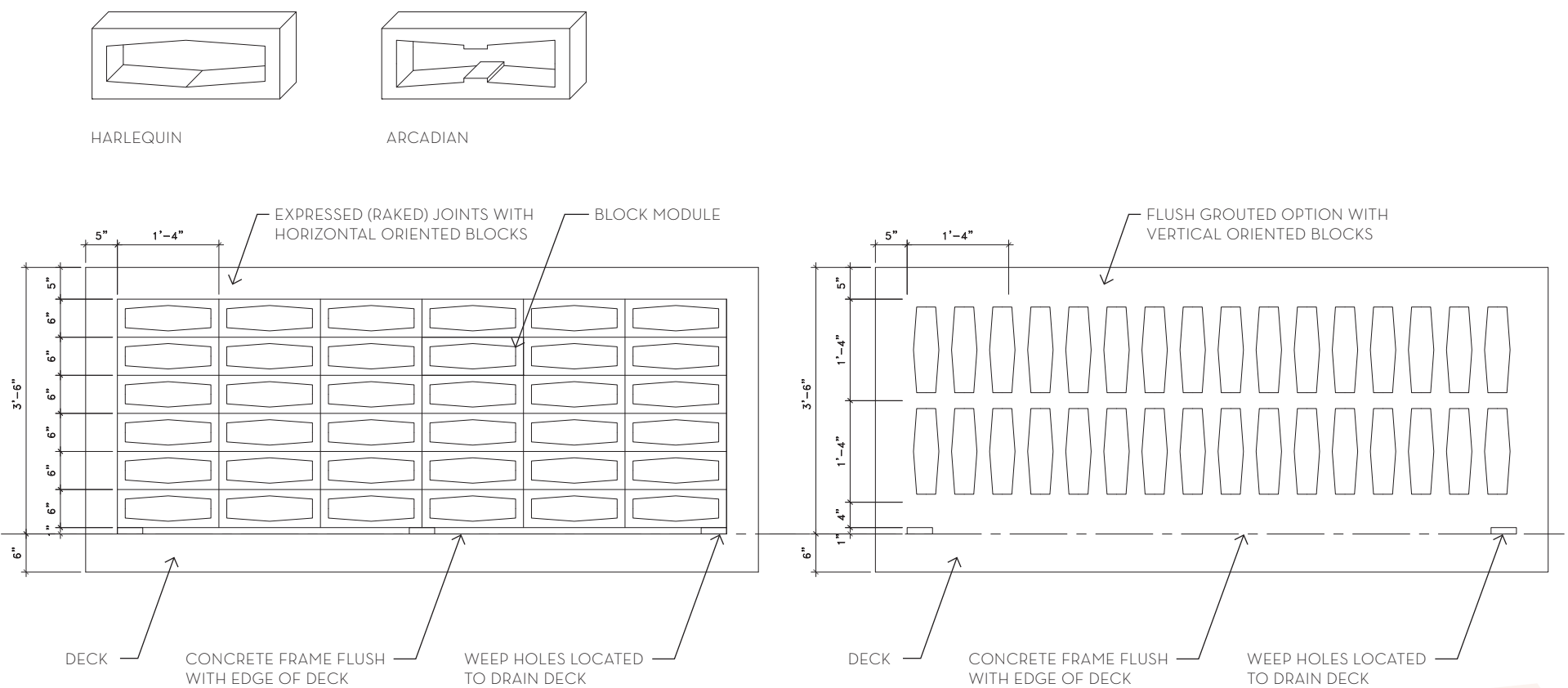
DESIGN STRATEGIES

D Modular Concrete Breezeblock: 6" x 16" Type

A more slender block type, 6"x16", these blocks stack perfectly to achieve a 42" height rail with a large amount of opening. These block designs were found in original patterns with expressed joints, smooth joints between blocks, and in vertical and horizontal orientation. These details, and the original thickness of the posts and rail at the top should all be taken into consideration.



SUITABLE BLOCK TYPES
DESIGN COURTESY OF ABEL BUILDING SOLUTIONS AND E ZEE LAY BRICKS

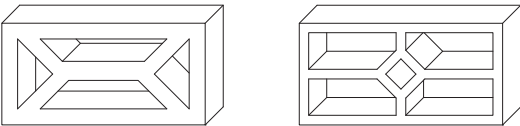


DESIGN STRATEGIES

D Modular Concrete Breezeblock: 8" x 16" Type

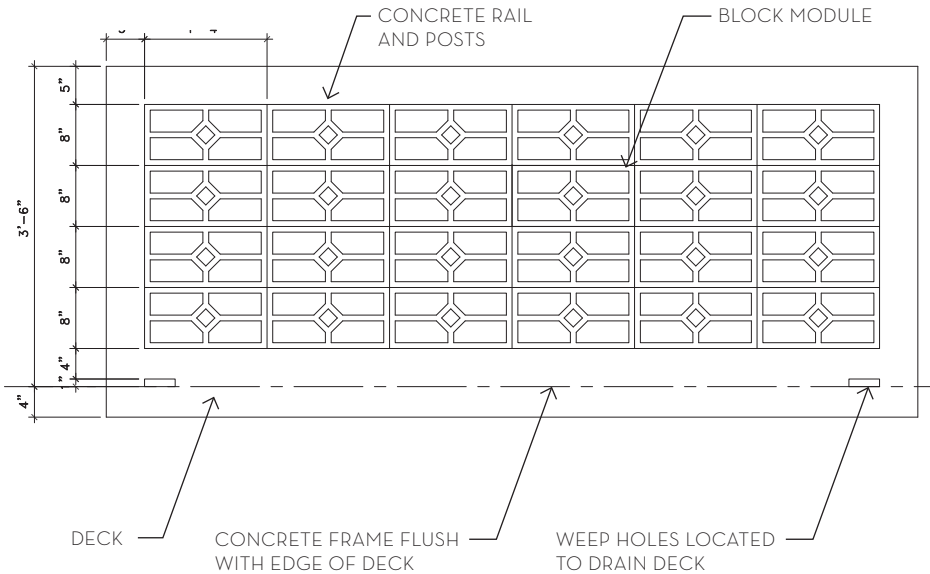
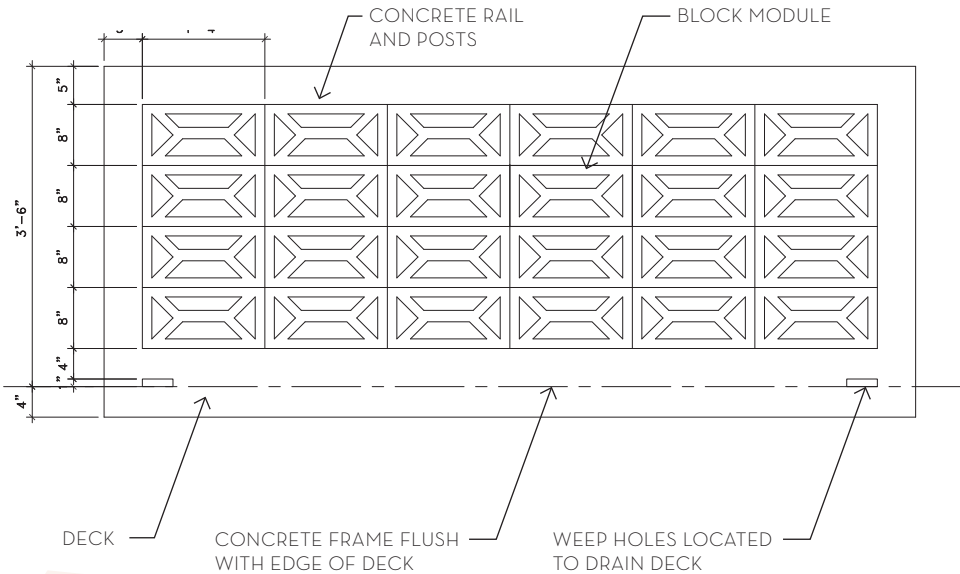
A more typical block size, 8"x16", not all standard fabricated block patterns are suitable for use in a mid-century designed building. Particular designs have been identified that lend themselves this use, however it would be preferred that the original block design be replicated, available at most block fabricating companies. Accommodating this block size requires formation of a concrete base to maintain the correct thickness for the rail.

SUITABLE BLOCK TYPES
DESIGN COURTESY OF A1 BLOCK



#314

#422

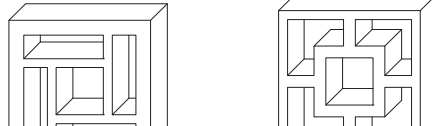


DESIGN STRATEGIES

D Modular Concrete Breezeblock: 12 x 12" Type

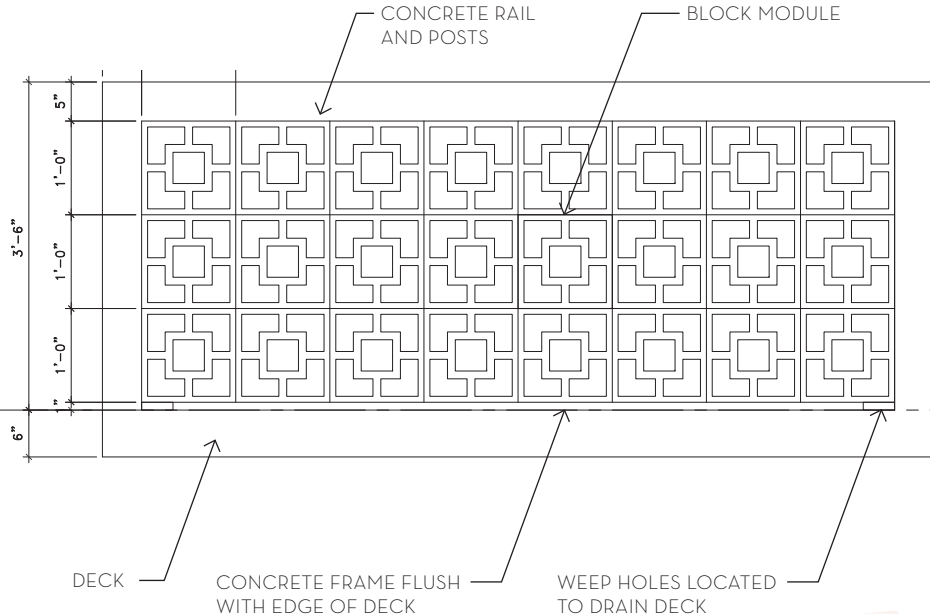
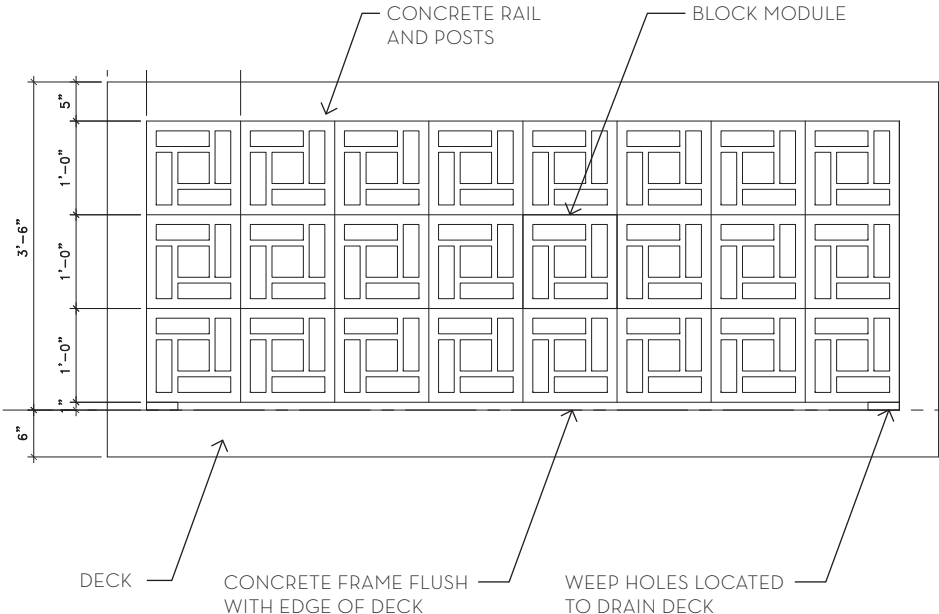
16"X16" blocks are by far the most common mid-century block used for railings. None of the original designs are currently available by standard order, however are available as a custom purchase from most concrete block manufacturers. Ideally, the original block pattern should be utilized, but suitable substitutes may include the designs below. These block sizes are very suitable for forming a 42" high balustrade.

SUITABLE BLOCK TYPES
DESIGNS COURTESY OF A1 BLOCK



#501

#397

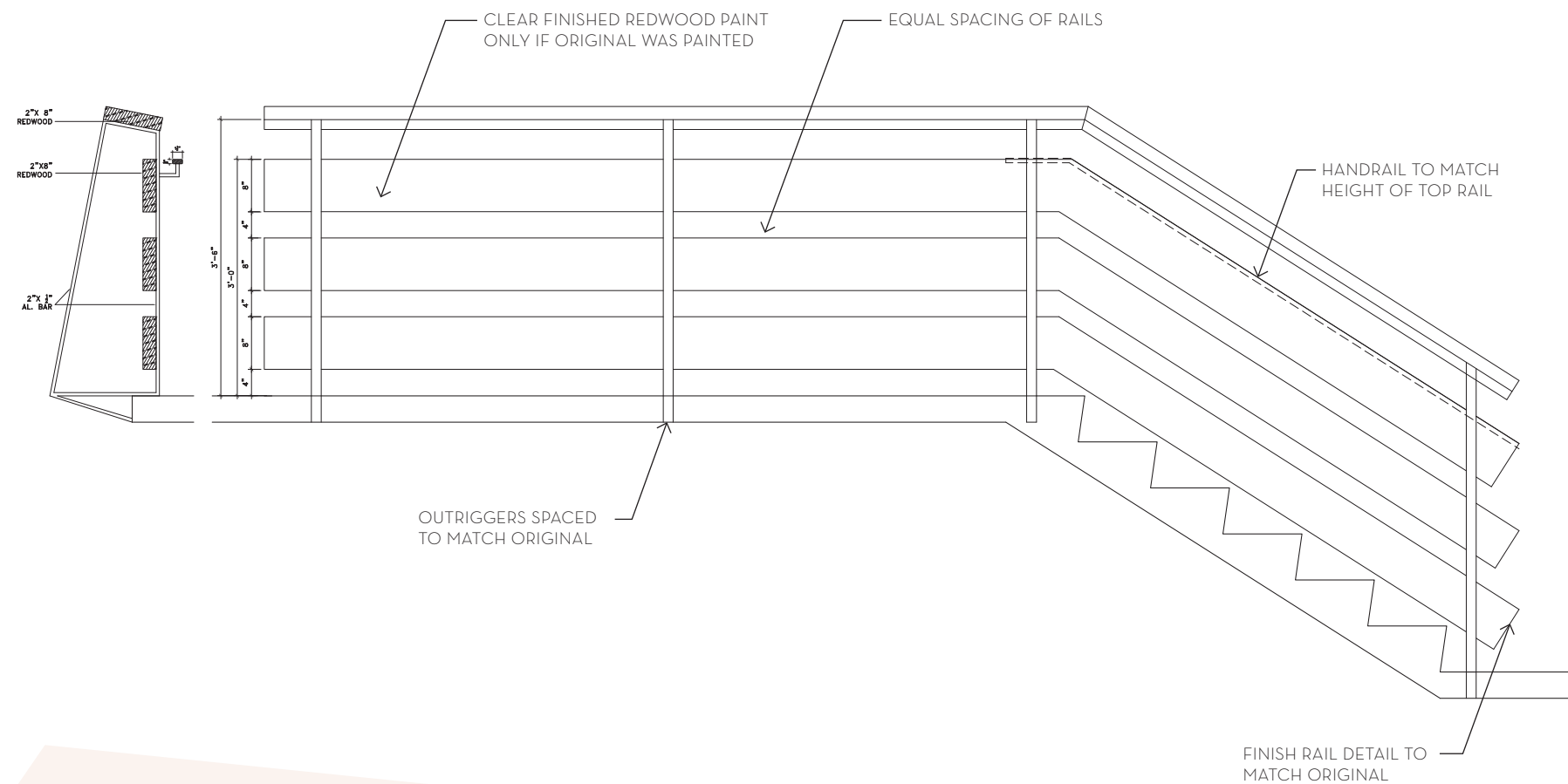


DESIGN STRATEGIES

Ε

Wood and Metal 1

This very unique design illustrates the strong relationship between the railings and the outriggers often employed to stabilize these very slender posts. While slightly more tightly spaced, these railings are generally able to maintain a lot of their original proportions while meeting current codes.

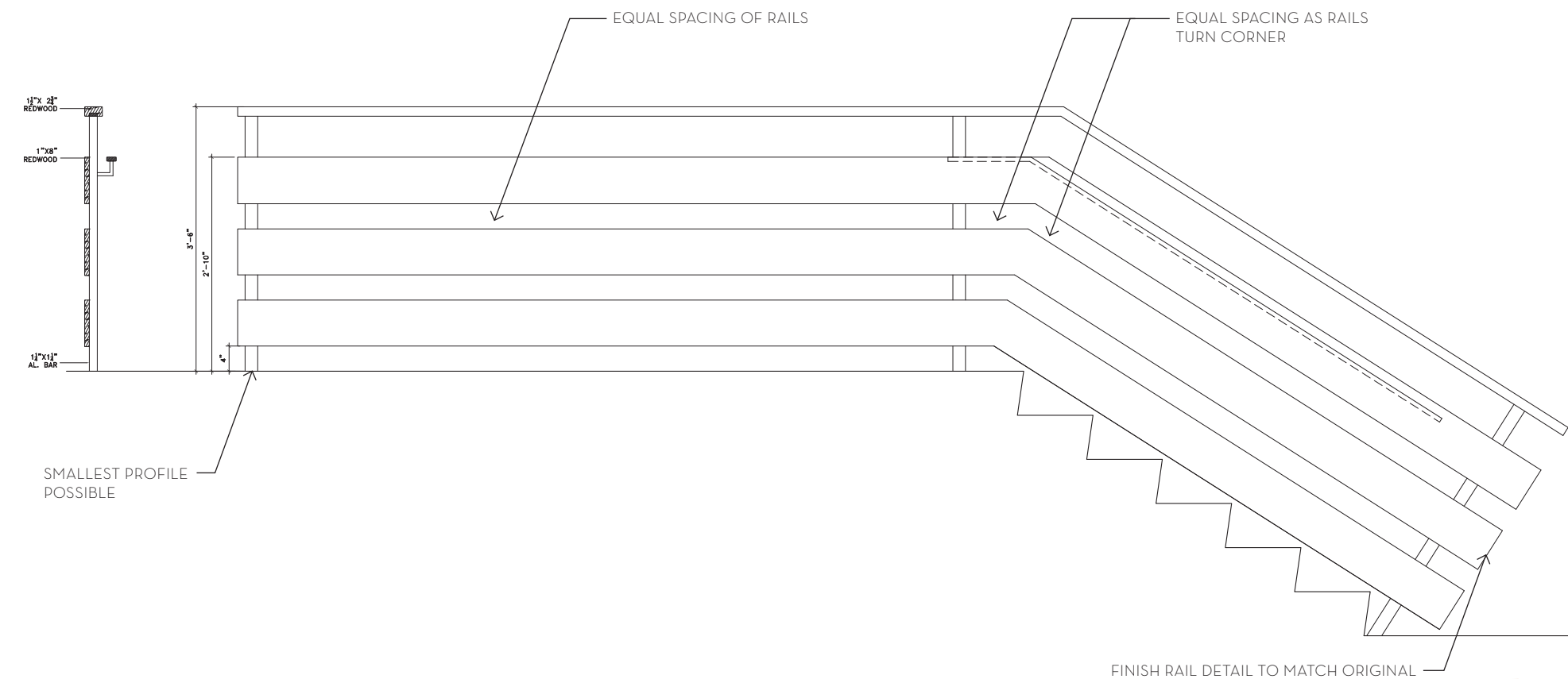


DESIGN STRATEGIES

Ε

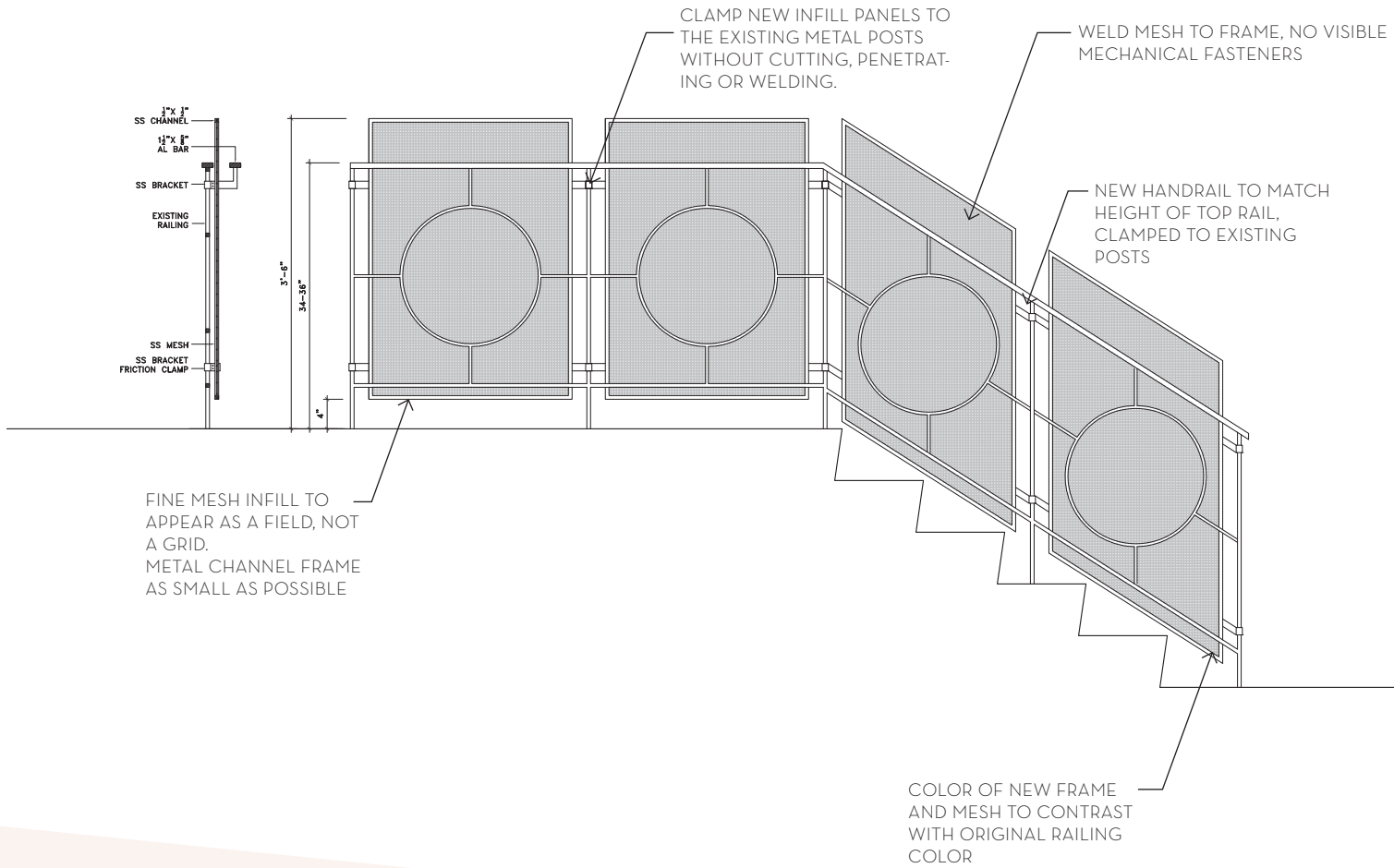
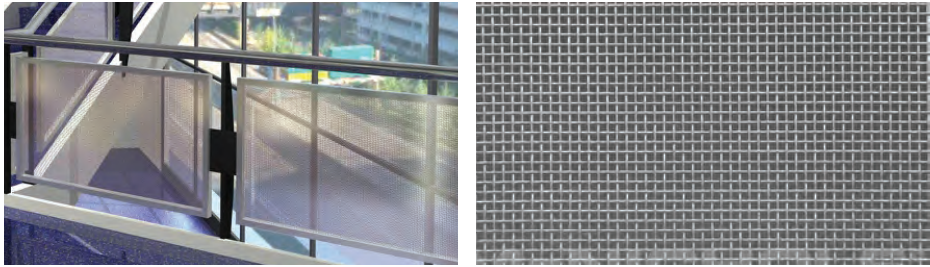
Wood and Metal 2

A more simple version incorporates a standard embedded post design, but illustrates some of the detail options such as the angled termination of the railings at the base of a stair. This design also lightens the density of the rail by maximizing the allowable opening between the top of the 34-36" rail and the top of the guardrail.



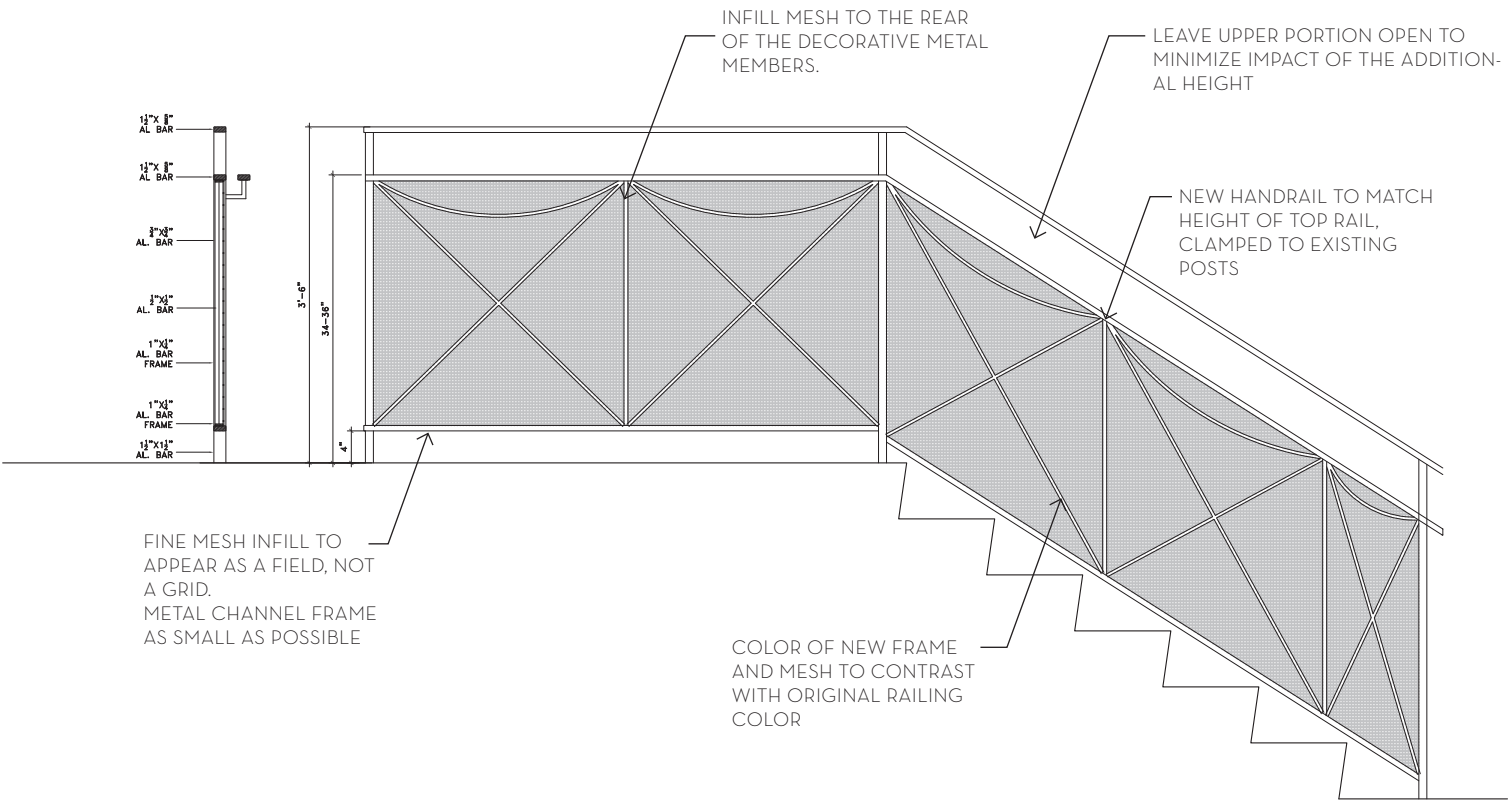
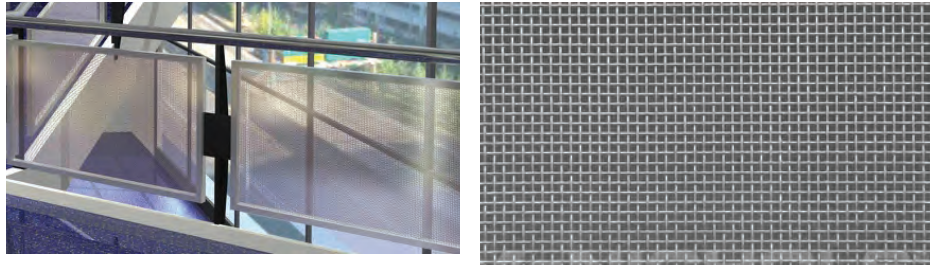
DESIGN STRATEGIES

F Adaptation of Original with Mesh Behind
The priority of adapting the original railing should be to retain in its entirety the original railing, and add as little new material to achieve current code compliance. This solution proposes a transparent field of panels behind the existing, in a contrasting color, so that the original and the new can be clearly identified.



DESIGN STRATEGIES

G Adaptation of Original Design with Mesh Incorporated
This example is proposed for original designs that are difficult to modify without losing the intent of the design, and where replacement is required because of deterioration or structural inadequacy. The new railing should incorporate the correct proportions for the metal members, and the 4 inch rejection requirement is achieved via a metal mesh attached discretely behind the decorative members. The mesh should be a contrasting color from the railing members.



1

STEEL/WROUGHT IRON

A

Restoration

I. Identification of Damage

Ironwork suffers deterioration which must be identified and treated effectively as early as possible. The most common of which are corrosion, structural damage and poor previous repairs. Corrosion is the formation of iron oxide (rust) by the reaction with oxygen and water, and begins at breaks in the surface of protective paint. Prevention of water penetration and retention is therefore a vital aspect of rust prevention. In addition, corrosion can occur where two different metals are in contact with each other. If affected areas are not treated as soon as they occur then rust can move across the railing, causing damage to attachment points such as cracking stucco and concrete, and staining adjacent materials.

II. Metal Repair

Surface preparation in order to repaint should include the following steps; removal of old paint, removal of rust, removal of loose flakes, called ‘mill scale’ and removal of dirt, dust, soluble salts and other substances. Only paint that is loose, perished or flaking must be removed unless areas of existing paint are also hiding details in the metalwork, or transitions between old and new are visible after repainting. Areas of existing paint in good condition may be cleaned and repainted with two coats of paint suitable to the substrate. The use of mechanical, especially dry high speed abrasive tools should be avoided because of the risk of inhaling lead dust contained in old paints. Paint striped may be used, but must be removed from the surface as per manufacturers’ recommendations before repainting. Hot air blowers may also be used however care should be taken since localized overheating can set up thermal stresses in the metal. A suitable cleaning method should be identified based on the type of metal being cleaned, the amount of detail and the condition of the railing.

Loose and defective mill scale can be removed by abrasive action helped if necessary by the application of heat. Removal of small areas of rust may be completed with abrasive action and treated with a chemical converter. Deeper affected areas may need repair with metal fillers after the removal of the rust, or in severe cases sections may require replacement. Most cleaning methods are likely to cause parts to become dislodged, or other structural damage. Care should be taken to avoid such further deterioration. A thorough inspection of the cleaned ironwork should be completed prior to any preparatory coatings or paint being applied to the metal. If possible, existing railings should be galvanized for additional protection, and to reduce the amount of cleaning/painting maintenance required for their upkeep. New paint coatings must be compatible with the existing paint. It is important to maintain a continuous paint layer, typically by applying several layers to prevent ‘pin holes’ or thin areas of paint coinciding in all layers. Painting must be done regularly and effectively, ideally at least annually. Painting over rust is a waste of time and money, since the corrosion continues under the surface. The above steps must be completed in their entirety for an effective solution to further deterioration. In addition, ironwork which has been continually painted over will lose any detail, so it is recommended that old paint is removed and replaced.

B

Replication

Should replication in wrought iron be the chosen method of railing replacement, new ironwork design and fabrication details should match the original railings in every possible manner. Connection details to the walls, spacing of posts, spacing of spindles, profiles of the handrails, connection methodology of the various railing components, and component profiles should match. New wrought iron railings can be additionally protected with galvanizing, reducing the need for the same amount of maintenance as required for an

existing wrought iron railing.

C

Installation

Embedment of new railings or reinstallation of repaired railings into the concrete deck should ideally be completed with attachments in the same locations as the original railing. This will require re-coring of the existing post holes. Re-core the slab, providing a hole wide enough to accommodate the new railing without any contact between the post and the existing concrete. Should any rust or deterioration be noted in the existing rebar, concrete remediation should be performed to industry standards for concrete restoration. The bases of the steel posts shall be galvanized and powder-coated to standards as noted earlier both inside and outside to a minimum height of 3” above the finished concrete deck. Posts shall be set in non-shrinking grout. The grout shall be positively sloped away from the base of the post and shall be at a minimum, level with the finished deck level to avoid any water ponding against the posts. The entire deck should be waterproofed in accordance with industry accepted guidelines to avoid water intrusion into the grout. If new post holes are to be cored into an existing slab care shall be taken to avoid coring through rebar. If railing is to be attached to a newly poured concrete deck, post holes should be located and formed using a grout pocket form to avoid later coring of rebar in the deck.

RESTORATION/FABRICATION METHODOLOGIES

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ALUMINUM

A Fabrication

Although not the preferred methodology for replacement of the railings, aluminum has proven to be a popular choice for railing replacement given its enhanced ability to withstand the salt air environment, and lower maintenance requirements. It must be understood, however that aluminum is a much softer metal, and much easier to damage via bending and impact. For this reason, a life cost analysis may prove that aluminum is not the best solution.

Aesthetically, aluminum runs the risk of not being a suitable solution for replacement railings, since typically larger profiles are required to achieve the same structural performance. Where possible, solid bar stock should be considered in order to minimize member sizes in order to more closely replicate the original designs. In addition, solid bar is more suited to curved shapes since rolling does not kink the material, often a problem for tubular members. For tube profile posts and rails, a thicker wall thickness may allow for a much smaller cross section.

Replacement railings shall be engineered to comply with all current required structural loads and shall allow for the appropriate thermal expansion. Railings shall be fabricated from all new metals free from pitting, seam marks, roller marks, stains, discoloration and other imperfections, and different metals shall be appropriately insulated from one another to prevent corrosion.

All connections must have a four sided weld, with no exposed mechanical fastenings. Concealed fasteners should only be used for interconnecting railings components and for attachment to other work. All fasteners must be of the same material as the railing. All connections must maintain the structural integrity of the whole, and all railing ends must be closed. Weep holes should be provided when necessary to provide condensate moisture to escape.

The design should allow for the railings to be preassembled to the greatest extent possible to minimize field splicing and assembly. Field measurements should be carefully taken to eliminate the need for cutting,

welding or abrading of the railing during installation. Installation in the field should incorporate the bare minimum fully concealed fasteners, and the resulting joints should be flush, smooth, rigid hairline joints. Aluminum railings should first be pretreated then receive a baked-on painted finish. Anodizing is not recommended for welded railings due to the likelihood of discoloration.

B Installation

Embedment of new aluminum railings into the concrete deck should ideally be completed with attachments in the same locations as the original railing. This will require re-coring of the existing post holes. Re-core the slab, providing a hole wide enough to accommodate the new railing without any contact between the post and the existing concrete. Should any rust or deterioration be noted in the existing rebar, concrete remediation should be performed to industry standards for concrete restoration.

The bases of the aluminum posts shall be powder-coated both inside and outside a to minimum height of 3” above the finished concrete deck to avoid interaction between the aluminum and concrete.

Posts shall be set in non-shrinking grout. The grout shall be positively sloped away from the base of the post and shall be at a minimum, level with the finished deck level to avoid any water ponding against the aluminum.

The entire deck should be waterproofed in accordance with industry accepted guidelines to avoid water intrusion into the grout.

If new post holes are to be cored into an existing slab care shall be taken to avoid coring through rebar.

If railing is to be attached to a newly poured concrete deck, post holes should be located and formed using a grout pocket form to avoid later coring of rebar in the deck.

RESTORATION/FABRICATION METHODOLOGIES

3

CONCRETE; PRECAST AND BREEZEBLOCK

A Restoration

Precast and breezeblock railings appear to have the best longevity of the Mimo railings, with the majority intact,. However, insufficient concrete coverage of reinforcing bars has often caused spalling of the concrete railings and posts,and some blocks have received impact damage and the broken blocks have been removed.

Cleaning and concrete repair work both of the deck and the railings themselves should aim to remove all rusted reinforcing bars, and new reinforcing doveled in and correctly covered to industry standards. All concrete elements should be kept at the same depth and width as the original, unless less than 4” in any direction, which then does not provide sufficient coverage of the rebar.

While the majority of the block and precast baluster designs are no longer in production, some local CMU fabrication companies are capable of creating a mold of the original block and can create exact copies of the original. Depending on the amount of block to be replaced, this replication process can result in a less expensive solution if the alternative is to demolish and replace all existing blocks. New blocks can also be slightly modified where appropriate to enable compliance with current codes. If weight is an issue, lightweight concrete may be investigated as an alternative.

B Replication/Replacement

Where all blocks or precast panels are to be replaced, a mold of the original should be made, or a similar code compliant block sourced. Units should be reinforced, tied or anchored as appropriate for each type of block and the size of the opening. Grout joints should either be raked and expressed, or fully buttered and flush, to match the original design. New concrete railings and posts should match the existing in proportion and be cast in place to avoid expressed joints resulting from piecing together using precast components.

Precast balustrades consist of the baluster, post and rail. Balustrades should be appropriately attached to the deck to meet structural requirements by drilling of the deck to accommodate rebar mortared into the deck and baluster with Type S mortar or sanded grout, depending on the joint size.

The top of railings should be slightly pitched toward the deck to provide positive drainage to the surface and prevent ponding and water damage. Regular weep holes coordinating with the deck slope should be installed to prevent water ponding against the base of the units and rusting the rebar doveled into the baluster.

All block and precast units should be painted as per the original design where applicable.

C Protection and Maintenance

Railings should be regularly checked for cracks and chips to prevent water intrusion and rust developing in the rebar.

RESTORATION/FABRICATION METHODOLOGIES

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WOOD

A

Restoration

Most original wood railings have extensive damage, and so few will be suitable for pure restoration. Original redwood slats should be stripped of all paint, while protecting the wood beneath, unless original documentation of the railings demonstrates that they were originally painted. Only those portions showing damage should be replaced, and entire pieces should be replaced, not spliced with a new board. The grade of all replacement pieces should match those adjacent, with the same species and the same amount of grain, figure, texture, color and cut. Refer to Steel section of these guidelines for restoration of the metal elements of these railings.

B

Replacement

All new wood shall be in proportions to match the original.
Re-housing into structure: See Aluminum or Steel sections.

C

Protection and Maintenance

Regular stripping and re-coating is required to retain the original natural wood.

D

The use of new redwood is strongly discouraged to prevent the potential future loss of these ancient trees. Alternative wood types resistant to weather such as teak, mahogany or cedar should be considered.

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About

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Graphic Design by SUBLIME Miami, Inc.
Prepared and Edited by the City of Miami Beach – Joyce Meyers, Debbie Tackett & William Cary
Photos by City of Miami Beach, Raelene Mercer, Robin Hill, Arthur Marcus, and Thomas Delbeck
Illustrations – City of Miami Beach Planning Department

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