

SUSTAINABLE HISTORIC PRESERVATION – Joint Guidelines Adopted by the Evanston Preservation Commission, Environment Board and Utilities Commission

In 2018, the City of Evanston formally adopted the Climate Action and Resilience Plan (CARP) setting out community goals of carbon neutrality, zero waste, and 100 percent renewable energy. This fundamental goal of sustainability and livability has long been embraced by historic preservation. Preserving the historic integrity of our building stock rather than replacing or constructing new is one of the most successful strategies for sustainability that can be employed. In addition, older structures built before the crutches of modern heating and air conditioning systems are often more efficient than new construction when maintained properly. Combining the merits of historic construction with advances in renewable energy will help Evanston reach our CARP goals. With this in mind, in 2019, the City of Evanston formed a subcommittee comprised of three City entities: the Environment Board, the Utilities Commission, and the Preservation Commission, to develop guidelines focused on preserving Evanston's unique architectural character, while incorporating sustainable materials and systems to help us meet our CARP goals. The following guidelines address sustainability from a design perspective as applied to historic structures.

Solar Systems and Green Roofs:

Installation of solar systems and green roofs must take into account a variety of factors, including the building's structural capacity, orientation to the sun, surrounding buildings, trees, and vegetation, and zoning and building code requirements. For historic landmark buildings, or those located in an historic district, there is also a requirement that installations be compatible with their architectural and neighborhood character, maintaining the resource's historic integrity and the ability to interpret its historic significance. Regardless of whether or not a building is designated an historic landmark, existing buildings in a historic district may contribute to the character and diversity of the district. Successful approaches specifically tailor an installation plan to a building's individual characteristics, balancing the goals of sustainability and green design with the preservation of historic character.

While most historic buildings can be retrofitted with solar or green roofs in a manner that respects their architectural character, there may be limited instances in which solar is not feasible or appropriate. Fortunately, with emerging technologies there are an increasing number of options available for compatibly integrating solar into older and historic buildings, such as thinner panels, solar film systems, and solar integrated roofing materials.

Preservation Guidelines for Solar and Green Roof Systems When Certificate of Appropriateness (COA) is Required

The Evanston Preservation Commission reviews solar installations on buildings with landmark status or located in an historic district. A Certificate of Appropriateness (COA), if approved, is issued by the Commission as part of the city's building permit requirements. Projects may be reviewed either administratively with the city's Preservation Coordinator or submitted to the Preservation Commission for review, depending on the specifics of each project.

The Preservation Commission has developed design guidelines for solar and/or green roof installations based on the Evanston Preservation Commission Standards for Review. The Commission has authorized

the city's Preservation Coordinator and/or authorized City staff to grant staff-level approval for solar and green roof installations that are consistent with the principles outlined in the guidelines. Installations that may qualify for administrative approval include those that are not visible when looking at the primary elevation from a street or public way and installations on detached accessory structures, such as garages and coach houses. Corner lot properties may need to appear in front of the Commission, depending on the degree to which solar or green roof installations are not consistent with the guidelines. Proposals that are visible when looking at the primary elevation, and those that are not consistent with the guidelines, will be submitted for review by the Preservation Commission to determine whether an exception to the design principles is warranted.

These guidelines are intended to promote these types of installations in a manner that retains historic building characteristics and minimizes alterations that could adversely impact an historic building or district.

Guidelines:

1. Retain original character-defining roof and exterior wall features and finish materials or other building characteristics that are significant to the building's integrity and original design.
2. Install so that there is no perceptible change in the building's massing, height, or roofline, as seen from a street or public way, and distinctive roof features or materials are not obscured on primary elevations. Solar panels should, when possible, blend in color with the roof itself. Every attempt should be made to limit installation to subordinate additions or secondary structures.
3. For buildings with flat roofs, locate solar or green roof installations back from the front edge of the roof (and from the exposed side edge for corner properties) to minimize visibility from a street or public way.
4. For buildings with sloped roofs, locate solar or green roof installations on secondary elevations to minimize their visibility from a street or public way. If installations on secondary elevations are visible from a street or public way, install solar panels parallel with roof plane and use low-profile panels set flush with the roof.
5. If it is necessary to install solar panels on a primary elevation to achieve solar performance, installations should be pulled away from roof edges and ridges. Careful attention should be paid to the grouping of solar panels into simple, rectangular blocks, avoiding sawtooth patterns. Use low-profile panels set coplanar and flush with the roof. Solar panels and related installation hardware should be designed and arranged to minimize their appearance from the street.
6. Installation hardware should be installed in a manner that is not prominent on a primary elevation. Installation hardware should be minimally visible (including ground level equipment).
7. As new technologies are tried and tested, it is important that they leave no permanent negative impacts to historic structures. Installations should be done in such a way that they can be removed readily, and the original character easily restored. Installation hardware should not interact negatively with historic building materials. The reversibility of their application will be an important

consideration when determining appropriateness. In the event that solar technology is used which is integral to the structure of the roof, such as solar shingles, the application and the issue of reversibility will be reviewed on a case by case basis.

8. If the primary elevation is the southern exposure, then all other exposures should be considered for the installation. See Guideline 5 in the event that it is necessary to install solar panels on the primary elevation.
9. Consideration should be given to any reduction in the efficiency levels of solar panels due to their location on a building location.

REQUIREMENTS FOR SOLAR AND GREEN ROOF INSTALLATIONS WHEN COA IS REQUIRED

The following information is required when submitting for a COA from the Preservation Commission for a solar or green roof installation for landmarked buildings or those in a historic district. Applications will be handled administratively or at a commission hearing, depending on the project.

1. Photographs/3D Renderings: Photos should illustrate all elevations of the building and of the roof itself in the existing context of the neighborhood, including street facing and views from public ways, including any thru-views across surrounding lots. Photos of a mockup or 3D renderings of the panels on the roof as visible from public ways are helpful.
2. Site Plan: The site plan should show the location of the solar or green roof systems on the building with zoning setbacks indicated on the plan.
3. Roof plan: The plan should show existing roof features (such as skylights, chimneys, and decks), and placement of the solar or green roof installation. The plan should specify dimensions of the installation, and set backs from the front, side and rear edges of the roof. The plan should also include details of the installation hardware layout.
4. Roof section: The section should show the angle of the existing roof and the proposed installation, the height of the installation and any related structural supports above the roof, and the thickness of the installation. The dimension from the roof surface to the top of the racking system and solar panels or green roof should be clearly noted.
5. Materials: The type of solar or green roof installation should be fully described. Samples of materials, such as solar roofing shingles, are encouraged to be presented at the Commission hearings.