



MEMORANDUM DATE: June 2, 2021

AGENDA DATE: June 9, 2021

RE: **Resolution 31-2021 – Low-E Window Coatings in Historic Districts**

TO: Chair and Members of the Historic Resources Preservation Board

THRU: William Waters, AIA, NCARB, LEED AP BD+C, ID, SEED
Community Sustainability Director

FROM: Jordan Hodges, Senior Preservation Coordinator
Abraham Fogel, Preservation Planner
Community Sustainability Department

TITLE: Resolution 31-2021: An amendment to page 198 of the City’s Historic Preservation Design Guidelines to allow Low-E coatings with a minimum visible light transmittance (VLT) of 60% for glazing in the historic districts.

BACKGROUND:

- The City of Lake Worth Beach was awarded a Small Matching Grant (#18.HSM.300.007) from the Florida Department of State to create a set of City of Lake Worth Beach Historic Preservation Design Guidelines (LWBHPDG) to specifically address the City’s unique historic resources.
- Design Guidelines are intended to be used as a tool for design professionals, homeowners, city staff, and other interested parties who want to understand what is significant about their communities’ historic resources, and how to peruse rehabilitation in a sensitive manner.
- The grant funds awarded by the State were utilized by the City to hire a consultant to research, design, plan, process, and draft the Design Guidelines document. The City’s consultant for this project, Treasure Coast Regional Planning Council, produced the document.
- At the January 15, 2019 City Commission Meeting, the LWBHPDG were adopted through Resolution No. 03-2019.
- Page 198 of the LWBHPDG provides special considerations for window replacement. Item #5 states “Windows historically utilized clear glass, and therefore clear glass is the most compatible type for historic structures. Windows with Low-E or Solarban coatings, applied tint, and mirrored finishes are not recommended.”
- After the adoption of the LWBHPDG, the Historic Resources Preservation Board (HRPB) gave the directive that “clear Low-E” coatings were visually consistent with clear glass and could be approved by either administrative review or review by the HRPB.
- At the August 12, 2020 HRPB meeting, the Board made a motion to place a moratorium on all glass types other than clear, as “clear Low-E” coatings varied in appearance between manufacturers due to inconsistent industry standards. The HRPB requested that staff research visual light transmittance (VLT), a quantifiable industry standard measuring how much light is transmitted through glass, to create clear and enforceable regulations for glass coatings. As a result, all administrative and Board

cases related to windows and doors (that utilize glass) required clear glass until the moratorium was lifted.

- At the September 9, 2020 HRPB meeting, the Board requested that staff provide additional research that compares the efficiency of clear glass and glass with Low-E coatings. The Board also requested that the standard for visible light transmittance (VLT) be revised to only account for the glazing and not the entire product (frames, simulated divided lights, etc.) to more effectively review glass types.
- At the October 14, 2020 HRPB meeting, the Board lifted the moratorium and amended the Certificate of Appropriateness (COA) Approval Matrix to create a standard for Low-E glass that was equivalent to clear glass in historic districts: *“All glazing shall be clear, non-reflective and without tint. Low-E (low emissivity) is allowed but the glass shall have a minimum 70% visible light transmittance (VLT) measured from the center of glazing. Glass tints or any other glass treatments shall not be combined with the Low-E coating to further diminish the VLT of the glass.”*
- At the May 4, 2021 City Commission meeting, staff was directed to amend historic preservation requirements that limited Low-E coatings to a minimum 70% VLT. Members of the public expressed concern that the most widely available Low-E coatings do not satisfy the adopted VLT requirement. Lowering the VLT requirement to 60% increases the range of the Low-E coatings that are permitted for properties located within the City’s historic districts.
- The City Attorney, Susan Garrett, wrote a memorandum providing procedural guidance to adopt the 70% VLT standard, which indicated that an amendment to the LWBHPDG was required to allow for the implementation of the 60% VLT standard. The memorandum is included as **Attachment C**.
- Pursuant to the City’s participation in the Certified Local Government program, a notice of at least 30 days was provided to the Florida Department of State regarding a City Commission meeting (June 15, 2021) to review the amendment to the LWBHPDG. The letter received by the Florida Department of State, Division of Historical Resources, is included as **Attachment B**.

ANALYSIS:

Energy Efficiency

The construction and maintenance of buildings consumes an enormous amount of natural resources and energy produced in the United States. In an effort to curb the growing energy and material consumption associated with the built environment, architects, engineers, builders and planners, have developed or often rediscovered, “green” building practices which aim to improve energy efficiency. When applying “green” concepts to a building, it’s important to look to the past while considering the future. Historic homes often have advantages in “green” building since they were designed and built when energy and water efficiency were necessities. Historic homes responded to the South Florida climate in ways that were effective and affordable:

- Windows and doors with large overhang eaves and porches which prevent harsh sun and heat gain in the home;
- Covered outdoor spaces which allow for outdoor living;
- Roof venting through attic vents allow heat and moisture to escape once in the home;
- Two or more operable windows in each habitable room allow ample cross ventilation;
- Ceiling fans to encourage air movement;
- Cool flooring like terrazzo or breathable materials like wood to allow air movement;

- Raised foundations which allow air circulation against cooler ground, and raises home above minor flood events;
- Heat producing systems located outside the main living spaces, such as locating a washer and dryer outside or in non-conditioned spaces;
- Smaller building footprints.

Whenever possible, it is the best practice to use the originally designed sustainability features as intended. However, adaptive reuse may prompt modifications to historic structures, so it is important to balance the efficient use of the building with the restoration and historic qualities.

Glazing

Windows and doors are character-defining architectural features of historic homes that should be given special consideration for compatibility and continued operational use. Windows and doors should aim to achieve energy efficiency, while being consistent with the structure's historic architectural style. Apart from the window or door product itself, there are many variables that influence its overall energy efficiency. The orientation in relation to the sun, shading due to nearby landscaping or roof overhangs, and use of curtains or blinds all will influence how glazing performs.

Low-E Coatings in Historic Districts

In 2019, the City of Lake Worth Beach published Educational Guidelines through a Florida Department of State, Division of Historical Resources small-matching grant (#19.HSM.300.087). The Educational Guidelines review steps towards energy efficiency, which can be applied to both existing homes and new construction. As indicated on page 11, "Low-E' is a non-reflective, non-tinted window film that greatly reduces heat gain through windows. It's available as a film applied to existing windows or in replacement windows. Tints and mirrored glass are typically not appropriate for historic structures and are not as effective as a 'Low-E' treatment."

Visible light transmittance (VLT) refers to the amount of light that passes through a glazing material. A higher (VLT) means there is more light is being transmitted. For impact glass, the VLT typically ranges from 80% for uncoated clear glass to less than 10% for highly reflective coatings on tinted glass. The VLT is determined by the thickness of the frame and sash, coating or tint on the glass, and any grids or muntins as they block some of the light. The VTL representative of the center-of-glazing (COG) region only measures the amount of light that is being transmitted through the glass, not the entire window or door product.

At the October 14, 2021 HRPB meeting, the Board determined that Low-E coatings with a minimum 70% VLT are within the range of "clear glazing", which is the standard set by the LWBHPDG.

At the May 4, 2021 City Commission meeting, staff was directed to amend historic preservation requirements that limited Low-E coatings to a minimum 70% VLT. Members of the public expressed concern that the most widely available Low-E coatings do not satisfy the adopted VLT requirement. Lowering the VLT requirement to 60% increases the range of the Low-E coatings that are permitted for properties located within the City's historic districts. As a result, darker Low-E coatings which cannot be considered visually similar to clear will be permitted. The Resolution 31-2021 draft is included as **Attachment A**.

RECOMENDATION BY THE FLORIDA DEPARTMENT OF STATE:

The Certified Local Government (CLG) Program links three levels of government; federal, state and local, into a partnership for the identification, evaluation and protection of historic properties. Designation as a certified local government, either as a municipality or a county, makes historic preservation a public policy through passage of a historic preservation ordinance. The ordinance establishes a historic preservation board to develop and oversee the functions of its historic preservation program.

Pursuant to the City's participation in the Certified Local Government program, a notice of at least 30 days was provided to the Florida Department of State regarding a City Commission meeting (June 15, 2021) to review the amendment to the LWBHPDG. The letter received by the Florida Department of State, Division of Historical Resources, is included as **Attachment B**.

The Florida Department of State Certified Local Government Coordinator, Mariah Justice, indicated that the proposed amendment to the LWBHPDG that allow Low-E coatings with a visual light transmittance of less than 70% is not in agreement with the Secretary of Interior Standards for Rehabilitation and Guidelines on Sustainability for Rehabilitating Historic Buildings: "retrofitting historically-clear windows with tinted glass or reflective coatings will negatively impact the historic character of a building...". Therefore, the amendment is not recommended for the LWBHPDG to permit its use on historic properties.

PUBLIC COMMENT:

Staff has not received public comment for this item.

POTENTIAL MOTION:

I MOVE TO **RECCOMDEND APPROVAL TO THE CITY COMMISSON OF RESOLUTION 31-2021** to amend page 198 of the City's Historic Preservation Design Guidelines to allow Low-E coatings with a minimum visible light transmittance (VLT) of 60% for glazing in the historic districts.

I MOVE TO **RECCOMDEND DENIAL TO THE CITY COMMISSON OF RESOLUTION 31-2021** to amend page 198 of the City's Historic Preservation Design Guidelines to allow Low-E coatings with a minimum visible light transmittance (VLT) of 60% for glazing in the historic districts.

ATTACHMENTS:

- A. Resolution 31-2021 Draft
- B. Florida State Department Letter
- C. City Attorney Memorandum