

**SALT LAKE CITY
HISTORIC LANDMARK COMMISSION**

TRACY AVIARY SOLAR PANEL REQUEST

**CASE NO 470-07-13
MAY 2, 2007**

OVERVIEW

Tracy Aviary, represented by Patty Shreve, Curator, is requesting approval to install photovoltaic panels on the roof of the Lorikeet Holding / public restroom building located at approximately 589 East 1300 South within the Aviary. The purpose of the request is to allow the Aviary to generate, through solar power, enough energy to cover the power needs of the Aviary. The property is located within Liberty Park, a Landmark Site. The base zoning of the property is Open Space (OS), the purpose of which is “to preserve and protect areas of public and private open space and exert a greater level of control over any potential redevelopment of existing open space areas. The zone allows uses such as parks, zoos, golf courses and cemeteries as permitted uses.

BACKGROUND AND PROPOSAL

The nomination form for Liberty Park, completed in 1978, does not give specific information on this structure. As identified in the Liberty Park Landscape Scoping Project of 1997, Liberty Park’s architecture is eclectic and heterogeneous. The extant 25 buildings and structures (including those in the Aviary) exhibit a wide variety of styles, forms, roof types, materials and details. This same document identifies the Lorikeet Holding building as a bungalow structure built in the 1920s.

According to the applicant, one of the stated goals of the Tracy Aviary master plan is to be environmentally responsible. The purpose of the project is to move towards that direction while educating the public about renewable energy opportunities available. The Aviary was awarded a grant from PacifiCorp to help the Aviary fulfill that goal.

The project includes educational graphics placed along the public walkway in front of the panels explaining how the panels work as well as computer hardware and software that will allow anyone accessing the Aviary’s website to see current electricity generation. The educational display will look similar in form and style to other educational graphics seen in the Destination Argentina exhibit near the Lorikeet Building. The graphic will be on a post approximately three feet high at the edge of the walkway. The graphic panel will be approximately 18-20 inches high by 2 ½ -3 feet long. Other renewable energy projects were considered but were found to not work given other considerations of the Aviary (please see Exhibit 1 for more information.)

According to the applicant, the location of the panels on this particular building and on this side of the building is dictated by the available sunlight. If the panels do not receive direct sunlight for a majority of the day, their potential to produce electricity is greatly reduced. To receive the maximum solar radiation the panels must face south. They also took into account the tree canopy which covers approximately 80% of the Aviary grounds. This building is in one of the sites where the trees are not located.

The proposed solar panels are a product of "Solar World." Most solar panels have a similar appearance with some minor variation (see Exhibit 3). There are not options for color variations. The Aviary's peak power draw, based on their annual billing invoices, is 5,000 watts. Therefore, they designed the project with just enough panels to meet that need; a total of thirty panels will be placed on the roof to produce 5,000 watts of power. The panels will cover approximately 49% of the south side of the roof. The inverters and communication box will be located within the building near the distribution panel and the applicant has agreed to place the AC & DC disconnects in an area other than the south elevation of the building.

The applicant is proposing to install the Shell Power Max Ultra 175-PC solar panel system which can generate 175 watts and 35.4 volts of electricity per panel. They typically consist of the following components: solar collector panels, inverters and conduits and other accessory equipment. In this case, solar panels would be mounted flat on the roof. The submitted plans show a thirty (30) paneled system with each panel measuring 63.9 (w) x 32.1"(h) x 2.2"(d). The panels would cover the south slope (front facing slope) of the roof of the original structure extending approximately two feet below the ridge of the roof for a total length of thirty-two feet (32') across the roof.

ANALYSIS

REQUIREMENTS OF THE ZONING ORDINANCE

ZONING REQUIREMENTS

All proposed work must comply with height, yard and bulk requirements of the Open Space (OS) zoning district.

ZONING ORDINANCE AND DESIGN GUIDELINES

21A.34.020 H Historic Preservation Overlay District:

G. Standards for Certificate of Appropriateness for Alteration of a Landmark Site or Contributing Structure. In considering an application for a certificate of appropriateness for alteration of a landmark site or contributing structure, the historic landmark commission, or the planning director, for administrative decisions, shall find that the project substantially complies with all of the following general standards that pertain to the application and that the decision is in the best interest of the city:

1. *A property shall be used for its historic purpose or be used for a purpose that requires minimal change to the defining characteristics of the building and its site and environment;*

FINDING: No changes are proposed in the use of the building. It will continue to be used as a public restroom. The proposed project is consistent with this standard.

2. *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;*

DISCUSSION: This structure is a simple bungalow structure with a gable roof which is a character defining features of this style of architecture. The new solar collector panels have a flat profile and would cover a substantial amount of the front facing (south) roof slope, altering the historic character of the property.

FINDING: The proposed roof mounted solar panel system does not meet this standard since its large surface area will visually alter the roof which is a character defining feature of the structure.

3. *All sites, structures and objects shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create a false sense of history or architecture are not allowed;*

DISCUSSION: The contemporary nature of the proposed solar panel system distinguishes it from the original historic portion of the structure.

FINDING: Retrofitting the historic building with contemporary equipment to make it more energy-efficient differentiates the improvements from the historic portion of the structure. Thus, the proposed panel installation will be recognizable as a product of its own time and is consistent with this standard.

4. *Alterations or additions that have acquired historic significance in their own right shall be retained and preserved;*

FINDING: The removal of alterations or additions that have acquired historic significance in their own right is not part of this request.

5. *Distinctive features finishes and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved;*

DISCUSSION: Although the roof is a very basic design without elaborate details of the trim or eaves, the applicant is proposing to install solar collector panels that would cover the south slope (front) of the original structure extending below the ridge of the roof for a total length of thirty-two feet, or 49 % of the front facing slope of the roof. The panels are proposed to be placed two feet below the ridgeline and on the western half of the front of the roof. Except for the roof itself, the placement of the panels will

not remove distinctive features, finishes and construction techniques or examples of craftsmanship that characterize the historic structure.

FINDING: The proposed addition will cover and change a character-defining feature of the building, the roof. However, other distinctive features, finishes and construction techniques or examples of craftsmanship that characterize the historic structure will be preserved

6. *Deteriorated architectural features shall be repaired rather than replaced wherever feasible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures or objects;*

FINDING: Repair or replacement of missing architectural features is not a component of this request.

7. *Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible;*

FINDING: No chemical or physical treatments are proposed as part of this project.

8. *Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant cultural, historical, architectural or archaeological material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment;*

DISCUSSION: The project includes 30 solar collector panels which will cover approximately 49% of the south (front) facing slope of the roof. The panels are located in a configuration of five rows of six panels and will be placed approximately two feet below the ridgeline.

The color of the panels is a dark black color which is highly visible on the existing tan roof. It is believed the existing roofing materials were installed in the early 1990s. Although the tan color roof is compatible with the brick structure, a darker color shingle may better blend with the color of the solar panels, which have no option for color variation. Although a black shingle is not typically compatible on a historic structure and black shingles are not as environmentally friendly because they attract / trap heat, in order to create a balance between the tenants of preservation with those of environmental sensitivity it may be appropriate to ask the applicant to consider

replacing the roofing material with a colored shingle that helps decrease the visibility of the solar panels.

FINDING: The proposed improvements will change the visual appearance of the roof, including when viewed from the street. Changing the color of the roof to be consistent with the panel color may help to minimize the panels' appearance and decrease the visibility of the panels from the street.

9. *Additions or alterations to structures and objects shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired. The new work shall be differentiated from the old and shall be compatible in massing, size, scale and architectural features to protect the historic integrity of the property and its environment;*

DISCUSSION: Although the panels are not visually compatible, it would be possible to remove the roof mounted solar panel system in the future and the essential form and integrity of the historic property and its environment would be unimpaired.

FINDING: The proposed equipment design is generally inconsistent with this standard because a portion of the original roof structure of the historic building will be covered which alters its historic character. However, if the color of the roof is changed to blend with the panel colors it may make it more visually compatible with the contributing structure. The new work will be discernable from the old and it would be possible to remove the panels in the future without disrupting the essential form and integrity of the structure. The proposed project is consistent with the standard in this area.

10. *Certain building materials are prohibited including the following:*

a. Vinyl or aluminum cladding when applied directly to an original or historic material, and

b. Any other imitation siding material designed to look like wood siding but fabricated from an imitation material or materials;

FINDING: No prohibited building materials are proposed.

11. *Any new sign and any change in the appearance of any existing sign located on a landmark site or within the H historic preservation overlay district, which is visible from any public way or open space shall be consistent with the historic character of the landmark site or H historic preservation overlay district and shall comply with the standards outlined in Part IV, Chapter 21A.46, Signs;*

FINDING: Signage is not a component of this project.

12. *Additional design standards adopted by the historic landmark commission and city council.*

19.0 (Solar Panel Installation) of the Historic Landmark Commission's Policy Document

On July 5, 2006, the Historic Landmark Commission adopted the following criteria to consider relating to the installation of solar panels on residential structures located within a local historic district or on residential structures that are listed individually as Landmark Sites. Although the adopted criteria relates specifically to residential structures, the guidelines are relevant to the installation of solar panels on contributing structures in general because the criteria were based on best practices as identified by the National Park Services relating to solar panel installation on contributing structures.

1. *Solar panels should be installed below the ridgeline of a pitched roof, when possible or setback from the edge of a flat roof.*

Discussion: The panels are proposed to be installed two feet below the ridgeline.

Finding: The proposal meets this standard.

2. *Solar panels should be located so as not to change an historic roofline or obscure the relationship of an historic roof to character-defining features such as dormers and chimneys.*

Discussion: The only prominent detail of the roof is the gable over the front door of the building. The panels will be away from this small cross gable, will be flush with the slope of the roof and will be located below the ridgeline. There is a skylight located on the front of the roof (eastern side) but staff was not able to find a permit for this installation.

Findings: The panels will not be located in a way that would change or obscure the relationship of an historic roof to character defining features of the structure.

3. *Solar panels should be installed in a manner which does not damage or obscure character-defining features.*

Discussion: The roof is a prominent feature of this simple bungalow structure and placement of the solar panels on the front facing side of the roof (south) will in some way, obscure this character-defining feature of the building. However, the roofline itself will not be changed and other obstructions, including the skylight on the southeastern side of the structure have already been installed.

Findings: Although installing the panels on the roof of the Lorikeet Building will obscure the character-defining features of this simple structure, it will not damage the roof.

4. *Solar panels should be located on the rear or sides of a pitched roof. Locating solar panels on a front pitched roof of the primary façade is inappropriate.*

Discussion: The proposal includes installation of the panels on the front side of the pitched roof. Although it is within the Park, the lack of tree cover in this area of the Aviary makes the building visible from the Park roadway as well as from 1300 South. It is this lack of tree coverage; however, along with the south facing slope, which make the building a logical candidate for the solar panel system to work. In fact, as seen on the attached aerial (exhibit 4) it is the best choice of buildings within the Aviary for collecting solar energy. The only other structure in the Aviary with a lack of tree canopy and with southern exposure is the Wilson Pavilion. The roof on the Wilson Pavilion is a large part of the character of this unique building and therefore, installing the panels on the bungalow structure of the Lorikeet building would have less negative impact than if they were to be installed on the Wilson Pavilion roof.

Findings: The proposal includes locating the solar panels on the front side of the pitched roof. In this case, the front side is the southern side; the exposure most conducive to capturing solar energy. In that sense, the project does not meet this standard. However, due to the lack of other plausible locations within the Aviary for collecting solar energy, allowing for the panels to be located on this side of the structure, along with requesting the applicant consider changing the color of the roof to a color that helps decrease the visibility of the panels and makes them less visually prominent on the front elevation may be an appropriate compromise.

5. *Solar panels should be mounted parallel to the plane of a pitched roof and have a low profile.*

Discussion: The panels are proposed to be mounted flat on the roof and have a depth of 2.2 inches.

Finding: The proposal meets these criteria.

6. *Solar panels should be installed in a location on the roof so as not to be readily visible from public streets.*

Discussion: The installation of the panels on the south facing slope is required to obtain optimal solar energy. Unfortunately, the lack of trees in this area, makes the building visible from both the Park street and 1300 South. This building was chosen because of the lack of tree canopy surrounding this structure; whereas approximately 80% of the Aviary is not available for this type of facility. In fact, there are no other structures in the aviary where this type of facility could be erected except perhaps the Wilson Pavilion. The applicant has looked at placement of the equipment on the ground but did not find this scenario acceptable. In fact, it is the lack of trees in this area of the Aviary which allows the structure to be visible from the Park street and 1300 South. Even if the applicant were to erect fewer panels, the fact that the panels are on the front of the building, makes the number of panels less important because of their prominent display on the roof. What may make the panels less readily visible is if the color of the panels was similar to the color of the roof. Because the panel color cannot change, it may be appropriate to request the applicant to resheath the roof with a colored shingle that helps decrease the visibility of the solar panels.

Finding: Due to the fact that there is not another location within the Aviary that is conducive for placement of solar panels, resheathing the roof with a colored shingle that helps decrease the visibility of the solar panels may be a solution to help make the panels less readily visible from public streets.

RECOMMENDATION

Based upon the analysis and findings noted above, Planning Staff recommends the Historic Landmark Commission approve the proposed design for the installation of the solar panel configuration to the existing Lorikeet Building in the Tracy Aviary with the following conditions:

1. The applicant consider re-sheathing the roof with a roofing shingle color that helps decrease the visibility of the solar panels;
2. The other mechanical equipment necessary to make the system work is not placed on the southern slope of the structure and is placed on or in the building where it will minimize the visibility of this equipment;
3. Approval of the final details of the design of the proposed project is delegated to Planning Staff based upon direction given during the hearing from the Historic Landmark Commission.
4. This approval is for design only. The project must meet all other applicable City requirements.
5. Any changes to approved plans must be reviewed and approved by the Historic Landmark Commission or Planning Staff.

If the Commission decides to deny the request, is should adopt findings supported by substantial evidence.

Cheri Coffey, AICP
Deputy Planning Director

Attachments: Exhibit 1: Project Description
Exhibit 2: Photographs
Exhibit 3: Drawings and equipment brochures
Exhibit 4: Aerial
Exhibit 5: Tracy Aviary Master Plan

