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BACHELORS ROW, CHRIST CHURCH, OXFORD

APPENDIX D: VISUAL IMPACT ASSESSMENT

FOR BACHELORS ROW ROOF PV PROPOSAL



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Introduction

- 1.1 This Visual Impact Assessment has been prepared to serve as a visual guide into the assessment of the potential visual impact of the proposed photovoltaic installation on the roof of the Tom 5,6,7 building (the second floor of which is also known as Bachelors Row), Christ Church. This appendix follows pre-application advice received on the suitability of the location for a photovoltaic array. The purpose is to improve sustainability and to reduce Christ Church's carbon footprint in line with the net zero carbon targets as laid out by both local and national government policies.
- 1.2 Bachelors Row forms part of Tom Quad, a Grade 1 listed college building that is set within Grade 1 listed parkland and gardens at Christ Church, north of the river Thames and Folly bridge. Christ Church is located within the Historic Urban Character Area 34 : The Eastern Colleges – South of the High Street. The site itself is surrounded by:
 - St Aldates Church, Grade 2 listed to the southwest.
 - Christ Church Cathedral, Grade 1 listed, to the southeast.
 - The Old Palace, Bishops King Palace, Grade 1 listed, to the southwest.
 - Masters Lodging, Pembroke College, Grade 2 listed, to the southwest.
 - Various Grade 2 listed buildings and shops on the west side of St Aldates Street.
- 1.3 Bachelors Row comprises residential accommodation for Junior Members of Christ Church. It is currently being refurbished, including the roof, under listed building consent (ref 23/00297/LBC). A refurbishment of the lower floors is scheduled for 2024, which will be subject to a separate application.
- 1.4 The proposal for the photovoltaic array aims to make the most of the opportunity to increase the buildings' sustainability in conjunction with the refurbishment of the existing roof and other parts of the building. The proposed system includes 66 panels which would provide substantial amount of renewable energy for the college.
- 1.5 The ultimate goal, is for Christ Church to reduce its carbon emissions in line with the city of Oxford's Net Zero target of 2040 and the national government's legislated target of carbon zero by 2050. These targets are completely dependent on the combined efforts to identify and deliver sustainable clean energy systems that take advantage of all local renewable energy generation opportunities. We submit that Bachelors Row, can contribute towards achieving these targets.
- 1.6 A Planning / Heritage Statement has been prepared by Keevill Heritage Ltd to accompany this planning submission. Please refer to this document to view the full report on the heritage assessment. It is important to emphasise that Bachelors Row was substantially reconstructed in the 1960's including the roof structure, therefore the installation of the photovoltaic system will not harm any historic fabric of the building, chiefly the original external walls that the building is nestled within. Additionally, the installation of the system is reversible utilising a fixing system that has minimal impact on the lead roof.
- 1.7 The purpose of this assessment is to show the key views of the Bachelors Row roof that are readily accessible by the public whether it be via pedestrian routes or high-level vantage points such as Carfax Tower, Westgate roof terrace and St Marys Church Tower. These views have been assessed individually to indicate the potential visual impact of the proposed system. A glint and glare assessment for the solar panels is summarised at the end of this report and the original certificate from the manufacturer included in the submission. This report forms part of the planning submission with the aim of informing and aiding further discussions with the statutory stakeholders.

Visual Impact Assessment

2.1 The document has been prepared with reference to the Oxford viewing cones, as reviewed with the conservation officer at the pre-application stage. These viewing points were selected as they provide a broad range of visual aspects, whereby the proposed photovoltaic array on the roof Bachelors Row may be visible. The viewpoints have been assessed individually by placing a simulacrum of the photovoltaic system into the view, showing what the proposed system would look like from each particular vantage point and then determining what level of visual impact the proposed photovoltaic system would have on the view. The photo montage view will show the massing and angle of the system as seen from each viewing cone, but not the reflectivity of the system. A summary of the solar panel glint and glare assessment will be provided at the end of this report as well as measures that are being taken to minimize reflectivity and visual prominence of the system as a whole.

2.2 The external walls and parapets of Bachelors Row can be seen from a range of pedestrian viewpoints in the vicinity of the Christ Church. The roof only becomes visible in limited pedestrian viewing spots as well as distant elevated views. These specific viewing situations that have been included for visual impact assessment are:

Viewpoint 1: From Carfax Tower looking south-east across the roof of Bachelors Row and towards Tom Tower.

Viewpoint 2: From St Marys Church Tower Hill looking southwest across the roof of Bachelors Row and towards Tom Tower.

Viewpoint 3: From the Westgate rooftop terrace looking east towards the roof of Bachelors Row, Tom Tower and St Marys Church Tower.

Viewpoint 4: From pedestrian path on the east range of Tom Quad looking west towards Bachelors Row and Tom Tower.

Viewpoint 5: From the west side of the St Aldates in front of Tom Quad looking southeast towards Bachelors Row and Tom Tower.

Viewpoint 6: From Pembroke Street looking east towards Bachelors Row.

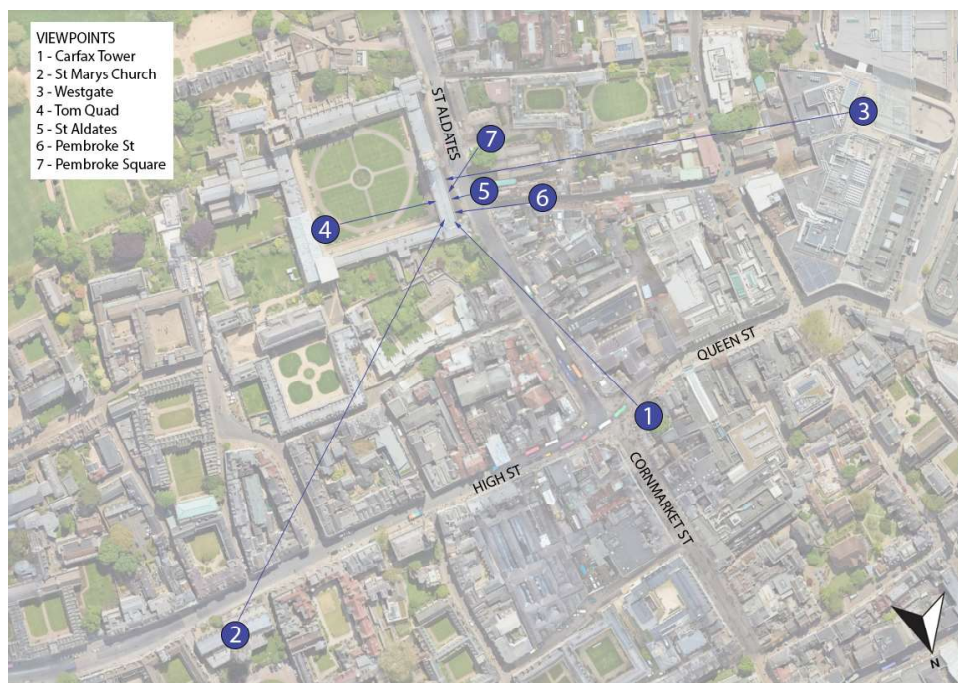
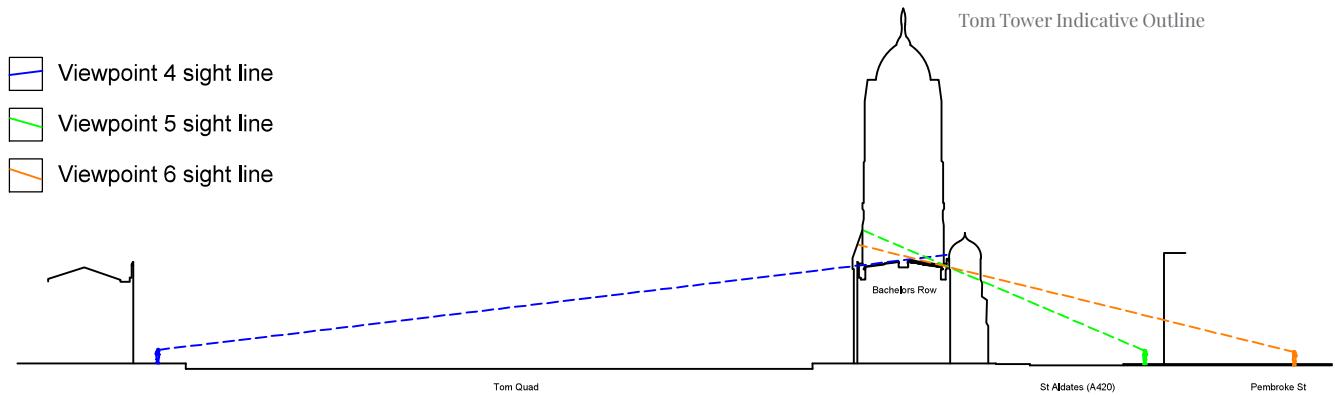


Fig 1 : Map of viewpoint locations.

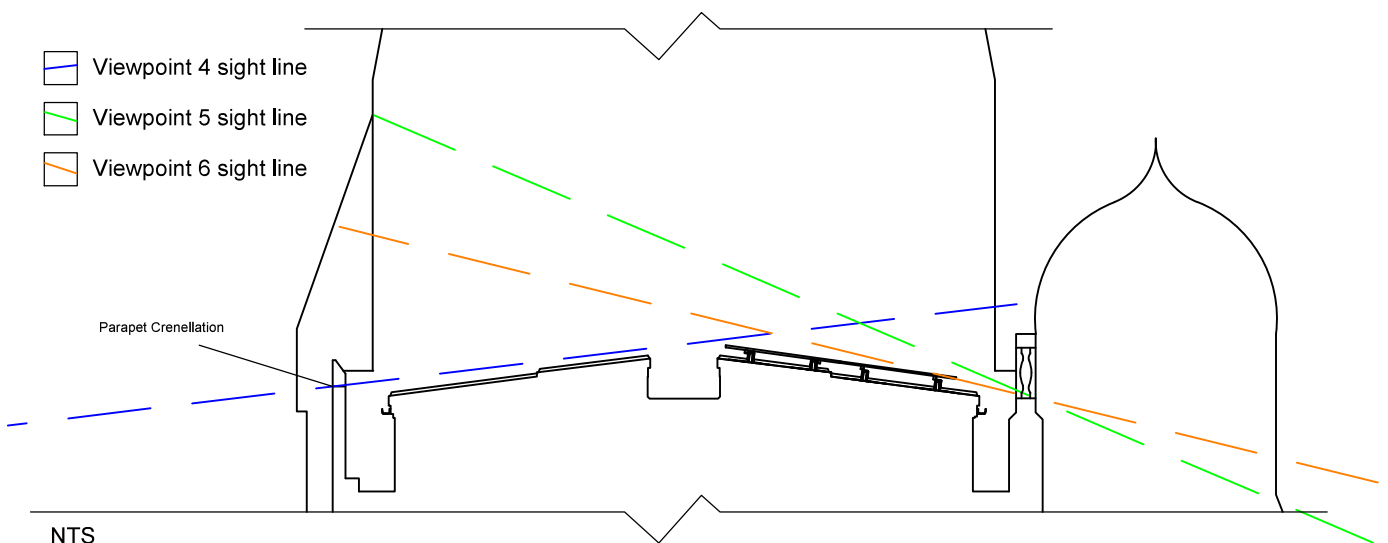
Pedestrian Visual Impact Assessment



NTS

Fig 2 : Diagram illustrating pedestrian sightlines from viewpoints.

3.1 We have compiled several simple diagrams showing sight line angles from some of the included pedestrian views. These diagrams show that the proposed photovoltaic system would be visually obscured from the majority of pedestrian viewpoints due to the parapet detail to the external walls of Bachelors Row. The two viewing points at Pembroke Street and Pembroke Square provide a straight on view with enough distance away from Bachelors Row for their sightlines to include a portion of the roof. More distant viewing points along St Aldates Street have the view of the roof and proposed system obscured by the balustrade parapet to the the external wall due to wider viewing angles not being able to see through the stone balusters.



NTS

Fig 3 : Magnified diagram illustrating pedestrian sightlines from viewpoints.



Fig 4: Map showing visual impact on pedestrians at street level.

Viewpoint 1 - View from Carfax Tower

Viewpoint location and direction:

From Carfax Tower looking south-east across the roof of Bachelors Row and towards Tom Tower. This viewpoint is approximately 200 metres away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof might be partially visible from this viewpoint. However, the impact on the view would be minimal due to distance. Additionally, a portion of the proposed PV system would be obscured by the balustrade parapet.



Fig 5: Existing view from Carfax Tower.



Fig 6: Magnified view from Carfax Tower.



Fig 7: Photomontage of proposed photovoltaic installation.

Viewpoint 2 - View from St Marys Church Tower

Viewpoint location and direction:

From St Marys Church Tower Hill looking southwest across the roof of Bachelors Row and towards Tom Tower. This viewpoint is approximately 330m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof might be partially visible from this viewpoint. However, the impact on the view would be minimal due to distance. Additionally, the viewing angle would only show a small portion of the underside of the panels and the framing.



Fig 8: Existing view from St Marys Church tower.



Fig 9: Magnified view from St Marys Church tower.



Fig 10: Photomontage of proposed photovoltaic installation.

Viewpoint 3 - View from Westgate rooftop terrace

Viewpoint location and direction:

From the Westgate rooftop terrace looking east towards the roof of Bachelors Row, Tom Tower and St Marys Church Tower. This viewpoint is approximately 330m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof might be partially visible from this viewpoint. However, the impact on the view would be minimal due to distance. Additionally, the proposed PV array would only be seen through the gaps of the stone balusters.



Fig 11: Existing view from Westgate roof.



Fig 12: Magnified view from Westgate roof.



Fig 13: Photomontage of proposed photovoltaic installation.

Viewpoint 4 - View from opposite side of Tom Quad

Viewpoint location and direction:

From pedestrian path to the east range of Tom Quad looking west towards Bachelors Row and Tom Tower. This viewpoint is approximately 81m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof will not be visible from this viewpoint. This is due to the sightline being blocked by the crenellated parapet on the external wall.



Fig 14: Existing view from Tom Quad.



Fig 15: Magnified view from Tom Quad.



Fig 16: Photomontage of proposed photovoltaic installation (Not visible from this viewpoint). The position is indicated with the dashed green line.

Viewpoint 5 - View from the west side of St Aldates St

Viewpoint location and direction:

From the west side of St Aldates Street in front of the west range of Tom Quad looking southeast towards Bachelors Row and Tom Tower. This viewpoint is approximately 30m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof will not be visible from this viewpoint. This is due to the sightline being blocked by the balustrade parapet on the external wall.



Fig 17: Existing view from St Aldates.



Fig 18: Magnified view from St Aldates.



Fig 19: Photomontage of proposed photovoltaic installation (Not visible from this viewpoint). The position is indicated with the dashed green line.

Viewpoint 6 - View from Pembroke St

Viewpoint location and direction:

From Pembroke Street looking east towards Bachelors Row. This viewpoint is approximately 55m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof may be slightly visible from this viewpoint. However, the impact on this view would be minor as only a small portion of the PV system would be visible through the balustrade parapet of the external wall.



Fig 20: Existing view from Pembroke Street.



Fig 21: Magnified view from Pembroke Street.



Fig 22: Photomontage of proposed photovoltaic installation.

Viewpoint 7 - View from Pembroke Square

Viewpoint location and direction:

From Pembroke Square looking east towards Bachelors Row. This viewpoint is approximately 60m away from Bachelors Row.

Visual impact:

A PV array placed on the west slope of the Bachelors Row roof may be slightly visible from this viewpoint. However, the impact on this view would be minor as only a small portion of the PV system would be visible through the balustrade parapet of the external wall.



Fig 23: Existing view from Pembroke Square.



Fig 24: Magnified view from Pembroke Square.



Fig 25: Photomontage of proposed photovoltaic installation.

Glint & Glare Assessment

5.1 The solar panels selected for the proposed PV system have an anti-reflection coating which reduces the total reflected light to less than 6 % (less than 5% in theory and between 5-6% in practical applications) under circumstances of perpendicularly incidental light. Original manufacturers certificate included with the planning submission

5.2 Additional measures for the proposed PV system to reduce visual prominence include:

- Black solar panels.
- Black coated framing.
- Lead covered roof fixings.
- Bespoke mounting brackets to enable the system to be mounted closer to the roof.
- Low overall system pitch to match that of existing roof.

Conclusion

- 6.1 It is submitted that the proposal to install a PV array on the west slope of the Bachelors Row roof will have a minimal visual impact on the key viewing cones and viewpoints. The proposal however would be a positive contribution to reducing Christ Church's carbon footprint and establishing a source of clean renewable energy with the added benefit of assisting the collective effort to meet the targets set from the climate change policies put forth by Christ Church, the City of Oxford and the national government. The proposed system would also serve as a positive example to the students, local stakeholders and the public on the importance of investing in protecting our environment and that heritage assets can also play their part in achieving this outcome.

The majority of key viewpoints will be minimally impacted by the installation for the proposed PV array, this is largely due to the distance of the viewpoints from Bachelors Row as well as the obscuring nature of the parapets atop the external walls of the building. These views include Carfax Tower, St Marys Church Tower, Westgate rooftop terrace, Tom quad and St Aldates.

It is important to note that the proposed solar array will have a minor impact at two of the key viewpoint locations - Pembroke Street and Pembroke Square. This is due to the ability to get far enough away from the walls of Bachelors Row while still looking straight on resulting in the ability to see a portion of the PV array through the balustrade parapet. The angle of the sight lines from this point would see more of the underside of the system rather than the glazing of the panels.

The PV array proposal has been developed to mitigate the visual impact of the installed system by careful consideration to the component colours, well considered design that visually blends the system into its context, uniformly covering the roof at a low pitch and incorporating bespoke fixing elements to keep the system projection off the roof as low as possible. The roof on Bachelors Row has the advantage of being nestled below the parapets on the walls either side of the building. Any minor visual detriment would be diminished by the complexity and massing of the building itself as well as the other surrounding heritage buildings in the vicinity. It is for these reasons that we believe that the proposal is justified, including the long-term provision of clean renewable energy and for the benefit of all in reducing carbon emissions and protecting our environment.