

Design Guidelines

Lindbergh Forest

*The **Lindbergh Forest Historic District Design Guidelines** seek to outline the historic neighborhood's significant features and guide future development. Drafted with input from property owners, these guidelines represent the vision of the community in maintaining its historic character and provide the standards for future preservation, rehabilitation, and new construction. Rooted in accepted preservation standards for exterior maintenance, rehabilitation, and new construction, the guidelines provide a common language and consistent direction for all parties that work with buildings in the historic overlay. The guidelines are intended to guide owners toward design solutions that are feasible while maintaining the district's historic nature.*

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Text-Only Draft

Graphics, photos, illustrations, and text formatting to come

History

Lindbergh Forest was established in 1929, when the subdivision was platted in the curvilinear pattern typical of Knoxville's early twentieth-century automobile suburbs. The subdivision was named for Charles A. Lindbergh, the aviator who flew a plane nonstop from New York to Paris in 1927. Lindbergh Forest was the first Knoxville subdivision in which the developer installed infrastructure at the time of the subdivision's development, including utilities, concrete streets, and curbs. The development also boasted distinctive streetlights composed of concrete posts with square light fixtures, reminiscent of gas lights from the late 18th century. Lindbergh Forest was the first subdivision with underground utilities in Knoxville.

Characteristic of advertising for early automobile suburbs, the October 1927 auction for lots in Lindbergh Forest included attractions to generate publicity. Along with the promise of a "free radio and other gifts," the event included an "aerial circus" where a parachuter jumped from a moving airplane, promoting the connection with Charles A. Lindbergh.

Many of Lindbergh Forest's original houses took advantage of the nearby East Tennessee marble industry. In the 1920s and 1930s, East Tennessee marble was mined extensively and used as a prominent building material in public buildings throughout the United States, including the Oklahoma State Capital and the National Gallery of Art. Many public and commercial Knoxville buildings also feature the material; the downtown Post Office is a high-style example. Relatively few examples of residential construction featuring East Tennessee marble exist, and many of the best examples can be found in the Lindbergh Forest Historic District. Throughout the neighborhood, East Tennessee marble is featured in window and door sills, wall coverings, and walkways.

Lindbergh Forest features many examples of early Colonial Revival and Tudor Revival style houses, along with many Minimal Traditional houses. One example of a Colonial Revival-style house is 256 Chamberlain Boulevard, while 3419 Southwood Drive illustrates the Tudor Revival style. Many houses combine Tudor Revival, Colonial Revival, Craftsman, or Mission Revival influences to create an eclectic mix, typical of Knoxville's residential architecture. Both 205 and 244 Druid Drive are combinations of Tudor and Colonial Revivals. The residence at 216 Chamberlain Boulevard shows both Bungalow and Tudor Revival influences.

Most of the houses in the district were constructed before the beginning of World War II. However, a few lots remained undeveloped, and no houses were built between 1941 and 1947. Around 1947, two new houses were constructed in the district. Both were Lustron houses, which were prefabricated with enameled metal panels. These houses illustrate an important movement in the mid-twentieth century to construct houses quickly and inexpensively to meet post-war housing shortages. Although their style is different from other residences in the district, the Lustron houses are an important part of the

neighborhood. Reflecting two of the six Lustron house examples in Knoxville, they are compatible with the overall scale and streetscape patterns of the district.

The Lindbergh Forest Historic District contains many unique houses representative of Knoxville's residential architecture from the 1920s to the 1940s. Distinctive features include its extensive use of East Tennessee marble, the curving streets, mature landscaping, and concrete street paving and street lights. Lindbergh Forest is an intact example of Knoxville's early automobile suburbs.

Architectural Styles

The majority of houses in Lindbergh Forest can be categorized into one of the architectural styles below, and most houses employ an eclectic mix of these styles along with other architectural trends of the early 20th century.

Tudor Revival

Tudor Revival architecture is inspired by a wide variety of English domestic architecture from the late Medieval and early Renaissance period (1550-1650). Its popularity began in England around 1850 as architects sought to evoke a nostalgic idyll in response to the Industrial Revolution. The style spread to the United States through plan books and well-publicized English examples around 1880, and it was prolific in early American suburbs until the 1940s. Tudor Revival houses typically employ patterned brick, stone, and stucco wall cladding, steeply-pitched gable roof forms, large stylized chimneys, and groupings of tall narrow windows with masonry trim. Arched entries with stone detailing, decorative half-timbering, and ornamentation and variation at gable eaves are also common.

Colonial Revival

Colonial Revival architecture incorporates the forms and detailing of early American architectural styles (Georgian, Federal, Dutch Colonial) with contemporary materials and details. This was the most dominant architectural style of American houses throughout the first half of the 20th century, accounting for approximately 40% of houses built from 1910-1930. The Philadelphia Centennial Exhibition in 1876 revived interest in American history and culture, inspiring the earliest examples of the style, which became increasingly popular with its presence at the 1898 Columbian Exhibition in Chicago ("White City") and with the restoration of Colonial Williamsburg in the 1920s and 1930s. Colonial Revival architecture is defined by a symmetrically balanced façade with a center door that is typically accentuated by a pediment (or more elaborate surrounds) and a small entry porch with slender columns, along with other Classical detailing. Side-gable, hipped, and gambrel roof forms are most common and frequently feature cornices and dormers.

Mediterranean Revival

Mediterranean Revival is a general category for a variety of architectural styles inspired by historic Italian and Spanish estates. The style was most popular from 1905-1935 due to increased interest in European architecture after World War I and advancements in masonry veneering techniques that made construction more affordable. This style was characterized by low-pitched hipped (sometimes flat) roofs clad in ceramic tiles with wide eave overhangs, stone and stucco (or brick) wall cladding, arched windows and doorways, and porticos or columned recessed entries. Ornamental details such as dormers, parapets, decorative brackets, quoins, classical details, cornices, beltcourses, rusticated stone,

and carved masonry can be present. The use of Tennessee marble within Lindbergh Forest provides a local distinction from other examples of this style.

Minimal Traditional

Minimal Traditional is a form of modern architecture that was proliferated from 1935-50 due to its relative availability and affordability during the Great Depression and the housing shortage following World War II. Minimal Traditional designs were widely circulated through house plan pattern books and catalogs (such as Sear's Modern Homes). They were designed to be eligible for FHA (Federal Housing Administration) loans, which were created in 1934 to support homeownership for working class white Americans, limited the maximum sales price of homes that qualified for funding, and encouraged that "all nonessential features can be profitably omitted" in design. Minimal Traditional houses tend to be small in size with a compact rectangular floor plan, low-to-moderately pitched side gable roof (some variations), and a symmetrical façade centered on a stoop rather than a larger porch. Ornamentation is generally limited to picture windows, chimneys, paneled front doors, shutters, variations in roofs over the front stoop, and material variations in exterior cladding (such as wood siding, asbestos shingles, brick, and stone). A number of Minimal Traditionals in Lindbergh Forest employ stone quarried from nearby Crab Orchard, Tennessee.

Lustron houses are houses made almost entirely from prefabricated porcelain-enameled steel, which were developed from 1947-50 by the Chicago-based Lustron Corporation and were touted for their durability, efficiency, and sleek design. They are a rare type of Minimal Traditional housing that can be found within Lindbergh Forest.

Design Guidelines

Roofs

A roof's shape and pitch support the architectural character of a building and play a role in defining a building's massing, volume, and presence along the street. Defining features of a roof include chimneys, dormers, cornices, and eaves. Roofing materials are also distinguishing details, including standing seam metal, slate, cement or metal shingles, and terracotta tiles. Many roofs have been re-clad with modern asphalt shingles. Retaining the original roof shape and pitch, as well as associated details, is important since changes to the roof can significantly alter the appearance of a building.

1. Retain the existing roof shapes, pitch, materials, and associated characteristics.
2. Retain and repair character-defining eave details.
 - a. It is not appropriate to remove, cover, or wrap original eaves or cornices.
 - b. It is not appropriate to enclose exposed rafters.
 - c. Match existing overhang, fascia boards, soffits, trim, and other details.
3. Repair original roofing materials unless substantial deterioration warrants replacement. Replace deteriorated materials with compatible counterparts.
 - a. Retain and repair original roofing materials and features unless substantial deterioration warrants replacement.
 - b. Replace deteriorated roofing with in-kind materials, matching original materials in appearance, pattern, color, and composition. Compatible substitute materials, including low-profile asphalt or fiberglass shingles can be used if determined an appropriate match for traditional roofing materials.
 - c. Repair original specialty materials such as slate, metal, or tile by replacing only deteriorated sections with in-kind materials, unless more than 35% of the total surface is deteriorated, in which case replacement can be appropriate.
 - i. When possible, replace specialty roofing materials with in-kind materials.
 - ii. If in-kind materials are not feasible, new materials that replicate the look and texture of the original will be considered. When reviewing such materials, the HZC will consider the texture, pattern, durability, and dimension of materials. Replacement with dimensional fiberglass or asphalt shingles may also be considered.
 - iii. Consider salvaging intact units of specialty cladding materials when replacing roofs in order to reduce landfill waste and promote reuse of historic fabric.
 - d. Repair deteriorated flashing by installing new to match existing. Unfinished metal flashing is not appropriate.
 - e. It is not appropriate to install tar paper as a finished roof or patch roofing materials with tar.
 - f. Corrugated, 5V, or wide sheet metal is not appropriate on the roof of the main building or on front porches.
4. Preserve and repair character-defining roof details.
 - a. Retain and preserve decorative and functional features such as dormers, finials, cresting and built-in gutters.
 - i. Do not remove or replace original features that can be repaired.

- ii. If replacement is necessary, match the original feature in size, appearance, and material.
Compatible substitute materials can be used if determined to be an appropriate match and it is not feasible to replace with the original material.
- b. Original roof dormers should not be removed.
- c. It is not appropriate to add dormers, skylights, or other architectural features to a roof if they can be viewed from the street.
- d. Skylights should be flat. Bubble profile skylights are not appropriate.
- e. When reconstructing an original feature that is missing, base the reconstruction on historical, photographic, and/or physical documentation.
- 5. Retain and repair original chimneys whenever possible.
 - a. Retain original or reconstructed chimneys including chimney caps, chimney pots, and patterned masonry.
 - b. Use compatible mortar when repairing chimneys. Replacement masonry should match the shape, size, color, and texture of the original. It is not appropriate to use simulated masonry materials.
 - c. Reducing the height of secondary chimney stacks, while retaining the appearance that a stack exists, can be considered based on a professional contractor's assessment of their condition. If a chimney stack is destroyed or the height reduced by an act of nature, then retain any remainder of the stack and cap the chimney. Retain and store loose brick and/or stone for possible future reconstruction.
 - d. The height of character-defining chimneys on primary elevations should not be reduced.
 - e. Small chimneys that originally served as enclosures for stove pipes and secondary chimneys can be removed if determined to be of no architectural or historical significance.
 - f. Altering the character of a chimney by painting, parging, or otherwise covering exposed masonry materials is not appropriate and can cause damage.

Devices on Roof

Devices include satellite dishes, solar collectors, modern skylights, anachronistic elements or structures, mechanical units, vents with fans.

- 1. Satellite dishes and rooftop mechanical equipment may not be installed on roof planes that are visible from the street.
- 2. Do not install devices where they interfere with existing decorative roof elements.
- 3. If installed, devices should not comprise more than 30% of the total roof surface.
- 4. Installation of solar collectors, skylights, and mechanical units on existing roofs may require approval and certification by a structural engineer.
- 5. Rooftop solar collectors can be evaluated on a case-by-case basis based on the following guidelines:
 - a. Minimize the impact of solar collectors on the historic character of a building. Install on roof slopes that are not visible from the street.
 - b. Ensure the roof structure can support the weight of added collectors.
 - c. If a building's orientation limits the utility of solar collectors on a rear roof slope, a visible location on a secondary elevation may be considered, taking into account the size, panel arrangement, and material finish.
 - d. If possible, install solar collectors on accessory buildings at the rear of the lot rather than on primary buildings.

- e. Install solar collectors so they lie parallel to and within 6 inches of the roof surface. If solar panels' efficiency is reduced by this requirement due a building's orientation, HZC may consider permitting an alternate installation if collectors will be invisible from the street.
- f. The colors of collectors and frames should be similar to the color of the roofing materials.

Special Considerations for Lustron Houses

Lindbergh Forest contains two Lustron houses (3510 Glenhurst Drive and 222 Chamberlain Boulevard), which are a rare type of Minimal Traditional housing made of prefabricated porcelain-enameled steel that were only manufactured from 1947-50. Their prefabricated nature complicate repairs and replacement of roofing and siding because they generally require a specific disassembly and reassembly process; manuals are available online. In-kind replacement materials can be very difficult, if not impossible, to find. It is important to select an experienced contractor to undertake significant exterior and interior repairs to avoid long term damage.

Roofs and siding can be repaired by removing rust, filling holes with steel-enforced epoxy, and installing an elastomeric coating to protect against leaks. In cases of severe deterioration or damage, it may be necessary to install a new roof or siding over the original. Removing original exterior materials can compromise the house's structural integrity.

Wall Coverings

Masonry

1. Protect and retain original masonry surfaces and features.
 - a. Retain the original color and texture of masonry materials.
 - b. Provide positive drainage away from foundations to move water away from the foundation wall.
 - c. Retain protective paint coatings where historically present.
 - d. It is not appropriate to paint or stucco historically exposed masonry surfaces.
 - e. It is not appropriate to remove protective patinas that evolve over time and are part of the structure's character.
 - f. It is not appropriate to sandblast or use abrasive methods to clean masonry materials. Masonry should be cleaned with the gentlest method possible, such as low-pressure water and detergent and natural bristle or other soft-bristle brushes.
2. Repoint deteriorated mortar joints.
 - a. Repoint mortar joints only where there is evidence of moisture problems, material breakdown, or sufficient erosion to allow standing water in the joint.
 - b. Prepare joints by using hand tools, removing ½" to 1" of old mortar to provide sufficient space to bond new mortar.
 - c. Repoint mortar with materials matching the original in composition, color, and texture. High lime mortars and hydraulic cements are the most appropriate for repointing historic masonry.
 - d. Match the size and profile of the repointed joint to the original joint.
 - e. Using inflexible mortars with high amounts of Portland cement, which are incompatible with historic soft mortars that accounted for expansion and contraction of masonry materials, is not appropriate and can cause severe damage.

3. Replace deteriorated or missing masonry units or features in kind.
 - a. Replace only the sections of historic masonry that are missing or deteriorated.
 - b. Use new or recycled masonry materials that match the original as closely as possible in size, shape, color, and texture.
 - c. If a historic masonry feature is missing, replace it with a new feature that, based on photographic documentation or comparable features elsewhere on the building, matches the original in size, material, texture, and scale.
 - d. Replacing large sections of intact masonry materials is not appropriate.
 - e. It is not appropriate to use materials such as artificial stone or brick veneer as a substitute for replacement of deteriorated masonry.
4. Retain historic stucco cladding and repair damaged sections as needed with new stucco that duplicates the old in strength, composition, color, and texture.
 - a. Synthetic stucco is not an appropriate replacement.

Masonry Sealants

Applying paint and waterproof or water-repellent coatings to masonry is generally not appropriate. Not only can they alter the appearance of masonry, but sealing and painting can also prohibit the natural movement of moisture through masonry, ultimately trapping it and causing additional deterioration.

Sealants are not to be used as a substitute for appropriately repairing deteriorated materials. Sealants are only to be applied in rare circumstances where moisture can be demonstrated to be uncontrollably infiltrating masonry and when the method of infiltration is understood.

In instances where use of a sealant is determined appropriate, coat only the masonry that is affected. It is not appropriate to unnecessarily seal masonry that has no demonstrated infiltration. Apply sealants only on dry masonry. Treating masonry while damp can unintentionally trap damaging moisture inside the masonry.

Maintain clear distances between plantings and the foundation wall in order to limit the potential for moisture to be trapped against the wall by vines or vegetation.

Wood Features and Siding

1. Repair deteriorated wood elements as character-defining features.
 - a. Repair deteriorated wood surfaces by patching, consolidating, splicing, or otherwise reinforcing deteriorated sections.
 - b. Match repairs to original materials in appearance, profile, texture, and finish.
 - c. When repairing deteriorated components, retain unique details such as beaded edges, bevels, or fish scale patterns.
2. Maintain compatibility when replacing wood features and wood and asbestos siding that are deteriorated beyond repair.
 - a. Repair or replace, only as needed, materials and features with components that match the original in material, dimension, detail, profile, and texture.

- b. Smooth-finished fiber cement board may be utilized as a replacement for wood and asbestos siding only when it has deteriorated beyond repair and for any other type of siding, as long as the profile and exposure (visible width) is historically appropriate.
- c. Existing vinyl or aluminum siding may be replaced in-kind if no further architectural detailing is covered or removed. New vinyl and aluminum siding are not appropriate.
- d. Utilize a replacement siding that matches the profile and exposure of any original existing siding or matches what is documented to be the original. In the absence of appropriate documentation, install siding with an exposure to match that of similar buildings in the district.
- e. Replace missing wood features with elements based on historical, photographic, or physical evidence of the original feature. In the absence of such evidence, use a design that is compatible with the building in style, scale, and size.

How to Preserve Wood Features

- Maintain compatibility when replacing wood features and wood and asbestos siding that are deteriorated beyond repair.
- Protect wood surfaces and features from deterioration by providing a protective, weather-resistant coat of paint or stain. Paint all six sides of new siding in order to provide a consistent protective coating.
- Identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks and holes in siding, deteriorated caulking at seams, plant material, or insect or fungus infestation.
 - Apply chemical preservatives to historically exposed wood features such as ends of beams or rafters.
- Remove deteriorated protective coatings to the next sound layer by hand scraping and then repaint. It is not appropriate to use damaging methods such as a propane torch to remove paint.
 - When patching or splicing deteriorated wood components, use timber that matches the grain and density of existing materials.

Windows

While the most common argument against historic windows is that they are not energy efficient, an appropriately weather-sealed historic wood window with a storm window is just as energy efficient as a new insulated window. In addition, historic windows made of old growth wood are more stable and resistant to deterioration and, if properly maintained, can be easily repaired and last for over one hundred years.

1. Improve energy efficiency of intact original windows.
 - a. Low-e or other light-absorbing coatings are only appropriate on the primary facade when it can be demonstrated that there will be no significant change in the original appearance of the glass.
2. Storm windows may be installed as follows:
 - a. Align storm windows with the original opening. Altering an opening to accommodate a storm window is not appropriate.
 - b. Wood-framed storm windows are most appropriate, but baked-on enamel-finished or anodized aluminum is also acceptable if the finish color matches that of the building's trim. Bar aluminum sashes are not appropriate.
 - c. Storm windows that do not allow a full view of the primary window or do not have a meeting rail that aligns with that of the primary window are not appropriate.
3. Original windows should be retained and repaired as a first course of action.
 - a. Character-defining windows, including stained glass and windows with unique shapes, should be repaired and retained.
4. Replacement of windows which are deteriorated beyond repair can be approved if replacement windows meet the below guidelines. Replacement windows should be compatible with the original windows and with the overall house.
 - a. It is not appropriate to enlarge or reduce the size of the original opening to accommodate the installation of a replacement window.

- b. Replacement windows should match the operation type (e.g., double-hung, casement) of the original windows.
 - c. Alternative materials for replacement windows may be considered, as long as the replacements match the overall size, muntin configuration and profile, rail width and profile, and style of the original windows.
 - d. When replacing divided-light sashes on street-facing elevations, use either true-divided-light or simulated divided light sashes with dimensional muntins permanently affixed to the exterior of the glass. Snap-in grids and internal muntins between panes of glass are not appropriate substitutions for exterior muntins.
 - e. Maintain the original profiles, trim dimensions, and depth of reveal when installing replacement sashes. Properly recess new window sashes within the existing opening to protect the window, allow water runoff, and preserve the original window profiles.
 - f. Frosted, tinted, reflective, opaque, or patterned replacement glass is not appropriate on street-facing facades, unless as an in-kind replacement on a stained glass or a similar feature.
5. Design new window openings to be as inconspicuous as possible.
 - a. Where a new window opening is considered necessary, locate it to the rear quarter of a side elevation or the rear elevation so its visibility from the street is limited.
 - b. Design new window openings to be compatible with existing windows in scale, materials, and details.
 - c. If new egress window openings for converted attic spaces are required, install them so their visibility from the street is limited. Size these windows to be appropriate to the scale of the wall elevation where they are being added.

Entrances & Doors

The entrance to a historic house includes the front entry door and any decorative details associated with it. The entrance can include front entry steps and the railing. An entrance door should be consistent with the design of the historic house and may have a transom and sidelights. Secondary entries at the rear of the building are typically simpler in detail.

1. Retain and repair original primary entrances and associated features.
2. Replace existing doors when they are determined to be deteriorated beyond repair. Replace these doors in kind. Door assemblies, sidelights, transoms, etc. should match the original in style, size, profile, and glazing configuration. True divided lites or simulated divided lites are appropriate.
 - a. Vinyl, vinyl-clad wood, or steel doors are not appropriate for main entries, but may be considered for secondary doors if the details match the originals.
 - b. Undistinguished, flush doors are not appropriate.
3. Design new door openings to be as inconspicuous as possible.
 - a. Install new door opening to the rear quarter of a side elevation or on the rear elevation so that its visibility from the street is limited.
 - b. New door openings to be compatible with those existing on the building in size and proportion.
4. Install appropriate energy efficiency enhancements.
 - a. Installing weather stripping around the door jamb and threshold to reduce air leakage around an existing door.
 - b. If a storm door is used, it should have a color-clad frame and a full-view glass or be designed to respect the original entry door.

Porches & Stoops

More than half the houses in Lindbergh Forest have a porch or an entry stoop. Porches protect entries from weather and cool the house by shading the windows and doors. They offer entertainment and an opportunity for neighborhood social life. They may stretch across the full width of the house or wrap around corners. Enclosing or removing a porch harms the appearance of the house, detracting from the original character and design. The individual design elements of the neighborhood porches – wood columns, metal railings, stone or brick arches, wood ceilings and floors, stone floors, etc. – reinforce the style of the houses. These individual details should be repaired and preserved or replicated if good documentation of an original porch exists. Porches are important features to include on new buildings constructed in Lindbergh Forest. Properly proportioned porches will help new construction blend better with the neighborhood.

1. Retain and preserve original or early porches and stoops, including their individual components.
 - a. Retain porches and stoops that contribute to the historic character of the building, including individual components such as: porticos, support columns and posts, masonry piers, ceilings and roofs, steps and handrails, foundation cladding, balustrades (rails & balusters), newel posts, and other character-defining masonry elements.
 - b. Where historic components are determined to be deteriorated beyond repair, use them as the basis for selecting replacement components in order to match the early or original in design, profile, material, and texture.
 - c. Do not replace a wooden porch floor with a poured concrete or masonry floor both for aesthetic reasons and moisture control.
 - d. Retain the location and character of front porch steps. If the rise/run of existing steps is steep and unsafe, rebuilding in the same location can be considered.
 - e. Where historic components are missing, use historical, photographic, or any remaining physical evidence as the basis for replacement components.
2. Enclosure of existing porches should be as inconspicuous as possible, and should not result in the removal of historic materials.
 - a. Retain open porches on street-facing facades. It is not appropriate to enclose a front porch with glass.
 - b. Porches on the fronts of houses may be partially enclosed with lattice panels for privacy. This screening should not exceed more than one-third of the porch area in order to maintain the traditional open appearance. Lattice panels should be installed behind, not in front of, porch columns and railings, and it must be able to be removed without damage to historic materials.
 - c. Screened front porches may be acceptable if the screening is translucent and the open appearance of the porch is maintained. The screening should be able to be removed without damage to historic materials.
 - d. Porches at the rear of secondary elevations may be enclosed with glass or screening with minimal framing in order to retain a sense of transparency.

Mechanical & Utility Equipment, Energy Retrofit

Such systems include heating, ventilation, air conditioning, plumbing systems, satellite dishes, and antennas, as well as energy conservation and green technologies. It is important, though, to make sure that the installation of modern systems does not compromise the architectural character of a historic building or detract from the appearance of the streetscape or district.

Energy Efficiency Tips

Enhance rather than replace or remove original materials and features of historic buildings and their sites to maximize energy conservation.

- Retain mature shade trees, porches, awnings, operable windows, transoms, breezeways and other such historic features that help to regulate air flow and temperatures.
 - Retain and preserve existing energy efficient features such as porches, breezeways, transoms, and operable windows.
 - Enhance the energy efficiency of existing features by installing weather stripping and maintaining tight seals by caulking.
 - Add storm windows and doors in accordance with the guidelines.
 - Insulate attic spaces.
 - Install draft plate sealers to electrical outlets and switches.
 - Seal around holes in foundations and walls used for service lines.
 - Fill electrical, plumbing, and ventilation chases with insulation.
1. Locate modern systems and equipment to minimize aesthetic impacts.
 - a. Place ground-mounted equipment, such as air-conditioning units, so it is not visible from the public street right-of-way or screen it from view with appropriate landscaping, fencing, or masonry wall.
 - b. Locate new utility systems, such as water, gas, and electric meters, so they are not visible from the public street right-of-way or screen them from view with appropriate landscaping, fencing, or masonry wall.
 - c. Locate antennae and satellite dishes toward the back of secondary roof slopes or on the rear roof slope.
 - d. Screen antennae and satellite dishes from view as much as possible by placing behind chimneys, dormers, or in roof valleys.
 - e. Paint mechanical and utility equipment to blend with the building or landscape, if the existing color stands out.
 - f. Installing runs of ducts, pipes, or cables on the exterior of a building is not appropriate.
 - g. The installation of wireless communication towers within the boundaries of the historic district is not appropriate.
 2. Install modern systems and equipment in a manner that avoids damage to historic materials and features.
 - a. When installing roof-mounted systems, use methods that do not damage historic fabric or require removal of character-defining features.
 - b. Install equipment in such a way that it can be easily removed in the future without damaging historic fabric.

- c. It is not appropriate to cut holes in features such as decorative cornices or rake boards to accommodate cables or modern systems or equipment.
- 3. Install passive energy collection systems in a manner that does not diminish the character of the building.
 - a. Install freestanding or detached solar collectors in areas that are inconspicuous from the public street right-of-way.
 - b. Select a finish for exposed hardware, frames, and piping that blend with that of the primary building.
 - c. It is not appropriate to install framing systems with reflective surfaces. Matte finishes of black, brown, and gray may be appropriate.

Accessibility and Safety

- 1. Minimize the impact of accessibility and safety features on the visual character of the building and the district.
 - a. Locate ramps and other means of access along secondary elevations whenever possible.
 - b. Scale the feature to the historic building to which it is being added.
 - c. Design ramps to have simple, non-detracting detailing.
 - d. Design accessibility elements such as handrails and balusters to be simple in character and finish.
 - e. Select finishes that blend with the building or landscape.
- 2. Minimize the impact of accessibility and safety features on the historic fabric of a building.
 - a. Design and install ramps so that they do not require removal or alteration of character-defining features.
 - b. Design and install ramps so that they can be removed in the future without damaging historic materials.
 - c. It is not appropriate to install ramps or other means of access that require major changes to the original front entry or porch.
 - d. Widen entries on secondary elevations, if necessary to meet the accessibility code, rather than those on the front.

Accessory Structures

Accessory structures may include carriage houses, garages, sheds, carports, or gazebos. These structures impact the relationship of open to occupied space on a property. It is important that new accessory structures be designed to be compatible with the character, massing, and scale of the primary building on the lot.

- 1. Retain existing historic accessory structures.
 - a. Retain and repair accessory structures in their original locations.
 - b. Retain historic materials and configuration, including massing, scale, roof shape and pitch, and placement of doors and windows.
 - c. Retain historic doors and windows. Deteriorated or non-functional garage doors may be replaced with new doors whose design is compatible with the design character of the house and/or accessory building.
 - d. Replace elements that are deteriorated beyond repair with new features that are compatible in design.

- e. Altering the design of historic accessory structures to be inconsistent with their original character is not appropriate.
 - f. Demolition of accessory structures may be reviewed and approved if the existing structure has deteriorated beyond reasonable and economic ability to be repaired.
- 2. Design new accessory structures to be visually compatible with the primary building on the lot as well as adjacent structures in terms of scale, size, and materials. Simplified designs are the most appropriate.
 - a. Utilize roof shape and pitch that are consistent with the primary building, which are commonly gable roofs. Other roof shapes, including shed and flat roofs, can be appropriate when the structure is not visible from the right-of-way.
 - b. Select exterior wall and roof materials that are visually compatible with the stone, brick, and siding materials approved for use in the district.
 - c. Choose windows and doors that are consistent with the primary building and that are proportionately consistent with the size of the accessory structure.
 - d. Accessory structures that are greater than one-third of the footprint of the primary building are not appropriate, except in the case of a two-car garage which may have some other minimum size requirement.
- 3. Respect the character of the site when designing a new accessory structure.
 - a. Retain the historic relationship between the primary building, open space, and landscape features when siting a new accessory structure.
 - b. Locate new accessory structures in rear yards unless documented precedent exists within the district for other locations.

Additions to Existing Structures

With proper planning and consideration of the historic qualities of the primary building, an addition can both provide needed space and be compatible with the primary building and the district.

On the other hand, an inappropriate design can result in an irrecoverable loss of the historic character. During the continued life of a building, there is often a need to adapt it to provide additional space. While many historic buildings can readily accommodate a new addition, careful consideration must be given to the design and location of a proposed addition.

Reusing Historic Materials

Make every effort to limit the amount of historic materials and features removed with constructing an addition. If necessarily removed materials are sound or reparable, it would be good – but not required by these guidelines – to retain them or donate them for future use on other projects. Doing so would make use of the embodied energy in existing materials and would limit use of landfill space, but would add costs to the project – a consideration which would not be ignored.

Considerations when Planning an Addition

When planning to construct an addition, it is important to be aware of the factors that the HZC will consider in its review of the appropriateness of the proposed addition.

Questions that the HZC will ask include:

- Is the addition visible from the public street right-of-way?
 - Does the addition diminish the ability to interpret the character and vintage of the original building?
 - Does the addition detract from adjacent properties?
 - Does the addition require significant alterations or removal of character-defining features?
 - Does the addition require structural changes to the original building?
 - Is the massing of the addition subordinate to the original building mass?
 - Is the addition offset from the original building to provide differentiation?
 - Is the design simple and compatible with the character of the original building and surrounding properties?
 - Could the addition be removed in the future without causing irreversible damage to the historic building?
1. Design the roofs of new additions to be compatible with the primary structure.
 - a. Minimize the impact of additions on the existing roof form.
 - i. Retain the original roof configuration when making additions or changes to the building.
 - ii. Roofs on new additions should be compatible with the shape and pitch of the existing roof.
 - b. Eaves should have overhang(s) that mimic the original eaves.
 - c. Fascia boards should be included on all gable ends.
 - d. New dormers are to be scaled to the massing of the building and other dormers present on the building.
 - e. Additions should duplicate existing roofing materials if possible.
 - f. Rooftop additions should be designed carefully to be compatible with the house.
 - i. Carefully consider the location and character of rooftop additions to minimize visual impacts.
 - ii. Appropriate rooftop additions are generally limited to dormers.
 - iii. New dormer additions should conform in design and scale with existing dormers, if any.
 - iv. Large rooftop additions that dramatically alter perception of the original building mass are not appropriate.
 2. Additions should be placed in locations compatible with the primary building.
 - a. Locate additions to minimize visual impact on the original building and the district.
 - b. Place new additions on the rear elevation or at the rear half of a side elevation.
 - c. Locate new additions so that they do not conceal, destroy, or cause removal of character-defining features of the original building.
 - d. Locate a new addition so that significant landscape features (such as mature trees) and historic accessory structures are not damaged or removed.
 - e. It is not appropriate to construct an addition that significantly alters the original structural system of the original building.
 - f. It is not appropriate to construct an addition that changes the orientation of the primary entry on the original building.
 3. New additions should feature an overall massing and scale that do not detract from the historic structure.
 - a. Design an addition that respects the massing and scale of the primary of the primary building and surrounding structures.
 - b. Design an addition so that it is compatible with the size, scale, setback, and massing of the primary building.

- c. Additions that exceed 40 percent of the primary building's original footprint are not appropriate. Street-facing exterior walls should be offset from those of the primary building in order to differentiate the two.
 - d. Consider separating a large addition from the primary building by a small linking corridor (called a "hyphen") that distinguishes the two forms from one another.
 - e. Design an addition with reference to the roof shape and pitch of the primary building. The roof of an addition should not result in changes to the shape and pitch of the primary roof.
 - f. Porches to be added to the rear of secondary elevations or on the rear elevation must be compatible with the building in terms of overall design and scale as well as material and detail.
4. Select a design that is compatible with the character and materials of the original building and surrounding structures.
- a. Design an addition so that it is compatible with the character of the original building but is differentiated from the primary house, making it clear what is historic and what is new. Subtle changes in setback, material, and architectural motif are appropriate methods to employ.
 - b. Simplified details that reference the character of the original building are appropriate.
 - c. Design door and window openings that conform to the proportion, size, and rhythm of those on the original building.
 - d. Visible foundation walls are to be offset from those of the original building.
 - e. Use materials historically found on the original building or compatible alternative materials that are consistent in color, texture, and scale.
 - f. Duplicate only the most basic details from the original building, such as trim. Minimize replication of highly decorative or distinguishing details found on the original building.
 - g. Designs that starkly contrast with the original building and call undue attention to the addition are not appropriate.

Construction of New Primary Buildings

Designing a new building to fit within a historic neighborhood requires careful planning and an inherent understanding of the area's architectural history to determine the basic features that reinforce the district's character.

Replication of historic house designs is not required, although it is acceptable to use them as a basis for new construction. The guidelines allow for contemporary designs that allude to the historic styles in the district. New buildings should be differentiated from their historic counterparts and avoid creating a false sense of history, while remaining compatible with the context. The following elements are particularly critical in considering the design of a new construction within the district: location, setback, form, scale, massing, height, and roof shape.

Site

1. Design new buildings to be compatible with the existing site.
2. Significantly altering the existing topography of a site to accommodate a new structure is not permitted.
3. Consolidating lots into a larger property in order to accommodate a large structure disrupts the pattern of properties within the district and is not appropriate.
4. New building placement should preserve existing mature trees and should be placed outside of their critical root area, if at all possible.

Placement

1. Base the location of a new building on existing patterns of setbacks, orientation, and building spacing. This will help retain the historic relationship among buildings within the district.
2. The front façade line of new houses should be aligned with façade lines of adjacent houses and compatible with the overall setback pattern of the block.
3. Maintain the existing spacing of front and side yard setbacks along a block.
4. Orient the front entrance toward the main street.
5. Locate new accessory buildings at the rear of the lot consistent with those existing in the district.

Height and scale

1. Maintain the established height and scale of the street by designing new buildings to be within the typical range of heights and forms. Design new buildings so their height and width are compatible with existing buildings in the district.
2. Design new buildings to have massings similar to those traditionally found within the district.
3. Choose a building form that has a similar complexity to those elsewhere in the surrounding area.
4. Break up large massings through vertical and horizontal articulation, such as projecting bays, bay windows, porches, and material changes.

Roofs

1. Roofs on new primary structures should imitate the shape, pitch, and complexity of neighboring existing houses or others of the same architectural style in the district.
2. New primary structures should include gable roofs, unless a more complex roof form that is associated with a cohesive architectural style is proposed.
3. A minimum eave overhang of 8 inches should be used on new buildings.
4. Fascia boards should be included on all gable ends.
5. Appropriate materials include asphalt or fiberglass shingles, slate, clay or concrete tiles. Color of roofing materials should be dark green, charcoal gray or black, dark reddish brown, to simulate other roof colors in the neighborhood.
6. Use contemporary interpretations of traditional roof details such as rake boards, chimneys, roof cresting, finials, dormers, parapets, attic vents, cornices, molding, and other unique roof features when designing new buildings.

Design Features

1. Design new buildings with features that reflect those existing in the district.
2. Balance facade proportions with those historically found in the district. The composition and scale of facade elements such as porches significantly affect the aesthetic of the district.
3. Use materials with traditional dimensions.
4. Maintain traditional ratios of solid wall spaces to openings.
5. Utilize window and door openings that are compatible with those on the surrounding buildings in placement, spacing, scale, proportion, and size. Windows are to have a vertical orientation.
6. Design a new building to be compatible in character with existing structures but also to be a product of its own time.
7. It is appropriate to employ contemporary interpretations of historic designs or use a simple contemporary design that conforms to general characteristics such as massing, scale, and proportions. Include architectural details or building articulation such as cornices, lintels, brackets, and chimneys. Contemporary interpretations of traditional details are encouraged, but avoid oversimplified buildings that stand in contrast to the rich architectural variety within the district.

Porches and Stoops

1. A front porch or stoop is required for all new primary structures.
2. The proportion of the porch or stoop to its front facade should be consistent with the other porches in Lindbergh Forest.
3. Details such as columns, posts, arches, wall coverings, balustrades, floors, ceilings should be clad with materials that are compatible with other porch details in the neighborhood.
4. If provided, front porches must be large enough to provide space for active use, measuring six to eight feet deep at minimum, and feature a porch roof.
5. If a stoop is provided, stoops should be a minimum of 4' deep and be proportionate to other historic stoops in the neighborhood.

Materials

1. Use traditional materials or alternative materials that are comparable to those found in the district.
2. Select materials with textures and finishes that are compatible with those of the surrounding area, promote a sense of human scale, and have proven durability.
3. All new construction should include a character-defining masonry element similar to original features in the neighborhood, such as wall cladding, foundation cladding, chimneys, window trim, or porch elements.
4. See below guidelines for specific materials.
 - a. **Wood siding**
 - i. New construction with wood siding should incorporate cornerboards, window trim, and door trim with a depth and level of detail comparable to historic houses in the neighborhood.
 - ii. Alternative materials that simulate wood siding may be appropriate, excluding vinyl and aluminum siding.
 - b. **Fiber or cement board siding**
 - i. Use smooth-finished boards and maintain a four to six inch reveal compatible with wood siding on historic houses.
 - ii. It is not appropriate to use fiber cement board or other material that has a faux wood grain.
 - c. **Masonry**
 - i. Use masonry materials that are compatible with the character of traditional masonry materials (stone and brick) in size and texture.

Parking

1. New parking pads, driveways, and access points for new construction and existing houses should be unobtrusive to the existing pattern of the block and streetscape.
2. Do not locate parking pads in front yards.
3. Parking areas should be at least twenty feet behind the front facade of the house, with access limited to one lane between the street and the façade, unless site constraints require a different configuration.

Further Guidance for New Construction

Applying the Guidelines

Guidelines for new construction are not intended to define a specific level of detail or style for new buildings. Rather, they are intended to promote an understanding of the general characteristics that are important to consider in ensuring that a new building is compatible with the surrounding district.

The HZC will utilize the guidelines to answer the following questions:

- Does the building maintain the street character?
- Does the building fall within the established rhythm along the street?
- Is the building orientation and setback consistent with the streetscape?
- Is the front entrance oriented to the street?
- Does building massing and form fall within the established range of the streetscape?
- Does the front façade incorporate human-scale elements?
- Is the ratio of solid to openings (windows and doors), particularly on the façade, consistent?
- Is the complexity of the building form appropriate within the context of the streetscape?
- Does the roof shape and pitch conform to those within the district?
- Are materials scaled to the building and appropriate traditional materials or modern substitute counterparts with proven durability?
- Is the building appropriately articulated by architectural details that recall historic forms but stand as a product of their own time?

Recommendations for Environmental Stewardship

Just as with rehabilitating historic buildings, carefully plan the construction of infill buildings to include a sustainable approach and maximize energy efficiency:

- Maintain site features such as mature trees that provide natural shade.
- Site a building to take advantage of passive solar gain in the winter and deflection in the summer.
- Incorporate features such as porches where there is historic precedent.
- Use locally-sourced or recycled materials that are compatible with traditional materials in the district.
- Consider roof forms that allow for the installation of solar collectors at the rear of secondary elevations or on the rear elevation.
- Design and locate gutter systems that allow for the capturing of stormwater runoff.
- Locate windows and doors to allow for indoor cross ventilation.

Demolition

Demolition creates a permanent change in and loss to the district, reducing its historic and architectural significance. Demolition will be considered only when all other alternatives have been explored.

1. Work with the Historic Zoning Commission (HZC) or staff to identify alternatives to demolition. Alternatives are listed below.
 - a. Redesign the project to avoid any impact to the structure or setting.
 - b. Incorporate the structure into the overall design of the project.
 - c. Convert the structure into another use (adaptive reuse).
 - d. Relocate the structure on the current property.
 - e. Relocate the structure to another property within the same H zoning overlay.
 - f. Relocate the structure to another property within the city or county.
2. Before demolition is considered, document the condition of the building, including any public health and safety issues, such as asbestos or lead paint.
3. Document significant structures through photographs and drawings prior to demolition.
4. Work with the HZC staff and interested groups to facilitate salvage of usable architectural materials if demolition is approved.
5. Approval for demolition may be considered if the HZC determines that the building or structure does not contribute to the historical or architectural character of the district. A building's contribution may include its linkage, historically or architecturally, to other buildings in the district, such that their continuity as a collection possesses greater significance than the subject building as an individual resource.
6. Approval for demolition may be considered if the HZC finds that structural problems and associated costs to address the problems warrant demolition; the decision shall be based on an assessment by a licensed structural engineer or architect.