Breakfast Point DP270347:-

Guidelines for the Approval of Photovoltaic Panel Installations.

Solar Energy Working Group

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1. Preface

The purpose of this document is to define the requirements that are to be met in any Application to the Community Association for the installation of Solar Panel Arrays within the Community. The Solar Energy Working Group was formed in 2017 by the Community Association Executive Committee at that time. The Working Group initially conducted a survey via the Community Association Representatives for Strata and Precincts, and this indicated significant support for Solar Energy. The primary concerns expressed were related to capital cost and appearance. The overall cost benefit was considered to a factor for individual applicants to assess whilst the impact on appearance was considered to be a community wide issue to be addressed in the guidelines.

The overall objective is to introduce a consistent process for the whole of the Breakfast Point Community to ensure that the introduction of economically efficient photovoltaic systems can be implemented in a manner that will enhance property values and the overall reputation of the Community. For visible panels particular attention has been directed in ensuring that the visual appearance is of a high standard and there is consistency of appearance throughout the Community.

The primary design objective proposed for visible panels is to achieve the appearance of a single integrated assembly that reflects the geometry of the roof plane on which it is installed. The component parts including panels, frames, skirts, and infill panels combined are to mimic the geometry of the roof plane and be positioned to provide a uniform spacing between the edge of the assembly and the immediate edge of the roof plane. Typically, this spacing will be approximately 500mm as referenced below.

Those eligible to submit an application include the Owners Corporations of individual Strata, Owners of a lot within a subsidiary body and Owners of Torrens Title dwellings all within Deposited Plan 270347. These guidelines have been compiled with reference to the Community Associations Architects, survey responses from the Community, and State and Local Government regulations. Any variation in State and Local Government Regulations will take precedence over any content in this document.

2. REQUIREMENTS OF THE STATE, LOCAL GOVERNMENT AND THE COMMUNITY ASSOCIATION.

a. It is the responsibility of the Applicant to comply with the Building Code of Australia, relevant Australian Standards and statutory requirements existing at the time of installation. Prior to assessment the Applicant must obtain and have available all supporting documentation confirming compliance. If non-compliance is subsequently established and not redressed the C.A. retains the right to revoke the Application and order removal of the installation and restoration of the building to its original condition.

b. If a formal recall notice related to safety is notified for any component of the installation the Applicant will be required to comply with the requirement of any such notice and advise the Community Association of the action to be taken.

c. The Canada Bay Council requires that all installations above 10 kVA require a Development Application to be submitted. Any D.A. Approval to CBCC must first be approved by the Community Association and the application will require the common seal of the Community Association to be applied. CBCC may refer you to the checklist for requirements of Development Applications related to Minor Residential Structures. http://www.canadabay.nsw.gov.au/link.aspx?id=989

d. Installation of photovoltaic solar panels on a property that is a State or local heritage item or is in a heritage conservation area requires Council's approval. Please refer to the State Policy for development standards relating to photovoltaic electricity generating system, which may be installed as exempt or complying development under the State Environmental Planning Policy (Infrastructure) 2009 (the ISEPP). https://legislation.nsw.gov.au/view/html/inforce/current/epi-2007-0641#sec.39

2.1 THE COMMUNITY ASSOCIATION ARCHITECTS' REQUIREMENTS

All applications for solar panel installations must include the following:

a) A site plan including a north point showing the location of the building roof, the proposed solar array and the relationship to the site boundaries
b) A roof plan showing the dimensions of the solar array
c) Building elevations showing the solar array. (Not applicable for non-visible arrays)
d) Photomontages of the building from viewpoints to be nominated by the Community Association accurately illustrating the proposed installation. (At C.A. Executives discretion for non-visible panels)
e) Details of the proposed fixing system
f) Electrical engineer's drawings showing how the proposed installation is to be integrated into the building electrical system
g) Certification from a structural engineer in respect of the proposed fixing system and the ability of the existing structure to support the additional imposed loads.

2.2 CATEGORIES OF INSTALLATIONS

Specific additional requirements are defined for two categories of installations. These are:

a. Category A: Non-Visible Photovoltaic Arrays.

b. Category B: Visible Photovoltaic Arrays.

The Community Association will assess compliance with these guidelines and conformity with the C.M.S. when considering installation approvals.

3. CATEGORY A: NON-VISIBLE PHOTOVOLTAIC ARRAYS.

3.1 DEFINITION

Non-Visible Panels and associated components/support structures are defined to be:

a) Panels not visible from any habitable space/balcony/terrace of the subject property. An exemption may be considered where an owner/owners in the subject property all provide written support for an application to install panels visible from each of their respective properties. This exemption may require implementation of a bylaw pertaining to the Applicants property.
b) Panels that are not visible from any habitable space/ balcony/ terrace of any other property, adjacent ground, ground or water transport, any of which are located within a 1 km distance from the subject property. For example: Roof top of 9 storey buildings, roofs hidden behind parapet walls, roofs.

3.2 CONDITIONS

a) Any application for non-visible panels would require an exhibition period of at least 2 months between application and approval to ensure there was a reasonable timeframe for community consultation and consideration of the "non-visible" status of the application to be assessed.
b) Where any additional structure is proposed to ensure installations can be nominated as “Non Visible” a separate application/D.A must be submitted to vary the existing structure.
c) Panels to be installed are to be sourced from the Approved Panels list.

3.3 RECOMMENDATIONS

Non-Visible Panels be close coupled to maximize use of the available area. Non-Visible Panels installed above service areas or behind parapets may be optimized for orientation and inclination.

4. CATEGORY B: VISIBLE PHOTOVOLTAIC ARRAYS.

The ***primary*** objective is to achieve the appearance of an array geometry that reflects the geometry of the particular roof plane on which the array is installed. An individual roof plane may be classified as a planar section of roof having boundaries defined by gutter lines, ridge, and valley lines.

4.1 RECTANGULAR GEOMETRY

Rectangular Photovoltaic Arrays are defined to be a closely coupled assembly of individual panels collectively forming a straight edge between each of four 90-degree corners. Non active infill panels may form part of the array if conditions dictate. A roof plane of essentially rectangular geometry may be defined by the boundaries of a rectangular roof or alternatively by some existing structural elements of the building that define a rectangular section within the roof. Solar Arrays will be rectangular in shape with the centerline of individual panels aligned with the centerline of adjacent panels. i.e. all panels within the array must be either vertically or horizontally aligned.

Fig 1. An example of a rectangular array utilising dark panels, dark frames and matching skirt.

4.2 NON RECTANGULAR ARRAY

For example, an array installed on a triangular or trapezoidal shaped roof plane. For these cases the installation will require that there is a uniform but minimum distance of 500mm between the adjacent boundaries of the roof plane and the solar skirts forming the edges of the array assembly. Any visible roof area existing between the solar skirt and the edge of solar panels will be covered with an infill panel maintaining the same plane as the top surface of the solar panel continuing to the matching top surface of the skirt.

4.3 RECOMMENDATIONS

All panels within the array must be either vertically or horizontally aligned. It is generally recommended that the maximum number of panels be included in the proposed array. The minimum spacing from ridge, valley or gutter will be 500mm with a minor change permitted to enable inclusion of an additional panel. In the event that there is a justifiable reason not to maximise the array size the maximum horizontal dimension of the array will be located 500mm from the adjacent roof boundary dimension and the remaining distance to the minor horizontal dimension line will be dictated by the number of rows of modules to be installed between the base and the apex. eg. Removing the upper row of panels in figure 3 would be an allowable configuration where the distance to the ridge line is greater than distance to gutter line and to each of the side boundaries. Clause e) of the general conditions will still apply. Refer Figures 2 & 3.

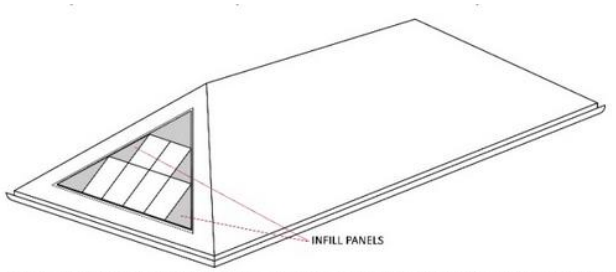

Fig 2. Example of Trapezoidal Solar Array on a Triangular Roof Plane

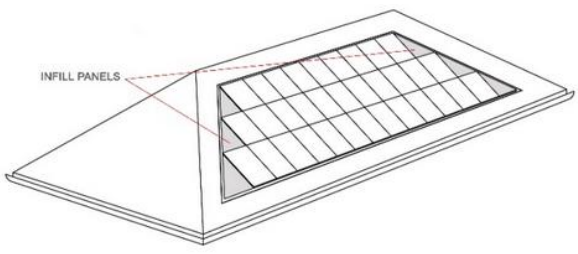

Fig 3. Example of a Trapezoidal Solar Array on a Trapezoidal Roof Plane.

4.4 GENERAL CONDITIONS

a) All panels and infill panels will form a planar upper surface positioned parallel to the roof plane on which the array is mounted. The array will be installed with the minimum offset above the roof plane as dictated by the mounting hardware and any ventilation and/or drainage requirements.
b) Individual panels must have frames/surrounds in a colour that closely matches the general colour of the panel.
c) The panels in solar arrays will be placed with the minimum allowable clearance between panels.
d) The array will be centered in the roof plane side to side. The minimum spacing from each side will be 500mm. Applicants may request a minor change to this requirement if it can be demonstrated that it will enable installation of an additional panel within the array.
e) Where multiple arrays are to be installed in distinctly separate roof areas of the one building structure the arrays are to be installed in such a manner that achieves an overall symmetrical appearance of arrays for the building.
f) Where service pipes or exhaust ducts interfere with the placement of panels and where additional clearance is required between panels a fill-in panel in a matching colour will be required to maintain an overall uniform appearance of a single element. Protrusions through these fill in panels are to be finished in a matching colour to the fill in panel.
g) A continuous skirt will be required around the perimeter of the array to minimise the visual impact of the array edge. A skirt may also assist in minimising any potential build-up of debris against the array edge.
h) The solar array assembly is to be maintained in good operating condition and the applicant will commit to clean and maintain solar panels and the associated infill panels and skirts when required by a direction of the Community Association.
i) It should be noted that the placement of abseiling anchors on the roof may preclude the installation of solar panels. Where roof anchors are installed, no application will be considered unless accompanied by expert opinion that the solar array installation will not impact on the use of the anchors. Infill panels will be required for all exposed areas of associated with these anchors. Infill panels related to roof anchors may need to be removable when anchors are in use.
j) It is required that installed panels be sourced from the approved list designated by the Community Association Executive. These approved panels generally have long manufacturer's warranties as the cost of installation/replacement on elevated roofs would dictate maximum panel life is important. These panels also typically involve a manufacturing process that provides greater efficiency and the approved panels have been selected to provide a more uniform visible appearance. This is considered desirable in meeting a secondary design objective of achieving a consistent appearance across the Community. In the event that the introduction of new technology provides an acceptable alternative solution submission will be considered on a case-by-case basis.
k) The Installation of photovoltaic arrays that would be visible in the direction of the primary sight lines/ focal points as indicated in *Figure 4. Urban Design Primary View and Landmark Objectives* of the Breakfast Point Master Plan 2002 is at the discretion of the Community Association**.**

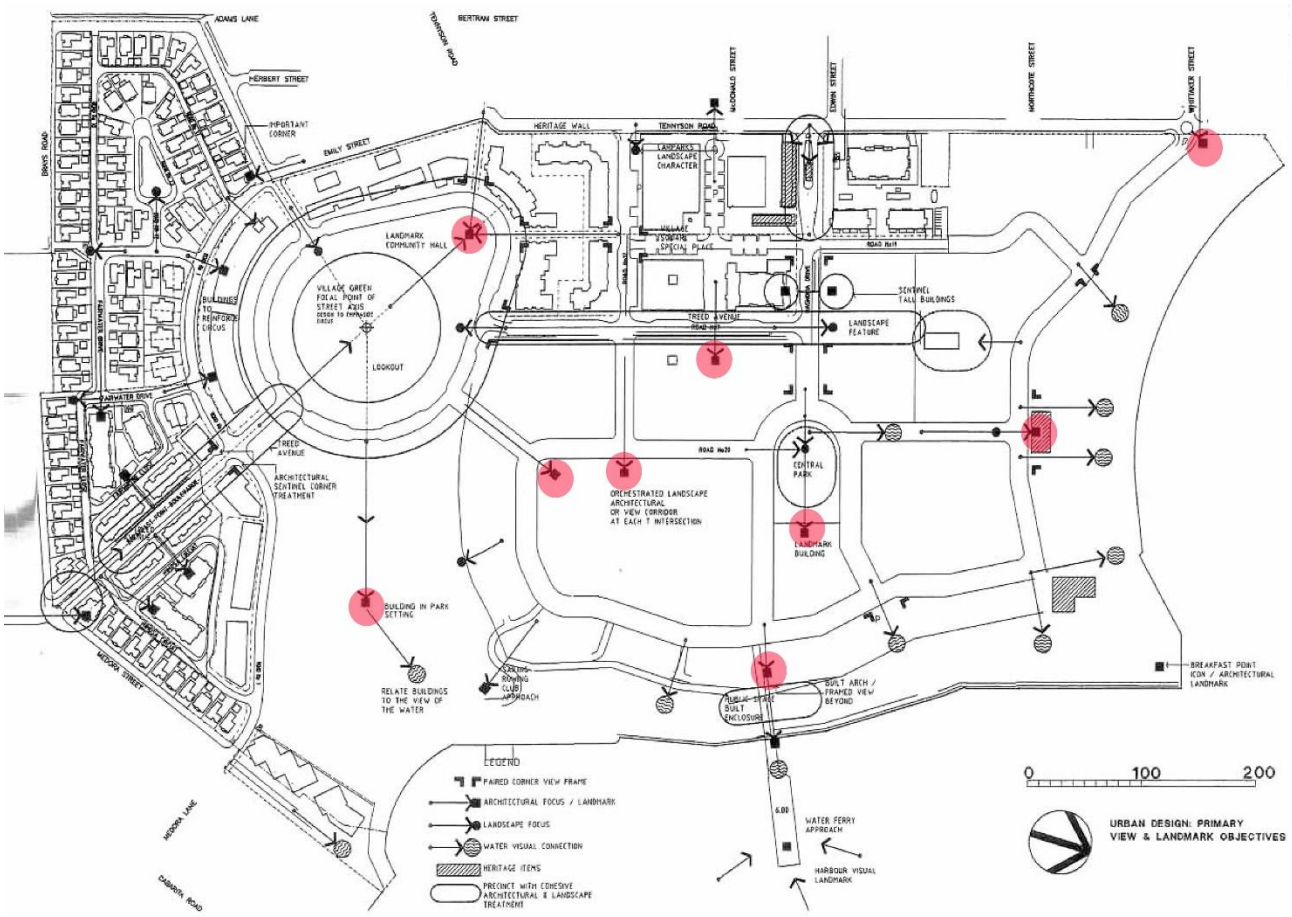

Fig 4. Urban Design Primary View & Landmark Objectives (Source: Breakfast Point Master Plan 2002)

5. APPROVED SOLAR PANELS

Applications for inclusion of the Approved Panel List may be submitted by Applicants, Installers, Suppliers and Manufacturers. Inclusion on the list is at the sole discretion of the Community Association Executive.

Criteria for inclusion include:

a. Panels must comply with all statutory requirements existing at the time of nomination. Any recall or safety related notices must be advised at the time such notices are issued.
b. Panels must be of an overall uniform dark appearance. As noted, the design objective is to achieve an overall array appearance that provides a uniform appearance across the entire array and throughout the Community so individual panels are to be compatible with this objective. (In the event that specialised modules designed to blend with the roof material are specified, i.e., Solar Tiles to match with tiled roofs these will be assessed on a case-by-case basis.)
c. The frame surround is to closely match the general panel colour.
d. Panel specifications must clearly indicate the power output, efficiency and warranty claimed for the panel.
e. Where a panel is nominated by an installer, supplier or manufacturer they may nominate a discount rate applicable to all installations within the Community.