CITY OF COLUMBIA

SOLAR PANELS AND HISTORIC BUILDINGS

Renovations and retrofits of historic buildings can often involve the installation modern systems that were not invented at the time of the building's original construction. Taking into account the manner in which these modifications are installed, introducing new systems to historic buildings *is* possible and *can* involve energy efficient and cost effective investments that *do not* detract from the historic character of a property.

SOLAR ENERGY

Recently, interest in solar energy retrofits have gained in popularity. There are three main ways that solar energy may be used to provide energy to a building:

- A **photovoltaic system** (or PV system) is the most common type of solar panel system seen on buildings. It consists of multiple components, including the photovoltaic modules, mechanical and electrical connections and mountings. The panels are mounted on top of existing roofing.

- **Solar shingles**, also called photovoltaic shingles, are solar cells designed to look like conventional shingles and installed as strips or single shingles in place of roofing shingles.

- **Freestanding PV panels** or freestanding arrays are placed away from the residence on the ground and connected to the property through underground wiring. These systems allow the benefits of renewable solar power without disrupting the roofline or altering the historic property.

Above definitions courtesy of the National Alliance of Preservation Commissions (https://www.growsolar.org/wp-content/uploads/2015/08/Sample-Guidelines-for-Solar-Systems-in-Historic-Districts.pdf); Images from the National Alliance of Preservation Commissions and the National Park Service

SOLAR TECHNOLOGY AND PRESERVATION REVIEW

Within historic districts and related to historic buildings, solar panel installment can raise questions of appropriateness. At this time, with rapidly changing technology, the City of Columbia does not have ordinance language that specifically addresses the installment of solar technology on historic buildings. Instead, we look to general roof language in district guidelines and the Secretary of Interior Standards for guidance on solar technology installation in historic context.

REVIEW WITH CITY ORDINANCE SECTION 17-674

Within certain areas, listed below, solar panel installations would be reviewed by the Standards (the Secretary of the Interior's Standards for Rehabilitation, as amended) which are listed in the City Ordinance Section 17-674.

- Individual Landmarks
- Landmark District
- Elmwood Park ACD
- Governor's Mansion PA
- Bailey Bill properties

CONSIDER THE FOLLOWING:

- Installation of panels should be reversible and not damage historic integrity, detract from the historic character, alter character defining features, or remove historic materials
- Panels should be installed so that they do not alter the slope of the roof; consider using on rear slopes to minimize visibility from the public right-of-way.
- Solar panels should be positioned behind existing architectural features such as parapets, dormers, and chimneys.
- Freestanding or detached solar panels should be installed in locations that minimize visibility from the public right of way; consider using screening if needed.

APPLICABLE STANDARDS:

- Standards A and B: (a) For landmark districts and individual landmarks, the historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided. (b) In architectural conservation districts and protection areas, the historic character of a district shall be retained and preserved through the preservation of historic materials and features which characterize the historic district.
- Standard H: New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

REVIEW WITH LOCAL DISTRICT GUIDELINES

Within Architectural Conservation Districts, listed below, solar panel installations would be reviewed by district design guidelines. While guidelines may differ slightly between districts, roofing guidelines within Architectural Conservation Districts generally include the same language.

- Cottontown/ Bellevue ACD
- Granby ACD
- Melrose Heights/ Oak Lawn ACD
- Oakwood Court ACD
- University ACD
- Wales Garden ACD

CONSIDER THE FOLLOWING:

- Panels should be installed so that they do not alter the slope of the roof.
- Color of array should be chosen to match existing roofing.
- Install panels so they do not disrupt or damage character defining features or historic materials on the roof.

APPLICABLE GUIDELINES:

1. Preserve the original roof form in the course of rehabilitation
2. Preserve historic roofing materials when technically and economically feasible.
3. Replace deteriorated roof surfacing with new material, such as composition shingles or tabbed asphalt shingles, that match the original in composition, size, shape, color, and texture.
4. Retain or replace where necessary: dormer windows, cupolas, cornices, brackets, chimneys, cresting, weather vanes, and other distinctive architectural or stylistic features that give a roof its essential character.

Other districts may have limited roofing language that can be applicable when considering adding solar panels.

- Old Shandon / Lower Waverly Protection Area
- Waverly Protection Area

CONSIDER THE FOLLOWING:

- Panels should be installed so that they do not alter the slope of the roof.

- West Gervais Historic Commercial District and Protection Area

CONSIDER THE FOLLOWING:

- Panels should be installed so that they do not alter the slope of the roof.
- Panels should be positioned behind existing architectural features such as parapets and chimneys.

AREAS THAT DO NOT REQUIRE ROOFING REVIEW

Design guidelines of the districts listed below do not support review of any roofing changes.

- Earlewood Protection Area
- Seminary Ridge Protection Area
- Whaley PA

PLEASE NOTE:

- Contributing structures within these districts that apply for the Bailey Bill should comply with Bailey Bill standards when considering the installation of solar panels

NEW CONSTRUCTION IN A HISTORIC CONTEXT

When considering solar energy for new construction/ infill within a historic district, the solar technology should be integrated into the initial design to assure compatibility of the design with the historic context.

GENERAL CONSIDERATIONS AND MORE INFORMATION

If a historic property is not subject to design review but a property owner is concerned with maintaining historic integrity, consider the following:

If the goal is to maintain historic integrity when installing solar panels, the answer to each of these questions should be 'no'

- Does the building have historic roofing material that will be altered/ damaged the solar panel by installation?
- Will the solar panels alter the roof shape/ pitch?
- Will the solar panels be visible from the street?
- Is the installation of the solar technology irreversible?

For more information about using solar technology in a historic setting:

National Park Service, Technical Preservation Services, "Installing Solar Panels and Meeting the Secretary of the Interior's Standards"

- https://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm

National Park Service, Technical Preservation Services, " Incorporating Solar Panels in a Rehabilitation Project"

- https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS52-SolarPanels.pdf

If you have any questions about a specific historic property please contact City of Columbia preservation staff. Contact information can be found on the City of Columbia website: *https://www.columbiasc.net/planning-preservation/planning-staff*