EXETER
COLLEGE
OXFORD

# A New Quad at Walton Street

## **Supplementary Planning Document**

July 2013


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# Contents

## 1.0

### Introduction and Purpose

This addendum statement responds to the issues arising from the recent statutory consultation process, as well as the consultation undertaken by Exeter College directly, in support of the statutory processes.

The addendum report is a formal submission to Oxford City Council and should be read in conjunction with the applications new paragraph 13/00832/FUL for "Redevelopment of existing student accommodation and teaching site comprising the demolition of all buildings, with exception of the 1913 Ruskin College facade to Walton Street and Worcester Place, and erection of 90 student study rooms, 3 Fellows/Staff residential rooms, teaching facilities, library archive, social space, landscaping and associated works"; and 13/01075/LBD for "External alterations involving demolition of south and west facades of 1913 building, demolition of 1930's, 1960's and 1980's extensions, and removal of existing roof. Erection of four storey extension to rear to provide 90 student study rooms, 3 Fellows/Staff residential rooms, teaching/lecture facilities, library archive and social space. Erection of replacement roof. Alterations to window openings, insertion of replacement windows and new gates to front entrance. External landscaping including cycle stands and tree planting. Internal works involving demolition of internal structure and replacement with new steel framing, staircases, floors and partitions, and installation of new lift shaft."

## 2.0

### Overview of the consultation process

Since our original application was submitted, various meetings have been held to engage with the following groups in order to convey greater understanding of the scheme and to identify potential issues or details that may not have been fully conveyed during statutory consultation. These can be summarised as follows:

- Oxford City Council – 8th May
- Committee Members – 13th May
- Oxford City Council – 10th June
- Oxford Preservation Trust – 10th June
- Residents of Worcester Place – 10th June

## 3.0

### Amendments to scheme/clarifications to evidence base

This Section has been arranged thematically in response to the key issues that arose during the statutory consultation process:

3.1 Worcester Place and Public Realm:
Addressing not only the physical relationship between the building and Worcester Place, but also its intended operational relationship.

3.2 Windows:
In response to dialogue with the City Council and English Heritage, the fenestration strategy has been altered.

3.3 Roof Materials:
The latest progress on refining proposals for the roofing material is presented here.

3.4 Internal Alterations:
Additional clarification is provided in respect of the proposed works to the main Ruskin building.

3.5 Worcester College:
The concerns of Worcester College are understood and appreciated. We have reviewed the evidence base in support of the application and provided additional clarification in response to those concerns.

3.6 Other Matters:
This element deals with minor environmental matters that arose during consultation.

# 3.1

## Worcester Place and Public Realm

# 3.1 Worcester Place and Public Realm

3.1.1

## Worcester Place Study

At the residents' meeting on the 10th June, the initial findings of a sectional study of Worcester Place and a supporting Sunlight and Daylight Report were presented in response to their concerns about the impact of the new building.

At that meeting, the residents requested the supporting information to address the following points:

1) The decrease in light angles owing to extra height, including the large dormer windows
2) The missing shadowing analysis for December 21st and March 21st
3) The potential overall reduction of light to their homes.

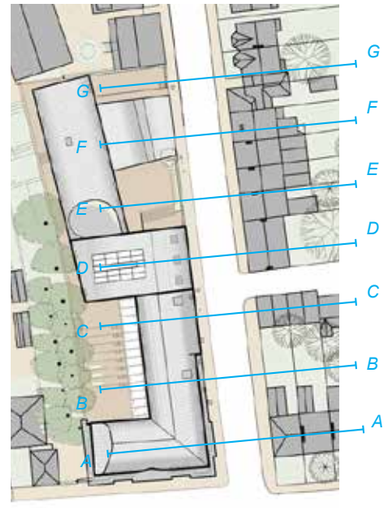
We can confirm that this submission addresses all of these points and is presented below.

Analysis of the Ruskin building's roof profiles led the team to explore the concept of extending the existing mansard vertically to generate new space. We found that extending the Ruskin roof at an angle within closest viable proximity to the existing mansard permits an additional storey of expansion, required to encompass the program and rooms outlined in the brief. To soften and lower the visual impact of the extended roof and vertical massing we have adopted the principle of the radiused ridge geometry, a new formal language for the Ruskin building, but one familiar to the 19th Century Beaux-Arts eye, or the 21st Century eye attuned to the organic and curvilinear. We found that the radiused roof profiles allowed us to make smooth transitions in building heights and widths along the length of the site in line with the constantly varying planes defining daylight and sunlight envelope.

The following sectional analysis demonstrates that only in two cross sections (C and F) there is a modest increase in the height of the building. There is no significant change in three of the cross sections (A, B and D) whilst there is a substantial improvement in two of the cross sections (E and G).

The limited changes in bulk and massing to Worcester Place has resulted in a positive assessment of sunlight and daylight as shown in 3.1.2 below.

Existing sections along Worcester Place

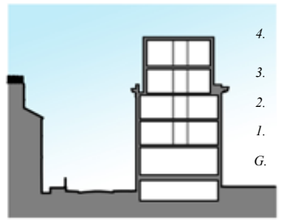


Proposed sections along Worcester Place

1

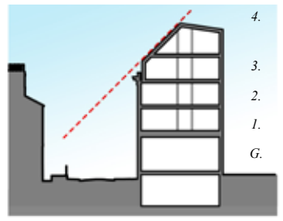
Existing
Net NIA: 3429 SqM
Student Rooms: 80

2



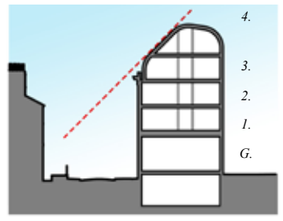
Opportunity
To meet the proposed brief
an extra floor level is required.

3

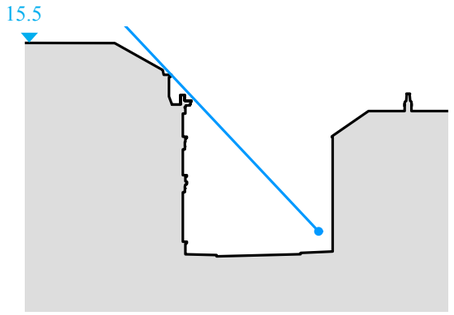


Angled Roof Profile

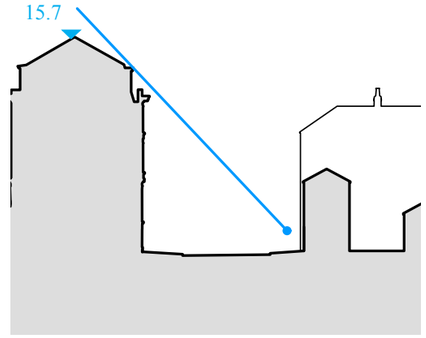
4



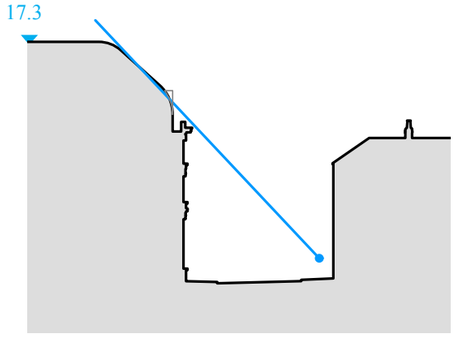
Roof Profile Softened
With Radii



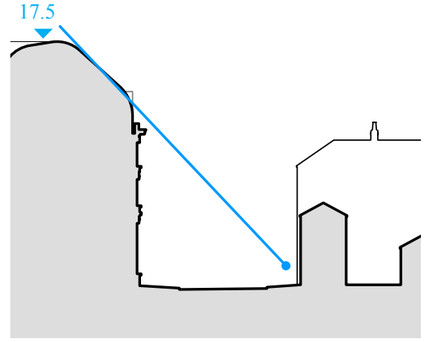
Section A - Existing



Section B - Existing



Proposed



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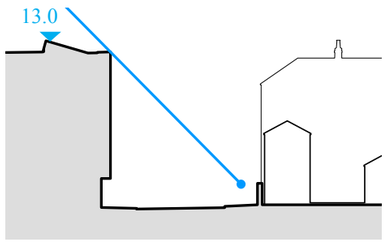
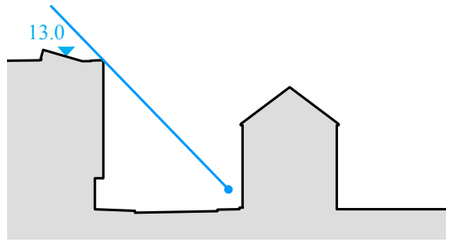
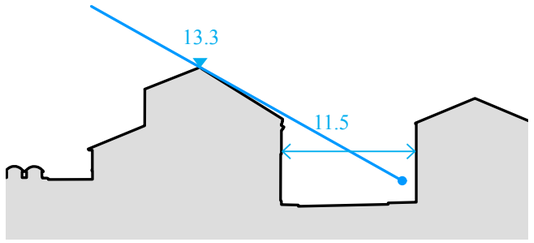



Section C - Existing




Section D - Existing

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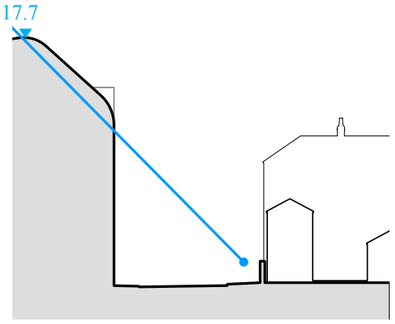


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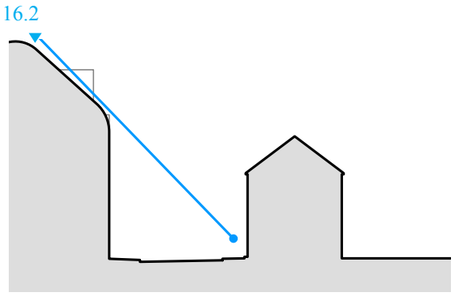


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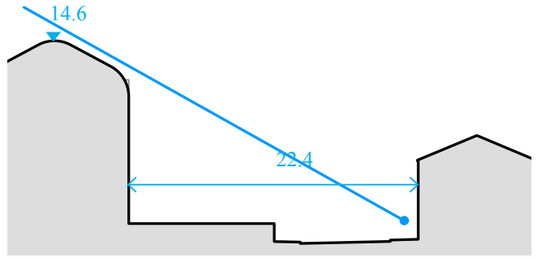


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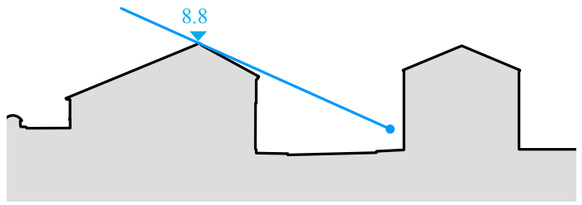
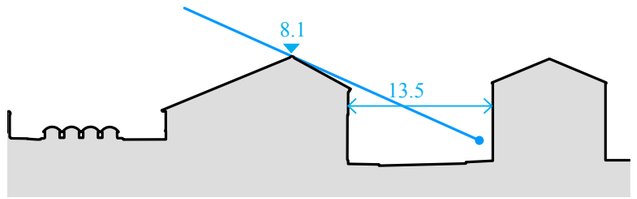
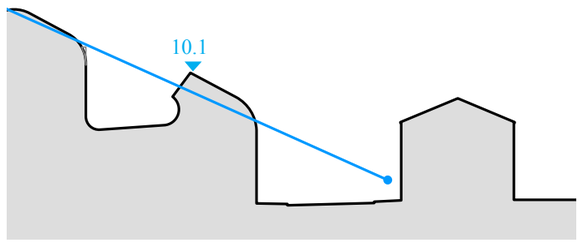



Section F - Existing




Section G - Existing

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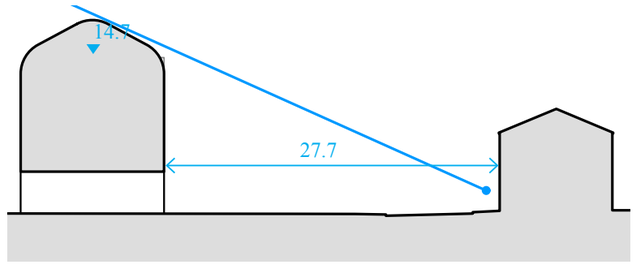



Proposed

3.1.2

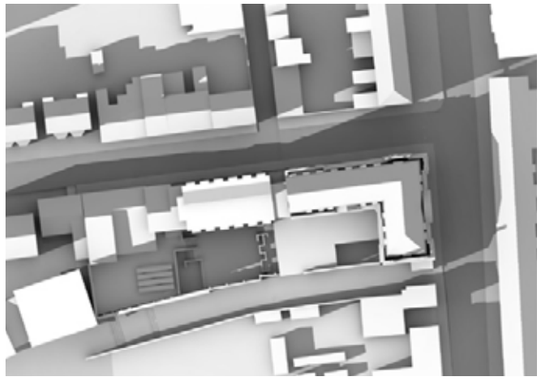
## Sunlight and Daylight Assessment

The assessment is produced in full within Appendix 1 and was carried out in accordance with the industry standard ‘BR 209, Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice’.

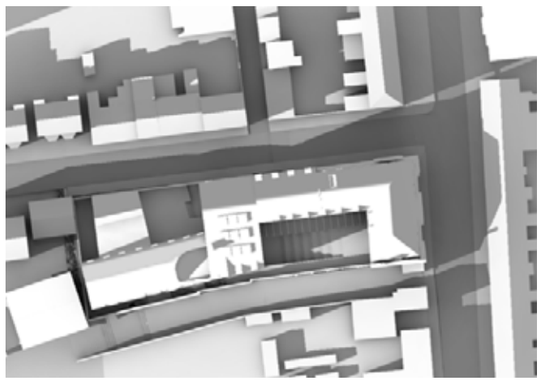
Focussing on residents properties, the proposed development has a potential localised impact on sunlight within 4 Walton Street. The ground floor room in the rear extension of 4 Walton Street is primarily affected during winter, when the sun path is lower. If the affected room is a living room the impact would be considered minor, otherwise the impacts would be considered insignificant.

In respect of all other residential properties, no further impacts are expected.

Extract from the Daylight and Sunlight Report.
Worcester Place Sunlight Model - Existing, 21st September 17:00



Worcester Place Sunlight Model - Proposed, 21st September 17:00



# 3.1 Worcester Place and Public Realm

3.1.3

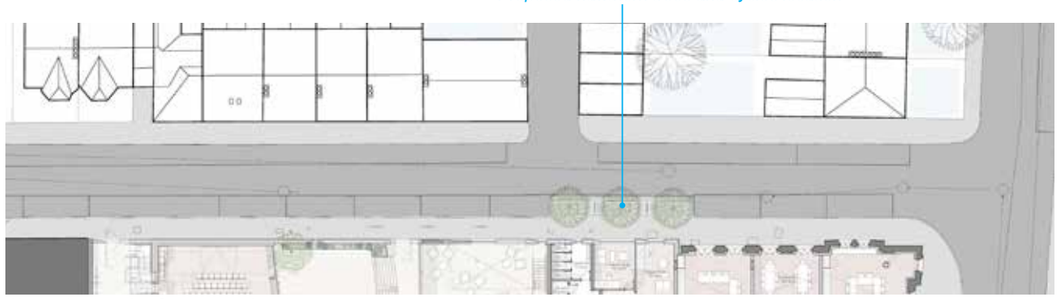
## Cycle parking

Two principle concerns have been raised in respect of cycle parking: location and management. In respect of location, residents of Worcester Place raised a concern over the noise of bikes being parked and the potential to cause a nuisance to the occupants of the dwellings directly opposite.  In response, the Project Team has looked again at the position of the cycles. There is not enough space at the front of the building, on Walton Street to accommodate them. However, it is possible to move the cycle stands closer to Walton Street, positioning them opposite Walton Lane. In this way, it is considered that the prospect of nuisance arising from the cycle spaces can be avoided.

Reference tree and bike island

Trees and cycles location proposed at planning

*Proposed hawthorn trees and cycles location*

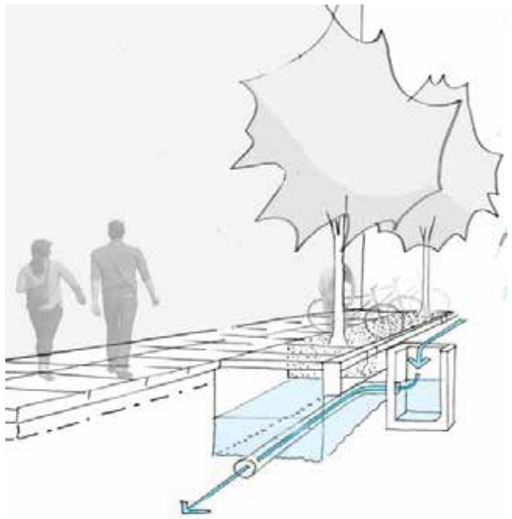


Alternative location for trees and cycles

3.1.4

## Hawthorn trees

The proposed planting in Worcester Place consists of 3 Hawthorn Trees. These trees have been selected as they are of an appropriate scale for Worcester Place, being of limited height and bulk, but will nonetheless provide a welcome touch of greenery to the street. They will be planted in tree pits, ensuring that there is no risk of root encroachment on adjacent buildings.  As with the position of the cycle stands, the location of the trees will also move closer to Walton Street.



Tree pit for root constraint and watering

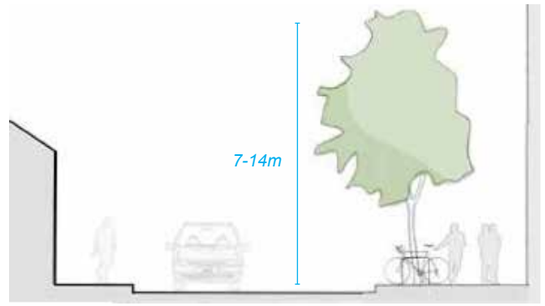
Hawthorn tree

Fruiting

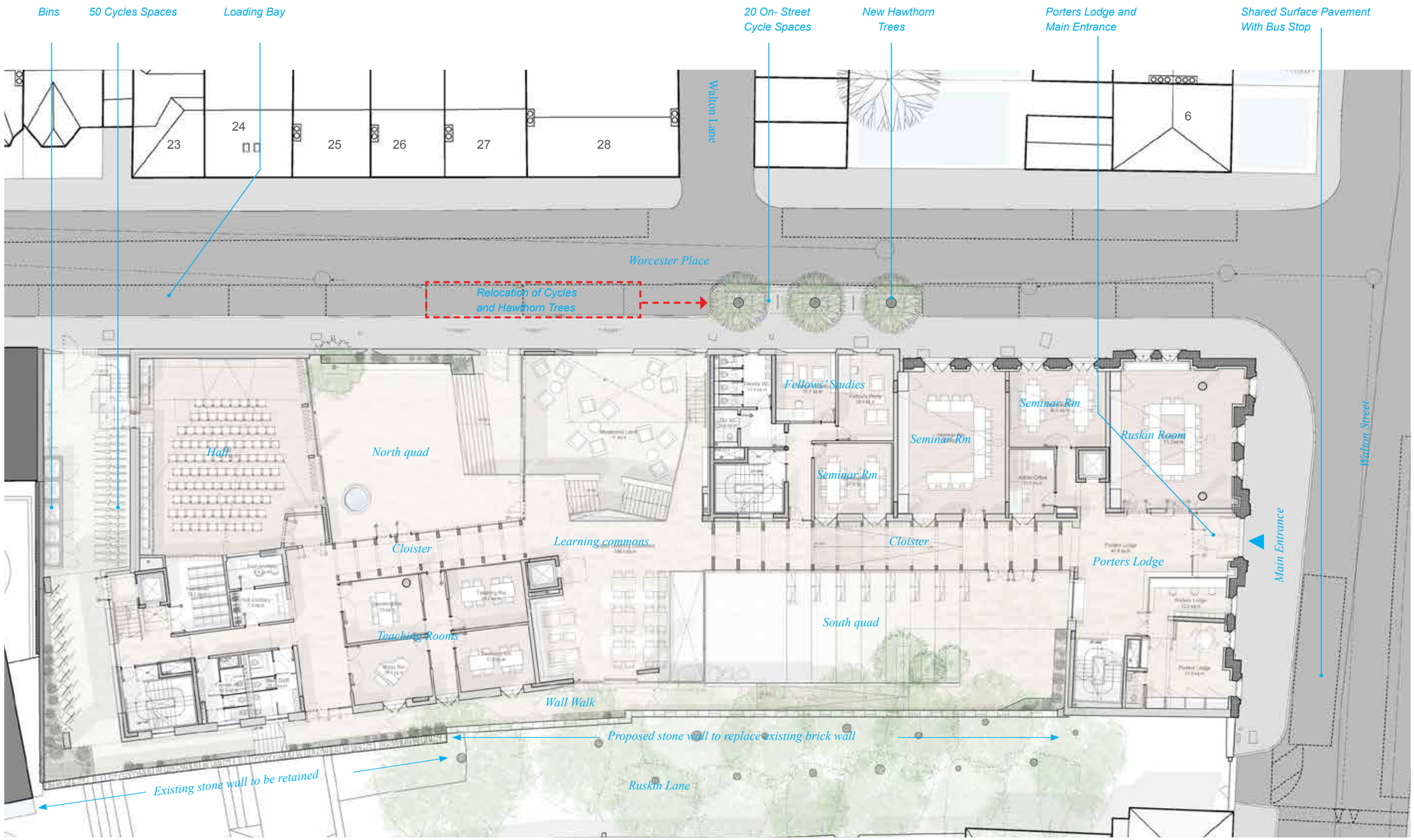
Spring blossom

Bark

Leaf




Street section




Ground Floor Plan

# 3.1 Worcester Place and Public Realm

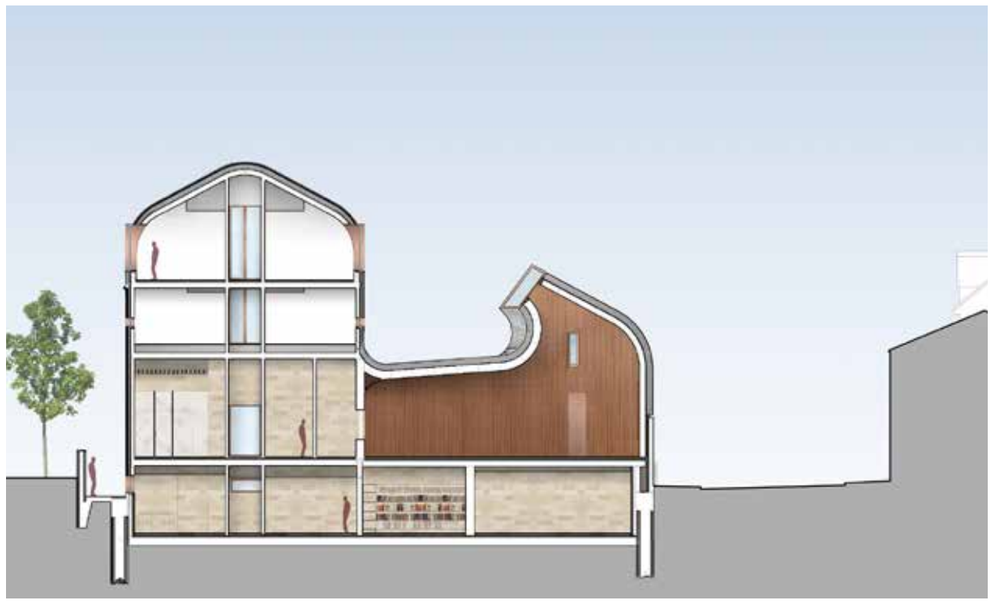
3.1.5

## Lecture Hall Use and Acoustics

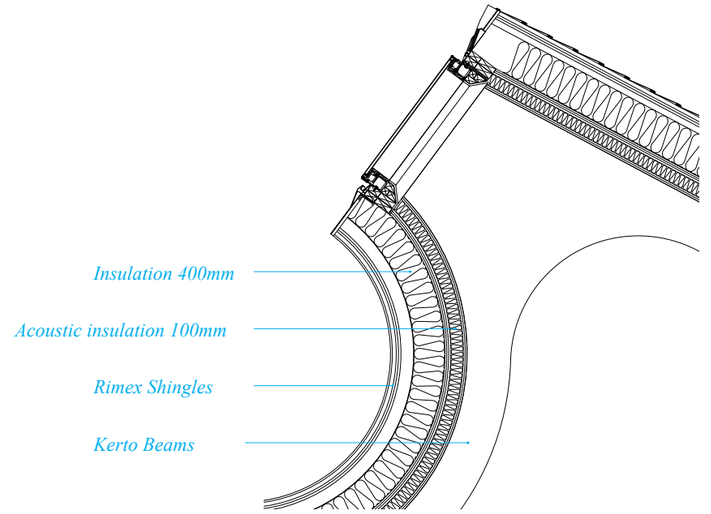
The auditorium positioned on Worcester Place is designed primarily for use as a lecture hall for teaching purposes. It will also be available for occasional recitals, talks and public events, should the community wish to use it. It will not be used for any events involving amplified music.

The walls of the auditorium include insulation of half a metre thickness to ensure that no disturbance occurs either to the students residing in the building or to the residents of Worcester Place.

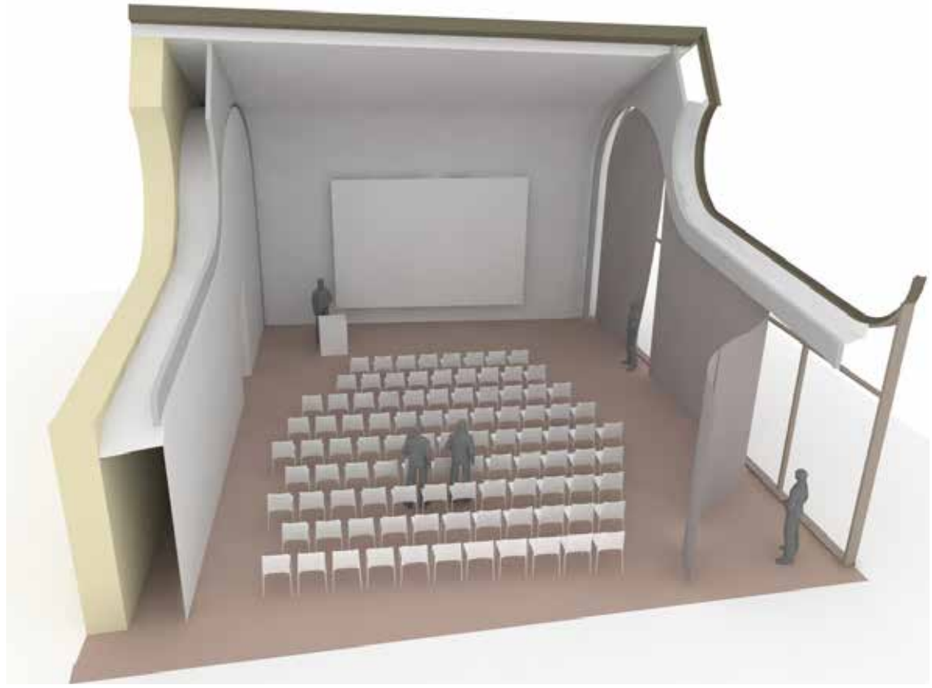
Lecture Hall Location



Section through Lecture Hall




Roof light and roof buildup detail



3d view of the Lecture Hall. “Lecture” layout

3.1.6

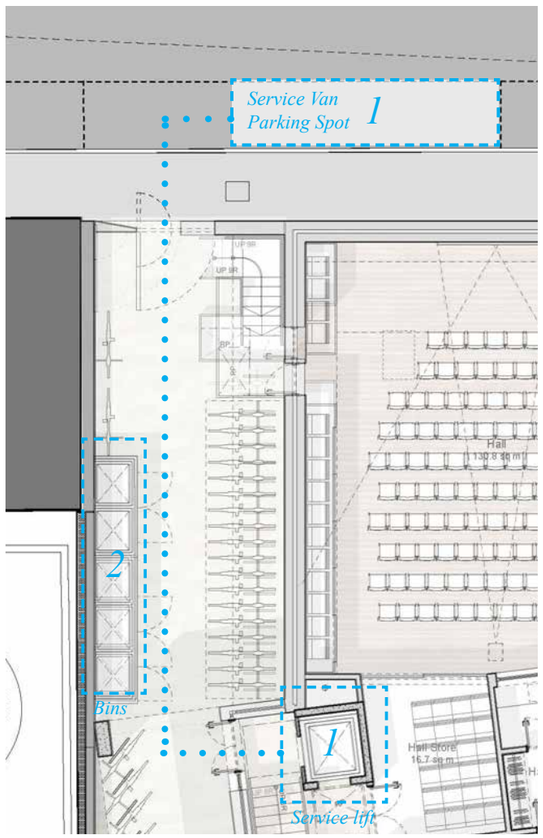
## Collection and delivery hours

Concern was expressed by a resident of Worcester Place with regard to the timing of collections and deliveries to the site. The level of servicing is anticipated to be very similar to that which occurred when Ruskin College was in operation at the site, circa 3-4 deliveries per day.

The College proposes to manage servicing of the Walton Street Quadrangle in a similar way to the approach at the Turl Street Campus as many of the same contractors will be involved. The present arrangement is that no deliveries/ collections occur before 7.30am and none later than 4pm and it is envisaged that this will continue for the Walton Street site.

*1. Waste Collection - 10:00 am To avoid causing disturbance to residents and traffic*

*2. Delivery - Off peak hours for traffic i.e. 7:30am - 8:30am and 10:00 -16:00pm*




Service Lane

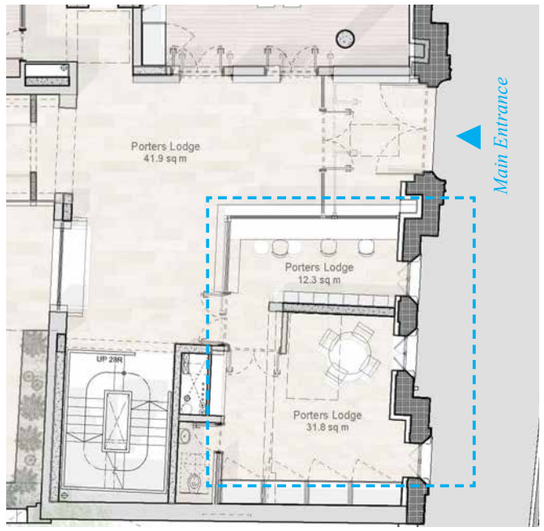
3.1.7

## Student Management

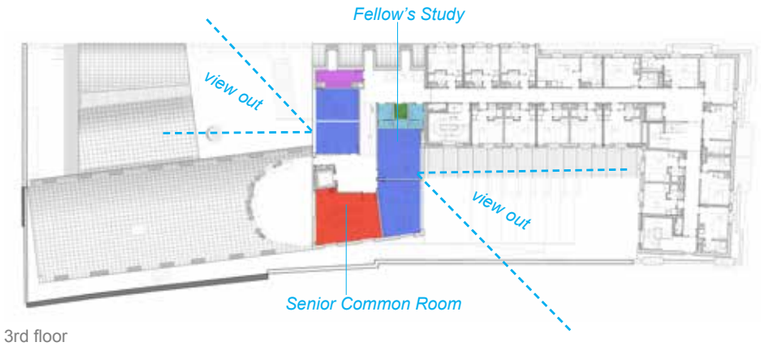
The College places great importance on ensuring that the site is well managed and will not cause nuisance to its neighbours. The new quad will have a 24hr Porter's Lodge, located at the Walton Street entrance. It is considered unlikely that there would be many incidences of nuisance from Exeter College students, as there are very few from existing College sites. However, the porters will monitor the site at all times and intervene if any issues should arise. In addition, two Fellows and a Junior Dean will reside at the site. Their rooms have purposely been positioned in order to allow for surveillance of both quads. Finally, all windows will be double glazed, minimising noise emissions from the building.

*3. 24 Hour Porter at front entrance*

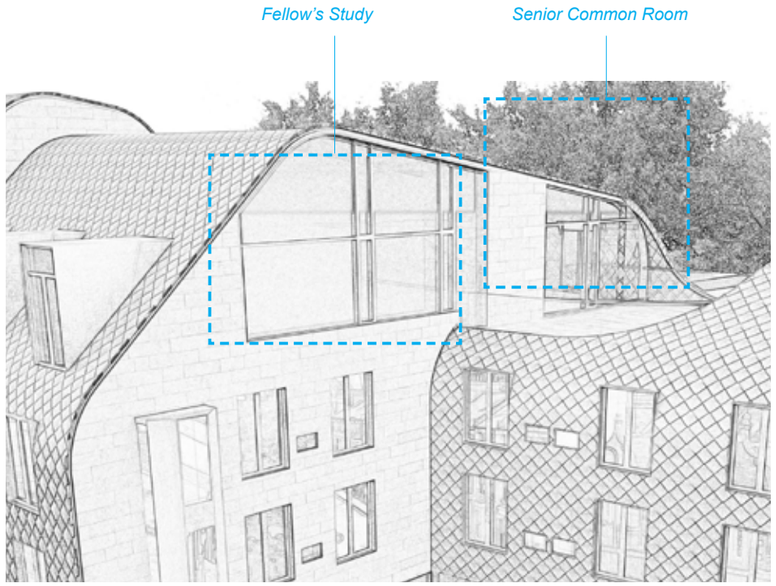
*4. 2 Fellows and a Junior Dean will live above the Learning Commons Block, overlooking Worcester Place and both new Quads*




Porters Lodge




3rd floor
Location of Fellows Studies and Senior Common Room, in the heart of the building




Exterior View of Fellows Study and Senior Common Room

# 3.2

*Windows*

# 3.2 Windows

3.2.1

## Proposals at Planning Submission

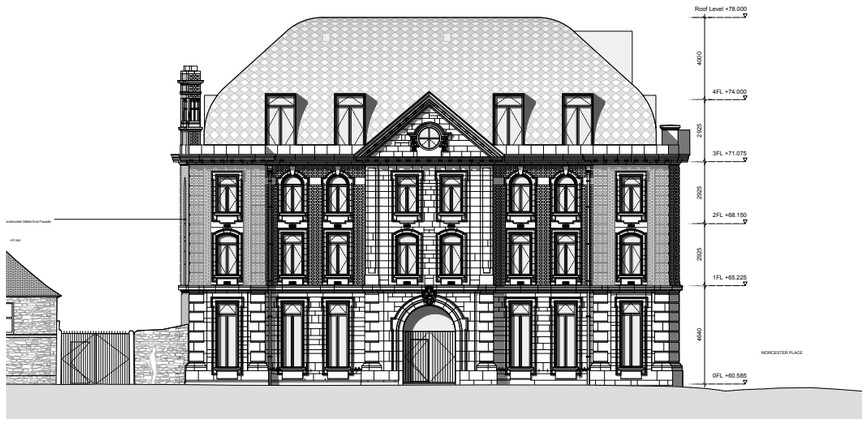
The Project Team originally proposed to replace the existing deteriorating sash windows with new casement windows to provide greater thermal and acoustic performance.
The more open frame of casement windows with opening fanlight would provide better lighting and natural ventilation to the public spaces on the ground floor as well as the student rooms. Along with the new roof, the intention for the replacement was to add a new layer of meaning representing both Ruskin's heritage and Exeter College at the Walton Street site. However during the consultation process the significance of preserving the window detail of the Ruskin elevation was highlighted.

Changes to the Ruskin Building proposed during Planning

## Original Ruskin Windows

The current windows of the Ruskin building were most likely installed during construction, some 100 years ago. The sash box is untypically exposed within the opening of the window giving the frames a substantial presence in the elevation. The original drawing of 1913 shows similar thick timber glazing bars to all floors, but as executed the ground floor windows are of metal rather than timber, with a different pane size from those above. It is unclear if the Internal timber casement windows behind the fixed metal pivot window of the ground floor were added at a later date, for acoustic and thermal reasons, or during construction.

Ruskin Building view from Walton Street




Worcester Place Elevation Proposed at Planning Submission Stage


Existing Walton Street Elevation


Worcester Place Elevation Proposed at Planning Submission Stage


Existing Worcester Place Elevation

3.2.2

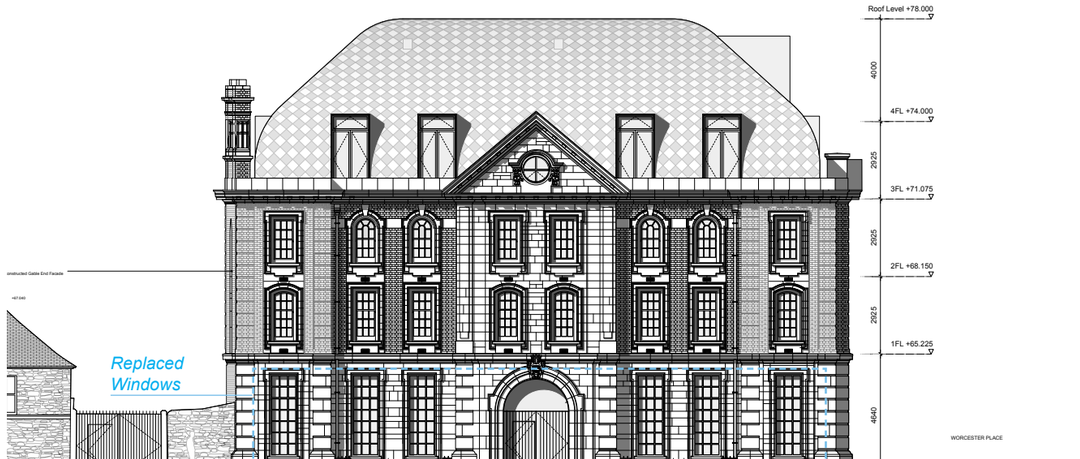
## Proposed Window Replacement

During the consultation process the team changed its approach of using casement windows as a universal replacement for all the Ruskin building windows. A like-for-like restoration and replacement approach has been adopted instead. The sills and aprons of the ground floor windows will be lowered to suit the new ground floor level. Window surrounds will be extended and the existing inscribed apron stones reset at a lower level, though elevated from the level proposed at planning submission stage.

The ground floor windows will be replaced with new double-glazed thermally broken steel-framed windows with glazing bars to match the existing, with two extra panes in the overall height. The upper floor windows will be replaced with an exact double glazed timber sash replica or restored, subject to further investigation of the window frame conditions.

Upper floor windows to be restored/replicated

Ruskin Building retained facade and retained windows visualization




Proposed Worcester Place Elevation


Proposed Worcester Place Elevation

# 3.2 Windows

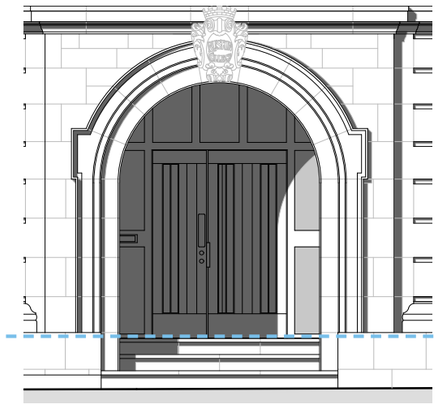
3.2.3

## Window Elongation on Ground Floor

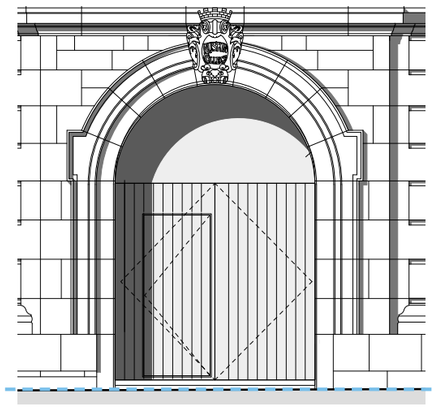
The team consultant structural engineer has demonstrated that full reconstruction of Ruskin Building internal floors is necessary in order to achieve functional and accessible floor plans and levels, since the filler-joist floor structure cannot accommodate the moving of all the structural partition lines and numerous penetrations for new services. Once the ground floor has been lowered to make the whole building accessible from Walton Street the ground floor window openings become uncomfortably high above ground floor level to serve their purpose.

## Lowering Windows to match the new floor level

For this reason the Project Team proposes to add two extra panes of glass to lower the sill of the ground floor windows. This allows extra window height for increased light levels and a proportionate relationship to the new primary floor level.




Existing entrance and ground floor level




Proposed entrance and ground floor level

Lowered ground floor, windows not extended

Walton Street Existing window type1

Lowered ground floor, windows extended

Proposed Replacement

## Retaining The Stone Aprons

The sills and aprons of the ground floor windows will be lowered to suit the new ground floor level, window surrounds will be extended and the existing inscribed apron stones reset at a lower level. The ground floor windows will be replaced with new steel-framed double glazed windows with glazing bars to match the existing, extended by two extra panes in height.

Retained Inscribed Aprons

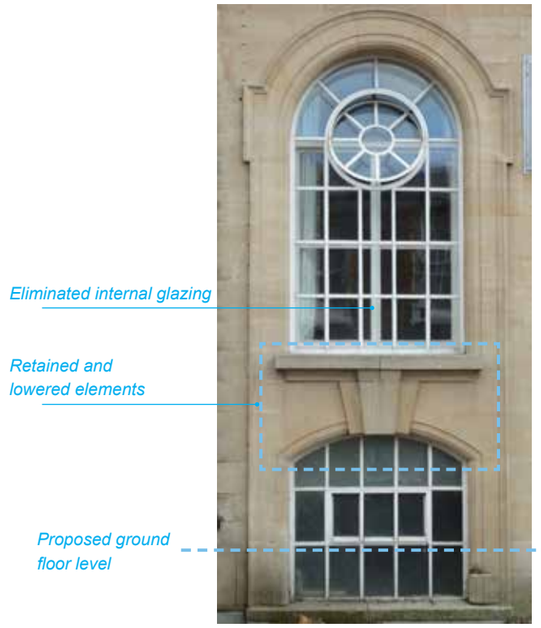


Walton Street Existing window type2


Proposed Replacement

## Worcester Place Windows

The sills, aprons, arches and keystones of the ground floor windows on Worcester Place will be lowered to suit the new ground floor level, window surrounds will be extended and the remainder of the second window into the basement filled in with matching stone. The window frames will be replaced with new steel-framed double glazed windows with glazing bars to match the existing, with two extra panes in the height. The existing secondary internal glazing, thought to have been added to mitigate external noise and heat loss, will be removed.




Worcester Place Existing window


Worcester Place ground floor windows


Proposed Replacement

# 3.3

*Roof Materials*

# 3.3 Roof Materials

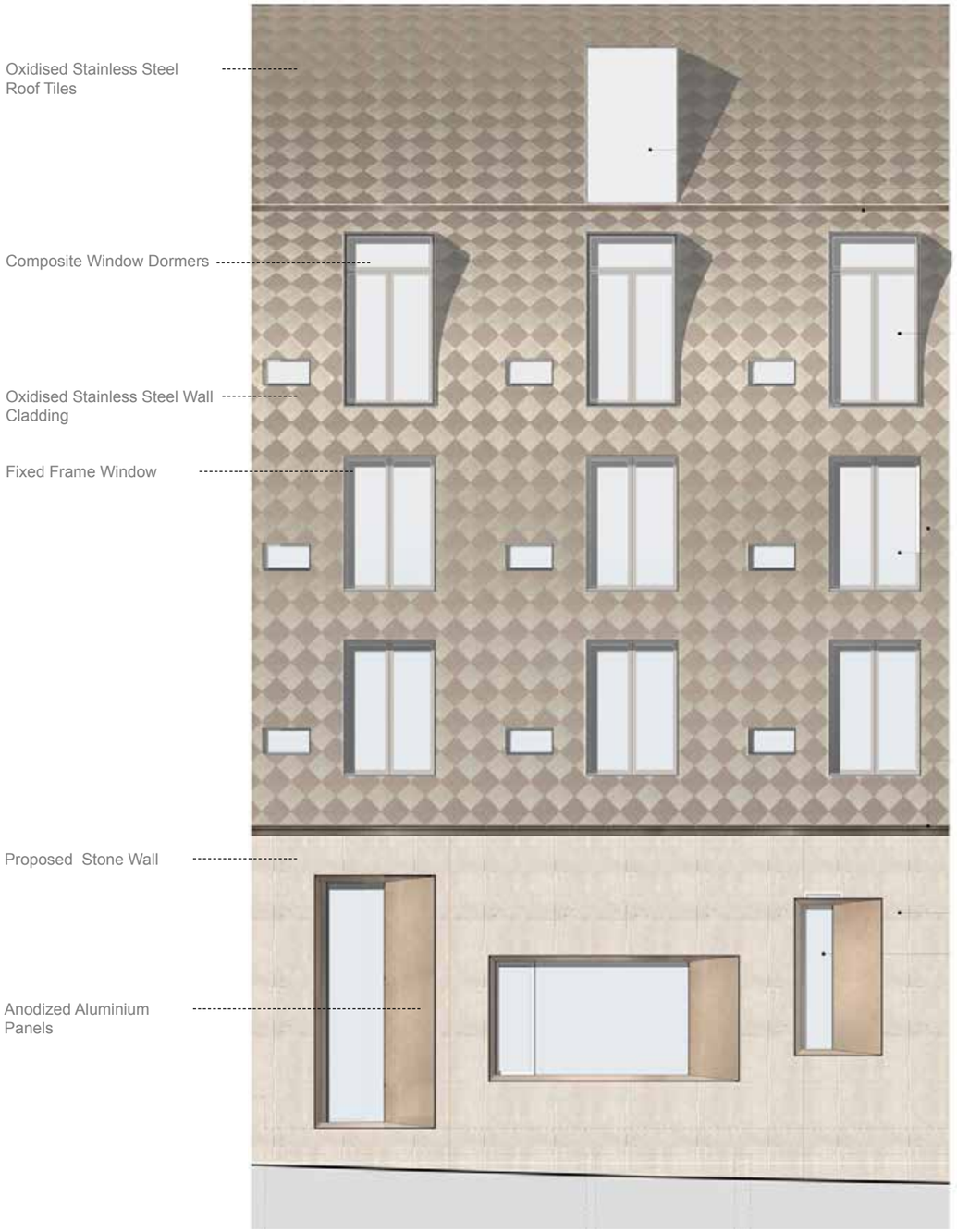
3.3.1

## Primary Building Facades

Exterior cladding materials for the new Walton Street site have been selected to refer specifically to Exeter College's central Oxford Quad, while complementing the Ruskin building's palette of dark red brick and dressed stone. The primary flooring and cladding material will be of ashlar stone, potentially sourced locally from the Bath Stoke Hill Mine. The Stone and brick of the Ruskin elevation will be cleaned according to current British Standards (BS 8221 – 1:2000) to restore its original colour.

New York Public Library - example of stone restoration.
A. Schwarzman Completed in 1911

Restored 2011




Worcester Place elevation

Patinated stainless steel roof tiles

Natural stone walling

3.3.2

## Rimex Sample Panels - Evolution

The principal concerns raised over the Rimex stainless steel cladding material relate to colour and reflectivity levels of the shingles. The Project Team, has taken further actions to reduce the glow through manufacturing processes such as sanding and bead blasting. The results of these tests are manifested in a set of large scale mock up panels on display at Ruskin College. The three panels range from highly reflective to nonreflective. The feedback gathered by the Team during public consultation and OCC meetings seems to be in favour of the “low reflective” mock-up panel as the material has a subtle range of tones as seen from different angles of view, compared to the nonreflective cladding. The concerns of direct light reflections into Worcester Place residents windows have been analysed further and no significant reflectivity was found possible as the Rimex cladding is predominantly facing north.

Rimex textured Bronze and flat Champagne shingles (high reflectivity)

Rimex textured Bronze and textured Champagne; top layer sanded (low reflectivity)

Rimex textured Bronze and textured Champagne; top layer sanded and bead blasted (nonreflective)

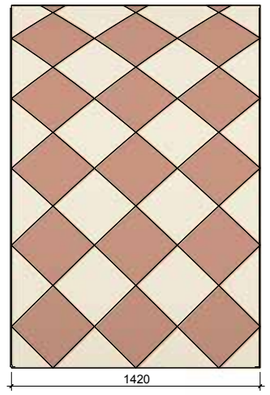
Rimex Factory Visit, Edmonton

Unprocessed stainless steel roll

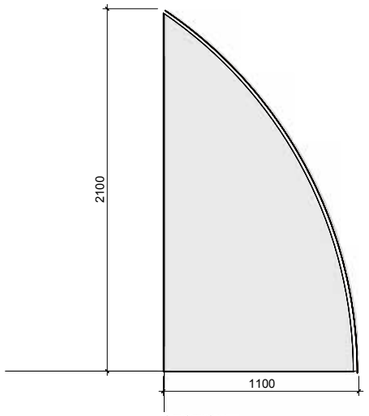
Flattening and patination

Oxidization

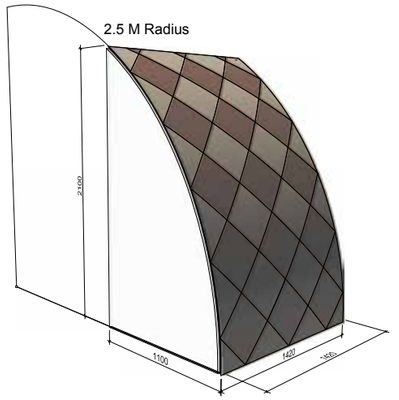
Assembled sample panel



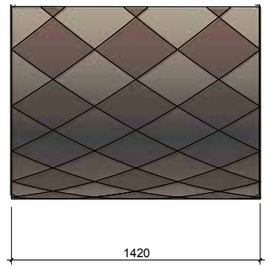

FRONT ELEVATION




SECTION




PERSPECTIVE



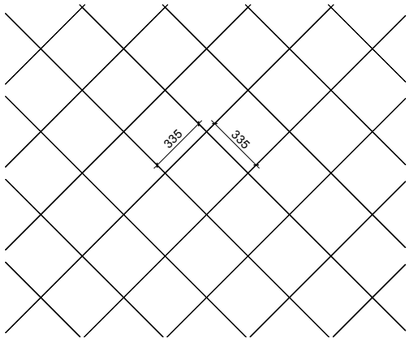

PLAN

RIMEX BRONZE

PALADIN PATTERN
335 X 335 MM VISIBLE DIMENSION

RIMEX CHAMPAGNE

PALADIN PATTERN
335 X 335 MM VISIBLE DIMENSION




DIMENSIONS OF FLAT SHINGLES

# 3.4

*Internal Alterations*

# 3.4 Internal Alterations

## Approach

The recent listing of the 1913 Ruskin Building and consultation response from English Heritage have confirmed our assessment that the building's significance is primarily social, relating to its role in bringing higher education within reach of those who could not otherwise have afforded it. Although the Design Team initially intended to retain and refurbish the building, through the design process it became clear that this would result in a highly compromised scheme. As a result, the Team came to the conclusion that the best way to achieve the aspirations of the College and to preserve the significance of the building was to retain the principle elevations as a memory of the social and architectural significance of Ruskin College, whilst rebuilding the floor plan behind. The key reasons behind this approach are set out in greater detail below.

### 3.4.1

## Accessibility

Accessibility was a key consideration within the initial brief, as the College seeks to expand its provision of fully accessible facilities and student accommodation, which are currently limited, primarily due to the site sensitivities of the historic Turl Street campus and the distance from central Oxford of other College accommodation.

It should be noted that the constraints and potential impacts on historic building fabric of providing fully accessible accommodation and facilities are far greater at Turl Street than the interventions sought in this proposal.

### 3.4.2

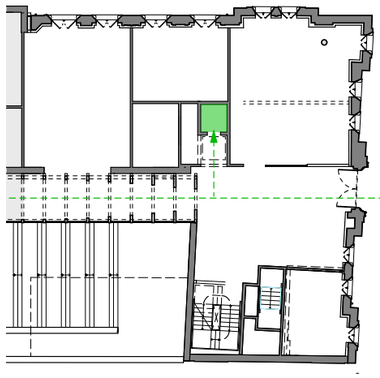
## Servicing

Whilst developing initial plans for the site, the Design Team quickly became aware of the fact that in order to provide the facilities and associated servicing required within the College's brief, a high proportion of the existing internal fabric would become compromised or would be lost completely. This servicing is vital to ensuring a suitable and viable scheme which meets the College's needs.

It should be noted that in English Heritage's correspondence, dated 16 May 2013, it is recognised that whilst internal alterations to accommodate modern servicing requirements are feasible, and could retain aspects of the floor plan, the existing steel frame would be particularly unforgiving of small adjustments, necessitating much more wide-ranging changes. As such English Heritage accepts that, at the end of this operation, it is true that relatively little might survive of the sense of how Ruskin was inhabited and used'. Retention of individual sections would also add significant costs, as well as compromising the final scheme, thus potentially making it unviable.

Ground Floor Retained Ruskin Building fabric

*Retaining all of The Existing fabric of the Ruskin Building reduces accessibility.*

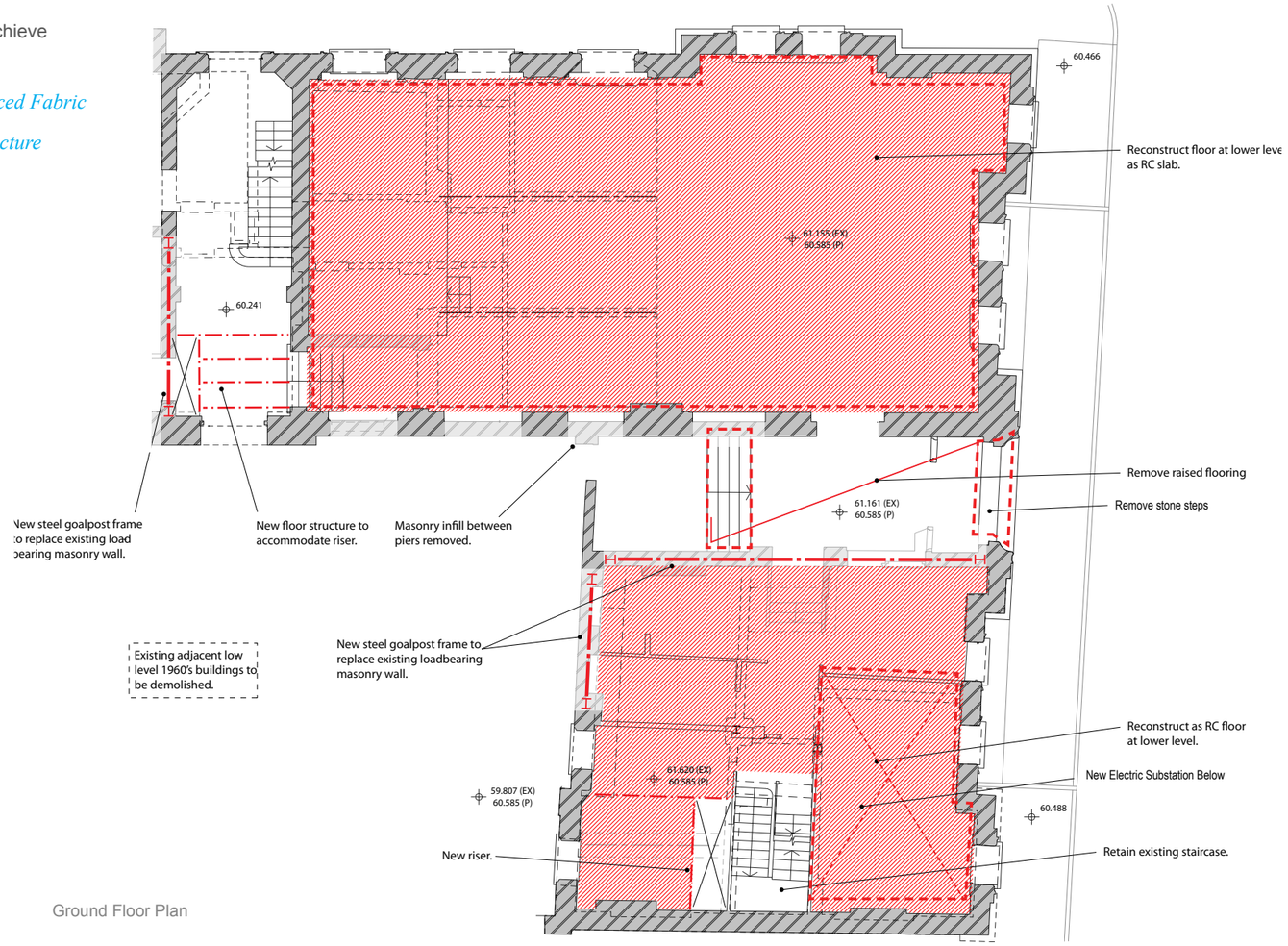


Ground Floor Replaced Ruskin building fabric

*Removing the existing Ground floor interior enables level access and lifts to all floors*

Fabric Intervention to achieve full Accessibility **Key:**

- *Extent of Replaced Fabric*
- *New Major Structure*

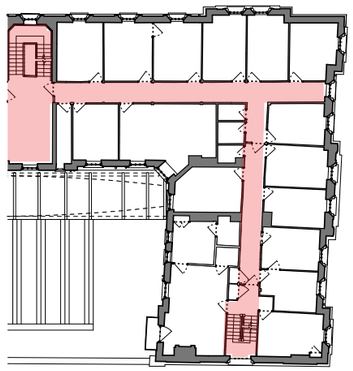



Ground Floor Plan

3.4.3

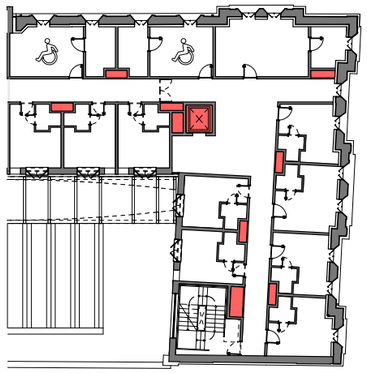
## Fit-for-purpose

In order to meet the demands and expectations of modern 21st century students in Oxford it is crucial that the College is able to provide fit-for-purpose facilities and student rooms. This involves providing ensuite facilities and meeting certain space standards, enlarging the current student bedrooms which are well below the size offered by neighbouring colleges.



1st Floor Existing Ruskin Building fabric

*30 Undersized Student Rooms (11 SqM)*
*Non Compliant Corridors*
*Fire Escape Compromised*
*No En suite Facilities*
*Not Accessible*



1st Floor Replaced Ruskin building fabric

*37 Full sized en suite Student Rooms (15 SqM)*
*100% Disabled Access*
*2 DDA Student Rooms per Floor*
*Lift Access*
*Compliant Stairs*
*Improved Environmental Performance*
*Relationship of floorplan to windows retained.*

Fabric Intervention to achieve fit for purpose student accommodation **Key:**

*- Extent of Replaced Fabric*

*- New Major Structure*

# 3.5

*Worcester College*

# 3.5 Worcester College

3.5.1

View from Worcester College Grounds

An updated Heritage Impact Assessment has been provided by Conservation Architect Richard Griffiths (Appendix 2). In relation to the potential impact on the setting of Worcester Colleges buildings and gardens, the updated report concludes that no significant adverse impact will occur.

*There have always been buildings beyond the north boundary wall of the garden, and the area to the east of the Orchard has always contained maintenance, garden outbuildings and carparking, which greatly reduce the significance of this part of the garden.*

*A thick line of evergreen holm oaks obscures the length of the current 1913 and 1936 buildings, but the 1967 and 1982 buildings are visible between the end of the line of Holm oaks and Worcester College's own Ruskin Lane Buildings of 2006 immediately behind the wall. The new design has a range of buildings in line with, and following the precedent of, those of Worcester College, being of the same height in elevation, albeit with an additional floor within the roof, and set back from the site boundary.*

*Being taller than the existing buildings, the roof of the new building will have a somewhat greater impact than the 2006 building on views from Worcester College, but it is considered that this will not adversely affect the significance of the Orchard and any significant views from the College, bearing in mind the carparking and maintenance buildings.*

Worcester College: maintenance and car park area

South elevation as shown at planning submission stage

Nevertheless, in response to the concerns raised, the design team have reviewed the Worcester College elevation further and in order to introduce greater complexity in the elevation, additional features have been added to articulate the facade. This is in addition to the raising of the cladding line prior to submission in order to increase the balance of stone on this facade and to make a stronger distinction between roof and wall.

*The historically most significant views from the College buildings towards the lake will not be affected by the building.*

*There is no impact on the Carfax height limit, or the Radcliffe Observatory meridian line.*

Proposed changes to south elevation

# 3.6

*Other Matters*

# 3.6 Other Matters

3.6.1

## Student Bedrooms in Holm Oaks proximity

Due to concerns raised about the potential lack of natural light within the student bedrooms along the Ruskin Lane boundary, owing to the close proximity of a group of Holm Oaks within the Worcester College grounds, a modelling exercise has been undertaken to calculate the likely impact. This has shown that the minimum daylight factor for bedrooms will be achieved within the rooms, in accordance with BS8206-2:2008 Code of Practice for Daylight.

3.6.2

## Bat Survey

A further bat survey has also been undertaken. This concluded that the main ecological value of the site lies in the line of Holm Oaks within the Worcester College grounds, where there is an active commuting/foraging route. It is recommended that this boundary be protected and strengthened, with future lighting levels minimised. Potential for roosting bats has been identified within buildings on the southern boundary and as such bat tubes should be installed to replace any lost roosting opportunities. Further bat surveys will be completed prior to the commencement of demolition on-site.

# 4.0

*Summary and Conclusion*

# 4 Summary and Conclusion

## Summary

In summary it should be noted that throughout the design and statutory processes the College has continued to engage and consult the local community, seeking to address any reasonable concerns and provide a robust evidence base/justification for the application proposals.

# Appendix 1

*Sunlight and Daylight Assessment*

Contents



Appendices



# 1. Introduction

1.1.1 Capita Symonds Limited has been instructed on behalf of Collexoncotoo Limited to assess the potential impact of the proposed redevelopment, by Alison Brooks Architects (ABA), of the Exeter College student accommodation site on Walton Street.

1.1.2 The assessment applies detailed numerical modelling studies in conjunction with industry standard criteria to assess the suitability of internal daylighting within the development itself and the impact on daylight and sunlight to surrounding residential properties.

1.1.3 The assessment is based on a detailed 3D model of the proposed development provided by ABA in January 2013.

# 2. Policies and Guidelines

## 2.1 National Planning Policy and Guidelines

2.1.1 There are no national policies relating to the assessment of natural lighting in the built environment.

2.1.2 Although the guidelines presented are not mandatory and not intended as an instrument of planning policy, 'BR 209, Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' represents the UK industry standard reference and is recognised by Local Authorities as a suitable benchmark for sunlight, daylight and overshadowing assessments. The guide stresses that numerical guidelines should be interpreted flexibly. It is further intended to be used in conjunction with British Standard BS8206-2:2008 'Lighting for buildings – Part 2: Code of practice for daylighting.'

## 2.2 Regional Planning Policy

2.2.1 The South East Plan, published in May 2009, presents a number of core regional policies. These include Policy CC4: Sustainable Design And Construction, which states:

> *The design and construction of all new development, and the redevelopment and refurbishment of existing building stock will be expected to adopt and incorporate sustainable construction standards and techniques. This will include:*
>
> *ii. designing to increase the use of natural lighting...*

## 2.3 Local Planning Policy

2.3.1 Oxford's Core Strategy, adopted in March 2011, contains no specific reference to natural lighting. The Oxford Local Plan 2001-2016, adopted in November 2005, includes the following:

Policy CP.10 - Siting Of Development To Meet Functional Needs

> *Planning permission will only be granted where proposed developments are sited to ensure that:*
>
> *e. buildings are orientated to provide satisfactory light, outlook, and privacy; and*
>
> *f. the use or amenity of other properties is adequately safeguarded.*

Policy HS.19 - Privacy And Amenity

> *Planning permission will only be granted for development that adequately provides both for the protection, and/or creation, of the privacy or amenity of the occupants of the proposed and existing neighbouring, residential properties. The City Council will assess each development proposal in terms of:*
>
> *g. sunlight and daylight standards.*

2.3.2 The City Council's stated intention is to safeguard the amenities of the occupiers of properties surrounding any proposed development. This is considered particularly important for existing residential property. New development can block light, have an overbearing effect, overlook adjoining properties or jeopardise their security. So the siting, size and orientation of the proposed structures and the presence of plant and machinery should not affect the privacy, light, outlook or security of occupiers of adjoining properties.

# 3. Assessment Methodology and Criteria

3.1.1 The assessment is carried out in accordance with the industry standard 'BR 209, Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'.

3.1.2 BR 209 stresses that the guidelines are purely advisory.

## 3.2 DAYLIGHT

3.2.1 BR 209 describes three main parameters for the assessment of natural daylighting of internal spaces:

- Vertical Sky Component (VSC);
- Average Daylight Factor (ADF); and
- No Sky Line (NSL).

3.2.2 For developments designed in detail, the principal means of assessing daylight is the Average Daylight Factor (ADF). This is derived from BS8206-2:2008 and represents a detailed analysis of interior daylighting. It accounts for window sizes, room sizes, reflectance of internal surface and room use, as well as the amount of skylight (or direct sky illuminance) falling on the window(s). Minimum recommended values of ADF are as follows:

- Kitchens - 2.0%
- Living Rooms - 1.5%
- Bedrooms - 1.0%

3.2.3 If a predominantly daylit appearance is required, an ADF of 5% is recommended in the absence of supplementary daytime electric lighting, and 2% with supplementary electric lighting.

3.2.4 The above guideline values principally relate to dwellings. However, it is considered good practice to target suitable levels of interior daylight in student accommodation, both to avoid a gloomy interior appearance and to offer potential energy savings via lighting efficiency. Daylighting to habitable rooms within the development is therefore considered in the current report.

3.2.5 The principal means of assessing the impact of a development on existing surrounding dwellings is the Vertical Sky Component (VSC). This is a measure of the amount of skylight (or direct sky illuminance) falling on the external surface, as a ratio of the simultaneous skylight on an unobstructed horizontal surface. BR 209 provides the following indicators on the meaning of the VSC:

- VSC ≥ 27% - conventional window design will usually provide adequate daylight
- 15% ≤ VSC < 27% - special measures such as larger windows or tailored room layout are usually required to ensure adequate daylight
- 5% ≤ VSC < 15% - very difficult to achieve adequate daylight unless very large windows are adopted
- VSC < 5% - often impossible to achieve adequate daylight

3.2.6 BR 209 therefore suggests that a VSC of 27% indicates the potential for good interior daylighting. If, following the introduction of a new development, the VSC at windows of existing surrounding buildings is reduced to less than 27% and to less than 0.8 times its former value, then the loss of daylight will be noticeable to the occupants. BR 209 does however state that this value, based on a suburban scenario comprising 2-storey housing, is advisory only.

3.2.7 BR 209 recommends that daylighting to residential buildings, schools, hospitals, hotels, small workshops and most offices be assessed. However, bathrooms, toilets, storerooms, circulation areas and garages do not have significant daylight requirements and need not be assessed.

3.2.8 The No Sky Line (NSL) divides a room into areas which can and cannot see the sky, at a reference height termed the 'working plane'. It therefore identifies parts of the room which receive some direct skylight. However, it does not quantify the amount of skylight and therefore provides only a very crude indication of the daylight distribution within a room. BR 209 considers the NSL only in terms of potential impact of a new development on rooms of existing buildings and only where the internal layout is known due to the sensitivity to the internal room dimensions. At this stage, the internal layout of the surrounding buildings is not known and the NSL is therefore not considered in the current assessment.

## 3.3 SUNLIGHT TO BUILDINGS

3.3.1 BR 209 assesses access to direct sunlight in terms of the Annual Probable Sunlight Hours (APSH) reaching a window. Based on BS8206-2, it recommends that rooms where occupants have a reasonable expectation of direct sunlight should received at least 25% of the APSH, with at least 5% of the APSH in winter months (between 21st September and 21st March).

3.3.2 The main requirement for sunlight within buildings is in living rooms of dwellings, with sunlight considered less important in bedrooms and kitchens. Some non-domestic buildings have specific requirements for sunlight. This includes buildings such as hospitals and care homes where occupants may have limited access to the outdoors. With its more transient, and predominantly bedroom, usage it is normal to consider student accommodation similarly to hotels or hostels. The student accommodation is therefore not considered to have any specific requirements for sunlight access, though sunlight within habitable rooms of the proposed development is still assessed in the current report, for information.

3.3.3 If following the introduction of a new development the APSH at windows of existing surrounding dwellings is less than the above values and reduced to less than 0.8 times its former values (for either the year or winter) then the loss of sunlight will be noticeable to the occupants.

### 3.4 Sunlight to Amenity Spaces

3.4.1 Access to direct sunlight is considered important in optimising the amenity value of external public and private spaces in and around the site. BR 209 recommends the Spring Equinox (21st March) as a suitable date for the assessment of overshadowing. It suggests that at least 50% of an amenity space should receive at least 2 hours of direct sunlight at ground level during the course of the day (assuming a clear sky).

3.4.2 If, following the introduction of a new development, the area of an existing space receiving more than 2 hours of sun is less than 50% and reduced to less than 0.8 times its former value then the loss of sunlight will be noticeable.

3.4.3 For critical areas further detailed analysis is recommended. This is typically done through a qualitative analysis of transient shadows through the course of selected dates. The current study presents shadow plots at regular intervals for 21st March, 21st June and 21st December, covering the median, best case and worst case days.

### 3.5 Modelling Studies

3.5.1 A numerical 3D model of the existing site and surrounding area was constructed in CAD, based on detailed survey information provided by ABA. A 3D model of the proposed development was also provided by the architects.

3.5.2 An initial assessment was carried out to identify the extent of surrounding area for which any part of the proposed development will be visible above an angle to the horizontal of 25°. This is the minimum angle identified in BR 209 for which there is potential for a substantial effect on either sunlight or daylight. Within this extent, existing main windows facing within 90° of the site, and not already blocked by other existing buildings, were modelled. Amenity spaces within the same extent, to the north of the site, were also modelled. For these, boundary walls of height greater than 1.5m were included.

3.5.3 Based on this, the modelling studies have assessed the potential impact on daylight access to the properties at Ruskin Lane (adjacent to the site), 10 – 12 Worcester Place, 16 – 28 Worcester Place, 2a Walton Street, 4 Walton Street and 151 - 162 Walton Street.

3.5.4 In accordance with BR 209, potential impacts on sunlight access are only expected on southerly orientated facades lying within 90° of due north from the site. This applies to the properties on Worcester Place, 4 Walton Street and 151 – 157 Walton Street only.

3.5.5 Overshadowing of the garden of 4 Walton Street and the east end of the quad between Ruskin Lane and 10 – 12 Worcester Place is also considered.

3.5.6 Ecotect 2011 was used to carry out the daylight, sunlight and overshadowing simulations.

3.5.7 Details of the model and results are presented in Appendix A.

# 4. Proposed Development

4.1.1 The proposed generally incorporates large windows, with high head heights and, with the low-level surrounds, would generally be expected to enjoy good daylight amenity.

4.1.2 There are a significant number of north facing rooms, which are not expected to enjoy good sunlight access. However, as stated above, the development's transient, and predominantly bedroom, usage is not considered to have any specific requirements for internal sunlight.

4.1.3 The resulting daylight, sunlight and overshadowing within the development is summarised below, with full results presented in Appendix A.

### 4.2 Daylight

4.2.1 The rooms of the proposed development generally enjoy good internal daylight, with a majority of rooms having a naturally daylit appearance.

4.2.2 Only the large communal kitchens on the 1st and 2nd floors have internal daylight below the guideline recommendations. These rooms are relatively large and served by a single window in the corner. As a result, the food preparation area, set back from the window, is unlikely to have any expectation of natural lighting. The dining / seating area adjacent to the window is considered adequately daylit for a dining or living room. Overall, these rooms are therefore expected to be satisfactory.

### 4.3 Sunlight to Building

4.3.1 All rooms along the south elevations enjoy good access to the sunlight. Most of the rooms on the end elevations also enjoy good sunlight access on an annual basis, though a few lower-level rooms receive less winter sun.

4.3.2 As would be expected, the north facing rooms, including the ground floor common room, are poorly sunlit. However, given their usage, this is not considered significant.

### 4.4 Sunlight to Amenity Spaces

4.4.1 The south quad is considered well sunlit, with approximately 55% of the space receiving more than 2 hours direct sunlight on the equinox. The quad is substantially shadowed in winter, but enjoys good access to sunlight in summer.

4.4.2 The north quad is poorly sunlit, receiving little direct sunlit on the equinox and in permanent shadow during winter. Some sun is enjoyed around midday and early afternoon in summer. Given the availability of surrounding amenity spaces with good access to the sunlight this effect is not considered significant.

# 5. Impact on Surrounding Dwellings

5.1.1 The proposed development represents a relatively modest extension in the massing of the existing building, and incorporates a sloping roof in the tallest areas to minimise the potential impact on neighbouring properties. The resulting impact on daylight, sunlight and overshadowing is summarised in Table 5.1 and discussed below, with full results presented in Appendix A.

Table 5.1: Summary of Impact on Surrounds

| Property | Impact | | |
|---|---|---|---|
| | Daylight | Sunlight to Building | Sunlight to Amenity Space |
| Ruskin Lane | Insignificant | Insignificant | Insignificant |
| 10 Worcester Place | Minor Adverse | Minor Adverse | |
| 12 Worcester Place | Insignificant | Insignificant | |
| 16 Worcester Place | Insignificant | Insignificant | Insignificant |
| 17 Worcester Place | Insignificant | Insignificant | Insignificant |
| 18 Worcester Place | Insignificant | Insignificant | Insignificant |
| 19 Worcester Place | Insignificant | Insignificant | Insignificant |
| 20 Worcester Place | Insignificant | Insignificant | Insignificant |
| 21 Worcester Place | Insignificant | Insignificant | Insignificant |
| 22 Worcester Place | Insignificant | Insignificant | Insignificant |
| 23 Worcester Place | Insignificant | Insignificant | Insignificant |
| 24 Worcester Place | Insignificant | Insignificant | Insignificant |
| 25 Worcester Place | Insignificant | Insignificant | Insignificant |
| 26 Worcester Place | Insignificant | Insignificant | Insignificant |
| 27 Worcester Place | Insignificant | Insignificant | Insignificant |
| 28 Worcester Place | Insignificant | Insignificant | Insignificant |
| 2A Walton Street | Minor Adverse | Insignificant | Insignificant |
| 4 Walton Street | Insignificant | Insignificant / Minor Adverse | Minor Adverse |
| 151 Walton Street | Insignificant | Insignificant | Insignificant |
| 152 Walton Street | Insignificant | Insignificant | Insignificant |
| 153 Walton Street | Insignificant | Insignificant | Insignificant |
| 154 Walton Street | Insignificant | Insignificant | Insignificant |
| 155 Walton Street | Insignificant | Insignificant | Insignificant |
| 156 Walton Street | Insignificant | Insignificant | Insignificant |
| 157 Walton Street | Insignificant | Insignificant | Insignificant |
| 158 Walton Street | Insignificant | Insignificant | Insignificant |
| 159 Walton Street | Insignificant | Insignificant | Insignificant |
| 160 Walton Street | Insignificant | Insignificant | Insignificant |
| 161 Walton Street | Insignificant | Insignificant | Insignificant |
| 162 Walton Street | Insignificant | Insignificant | Insignificant |

## 5.2 DAYLIGHT

5.2.1 The southwest block of the proposed development potentially impacts on daylight within the student residence at 10 Worcester Place. However, the skylight reaching in the worst affected window is reduced from the existing conditions by a factor of 0.78, only marginally below the 0.8 value considered acceptable by the guidelines. The dwelling also appears to have good size windows such that it is expected there is still potential to enjoy adequate daylight within the rooms. This effect is therefore considered no worse than minor.

5.2.2 In accordance with the guidelines, no further significant impacts are expected on Ruskin Lane or Worcester Place.

5.2.3 2a Walton Street sits very close and directly faces the development, such that even minor development of the existing Exeter College building would have potential impacts. The upper floor windows also sit closely under a significant overhanging eave. As a result, the small eastern window on the north elevation currently receives little skylight and the introduction of the proposed development would reduce the VSC from 3.5% to 1.6%. Given its size, the window appears likely to serve a bathroom, in which case the impact would be insignificant. A bedroom served by this window would likely be considered poorly lit under existing site conditions, such that the potential impact would be considered minor. The adjacent larger window is likely to serve a bedroom. Here the skylight is reduced from the existing conditions by a factor of 0.78, only marginally below the 0.8 value considered acceptable by the guidelines. The size of this window is such that it is expected there is still potential to enjoy adequate internal daylight for a bedroom. This effect is therefore considered no worse than minor.

5.2.4 No further significant impacts are expected on Walton Street.

## 5.3 SUNLIGHT TO BUILDINGS

5.3.1 The southwest block of the proposed development potentially impacts on sunlight within the student residences at 10 and 12 Worcester Place, particularly within the internal corner created by the dwellings, where sunlight from the southeast, over the site, is more important. It is expected that the affected 1st floor window on the east elevation of 12 Worcester Place serves a dual aspect room, with good sunlight access from the main southern window. This effect is therefore considered insignificant.

5.3.2 The ground floor room in the southwest corner of10 Worcester Place experiences a relatively minor reduction in the annual sunlight, with the total APSH reduced by a factor of 0.78 to 21.9%, only marginally below the 0.8 reduction or 25% APSH recommended by the guidelines. The effect is greater during winter, when the sunpath is lower, reducing from 3.9% APSH for existing site conditions to 1.6% APSH. It is understood that the affected room is a study/bedroom and this impact is therefore considered no worse than minor.

5.3.3 In accordance with the guidelines, no further significant impacts are expected on Ruskin Lane or Worcester Place.

5.3.4 The proposed development has the potential to impact on winter sunlight to the small rear extension of 4 Walton Street, where the south facing windows are directly opposite the development. Here the winter sunlight is reduced from the existing conditions by a factor of 0.76, only marginally below the 0.8 value considered acceptable by the guidelines. The room also enjoys good sunlight access on an annual basis. If the affected room is a living room this impact would be considered minor, otherwise the impact would be considered insignificant.

5.3.5 No further significant impacts are expected on Walton Street.

### 5.4 Sunlight to Amenity Spaces

5.4.1 For existing site conditions the garden of 4 Walton Street, directly to the north of the development is considered poorly sunlight. The garden is surrounded by a tall boundary fence along its south boundary, with a small building at the west end. The main house also extends out from the southwest corner, further obstructing the northeast corner of the garden from sunlight. With the introduction of the proposed development the area of garden enjoying more than 2 hours of direct sunlight on the equinox decreases from 28% to 14%.

5.4.2 This represents a worst-case impact, when the sunpath is partially obstructed by the taller roof of the proposed development. During mid-winter, the garden is in constant shadow for both existing and proposed site conditions. In mid-summer, when the sunpath is higher, and sunshine is most appreciated, the proposed development has no impact on sunlight to the garden. Overall, this effect is therefore considered minor.

5.4.3 For existing site conditions the eastern part of the courtyard between the rear of 10 - 12 Worcester Place and Ruskin Lane is considered satisfactorily sunlight, with 53% of the space enjoying more than 2 hours direct sunlight on the equinox. The proposed development slightly increases the overshadowing of the northeast area, in front of 10 Worcester Place, in early mornings from spring to autumn. However there is no additional overshadowing effect from late morning, or during winter. With the proposed development introduced, more than 49% of the eastern part of the courtyard retains more than 2 hours direct sunlight on the equinox. Although this is very marginally below the guideline recommendations, the area is reduced by a factor of just 0.93, well within the guidelines. Overall, the area is considered to retain satisfactory sunlight and the impact of the proposed development is deemed insignificant.

5.4.4 No further significant impacts are expected on surrounding amenity spaces.

# 6. Conclusions

### 6.1 Proposed Development

6.1.1 The proposed development enjoys good internal daylight with a majority of rooms having a naturally daylit appearance and the worst lit habitable rooms considered acceptable.

6.1.2 The proposed development has no specific requirement for direct sunlight, although all rooms along the south elevation and most of the rooms on the end elevation generally enjoy good access to the sunlight. As would be expected, the north facing rooms are poorly sunlit. However, given their usage, this is not considered significant.

6.1.3 The north quad is poorly sunlit, receiving direct sunlight only around the middle of the day in summer. Given the availability of surrounding amenity spaces with good access to the sunlight, including the south quad, this effect is not considered significant.

### 6.2 Impact on Surrounding Area

6.2.1 The proposed development has a potential minor localised impact on daylight within 10 Worcester Place and 2a Walton Street. The worst affected room is expected to be a bathroom, in which case the impact is insignificant. The other rooms affected have good size windows such that it is expected there is still potential to enjoy adequate daylight within the rooms.

6.2.2 The proposed development has a potential localised impact on sunlight within 10 Worcester Place, 12 Worcester Place and 4 Walton Street. It is expected that the affected 1st floor window on the east elevation of 12 Worcester Place serves a dual aspect room, with good sunlight from the main southern window, and this effect is therefore considered insignificant. The ground floor room in the southwest corner of 10 Worcester Place is primarily affected during winter, when the sunpath is lower. The affected room is understood to be a study/bedroom and this impact is therefore considered no worse than minor. The rear extension to 4 Walton Street is also primarily affected during winter. If the affected room is a living room this impact would be considered minor, otherwise it would be considered insignificant.

6.2.3 The proposed development has a potential localised impact on sunlight within the garden of 4 Walton Street. This garden is considered poorly sunlight for existing site conditions, and the introduction of the proposed development would further overshadow the garden primarily in spring and autumn. The proposed development would not affect sunlight during winter or summer and, overall, this effect is therefore considered minor.

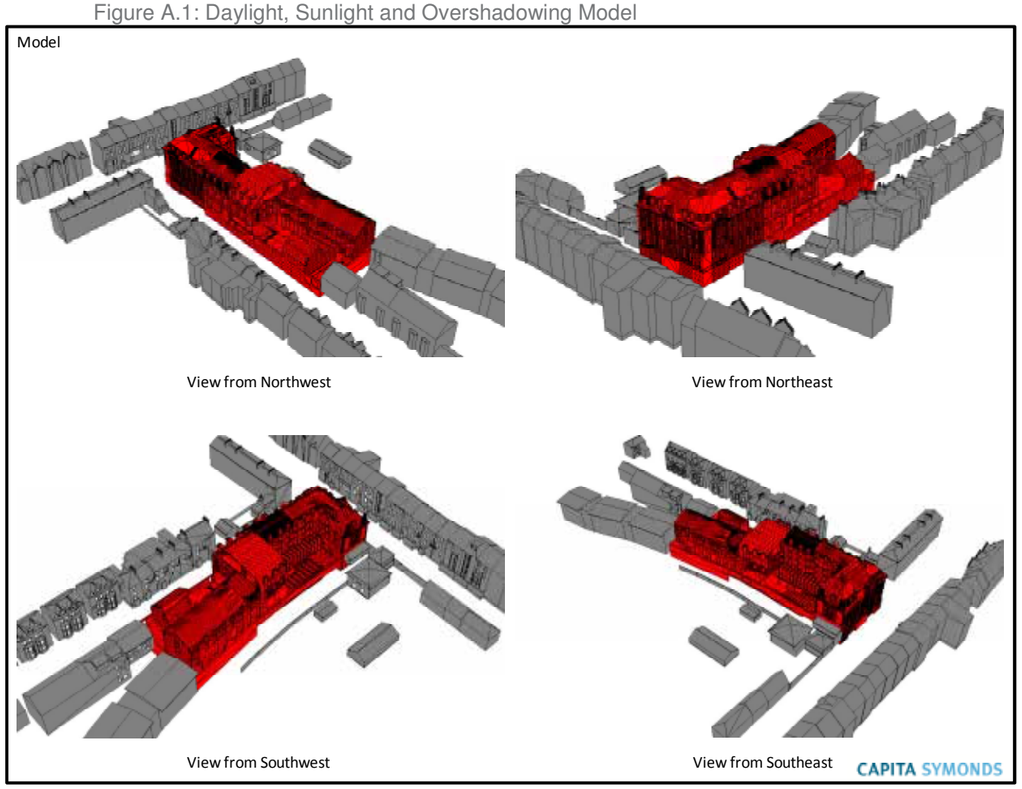
6.2.4 The proposed development has no significant impact on sunlight within the courtyard between 10 - 12 Worcester Place and Ruskin Lane.

6.2.5 No further significant impacts are expected.

## A.1 MODEL

The numerical model of the proposed development, and existing site conditions and surrounding area was constructed based on 3D CAD models and detailed survey information provided by the design team in January 2013, and is presented in Figure A.1.

Figure A.1: Daylight, Sunlight and Overshadowing Model




## A.2 DAYLIGHT AND SUNLIGHT RESULTS – PROPOSED DEVELOPMENT

Internal daylight within the rooms of the proposed development is presented in terms of the Average Daylight Factor (ADF). For dwellings, minimum recommended values of ADF, from BS8206-2:2008, are as follows:

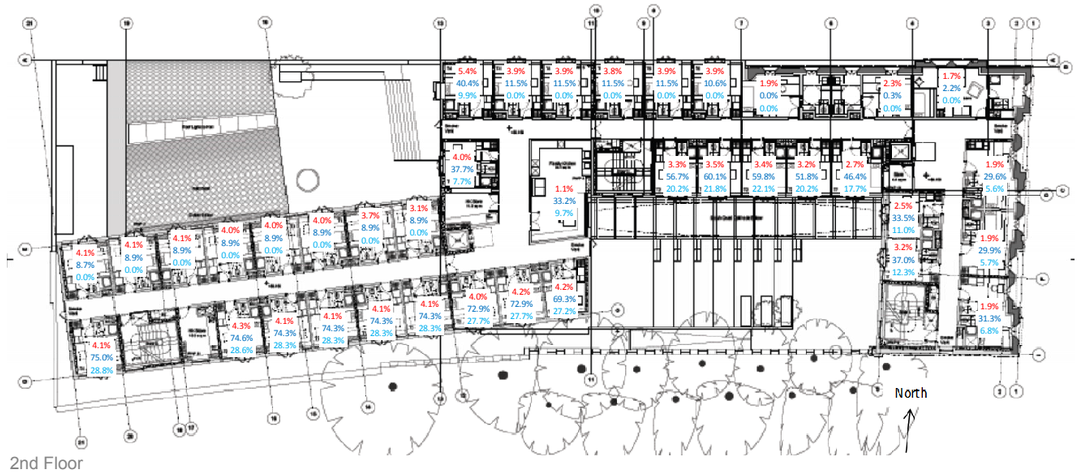
- Kitchens - 2.0%
- Living Rooms - 1.5%
- Bedrooms - 1.0%

The main requirement for sunlight is within living rooms of dwellings which, based on BS8206-2:2008 guidelines, should receive at least 25% of the Annual Probable Sunlight Hours (APSH), with at least 5% of the APSH in winter months (between 21st September and 21st March). Sunlight is less important in kitchens and bedrooms, and student accommodation is not generally considered to have any specific requirements for sunlight access.

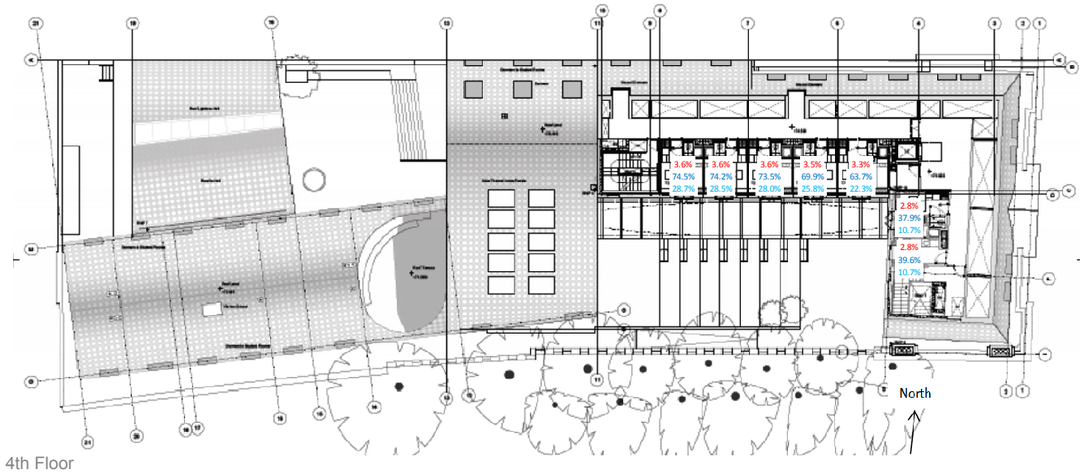
BR 209 stresses that the above guidelines are purely advisory. BS8206-2 also suggests that the absence of sunlight will be more acceptable if a room is necessarily north facing.

The values are presented in Figures A.2 in the following format:

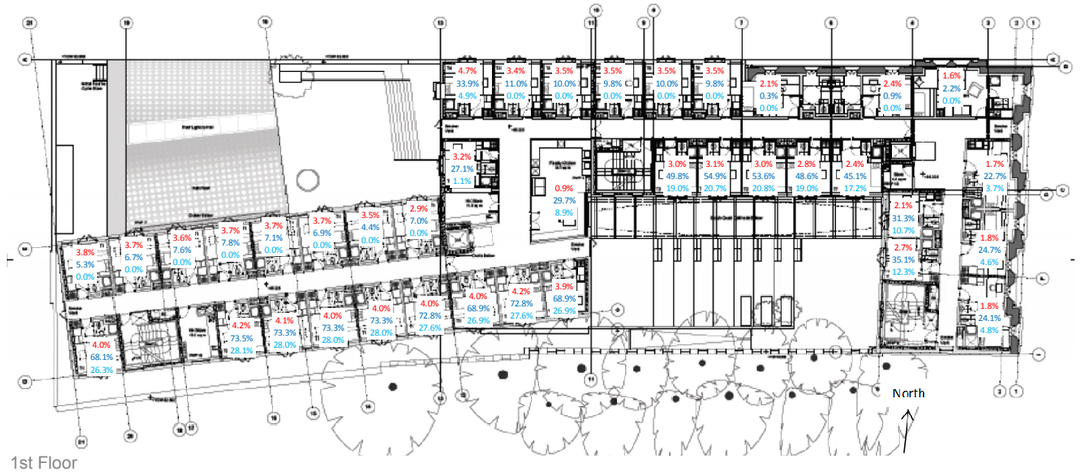
*.*% - ADF
**.*% - $APSH_{total}$
*.*% - $APSH_{winter}$



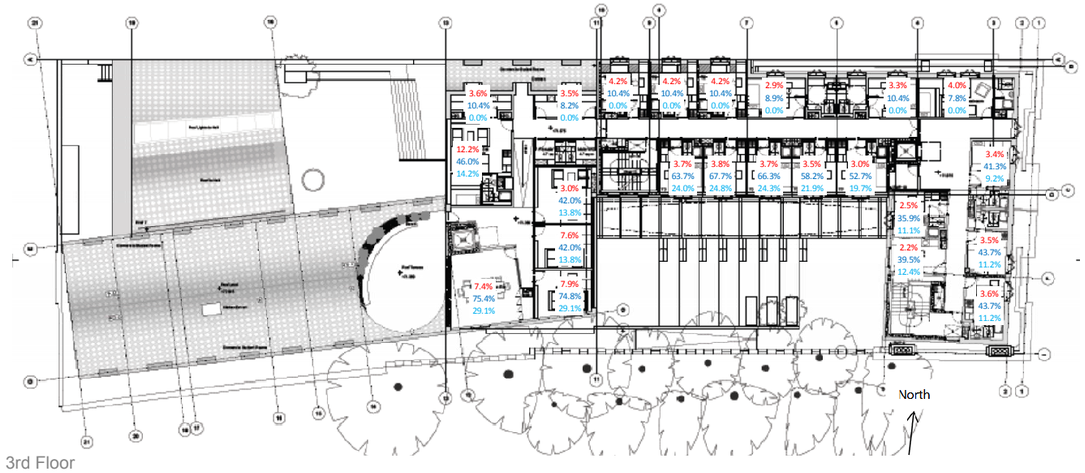

2nd Floor



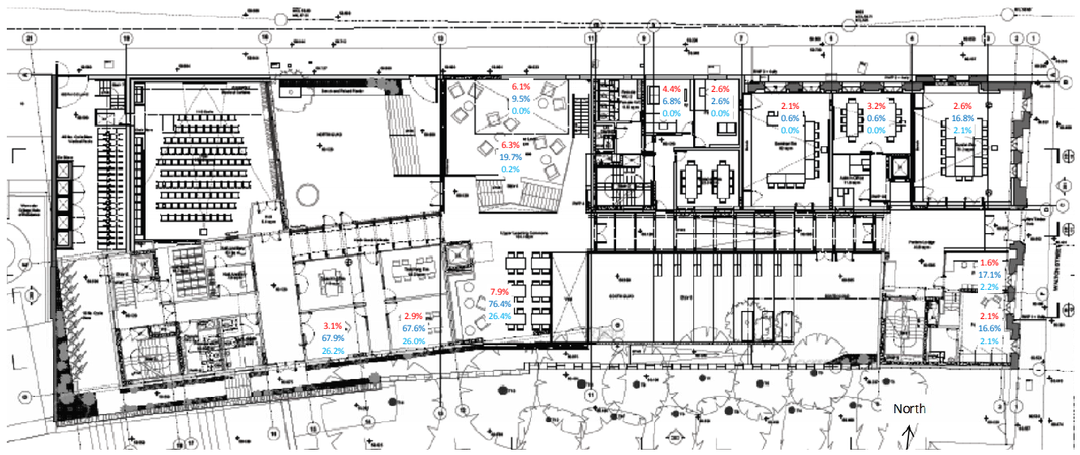

4th Floor




1st Floor




3rd Floor




Ground Floor

Figure A.2: Proposed Development Daylight (ADF) and Sunlight (APSH)

CAPITA SYMONDS

## A.3 DAYLIGHT AND SUNLIGHT RESULTS – SURROUNDS

The potential effect on daylight within existing surrounding buildings is based on the Vertical Sky Component (VSC). BR 209 suggests that a VSC of 27% indicates the potential for good interior daylight. If, following the introduction of a new development, the VSC at windows of existing surrounding buildings is reduced to less than 27% and to less than 0.8 times its former value, then the loss of daylight will be noticeable to the occupants.

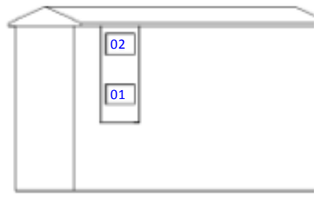
Sunlight access to southerly orientated facades of existing surrounding buildings lying within 90° of due north from the site is assessed in terms of the Annual Probable Sunlight Hours (APSH) reaching the windows. The main requirement for sunlight within a dwelling is in living rooms which, based on BS8206-2:2008 guidelines, should receive at least 25% of the APSH, with at least 5% of the APSH in winter months (between 21st September and 21st March). Sunlight is less important in kitchens and bedrooms. If following the introduction of a new development the APSH at windows of existing surrounding buildings is less than the above values and reduced to less than 0.8 times its former values (for either the year or winter) then the loss of sunlight will be noticeable to the occupants.

BR 209 stresses that the above guidelines are purely advisory.

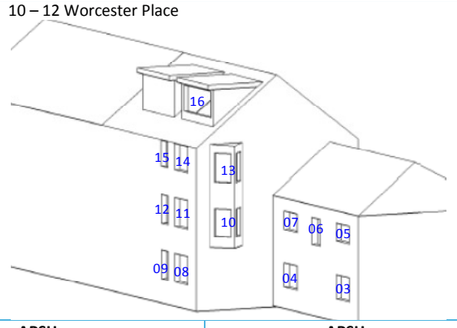
The VSC and APSH for applicable surrounding buildings are presented for existing and proposed site conditions in Figure A.3. Exceedances of guidelines recommendations, in terms of reductions in daylight or sunlight, are highlighted in red.

Figure A.3: Impact on Daylight (VSC) and Sunlight (APSH) to Surrounding Buildings

Ruskin Lane




10 – 12 Worcester Place

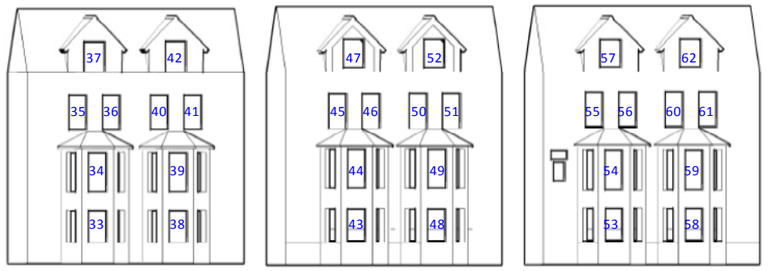



| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 1 | 28.0% | 24.8% | 0.88 | North Facing | | | | | |
| 2 | 27.3% | 25.7% | 0.94 | | | | | | |
| 3 | 15.5% | 15.2% | 0.98 | 28.0% | 23.1% | 0.83 | 4.8% | 4.3% | 0.89 |
| 4 | 17.7% | 14.0% | 0.79 | 28.1% | 21.9% | 0.78 | 3.9% | 1.6% | 0.42 |
| 5 | 24.1% | 21.6% | 0.89 | 42.0% | 41.3% | 0.98 | 11.6% | 9.4% | 0.81 |
| 6 | 28.0% | 22.0% | 0.78 | 49.5% | 40.2% | 0.81 | 13.9% | 8.7% | 0.63 |
| 7 | 25.2% | 20.3% | 0.80 | 45.4% | 34.6% | 0.76 | 12.2% | 6.2% | 0.51 |
| 8 | 16.0% | 14.5% | 0.91 | 42.9% | 34.1% | 0.80 | 3.4% | 3.0% | 0.88 |
| 9 | 17.0% | 16.0% | 0.94 | 43.5% | 35.9% | 0.83 | 3.4% | 3.4% | 0.99 |
| 10 | 23.1% | 19.4% | 0.84 | 32.5% | 21.9% | 0.67 | 4.2% | 2.2% | 0.52 |
| 11 | 24.5% | 23.2% | 0.95 | 56.2% | 49.1% | 0.87 | 9.1% | 8.2% | 0.90 |
| 12 | 25.1% | 24.0% | 0.96 | 55.9% | 50.1% | 0.90 | 8.9% | 8.4% | 0.94 |
| 13 | 31.9% | 28.9% | 0.91 | 49.6% | 40.9% | 0.82 | 13.4% | 10.9% | 0.82 |
| 14 | 34.6% | 33.3% | 0.96 | 76.0% | 70.7% | 0.93 | 24.3% | 22.9% | 0.94 |
| 15 | 35.0% | 33.9% | 0.97 | 77.9% | 73.3% | 0.94 | 25.8% | 24.6% | 0.95 |
| 16 | 36.0% | 35.1% | 0.97 | 75.6% | 71.9% | 0.95 | 29.6% | 27.5% | 0.93 |

16 Worcester Place


| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 17 | 27.8% | 27.7% | 1.00 | 60.7% | 60.0% | 0.99 | 13.8% | 13.8% | 1.00 |
| 18 | 28.6% | 28.6% | 1.00 | 59.5% | 58.8% | 0.99 | 12.8% | 12.8% | 1.00 |
| 19 | 28.0% | 27.9% | 1.00 | 60.1% | 59.1% | 0.98 | 12.2% | 12.0% | 0.98 |
| 20 | 27.6% | 27.3% | 0.99 | 59.5% | 58.3% | 0.98 | 12.1% | 11.8% | 0.97 |
| 21 | 33.1% | 33.1% | 1.00 | 68.3% | 68.0% | 1.00 | 21.5% | 21.3% | 0.99 |
| 22 | 31.5% | 31.4% | 1.00 | 70.5% | 70.3% | 1.00 | 20.6% | 20.4% | 0.99 |
| 23 | 30.6% | 30.4% | 1.00 | 66.8% | 66.3% | 0.99 | 19.1% | 18.9% | 0.99 |
| 24 | 30.0% | 29.8% | 0.99 | 64.9% | 63.9% | 0.99 | 18.1% | 17.9% | 0.99 |
| 25 | 36.1% | 36.0% | 1.00 | 75.7% | 74.8% | 0.99 | 24.1% | 23.5% | 0.98 |
| 26 | 35.6% | 35.5% | 1.00 | 75.0% | 74.2% | 0.99 | 23.5% | 23.0% | 0.98 |
| 27 | 35.1% | 34.9% | 1.00 | 74.6% | 73.8% | 0.99 | 23.2% | 22.8% | 0.98 |
| 28 | 34.7% | 34.5% | 0.99 | 75.0% | 73.9% | 0.99 | 23.6% | 22.8% | 0.97 |
| 29 | 38.4% | 38.2% | 1.00 | 81.6% | 81.1% | 0.99 | 28.3% | 27.9% | 0.99 |
| 30 | 38.0% | 37.9% | 1.00 | 81.6% | 81.1% | 0.99 | 28.3% | 27.9% | 0.99 |
| 31 | 37.8% | 37.6% | 0.99 | 81.9% | 80.8% | 0.99 | 28.5% | 27.7% | 0.97 |
| 32 | 37.5% | 37.2% | 0.99 | 82.1% | 80.8% | 0.98 | 28.6% | 27.7% | 0.97 |

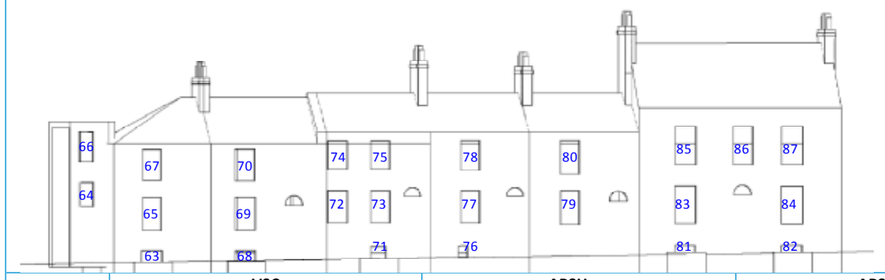
17 – 22 Worcester Place




| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 33 | 26.3% | 26.2% | 1.00 | 56.8% | 56.7% | 1.00 | 10.1% | 10.1% | 1.00 |
| 34 | 29.3% | 29.0% | 0.99 | 63.7% | 62.4% | 0.98 | 15.2% | 15.1% | 0.99 |
| 35 | 34.3% | 34.0% | 0.99 | 74.6% | 73.6% | 0.99 | 23.4% | 22.5% | 0.96 |
| 36 | 34.1% | 33.7% | 0.99 | 75.1% | 73.6% | 0.98 | 23.8% | 22.5% | 0.95 |
| 37 | 37.4% | 36.9% | 0.99 | 82.4% | 80.3% | 0.97 | 28.9% | 27.4% | 0.95 |
| 38 | 26.5% | 26.1% | 0.99 | 56.3% | 55.6% | 0.99 | 10.4% | 9.8% | 0.94 |
| 39 | 29.4% | 29.0% | 0.98 | 63.3% | 61.7% | 0.98 | 15.1% | 14.5% | 0.96 |
| 40 | 34.0% | 33.5% | 0.99 | 75.2% | 73.7% | 0.98 | 23.8% | 22.6% | 0.95 |
| 41 | 34.0% | 33.3% | 0.98 | 76.1% | 73.2% | 0.96 | 24.6% | 22.2% | 0.91 |
| 42 | 37.3% | 36.6% | 0.98 | 82.9% | 80.1% | 0.97 | 29.3% | 27.2% | 0.93 |
| 43 | 26.6% | 26.4% | 0.99 | 56.8% | 56.8% | 1.00 | 10.1% | 10.1% | 1.00 |
| 44 | 29.7% | 29.2% | 0.98 | 63.5% | 62.6% | 0.99 | 15.2% | 14.5% | 0.96 |
| 45 | 34.8% | 33.7% | 0.97 | 77.8% | 75.1% | 0.97 | 25.9% | 23.7% | 0.92 |
| 46 | 34.8% | 33.6% | 0.97 | 77.7% | 74.3% | 0.96 | 25.8% | 23.1% | 0.90 |
| 47 | 37.8% | 36.7% | 0.97 | 82.6% | 79.3% | 0.96 | 29.1% | 26.6% | 0.91 |

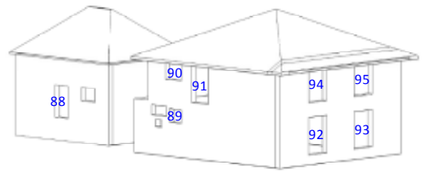
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 48 | 26.9% | 26.4% | 0.98 | 56.6% | 56.1% | 0.99 | 10.4% | 10.1% | 0.97 |
| 49 | 29.9% | 29.3% | 0.98 | 63.3% | 62.4% | 0.99 | 15.7% | 15.0% | 0.96 |
| 50 | 35.1% | 33.8% | 0.96 | 78.1% | 74.2% | 0.95 | 26.1% | 23.0% | 0.88 |
| 51 | 35.1% | 33.8% | 0.96 | 77.4% | 72.7% | 0.94 | 25.6% | 22.2% | 0.87 |
| 52 | 38.3% | 37.0% | 0.97 | 82.3% | 79.0% | 0.96 | 28.8% | 26.3% | 0.91 |
| 53 | 26.5% | 26.2% | 0.99 | 52.9% | 52.9% | 1.00 | 10.1% | 9.9% | 0.98 |
| 54 | 30.3% | 29.2% | 0.96 | 65.5% | 63.2% | 0.97 | 16.9% | 15.4% | 0.91 |
| 55 | 35.4% | 33.9% | 0.96 | 76.7% | 72.5% | 0.94 | 25.0% | 21.7% | 0.87 |
| 56 | 35.4% | 33.7% | 0.95 | 76.3% | 71.8% | 0.94 | 24.9% | 21.3% | 0.86 |
| 57 | 38.3% | 36.4% | 0.95 | 80.8% | 77.4% | 0.96 | 28.1% | 25.6% | 0.91 |
| 58 | 26.1% | 25.8% | 0.99 | 49.8% | 49.2% | 0.99 | 10.4% | 10.3% | 0.99 |
| 59 | 30.1% | 28.8% | 0.96 | 62.4% | 59.9% | 0.96 | 17.0% | 15.2% | 0.90 |
| 60 | 35.3% | 33.4% | 0.95 | 75.1% | 70.4% | 0.94 | 23.9% | 20.6% | 0.86 |
| 61 | 35.0% | 33.4% | 0.95 | 74.7% | 70.4% | 0.94 | 23.6% | 20.6% | 0.87 |
| 62 | 38.4% | 36.1% | 0.94 | 80.0% | 77.2% | 0.97 | 27.5% | 25.4% | 0.92 |

23 – 28 Worcester Place

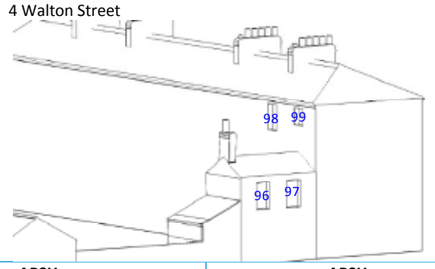



| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 63 | 23.1% | 22.5% | 0.98 | 49.6% | 49.8% | 1.00 | 6.3% | 6.0% | 0.96 |
| 64 | 22.0% | 21.6% | 0.98 | 42.2% | 41.2% | 0.98 | 13.2% | 12.4% | 0.94 |
| 65 | 27.0% | 27.1% | 1.00 | 57.4% | 58.0% | 1.01 | 11.3% | 12.1% | 1.07 |
| 66 | 32.7% | 31.9% | 0.98 | 66.5% | 64.3% | 0.97 | 21.1% | 19.3% | 0.92 |
| 67 | 30.9% | 29.6% | 0.96 | 66.9% | 64.3% | 0.96 | 18.1% | 16.5% | 0.91 |
| 68 | 22.1% | 21.4% | 0.97 | 48.9% | 48.4% | 0.99 | 6.0% | 5.7% | 0.95 |
| 69 | 25.9% | 25.9% | 1.00 | 55.2% | 56.6% | 1.02 | 10.1% | 11.0% | 1.09 |
| 70 | 29.9% | 29.4% | 0.98 | 66.2% | 63.5% | 0.96 | 17.6% | 15.9% | 0.90 |
| 71 | 20.2% | 20.9% | 1.04 | 47.0% | 47.0% | 1.00 | 5.3% | 5.2% | 0.98 |
| 72 | 24.7% | 25.1% | 1.02 | 53.8% | 53.4% | 0.99 | 9.1% | 9.3% | 1.02 |
| 73 | 23.8% | 24.5% | 1.03 | 53.0% | 52.5% | 0.99 | 8.7% | 8.8% | 1.01 |
| 74 | 29.6% | 28.6% | 0.97 | 64.5% | 61.7% | 0.96 | 16.3% | 15.0% | 0.92 |
| 75 | 28.9% | 28.5% | 0.99 | 63.4% | 61.7% | 0.97 | 15.4% | 14.9% | 0.97 |
| 76 | 19.0% | 20.6% | 1.08 | 45.9% | 46.7% | 1.02 | 4.9% | 5.3% | 1.08 |
| 77 | 22.3% | 23.4% | 1.05 | 51.2% | 51.5% | 1.01 | 7.4% | 8.5% | 1.15 |
| 78 | 26.3% | 26.7% | 1.01 | 59.9% | 57.3% | 0.96 | 12.7% | 11.5% | 0.91 |
| 79 | 20.1% | 22.0% | 1.10 | 47.9% | 49.8% | 1.04 | 5.1% | 7.6% | 1.49 |
| 80 | 24.0% | 24.9% | 1.04 | 54.0% | 54.5% | 1.01 | 8.0% | 10.2% | 1.28 |
| 81 | 11.8% | 11.3% | 0.96 | 28.7% | 26.7% | 0.93 | 0.0% | 0.0% | - |
| 82 | 11.8% | 11.2% | 0.95 | 28.7% | 27.0% | 0.94 | 0.0% | 0.0% | - |
| 83 | 18.5% | 19.7% | 1.07 | 44.7% | 46.6% | 1.04 | 3.5% | 6.5% | 1.86 |
| 84 | 17.7% | 17.2% | 0.97 | 43.2% | 44.3% | 1.03 | 2.6% | 4.5% | 1.70 |
| 85 | 23.8% | 22.9% | 0.96 | 53.0% | 52.8% | 1.00 | 7.4% | 8.6% | 1.17 |
| 86 | 23.6% | 21.8% | 0.92 | 52.9% | 50.0% | 0.95 | 7.3% | 6.7% | 0.91 |
| 87 | 23.2% | 20.7% | 0.89 | 52.5% | 49.2% | 0.94 | 6.6% | 5.2% | 0.80 |

2A Walton Street




4 Walton Street




| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 88 | 15.1% | 14.6% | 0.97 | Building lies to south of development | | | | | |
| 89 | 15.3% | 13.3% | 0.87 | | | | | | |
| 90 | 3.5% | 1.6% | 0.44 | | | | | | |
| 91 | 12.2% | 9.4% | 0.78 | | | | | | |
| 92 | 34.8% | 31.6% | 0.91 | | | | | | |
| 93 | 35.3% | 32.5% | 0.92 | | | | | | |
| 94 | 27.7% | 24.7% | 0.89 | | | | | | |
| 95 | 27.8% | 25.8% | 0.93 | | | | | | |
| 96 | 20.0% | 19.2% | 0.96 | 47.1% | 45.7% | 0.97 | 3.2% | 2.5% | 0.80 |
| 97 | 20.3% | 19.3% | 0.95 | 47.6% | 46.4% | 0.97 | 3.7% | 2.8% | 0.76 |
| 98 | 36.7% | 35.9% | 0.98 | 40.0% | 36.9% | 0.92 | 8.9% | 6.5% | 0.73 |
| 99 | 36.4% | 35.2% | 0.97 | 38.6% | 35.3% | 0.92 | 8.4% | 5.8% | 0.69 |

151 – 157 Walton Street


| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 100 | 29.0% | 28.6% | 0.99 | 28.1% | 27.7% | 0.98 | 5.8% | 5.5% | 0.94 |
| 101 | 33.3% | 33.1% | 0.99 | 38.3% | 38.2% | 1.00 | 9.6% | 9.5% | 0.99 |
| 102 | 33.7% | 33.4% | 0.99 | 38.0% | 37.5% | 0.99 | 9.8% | 9.4% | 0.96 |
| 103 | 36.2% | 35.9% | 0.99 | 44.4% | 43.2% | 0.97 | 12.8% | 11.9% | 0.93 |
| 104 | 36.3% | 35.7% | 0.99 | 43.0% | 41.8% | 0.97 | 12.2% | 11.3% | 0.92 |
| 105 | 17.3% | 17.3% | 1.00 | 15.4% | 15.4% | 1.00 | 1.3% | 1.3% | 1.00 |
| 106 | 30.2% | 30.1% | 1.00 | 31.9% | 31.9% | 1.00 | 7.1% | 7.1% | 1.00 |
| 107 | 33.3% | 33.0% | 0.99 | 37.5% | 37.2% | 0.99 | 9.0% | 8.8% | 0.97 |
| 108 | 33.4% | 33.0% | 0.99 | 38.2% | 38.0% | 1.00 | 9.1% | 9.1% | 1.00 |
| 109 | 36.0% | 35.6% | 0.99 | 43.9% | 42.9% | 0.98 | 11.9% | 11.1% | 0.93 |
| 110 | 35.8% | 35.3% | 0.99 | 42.5% | 41.7% | 0.98 | 11.7% | 11.0% | 0.94 |
| 111 | 28.6% | 28.5% | 1.00 | 30.1% | 30.5% | 1.01 | 6.4% | 6.4% | 1.00 |
| 112 | 33.0% | 32.4% | 0.98 | 37.3% | 36.8% | 0.99 | 8.6% | 8.2% | 0.95 |
| 113 | 32.6% | 32.0% | 0.98 | 38.1% | 36.9% | 0.97 | 9.9% | 9.6% | 0.98 |
| 114 | 35.5% | 35.3% | 0.99 | 42.7% | 42.7% | 1.00 | 11.2% | 10.8% | 0.97 |
| 115 | 35.5% | 34.8% | 0.98 | 42.7% | 41.9% | 0.98 | 11.2% | 10.6% | 0.95 |
| 116 | 27.8% | 27.5% | 0.99 | 31.2% | 31.4% | 1.01 | 7.9% | 7.9% | 1.00 |
| 117 | 31.2% | 30.7% | 0.98 | 36.6% | 36.2% | 0.99 | 9.0% | 9.0% | 1.00 |
| 118 | 30.5% | 29.8% | 0.97 | 33.8% | 34.4% | 1.02 | 9.1% | 9.1% | 1.00 |
| 119 | 34.1% | 33.4% | 0.98 | 41.1% | 39.7% | 0.97 | 11.1% | 10.3% | 0.93 |
| 120 | 34.0% | 33.0% | 0.97 | 40.2% | 37.9% | 0.94 | 11.2% | 10.6% | 0.95 |
| 121 | 20.1% | 19.8% | 0.99 | 19.0% | 17.6% | 0.93 | 5.1% | 5.1% | 1.00 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 122 | 25.7% | 25.5% | 0.99 | 26.5% | 26.5% | 1.00 | 8.9% | 8.9% | 1.00 |
| 123 | 29.8% | 28.6% | 0.96 | 31.9% | 31.1% | 0.98 | 9.5% | 9.1% | 0.96 |
| 124 | 29.1% | 27.9% | 0.96 | 30.7% | 27.8% | 0.91 | 9.2% | 8.9% | 0.97 |
| 125 | 33.3% | 32.3% | 0.97 | 40.3% | 36.8% | 0.91 | 12.2% | 12.0% | 0.98 |
| 126 | 32.8% | 32.1% | 0.98 | 36.4% | 34.1% | 0.94 | 10.4% | 10.3% | 0.99 |
| 127 | 18.0% | 17.5% | 0.97 | 17.3% | 15.8% | 0.91 | 5.9% | 5.9% | 1.00 |
| 128 | 26.2% | 25.4% | 0.97 | 36.2% | 35.0% | 0.97 | 12.9% | 12.9% | 1.00 |
| 129 | 30.4% | 29.3% | 0.97 | 40.3% | 40.0% | 0.99 | 13.9% | 13.9% | 1.00 |
| 130 | 33.7% | 32.5% | 0.97 | 45.5% | 42.5% | 0.93 | 14.7% | 14.5% | 0.98 |
| 131 | 23.7% | 23.4% | 0.99 | 32.7% | 32.0% | 0.98 | 11.7% | 11.7% | 1.00 |
| 132 | 27.5% | 26.9% | 0.98 | 35.3% | 34.7% | 0.98 | 13.4% | 13.4% | 1.00 |
| 133 | 30.8% | 29.8% | 0.97 | 38.3% | 36.6% | 0.95 | 14.4% | 14.4% | 1.00 |
| 134 | 32.2% | 31.6% | 0.98 | 39.7% | 39.4% | 0.99 | 14.9% | 14.9% | 1.00 |
| 135 | 34.0% | 33.0% | 0.97 | 40.3% | 39.4% | 0.98 | 14.6% | 14.6% | 1.00 |
| 136 | 34.7% | 33.8% | 0.97 | 41.5% | 41.7% | 1.01 | 14.9% | 15.1% | 1.01 |

158 – 162 Walton Street


| | VSC | | | $APSH_{total}$ | | | $APSH_{winter}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| **Window** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** | **Existing** | **Proposed** | **Ratio** |
| 137 | 26.8% | 26.5% | 0.99 | Buildings lie to south of development | | | | | |
| 138 | 30.2% | 29.7% | 0.98 | | | | | | |
| 139 | 33.3% | 32.5% | 0.97 | | | | | | |
| 140 | 33.9% | 33.3% | 0.98 | | | | | | |
| 141 | 35.6% | 34.7% | 0.97 | | | | | | |
| 142 | 36.2% | 35.2% | 0.97 | | | | | | |
| 143 | 19.3% | 19.1% | 0.99 | | | | | | |
| 144 | 31.4% | 31.1% | 0.99 | | | | | | |
| 145 | 34.4% | 33.6% | 0.97 | | | | | | |
| 146 | 35.5% | 34.8% | 0.98 | | | | | | |
| 147 | 36.8% | 36.1% | 0.98 | | | | | | |
| 148 | 37.1% | 36.1% | 0.97 | | | | | | |
| 149 | 11.5% | 11.5% | 1.00 | | | | | | |
| 150 | 32.9% | 32.5% | 0.99 | | | | | | |
| 151 | 35.8% | 35.0% | 0.98 | | | | | | |
| 152 | 36.2% | 35.6% | 0.99 | | | | | | |
| 153 | 37.6% | 36.4% | 0.97 | | | | | | |
| 154 | 37.9% | 37.0% | 0.97 | | | | | | |
| 155 | 34.3% | 33.9% | 0.99 | | | | | | |
| 156 | 36.7% | 36.2% | 0.99 | | | | | | |
| 157 | 36.7% | 36.2% | 0.99 | | | | | | |
| 158 | 38.2% | 37.3% | 0.97 | | | | | | |
| 159 | 38.3% | 37.8% | 0.99 | | | | | | |
| 160 | 15.4% | 15.4% | 1.00 | | | | | | |
| 161 | 34.0% | 33.5% | 0.99 | | | | | | |
| 162 | 37.0% | 36.3% | 0.98 | | | | | | |
| 163 | 38.7% | 38.1% | 0.98 | | | | | | |
| 164 | 38.7% | 38.2% | 0.99 | | | | | | |

## A.4 OVERSHADOWING

Access to direct sunlight across the external public and private amenity spaces is assessed for the Spring Equinox (21st March), assuming a clear day. BR 209 recommends that at least 50% of an amenity space should receive at least 2 hours of direct sunlight at ground level during the course of the day. If following the introduction of a new development the area of an existing space receiving more than 2 hours of sun is less than 50% and reduced to less than 0.8 times its former value then the loss of sunlight will be noticeable.

The number of hours of sunshine is presented for each amenity space in Figures A.4, with the area achieving 2 hours indicated.

Shadow plots at regular intervals for 21st March, 21st June and 21st December, covering the median, best case and worst case days, are presented in Figures A.5.

Figure A.4a: Amenity Spaces - Hours of Sunshine on Equinox

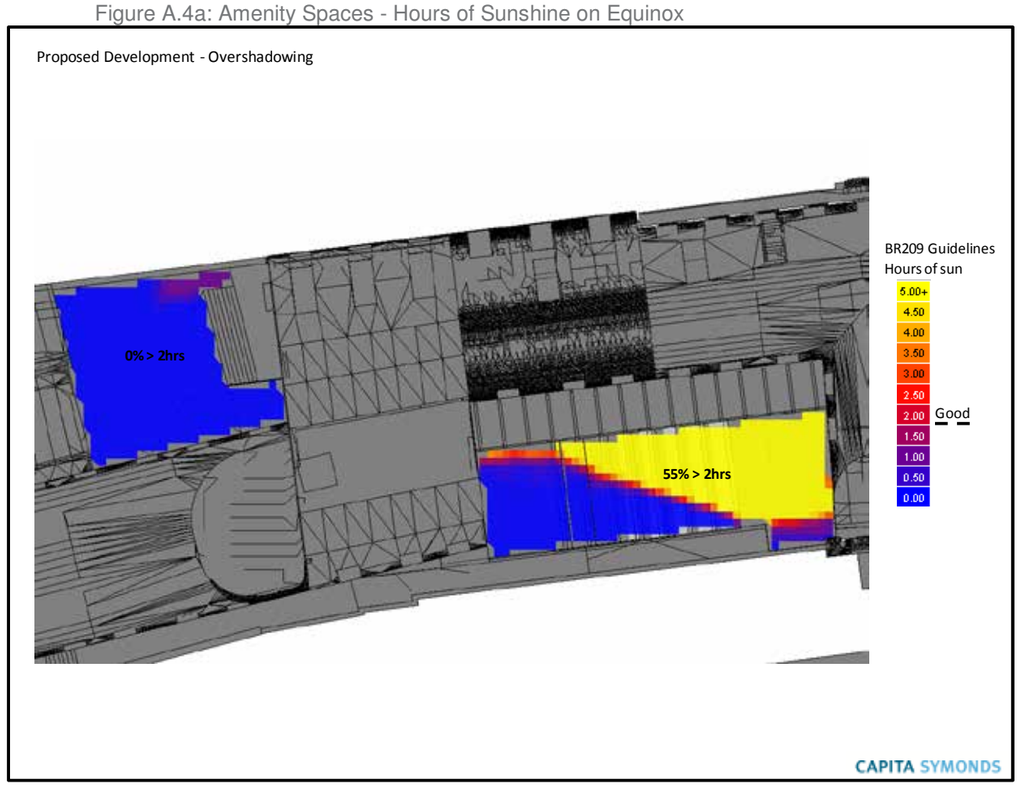



Figure A.4b: Amenity Spaces - Hours of Sunshine on Equinox

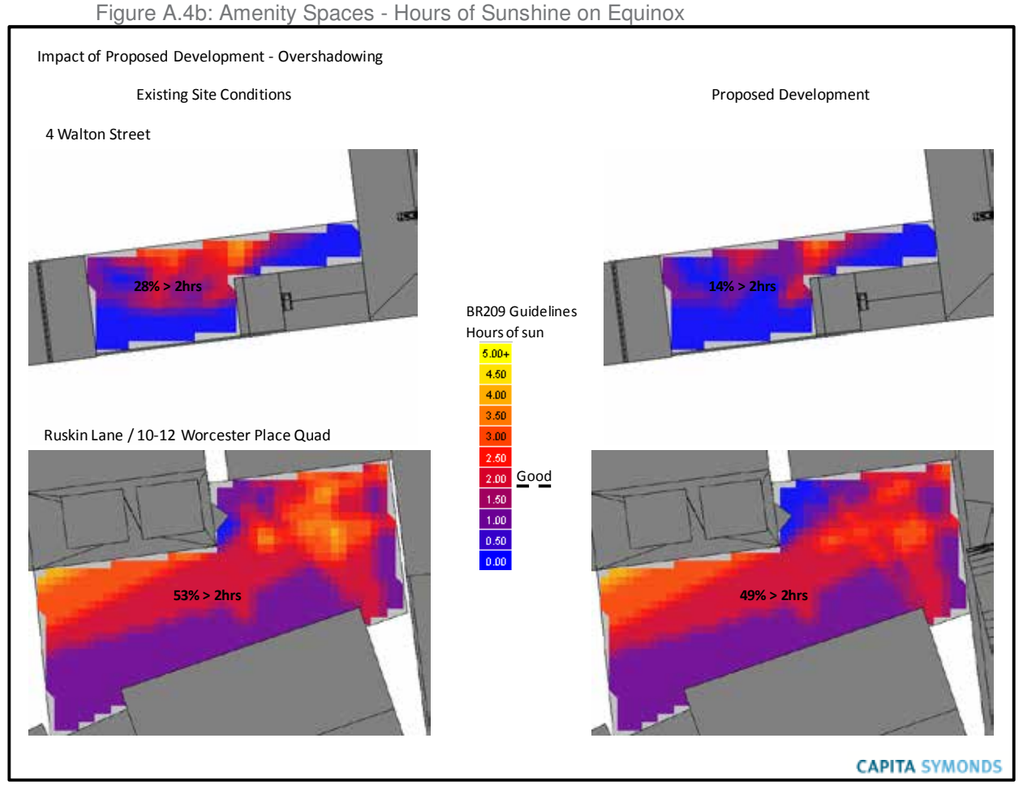


Figure A.5a: Shadow Plots – Spring Equinox, Existing

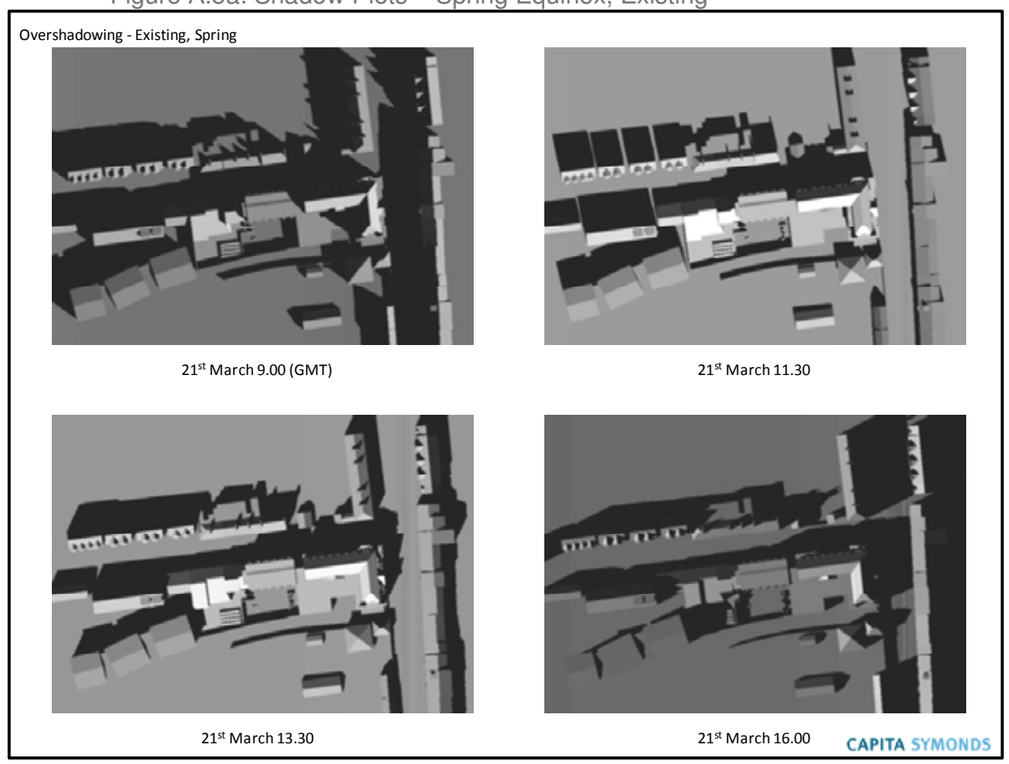



Figure A.5b: Shadow Plots – Spring Equinox, Proposed

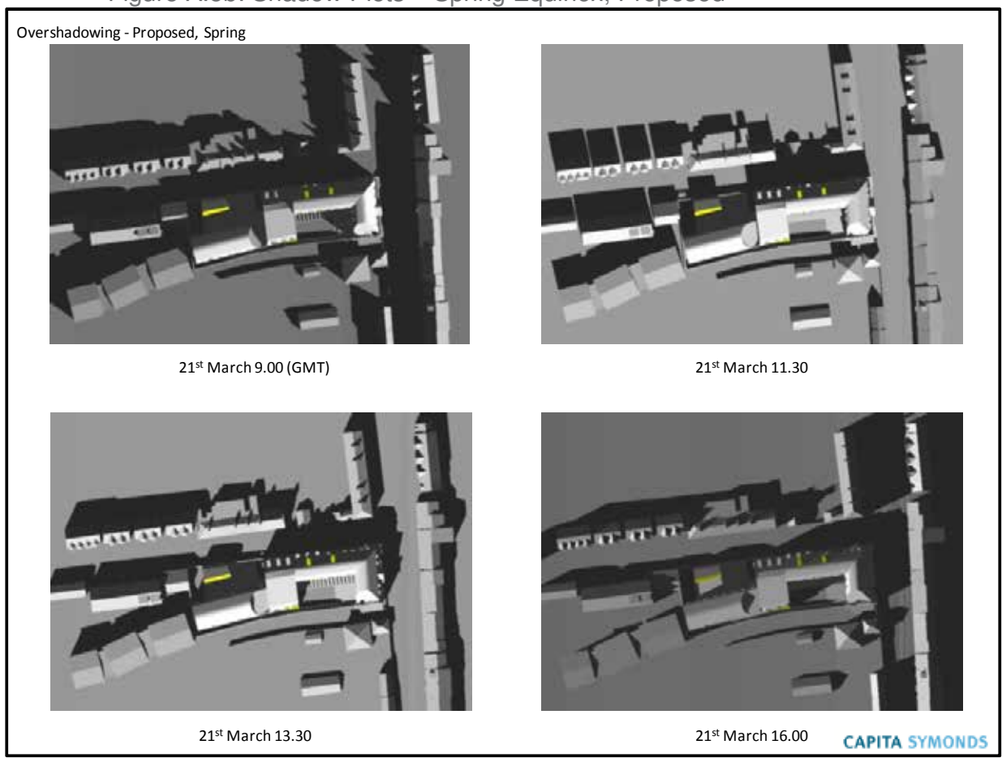


Figure A.5c: Shadow Plots – Summer Solstice, Existing

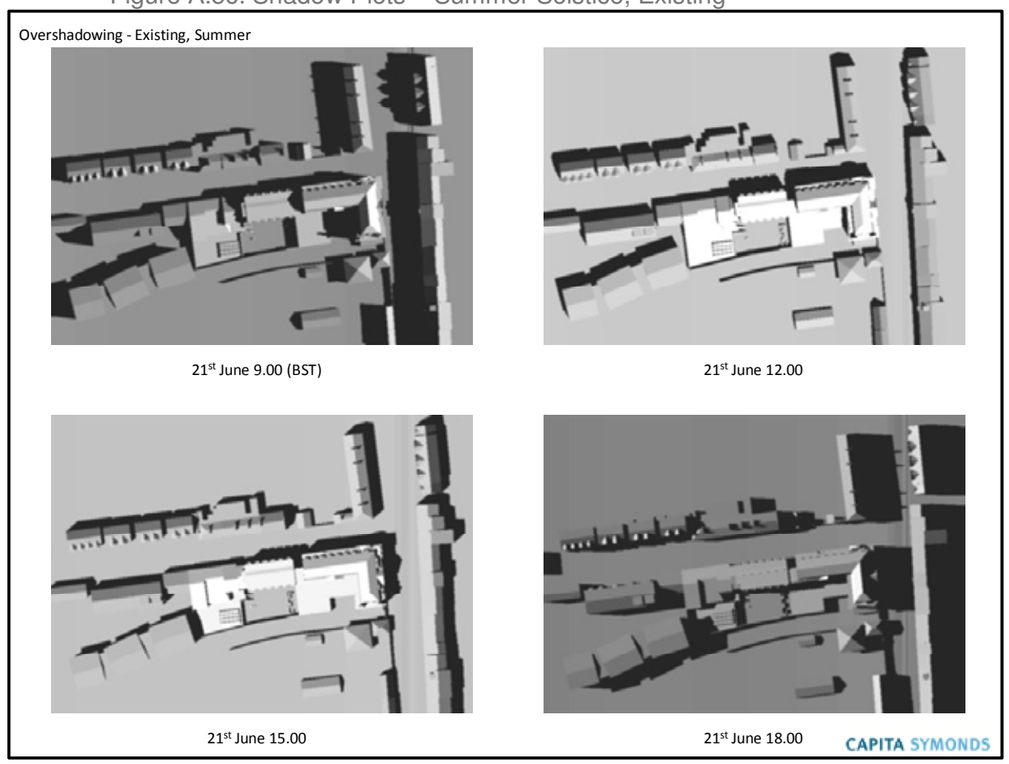



Figure A.5d: Shadow Plots – Summer Solstice, Proposed

Figure A.5e: Shadow Plots – Winter Solstice, Existing

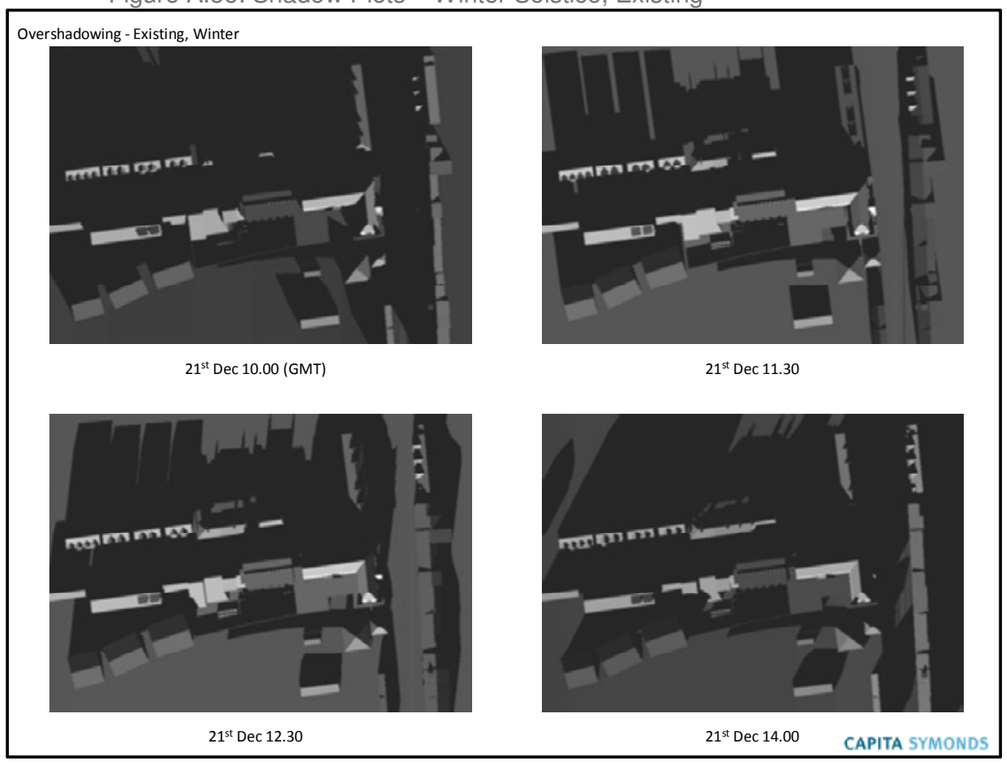
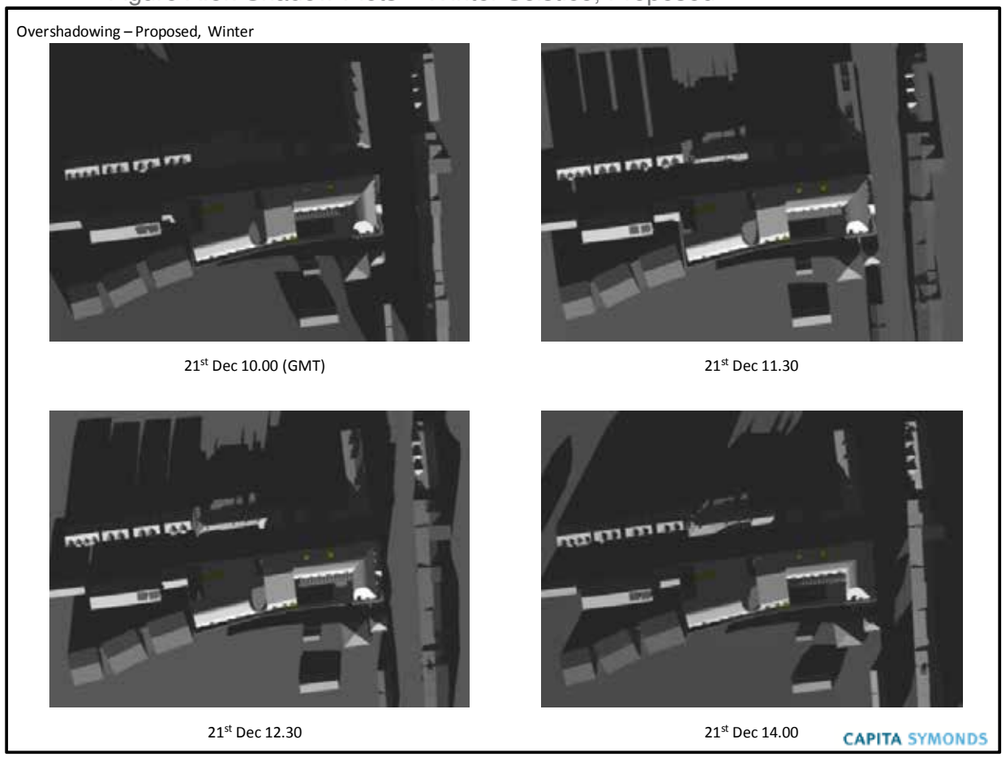



Figure A.5f: Shadow Plots – Winter Solstice, Proposed



# Appendix 2

*Updated Heritage Impact Assessment*

# A2 Updated Heritage Impact Assessment

**Introduction**

This Heritage Impact Assessment assesses the proposals for alteration of the listed 1913 building against the significance of the building as assessed in the Ruskin College Buildings Walton Street Oxford Statement of Significance dated December 2012 and in accordance with the NPPF. This document is included in an appendix. The Heritage Impact Assessment analyses the impact of the proposals on the heritage of the site and of its setting in accordance with the requirements of the NPPF, bearing in mind the overall presumption of the NPPF in favour of sustainable development that contributes to economic, social and environmental progress :

> *In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.*

In preparing this assessment due regard has been taken to the advice contained in the English Heritage published guidance on 'Conservation Principles for the sustainable management of the historic environment', 'The setting of heritage assets' and 'Seeing the history in the view'.

## 1 Historical significance and significance of use

**Impact**
Ruskin College is moving to Headington, and the Walton Street site has been acquired by Exeter College as a third quadrangle for Exeter College.

**Justification**
Exeter College is extremely constrained within its Turl Street site in the centre of Oxford, and this project represents a unique opportunity for it to satisfy its accommodation needs within a new campus close to the main site. It will represent an entirely new model for a College campus, not a residential dormitory, but a fully fledged third quad, complete with a meeting hall, meeting rooms, archive facilities, and a new learning commons, a unique student facility combining a social area with cafe, and a quiet space for private study. It lacks a student refectory, which will remain in the old College hall. Exeter College's use of the Ruskin College site will therefore enhance its significance as an innovative centre of learning. Moreover, Ruskin College will retain a base in the new building so as to be able to continue to offer teaching near the centre of town, to complement their new main campus in Headington. Ruskin College was significant for bringing higher education within reach of those who could not otherwise have afforded it. Exeter College is also committed to making higher education financially accessible to students of the requisite academic standard through scholarships and bursaries.
The sustainability of the main Turl Street site is enhanced by the new use of the Walton Street buildings, because it can provide new, fully accessible, facilities that cannot be provided at Turl Street, or that can otherwise only be provided through alterations harmful to the historic site.

**Mitigation**
Given that Ruskin College have moved, it is difficult to envisage a more appropriate new use than as a third quad for Exeter College. Nevertheless, Ruskin College retain use of a lecture room on the ground floor, in the position of the historic Buxton Memorial Hall. The memory of Ruskin College will also be perpetuated by the retention of the carved plaque over the main entrance, the memorial inscriptions on the aprons below the windows of the Walton Street elevation, and the bronze Buxton memorial plaque, which will be re-set in the entrance area.

## 2 Architectural significance: the site as a whole

**Impact**
The proposals involve the major remodelling of the 1913 building, and the demolition of the other buildings on the site.

**Justification**
Alison Brooks Associates were appointed as architects for the project following a major architectural competition between six architectural practices of national reputation for award-winning design excellence. Uniquely among the competitors, they envisaged a campus of two 3-sided courts linked by a major new level circulation spine leading from the main Walton Street entrance to the full depth of the site, the first court open on the side facing Worcester College, the second court open to Worcester Place, flanked by a new meeting hall. This architectural parti offers three major enhancements to the significance of the site, firstly by creating for the first time a unified architectural rationale in place of the truncated 1913 project and its ad-hoc extensions; secondly in offering a generous sense of openness towards the street in place of the existing closed and inward-looking appearance, and towards the local community, who will be able to use the facilities that the hall has to offer; and thirdly making the whole site fully accessible, with all the major spaces at ground level.
The buildings to be demolished are of low architectural significance, as identified in the Statement of Significance. The 1936 extension is 'solidly built but of minimal architectural significance'. The 1967 building is 'a competent example of its period and style but not outstanding' and has 'a hostile appearance at street level'. The 1982 buildings are 'of no special architectural significance'.

**Mitigation**
The new buildings should prove to be of exceptional architectural significance, representing a major enhancement of the architectural significance of the site. The external elevations of the 1913 building will be retained as a memory of the social and architectural significance of Ruskin College. The impact on the significance of the 1913 building is considered in more detail below.

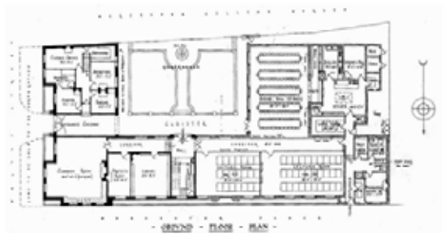
## 3 Architectural significance: the 1913 building

**Impact: plan layout.** The internal plan layout will be lost in the conversion.

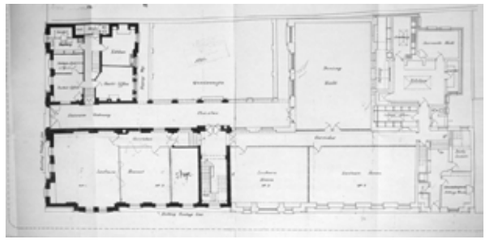
**Justification**
The plan layout was altered between the competition winning designs and the executed designs, which only realised a small part of the intended layout. The College never had the resources of the older Oxford Colleges, and the rooms were small and rather Spartan. Little significance will therefore be lost.

**Impact: Ground floor level**
The ground floor will be rebuilt at the Walton Street level in order to achieve level access to all ground floor areas.

**Justification**
The competition elevations of 1907 show that Joseph and Smithem originally intended to have the ground floor at the Walton Street level. However, as finally built in 1913, the whole of the ground floor was raised up by several steps, apart from the entrance corridor itself. The rooms to the left were approached up a flight of steps, and the only way into the Buxton Memorial Hall to the right was by doubling back via the main staircase. A direct way into the Buxton Memorial Hall was later intentions of the competition design to be respected, and allow the removal of the ad-hoc and unsightly later alterations to access.



1907 competition plan



1913 plan as built

**Impact: Ruskin Room**: The scale and position of the Ruskin Room will be recreated in the reconstructed floor plan.

**Justification**
The Hall (former Buxton Memorial Hall) appears to have been a change of mind during or after the construction in 1913. The 1913 ground plan shows two lecture rooms with instead of the Hall. The partitions have been scribbled over on the drawing to indicate their removal and the stage added in manuscript. As originally constructed the walls of the Ruskin Room (Buxton Memorial Hall) were lined with glazed tiling, and the room was approached by means of a corridor separated from the room by means of a glazed timber partition, as shown in the photograph. The partition has been replaced, the tiles painted over, and the stage area lined with walnut panelling in place of the tiling. The later alterations are of little significance, and the impact of the proposed lowering of the floor will be low.

**Mitigation**
The Ruskin Roomk will be reconstructed at external ground level, and continue to be used as a teaching and meeting room for Ruskin College.

**Impact: Staircases**
The staircases will be replaced in a different position

**Justification**
The main staircase is of minor significance on account of the decorative ironwork of its balustrade, the only element of the interior that shows some architectural pretention. It has been altered by the addition of boarding to the walls. The south stair is of even less significance, and is even narrower. The loss of significance will be low.

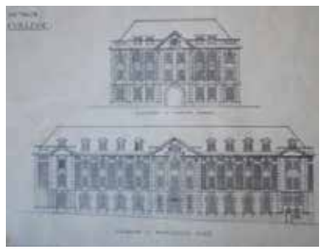
**Impact: upper floor levels**
The upper floors will be reconstructed to a new plan. The size and type of the existing rooms is smaller than required to meet the College's current space standards, and suffers from the following defects identified in the Alison Brooks Associates' Design and Access Statement. :

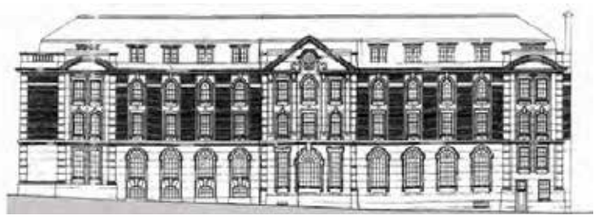
- No lift
- Corridor width inadequate
- Staircases too narrow
- No DDA compliant bedrooms
- No thermal insulation to the external walls

**Mitigation**
The plan form is not architecturally significant, nor are any of the interiors. It is clear from the changes to the design between the competition of 1907 and the building of a truncated and reduced design in 1913 that there was a shortage of funds, as also evidenced by the contemporary fundraising appeal. The simplicity of the design is therefore a product of economy rather than having any particular social purpose. Although apparently little altered, the rooms and corridors were small and narrow with little expenditure on finishes. The tiling to the walls of the corridor has been painted over. The impact on historic significance will therefore be very small

**Impact: Roof level**
The required number of rooms can only be achieved by accommodating additional rooms in the roof. The intention is do this by adding a single line of rooms at the rear of the site, accommodated within an asymmetric curved roof, covered by diagonal metal tiles.

**Justification**
Joseph and Smithem's 1907 competition design shows a tall, steeply pitched roof, almost as high as the brickwork of the upper floors, following the precedent of those magnificent buildings of the Wren period that have tall roofs (eg Coleshill and, in Oxford, 16 St Giles) and those buildings of the Queen Anne revival and Wrennaissance that emulate them (eg Bryanston and, in Oxford 27 and 29 Banbury Road by JJ Stevenson). In these buildings, as in the 1907 competition elevations, the height of the roof is more than a quarter of the overall apparent height of the elevation. However, in execution the 1913 building has a mansard roof with a steep and then a low pitch, having the peculiar property of making very little impact in nearer views, and a greater impact in longer views down Walton Street from north and south.


1907 competition elevations


1913 elevations with mansard roof


Coleshill by Roger Pratt 1660


Bryanston by Norman Shaw 1889


16 St Giles – front elevation


16 St Giles – rear elevation

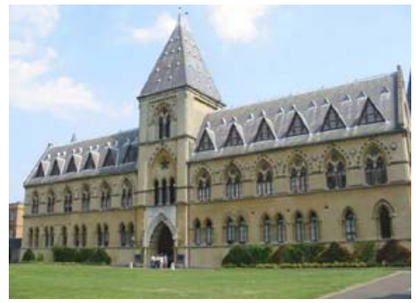

5 Banbury Road


27 Banbury Road by JJ Stevenson

There is therefore good historical precedent for a roof of greater scale, proportioned to the whole height of the elevation (a quarter of the overall height in each of the historic examples). Alison Brooks stands at the forefront of the movement away from the Modern Movement's suppression of the roof, and the expression of the new roof is capable of adding a rich new layer of architectural interest and significance to the 1913 building, reflecting the new layer of use in the history of the site. Significantly, the height of the proposed roof is just over a quarter of the overall height, as seen in the longer views from the north and south along Walton Street.

The material of the roof covering will be of diagonal stainless steel slates, with an alternating colour-coated surface finish. The pattern will have a decorative quality inspired by certain Oxford precedents, such as the roof and spire of Exeter College Chapel, and the roof of the Oxford Museum. The surface will be slightly more reflective and lighter than the traditional roofs of Oxford, which are generally of stone tiles, clay tiles, slate or lead. However the effect of the lighter colour will be to dematerialise the appearance of the roof by picking up reflections from the sky. The surface coating, together with the curve and pitch of the roof, will avoid solar glare from reflections. A sample will be mounted at roof level on the Ruskin building to demonstrate the appearance.

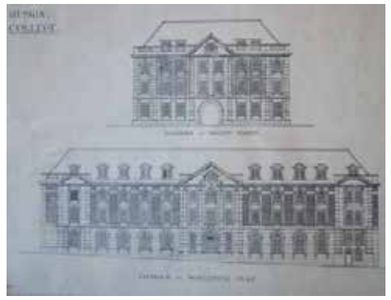

Exeter College Chapel


The Oxford Museum

**Impact: Street elevations to Walton Street and Worcester Place**
The sills and aprons of the ground floor windows will be lowered to suit the new ground floor level. New glazed entrance doors will be provided below the entrance arch.

**Justification**
The proportions of the elongated windows respond to the exaggerated height of the masonry ground floor. The present front doors are of no architectural significance and new doors will announce the new use of the building.

**Mitigation**
The ground floor window surrounds will be extended to match the existing, and the existing inscribed apron stones reset at a lower level. The ground floor windows will be replaced with new steel-framed windows with glazing bars to match the existing, with two extra panes in the height.



1907 competition design

Early photograph showing pivoting metal windows on the ground floor

**Impact: Structure, flank and rear elevations**
The structure of the building will be entirely renewed, retaining the street facades, and the south flank wall and chimneys will be rebuilt in facsimile. The engineer has demonstrated that rebuilding is necessary in order to achieve the desired changes to the floor plans

**Justification**
The rear elevation was never part of the public realm, and its design was compromised by the partial realisation of the competition scheme, and by the later infills. In places the construction is poor, particularly adjacent to the 1936 extension. Its loss will be outweighed by the gain of Alison Brooks' new integrated architectural conception.
The south wall, with its prominent chimneys , is important to the appearance of the building as seen from the south along Walton Street. It is built of limestone and red brick using lime mortar, and it will be carefully taken down by hand, cleaning and setting aside the bricks and the blocks for rebuilding in facsimile, except for substituting a stone base to match those on the front elevation, rather than brick as inappropriately used at present. It has been noted that the brickwork has been repointed at some stage in the past, and in the event that it proves difficult to clean the bricks adequately for reuse, then matching handmade bricks will be used in the rebuilding.

## 4 Evidential significance

There is possible evidence of the Civil War fortifications to be gleaned from the archaeology of the site. An archaeological desk-top appraisal has been carried out by Oxford Archaeology, who have identified the potential for archaeological remains to be disturbed in the undisturbed garden area, but that is not considered to be an area of high potential. Moreover, in view of the recent date of the buildings, there is little or no historic or architectural knowledge to be gained from a study of the fabric of the 1913 building or of the later buildings on the site. With regard to the 1913 building, since it is intended to rebuild the whole of the ground floor and of the roof, it will in practice be more appropriate to rebuild the whole building behind the retained street and south flank elevations. This will involve the loss of the plan form of the original building, but allow the creation of a new set of rooms fit for purpose, safer in the event of fire, better lit, better insulated, and more sustainable.

### Mitigation

A full record will be made of the fabric of the 1913 building in accordance with the level 3 standards of recording set out in the English Heritage publication Understanding historic buildings: a guide to good recording practice.

## 5 Communal significance

The communal significance of the buildings of Ruskin College lies in their provision of higher education for working men unable to afford to study at Oxbridge colleges. However, the buildings play little role in the life of the local community, being sequestered behind walls. The communal significance of the site through education will be sustained through the new use as a campus of Exeter College. The College has a policy that no suitable student should be prevented from attending by reason of limited means, and scholarships are available for this purpose. The significance of the site for the local community will be enhanced through the enjoyment of the open-sided court and the meeting hall facing Worcester Place.

## 6 Impact on the Conservation Area

As outlined in the assessment of significance, Walton Street is characterised by a general grain of residential development, interspersed with larger institutional buildings – Worcester College, Ruskin College, the University Press, Somerville College. Because of the large overhang of the cornice of the 1913 building, the proposed new roof will be partly obscured in nearer views. In longer views along Walton Street from the south, the increased scale of the proposed new roof is screened by the tall chimney stacks of the flank south elevation.

Nearer view from opposite side of Walton Street

View from the south

As seen in longer views from the north, the roof will have a more pronounced presence than at present, but one that is nevertheless proportionate to the overall height of the elevation (slightly more than a quarter of the height of the building, as in the historic precedents quoted above) . The appearance of the roof will be enlivened by the proposed use of diagonal metal sheet roofing, and by the projecting windows , and the use of colour-coated stainless steel will dematerialise the roof by reflecting the sky. The roofscape and elevations along Worcester Place have been broken down to follow the vertical rhythm of the buildings of that street, the roof stepping down gradually from the larger scale of Walton Street to the smaller scale of the adjacent houses on Worcester Place to the west. This represents a great enhancement to the appearance and significance of the site.

View from the north

View along Worcester Place

The view from Carfax will not be affected

## 7 Impact on Worcester College and its garden

### Impact on the setting of Worcester College and its garden

The original setting of Worcester College and its garden was in an area still largely rural. However, over the years subsequently the area outside the walls has been extensively developed with buildings that can be readily seen, as with the buildings flanking the north orchard, including the houses on Walton Street to the east, the buildings of Ruskin College to the north, and the new Sainsbury and Ruskin Lane buildings of Worcester College itself; or glimpsed between the trees, as with the buildings to the west. So although the new Ruskin College buildings will have be visible beyond the walls of the garden, this only continues a process of gradual change that has extended over centuries.

View to the west

View from cricket field to the north

View from Orchard to the west

View from orchard to the north (Walton Street)

### Impact on Worcester College buildings

The main buildings at Worcester College are grade 1 listed, including the north range and the Provost's lodging of 1773 by Henry Keene. The elevations face south overlooking the main court, and north towards the orchard, with views of the new 2006 range of Worcester College buildings and of the buildings of Ruskin College behind the stone garden wall. The west range of the proposed new buildings will follow the line and height of the Worcester College, albeit with the addition of further rooms in the roof. This follows a long-standing Oxford tradition of rooms added in a 'cockloft', as indeed found in the attic floor added in 1926 to the roof of the north range at Worcester College. It should be noted that the planning officers' report on the Worcester College building in 2006 noted that 'to some extent the permeability of views through the land to the north would be lost. However, officers are of the opinion that the proposal would not cause harm to the setting'. They also noted that 'the proposal introduces a modern architectural style, which is not considered to be at odds with other more modern developments nearby such as the Sainsbury's building or recently approved College development further north on Worcester Place. Neither is it considered overly large in height or massing in relation to adjacent buildings or views from the adjacent park and garden'. The same considerations apply in the case of the proposed new range for the Ruskin College site.

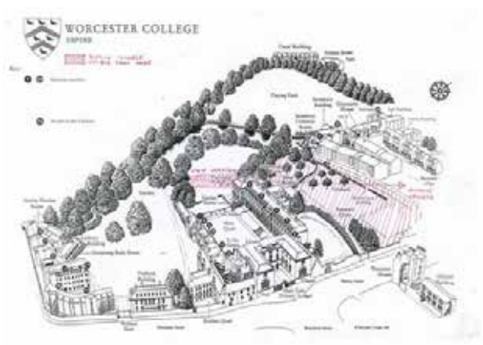
It has been suggested that there may be some significance in the views from the Observatory towards Worcester College, in relation to the line of the meridian. It has now been established that the line of the meridian is indeed marked on Worcester College, but in a position no longer visible from the Observatory, and therefore unaffected by the proposed development.

The Provosts' Lodging, together with its most significant rooms, faces west rather than north and south as the rest of the north range. The significant views from the Provosts' Lodging are therefore towards the historic landscape and lakes to the west rather than to the north. The only views towards the proposed new buildings will be from secondary bedrooms on the upper floors.

**Impact on Worcester College garden**

The  Grade 11* listed garden of Worcester College abuts the site to the south, the other side of a wall running alongside a track that formerly ran from Walton Street down to the lake. The garden is based on the grounds of Gloucester College of the 1280's, dissolved and reconstituted as Gloucester hall in 1451 and  refounded as Worcester College in 1714.  The grounds were largely remodelled between 1810 and 1820 around a crescent-shaped lake, with additional planting in 1827.  According to the List description, 'by the mid C19 (Hoggar, 1850; OS 1876) the dramatic landscaping around the college had been accomplished, with the creation of the lake, bounded to the east and south by lawns with island shrub beds and specimen trees. The lake was enclosed by perimeter walks, and enjoyed views to and from the buildings surrounding Main Quad'. As Mavis Batey puts it in Regency Gardens 'The Fellows of Worcester College, in 1817, having skilfully contrived a would-be cottage orné with curly barge boards and trellis on the upper end of a monastic range of buildings, created a lake and a forest lawn with a perimeter Regency ornamental shrubbery in the college grounds'.  The most significant parts of the garden are the south lawns, the Provosts' Garden and the lake; less so the cricket ground across the lake and the north garden, which has always housed maintenance buildings in addition to the Orchard.  The most significant views in the garden are those to and from the lake from the College buildings and Provosts' Lodging.

The garden in 1850 (Hoggar)




The Garden today showing visibility of Ruskin College

**Impact on views from the Provosts' garden, south garden and lake**

The 1850 map shows the belt of trees that separates the Provosts' garden from those to north and south.  These have now grown to form a continuous belt of trees surrounding the perimeter walk (unfortunately including along the lakeside), broken in only one position to the north.  It is only in this position that views of the new buildings will be obtained, glimpsed as in incident on the perimeter walk and from the bridge linking the Provosts' garden to the south garden.  The rest of the south garden is separated from the new buildings by two lines of trees, and they will therefore not be seen. The new buildings will be glimpsed in places along the perimeter walk around the lake behind trees in Winter, but obscured by foliage in Summer.

Ruskin glimpsed from the Provost's lodging

View from path to the south garden

View from the bridge to the south garden

View from the lake

**Impact on views from the Orchard and playing field**

There have always been buildings beyond the north boundary wall of the garden, and the area to the east of the Orchard has always contained maintenance, garden outbuildings and carparking, which greatly reduce the significance of this part of the garden. A thick line of evergreen holm oaks obscures the length of the current 1913 and 1936 buildings, but the 1967 and 1982 buildings are visible between the end of the line of Holm oaks and Worcester College's own Ruskin Lane Buildings of 2006 immediately behind the wall. The new design has a range of buildings in line with, and following the precedent of, those of Worcester College, being of the same height in elevation, albeit with an additional floor within the roof, and set back from the site boundary. Being taller than the existing buildings, the roof of the new building will have a somewhat greater impact than the 2006 building on views from Worcester College, but it is considered that this will not adversely affect the significance of the Orchard and any significant views from the College, bearing in mind the carparking and maintenance buildings.

From the Playing Field to the west the view is entirely obscured by buildings.

View north past cars to Ruskin College

View NE towards maintenance yard

**Justification**

The new buildings, like those of Worcester College itself, lie beyond the walls of the garden, where development of different forms has existed for almost as long as the garden. Although the localised view within the Orchard will change, the historically most significant views from the College buildings towards the lake will not be affected. With the exception of the orchard to the north of the College, the views will be largely screened by the belts of mature trees that surround the south and Provosts' gardens, particularly in Summer, and in Winter the new buildings will be glimpsed as incidents in the view during a perambulation of the gardens.

## 8 Conclusion

The  design proposals from Alison Brooks Associates have evolved from those that won the competition in the light of continuing research into the significance of the buildings, and in response to comments and feedback from the Planning Authority and English Heritage.  The new buildings continue and enrich the social and educational significance of the site and the memory of Ruskin College through Ruskin's continued presence on the site and through the retention of the familiar street elevations.  The architectural design combines the retention of the best of the old – the elevations of the 1913 building – together with the best of the new – the innovative new College parti for Exeter College by Alison Brooks Architects, providing a rich layering of history and significance on the site. The conclusion of this Heritage Impact Assessment is that the proposals sustain or enhance the significance of the site, and that where demolition is intended, the interior of the 1913 building will be preserved by record, for deposit in the local HER archive.

# Appendix 3

*Student Room Light Study*

## EXETER COLLEGE, OXFORD: WALTON ST QUADRANGLE

## DAYLIGHT TO STUDENT BEDROOMS

### 1 Summary

The proximity of existing trees owned by Worcester College adjacent to student bedrooms has been noted as a concern, partly due to the expected reduction in natural light reaching the bedrooms.

We have modelled the impact of the trees on the daylight factor in a typical bedroom. We have found that, although significantly less than in bedrooms not overshadowed by trees, the daylight factor in the normally occupied parts of the room falls within BS8206 and SLL Lighting Code guidelines.

### 2 Modelling Assumptions

The trees are Holm Oaks (Quercus Ilex) and have been taken to be 10% transparent, 10% reflective dark green with a high roughness. The transparency is a conservative figure based on visual estimates of the proportion of sunlight reaching the ground versus shadow through a similar tree.

The dimensions and location of the trees and the room dimensions are taken from the Architectural planning drawings, assuming they are pruned back to the boundary line, and taking a conservative amount of foliage overlap.

The room was modelled in Dialux 4.10, making a daylight factor assessment using a standard overcast sky. The daylight factor was calculated on the desk, and at low level on the floor near the bed, and an average across the whole occupied part of the room (excluding the entrance).

## 3 Results and Discussion

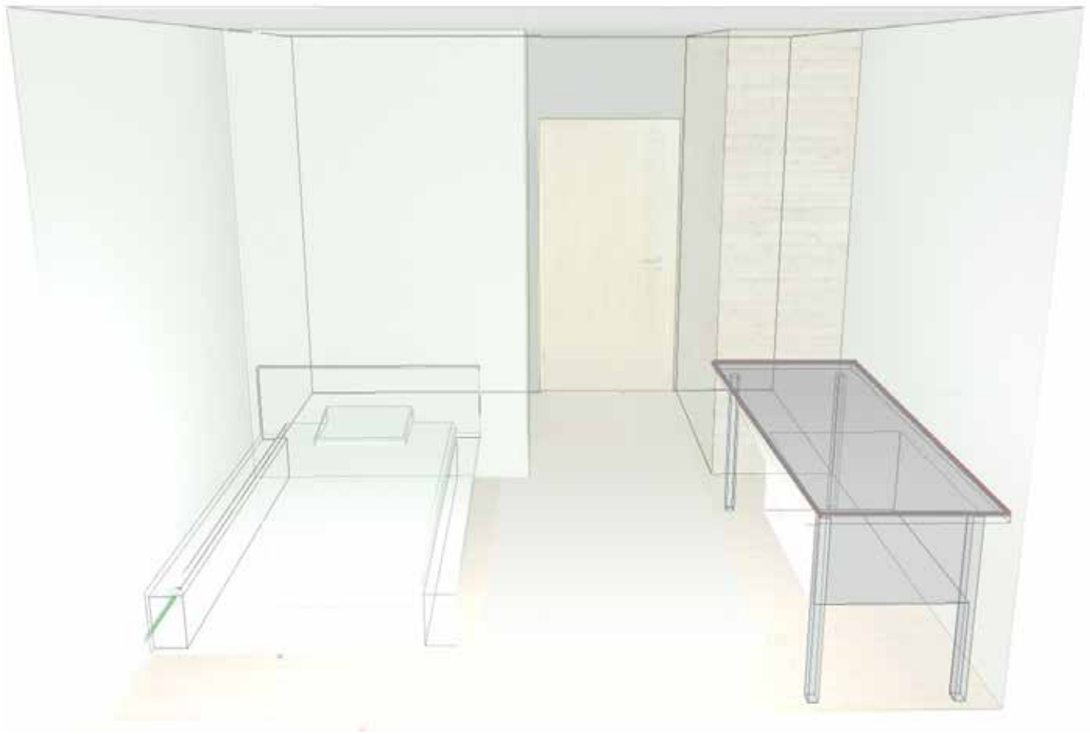
The daylight factors achieved are as follows:

| Scenario | On Desk | Adjacent to Bed | Occupied Part Average |
|---|---|---|---|
| **With Trees** | 0.8% | 1.8% | 1.4% |
| **Without Trees** | 2.8% | 5.2% | 4.4% |

A daylight factor of 0.8% corresponds to around 90-100 lux on the desk, and 1.8% to around 210-220 lux, due to daylight alone. This is comfortable to move around in, but would require use of the provided task lighting for study.

BS8206-2:2008 Code of Practice for Daylighting recommends 1% as a minimum daylight factor for bedrooms, which is referenced in the SLL Code for Lighting and CIBSE LG10. This benchmark is achieved both with and without the presence of trees.

The profile of use of the study bedrooms in this development is expected to be similar to that of a domestic bedroom. These rooms will generally be unoccupied during the day as students will be attending lectures or using other University facilities. The rooms are also less likely to be occupied during the summer months when the most natural light is available. These factors mean that the negative impact of reduced natural light to these rooms is not expected to be great.



# Appendix 4

*Bat Survey Report*

REPORT CONTENTS



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# 1.0 INTRODUCTION

## 1.1 PURPOSE

Bat emergence surveys were commissioned at Ruskin College, Walton Street, Oxford (SP509066). The survey was carried out by A. Fure, bat licence holder assisted by W. Reynolds. This was in advance of plans by Exeter College, to redevelop the site for continued educational use. This report should be read in conjunction with the Bat Scoping Survey, April, 2012 which recommended emergence surveys prior to demolition of the buildings.

## 1.2 SITE DESIGNATIONS

In nature conservation terms the nearest areas of interest are: Oxford Meadows, Special Area of Conservation (SAC); Port Meadow with Wolvercote Common & Green, Special Site of Scientific Interest (SSSI). A second SSSI lies slightly further to the north-east wildlife, New Marston Meadows. The location is crisscrossed by rivers, streams a canal and a number of lakes and ponds namely, the Thames, Cherwell, Seacourt and Hinkley streams as well as the Oxford Canal. Railway and rail-side land is located to the west of the college. Adjacent land has been managed for nature conservation and must have an influence on wildlife in the local context. These are all landscape features attractive to foraging bats.

## 1.3 CAMPUS HABITAT

There are no recent bat records for the college but the campus is overlooked by mature evergreen holm oak trees, which contain potential for bat interest. There is a lake in the grounds of the adjacent Worcester College and mature holm/evergreen/holly oaks *Quercus ilex* line the boundary. Open water, trees and treelines are used by bats for a variety of functions such as:

- commuting routes: in order to avoid open areas;
- cover: especially during the early part of the evening and in urban centres where light levels are high; and
- foraging areas: the trees are both an insect breeding habitat and offer a sheltered microclimate.

# 2.0 METHOD

## 2.1 DESK STUDY

A desk study was undertaken using widely available information as follows:

National Biodiversity Network Gateway http://data.nbn.org.uk; and the

Oxfordshire Bat Group data.

## 2.2 WALKOVER SURVEYS

A walkover of the area was undertaken April 2012 (see Furesfen, 2012), in line with Bat Conservation Trust Guidelines (2012) to establish features of bat interest, including any flight lines there might be around the site as well as roost opportunities. This included a binocular inspection of the exterior of buildings as well as loft inspections, where access was possible. A binocular inspection was repeated during the 2013 surveys. Offsite land was also visited, 16.6.13.

## 2.3 BAT ACTIVITY SURVEYS

Three bat activity surveys 9/5/13, 14/6/13, and 15/6/13 were undertaken in total using hand held recordable Bat Box 4 Frequency Division equipment. Recordings were played through BatSound and interpreted according to Russ (2012).

## 3.0 RESULTS

### 3.1 DESK STUDY

Oxfordshire bat group records indicate that several species of bat have been recorded roosting and foraging within 2 km, mostly associated with riparian land, including the canal and river (refer to Table 1).

Table 1: Status of bats recorded nearby.

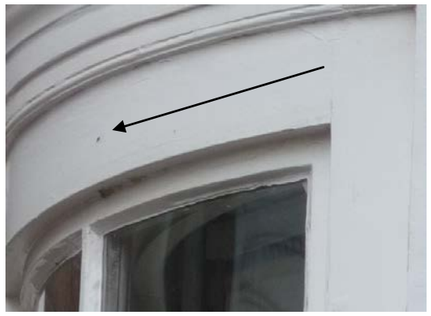
| Species | Frequency and roost site |
|---|---|
| Common pipistrelle | **Common roosts known 500m east; 1,000m north** |
| Soprano pipistrelle | **Common**<br>**Roosts within 1,000m** |
| Noctule bat | **Uncommon** declining in the some regions |
| Leisler's bat | **Rare** nationally<br>Roosts in trees and buildings |
| Natterer's bat | Recorded along the canal |
| Daubenton's bat | Recorded along the canal |
| Brown long eared bat | Common in wooded areas<br>Roosts within 1,000m north east |

#### 3.1.2 Buildings: front

Campus buildings ranged from the main building with period features (1912) to a concrete (1970's) dining block to modern library and accommodation block (Library & Kitson Building 1980's). The frontage of the main building onto Walton Street and Worcester Place presented low potential for bat interest due to the lack of obvious features and light pollution from a number of sources. There were a few slipped tiles, which might allow ingress to roof spaces. The southern elevation, on the boundary with Worcester College was obscured by 7 evergreen oak trees, which may provide sufficient cover, necessary to attract bats to explore the roof.

#### 3.1.3 Buildings: rear

The west elevation had a Queen Anne style window (the Principals office) where a possible bat dropping was found during the 2012 survey (refer to Fig 1). This was the only mammal dropping noted during the survey. Fig. 1 western elevation.



Most weaknesses present in the protective coverings of the roof (flashing, tiles etc.) were found at the curve of the building. There were regular points where lead flashing was no longer flush to the tiles or window framework, either through lost pins or where they had been subject to past repairs. Fig. 2 (left) the arrow marks the position of a dropping on the window of the Principals office (April, 2012). Flashing pins above this window were often missing. Below this area was a single-storey linking building with a flat-roof, which can be of interest to pipistrelle bats, due to the warmth they radiate.

#### 3.1.4 Biodiversity Action Plan

The National Biodiversity Action (UKBAP) contains Species Action Plans (SAPs) for Bats and is a material consideration in planning applications. The BAP aims to increase the number of this species within the district by:

- protecting certain habitats;
- securing appropriate management for them; and by
- halting the factors leading to their decline.

This means mitigation is required for loss of features that are of bat potential, or factors which may affect a feature important for bats such as light pollution.

### 3.2 BUILDING INSPECTION, 2013

The exterior of the building was inspected prior to emergence surveys, 2013. The roof construction of Ruskin College (1912 building) emulates the neo-classical design of the adjacent buildings at Worcester College, complete with pediment and Dormers. The materials are modern and zinc flashing has replaced lead flashing in most cases. Particular attention was given to the western elevation, including the Principles office. Windows and dormers were inspected using binoculars, for bat droppings or urine stains. Only pigeon droppings were noted. The roof lights above the library were inspected for the droppings of flying mammals although none were found. Hanging tiles around former student accommodation was inspected. The interior of the building was

entered and window ledges and some roof detail could be examined from various vantage points. No signs of bat ingress or occupation were noted at any time. It was a major limitation of the survey that trees obscured a portion of the southern elevation.

3.3 BAT EMERGENCE SURVEYS

During the surveys one bat specie was recorded, that of the common pipistrelle. Activity was low on the first occasion and bats were encountered moving along the line of holm oaks and foraging over the raised patio in front of the western elevation. No bats were seen emerging from the buildings.

3.3.1. First survey

**Table 2: Selected bat activity (9.5.13)**

Sunset 20.40p.m. Cloud cover 7/8 .Temperature 12 degrees centigrade at start

| Time | Details: Duet detectors WR and AF |
|---|---|
| 20.58<br>Sunset + 18 minutes | Common pipistrelle along 1960's block |
| 21.11 | Common pipistrelle foraging along boundary Holm Oaks |
| 21.30 | Common pipistrelle not seen |
| | No further bats Bright light in quadrangle, no patio access |

3.3.2 Second Bat Survey

During subsequent bat surveys only one bat specie was detected on bat detection equipment, early in the evening (sunset + 13 minutes) indicating the bat had not travelled far from its roost. Bats remained foraging during the second and third surveys for a considerable portion of the evening. No bats were seen to emerge from the building although considerable interest was shown in the western and southern elevations with much activity around the chimney.

**Table 3: Selected bat activity (14.6.13)**

Sunset 21.24p.m. Cloud cover 7/8 .Temperature 16 degrees centigrade at start

| Time | Details: Duet detector |
|---|---|
| 21.37<br>Sunset+13mins | Common pipistrelle pass from south circling over raised patio for a short time |
| 21.42-21.55 | Common pipistrelle from south undertaking passes around the raised patio |
| 22.01 | Common pipistrelle from the south |
| 22.04 | Common pipistrelle from the south |
| 22.45 | No further bats |

3.3.3 Third bat survey

**Table 4: Selected bat activity (15.6.13)**

Sunrise 04.46p.m. Cloud cover 7/8 .Temperature 12 degrees centigrade at start after rain

| Time | Details: Duet detector |
|---|---|
| 03.29 | Common pipistrelle |
| 03.40-59 | Constant foraging activity with successful feeding buzzes of one pipistrelle bat |
| 04.12 | Last bat pass |
| | |

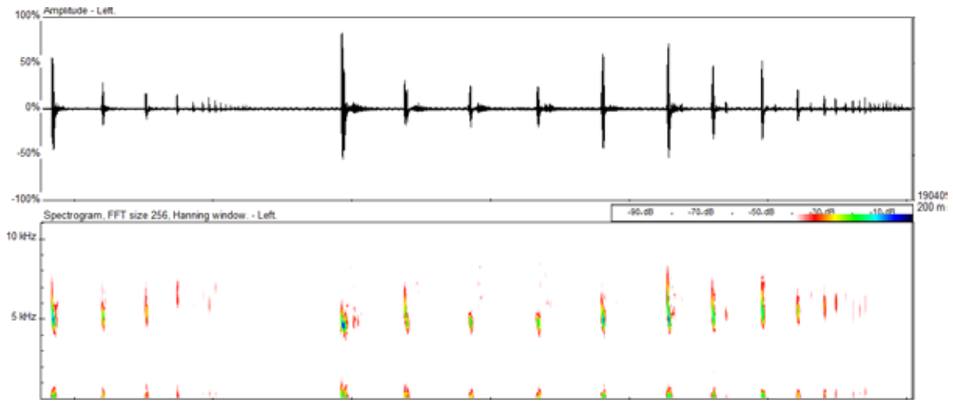



Fig. 3 Screenshot of the sonogram of 2 successive feeding buzzes of a common pipistrelle 15.6.13

## 4.0 EVALUATION

4.1 Table 5: Evaluation Summary Table.

| Site Resources | Value. | Reasons. |
|---|---|---|
| Buildings | Local | Buildings are adjacent to a bat commuting corridor.<br><br>Improvement can be made for bats within the scheme. |

4.2 SURVEY EVALUATION.

- Overall the site is assessed to be of value to foraging common bats. It could be assessed of value at a higher level if any bat species were found roosting at the site.

4.3 LIMITATIONS

The surveys have not been carried out according to Bat Conservation Trust Survey Guidelines which state that they should be carried out across the bat recording season during the summer months: June July and August. For this reason an additional survey will be performed prior to demolition of the building. This is especially important this year due to the late arrival of spring and the late formation of bat maternity colonies. There was no access to the patio during the first survey as it was too dangerous (slippery). The view of the southern end of the building was obscured by mature trees and adjacent buildings. For this reason mitigation measures will be required.

## 5.0 DISCUSSION

5.1 BAT SPECIES

One bat specie was recorded during surveys, that of the common pipistrelle. Many bat encounters were recorded during the surveys. Most of the bat movement was located along the treeline on the offside of the boundary wall as well as many bat foraging passes over the patio. These were bats, which had either travelled from offsite locations in order to forage, or were commuting to a nearby feeding area. The nearest known bat roosts were 500m and 1,00m respectively (to the east). The surveys were limited as they were undertaken early in a year with a late start to the spring.

5.2. BAT ECOLOGY

The “common” pipistrelle has been split into two separate species *Pipistrellus pipistrellus* that echolocates around 45 kHz and *P. pygmaeus* that calls around 55 kHz. The 45 kHz pipistrelle can use a wide range of habitats, but frequents the more open situations, such as woodland edges, parkland, recent plantations, watersides and gardens. It will fly up to 5km from the roost to forage but most stay with 2km. Colonies, usually of 30-60 bats; they frequently use modern building for roost sites, but are rarely found in bat boxes or trees. Emergence of both species is usually twenty minutes after sunset and the early arrival of bats was consistent with bats having travelled from offsite areas possibly to feed at the lake in the grounds of the adjacent Worcester College

5.3 TREES: MOVEMENT AND FORAGING.

The main ecological value of the site is the line of trees just outside the boundary. Evergreen oak trees, next to the survey site were assessed as a commuting route for bats to the lake. Vegetation particularly mature trees are used by bats as commuting routes in order to avoid open areas acting as cover especially during the early part of the evening and in areas where light levels are high. The trees are both an insect breeding habitat and offer a sheltered microclimate.

5.4 BUILDINGS

Most buildings were considered to be of low potential for roosting bats, except those located on the southern boundary of the survey site, which were assessed to be medium-high potential for bat interest. The reasons for this were due to the:

- type of construction with opportunities for ingress around Dormers;
- permeability of materials such as the peeled back lead flashing;
- elevation of the building with the highest potential for bat ingress was obscured by trees (refer to fig.4);
- proximity to a known roost of this species (within 500m);
- use of the boundary feature by bats (holm oaks) as a commuting route;
- prolonged foraging of a bat over the patio(s); as well as the
- proximity of a lake.

5.5 DEMOLITION

During demolition vigilance is warranted when stripping roofs due to the features outlined at 5.4. If small mouse like droppings are located either in piles or adhering to surfaces such as walls or windows are found, work should be halted and an ecologist contacted. In the case of the southern elevation soft stripping of cladding should be undertaken. This means that the hanging tiles around the Dormers facing Worcester College (Fig. 4 left) and any other feature obscured

by trees, such as the lead flashing, should be removed carefully by hand. An ecologist should be warned of the date of demolition and a Team Talk should be given prior to works. Spring or autumn would be the best time to undertake demolition works. It is understood that a proportion of the façade will remain in any event.

5.6 BAT RESPONSE TO LIGHT

A light level of 14 lux can be a better indication of pipistrelle emergence in urban areas than minutes after sunset. In areas affected by light pollution, bats can emerge late in the evening. This means that the dusk peak for insects may have passed and our urban bat populations may be feeding at a suboptimal time, which may be a major factor in the decline in some bat species. Bats may refrain from using corridors if there is spill from lighting. The key to the continued presence of pipistrelle bats in this urban area is to maintain a dark corridor for safe bat passage and there should continue to be no formal lighting along the line of holm oaks.

5.7. GENERAL LIGHTING

Any proposed development should also consider the impact of lighting on habitats utilised by bats, as per Bat Conservation Trust & Institution of Lighting Professionals. A Statement by the Bat Conservation Trust on Lighting and Mitigation for Bats (May, 2011) resolved that: smarter lighting, rather than less lighting, is key to mitigating the effects of light pollution. Light should only be erected where it is needed, illuminated during the time period it will be used, and at levels that enhance visibility. Any bare bulbs and any light pointing upwards should be eliminated. The spread of light should be kept near to or below the horizontal. Narrow spectrum bulbs should be used to lower the range of species affected by lighting and light sources that emit ultra-violet light must be avoided. Reducing the height of lighting columns as light at a low level reduces ecological impact. For pedestrians, low level lighting that is directional as possible should be used and below 3 lux at ground level (preferably 1 lux BCT, 2012).

5.8 CONCLUSION

Protection and strengthening of the boundary feature along the wall at Worcester College is key to the persistence of central Oxford bat colonies. During demolition some features will require soft stripping in order to mitigate for any bat species that might be roosting casually as ‘singles’ along the corridor. This includes the southern elevation.

## 6.0 RECOMMENDATIONS

- Bat surveys are time limited to a short period and demolition works should proceed this autumn.
  Rationale: bats are highly mobile and surveys are only valid for the season in which they are undertaken; or

- Bat surveys may need updating prior to demolition of the buildings depending on the demolition date.
  Rationale: Surveys have been performed very early in the year and not across the recording season

- Demolition is best undertaken during the autumn and should be avoided in winter
  Rationale: after bat maternity colonies have broken up and before bats go into hibernation

- An ecologist should be warned of the date and a Team Talk should be given to operatives prior to demolition. This can be undertaken over the telephone if necessary.
  Rationale: So that the operatives are made aware of how to identify bat droppings and what to do if these are found.

- External lighting should be kept to a minimum within the new scheme and Bat Conservation Trust Lighting Guidelines should be followed.
  Rationale: So that the bat commuting corridor to the lake will not be undermined.

- Bat tubes should be incorporated in the construction of the southern elevation
  Rationale: so that roost opportunities are not lost as per the National and Regional Biodiversity Action Plan (refer to Appendix).

## 7.0 LEGISLATION AND POLICY

### 7.1 EUROPEAN AND UK LAW PERTAINING TO BATS

All species of bat are fully protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations, 2010. The Act and Regulations make it illegal to:

- intentionally or deliberately kill, injure or capture (take) bats;
- deliberately disturb bats (whether in a roost or not);
- damage, destroy or obstruct access to bat roosts;
- possess or transport a bat or any other part of a bat, unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

### 7.2 AMENDMENTS TO THE CONSERVATION OF HABITATS REGULATIONS (2010)

Moves to strengthen the protection of features of importance that protected species are reliant upon. This applies where there may be ANY disturbance to bats or a disturbance affecting:

- The ability of a group of animals of that species to survive, breed or rear or nurture their young;
- In the case of migratory species, impair their ability to hibernate or migrate or
- The local distribution or abundance of the species

This may preclude fragmentation of corridors caused by **light pollution** and a useful discussion of this is provided by Garland and Markham (2007). If a bat roost is to be affected by development activities, a licence from Natural England will need to be obtained.

### 7.3 NATURAL ENVIRONMENT AND RURAL COMMUNITIES (NERC) 2006

This states that every public authority in exercising its function, must secure compliance in conserving biodiversity

(3) Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

(4) “Public authority” means any of the following (c) a public body (including a government department, a local authority and a local planning authority);

Within the terms of this act are habitats and species of principal importance for the purpose of conserving biodiversity.

### 7.4 UK HABITATS AND SPECIES OF PRINCIPLE IMPORTANCE NERC 2006 AND THE ROLE OF CONSERVATION UNDER BIODIVERSITY ACTION PLANS (BAPS)

Section 40 (1) of the NERC Act (2006): lists principle habitats and species, which are often included in Local, Regional and National Biodiversity Action Plans (BAP’s). For example, the UK Biodiversity Action Plan (BAP) contains a Bat Species Action Plan (SAP). The BAP aims to increase the number of this species within the district by protecting certain habitats; securing appropriate management for them and by halting the factors leading to their decline such as:

- Loss of maternity roost sites through damage or destruction resulting from a lack or a misunderstanding of the legislation protecting bats ;
- Loss of hibernation and other seasonally used roost sites;
- Lack of insect rich feeding habitats such as wetlands, woodlands and grasslands;
- Losses of linear landscape elements (flight line features) such as tree lines; and
- Excessive lighting, such as in streets and some open spaces.

### 7.5 ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION (2009)

The Royal Commission on Environmental Pollution, reported on the nuisance caused by badly designed lighting and the effects of artificial light on nature and ecosystems. It concluded that there was an urgent need for government to recognise that artificial light in the wrong place at the wrong time is a pollutant, which can harm the natural environment.

# 8.0 REFERENCES

Oxfordshire Bat Group data June, 2013

Bat Conservation Trust (2012) Bat Survey Guidelines available from www.bats.org.uk

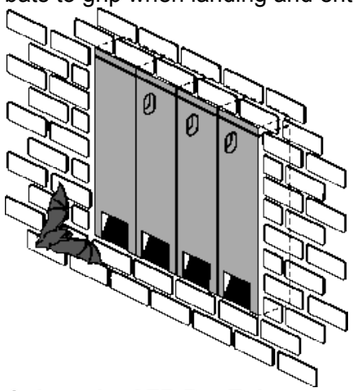
Garland L., & Markham S., (2007) Is important bat foraging and commuting habitat legally protected?

Mitchell –Jones A.J. & McLeish A. P. (Ed's). (2004) 'Bat workers Manual' JNCC

Appendix Bat Tubes

**BAT TUBES**

Bat tubes provide an access slot of dimension 100 x 15mm between the soffit and the wall at the roof apex at various locations in the new building. Note that if the dimensions are smaller the bats will not be able to access the new roost and if they are any larger birds may move in. The exterior brick or stone work will be of a rough material to assist bats to grip when landing and entering roosts.



***Schwegler 2FR Bat Tube***

Stockist - NHBS, Pearce Environmental

The tubes have holes in the sides which allow multiple tubes to be placed next to each other to form a much larger bat roost. Brick boxes are designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. They are particularly useful for new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated. This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits.