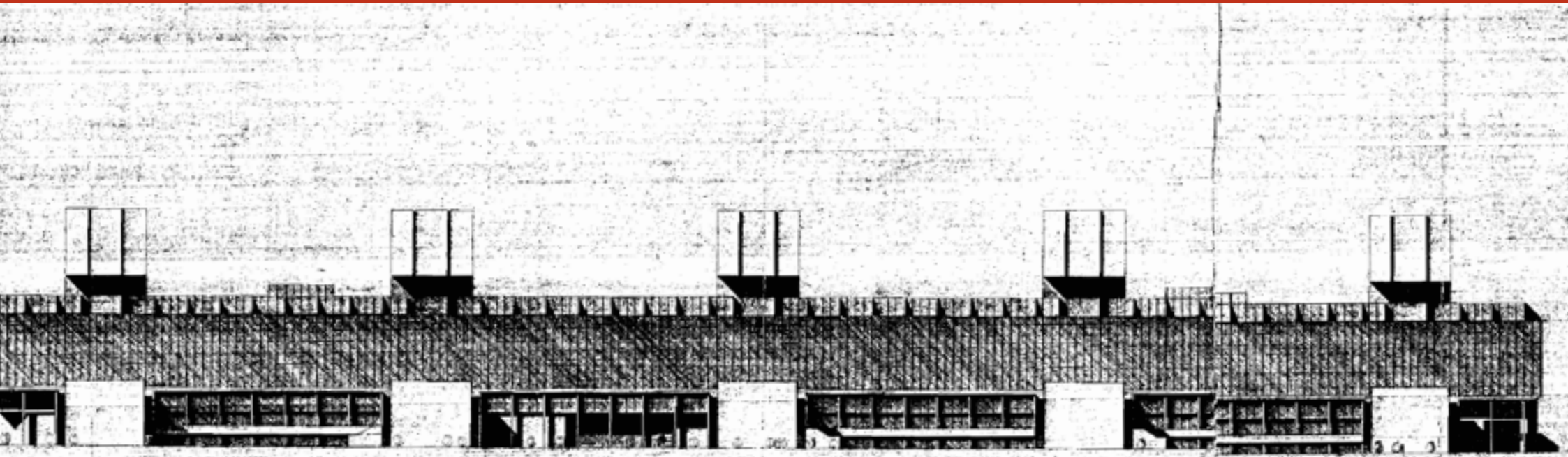
UCL Institute of Education, No. 20 Bedford Way: Bloomsbury Heat and Power Network Heritage, Townscape and Visual Impact Assessment

Prepared for the University of London and UCL

July 2024



Alan Baxter

UCL Institute of Education, No. 20 Bedford Way: Bloomsbury Heat and Power Network Heritage, Townscape and Visual Impact Assessment

Prepared for the University of London and UCL

July 2024

Contents

Executive summary

Introduction

No. 20 Bedford Way is located in the London Borough of Camden. It is part of a larger building comprising Nos. 17, 20 and 26 Bedford Way, which house various functions of University College London (UCL or 'the University'). The whole building is Grade II* listed and is in the vicinity of several other heritage assets, notably the many Grade II* and Grade II listed buildings of UCL's campus to the northwest of the Grade II registered Russell Square. The campus, and wider area, lies within the Bloomsbury Conservation Area.

This Heritage, Townscape and Visual Impact Assessment relates to the University's commitment to reduce its carbon footprint in response to the Climate Emergency. Working in collaboration with the University of London and other partners such as the School of Oriental and African Studies, the University seek to install a Combined Heat and Power network across its historic campus. To enable this, it will be necessary to add an area of plant to the roof of No.20 Bedford Way. This document has been prepared by Alan Baxter Ltd on behalf of both the University of London and UCL to accompany planning and listed building consent applications for the addition of rooftop air source heat pumps and the erection of a surrounding acoustic screen to the roof of the Grade II* listed Institute of Education building (hereafter 'the IoE').

The report sets out the heritage, townscape and visual baseline of the building before using this information to assess the impact of the proposals on this baseline context and against local and national policy. This assessment has been made with the aid of seven Accurate Visual Representations (AVRs), also known as verified views'.

History and significance

The building was designed by Sir Denys Lasdun, one of Britain's foremost twentieth-century architects, and was completed in 1976, arguably one of the finer buildings of that decade. Its architectural interest derives from its sophisticated use of horizontal strata and imposing towers that make up its strong, sculptural form, and from the high-quality of its finishes, including concrete poured in situ (particularly in the building's circulation cores).

The works

The proposals relate to the permanent installation of sixteen air source heat pumps to two of the building's flat roofed sections (Zones A and B). Due to the proximity of the noise-sensitive hotel on the eastern side of Bedford Way and the architectural significance of the roof form of the building, the University has taken the unusual step of having a bespoke acoustic screen designed by conservation architects AHMM.

Specifically the proposals will include:

- Installation of sixteen ASHPs and associated compressors
- Installation of the ASHPs support structure comprising of a steel 'raft' to span the roof areas of Zones A and B ,resting on concrete pedestals.
- Installation of an 3.76m high louvred plant screen finished in bronze powder coated aluminium.
- Rerouting of four existing flues to within the plant enclosures.
- Penetration of the existing concrete riser forms from within the proposed enclosures.

- Associated pipework to be added to existing risers to reach a plant room at Level 1 of the building.

As set out in the Design and Access statement accompanying this application, the project allows the university to move significantly closer to its commitment to net zero, which is a significant public benefit.

Impact

Reflecting the context of a building that is significant as a result of its high-quality finishes and the emblematic sculptural form of its roof and integrated roof plant, the proposed rooftop development has been designed to complement and emulate the existing building, while minimising the impact on key views. Placement of the acoustic screens has had particular regard for views of the building from the east, where Lasdun's iconic roof form is a key part of how the building is experienced and recognised.

There are alternate philosophies to the addition of new elements to a building with a strong visual character typical of its period ranging from relying on marked visual difference to celebrate the additions and delineate the old from the new, to a more visually subtle approach where new development takes its stylistic cues from the host building. Neither one approach to the adaptation of the historic environment fits all buildings and is necessarily right or wrong: the more critical consideration is how any addition or adaptation maintains or preferably enhances the significance of the host building its all historic buildings. With regard to the proposed scheme, the architects have carefully considered varying approaches in consultation with Historic England, design advocates at the Twentieth Century Society and officers of LB Camden and have proposed a solution that we are able to fully support as appropriate to its context and compliant with national and local policy with respect to the historic environment.

A consistent palette of carefully chosen materials and proportionate form will unify the two elevations of the building and the proposed plant screen although subtly different design approaches have been taken for each side, reflecting the different appearances and approaches to these two elevations .

To the east, where the sculptural forms of the core towers is a key and notable element of the building's roofscape, and approaches to the building from Russell and Tavistock Squares allow these core towers to be appreciated along the length of the building, the proposed plant screens will be subtly visible. They will be recessive elements, subordinate to the existing roof form and barely appreciated from street level.

By contrast, from the western elevation, where longer-range views of the roof top are possible,if truncated relative to the full length of the building, the architects have chosen to follow the existing language of the building in a more visible and celebratory way, with the plant screen appearing as a dormer-like level above the existing western frontage of the building. Here, the careful junction of materials and subtle shadow gaps of the original elevational treatment have influenced the width, proportions and form of the proposed plant screens. Here, the plant screens will be noticeable but will not detract from or dominate the existing building or the spaces adjacent to it.

As a result of careful, heritage-led architectural design, the plant screens will be a neutral addition to this iconic Grade II* listed building in heritage terms.

Beyond this, there is a substantial public benefit gained by the addition of air source heat pumps and their contribution to achieving carbon net zero.

For these reasons, we offer the proposed rooftop enclosure as fully compliant with national and local policy relating to design and historic built environment, namely: Paragraphs 194-207 of the NPPF; Policies D3, D9, HC1 and HC3 of the London Plan; and paragraphs 7.41 and 7.44 and Policy D2 of the Camden Local Plan.

1.0 Introduction

1.1 Purpose of this report

This Heritage, Townscape and Visual Impact Assessment (hereafter HTVIA) has been written by Alan Baxter on behalf of the University of London and UCL, to accompany planning and listed building consent applications for the installation of carbon neutral energy provision to the roof of the Institute of Education (hereafter, the IoE), as part of the Bloomsbury Combined Heat and Power Network.

This report concerns the proposed location of air source heat pumps on the roof of the Grade II* listed Institute of Education to power the Bloomsbury Heat and Power network (BHPN) which was conceived to serve the many individual universities and institutions that operate within Bloomsbury known as the BHPN Consortium. However, following withdrawal from the project by several other institutions, the BHPN will now predominantly serve UCL's buildings within Bloomsbury to contribute to the University's ambitious plan to achieve carbon net zero by 2030.

The proposed development has been designed by the celebrated architectural practice AHMM. This assessment uses verified views provided by Cityscape Digital, based on digital models produced by the architectural team.

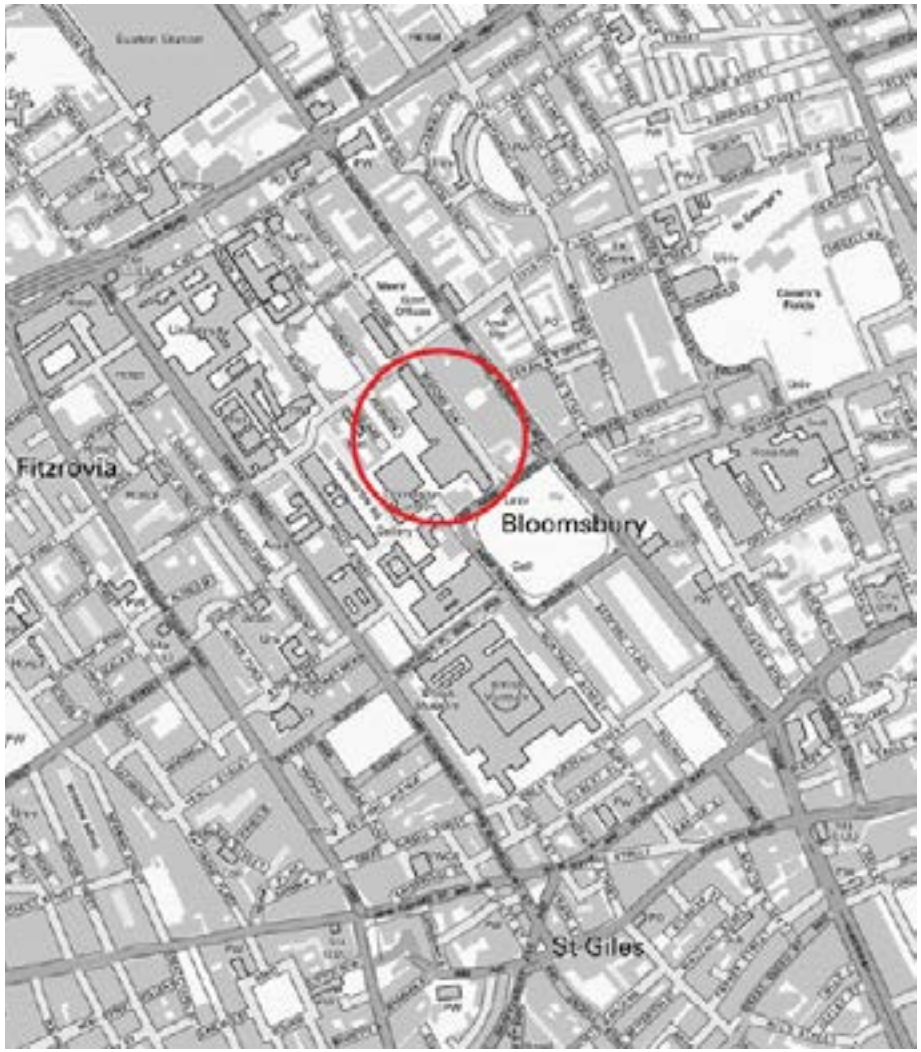


Fig. 1: Location Plan

Based on best-practice guidance relating to heritage, townscape and visual impact assessment (including the Guidelines for Landscape and Visual Impact Assessment, 3rd edn [2013]), this HTVIA assesses the likely impact of the proposed development upon the surrounding heritage assets, townscape and views within a 300m radius of the IoE (the 'study area') including the significance and setting of the Grade II* listed IoE building; nearby listed buildings; and the Bloomsbury Conservation Area. The proposed development is then assessed against the relevant parts of legislation and the Camden Local Plan relating to design and the historic built environment.

These principally include Sections 12 and 16 of the National Planning Policy Framework (NPPF); Policies HC1 of the London Plan and Policy D2 of the Camden Local Plan. These policies are reproduced in Section 8.5.

1.2 Report structure

The report is divided into nine sections:

- the preceding executive summary;
- this introduction outlining the report's purpose, scope and the heritage and townscape designations applying to the Site (Section 1.0);
- a methodology for the assessment of heritage, townscape and views selection, and the assessment of impacts (Section 2.0);
- a description of the Proposed development (Section 3.0);
- an assessment of the history, significance and setting of the IoE and nearby heritage assets (Section 4.0);
- an assessment of the townscape context of the Site (Section 5.0);
- an assessment of the heritage, townscape and visual impacts of the Proposed development, illustrated by verified views (Section 6.0);
- a conclusion of the overall heritage, townscape and visual impacts of the Proposed development (Section 7.0);
- and supporting information (Section 8.0), including a list of consulted sources, the building's entry on the National Heritage List, Greater London Historic Environment Record (GLHER) map and relevant search results, and the relevant national, regional and local legislation, policy and guidance.

1.3 The Institute of Education at No. 20 Bedford Way

The Grade II* listed building comprises Nos. 17, 20 and 26 Bedford Way and takes up the length of the urban block between Tavistock Square to the north and Russell Square to the south. The main elevation faces Bedford Way to the east. Whilst this report refers to the building as No.20 Bedford Way, or the Institute of Education, the entire building (See Fig. 2) is listed as a single entity. To the west, the block it is enclosed by rows of nineteenth-century terraced houses facing Woburn Square at the northern end with direct access to Thornhaugh Street to the south. A cluster of listed buildings occupy the campus to the immediate west.

The building consists of nine levels - six above 'ground level' and three below with ground level split between Level 3 (on the eastern side of the building) and Level 4 (on the western side). |The IoE has a linear, north-south plan with five distinctive concrete core towers projecting at roof level. These contain plant, ventilation and services for the building. The central three cores, located, within No.20, are referred to by the IoE as Cores A, B and C. The remaining two cores at the extremes of the building serve seperate properties at either end (Nos. 17 and 26).

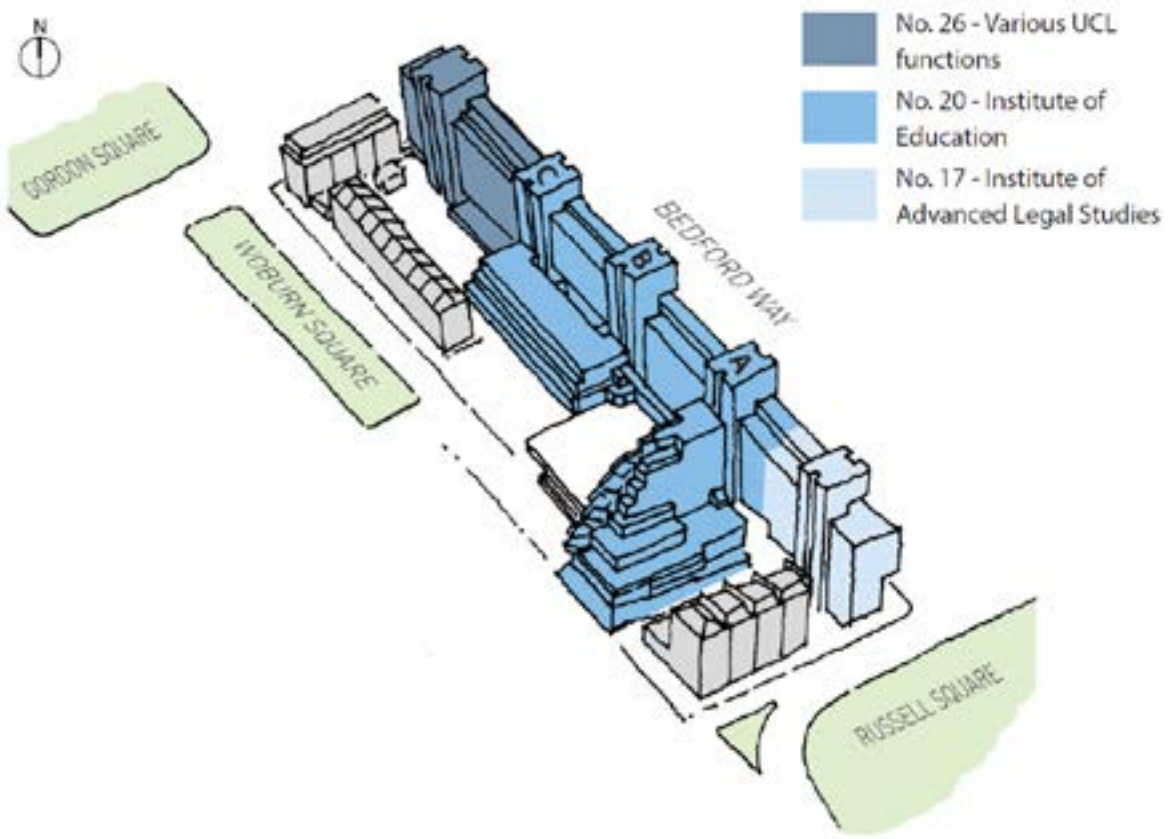


Fig. 2: Nos. 17-26 Bedford Way

At the southern end of No.20 Bedford Way, on the western side, Lasdun completed one 'ziggurat' or stepped accommodation block, the only one of several that were initially planned. Directly next to this, a wide ramp or terrace allows access directly into Level 4 of the building, linking the IoE with UCL's twentieth-century campus to the west.

1.4 Planning context

The Institute of Education has recently completed a programme of refurbishment and rationalisation within the building.

On completion, UCL has applied for retrospective consent to regularise minor amendments made as these works were carried out, often where the physical fabric of the listed building dictated that minor alterations to the approved plans would be better suited to the significance of the building. As a result, these works are currently under consideration with LB Camden despite having been completed on site.

1.5 Pre-application engagement

The works subject of this report have been discussed with officers of LB Camden; the Twentieth Century Society and Historic England and have been amended to reflect the advice of the former where relevant. The Twentieth Century Society's positive response is included at Appendix A. At the time of writing, no response has been received from Historic England.

1.6 Methodology, sources and limitations

The findings of this report are based on site visits carried out in 2024 and our many years of intimate experience with the building together with desk-based research using secondary literature and GIS data. A list of key sources is provided in Section 8.0.

1.6.1 Historic Environment Record

The Greater London Historic Environment Record has been consulted and its results have informed the findings of this Assessment. The search map and relevant results are reproduced in Section 8.3.

1.6.2 Limitations of Data

It is the nature of existing buildings that details of their construction and development may be hidden or may not be apparent from a visual inspection. The conclusions and any advice contained in our reports — particularly relating to the dating and nature of the fabric — are based on our research, and on observations and interpretations of what was visible at the time of our site visits. Further research, investigations or opening up works may reveal new information which may require such conclusions and advice to be revised.

Views analysis has been undertaken from publicly accessible areas only. Views from within private properties may be different. Views analysis is, by its nature, selective, with view locations chosen to provide a representative sample of key and sensitive views. It is recognised that different locations would give a different experience of the Proposed development and that not all views can be captured and assessed as part of the HTVIA process.

The Lidar data used to form the basis of our analysis is the most recent survey data available for the area. Please note however, that this data is a composite and can be in some areas up to ten years old, and will not include development that has been built after the survey date. Exclusions from the survey data may therefore include taller buildings within the assessment area. This is not considered to be disadvantageous to the assessment as the exclusion of more recent development provides a worse-case scenario with regard to the visibility of the proposed scheme.

Programme limitations mean that Winter photography could not be captured as part of this assessment.

1.6.3 Visualisations methodology

Appendix B includes the methodology of Cityscape Ltd, who provided the accurate visual representations included within this report.

1.7 Designations

No. 20 Bedford Way was listed Grade II* on 4 December 2000. Several other buildings in the immediate vicinity are also listed. They include the Grade II listed terraced houses Nos. 10 to 18 Woburn Square; Nos. 55 to 59 Gordon Square and Nos. 21 to 24 Russell Square. To the south-west, the SOAS library is Grade II-listed, while its extension—the Phillips Building, also by Denys Lasdun—is Grade II* listed, as is architect Charles Holden's Senate House beyond it. Russell Square is registered at Grade II on the Register of Historic Parks and Gardens. Two nineteenth- century parish markers in Woburn Square are also on the Council's local list.

The site, and wider campus, lies within Bloomsbury Conservation Area, designated in 1968. There have been several extensions, reflecting a growing appreciation of high-quality Victorian, Edwardian and twentieth- century architecture. Bloomsbury Conservation Area has numerous Sub-Areas; No 20 Bedford Way straddles Sub Area 3: University of London/British Museum and Sub Area 6: Bloomsbury Square/Russell Square/Tavistock Square.

Fig. 3: Designations plan. The Institute of Education is outlined in red

2.0 Methodology

2.1 Methodology basis

This document provides an assessment of the heritage, townscape and visual impacts of the Proposed development, effectively combining the functions of a Heritage Statement and a Townscape and Visual Assessment. These are defined as follows:

- Heritage Statement: A summary of the built heritage assets in the vicinity of the Site and their significance, followed by an assessment of the impact of the Proposed development upon the significance of these heritage assets.
- Townscape and Visual Impact Assessment: A baseline study of the townscape character of the area and its tolerance for change, followed by an assessment of the impact of the Proposed development upon the surrounding townscape context and a selection of illustrative viewpoints.

2.1.1 Guidance

Heritage guidance

In terms of its assessment of heritage assets, this document reflects relevant national best practice guidance as provided by the Department of Levelling Up, Housing and Communities in its Planning Practice Guidance for the Historic Environment (July 2019) alongside the following Historic England advice notes:

- Historic England's *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (2nd edn)* (2017);
- Historic England's *Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning 2* (2015);
- Historic England's *Conservation Area Appraisal, Designation and Management: Historic England Advice Note (2nd edn)* (2019).

TVIA guidance

The methodology adopted for the assessment of townscape and visual amenity in this document follows the best practice guidance set out by the Landscape Institute and the Institute of Environmental Management and Assessment (IEMA)'s 2013 *Guidelines for Landscape and Visual Impact Assessment* (GLVIA). While the current proposals will not impact strategic views designated under Policy HC3 of the London Plan, this report uses some standard terminology relating to Accurate Visual Representations ('verified views') outlined in the London View Management Framework Supplementary Planning Guidance (2012) which informs the current London Plan.

2.1.2 Data sources

The drawings and models within this document have been created using data from the following sources:

- The Environment Agency's Digital Surface Model and Digital Terrain Model Data set at 1m resolution (LIDAR data) downloaded March 2024
- Historic England's GIS data downloaded January 2024
- View shed Analysis capability within QGIS software
- LB Camden's published conservation area boundaries

2.1.3 Identification of a baseline study area

Best practice heritage and townscape assessment guidance recommends identifying an area for assessment around the Site within which the existing built heritage, townscape and views may be affected – this area is known as the baseline study area. The baseline study area should be proportionate to both the nature of the proposed development and to the nature of the surrounding townscape and built heritage, as both factors will affect the degree to which the proposed development would be potentially visible from nearby locations.

For the assessment of townscape and views in this report, a baseline study area of 300m radius around the Site has been chosen as proportionate to the potential impact of the Proposed development, based on an understanding of the surrounding townscape informed through desk-based research and site visits, and the nature of the Proposed development.

Not all heritage assets within the 300m-radius study area are assessed, as site visits and Zone of Theoretical Visibility testing strongly suggested that some are highly unlikely to experience changes to their setting as a result of the Proposed development by reason of distance to the Site and/or intervening built form. Heritage assets within the study area have been selected for assessment based on their proximity to the Site and the potential for their significance and setting to be affected by the Proposed development. The number of heritage assets assessed is proportionate to the scale of development and the potential for any level of harm to be caused to the assets' significance and setting. Similarly, some heritage assets lying beyond the study area are assessed due to their high sensitivity to changes to their setting.

2.2 Photography and accurate visual representations-

2.2.1 Initial views

To support the assessment, seven Accurate Visual Representations (AVRs) or 'verified views' have been produced by Cityscape. The location and split of wirelines to renders was agreed with LB Camden at pre-application stage.

Baseline photography for these views was captured using high quality professional DSLR (digital single lens reflex) and DSLM (digital single lens mirrorless) sub areas. The sub areas utilise FFS (full frame sensors) so declared focal lengths require no conversion to be understood in line with TGN 06/19 guidelines. For each viewpoint the sub area was positioned at a height of 1.60 metres above the ground level which closely approximates the average eyeline. These views are assessed in Section 6.0. The methodology used to create the verified views can be found at Appendix B of this HTVIA.

2.2.2 Renders

The verified views use a model produced by the architects, AHMM. Four verified views have been produced using a fully rendered model of the proposed buildings and landscaping, whilst the remainder have been produced using a wireline of the proposed buildings. Where the wireline is not shown, it cannot be seen.

2.3 Methodology for assessing the significance of heritage assets

This section outlines the methodology used in this report for assessing the significance and setting of heritage assets within the baseline study area. Assessing significance is the means by which the cultural importance of a place and its component parts is identified and compared. The identification of elements of high and lower significance, based on a thorough understanding of a site, enables owners and designers to develop proposals that safeguard, respect and where possible enhance the character and cultural values of the site.

Statutory designation is the legal mechanism by which significant historic places are identified in order to protect them. The IoE building is listed at Grade II* as part of Lasdun's Nos. 17-26 Bedford Way, while the building lies within the Bloomsbury Conservation Area. In addition, there are a number of designated heritage assets in the vicinity whose setting may be affected by the Proposed development. These are listed in Section 4.0.

However, it is necessary to go beyond these in order to arrive at a more detailed and broader understanding of significance. This is achieved here using the terminology and criteria from the National Planning Policy Framework (NPPF) (2021).

Annex 2 of the NPPF defines significance as:

> *The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.*

2.3.1 Heritage interests

Historic England's Conservation Principles, Policies and Guidance (2008) includes a methodology for assessing significance by considering 'heritage values'. In this instance, NPPF terms are used because their adoption simplifies the preparation and assessment of planning applications, but the equivalent heritage values are given in brackets for reference. The NPPF identifies four main types of interest. Three of these are defined in the Department of Levelling Up, Housing and Communities' Planning Practice Guidance (PPG) as:

> **Architectural and Artistic Interest ['aesthetic value']:** *These are the interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved.*
>
> **Historic Interest ['historical value']:** *An interest in past lives and events. Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history, but can also provide an emotional meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity ['communal value'].*

The fourth type of interest is defined in Annex 2 of the NPPF as **archaeological interest ['evidential value']** and described in the following way:

> *There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point.*

The archaeological interest of the Site will not be assessed in the following discussion of significance.

2.3.2 Assessing Setting

The definition of setting given in the NPPF (2021, Annex 2: Glossary) is:

> *The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.*

This means that all heritage assets have a setting, separate from the concept of curtilage, character and context. However, the contribution made by the setting to the significance of heritage assets varies considerably and is subject to change over time. Where a setting has been compromised by cumulative change, consideration still needs to be given to the effect of additional change.

Defining the extent, nature and contribution of a heritage asset's setting can be challenging. Historic England offers guidance on this in its Historic Environment Good Practice Advice in Planning Note 3 (Second Edition): The Setting of Heritage Assets (December 2017). This states that one of the most used expressions of a setting's contribution to the significance of a heritage asset is through views. These can be either static (from a fixed point and with a distinct focus) or dynamic (an evolving view that changes as one moves through a place). They can also encompass a variety of different views of, from, across, or including the asset.

Historic England has divided these additional attributes into two different categories; the asset's physical surroundings and the experience of the asset.

A setting's attributes that relate to physical surroundings include:

- Topography
- Formal design e.g. hierarchy, layout
- Orientation and aspect
- Openness, enclosure and boundaries

A setting's attributes that contribute to the experience of the asset include:

- Views from, towards, through, across and including the asset
- Intentional intervisibility with other historic features
- Visual dominance, prominence or role as a focal point
- Scents and smells
- Sense of enclosure, seclusion, intimacy or privacy
- Accessibility, permeability and patterns of movement
- Cultural associations

Sections 4 and 5 use this guidance to assess the setting of the heritage assets within the study area. This also allows us to understand the degree to which the setting of each heritage asset contributes to its overall significance, and therefore, what degree of impact changes to setting may have on an asset's significance.

2.3.3 Assessing the character and appearance of conservation areas

Unlike other forms of designated heritage asset, the special architectural and historic interest of conservation areas is commonly expressed in terms of character and appearance. This is based on Section 72[1] of the Planning (Listed Buildings and Conservation Areas) Act 1990, which states that when local authorities exercise their planning functions in the context of conservation areas, special attention shall be paid to the desirably of preserving or enhancing the character or appearance of that area.

Much like setting, defining the extent and nature of a conservation area's character and appearance can be challenging, and is often based on a combination of tangible and intangible factors.

Historic England's Conservation Area Appraisal, Designation and Management: Historic England Advice Note 1 (Second Edition, February 2019) offers guidance on how character and appearance can be defined, suggesting the following categories as examples of reasons for designation of conservation areas:

- *Areas with a high number of nationally or locally designated heritage assets and a variety of architectural styles and historic associations*
- *Those linked to a particular individual, industry, custom or pastime with a particular local interest*
- *Where an earlier, historically significant, layout is visible in the modern street pattern*
- *Where a particular style of architecture or traditional building materials predominate*
- *Areas designated because of the quality of the public realm or a spatial element, such as a design form or settlement pattern, green spaces which are an essential component of the wider historic area, and historic parks and gardens and other designed landscapes.*

Section 4.5 assesses the contribution that the IoE makes to the character and appearance of the Bloomsbury Conservation Area. This assessment will inform the selection of view locations and the assessment of impact upon the character and appearance of the conservation area.

2.4 Methodology for assessing townscape and views

This section defines the methodology used in this report for identifying and assessing the sensitivity to change of the townscape and views within the baseline study area and the impact of the Proposed development upon townscape and views.

The primary basis of this methodology is the GLVIA. This guidance predominantly relates to Environmental Impact Assessment but, as paragraph 3.2 of the guide makes clear, the essence of the guidance can still be applied to standalone appraisals (such as this HTVIA) but with some flexibility:

> *As a standalone 'appraisal' the process is informal and there is more flexibility, but the essence of the approach - specifying the nature of the proposed change or development; describing the existing landscape and the views and visual amenity in the area that may be affected; predicting the effects, although not their likely significance; and considering how those effects might be mitigated - still applies.*

2.4.1 Definitions

The Glossary of the GLVIA defines townscape as follows:

> ***Townscape –*** *The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces.*

The GLVIA sets out that the townscape (the built environment itself), the views that people have of that townscape (the 'views'), the pleasantness of the experience of those views (visual amenity), and the groups of people who experience those views ('visual receptors'), are different considerations.

The process of a TVIA consists of assessing the effect of a development on townscape and also on views, taking account of the value of those views and the susceptibility to change of the people (visual receptors) experiencing those views. These effects are categorised as either Townscape Effects or Visual Effects, defined as follows:

> ***Townscape Effects –*** *The effects of development on the physical characteristics of the site, its immediate context and surrounding townscape/landscape character and the effect on any interaction between those separate elements.*

> ***Visual Effects –*** *The effects of development on specific views and on the general visual amenity experienced by people.*

2.4.2 Assessment process

While an assessment of the heritage context of a place informs our understanding of the wider townscape character and the amenity of certain views, townscape character is the product of a diverse range of factors and requires a broader degree of understanding of the surrounding area. The assessment methodology adopted for this HTVIA comprises a combination of desktop analysis combined with fieldwork and involves the following sequence of processes:

- A policy review and a review of best practice guidance.
- An overview of statutory designations relevant to the site and its immediate context.
- Geographical Information System (GIS) analysis of the topography surrounding the Site and plotting of Zone of Theoretical Visibility (ZTV).
- Site visits to assess the townscape character of the Site together with an assessment of tolerance for change in the built and natural landscape.
- Identification of townscape/landscape character areas.
- Identification of representative viewpoints.
- Consultation with the London Borough of Camden to agree selected viewpoints and assessment methodology.
- Identification and assessment of potential townscape/landscape and visual effects of the Proposed development.
- Advice to the design team with regard to design mitigation of any identified effects.
- Assessment of the townscape and visual impact of the final iteration of the Proposed development as submitted for planning permission.

Professional judgement in the HTVIA process

The GLVIA notes that professional judgement is a very important part of the HTVIA process. Many aspects of townscape and visual impact assessment involve qualitative and subjective judgements, such as whether a change will be positive or negative in townscape terms. Alan Baxter has a robust system of auditing within the townscape and heritage team to provide a balanced and robust opinion, rather than relying on the opinion of any one individual assessor.

2.4.3 Selection of views

The views found in Section 7 of this report have been selected using a combination of a desk-based assessment of the heritage and townscape context within the baseline study area, pre-application discussions with planning and conservation officers, and LIDAR modelling of the wider terrain around the Site. The identification of townscape character areas in Section 5.0 of this report directly contributed to the selection of views, through allowing representative viewpoints from nearby character areas to be identified and assessed.

As set out within Section 2.4.5, view selection was influenced by the importance and sensitivity to change of views and the sensitivity of people viewing them (as far as can reasonably be judged). In line with paragraph 6.19 of the GLVIA, the selected views represent a series of representative, specific and illustrative viewpoints within the vicinity of the Site, and, in longer range views, within a modelled Zone of Theoretical Visibility.

The proposed view locations do not, and cannot, seek to provide every possible view of the proposed scheme but are instead intended to be a representative sample from key locations as well as typical views from townscape character areas within the vicinity of the Site. Where there are locations that are particularly sensitive to change, these have also been included in consultation with the Council's heritage advisor.

2.4.4 Townscape

Establishing townscape sensitivity

Before an assessment of the townscape effects of a proposed development can take place, the sensitivity to change of the townscape as a 'receptor' must be evaluated. This process involves combining judgements about the susceptibility of the receptor to changes arising from a specific type of change (in this case, a new building), and the value attached to the receptor, to arrive at an overall judgement of the receptor's sensitivity to change.

Identifying townscape receptors

The character and composition of a townscape is influenced by a range of factors including, but not limited to:

- the context or setting of the urban area and its relationship to the wider landscape;
- the topography and its relationship to urban form;
- the grain of built form and its relationship to historic patterns;
- the layout and scale of buildings, density of development and building types including architectural qualities, period and materials;
- the patterns of land use, past and present;
- the nature and location of vegetation, green space and tree cover;
- the types of open space and the character and qualities of the public realm;
- access and connectivity including streets and footways/pavements.

Generally speaking, these factors vary in nature across a defined study area, with certain sub-sections of the study area exhibiting common townscape characteristics which differ from other parts of the study area. These sub-sections of the study area are referred to as townscape character areas.

These townscape character areas are the 'townscape receptors' upon which the townscape impact of a Proposed development is measured.

Assessing the value of a townscape receptor

The extent to which different elements of the townscape are exhibited across the study area influences the value placed upon each townscape receptor (character area).

Table 1 on Page 18 outlines the criteria upon which judgements regarding the value of townscape receptors in this Assessment are based. Townscape Receptor Value is based on a five-tiered scale from Very High (highest townscape value) to Very Low (lowest townscape value)

Assessing the susceptibility to change of a townscape receptor

This process categories townscape receptors based on their susceptibility to the type of change arising from a proposed development. Table 2 on page 19 outlines the criteria upon which judgements regarding the susceptibility to change of townscape receptors in this Assessment are based. Townscape Receptor Susceptibility is based on a three-tiered scale from High (highest susceptibility to change) to Low (lowest susceptibility to change).

Table 1: Townscape Receptor Value

Townscape Receptor Value	Criteria
Very High	• Exceptional townscape of notable character. • Many remarkable features/landmarks including highly-graded designated heritage assets. • Unique, site-specific sense of place. • Clear urban grain – characteristic and identifiable pattern of buildings and open spaces. • Widespread use of high quality materials and a strong sense of architectural style (including variation where appropriate). • Very few detracting features. • Person-focused environment or natural environment emphasis.
High	• Attractive townscape with unique or place-defining features. • Some remarkable features/landmarks including designated heritage assets. • Townscape identifiable as of the particular location. • Clear urban grain – characteristic and identifiable pattern of buildings and open spaces. • High quality materials or architectural style strongly represented. • Few detracting features. • Person-focused environment or natural environment emphasis.
Medium	• Typical townscape with few unique or place-defining features. • Few remarkable features/landmarks, with few designated or non-designated heritage assets. • Townscape commonplace outside of the immediate locality. • Recognisable urban grain – Some characteristic and identifiable pattern of buildings and open spaces. • A prevalence of commonplace materials and architectural styles with some geographically specific examples. • Some features detract from the quality of the environment. • A combination of person-focused or environmental emphasis and some areas of mass transport or large-scale industry/private space.
Low	• Limited townscape quality with few or no place-defining features. • No remarkable features/landmarks, with few or no designated or non-designated heritage assets. • Some positive characteristics interspersed amongst built development and spaces of neutral or detracting quality. • Sense of character and townscape improvement necessary. • An interrupted urban grain – Some characteristic and identifiable pattern of buildings and open spaces interspersed with disruptive or poorly connected elements. • A prevalence or commonplace or mass-produced materials and architecture with few or no geographically-specific elements. • Some features detract from the quality of the environment. • A combination of person-focused or environmental emphasis and some areas of mass transport or large-scale industry/private space.
Very Low	• Townscape of low quality or in notable decline. • No remarkable features/landmarks and no designated or non-designated heritage assets. • No place-defining elements of townscape character. • Dominant detracting elements within the townscape. • Vehicle-focused or brownfield land-uses are present. • An interrupted urban grain - no characteristic or identifiable patterns of buildings and spaces, with disruptive or poorly connected elements. • A industrial or transport-focussed environment, with limited or no person-focused elements.

Table 2: Townscape Receptor Susceptibility

Townscape Receptor Susceptibility	
High	• The townscape receptor has very limited tolerance to change of the type proposed. • A development of the type proposed would be in direct conflict with specific townscape management or planning policies. • The townscape receptor has a direct relationship with the site.
Medium	• The townscape receptor is partially tolerant to change of the type proposed. • A development of the type proposed may conflict with some wider townscape management or planning policies. • The townscape has a partial direct or indirect relationship with the site.
Low	• The townscape receptor is tolerant of change of the type proposed. • A development of the type proposed does not conflict with, and may be recommended by, townscape management or planning policies. • The townscape receptor has little or no direct or indirect relationship with the site.

Establishing the Townscape Receptor Sensitivity or 'Nature of Townscape Receptor'

Once the value and susceptibility to change of townscape receptors have been established, these two factors are combined to assess the overall sensitivity to change, known as the Nature of Townscape Receptor.

Table 3 below illustrates the matrix that is used to establish the Nature of Townscape Receptor. This is based on a five-tiered scale from Very High (the most sensitive to change) to Very Low (the least sensitive to change). It is our professional judgement that a five point scale is necessary to properly differentiate between townscape qualities identified in our baseline studies.

The Nature of Townscape Receptor is judged verbally on a three-point verbal scale from High to Low, as recommended by the GLVIA.

Table 3: Nature of Townscape Receptor

	Townscape Receptor Susceptibility		
Townscape Receptor Value	**High**	**Medium**	**Low**
Very High	Very High	Very High	High
High	Very High	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Very Low
Very Low	Low	Very Low	Very Low

2.4.5 Visual Effects

The assessment of visual effects is a combination of the impact of change to views with identified values and the impact to change to those people experiencing those views. Such people are termed 'visual receptors'. In the case of visual effects it is important to note the distinction made in the GLVIA between the views within the townscape, their visual amenity ('the pleasantness of the views') and the visual receptors (the people experiencing the views). As such, the Views Value relates to the value ascribed to certain views and their visual amenity, while the Visual Receptor Susceptibility refers to the susceptibility of visual receptors (the person/people experiencing the view) to change due to the context for experiencing the view. These factors are combined to give the sensitivity to change of the view and viewer which is termed here the Sensitivity to Visual Effects.

Views

Assessing the value and susceptibility to change of views

As with townscape receptors, establishing the sensitivity to change of a view is based upon a combination and comparison of the value ascribed to a certain view and the susceptibility of the view to change.

Assessing the value of a view

This process categorises views and visual amenity based on their socio-cultural value, the visibility of individual features of landmark quality or heritage significance, the interrelationship with nearby landscape and urban features, and any designations applied to the view in planning policy. Table 4 opposite outlines the criteria upon which judgements regarding the value of views in this assessment are based. Views Value is based on a five-tiered scale from Very High (highest value) to Very Low (lowest value)

Table 4: Views Value

Views Value	Criteria
Very High	• Identified and designated views of national or regional importance (e.g.: London View Management Framework). • Typical views from publicly accessible areas of very high townscape quality
High	• Views of local importance identified and/or designated in supplementary planning guidance or conservation area appraisals. • Views having a designed or associated relationship with wider townscape features of importance. • Typical views from publicly accessible areas of high townscape quality
Medium	• Typical views from publicly accessible areas of medium townscape quality.
Low	• Typical views from publicly accessible areas of low townscape sensitivity. • Incidental or distant views from areas of higher townscape quality (medium or above)
Very Low	• Views from publicly accessible areas of very low townscape/landscape quality or from minimally publicly accessible areas.

Visual Receptors

Assessing the susceptibility to change of a visual receptor

This process classifies visual receptors (i.e. people) based on their susceptibility to the type of change arising from a proposed development as far as can reasonably be quantified for a group of individuals. Table 5 on page 21 outlines the criteria upon which judgements regarding the susceptibility to change of views in this assessment are based. Visual Receptor Susceptibility is based on a three-tiered scale from High (highest susceptibility to change) to Low (lowest susceptibility to change).

It is important to note that an assessment of how any one individual is feeling or experiences a place cannot be exhaustive. This table seeks to quantify typical behaviours rather than defining the experience of any one individual and values are therefore representative.

Table 5: Visual Receptor Susceptibility

Visual Receptor Susceptibility	
High	• People engaged in outdoor recreation where attention is likely to be focused on the townscape or particular views, including designed viewpoints. • Visitors to heritage assets or to other attractions where views of the surroundings are an important contributor to the experience. • Residents at home where views contribute to the setting of a residential area. • Distance, underlying topography and/or intervening built form do not disrupt the visual relationship between the viewer and the site.
Medium	• People travelling through a residential, retail area or other destinations as a leisure activity, where views of the townscape make a positive contribution to the experience but are not the primary focus of attention • People travelling by road or rail (unless the route is specifically identified for its views) • Distance, underlying topography and/or intervening built form may limit the visual relationship between the viewer and the site.
Low	• People engaged in outdoor sport or recreation which does not involve or depend on appreciation of views of the townscape. • People at work or a place of education whose attention may be focused on their work or activity, not on their surroundings, and where the setting is not important to the quality of working life. • Distance, underlying topography and/or intervening built form limit or prevent a visual relationship between the viewer and the site.

Establishing the Sensitivity to Visual Effects

Once the value of views and the susceptibility to change of visual receptors have been established, these two factors are combined to assess the overall sensitivity to change, termed the Sensitivity to Visual Effects.

Table 6 below illustrates the matrix that is used to establish the Significance of Visual Effects, which is based on a five-tiered scale from Very High (the most sensitive to change) to Very Low (the least sensitive to change).

Table 6: Sensitivity to Visual Effects

	Visual Receptor Susceptibility		
Views Value	**High**	**Medium**	**Low**
Very High	Very High	Very High	High
High	Very High	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Very Low
Very Low	Low	Very Low	Very Low

2.4.6 Assessing the nature of the effect of the proposed development

The GLVIA expresses impact to either townscape or views as the 'Nature of the Effect' (sometimes referred to as 'magnitude of impact'). The Nature of Effect must be identified and categorised according to the degree of change to the receptor, as set out in Table 7 below.

Table 7: Nature of Visual/Townscape Effect

Nature of Effect	**Criteria**
Very High	Total or nearly total change such that the townscape receptor or view, or the experience of the townscape receptor or view is totally or nearly totally altered.
High	Substantial change such that the townscape receptor or view, or the experience of the townscape receptor or view is substantially altered.
Medium	Considerable change such that the townscape receptor or view, or the experience of the townscape receptor or view is clearly altered..
Low	Slight change such that the townscape receptor or view, or the experience of the townscape receptor or view is slightly affected.
Very Low	Very minor or no change, that the townscape receptor or view, or the experience of the townscape receptor or view is hardly or not affected.

2.4.7 Assessing the scale of the effect of the proposed development

Combining the Nature Townscape Receptor with the Sensitivity to Visual Effect

The Nature of Townscape Receptor/Sensitivity to Visual Effect are combined to establish a combined sensitivity to change, here termed 'overall sensitivity'. For ease, and to produce the most robust assessment possible, the highest value out of nature of townscape receptor and sensitivity to visual effect is taken to identify receptor sensitivity. Thus if a Townscape Receptor Value for a particular view was low but the Sensitivity to Visual Effect from the same view were to be identified as High, the overall sensitivity of the view would be identified as High.

Once identified, this overall sensitivity would be assessed against the Nature of Effect, using the matrix set out in Table 8 below. If mitigation is proposed, any residual effects following mitigation are categorised using the same process.

Effects that are moderate or above are considered to be significant in terms of TVIA assessment, as highlighted in Table 8 below.

Table 8: Classification of the Scale of Potential Visual/Townscape Effects

	Nature of effect

Significant effect

Nature of townscape receptor/ Sensitivity to visual effect (Overall Sensitivity)	**Very High**	**High**	**Medium**	**Low**	**Very Low**
Very High	Major	Major	Moderate	Minor	Neutral
High	Major	Moderate	Moderate	Minor	Neutral
Medium	Moderate	Moderate	Moderate	Minor	Neutral
Low	Minor	Minor	Minor	Minor	Neutral
Very Low	Neutral	Neutral	Neutral	Neutral	Neutral

2.4.8 Nature of townscape and visual impact

The effects of a proposed development on views and townscape can be beneficial, adverse or neutral. More often than not, the impact is multi-faceted and includes a combination of beneficial, adverse and neutral aspects. Once the Scale of Potential Effect has been established for each view and any significant effects identified, the balance of these effects is assessed to evaluate whether the development will have an overall beneficial, adverse or neutral impact upon the townscape and views which experience significant effects. This evaluation is provided in Section 7.0 of this report.

Establishing beneficial, adverse or neutral

As described above, effects of 'Major' or 'Moderate' significance are deemed 'significant' effects. However, it is necessary to then establish whether this effect can be deemed beneficial, adverse or neutral. The methodology for establishing this is set out in Table 9 (overleaf).

The scale of effect (essentially whether something is experienced as a large change relative to the existing) is separate to a consideration as to whether that change is perceived as adverse, beneficial or having no real impact to the final townscape or views quality, It is possible to identify major or moderate changes to townscape/views that nonetheless have a neutral impact to how that townscape/views are appreciated. This may be, for example, because the townscape in that particular area has a high level or tolerance to change.

In these instances and for transparency for decision makers, we identify whether our methodology produces a significant scale of effect but any such effect is mitigated by a conclusion that the impact is neutral in townscape/views terms.

Accepting that significant change does not automatically equate to significant impact, we identify 'Neutral' impact as development having neutral impact to the townscape or identified views regardless of the magnitude of impact.

Please note that the significance of the townscape/visual impact is found to be 'Neutral' as set out in table 15.9 (below), the nature of the effect is no longer a significant effect, even if the magnitude of change (or rather 'scale of effect') is major or moderate in scale.

Table 9: Criteria for establishing significance of Townscape/Visual Effects

Significance of Townscape/Visual Effects	Criteria
Major Beneficial	Alterations that would be substantially characteristic and result in a pronounced improvement of the existing townscape or visual effects. Valued characteristic features would be restored or reintroduced as part of the Proposed Development.
Moderate Beneficial	Alterations that result in a partial improvement of the existing townscape or visual effects. Valued characteristic features would be partially restored or reintroduced.
Minor Beneficial	Alterations that result in a limited improvement of the existing townscape or visual effects. Characteristic features would be restored to a limited degree.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing townscape or visual effects, not uncharacteristic within the receiving townscape or views.
Neutral	Regardless of magnitude of change, development would have neither beneficial nor adverse effects on the existing townscape or visual effects.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing townscape or visual effects, not uncharacteristic within the receiving townscape or views.
Minor Adverse	Alterations that result in a limited deterioration of the existing townscape or visual effects. Characteristic features would be lost to a limited degree.
Moderate Adverse	Alterations that result in a partial deterioration of the existing townscape or visual effects. Valued characteristic features would be partially lost.
Major Adverse	Alterations that would be substantially uncharacteristic and that result in a pronounced deterioration of the existing townscape or visual effects. Valued characteristic features would be wholly lost.

3.0
Project description

3.1 Summary of the project

As part of their ambitious and pioneering commitment to achieving net zero-carbon by 2030 (and to reduce energy across its campus by 40%) UCL has joined with the University of London to bring forward a Combined Heat and Power Network across its historic Bloomsbury campus. After a year of preliminary work investigating the loading capacities and sensitivities of its building stock, the University has identified two possible locations for the necessary air source heat pumps required to bring the project forward, having also investigated cutting edge technologies such as sewer source heat pumps, which were problematic to implement. Having identified air source heat pumps as the only suitable sustainable option, the two possible locations for plant were the roof of the IoE and a combination of the roofs of the IoE and nearby Bonham Carter House on Gower Street.

As the latter is unlisted, further investigations were carried out to determine the suitability of the roof of that building as a location for rooftop plant. As one of the few non-designated heritage assets in this part of the campus however, Bonham Carter House is part of the University's highly-constrained future development programme and it was calculated that the near-future dismantling of the necessary roof plant would cancel out the carbon-saving gains from locating it here. In addition, Bonham Carter House could not take all of the necessary plant, some of which would be still need to be located on the roof of the IoE. As a result. Bonham Carter House was discarded as a suitably future-proofed option leaving the IoE as the only viable location for the plant. Please see submissions by Ramboll for further details of the extensive work investigating alternatives that has informed the proposals. For a summary of the heritage -specific review of alternative locations, please see Appendix C.

Having determined that the Grade II* listed IoE was the only viable option, and recognising the significance and sensitivity of the building, UCL and the University of London appointed AHMM, a leading conservation architect, familiar with the function and significance of Brutalist buildings. Whilst the proposed works relate to rooftop plant and an associated enclosure, it is recognised that a bespoke, architecturally-designed and heritage-led approach is needed to achieve a suitable aesthetic, responsive to Lasdun's architecture and ethos.

The proposals therefore relate to sixteen air source heat pumps, and the associated louvred plant enclosure screens which are to be finished in a bronze colour to match the existing building.

The design team investigated several alternative options for the appearance and extent of the plant enclosures, exploring options to celebrate and exaggerate their appearance and investigating extending the enclosures across all of the available roof areas Whilst design solutions are by their nature subjective, the final scheme is put forward as minimally visible from key locations to the north, east and south and of sufficiently high quality to respond to views of the building and the proposed plant enclosure from the west.

The enclosures have been restricted to two of the available roof areas, taking into account practical considerations such as the complexity of existing services on the roof and aesthetic considerations such as the desire to minimise visibility of the plant from key locations and maintain a subordinate and appropriate relationship to the building's iconic concrete roof forms. This approach has been endorsed by the Twentieth Century Society and results in a roof-top scheme that we feel able to assess as having no harm to the significance of the listed building, substantially outweighed by the environmental/public benefit of facilitating an otherwise unviable Combined Heat and Power Network.

4.0
Heritage context - the Site

4.1 Historical overview

The following section includes a historical overview of the site's history, detailing the historic development of Bloomsbury and the expansion of the University that led to the construction of Lasdun's building on Bedford Way in 1970–76.

4.1.1 The seventeenth-century Southampton Estate

Before the eighteenth century the site of No. 20 Bedford Way consisted of agricultural fields, called Lamb's Conduit Fields. The land belonged to the Earls of Southampton, who first began to develop the estate with Southampton House and Southampton (now Bedford) Square in the 1660s. In 1669 the land came into the ownership of the Russell Family – the Dukes of Bedford – through marriage, as part of the Bloomsbury Estate. This area stretched from Tottenham Court Road in the west; Oxford Street in the south; New Road (now Euston Road) in the north and Woburn Square and Southampton Row in the east. Southampton House was renamed Bedford House when it became the London home of the Dukes of Bedford.

4.1.2 Eighteenth- and nineteenth-century development of the estate

The large-scale development of the Bedford Estate continued in the late eighteenth century, transforming the rural landscape into a planned, residential estate. Bedford Square was laid out from 1776. In 1800, Francis Russell, the 5th Duke of Bedford (1765–1802) demolished Bedford House, commissioning James Burton (1761–1837) to develop the land. Burton created Russell Square between 1801 and 1804, while the renowned landscape designer Humphry Repton (1752–1818) laid out the gardens. Upper Bedford Square, leading north from Russell Square, was laid out at this time (Fig. 6), with this street later renamed Bedford Way. By 1870 a terrace of houses had been built along

Fig. 4: Horwood's Map of London, 1815 Alan Baxter

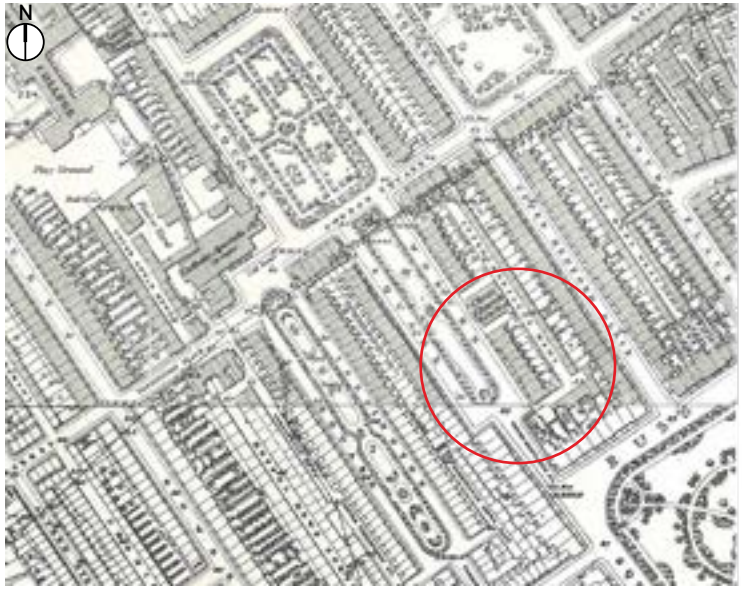


Fig. 5: OS map, 1870 © Crown copyright, 1870

Upper Bedford Square, with mews buildings to the rear. The terraces of Woburn Square had also been built by this point, as well as Christ Church on its northeast side (Fig. 7).

4.1.3 Diversification of Bloomsbury

The University College— UCL today—was established in 1826, inspired by Jeremy Bentham's (1748–1832) radical proposal for a secular university. The University's first building was the classically-styled college on Gower Street, designed by William Wilkins and opened in 1829. Over the course of the nineteenth century, Bloomsbury attracted a wide range of institutions and other occupants; to the north new railway termini on Euston Road led to a proliferation of hotels, whilst the British Museum to the west was formally opened in 1857.

4.1.4 Early twentieth-century

In the first half of the twentieth century, Bloomsbury's major development was associated with the expansion of the University, between Gower Street and Russell Square. This expansion, coupled with the introduction of railways, hotels and office uses led to a decline in residential occupation by the wealthier population, who moved to other fashionable areas of London. During the 1930s a new aesthetic and scale was adopted by the University and an expansion scheme was prepared by the architect Charles Holden (1875-1960), with a spine of buildings extending from Montagu Place to Byng Place, and from Malet Street to Woburn and Russell Squares. However, by the outbreak of the Second World War only Senate House was complete.

4.1.5 The university's post-war development of Bloomsbury

War-time bombing destroyed some of the older housing stock in the area which allowed the opportunity for new, large-scale developments, including the present No. 20 Bedford Way. Following the Second World War, the University expanded further south and east initiating further demolitions of historic buildings to make way for new university buildings. In 1959 UCL commissioned Leslie Martin and Trevor Dannatt to design a development plan for the Bloomsbury district. The scheme was supported by the London County Council and the Royal Fine Art Commission. Martin recommended Denys Lasdun (1914–2001) to draw up the first detailed designs and in 1960, Lasdun was commissioned to design an extension to the School of Oriental and African Studies (SOAS) and a new building for the Institute of Education and the Law Institute between Bedford Way and Woburn Square, to include a near 1000-seat auditorium.

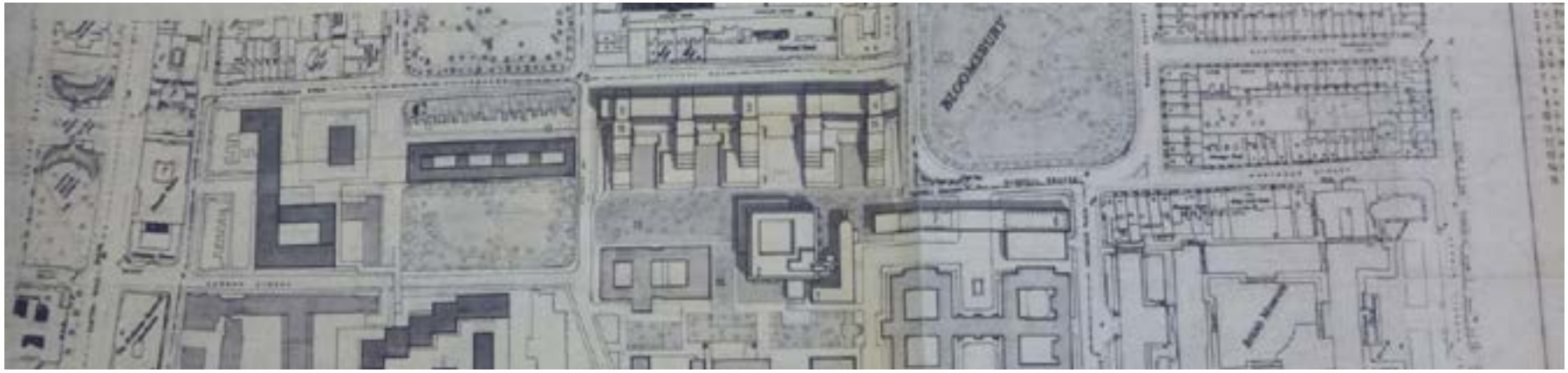


Fig. 6: Development plan for Bloomsbury, with Lasdun's SOAS extension and the IoE/Law Institute in the centre. c. 1966 London Metropolitan Archive

Brutalist Buildings

'Brutalism' as an architectural term originates from the use of exposed materials including raw concrete (*béton brut*). It has come to be used to describe the imaginative sculptural treatment of the volumes and surfaces of a building for the power of their formal expression, often in relation to the expression of internal functions. This was in contrast to the polite modernism of the Festival of Britain period which preceded it.

Brutalism was used almost exclusively in the public sector, for housing, and education and cultural buildings. Its uncompromising aesthetic and demanding engineering and construction techniques made it unsuitable for commercial development, for which low-risk building processes and an inoffensive aesthetic were more appropriate.

Alexandra Road Estate, Neave Brown (1972-78)

Barbican Estate, Chamberlain, Powell and Bon (1962-82)

Brunel University, Richard Sheppard, Robson and Partners (1965-66)

National Theatre, Denys Lasdun (1969-76)

Royal College of Physicians, Denys Lasdun (1960-64)

Trellick Tower, Erno Goldfinger (1968-72)

4.1.6 Lasdun's design and construction (1966–77)

Lasdun designed a modular building in the Brutalist style, which could be constructed in phases as funding was made available and land acquired. Initial drawings for the Institute of Education and Law Institute, dated 1966, show a building formed of nine storeys, three of which are below ground, articulated by a grid of pre-fabricated bronze-adonized aluminium panels and glazing, set in a structure of in-silo and precast reinforced concrete (Figs. 9-11). The spine of the building along Bedford Way is punctuated by five concrete service towers (Cores A to E), and five stepped wings, resembling ziggurats, that project west from the spine toward Woburn Square. Each wing is dominated by an external over-scaled concrete staircase.

However, in the mid-1960s a shift in public attitudes toward historic conservation occurred, in part as a result of the changing nature of Bloomsbury and UCL's approach to commissioning contemporary architecture from the 1930s onwards, at the cost of the area's older terraces. A conservation campaign to save Woburn Square from demolition, set up by UCL lecturers and students and headed by renowned architectural historian John Summerson, gained traction in 1968. In February 1969 a debate was held during a meeting of the University Convocation where the conservationists proposed that at least the facades of the Georgian terraces be retained. They lost the debate, but soon the tide would turn in their favour.

Construction started in September 1970, by which time the plans for Levels 1—4 (the three below- ground floors and ground floor), including the split-level entrance from Bedford Way (which addressed the change in ground level between Bedford Way and Thornhaugh Mews) and principal stair to the below-ground auditorium, known as University Hall (now Logan Hall), had been revised. Construction began with the spine of the building, progressing from south to north. (The north core tower was only completed in 1978, a year after the Institute was officially opened by the Queen Mother). The first and only ziggurat wing to be built was the existing west wing; delays to funding gave the conservationists time to list the remaining Georgian terraces in the area, preventing the completion of three of the wings. The fourth unexecuted wing would have enclosed the forecourt to the north of the completed west wing. Whilst the site was cleared in 1974, funding for the construction of the wing never came, and the site remains undeveloped to this day.

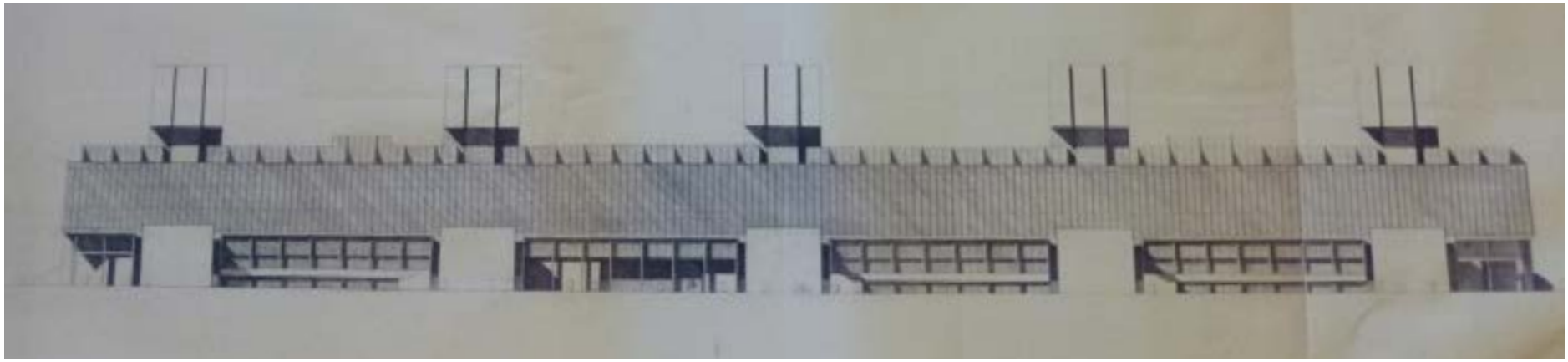


Fig. 7: Lasdun's design for the east (Bedford Way) elevation of the Institute of Education and Law Institute, 1966 London Metropolitan Archive

Lasdun designed the building with the future, evolving needs of the university in mind; its plan- form was intended to be flexible, with light-weight partitions that can easily be removed and rearranged. The history of alterations to the interiors since the 1970s, particularly the teaching spaces on the upper floors, indicates the success of this original concept.

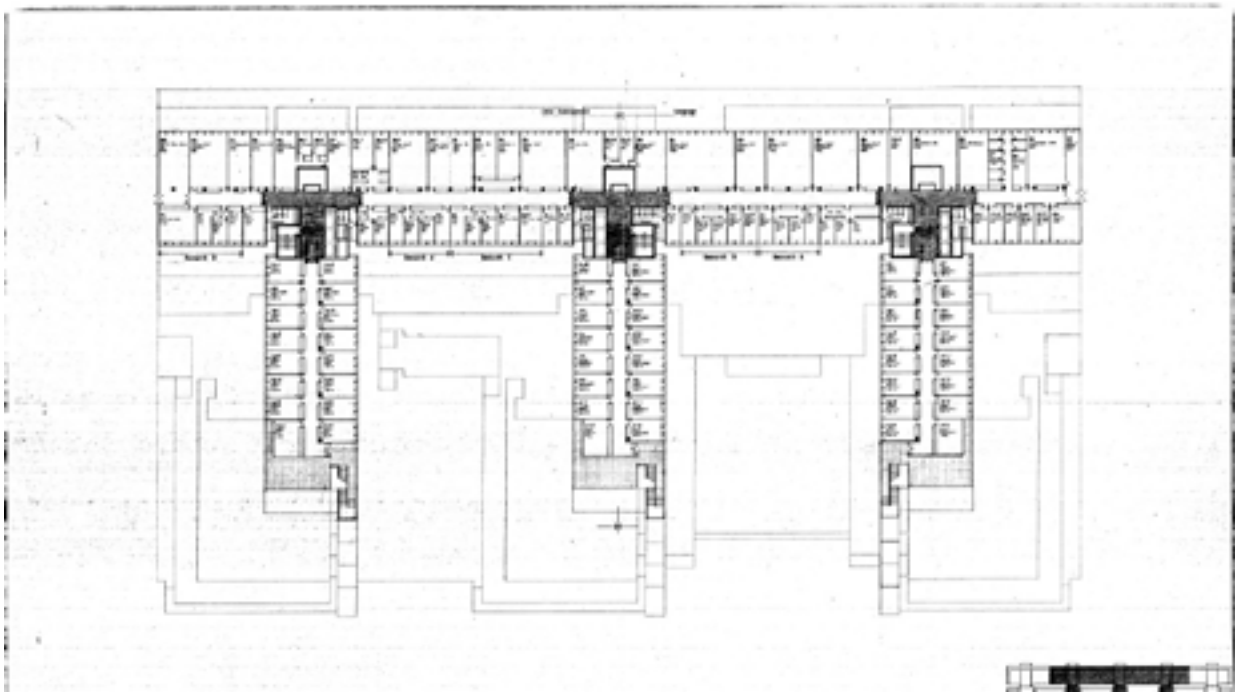


Fig. 8: Lasdun's original plan for the IoE (Level 7), 1966. Only the wing to the right was constructed London Metropolitan Archive

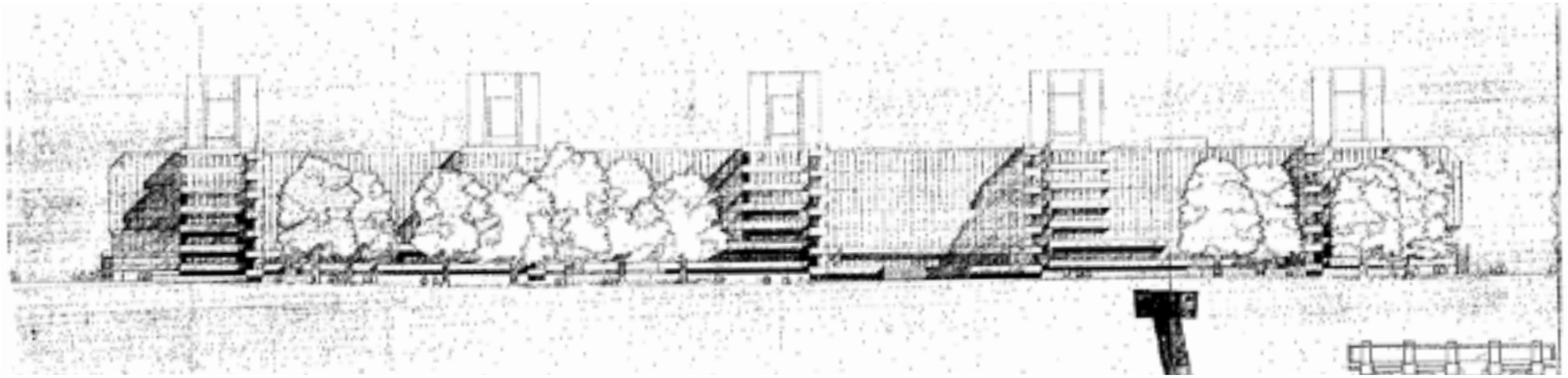


Fig. 9: Lasdun's never-realised design for the west elevation of the Institute of Education and Law Institute, 1966 London Metropolitan Archive

4.1.7 Extensions by Lasdun, 1990–93

In 1990–93 an extension was built to the rear of Zone C to house the Institute's library, partly incorporating the foundations that had been laid for the unexecuted wings. The three-storey extension (on Levels 3–5), was designed by Lasdun and uses the same vocabulary of a grid of aluminium panels and glazing.

In 1993 the entrance from Bedford Way was also reconfigured. The IoE was originally entered through the still existing pair of doors at street level (Level 3), set in a recessed curtain wall of glazing between Cores A and B, which accessed the main atrium and stair to University Hall. The 1993 entrance accessed Level 4: first floor level as seen from Bedford Way, reached by a stair from street level that projects beyond the concrete piers supporting the overhanging upper floors.

4.1.8 Works in the 2020s

In 2024, supported by LB Camden and Historic England, IoE took he bold step of removing Lasdun's 1993 entrance as part of a detailed programme of refurbishment works to reinstate the legibility of the building and improve the quality of spaces within the building. It is immediately clear to any visitor today that the reinstatement of the original entrance, complemented by the architects Penoyre & Prasad's sensitive entrance pavilion, has better revealed the legibility of the original arrival experience and contributes to an better appreciation of Lasdun's use of sculptural concrete in the stairwell and entrance areas. Refurbishment throughout has been sensitive to Lasdun's aspirations for an evolving and flexible building.

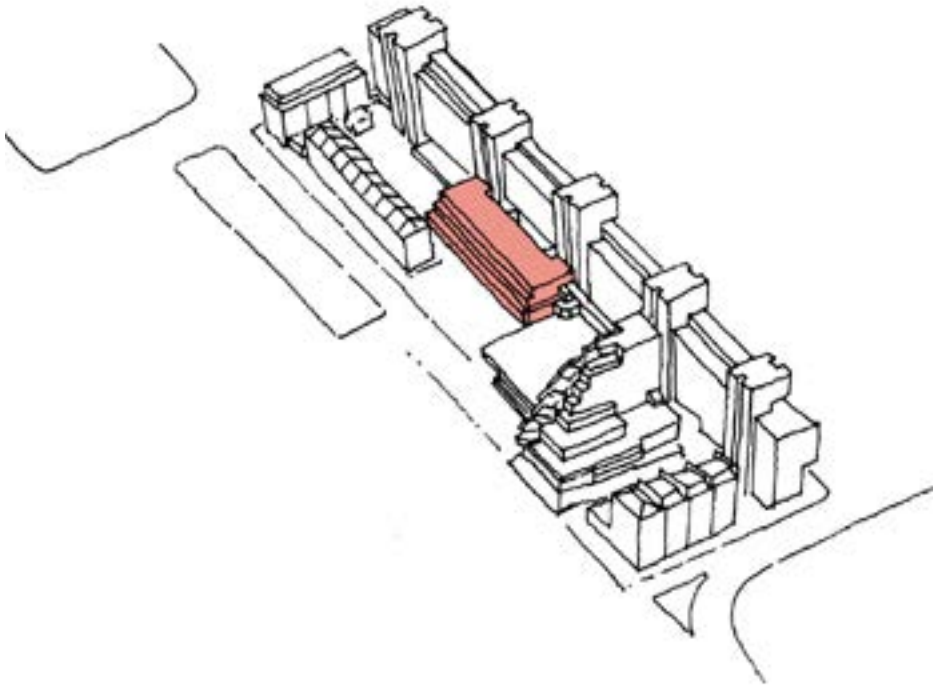


Fig. 10: Aerial view of the listed building, viewed from the south; Lasdun's library extension, built in 1993, is highlighted Alan Baxter

Fig. 11: No. 20 Bedford Way under construction, mid-1970s, viewed from Thornhaugh Street, facing north Institute of Education Archive

Fig. 12: Completed west wing in 1975, from Thornhaugh Street, facing north Institute of Education Archive

4.2 Assessing the significance of the IoE and its context

The following sections offer an assessment of the significance of the IoE and the nearby heritage assets which might be affected by this application. Significance is considered in relative terms within this report. Please see Section 2.0 for the methodology used in this assessment of significance.

A five-tiered scale of relative significance has been used in this assessment:

High significance: major contribution to special interest

Moderate significance: moderate contribution to special interest

Low significance: minor contribution to special interest

Neutral: makes no contribution to special interest, but does not detract

Detracts: is a negative feature that obscures or harms the special interest

These levels, in addition to the different heritage interests outlined in the NPPF, are referenced throughout the following sections as well as on the accompanying significance plan.

4.3 Significance of the IoE

Note: As the building that is to be directly affected by the proposed works, the Institute of Education is considered in more detail here.

4.3.1 Exterior

The historic interest of No. 20 Bedford Square lies in it being an excellent example of a university teaching and administration building, designed by one of Britain's leading post-war architects. It is characteristic of the large-scale, Brutalist development of the 1960s and '70s, and its bold expression of function, form and materials typifies the mature work of Denys Lasdun. The arrested development of No. 20 Bedford Square, specifically the incomplete design for multiple western 'spurs', reflects the growing importance of the historic building conservation movement in the mid- to late twentieth century.

The architectural interest of its external appearance lies primarily in the sophisticated use of horizontal strata contrasting with vertical elements: its imposing towers give a strong, sculptural form, in addition to the exceptionally high-quality finish of the materials comprising bronze- anodized aluminium panels, fair-faced concrete and bespoke, glazed curtain walling that was at the forefront of the technological capabilities of the day. Overall, the exterior of the building is of **high significance** with the fine detailing of the contrasting materials a significant component of that significance.

4.3.2 Interiors

Lasdun designed the interiors to be flexible, with the intention that as the needs of the university evolved, so too would the layout of the building. In line with this, the majority of the interiors have been extensively altered and are of **neutral significance**; however, original fabric remains in the external window frames and structural elements, usually finished in fair-faced concrete. Surviving original fabric, especially the exceptional quality of concrete and window frames are of **high significance**. The interplay between these materials is a key component of the experience of being in the arrival area and they are therefore of **high significance**, whereas all other surviving original fabric and plan-form are of **moderate significance**. However, modern finishes such as carpets, skirting, and paint and plaster on the concrete columns, and later infill partitions, obscure the original finishes and **detract from significance**.

The plan form of the building, with axial routes sectioned by doors separating each zone with spaces leading off of these and their meeting at the open spaces of the entrance hall and core staircase, are of **high significance**. The cellular compartmentalisation of the zoned areas is of **neutral significance** however with Lasdun, with particular foresight, always intending for these spaces to be altered to meet the future needs of the occupiers of the building. Some of these spaces have been sub-divided and partitioned. Later refurbishments are **neutral** although some of the office doors have some **low significance** as part of the original fabric of the building.

4.3.3 Setting

For such a bold and uncompromising building, the Grade II* listed university building has a surprisingly compact setting. Approached from the north or south, a first view of the prominent sculptural form and mass of the building surprises the viewer - forming a stark contrast to the brick terraces and whole-block buildings that crowd around it. It is abruptly and incongruously met from the leafy, polite surrounds of Tavistock and Russell Squares which is a positive and charming part of its setting. It is from these approaches that Lasdun's sculptural concrete forms are most evident and striking.

From the west, walking through the eclectic mix of buildings that form the University campus, the approach is more gradual and less surprising, having passed by monumental twentieth-century buildings cheek-by-jowl with converted terraces: this mixed character a key component of this part of Bloomsbury. It is from the east that one experiences more expansive views of the massive scale and length of building, first glimpsed and then dominating as one approaches it. From this perspective, it is the horizontality of the building and its ambitious scale that are most striking.

The setting is therefore experienced differently depending on ones approach - either a sudden and powerful contrasting sculptural form or a gradual appreciation of its ambitious scale and form.

4.4 Group Significance

The buildings of the Bloomsbury campus (including buildings that belong to Birkbeck and other institutions) represent a remarkable concentration of architecturally fine university buildings and often cutting-edge and controversial, expanding the boundaries of architectural design for these types of buildings.

Their significance is amplified by their proximity to each other and ongoing and continued use in their original purpose.

4.5 Character and appearance of the Bloomsbury Conservation Area

The site is located within Bloomsbury Conservation Area. The Conservation Area Appraisal and Management Strategy was produced in 2011. Bloomsbury Conservation Area's special architectural and historic interest is generally characterised by its formally planned arrangements of streets and Squares. The document states that:

> *The quintessential character of the Conservation Area derives from the grid of streets enclosed by mainly three and four-storey developments which have a distinctly urban character interspersed with formal Squares which provide landscape dominated focal points. (LB Camden 2011: 6)*

4.5.1 Contribution of the IoE to the character and appearance of the conservation area

The Management Strategy document divides the Conservation Area into sub-Areas based on shared characteristics. No. 20 Bedford Square is mentioned under two of the sub-Areas. In Sub Area 3: University of London/British Museum, the IoE building is described as part of a group with its neighbour, the Philips Building extension to SOAS, also designed by Lasdun. The document states that the two buildings:

> *Share a common vocabulary derived from post-war British Brutalist architecture: stark concrete, strongly modelled structures with horizontal glazing , and distinct sculptural forms including vertical circulation towers. While radical interventions in the Bloomsbury landscape, the Lasdun buildings are now part of the established character of the Conservation Area. (LB Camden 2011: 34)*

In Sub Area 6: Bloomsbury Square/Russell Square/Tavistock Square, No. 20 Bedford Way is noted for its dominant presence in the Bloomsbury streetscape:

> *On the north side [of Tavistock Square], the southern end of Denys Lasdun's Institute of Education (grade II* listed) has a bronze-coloured glazed curtain*

wall elevation facing the Square… The western side of the street [Bedford Way] is occupied entirely by the strongly modelled elevation of Sir Denys Lasdun's 1970s grade II listed Institute of Education and Clore Institute of Advanced Legal Studies. A notable example of British Brutalist architecture, the street elevation is punctuated by the vertical staircase towers and lecture room 'pods' at roof level. (LB Camden 2011: 48) In conclusion, the massive and imposing structure of the building makes a strong contribution to Sub-Area 3 of the Bloomsbury Conservation Area, in isolation and as part of a group with other university buildings.*

This contribution results primarily from the holistic experience of seeing the entire, massive, sculptural block rather than individual detailing.

4.6 Setting of nearby heritage assets

Due to the small scale of the proposed development, only a selection of the nearest buildings and those with the highest heritage significance is included here.

4.6.1 The Philips Building at the School of Oriental and African Studies (SOAS), Grade II*

A university library building also designed by Denys Lasdun, the Philips building was completed in 1973. It is designed to respect Charles Holden's 1930s SOAS Thornhaugh Street building which lies to the south, but also emulates and forms a group with the Institute of Education, which lies to the east.

Setting

The designed setting of the Philips Building includes a grassed area to the west which separates it from Torrington Square, and the open yard between it and the IoE to the east. The open space of Torrington Square lies to the west, and to the north lies Woburn Square, neither being part of the building's designed setting but an attractive part of the nearby townscape. Otherwise, the building is closely surrounded by streets and nearby development, forming a group with the other university buildings around it. This building is reached only after passing other university buildings and therefore has a significant campus feel to its setting, not necessarily repeated across all of the University's buildings.

4.6.2 The School of Oriental and African Studies, Thornhaugh Street, Grade II

Designed by Charles Holden in the late 1930s, this brown brick building is a later accompaniment to Holden's larger and more extravagant Senate House building to the south west.

Setting

The Holden building faces the open space of Torrington Square to the west, and the lawns of Senate House to the south. It has limited designed setting to the east toward the IoE, where the surrounding townscape is dominated by tarmac roads. This building mediates between the public square of Russell Square and the obviously campus buildings to its north, forming a polite rather than spectacular first approach to the heart of the extended campus.

4.6.3 Nos. 21-24 Russell Square, Grade II

This residential terrace with attractive terracotta detailing lies to the south west of the IoE, facing Russell Square

Setting

This neat row has a very limited designed setting but is appreciated as the formal and defining edge of Russell Square. The rear gardens of the buildings are modest, reflecting their non-domestic nature and enclosed by a high brick wall. The setting to the front and sides includes the railings and the adjoining pedestrian pavement. Despite its separation from the terrace by a busy roads, the greenery of Russell Square is a key part of the setting of the terrace.

4.6.4 Russell Square, Grade II Registered Park

Russell Square gardens were designed by Humphry Repton and completed by 1819. The gardens were designed as a private and enclosed space, described in the list description as surrounded by a *privet hornbeam hedge clipped to 6ft to screen the walk from the street.* Despite subsequent relandscaping the overall appearance today is similar to Repton's original concept.

Setting

The wide roads, generous space and grand facades of the buildings around it make Russell Square feel like a busy and pleasant public park rather more than a London Square. Glimpsed views of the handsome buildings that surround it through the foliage of its enclosing trees are an important part of its setting.

4.6.5 Nos. 55-59 Gordon Square, Grade II

The terrace of Nos. 55-59 Gordon Square abuts Lasdun's 26 Bedford Way, north of the IoE. It is a terrace of five houses designed by Thomas Cubitt and dating to approximately 1824.

Setting

Nos. 55-59 Gordon Square have a limited designed setting, being at one remove from Gordon Square itself. The rear gardens to the south are truncated and the setting to the north includes the railings and the adjoining pedestrian pavement. The greenery of Gordon Square and Woburn Square contributes to the setting towards the west end of the terrace. To the east, 26 Bedford Way, particularly its tower, dominates the setting of the terrace with the juxtaposition of the two a key part of the terrace's setting if not an original one.

4.6.6 Nos. 10-18 Woburn Square, Grade II

The terrace of Nos. 10-18 Woburn Square lies immediately to the west of 26 Bedford Way and the IoE. It is a terrace of nine houses by James Sim, James Sim Jnr and Robert Sim, dating to approximately 1829.

Setting

Nos. 10-18 Woburn Square have a limited designed setting but gain value as part of the varied nature of this part of the campus, imparting a domestic scale between the more monolithic buildings of the twentieth century. The setting to the west includes the railings and the adjoining pedestrian pavement.
The greenery of Woburn Square is a key part of the setting to the west of the terrace. The rear gardens to the east are small, and dominated by Lasdun's monumental building to the rear. Lasdun's 1990–93 library extension to the IoE projects into the area previously occupied by the rear gardens of Nos. 16-18 Woburn Square.

5.0
Townscape and visual baseline

This section analyses the townscape context site with the aid of maps and diagrams. Numerous physical and socio-cultural factors contribute to an area's townscape, including but not limited to:

- Urban grain
- Building height and scale
- Cultural and built heritage
- Topography
- Land use and tree cover
- Access and connectivity.

5.1 Urban Grain

This figure-ground drawing simplifies the built environment to black blocks to illustrate the area's urban grain. It demonstrates the IoE's location within the otherwise dense urban grain of Bloomsbury, which has been significantly altered by twentieth-century block-sized developments, fracturing the earlier tight grain of Georgian terraces. The square open space of Russell Square is clearly visible to the south of the IoE, and the two smaller squares of Gordon Square and Tavistock Squares can be seen to the north. Otherwise, the area is arranged in a series of densely developed rectangular blocks, divided by relatively narrow streets.

Institute of Education outline

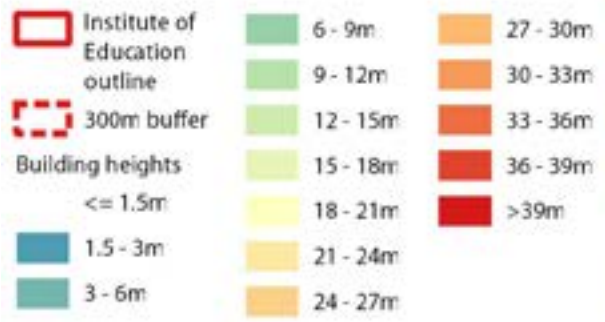
300m buffer

Fig. 13: Figure ground diagram

5.2 Building height

This map extends the understanding of the area, illustrating the relative heights of the buildings. It clearly shows the distinction between residential terraced buildings and more substantial university and hotel buildings. For example, to the north west of the IoE, the eighteenth century terraces of Gordon Square and Tavistock Square show in shades of green and yellow, indicating that they are in the main less than 21m in height. Taller and bulkier buildings, including hotels and university buildings, are on average 28-35m in height, showing in shades of orange. Key taller structures, such as the tall frontage of the Russell Hotel on the north east corner of Russell Square, are over 39m in height and show in this drawing as dark red.

The principal rooftops of the IoE are 25-26m in height, whereas the tall core towers are approximately 37m tall.



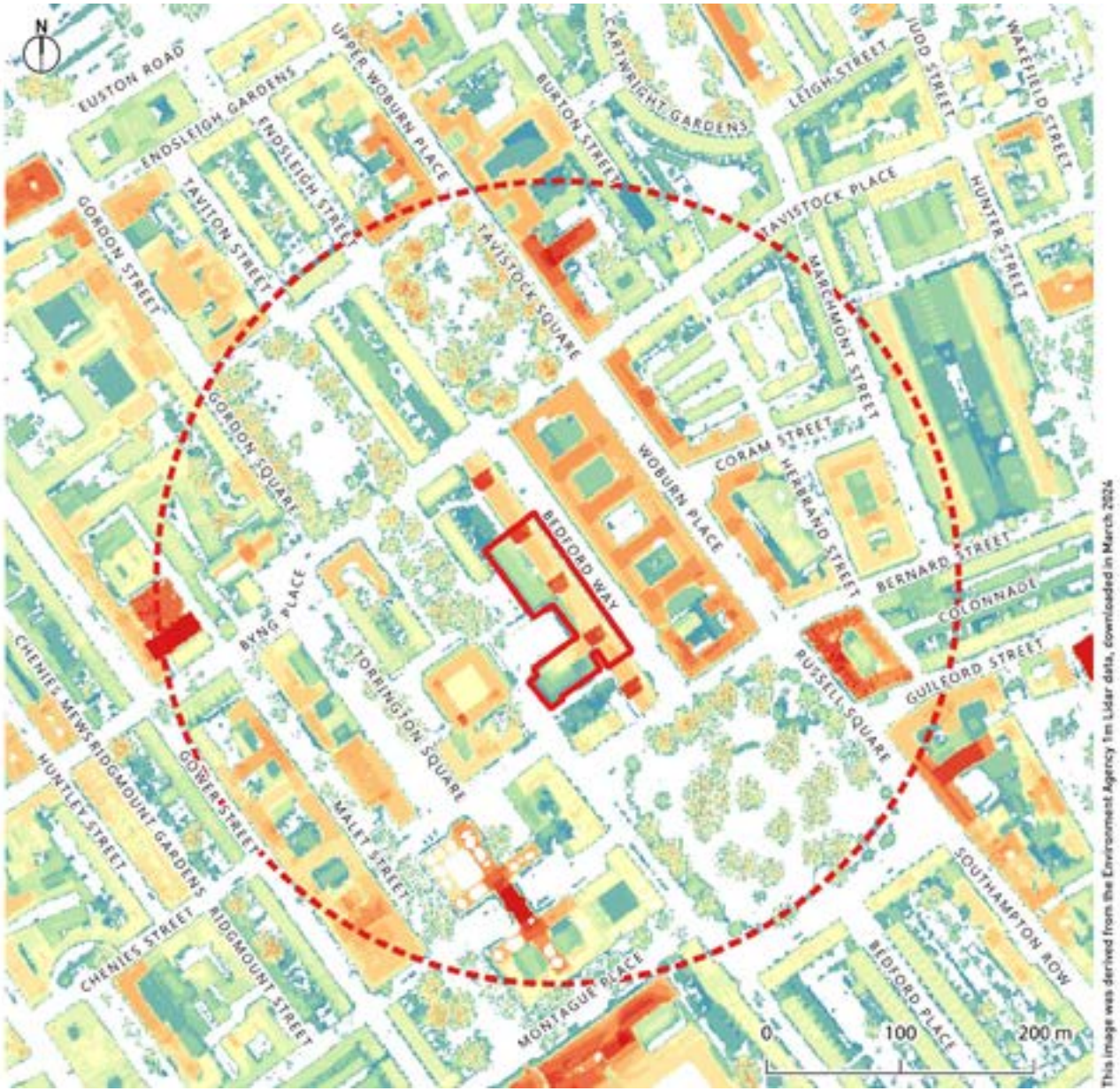


Fig. 14: Building heights diagram (trees included in LIDAR data)

5.3 Topography

This map of wider London illustrates the underlying topography of the site and the areas around it. The IoE lies on relatively flat ground raised a few metres above the flood plain. The land slopes gently down to the north and east towards the valley of the now culverted Fleet River. To the south lies the River Thames.

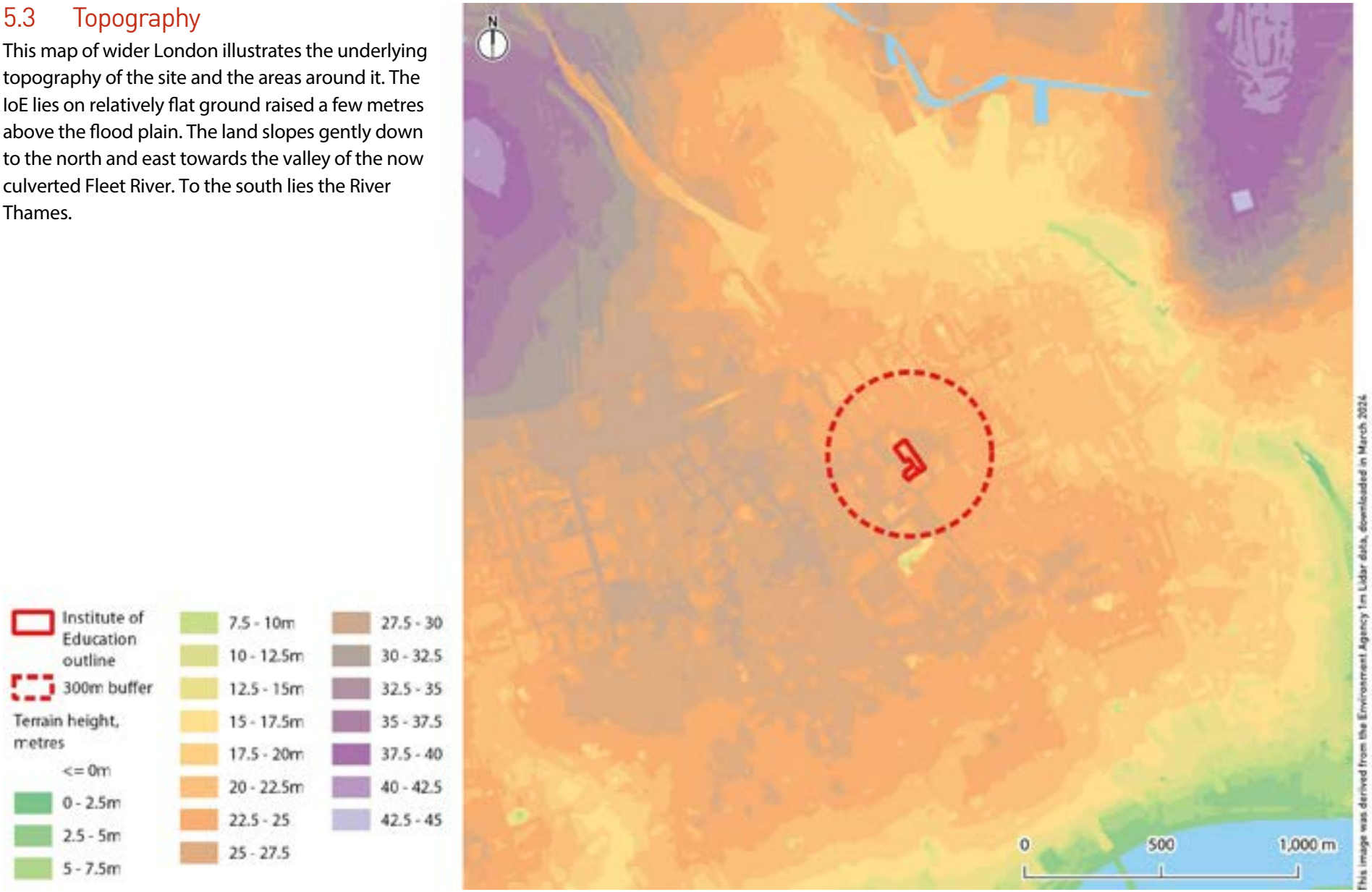


Fig. 15: Topography diagram

5.4 Land use

The study area consists of historically residential terraces, particularly to the north and east of the IoE, now almost all converted to university or office uses. The area also contains university buildings and hotels and infill commercial developments along major thoroughfares. The open spaces of Russell Square, Tavistock Square and Gordon Square are strong and pleasant features of the area.

5.5 Tree cover

The Google Earth aerial image in Fig. 16 demonstrates the large number of mature trees in the study area. These are not only in the three squares, but also line the streets and other open spaces. Some are of a considerable height (see Fig. 14), particularly the mature specimens in Tavistock Square, all contributing to otherwise densely-developed Bloomsbury's leafy character.

5.6 Access and connectivity

Most of the network of streets around the IoE are minor roads. The exception is the principal road the A420, which comprises Woburn Street/ Tavistock Square to the east of the IoE and forms a connection between Euston to the North and Holborn to the south.

Institute of Education outline

300m buffer

Fig. 16: Tree cover

5.7 Identifying Character Areas

The preceding sections illustrate how elements of townscape character can vary greatly across a defined study area and create visually distinct character areas. It is generally accepted that individual buildings and spaces within an identified character area may be atypical of the overall character: character assessment seeks to ascribe 'overall' character to areas which, in practice, are rarely completely homogenous. Nonetheless, by considering the elements that contribute to townscape character, different parts of the baseline study area may be identified as having a particular defined character area and can therefore be categorised according to the levels of Nature of Townscape Receptor as defined in Tables 1, 2 and 3 on Pages 15 to 16.

5.7.1 LB Camden character areas

For conservation areas, LB Camden use the definitions of character and appearance set out in the relevant Conservation Area Statement or Appraisal and Management Strategy, which are adopted supplementary planning documents. For areas outside conservation areas, Camden commissioned the 2014 Camden Character Study to identify and record character. Because the IoE sits within the Bloomsbury Conservation Area, its character is summarised in the Bloomsbury Conservation Area Appraisal and Management Strategy (see below).

This study relies on LB Camden's established characterisation areas.

5.7.2 *Bloomsbury Conservation Area Appraisal and Management Strategy* (2011) sub areas

The 2011 *Bloomsbury Conservation Area Appraisal and Management Strategy* sets out 14 separate character areas or 'sub areas'. The 300m study area includes six of these 14 areas, which are as follows:

- 2 - Gordon Square/Woburn Square/Byng Place
- 3 - London University/British Museum
- 6 - Bloomsbury Square/Russell Square/Tavistock Square
- 11 - Queen's Square/Red Lion Square
- 12 - Coram's Fields/Brunswick Centre
- 13 - Cartwright Gardens/Argyle Square

Below is a summary of the character of these sub areas, referencing the *Conservation Area Appraisal and Management Strategy*. The sub areas are illustrated in the map extract in Fig. 17.

2 - Gordon Square/Woburn Square/Byng Place
(Nature of Townscape Receptor: Medium)

This sub area is mainly characterised by early nineteenth century residential terraces.

> *Fine four-storey early 19th century terraces predominate in the sub-area. They were originally developed speculatively by Thomas Cubitt and James Sim and Sons for domestic use, during the first half of the 19th century. Cubitt introduced new squares into the street layout envisaged in the earlier 1795 plan for the Bedford Estate. Despite the replacement of areas of original development along these streets as a result of the expansion of the university in the 20th century, the scale of the streets and spaces has generally been preserved.*

3 - London University/British Museum
(Nature of Townscape Receptor: High)

The *Conservation Area Appraisal* describes this character as follows:

> *This area is dominated by large-scale institutional buildings. To the north of the area is the University of London precinct and its associated colleges and faculties. To the south is the British Museum which occupies almost an entire street block north of Great Russell Street and south of Montague Place. As well as some exemplary 18th and 19th century buildings, there are several examples of 20th century architecture of international repute. The original street pattern is retained in most part, but 20th century development has involved the loss of some earlier, small-scale domestic terraces. In most cases, later buildings maintain and define street frontages, despite their larger scale and increased bulk and mass. There are a series of pedestrianised spaces and courtyards of varying scales between the buildings giving a quieter but nonetheless active campus atmosphere contrasting with the busy streets.*

The IoE sits within this sub-area, and as a large scale institutional building and as an example of *20th century architecture of international repute* it is a key building which defines the area's character.

6 - Bloomsbury Square/Russell Square/Tavistock Square
(Nature of Townscape Receptor: Medium)

> *This sub area is largely made up of three- and four-storey late 18th and 19th century terraces surrounding a sequence of linked formal spaces, namely Bloomsbury Square, Russell Square and Tavistock Square. A series of north-south vistas visually connect the three squares. Moving through the area, there is a transition between the enclosed, urban nature of the streets and the more open squares which are softened by trees and green landscape. In places, the original terraces have been replaced with 20th century development, mostly of a larger scale and urban grain; this is particularly noticeable around Tavistock Square, Bedford Way and Upper Woburn Place.*

11 - Queen's Square/Red Lion Square
(Nature of Townscape Receptor: Low)

This character area is characterised by:

> *...a focal square (Queen Square in the north and Red Lion Square in the south) which is surrounded by a network of streets and minor routes. These secondary thoroughfares are characterised by a mix of commercial or residential uses. ... The formally planned squares comprise landscaped gardens enclosed by cast-iron railings and are now surrounded by a variety of building types, styles and ages, the earlier townhouses having been largely redeveloped during the 19th and 20th centuries.*

12 - Coram's Fields/Brunswick Centre
(Nature of Townscape Receptor: Medium)

This sub area is dominated by large-scale, green open spaces of historic significance in and around Coram's Fields. The spaces act as a green lung, providing a sense of openness which contrasts with surrounding areas. There is a predominance of institutional (hospital, university, education), recreational and community uses with secondary residential and office uses. The area is relatively busy during the daytime as a result of these uses. The Brunswick Centre, in total contrast, is a postwar monolithic concrete megastructure occupying an entire street block on the west side of Brunswick Square.

13 - Cartwright Gardens/Argyle Square
(Nature of Townscape Receptor: Medium)

The interest of this sub area derives from the formal early 19th century street pattern and layout of open spaces, and the relatively intact surviving terraces of houses. Developed mainly by James Burton, it was one of the later areas of Bloomsbury to be completed, and in its early 19th century parts retains a remarkably uniform streetscape. The mature trees to be found in the large formal gardens soften the urban area and provide a foil for the built environment in the summer months.

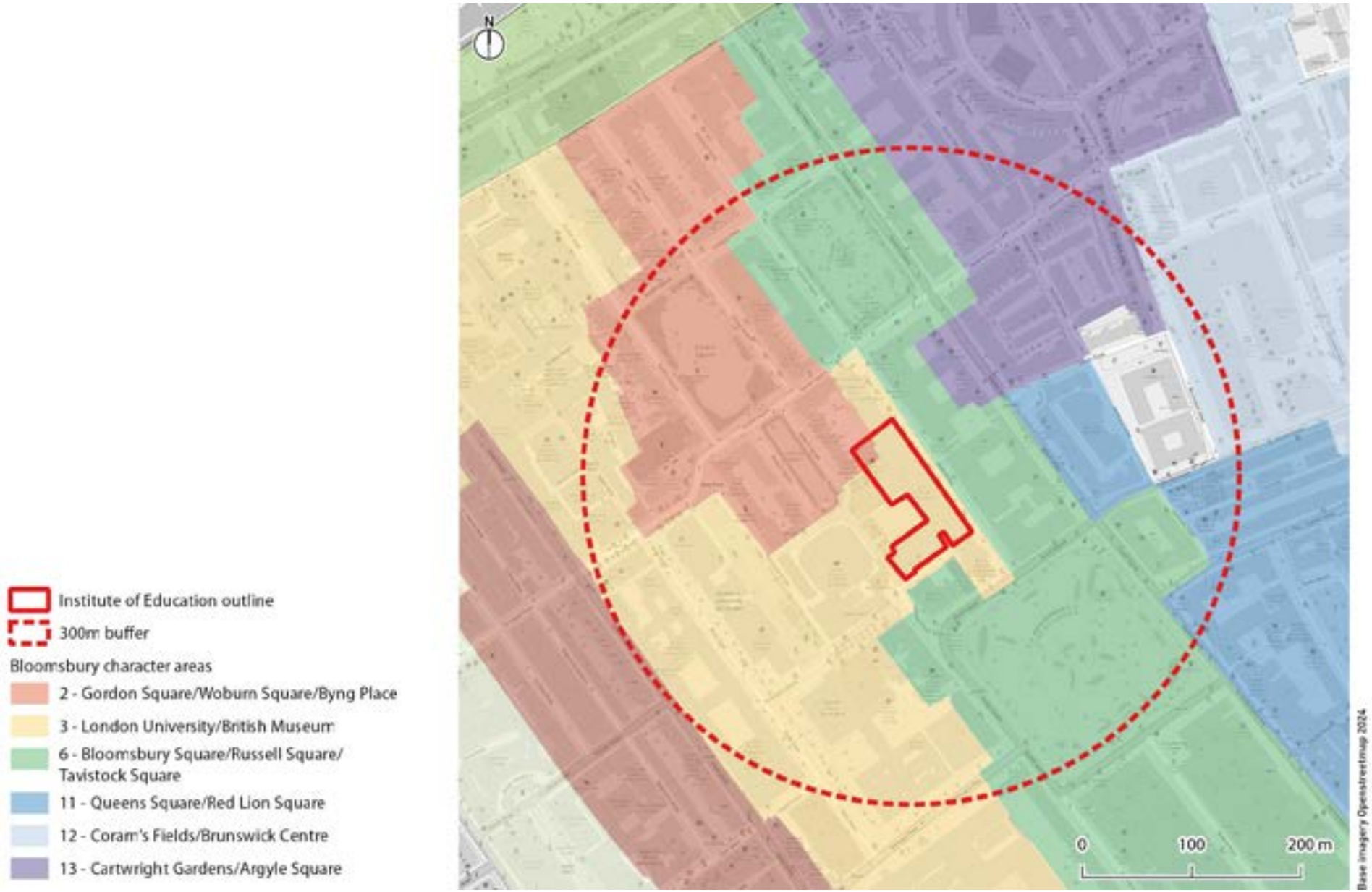


Fig. 17: The six Bloomsbury Conservation Area Character Areas which fall within the 300m buffer

5.8 Visual baseline

5.8.1 Identification of key and representative views

Views selection is based upon the comparison of several sources of information, and is designed to identify a series of views which can be used to assess the heritage, townscape and visual impact of a Proposed development. The key informatives that have gone into the selection of views presented in this section are:

- An understanding of the baseline heritage and townscape conditions around the Site, including identifying heritage assets and townscape character areas;
- Zone of Theoretical Visibility (ZTV) modelling based on the currently proposed height of the new leisure and community building;
- Careful analysis of the street-level conditions and approaches to the building.

5.8.2 Zone of Theoretical Visibility

Zone of Theoretical Visiblity (ZTV) models are a useful tool in determining the most representative locations for the views assessment. Using quantitative data drawn from GIS systems and LIDAR (Light detecting and ranging) mapping, ZTVs demonstrate the probable visibility of a proposed development based on its height above ground at a particular location, assuming a viewing height of 1.6m.

A ZTV has been produced to demonstrate where the roof plant enclosure would be visible from, allowing for topography, built form and tree cover. Figure 46 on page 70 shows the maximum visibility of the works at this proposed height in purple with visibility measured from the standard 1.6m average eyeline.

The ZTV shows a high degree of visibility from the immediate vicinity of the Site as expected but very limited visibility beyond the immediate streets, a consequence of the tall and massive blocks of development on both sides of Bedford Way and the relatively narrow street widths.

Views from more open areas, particularly the nearby squares, are significantly blocked by the dense tree cover.

It is recognised that ZTVs are only ever a model and that in reality some viewers may glimpse views through dense tree cover, especially in Winter. Nonetheless, the unusual density of high tree branches in both Woburn and Russell Squares will have an unusually high screening effect to views from these locations, as shown by the ZTV overleaf.

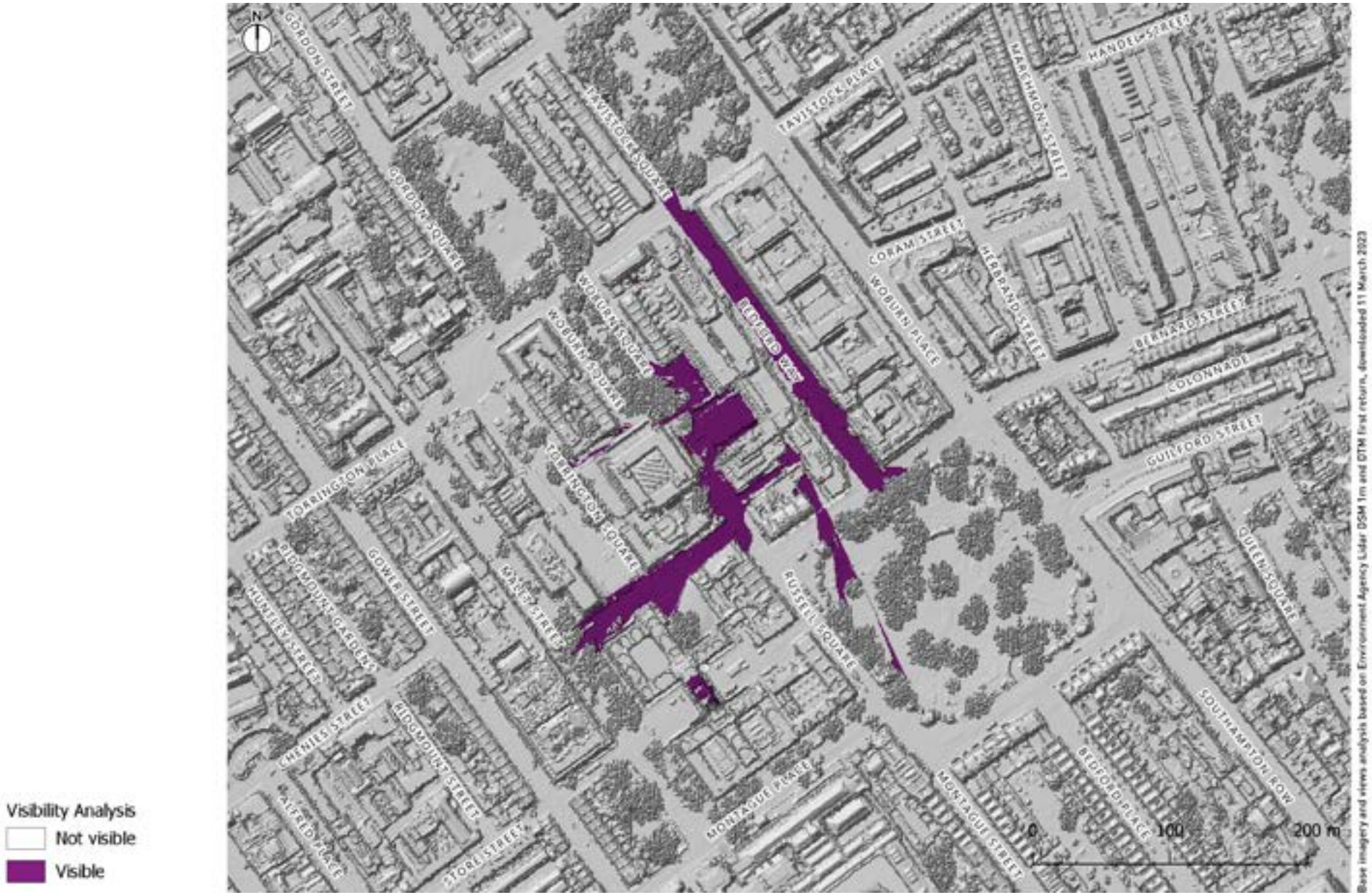


Fig. 18: Zone of Theoretical Visibility diagram.

5.9 Views selection

By combining the key informatives outlined in Section 5.8.1, seven views were chosen to reflect key views and as a representative sample of views from different character areas. These are locations where the Proposed development would be seen and its potential impact useful to demonstrate or, alternatively, locally important locations where an assessment is considered necessary to inform decision making. The chosen view locations were selected as a representative sample. The final view locations were agreed with LB Camden. The views are summarised as follows and illustrated in Fig. 19 on page 45. They are presented and discussed in more detail in Section 6.0.

1 View from Tavistock Square
2 View from south side of Tavistock Square
3 View from beside SOAS
4 View from Bedford Way - The National Hotel
5 View from corner beside Russell Square
6 View from within Russell Square
7 View from entrance to western forecourt

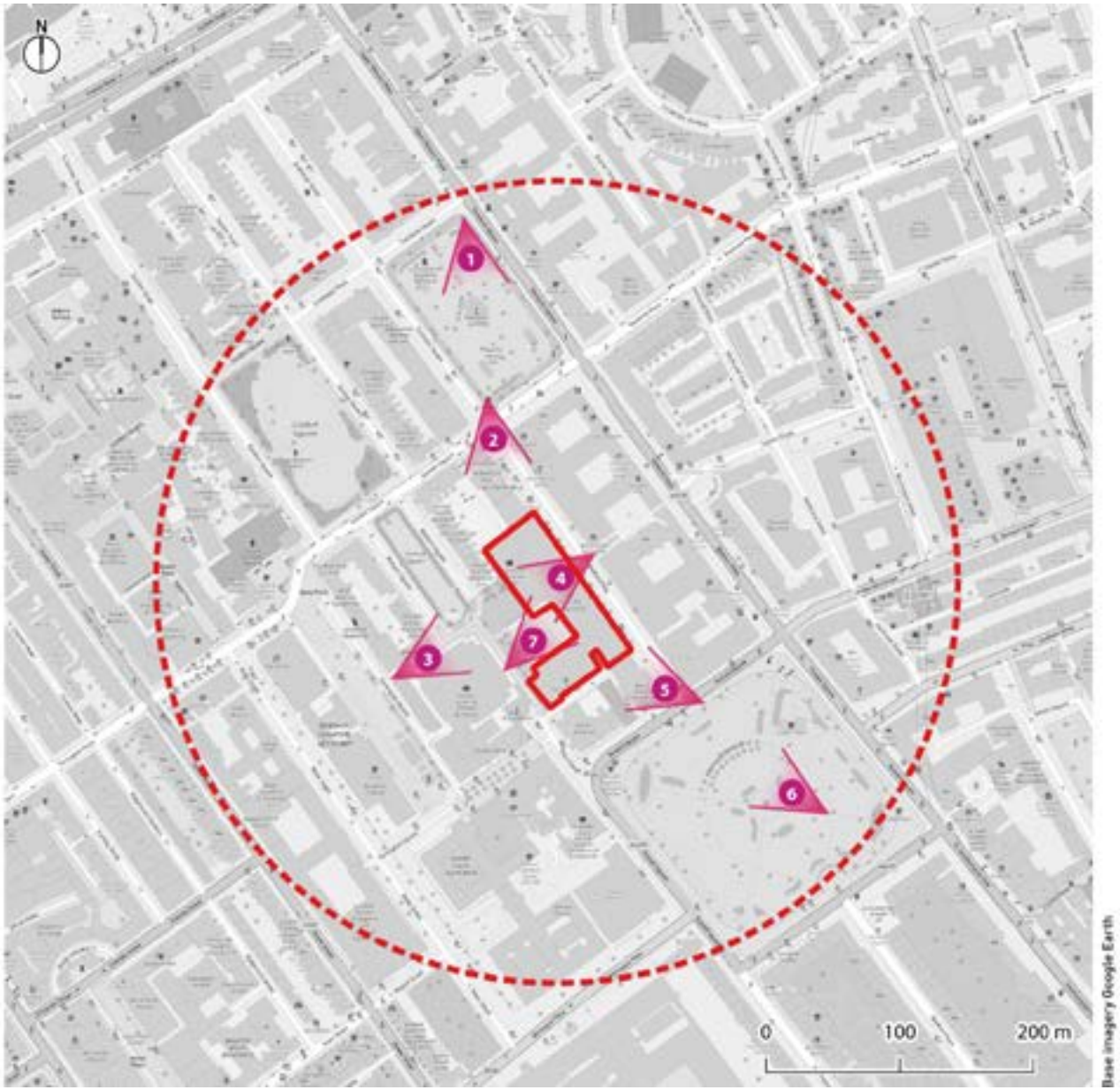


Fig. 19: Views

6.0
Impact assessment

6.1 Introduction

This section assesses the impact of the Proposed development upon:

- the significance and setting of the heritage assets identified in Section 4.0 of this report;
- the townscape character within the 300m study area, defined in Section 5.0 of this report;
- views from within the 300m study area, set out in this section.

The report uses verified views to illustrate the degree and nature of visibility of the Proposed development from seven locations within the study area, agreed with Camden Council. The impact of the Proposed development upon these views is assessed against the methodology outlined in Section 2.0.

Following the impact assessment, Section 7.0 provides a conclusion of the heritage, townscape and visual impact of the Proposed development, including an evaluation of the beneficial, adverse and neutral townscape and visual effects.

6.2 The proposals

In essence, the proposals relate to the installation of two, identical plant enclosures on Zones A and B of the IoE's roof, each screening eight ASHPs. The proposals relate to the permanent installation of sixteen air source heat pumps to two of the building's flat roofed sections (Zones A and B). Due to the proximity of the noise-sensitive hotel on the eastern side of Bedford Way and the architectural significance of the roof form of the building, the University has taken the unusual step of having a bespoke acoustic screen designed by conservation architects AHMM.

Specifically the proposals will include:

- Installation of sixteen ASHPs and associated compressors
- Installation of the ASHPs support structure comprising of a steel 'raft' to span the roof areas of Zones A and B ,resting on concrete pedestals.
- Installation of an 3.76m high louvred plant screen finished in bronze powder coated aluminium.
- Rerouting of four existing flues to within the plant enclosures.
- Penetration of the existing concrete riser forms from within the proposed enclosures.
- Associated pipework to be added to existing risers to reach a plant room at Level 1 of the building.

As set out in the Design and Access statement accompanying this application, the project allows the university to move significantly closer to its commitment to net zero, which is a significant public benefit.

6.3 Heritage impact assessment

This section assesses the impact of the Proposed development upon the significance and setting of heritage assets defined in Section 4.0.

Some impacts are direct (physical) while others are indirect (non-physical) impacts to the setting of heritage assets.

6.3.1 Grade II* listed Nos. 17-26 Bedford Way (including the IoE)

The proposed rooftop enclosures will be added to two of the rooftop areas of the Grade II* building, on the flat roofs either side of Core B (Zones A and B).

The proposed rooftop development has been sensitively designed to respond to the material design quality of Nos. 17-26 Bedford Way as well as its visually stark horizontality. At the same time, the sculptural concrete core towers, which are the key vertical elements of the building, have been respectfully given space to maintain a sense of the primacy of their sculptural forms as the primary roof-top features. After extensive design development,the architect-led team concluded that a design approach for the eastern elevation, with its geometric concrete forms, and for the western elevation with its powerful horizontality, needed to be subtly different.

On the eastern elevation, where the interplay of sculptural volumes and planes of the building is at its most sophisticated and striking, the enclosures are set back significantly from the parapet level so that only the uppermost third of the plant enclosures is likely to be seen. They will form a recessive and subtle element in the otherwise bold sculptural forms of this elevation, subservient to the mass and form of the building and critically, allowing space to the iconic concrete roof forms. This is important as views of this elevation tend to allow views of the entirety of the building, with sweeping views possible of all five concrete core towers from both the north and south approaches. The two, symmetrical additions to Zones A and B will be proportionally and visually subservient roof plant and, whilst visible, will not detrimentally affect the historical or architectural interest of the building.

On the western elevation, a longer visual approach is possible, although one where the full horizontal scale of the building is harder to appreciate. Because of the longer-range view, the rooftop plant screens will be more visible and rather than designed subservience, a more celebratory approach has been taken which responds to the chief architectural attributes of this elevation, namely monumental horizontality as well as the fine detail of high-quality materials and how they interact. The bronze-coloured metal and louvres within the slots of the rectangular concrete towers directly abut the smooth-faced concrete of the towers leaving only a slight shadow gap. Similarly, the bronze-coloured facade and windows stretch almost wholly to those towers with a minimal gap. A similar design approach has been taken with the louvred enclosures which repeat this language, stretching between the core towers with a minimal shadow gap.

A carefully balanced view must be taken with a noticeable intervention to the strong and visually important roof form of a Grade II* listed building. The default position must be that the addition of rooflplant is harmful to significance but through skilful architectural design, responsive to the individual language and forms of each elevation this harm has been carefully mitigated into a successful addition to this iconic Brutalist building. In heritage terms alone, we finely judge that any harm has been mitigated and the roof top plant is neutral in terms of the wider architectural and historical interest of the building.

This position is further supported by the substantial public benefits of achieving a low carbon network heating scheme across the campus, which will substantively contribute to talking the climate emergency.

We also hope that the successful architectural addition of a renewable energy source to such an important historic building will send a strong message that UCL is a thought leader, providing a positive example that the sustainable adaptation of the historic built environment can be achieved where design quality is exemplar, and led by the significance of the host building as with this scheme.

6.3.2 Bloomsbury Conservation Area

Nos. 17-26 Bedford way is a key building in Sub-Area 3 of the Bloomsbury Conservation Area, which is characterised by large scale university and museum buildings.

The proposed rooftop enclosure will alter the appearance of this key listed building. However, it has been carefully designed to mitigate harm to the character of the conservation area by respecting and deferring to the building's design. The setbacks; horizontal louvres; appropriate palette of materials and height all combine to minimise the impact, particularly in the views from Bedford Way, and from the nearby Russell Square and Tavistock Squares. The proposals would appropriately **preserve** the character and appearance of the Bloomsbury Conservation Area.

6.3.3 The setting of the Philips Building at the School of Oriental and African Studies (SOAS), Grade II*

The open forecourt between the Lasdun's Brutalist Philips Building and the IoE to the east is a shared element of the setting of both buildings, however it is partially screened from the Philips Building by an intervening row of trees. Views from this shared setting will be altered by the addition of the proposals but there will be no change in the relationship and sense of scale of the two buildings. We conclude that the proposals would be **neutral** with regard to the setting of this adjacent building.

6.3.4 The setting of the School of Oriental and African Studies, Thornhaugh Street, Grade II

This building has a limited setting towards the IoE in the east, where the surroundings are dominated by tarmac service roads. There is little visual or landscape connection with Nos. 17-26 Bedford Way. The proposals will therefore have **no impact** on the setting of this listed building.

6.3.5 Nos. 21-24 Russell Square, Grade II

Despite its proximity to Nos. 17-26 Bedford Way, the key feature of the setting of this terrace is Russell Square itself, with the setting to the north being limited to the small rear gardens. The proposed rooftop enclosures will therefore have **no impact** on the setting of this listed building.

6.3.6 Russell Square, Grade II Registered Park

The setting of Russell Square Gardens is largely restricted to the encircling greenery around the gardens themselves, and glimpsed views of the buildings around the Square. Though the southern end of Nos. 17-26 can be glimpsed, the proposed rooftop plant enclosure on the rooftops of the IoE will not be visible from the gardens. The proposed rooftop enclosures will therefore have **no impact** on Russell Square Gardens.

6.3.7 Nos. 55-59 Gordon Square, Grade II

No. 26 Bedford Way dominates the setting of the terrace to the east, however the IoE, at No. 20, is not strongly visible due to the intervening development. The rooftop enclosure will therefore have **no impact** on the setting of this listed building.

6.3.8 Nos. 10-18 Woburn Square, Grade II

The key setting of this early nineteenth century terrace is the greenery of Woburn Square to the west. To the east, the setting is very limited, and is dominated by and screened by the 1990s IoE library extension. The rooftop enclosure will therefore have **no impact** on the setting of this listed building.

6.4 Townscape and Visual Impact Assessment

This section assesses the townscape and visual impact of the Proposed development with the aid of seven verified views.

6.4.1 Views assessment

The following assessment of seven views follows the methodology laid out in Section 2.0 of this HTVIA. The views use summer photography which represents the maximum screening of views by greenery. Programme limitations mean that Winter photography could not be captured as part of this assessment.

Four views (Views 2, 4, 5 and 7), use a fully-rendered model of the proposed development. The other three views (Views 1, 3 and 6) are from locations where the proposed development would be minimally visible, if at all even in Winter views. These views have been represented as an industry standard 'wireline'; a blue dotted outline.

The impact – beneficial or adverse?

In Environmental Impact Assessment and other townscape analysis, the impact of development is often described in terms of being beneficial or adverse to a particular townscape or view. Whilst this is useful, it can be overly simplistic in approach. Often, highly visible development can be described as having a moderate or major change to townscape without having a harmful, or indeed beneficial, effect on townscape character. Conversely, small changes to highly sensitive townscapes can have relatively significant beneficial or adverse impacts on townscapes and sensitive views.

For this reason, this townscape and views assessment has purposely avoided labelling the Scale of Effect as 'adverse' or 'beneficial' and has instead taken a holistic approach to analysing impact, as advocated in Historic England's 2019 publication Statements of Heritage Significance: Analysing Significance in Heritage Assets: Historic England Advice Note 12 (2019). A conclusion of the overall impact of the Proposed development upon townscape and views, including defining where effects will be beneficial or adverse, is provided in Section 7.0.

6.5 Views

The following pages contain images of the existing and proposed views, and summaries of the impact as outlined above.

1 Existing view from Tavistock Square

Overall sensitvity: Medium

This is a medium-range view from the pavement at the north east corner of Tavistock Square, in Sub-Area 6 of the Bloomsbury Conservation Area. The busy A4200 runs to the east (to the left of the image) and the IoE lies to the south beyond the square. Visual receptors are primarily pedestrians and drivers travelling on the A4200, but there are also large numbers of visiting tourists, university students and residents taking less linear routes through the area.

The view, taken in summer, shows the thick growth of trees and shrubs which characterises this part of Tavistock Square.

The view value is medium and the visual receptor susceptibility is medium. Overall, the sensitivity to visual effects is Medium.

1 Proposed view from Tavistock Square

The proposed rooftop enclosure will not be visible from the north east corner of Tavistock Square due to the dense intervening trees and shrubs in this part of the square.

The nature of visual effect would be very low, and the scale of potential visual/townscape effect is therefore Neutral

Nature of visual effect: Very low

Nature of effect: Neutral

2 Existing view from south side of Tavistock Square

Overall sensitivity: High

This close-range view towards No.26 Bedford Way and the IoE is taken from the south east corner of Tavistock Square in Sub-Area 6 of the Bloomsbury Conservation Area, looking south towards the IoE in Sub-Area 3. This is an junction of B roads, used primarily by more local traffic and pedestrians. Visual receptors are primarily road users and pedestrians, many of whom are associated with the University.

The view captures the striking presence of the Grade II* listed Nos. 17-26 Bedford Way in the townscape, with its horizontal linear character punctuated by tall sculptural towers. This view allows the most complete appreciation of the building as a single, Brutalist mass.

The view value is high and the visual receptor susceptibility is medium. Overall, the sensitivity to visual effects is High.

2 Proposed view from south side of Tavistock Square

Nature of visual effect: Very low

Nature of effect: Neutral

The proposed rooftop enclosure on the roof of the IoE is in the middle ground of this view. Due to its position set back from the parapet edge the enclosure is scarcely visible in this view, showing only as a slight change in a gap in the recessed upper storey. The form and appearance of the Grade II* listed Nos. 17-26 remains virtually unchanged in this view, remaining fully legible and dominant in the landscape.

The nature of the visual effect would be very low, and the scale of visual effect would therefore be Neutral

3 Existing view from beside SOAS

Overall sensitvity: Medium

This is a medium-range view towards the west elevation of the IoE from the pathway north of Denys Lasdun's Grade II* listed Philips Building (to the right of the image). The pathway is a pedestrian route between university buildings, and is within sub area 3 of the Bloomsbury Conservation Area. Visual receptors are pedestrians, with the majority university students and employees.

The view captures the distinctively campus feel of this area of townscape. Mature trees lie between this viewpoint and the IoE to the east.

The view value is high and the visual receptor susceptibility is low. Overall, the sensitivity to visual effects is Medium.

3 Proposed view from beside SOAS

Nature of visual effect: Very low

Nature of effect Neutral

During the Summer months, the proposed rooftop enclosure will not be visible from this viewpoint. The IoE lies behind a screening row of mature trees, as demonstrated by the blue dashed wireline.

During winter months, there may be some limited visibility beyond the leafless trees. However, the maturity of the trees is likely only to allow glimpsed views of the proposed plant which would be read as part of barely discernible development beyond the tree line.

Even where assessing this glimpsed view, the repetitive linear form of the plant enclosure would not be prominent from and would traverse the entirety of the possible view of the building: the resulting linear uniformity being an expected part of a large-scale university campus building.

The nature of visual effect would be very low and therefore the scale of visual effect would be Neutral.

4 Existing view from Bedford Way - The National Hotel

Overall sensitivity: High

This non-standard portrait view was provided by the visualiser. A more standard landscape view has been requested and will be submitted seperately.

This is a close-range view of the east elevation of the Grade II* listed IoE from the entrance to the Royal National Hotel on Bedford Way, in sub area 6 of the Bloomsbury Conservation Area. This view looks directly at the IoE across Bedford Way, a B-road with a cycle lane and cycle parking. Visual receptors are a mixture of university students and staff, and the guests of the hotel itself.

The view captures the character of the east elevation with horizontal linear character punctuated by the tall sculptural tower in the centre. Street trees in this area are young, and relatively small in comparison with the listed building, which is by far the most striking feature of the townscape.

The view value is high and the visual receptor susceptibility is medium. Overall, the sensitivity to visual effects is High .

4 Proposed view from Bedford Way - The National Hotel

Nature of visual effect: Low

Nature of Effect: Minor

This non-standard portrait view was provided by the visualiser. A more standard landscape view has been requested and will be submitted seperately.

At 3.76m high in total above the existing roof, or 3.24m higher than the existing parapet, the top part of the proposed rooftop enclosure will be visible. As it is to be set back from the elevation of Bedford Way (by structural necessity and as part of the desire to minimise visual impact of the screen from this elevation), only the topmost third of the parapet screen will be seen from this elevation. Given the angle of view, the inset corners of the screens will give the appearance that the screens do not meet the sculptural concrete of the riser towers, allowing these dominating forms to maintain their visual prominence and maintain a consistent visual relationship with those towers that are not adjacent to plant enclosures.

The screens will be notable as relatively low, linear forms of comparable colour and materials to the existing material palette covering a large proportion of the two central roof areas of the building. Plant enclosures are an expected part of roofscapes and due to their comparable palette and careful scale and positioning will not be jarring nor draw the eye away from the sculptural forms of the building. The average onlooker would be unlikely to register them from street level.

The nature of visual effect would therefore be low, and the scale of visual effect would be Minor.

5 Existing view from corner beside Russell Square

Overall Sensitivity: High

This is a close range view north west towards the IoE from Russell Square in sub area 6 of the Bloomsbury Conservation Area. Russell square is a busy area for traffic, as well as students and tourists. Visual receptors include pedestrians and drivers travelling on the roads, students, and recreational visitors travelling between Russell Square Underground Station and the British Museum.

The view captures the striking presence of the Grade II* listed Nos. 17-26 Bedford Way in the townscape, with its horizontal linear character punctuated by tall sculptural towers. It also summarises the complementary relationship between the brutalist building and its more historic neighbours.

The view value is high and the visual receptor susceptibility is medium. Overall, the sensitivity to visual effects is High.

5 Proposed view from corner beside Russell Square

Nature of visual effect: Low

Scale of effect: Minor

The proposed rooftop enclosure will be visible in the middle ground of this view. From this angle the enclosure will project slightly above the parapet line of the upper storey, and will be slightly more visible where the upper storey is recessed back.

The linear horizontal planes of the Grade II* listed Nos. 17-26 Bedford Way are not harmed by this addition, nor is the dominance of the sculptural concrete towers. Overall the form and appearance of Nos. 17-26 remains virtually unchanged, remaining fully legible and dominant in the landscape.

The nature of visual effect would be low and the scale of visual effect would therefore be Minor.

6 Existing view from within Russell Square

This is a medium range view from Russell Square Gardens looking north west towards the IoE. This designed landscape is a popular place for locals and visitors alike, as a place for recreation.

The view captures the open central lawn and mature planting of Russell Square Gardens. Mature trees and planting create an intimate space with intermittent glimpsed views of the buildings beyond.

The view value is high and the visual receptor susceptibility is high. Overall, the sensitivity to visual effects is Very high

Overall Sensitivity: Very high

6 Proposed view from within Russell Square

Nature of visual effect: Very low

Scale of effect: Neutral

The proposed rooftop enclosure will not be visible from within Russell Square due to the dense intervening trees and shrubs.

Even in Winter, the intervening branches of very mature London Planes are likely to screen all discernible views of the IoE.

The nature of visual effect would be very low, and the scale of potential visual/townscape effect is therefore Neutral

7 Existing view from entrance to western forecourt

Overall Sensitivity: High

This close range view of the west elevation of the IoE is taken from the forecourt immediately to the west of the building, in Sub Area 3 of the Bloomsbury Conservation Area. This forecourt is a pedestrianised area with a western boundary of trees. Visual receptors are primarily students and employees of the university.

The view captures the character of the massively-scaled west elevation of the Grade II* listed Nos. 17-26 Bedford Way, with the strong horizontals interrupted by the rectangular mass of concrete towers with metal louvres.

The view value is high and the visual receptor susceptibility is low. Overall, the sensitivity to visual effects is High.

7 Proposed view from entrance to western forecourt

Nature of visual effect: Medium

Scale of effect: Moderate

The proposed rooftop enclosure would be visible above the parapet of the upper floor of the IoE from this view. The new enclosure's design purposely respects and blends with the language and materiality of the Grade II* listed building. It is set back from the parapet, deferring to the simple plane of the west elevation and allowing the towers to dominate at high level. Whilst leaving space between the sculptural geometric forms of the towers on the east elevation was deemed to be the most responsive design solution, the massive scale of the east elevation here called for a different treatment. Here the enclosures act almost as additional mansards, meeting the concrete towers to continue the striking horizontality of the building without visually distracting gaps at the ends or foreshortened lengths that would introduce a different scale and interrupted language to this elevation.

The textured louvres speak to the louvres of the service towers whilst visually responding to the materiality of the bronze-coloured facade. The enclosures are unashamedly seen from this elevation, of a necessary scale to respond to the scale of the building. Whilst prominent, they are not visually obtrusive nor conflicting with the host building.

The nature of visual effect is medium, and the scale of visual effect would therefore be Moderate.

7.0
Conclusion - impact of the Proposed development

7.1 Heritage impacts

The proposed rooftop enclosure will be a noticeable addition to the appearance of the Grade II* listed Nos. 17-26 Bedford Way, and, consequently to the Bloomsbury Conservation Area.

Noticeable is not the same quality as prominent or detracting in appearance however and, as a carefully designed scheme, the proposed intervention to a sensitive part of this Grade II* listed building is successful architecturally, in addition to its substantive public benefits beyond purely heritage considerations.

The proposed rooftop development will be a high-quality and meticulously detailed addition which positively responds to the unique character of the building. The architects have provided a range of RAL numbers for the final colouration of the enclosure, seeking the best match in collaboration with officers during the consideration of the scheme.

The public benefit of the zero carbon ambitions of this project are balanced against changes to the appearance of the listed building which have been mitigated by high quality design.

7.1.1 Bloomsbury Conservation Area

The proposed rooftop development would preserve and enhance the character and appearance of the Bloomsbury Conservation area by respecting the character, scale and dominating form of this key building with sensitive, high quality design, and with minimal impact on views.

7.1.2 Other nearby heritage assets

All other heritage assets assessed within this HTVIA would experience no harm to their significance or setting by virtue of the distance to the Site and/or the amount of intervening built form.

7.2 Townscape impacts

The proposed rooftop development would have the following impacts upon the identified townscape receptors:

Townscape Receptor (Conservation Area sub area)	Nature of townscape receptor	Nature of townscape effect	Scale of townscape effect	Beneficial, adverse or neutral?
2 - Gordon Square/ Woburn Square/Byng Place	Medium	Very low	Neutral	Neutral
3 - London University/ British Museum	High	Low	Minor	Neutral
6 - Bloomsbury Square/ Russell Square/ Tavistock Square	Medium	Very low	Minor	Neutral
11 - Queen's Square/ Red Lion Square	Low	Very low	Neutral	Neutral
12 - Coram's Fields/ Brunswick Centre	Medium	Very low	Neutral	Neutral
13 - Cartwright Gardens/Argyle Square	Medium	Very low	Neutral	Neutral

7.2.1 Sub area 3 - London University/British Museum

The IoE lies within Sub-Area 3, which is characterised by the large buildings of the Universities and the British Museum. The character area includes many striking university buildings including Senate House and UCL's Wilkins building, and the Grade II* listed Nos. 17-26 Bedford Way is a key example. The character area has a number of busy thoroughfares interconnected by quieter streets and pedestrianised pathways between the large university buildings which give the area its distinctive 'campus' feel.

The IoE as part of the block of Nos. 17-16 Bedford way is a striking feature of the immediate townscape. The eastern elevation of Nos. 17-26 is the most strongly visible elevation in townscape terms, allowing the full mass and sculptural form of the building to be appreciated. In views of this elevation the proposed rooftop enclosure has very limited visibility, thanks to the sensitive setbacks, material choice, and thoughtful design.

The proposed rooftop enclosure is most visible from approaches to the IoE's western elevation, within sub area 3. From nearby views to the west the proposed addition makes a pronounced difference to the appearance of the building, however it is sensitively designed not to detract from the overarching sculptural form and character of the building. As outlined in Section 4.3.3, the western elevation of Nos. 17-26 is perceived in glimpses over and between the varied mix of buildings in the surrounding townscape, and the building is not viewed as a whole. Views of the rooftop addition are therefore similarly fragmented and glimpsed.

When the rooftop addition to the IoE is considered in terms of its impact to the conservation area sub area as whole, the rooftop plant screen makes a negligible difference to the quality of the townscape. As demonstrated in the ZTV diagram in Fig. 18, the visibility is limited to only the immediate streets, and the character of the significant university buildings of the wider area remains unaffected. The addition of wholly expected roof-top plant to the roof of a university building would be negligible in terms of townscape prominence.

Taking into consideration the sensitive, respectful design of the proposed enclosure, its small size relative to the listed building, the fact that its visibility is limited to glimpses and close views from the immediate townscape, the minimal impact on the appearance of the sculptural east elevation, and the fact that beyond the immediate setting the enclosure will not be visible and will have no effect, the proposed rooftop development would have a **Neutral** effect upon Sub-Area 3 of the Bloomsbury Conservation area.

7.2.2 Sub Area 6 - Bloomsbury Square/Russell Square/Tavistock Square

This sub-area is characterised by the squares of Bloomsbury Square and Tavistock Square, and the historic buildings which surround them. The striking eastern elevation of Nos. 17-26 Bedford Way abuts sub area 6 of the Bloomsbury Conservation Area, and there are strong views of the east elevation of the building from the corner of Tavistock Square and Russell Square, as well as from the National Hotel directly opposite. Views from the wider townscape are relatively limited, as despite the bulk of the building it is largely screened by adjoining development and mature trees.

Due to the sensitive design of the proposed rooftop enclosure, set back from the plane of the front elevation and clad in appropriate materials, the eastern elevation of Nos. 17-26 will be only minimally affected, and its effect on the adjacent townscape will be negligible.

Because of the small scale and careful detailing of the proposed rooftop development, and its lack of visibility from the wider townscape, its addition would have a **neutral** effect on sub area 6 of the Bloomsbury Conservation Area.

7.2.3 All other sub areas

The proposed development will have a neutral effect on the other four sub areas of the Conservation Area which fall within the Study Area. There will be no visibility of the proposed rooftop plant from those areas, and their character will remain unchanged.

7.3 Visual impacts

Based on the methodology set out in Section 2.0 of this HTVIA, one view (View 7), would experience moderate changes in terms of townscape and visual impact assessment as a result of the proposed roof enclosure. Two of the seven views (Views 4 and 5) would experience minor changes. All of the other four views would experience no or negligible change.

As set out the methodology, a moderate impact is considered significant where it is either adverse or beneficial. Neutral townscape impacts are not considered moderate.

View	Scale of effect	Beneficial, adverse or neutral?
1	Neutral	Neutral
2	Neutral	Neutral
3	Neutral	Neutral
4	Minor	Neutral
5	Minor	Neutral
6	Neutral	Neutral
7	Moderate	Neutral

7.3.1 View 7 (pages 62 and 63)

View 7 is taken from the western forecourt, looking directly at the IoE from the East. This view illustrates the maximum impact of the rooftop enclosure from the west, all other views from the west being obscured by intervening trees or development.

The view demonstrates how the sensitively designed rooftop enclosure complements the geometric forms of the listed building, through the use of setbacks, and the thoughtful use of material and design (see page 63 for more detail). Though from this angle the new proposed addition is a noticeable change, resulting in a moderate scale of effect, it blends so well with the existing building and its language and form that its overall impact is neither beneficial or adverse, and can be considered **Neutral**.

7.3.2 Views 4 and 5 (pages 56 to 59)

View 4 is taken from the entrance to the Royal National Hotel on Bedford Way, and View 5 is an important view looking north west towards the building from Russell Square. Both views demonstrate how carefully the plant enclosure has been designed to respect the striking eastern elevation of the IoE. From both positions the enclosure is only minimally visible above the parapet line. Where the enclosure is visible, the setbacks, material choice and horizontal louvred finish are appropriate and blend well with the existing finish of the upper storeys (see page 57 and 59 for more detail).

Because of the minimal visibility, and subtle and appropriate design, the overall visual impact of the proposed rooftop enclosure on views 4 and 5 can be considered **Neutral**.

7.3.3 All other views

From all four of the other assigned view points, there is either no impact at all, or (as in view 2) an impact so minor that it is negligible. For all of these, the impact can be considered **Neutral**.

7.4 Conclusion

The proposed rooftop development has been designed to complement the existing building, while minimising the impact on key views, particularly of the monumental east elevation. The plant screens' design has been specifically modified to respond to the views possible of the building, resulting in different approaches using the same careful rhythm and materials for the very different townscape experiences to the east and west of the building.

As outlined in the Design and Access statement accompanying this application, the project is critical to allow the university to move significantly closer to its commitment to net zero, which is a significant public benefit.

We also hope that the project can be a exemplar of how to approach the addition of renewables to historic listed buildings, using an intelligent and responsive architectural approach informed by the significance of the host building and an understanding of the townscape qualities of the surrounding approaches to that building.

For these reasons, we offer the proposed rooftop enclosure as compliant with national and local policy relating to design and historic built environment, namely: Paragraphs 194-207 of the NPPF; Policies D3, D9, HC1 and HC3 of the London Plan; and Paragraphs 7.41 and 7.44 and Policy D2 of the Camden Local Plan.

8.0
Supporting Information

8.1 Bibliography

De Freitas, R. (2016) *From Fields to Fountains: The Story of Bloomsbury's Russell Square*. Marchmont Association, London

Marshall, B. (2007) *Building London: The making of a modern metropolis*. Endeavour London Ltd, London

Pevsner, N. and Cherry, B. (1998) *London: North, Volume 4*. Yale University Press, London

Phillips, Hugh. (1964) *Mid-Georgian London: A Topographical and Social Survey of Central and Western London About 1750*. Collins, London

Stamp, G. (2010) *Lost Victorian Britain: How the Twentieth Century Destroyed the Nineteenth Century's Architectural Masterpieces*. Aurum Press Ltd, London

Stamp, G. and Amery, C. (1980) *Victorian Buildings of London: An Illustrated Guide*. The Architectural Press, London

Tames, Richard. (1993) *Bloomsbury Past: A Visual History*. Historical Publications Ltd, London

Temple P, (ed). (2008) *Survey of London: Volume 47, Northern Clerkenwell and Pentonville, London* [online] Available at http://www.british-history.ac.uk/survey-london/vol47/pp165-184 [Accessed 30 January 2017]

LB Camden. (2010) *Camden Development Policies 2010-2025 Local Development Framework*. LB Camden Council, London

LB Camden. (2011) *Bloomsbury Conservation Area Appraisal and Management Strategy*. LB Camden Council, London

LB Camden. (2017) *Draft Local Plan*. LB Camden Council, London

8.2 IoE list description

Official list entry

Heritage Category:	Listed Building
Grade:	II*
List Entry Number:	1246932
Date first listed:	04-Dec-2000
List Entry Name:	INSTITUTE OF EDUCATION, CLORE INSTITUTE OF ADVANCED LEGAL STUDIES AND ACCOMMODATION FOR UNIVERSITY COLLEGE
Statutory Address 1:	INSTITUTE OF EDUCATION, CLORE INSTITUTE OF ADVANCED LEGAL STUDIES AND ACCOMMODATION FOR UNIVERSITY COLLEGE, 17, 20 AND 26, BEDFORD WAY

Location

Statutory Address:	INSTITUTE OF EDUCATION, CLORE INSTITUTE OF ADVANCED LEGAL STUDIES AND ACCOMMODATION FOR UNIVERSITY COLLEGE, 17, 20 AND 26, BEDFORD WAY

The building or site itself may lie within the boundary of more than one authority.

County:	Greater London Authority
District:	Camden (London Borough)
Parish:	Non Civil Parish
National Grid Reference:	TQ 29954 82136

Details

798-1/0/10133 BEDFORD WAY 04-DEC-00 Camden (West side) 17, 20 AND 26 Institute of Education, Clore Institute of Advanced Legal Studies and accommodation for University College

GV II*

University teaching building, 1970-6 by Denys Lasdun and Partners, extended 1990-3, also by Sir Denys Lasdun and Partners. In situ reinforced concrete and precast mullions with a cladding of prefabricated bronze-anodised aluminium panels and window sections. In plan the building makes a strong barrier to the traffic of Bedford Way while extending the concept of flexible teaching space already explored at the University of East Anglia, Norwich. Six storeys above ground, with three basement storeys, in 1999 numbered 1-9. Flat, paved roof. Long spinal range, with wing to rear, and footings for a second incorporated in 1990-3 library extension. Large basement includes lecture theatre, the Logan Hall, under forecourt facing Lasdun's extension to the School of Oriental and African Studies opposite; conference facilities, students' union and service entrance. Split-level entrance hall gives on to library, drama studio and bookshop, with flexible teaching areas above, mainly facing street, and tutorial rooms, mainly facing courtyard and in wing.

The elevational treatment is in Lasdun's mature language of strata and towers, a grid of aluminium panels and glazing set over concrete plinth on western elevation, with massively over-scaled concrete staircase towers. On the eastern elevation to Bedford Way, the entrance floors are set back behind exposed frame, and has cut-back corners which demonstrate the smooth, sharp concrete particularly forcefully. The quality of finishes is exceptional, and the contrasting texture of materials unique in Lasdun's surviving work. The single spur that was built is highly sculptural, with a striking silhouette of angular concrete escape stairs rising above the floor levels and curtain walling. A similar system of anodised aluminium and glass was adopted by Lasdun for his extension, but with more pronounced glazing bars, and with three pyramidal roof lights that are the clearest indication of the new work. Entrance doors in anodised aluminium surrounds. New entrance on Bedford Way, reached up steps, installed by Lasdun in 1993.

INTERIORS. The interiors are simple, but the quality of concrete finishes is

exemplary throughout. The upper teaching spaces were designed to be flexible, and continue to be altered regularly - a tribute to the success of the original concept. The areas of special interest are the lift lobbies, where Lasdun's finishes can be seen at their best, and the entrance hall and principal stair to the lecture theatre. This staircase, in a deep well in which are set giant columns, is a version in smooth concrete with brick treds of his earlier ceremonial stair at the Royal College of Physicians in Regent's Park (LB Camden, grade I), with concrete walls and balustrade. The entrance hall, with pavioured floors, is on two main levels, corresponding to the different level of Bedford Way and the square behind. Separate stairs lead to bookshop on lower level.

While the University of London was discouraged from further expansion in the post-war years it was appreciated that certain departments such as Education, Law and the School of Oriental and African Studies required enlarged facilities. Lasdun was commissioned by the University of London in 1960 to develop the concept of a spinal range along Bedford Way and to its north which had been published by Sir Leslie Martin and Trevor Dannatt the year before. His task was to integrate the new buildings within an existing urban fabric, whose pattern of Georgian squares was belatedly being appreciated. Lasdun's scheme preserved more terraces than had the earlier proposals, and created a new square between his two buildings, much of it formed over the basement lecture theatre. For him, the relationship between the spine building and the SOAS pavilion is paramount.

The building was formally opened by the Queen in 1977. `Lasdun's architecture carries absolute conviction', Architectural Review, March 1980, p.148. Although a building constructed to a grid, it is Lasdun's interest in planes and interpenetrating masses and belief in pure form and modelling. His synthesis of the modern movement of the 1930s, inspired by working with Wells Coates and Berthold Lubetkin, and his unique understanding of the formalism of the later generation of the New Brutalists makes him a comparable figure with Louis Kahn and is demonstrated particularly well here. This building forms a contrasting mass to the square pavilion of Lasdun's extension to the School of Oriental and African Studies, with which it forms an exceptionally strong group.

Architects' Journal, 5 March 1959, p.336 Architects' Journal, 14 June 1967, p.1384 Building Design, 15 October 1976 Architects' Journal, 12 December 1990, p.11 Architectural Review, March 1980, pp.145-54 Bridget Cherry and Nikolaus Pevsner, The Buildings of England, London North, London, Penguin Books, 1998, pp.279-80

Legacy

The contents of this record have been generated from a legacy data system.

Legacy System number:486897

Legacy System: LBS

Sources

Books and journals

'Architects Journal' in 5 March, (1959), 336

'Architects Journal' in 14 June, (1967), 1384

'Architects Journal' in 12 December, (1990), 11

'Building Design' in 15 October, (1976)

Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Ordnance survey map of INSTITUTE OF EDUCATION, CLORE INSTITUTE OF ADVANCED LEGAL STUDIES AND ACCOMMODATION FOR UNIVERSITY COLLEGE

End of official list entry

8.3 Map of the Bloomsbury Conservation Area

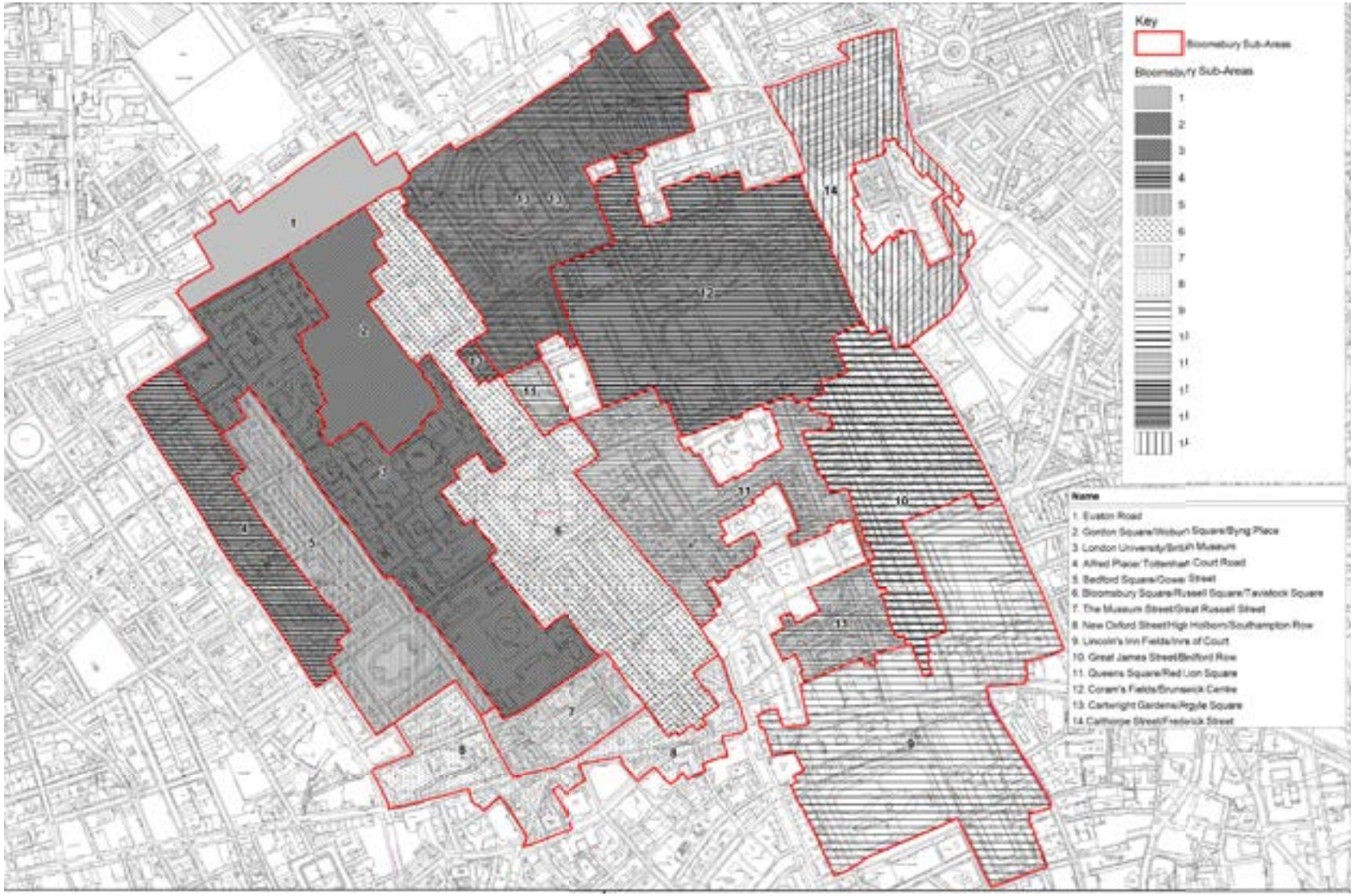


Fig. 20: Extract from the 2011 Bloomsbury Conservation Area Appraisal and Management Strategy, showing the 14 character areas

8.4 Legislation policy and guidance

8.4.1 Regional policy

London Plan (2021)

The London Plan (March 2021) is underpinned by the principle of 'Good Growth', that is, growth that is socially and economically inclusive and environmentally sustainable (Paragraph 1.0.1). Paragraph 1.1.4 highlights the positive impact that good quality, affordable homes, better public transport connectivity, accessible and welcoming public space, and built forms that work with local heritage and identity will have on London.

Policy HC1: Heritage conservation and growth states:

> *A) Boroughs should, in consultation with Historic England, local communities and other statutory and relevant organisations, develop evidence that demonstrates a clear understanding of London's historic environment. This evidence should be used for identifying, understanding, conserving, and enhancing the historic environment and heritage assets, and improving access to, and interpretation of, the heritage assets, landscapes and archaeology within their area*

For planning decisions, it states:

> *C) Development proposals affecting heritage assets, and their settings, should conserve their significance, by being sympathetic to the assets' significance and appreciation within their surroundings. The cumulative impacts of incremental change from development on heritage assets and their settings should also be actively managed. Development proposals should avoid harm and identify enhancement opportunities by integrating heritage considerations early on in the design process.*

8.4.2 Local policy

Camden Local Plan (2017)

In July 2017 Camden Council adopted the Local Plan, which has restructured the Core Strategy and Camden Development Policies documents as the basis for planning decisions and future development in the borough.

Paragraph 7.41 states:

> *The Council Squares great importance on preserving the historic environment. Under the Planning (Listed Buildings and Conservation Areas) Act the Council has a responsibility to have special regard to preserving listed buildings and must pay special attention to preserving or enhancing the character or appearance of conservation areas.*

Paragraph 7.44 states:

> *Any harm to or loss of a designated heritage asset will require clear and convincing justification which must be provided by the applicant to the Council. In decision making the Council will take into consideration the scale of the harm and the significance of the asset.*

Policy D2 Heritage states that the Council will:

> *preserve and, where appropriate, enhance Camden's rich and diverse heritage assets and their settings, including conservation areas, listed buildings, archaeological remains, scheduled ancient monuments and historic parks and gardens and locally listed heritage assets.*

Designated heritage assets

> *not permit development that results in harm that is less than substantial to the significance of a designated heritage asset unless the public benefits of the proposal convincingly outweigh that harm.*

Conservation areas

> *e. require that development within conservation areas preserves or, where possible, enhances the character or appearance of the area.*

Listed Buildings

j. resist proposals for a change of use or alterations and extensions to a listed building where this would cause harm to the special architectural and historic interest of the building

8.4.3 National guidance

Planning Practice Guidance (Department of Levelling Up, Housing and Communities) (2014)
The aim of the Planning Practice Guidance (PPG) is to support implementation of the policies set out in the NPPF. The section 'Conserving and enhancing the historic environment' was last updated in April 2014.

Historic Environment Good Practice Advice in Planning Note 3 – The Setting of Heritage Assets (Historic England, 2015)

This advice note supports the implementation of policy in the NPPF. This document sets out guidance on managing change within the settings of heritage assets including archaeological remains and historic buildings, sites, areas and landscapes. It contains advice on the extent of setting, its relationship to views and how it contributes to significance. It also sets out a staged approach to decision-taking.

8.4.4 Local guidance

Camden Planning Guidance: Design (Camden Council, July 2015, updated March 2018)
Camden Council is reviewing and updating its Planning Guidance documents to support the Camden Local Plan following its adoption in summer 2017. The update is in two phases, the first of which was completed in March 2018. CPG1 Design will come under review in the second phase, but continues to apply until it is fully updated. Section 3 of this CPG sets out further guidance on how Policy D2 Heritage from the Local Plan (2017) should be applied

8.5 Other material considerations

The Planning (Listed Buildings and Conservation Areas) Act 1990
The overarching legislation governing the consideration of applications for planning consent that affect heritage assets is contained in the Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended) (the Act). Sections 16(2) and 66(1) of the Act require local planning authorities, in considering whether to grant listed building consent, to have special regard to the desirability of preserving a listed building or its setting or any features of special architectural or historic interest which it possesses.

Section 72 of the Act requires local planning authorities, in considering whether to grant planning permission with respect to any buildings or other land in a conservation area, to pay special attention to the desirability of preserving or enhancing the character or appearance of that area.

National Planning Policy Framework (2021)
The NPPF sets out the government's planning policies for England and how these are expected to be applied. Its core principle is to help achieve sustainable development through the planning system. Sustainable development is commonly summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Having been first published in 2012, the Framework was most recently updated in 2021.

Section 16, entitled Conserving and Enhancing the Historic Environment, contains guidance on heritage assets, which include listed buildings and conservation areas. Paragraphs 194-207 are relevant to the present application:

Paragraph 194 requires an applicant to give a summary of the significance of the building or area affected, proportionate to its importance. This Heritage Statement provides that information at an appropriate level.

Paragraph 195 advises local authorities to take account of that significance in assessing proposals to avoid or minimise conflict between the proposals and

conservation of the asset.

Paragraph 197 emphasises the desirability of sustaining and enhancing the significance of individual assets and wider, local distinctiveness, and the desirability of viable and fitting uses for a building being found or continued.

Paragraph 199 advises that when considering the impact of proposed development on the significance of a designated heritage asset, great weight should be given to the conservation of the asset, and that the more important the asset, the greater the weight should be. It also establishes a scale of harm, from total loss, to substantial harm, to less than substantial harm.

Paragraph 200 establishes the principle that any harm to, or loss of, the significance of a designated heritage asset should require clear and convincing justification.

Paragraph 202 states: Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

Paragraph 206 advises that local planning authorities should look for opportunities for new development within Conservation Area and World Heritage Sites, and within the setting of heritage assets to enhance or better reveal their significance.

Paragraph 207 addresses harm to the significance of conservation areas. It states: Not all elements of a Conservation Area […] will necessarily contribute to its significance.

The NPPF also requires good design, as set out in chapter 12 and emphasised in relation to the historic environment in paragraph 130.

Appendix A:
Response by the Twentieth Century Society

Emailed to: SScott@ahmm.co.uk

30 May 2024

Dear Sam Scott and project team

SITE: INSTITUTE OF EDUCATION, BEDFORD WAY, LONDON, WC1H 0AL

Thank you for inviting the Twentieth Century Society to review and comment on the pre-application proposals to install decarbonisation plant on the rooftop of the Grade II* listed Institute of Education.

The Institute of Education was designed by Denys Lasdun, a major post-war architect, and built in 1970-76. The building's more than special architectural and historic interest is reflected in its Grade II* listing, a rare grade for a post-war building.

The addition of plant to the roof would alter the building's appearance (particularly when viewed from the west) and as such would cause some harm to the building's significance. However, the applicant has provided robust justification for their decision to install plant (and this quantity of plant) to the roof in the first place and for its proposed specific location on the roof within the central bays. We therefore do not object to the proposed installation of the plant in principle. In regards to the proposed approach to its installation, we agree with the project team that the plant should be as discreet as possible and that the finishes for the enclosure/screening should borrow from and complement those of the host building. The Institute of Education has a strong composition, with soaring concrete towers balancing the long elevations along Bedford Way. If the proposed plant was more loudly expressed it would compete with the sculptural concrete towers that characterise the roofline with a detrimental impact on the building's architectural significance. We feel that the project team's proposal to design the plant to be as unobtrusive and restrained as possible is the right one. We do not wish to indicate a preferred finish for the plant enclosure at this stage but would be willing to provide a view when the project team has whittled the options down to one or two potential finishes.

We hope that these comments are of use to you. Please do not hesitate to get in touch if you have any questions.

Yours sincerely,

Coco Whittaker

Head of Casework

The Twentieth Century Society
70 Cowcross Street
London, EC1M 6EJ
Tel 020 7250 3857
coco@c20society.org.uk

Remit: The Twentieth Century Society was founded in 1979 and is the national amenity society concerned with the protection, appreciation, and study of post-1914 architecture, townscape and design. The Society is acknowledged in national planning guidance as the key organisation concerned with the modern period and is a constituent member of the Joint Committee of the National Amenity Societies. Under the procedures set out in the *Arrangements for Handling Heritage Applications – Notification to Historic England and National Amenity Societies and the Secretary of State (England) Direction 2021*, all English local planning authorities must inform the Twentieth Century Society when an application for listed building consent involving partial or total demolition is received, and they must notify us of the decisions taken on these applications.

Appendix B:
Cityscape Digital Verified Views Methodology

Contents

Table of views

View	Visualisation type	Level of accuracy of location	Render / wireline	Ref	OS-E	OS-N	Height (AOD)	Height (AGL)	Heading	Lens	Lens choice	Field of view	Date	Time
01				D30406	Reference	Reference	Reference	1.60 M	Reference	Reference	Standard lens for open spaces	73.74°	11/06/24	10:18
02	Type 4	Better than 0.05m	Render	D30382	529899.568	182265.779	24.76 M	1.60 M	167°	24mm	Standard lens for open spaces	73.74°	11/06/24	10:33
03	Type 4	Better than 0.05m	Wireline	D30383	529830.283	182061.509	26.28 M	1.60 M	57°	24mm	Standard lens for open spaces	73.74°	11/06/24	11:31
04	Type 4	Better than 0.05m	Render	D30384	529983.72	182158.239	25.59 M	1.60 M	234°	24mm	Standard lens for open spaces	73.74°	11/06/24	11:11
05	Type 4	Better than 0.05m	Render	D30388	530061.378	182042.786	24.89 M	1.60 M	308°	24mm	Standard lens for open spaces	73.74°	16/06/24	17:10
06				D30385	Reference	Reference	Reference	1.60 M	Reference	Reference	Standard lens for open spaces	73.74°	11/06/24	11:52
07	Type 4	Better than 0.05m	Render	D30407	529926.356	182078.024	26.04 M	1.60 M	35°	24mm	Standard lens for open spaces	73.74°	24/06/24	12:51

0.0 Introduction

0.1 Methodology overview

The methodology applied by Cityscape Digital Limited to produce the *'Type 4 Photomontages survey / scale verifiable'*[1] or views contained in this document are described below. In the drafting of this methodology and the production and presentation of the images, guidance has been taken from the 'TGN 06/19 Visual Representation of development proposals' (TGN06/19) from the Landscape Institute published on 17 September 2019 in support of GLVIA3.

The disciplines employed are of the highest possible levels of accuracy and photo-realism which are achievable with today's standards of architectural photography and computer-generated models.

0.2 View selection

The viewpoints are being selected through a process of consultation with relevant statutory consultees by townscape/heritage consultants and having regard to relevant planning policy and guidance.

1.0 Photography

1.1 Digital photography

High quality digital full frame sensor cameras are being utilised.

1.2 Lenses

In accordance with TGN 06/19, Cityscape balances the need to include the extent of the site and sufficient context with the stated preference for 50mm lenses. For local urban views a wide angle lens of 24mm or 35mm is generally used. For more open spaces the default is 50mm, intermediate distance views are photographed with a lens between 35mm to 70mm and occasionally long range views may be required with lens options ranging from 70mm to 1200mm.

As a guide, the following approach is used:

View	Lens options
Relevant foreground, urban context or large site	24mm – 35mm
Open spaces, where proposed development can be included	50mm
800 to 5000 metres – intermediate	35mm – 70mm
5000+ metres – long	70mm – 1200mm

Examples of these views are shown in Figures 1 and 2.

1.3 TGN 06/19

States that:

"2.2 Baseline photography should: [...] include the extent of the site and sufficient context;"[2]

"1.1.7 If a 50mm FL lens cannot capture the view in landscape or portrait orientation (for example, if the highest point of the development is approaching 18° above horizontal) the use of wider-angled prime lenses should be considered, working through the following sequence of fixed lenses in this order: 35mm FL > 28mm FL > 24mm FL > 24mm FL Tilt-Shift. Tilt-Shift Lenses are considered at Appendix 13. In these unusual situations, the reasoning for the choice and the approach used should be documented, and the agreement of the competent authority should be sought (see Appendix 10 Technical Methodology)."[3] and

"Views should include the full context of the site / development and show the effect it has upon the receptor location.[...]"[4]

1.4 Digital camera

Cityscape uses high quality professional DSLR (digital single lens reflex) and DSLM (digital single lens mirrorless) cameras. The cameras utilise FFS (full frame sensors) so declared focal lengths require no conversion to be understood in line with TGN 06/19 guidelines.

Cityscape use high quality lenses that are matched to the resolution of the cameras to ensure high contrast and sharp rendition of the images.

1.5 Position, time and date recording

The photographer is provided with (i) an Ordnance Survey map or equivalent indicating the position of each viewpoint from which the required photographs are to be taken, and (ii) a digital mockup rendered with a context model of the desired view. For each viewpoint the camera is positioned at a height of 1.60 metres above the ground level which closely approximates the human eye altitude, and falls into the 1.5-1.65m range provided by TGN 06/19[5].

If local conditions required a deviation to capture the view, the exact height can be found in the Table of Views. A point vertically beneath the entrance pupil of the lens is marked on the ground as a survey reference point and two digital reference photographs are taken of (i) the camera/ tripod location and (ii) the survey reference point (as shown in Figures 3 and 4). The date and time of the photograph are recorded by the camera.

1 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp. 21-2

2 TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp. 5, Paragraph 2.2

3 TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp. 28, Paragraph 1.1.7

4 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp. 35, Paragraph 4.1.5

5 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp. 50

1: Local view

2: Intermediate view

3: Camera location

4: Survey reference point

2.0 Digital image correction

2.1 Raw file conversion

Professional digital cameras produce a raw file format, which is then processed for both high detail and colour accuracy. The final image is saved as an 8 bit tiff[6] file.

2.2 Digital image correction

The digital photographs were prepared for the next stage of camera matching (see Sections 6 and 7).

All lenses exhibit a degree of geometric distortion. The most common types are radially symmetrical along the principal axis of the lens, and tend to grow in size towards the perimeter of the image. The outer edges of the images are therefore not taken into consideration to reduce inaccuracies. Figure 5 illustrates the 'safe' or non-distortive area of an image which is marked by a red overlay.

The adjusted or corrected digital image, known as the 'background plate', is then saved ready for the camera matching process (see Sections 6 and 7). In preparation for the survey (see Section 3.2) Cityscape indicates on each background plate the safe area and priority survey points, such as corners of buildings, retained elements and party walls for survey (see Figure 6).

5: Area of interest to be surveyed

6: Background plate highlighting critical survey points in green and secondary survey strings in red

6 TIFF is the name given to a specific format of image file stored digitally on a computer.

3.0 Type 4 visualisations

3.1 Type 4 visualisation

Unless otherwise specified visualisations are completed to TGN 06/19[7] Type 4 Photomontage / Photowire (survey / scale verifiable) standards.

3.2 Survey

An independent surveyor is contracted to undertake the survey of (i) each viewpoint as marked on the ground beneath the entrance pupil of the lens at the time the photograph is taken (and recorded by way of digital photograph (see Section 1 above) and (ii) all the required points on buildings, hard landscape features or immobile permanent objects within the safe zone. The survey is coordinated onto the Ordnance Survey National Grid (OSGB36) by using GNSS (global navigation satellite system such as GPS[8]) equipment (see, for example, Figure 7) and processing software. The Ordnance Survey National Grid (OSGB36) is chosen as it is the most widely used and because it also allows the captured data to be incorporated into other available digital products (such as Ordnance Survey maps). The height datum used is Ordnance Survey Newlyn Datum and is also derived using the GNSS.

Improvements to the real-time position of GNSS data is achieved by RTK (real time kinematic) compensation, which utilises a comparison between known base stations positions and their current position fix to produce correction data to the measurements. The required points on each building are surveyed using conventional survey techniques utilising an electronic theodolite and reflectorless laser technology (shown in Figure 8). In certain circumstances, a viewpoint may need to be surveyed using conventional survey techniques as opposed to RTK, if, for example, the viewpoint is in a position where GNSS information cannot be received.

3.3 False origin

3D modelling programs, unlike CAD/BIM programs, have inherent inaccuracies the further an object is away from the origin. Cityscape decide on and record a local, 'false origin' that is used to move the model closer to the origin. This alleviates the inaccuracies. The 3D model of the proposed development, consented scheme models, and survey data are all moved uniformly to this new false origin. When performing positioning checks (see Section 5.2) the offset between false origin and OS are added back to the coordinates.

7: Field survey being carried out, GNSS receiver

8: Field survey being carried out, total station

7 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp.11, Table2, pp 21-24.

8 https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/sector-standards/land/guidelines-for-the-use-of-gnss-in-surveying-and-mapping-2nd-edition-rics.pdf

4.0 Type 3 visualisations

4.1 Type 3 visualisation

These visualisations are as described in TGN 06/19[9] Type 3 Photomontage / Photowire (not survey / scale verifiable) standards. In contrast to Type 4, Type 3 visualisations rely on good quality data for camera matching, but are not relying on surveys as described in Section 3.2. Data sources such as GPS, OS Maps, 3D City models, geo-referenced aerial photography, LiDAR or 3D models can be used.

The individual data source used is declared in an accompanying table. The possible angular shift of a 1m lateral displacement of the camera against its actual coordinate depends on the distance of the object from the camera[10]:

Distance from camera	Apparent shift
10m	5.7°
100m	0.57°
1,000m	0.057°
10,000m	0.006°

Cityscape also create 3D DSM (Digital Surface Model) models from publicly available data sources, such as Defra LiDAR scans from the Defra Data Services Platform. We always choose the newest data available at the highest possible resolution, typically at 1m resolution. The data is processed to coordinate onto Ordnance Survey National Grid (OSGB36), and converted to a Square Grid DSM. The square grid is then optimised into a TIN (Triangulated Irregular Network). The optimisation has been validated to produce no loss in usable information of the geometric mesh. This process follows the guidelines set out in 'Guidance - Visual representation of wind farms - Feb 2017'[11].

DSM source is typically the Defra LiDAR Composite DSM, 2020, resolution 1m.

4.2 False origin

3D modelling programs, unlike CAD/BIM programs, have inherent inaccuracies the further an object is away from the origin. Cityscape decide on and record a local, 'false origin' that is used to move the model closer to the origin. This alleviates the inaccuracies. The 3D model of the proposed development, consented scheme models, and survey data are all moved uniformly to this new false origin. When performing positioning checks (see Section 5.2) the offset between false origin and OS are added back to the coordinates.

11: 1m resolution LiDAR GeoTIFF

12: Resulting 3D TIN mesh

5.0 Model positioning

Applies to Type 3 and Type 4 visualisation.

5.1 Model source

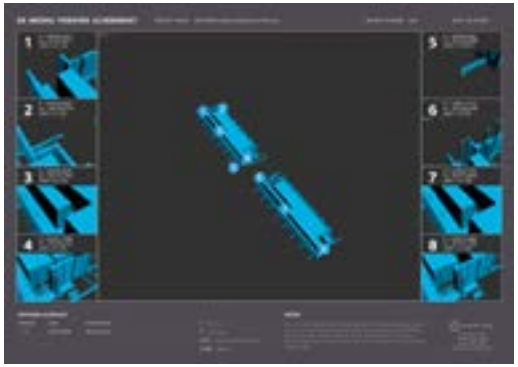
A wireframe 3D model of the proposed scheme if not provided is created by Cityscape from plans and elevations provided by the architects and from survey information of the ground levels on site and various other points on and around the site, such as the edge of adjacent roads and pavements etc. provided by the surveyor.

5.2 Proposed model position check

The architect supplies a 3D model in OS coordinates that can be used 'as is' for position checks as described below (utilising the false origin as described in Section 3.3). Alternatively, a non OS located model can be provided together with a floor plan that is positioned in an OS map. The model can then be positioned by way of setting it on the floor plan. Heights are either preserved from the original model if supplied in AOD, or taken from supplied elevations.

Once the model is positioned, confirmation of height and Easting/ Northing Coordinates is requested from the architect.

At least two clear reference points are agreed and used to confirm the placement of the model.



13: Proposed model position check

9 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp.11, Table2, pp 19-20.

10 'TGN 06/19 Visual Representation of development proposals.' Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed: March 2022).pp 56-57

11 'Guidance - Visual representation of wind farms - Feb 2017' Available at: https://www.nature.scot/sites/default/files/2019-09/Guidance%20-%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf (Accessed at March 2022). pp 8-9

6.0 Camera matching – Type 4 visualisations

6.1 Cityscape's database

Cityscape has built up a comprehensive database of survey information on buildings and locations in central London; the database contains both GNSS survey information and information regarding the dimensions and elevations of buildings gathered from architects and other sources.

The outlines of buildings are created by connecting the surveyed points or from the information obtained from architects' drawings of particular buildings. By way of example of the high level of detail and accuracy, approximately 300 points have been GNSS surveyed on the dome of St. Paul's.

The database 'view' (as shown in Figure 14) is 'verified' as each building is positioned using coordinates acquired from GNSS surveys. In many instances, the various coordinates of a particular building featured in one of the background plates are already held by Cityscape as part of their database of London. In such cases the survey information of buildings and locations provided by the surveyor (see Section 3.2 above) is used to cross-check and confirm the accuracy of these buildings. Where such information is not held by Cityscape, it is, where appropriate, used to add detail to Cityscape's database.

The survey information provided by the surveyor is in all cases used in the verification process of camera matching.

14: Selected GPS located models (yellow) from Cityscape's database, situated on Cityscape's London digital terrain model

6.2 Camera matching process

The following information is required for the camera matching process:

- Specific details of the camera and lens used to take the photograph and therefore the field of view (see Section 1);
- The adjusted or corrected digital image i.e. the 'background plate' (see Section 2);
- The GNSS surveyed viewpoint coordinates (see Section 3.2);
- The GNSS surveyed coordinates of points within the the background plate (see Section 3.2);
- Selected models from Cityscape's database (see Section 6.1);
- The GNSS surveyed coordinates of the site of the proposed scheme (see Section 3.2);

The data is combined in a 3D software package and is then used to situate Cityscape's virtual camera such that the 3D model aligns exactly over the background plate (as shown in Figures 15, 16 and 17) (i.e. a 'virtual viewer' within the 3D model would therefore be standing exactly on the same viewpoint from which the original photograph was taken (Figure 3). This is the camera matching process.

15: The background plate matched in the 3D GPS located models

16: Background plate matched to the 3D GPS located models

17: The camera matched background plate with an example of a proposed scheme included in red

7.0 Camera matching – Type 3 visualisations

7.1 Cityscape's context models

Cityscape have purchased available 3D city models of large parts of London and other parts of the UK that are modelled to within 25cm accuracy. Where available this data is used to create camera matches for Type 3 visualisations, or additional data is purchased.

In addition, or where 3D city models are not available, DSM data is used for camera matching (see Section 4).

7.2 Camera matching process

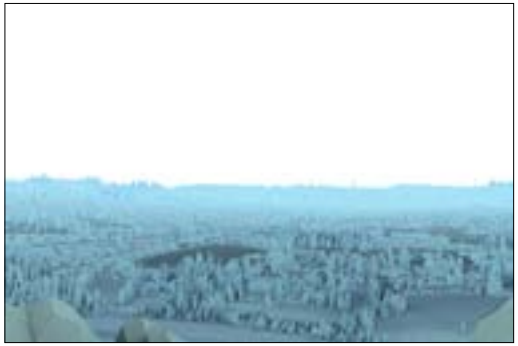
The following information is required for the camera matching process:

- Specific details of the camera and lens used to take the photograph and therefore the field of view (see Section 1);
- The adjusted or corrected digital image i.e. the 'background plate' (see Section 2);
- 3D city model and/or DSM context model (see Section 4);
- Selected models from Cityscape's database (see Section 6.1);
- A 3D model of the proposed scheme (see Section 5)

The data is combined in a 3D software package and is then used to situate Cityscape's virtual camera such that the 3D model/DSM aligns exactly over the background plate (as shown in Figure 20) (i.e. a 'virtual viewer' within the 3D model would therefore be standing very close to the same viewpoint from which the original photograph was taken (Figure 3). This is the camera matching process.

18: Background plate: digital photograph, size and bank corrected as described in Section 2

20: Camera matching: the background plate matched in DSM TIN mesh



19: Render: DSM model render, camera matched

8.0 Rendering

8.1 Wireline image (AVR 0/1)

The proposed developments are shown using a constant thickness wireline. The line is generated from a computer rendering of the 3D model and follows an 'inside stroke' principle.

Rendering is a technical term referring to the process of creating a two dimensional output image from the 3D model. The 'inside stroke' principle is followed so that the outer edge of the line touches the outline of the render from the inside, fairly representing the maximum visibility.

The camera matching process is repeated for each view and a wireline image of the proposal from each viewpoint is then produced. The wireline image enables a quantitative analysis of the impact of the proposed scheme on views.

8.2 Rendered image (AVR 3)

In order to assist a more qualitative assessment of the proposals, the output image needs to be a photo-realistic reflection of what the proposed scheme would look like once constructed. This is called an AVR3.

8.3 Texturing

The process of transforming the wireframe 3D scheme model into one that can be used to create a photorealistic image is called texturing[12].

Prior to rendering, Cityscape requires details from the architect regarding the proposed materials (e.g. type of glass, steel, aluminium etc.) to be utilised.

Cityscape also use high resolution photographic imagery of real world material samples, supplied by the client or the manufacturer, to create accurate photorealistic textures for use in all our images. This information is used to produce the appearance and qualities in the image that most closely relates to the real materials to be used (as shown in Figure 21).

8.4 Lighting and sun direction

The next stage is to light the 3D model to match the photographic environment. The date, time of the photograph and the latitude and longitude of the city are input (see Figure 22) into the unbiased physically accurate render engine. Cityscape selects a 'sky' (e.g. clear blue, grey, overcast, varying cloud density, varying weather conditions) from the hundreds of 'skies' held within its database to resemble as closely as possible the sky in the background plate.

The 3D model of the proposed scheme is placed within the selected sky (see Figure 23) and using the material properties also entered, the computer calculates the effects of the sky conditions (including the sun) on the appearance of the proposed scheme.

21: Screenshot of some materials in the 3D rendering package.

22: Screenshot of environment information (time, date and year) entered to locate the sun correctly (see Section 7.

23: Example of a proposed scheme highlighted in red within the selected sky and rendered onto the background plate

12 Texturing is often referred to as part of the rendering process, however, in the industry, it is a process that occurs prior to the rendering process.

9.0 Post production

9.1 Post production

Finally, the rendered image of the scheme model is inserted and positioned against the camera matched background plate.

Once in position, the rendered images are edited using Adobe Photoshop®. Masks are created in Photoshop where the line of sight to the rendered image of the proposed scheme is interrupted by foreground buildings (as shown in Figure 24).

The result is a verified image or view of the proposed scheme (as shown in Figure 25).

A similar process is followed for wireline (AVR1) images. The outline of the rendered model is traced with a constant thickness stroke which stays inside the massing of the rendered model. Additional lines are added using a narrower stroke to delineate significant stepping in the model's topography, and to aid with the understanding of the wirelines in respect to the overall arrangement of massing of the proposed development.

24: Process red area highlights the Photoshop mask that hides the unseen portion of the render

25: A photo-realistic verified image

Cityscape Digital

Printworks House
7 Bermondsey Street
London SE1 2DD

020 7566 8550

cityscapedigital.co.uk

Appendix C:
Summary of alternative locations for the plant

Alan Baxter

Prepared by Gemma Fowlie & Al Eggeling
Reviewed by Alice Eggeling
Draft issued July

T:\1564\1564-124\12 DTP Data\01 HTVIA

Alan Baxter Ltd is a limited company registered in England and Wales, number 06600598.
Registered office: 75 Cowcross Street, London, EC1M 6EL.

75 Cowcross Street
London EC1M 6EL

tel **020 7250 1555**
email **aba@alanbaxter.co.uk**
web **alanbaxter.co.uk**