

1 DRAFT, proposed amendment to the PHDC's Standards & Guidelines:  
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### 3 **MINOR ALTERATIONS: MECHANICAL & COMMUNICATIONS EQUIPMENT**

#### 4 5 **PASSIVE SOLAR ENERGY SYSTEMS**

##### 6 **Solar Panels, Heat Collectors and Photovoltaic Systems** 7

#### 8 **INTRODUCTION**

9 In 2013, with *Sustainable Providence*, the City of Providence released sustainability goals to move  
10 Providence forward in six key areas: waste, food, transportation, water, energy, and land use &  
11 development. As part of the global initiative to encourage energy conservation there is a rapidly growing  
12 trend toward retrofitting homes to be more energy efficient. This has brought an increase in the number  
13 of applications for installing solar energy systems on buildings within Providence's locally designated  
14 historic districts. Specifically identified in *Sustainable Providence* is the West Side Solar program, a  
15 successful initiative to introduce solar energy to primarily historic properties in the City's West End. The  
16 success of the program has created more interest in expanding the program throughout the City. This  
17 growing interest has caused some concern by the Providence Historic District Commission (PHDC) as to  
18 the appropriateness of allowing solar panel installations within the City's local historic districts. Of  
19 particular concern are those buildings with primary elevations that face south. The PHDC's Standards &  
20 Guidelines make the installation of publicly visible solar panels difficult to approve as such installations  
21 generally qualify as having an adverse effect on either the historic structure and/or the historic district.  
22 This is also in keeping with the National Park Service's Standards, the national guideline for historic  
23 district commissions. In an effort to allow both of these worthy initiatives, historic preservation and  
24 energy conservation, to continue the PHDC has amended their Standards & Guidelines as follows.  
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#### 26 **SUSTAINABILITY**

27 Before implementing any energy conservation measures to enhance the sustainability of a historic  
28 building, the existing energy-efficient characteristics of the building should be assessed. Buildings are  
29 more than their individual components. The design, materials, type of construction, size, shape, site  
30 orientation, surrounding landscape and climate all play a role in how buildings perform. Historic building  
31 construction methods and materials often maximized natural sources of heating, lighting and ventilation  
32 to respond to local climatic conditions. The key to a successful rehabilitation project is to identify and  
33 understand any lost original and existing energy-efficient aspects of the historic building, as well as to  
34 identify and understand its character-defining features to ensure they are preserved. The most  
35 sustainable building may be one that already exists. Thus, good preservation practice is often  
36 synonymous with sustainability. There are numerous treatments—traditional as well as new  
37 technological innovations—that may be used to upgrade a historic building to help it operate even more  
38 efficiently. Increasingly stricter energy standards and code requirements may dictate that at least some  
39 of these treatments be implemented as part of a rehabilitation project of any size or type of building.  
40 Whether a historic building is rehabilitated for a new or a continuing use, it is important to utilize the

41 building’s inherently-sustainable qualities as they were intended. It is equally important that they  
 42 function effectively together with any new measures undertaken to further improve energy efficiency.  
 43 (NPS, *Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings*)

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45 **Solar Technology**

<b>Recommended</b>	<b>Not Recommended</b>
Considering on-site, solar technology only after implementing all appropriate treatments to improve energy efficiency of the building, which often have greater life-cycle cost benefit than on-site renewable energy.	Installing on-site, solar technology without first implementing all appropriate treatments to the building to improve its energy efficiency.
Analyzing whether solar technology can be used successfully and will benefit a historic building without compromising its character or the character of the site or the surrounding historic district.	Installing a solar device without first analyzing its potential benefit or whether it will negatively impact the character of the historic building or site or the surrounding historic district.
Installing a solar device in a compatible location on the site or on a non-historic building or addition where it will have minimal impact on the historic building and its site.	Placing a solar device in a highly-visible location where it will negatively impact the historic building and its site.
Installing a solar device on the historic building only after other locations have been investigated and determined infeasible.	Installing a solar device on the historic building without first considering other locations.
Installing a low-profile solar device on the historic building so that it is not visible or only minimally visible from the public right of way: for example, on a flat roof and set back to take advantage of a parapet or other roof feature to screen solar panels from view; or on a secondary slope of a roof, out of view from the public right of way.	Installing a solar device in a prominent location on the building where it will negatively impact its historic character.
Installing a solar device on the historic building in a manner that does not damage historic roofing material or negatively impact the building’s historic character and is reversible.	Installing a solar device on the historic building in a manner that damages historic roofing material or replaces it with an incompatible material and is not reversible.
	Removing historic roof features to install solar panels.
	Altering a historic, character-defining roof slope to install solar panels.
	Installing solar devices that are not reversible.
Installing solar roof panels horizontally—flat or parallel to the roof—to reduce visibility.	Placing solar roof panels vertically where they are highly visible and will negatively impact the historic character of the building.
Investigating off-site, renewable energy options when installing on-site solar devices would negatively impact the historic character of the building or site.	

46 (NPS, *Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings*)

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**GENERAL GUIDELINES for Solar Panels, Heat Collectors and Photovoltaic Systems**

In the historic districts, the greatest potential for using solar panels to heat water or to generate electricity will be on buildings with large flat roofs, high parapets, or roof configurations that allow solar panels to be installed with limited or no visibility. All solar panel installations must be considered on a case by case basis recognizing that the best option will depend on the characteristics of the property under consideration. When considering retrofitting measures, historic building owners should keep in mind that there are no permanent solutions. One can only meet the standards being applied today with today's materials and techniques. In the future, it is likely that the standards and the technologies will change and a whole new retrofitting plan may be necessary. Thus, owners of historic buildings should limit retrofitting measures to those that achieve reasonable energy savings, at reasonable costs, with the least intrusion or impact on the character of the building.

1. On a flat roof (historic building, non-contributing existing building, or new construction), solar panels may be located, installed at a low angle, so that they are out of view from the public right-of-way adjacent to the building. In the case where a proposal meets these requirements and has been deemed to have no adverse effect by the RI Historical Preservation & Heritage Commission (when such review is required), the PHDC review would be conducted at an administrative level by the Commission's staff. Nothing would prevent staff from forwarding the application to the full Commission for review if warranted;
2. On buildings with a sloped roof (historic building, non-contributing existing building, or new construction) where solar panels are to be installed on a secondary elevation, not visible from the public right-of-way:
  - A. Panel layout shall be sympathetic or appropriate to design and scale of building. Rectangular configurations are preferred, with ample setback from edge of roof, dormers, chimneys, etc.;
  - B. Panels shall be installed parallel to the existing roof slope and matched as closely as possible to the roof plane;
  - C. Panels shall be installed without destroying or replacing original or historic materials or significantly compromising or altering the building's structural integrity;
  - D. Panels shall be compatible in color to existing roofing insofar as possible;
  - E. Installation of panels shall be as inconspicuous as possible when viewed from public right-of-way;
  - F. Installation shall be reversible. Panels shall be removed when no longer viable or functioning and roofing restored to pre-existing conditions; and,
  - G. In the case of proposals that have been deemed to have no adverse effect by the RI Historical Preservation & Heritage Commission (when such review is required), the PHDC review would be conducted at an administrative level by the Commission's staff. Nothing would prevent staff from forwarding the application to the full Commission for review if warranted; and,

89 3. Solar panels may be installed in side or rear yards, but may not exceed 8 feet in height. Freestanding  
90 or detached on-site solar panels should be installed in locations that minimize visibility from the  
91 public right-of-way. These systems should be screened from the public right-of-way with materials  
92 elsewhere in the district such as fencing or vegetation of suitable scale for the district and setting.  
93 Placement and design should not detract from the historic character of the site or destroy historic  
94 landscape materials. Solar panels are not permitted in front yards.

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96 **GUIDELINES FOR REVIEW OF ROOF-MOUNTED PHOTO-VOLTAIC SOLAR PANELS\* ON THE PRIMARY**  
97 **ELEVATION(S) OF AN HISTORIC STRUCTURE:**

- 98 1. For most historic properties, locating solar panels on the primary facade is the least desirable option  
99 because it will have the greatest adverse effect on the district's and property's character defining  
100 features, as well as its effect on the historic streetscape. All other options should be thoroughly  
101 explored and ruled out before considering installing solar panels on a primary elevation. For the  
102 installation of solar panels on primary elevations proof that all other elevations or locations on  
103 property are not viable or feasible for installation of solar panels is required. In the case of  
104 installations where the proposed solar array is visually intrusive or highly visible visible from the  
105 public right-of-way, such installations will be considered inappropriate;
- 106 2. For installations on Structures of particular significance if the proposed array is highly visible, such  
107 applications will be considered inappropriate~~recognized or deemed to have individual significance~~  
108 ~~(i.e. individually listed on the National Register) shall be more stringently reviewed;~~
- 109 3. Panel layout shall be sympathetic or appropriate to design and scale of building. Rectangular  
110 configurations preferred, with ample setback from edge of roof, dormers, chimneys, etc.;
- 111 4. Panels shall be installed parallel to existing roof slope and as closely as possible to roof plane;
- 112 5. Panels shall be installed without destroying or replacing original or historic materials or significantly  
113 compromising or altering building's structural integrity;
- 114 6. Panels shall be compatible in color to existing roofing insofar as possible;
- 115 7. Installation shall be reversible. Panels shall be removed when no longer viable or functioning and  
116 roofing restored to pre-existing conditions; and,
- 117 8. In the case of proposals that have been deemed to have no adverse effect by the RI Historical  
118 Preservation & Heritage Commission (when such review is required), the PHDC review would be  
119 conducted at an administrative level by the Commission's staff. Nothing would prevent staff from  
120 forwarding the application to the full Commission for review if warranted.

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122 \*This only applies to photo-voltaic solar panels designed to produce electricity for that particular  
123 property. Installation of other systems would not be appropriate for installation on the primary  
124 elevation.