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Daylight & Sunlight Report
Sainsbury Wellcome Centre

27th July 2020 (Revised 9th October 2021)

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DAYLIGHT & SUNLIGHT REPORT

Client: Ian Ritchie Architects

Project: Sainsbury Wellcome Centre
25 Howland St, Fitzrovia, London W1T 4JG

Report date: 27th July 2020 (Revised 9th October 2021)

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Andrew Pickersgill BSc (Hons), AssocRICS

About *MES Building Solutions*

***MES Building Solutions (MES)* is an established consultancy practice specialising in providing building solutions throughout the UK.**

We offer a full range of services for both residential and commercial buildings from small individual properties through to highly complex mixed use developments.

We are an industry leader in delivering a professional, accredited and certified service to a wide range of clients including architects, developers, builders, housing associations, the public sector and private householders.

Employing highly qualified staff, our team comes from a variety of backgrounds within the construction industry with combined knowledge of building design, engineering, assessment, construction, development, research and surveying.

MES Building Solutions maintains its position at the forefront of changes in building regulations as well as technological advances. Our clients, large or small are therefore assured of a cost effective, cohesive and fully integrated professional service.

About the Authors

Chris Jones is the Technical Director at *MES Building Solutions*. Chris has a Masters Degree in Energy Efficient & Sustainable Building, as well as an Honours degree in Mechanical Engineering. Chris has over 15 years' experience in providing sustainable building solutions and leads the Neighbourly Matters team at MES. He undertakes daylighting, sunlight and shadow cast analysis for planning applications. Chris is also a qualified BREEAM and Code for Sustainable Homes assessor and has worked with some of the UK's top developers, as well as housing associations and local authorities.

Andrew Pickersgill is an Associate member of the Royal Institution of Chartered Surveyors and is a member of our neighbourly matters team. He has a BSc (Hons) degree in Building Surveying. Andrew undertakes daylighting, sunlight and shadow analysis for planning applications. He is also involved in party wall issues and carries out other building surveying services for our clients.

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1. Executive Summary

1.1 We have carried out calculations following guidance in Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 to ascertain the impact of the proposed 5th Quad extension to the Sainsbury Wellcome Centre, 25 Howland St, Fitzrovia, London W1T 4JG, on the daylight and sunlight of Astor College, Hall of Residence, 99 Charlotte St and proposed new Middlesex Hospital Annex on the site of the former Cleveland Street Workhouse at 44 Cleveland St.

1.2 This, further revised, version of the report reflects design modifications made since the pre application submission. Namely the enclosure of the stepped terraces on the east and west façade with sloped glazing. The reasoning for this is discussed in more detail in paragraph 1.7 below.

1.3 In dense urban locations such as this, site constraints, including the number, height and proximity of other neighbouring buildings means that windows and rooms will often fall short of the guidance figures.

1.4 Daylight and sunlight is one of a number of considerations when designing a building and should therefore be balanced with other planning issues, such as the appearance of the building, the need for additional local housing, the existing street scene and the commercial viability of the project.

1.5 The guidance is clear that the advice is not mandatory, should be used flexibly and that in certain environments (such as this) a higher degree of obstruction may be unavoidable.

1.6 Camden Planning Guidance (Amenity January 2021) state that flexibility should be used when considering daylight and sunlight impact: *"While we support the aims of the BRE methodology for assessing sunlight and daylight we will consider the outcomes of the assessments flexibility where appropriate, taking into account site specific circumstances and context. For example, to enable new development to respect the existing layout and form in some historic areas, or dense urban environments, it may be necessary to consider exceptions to the recommendations cited in the BRE guidance. Any exceptions will assessed on a case-by-case basis".*

1.7 A substantial amount of design work was undertaken prior to finalisation of the proposed scheme in order to minimise the impact on the neighbouring buildings. Stepping back the upper floors of the proposed development significantly reduced the impact to both Astor College and the approved MHA development. The buildings form has been further simplified since the pre application submission and the external terraces on the stepped east and west façade have been enclosed with inclined glazing to increase the internal floor space. This reflects end user considerations over the relative importance of academic, teaching and support spaces over external terraces. Sainsbury Wellcome Centre is already well provided with external social space by the 5th floor roof terrace. By enclosing the small 5th Quad roof terraces with inclined glazing, the tapering form of the 5th Quad is retained while impact to the neighbouring properties is minimal.

1.8 As a result, on this occasion, the majority windows and rooms within Astor College comfortably fulfil the planning guidance. There are a number of habitable rooms within Astor College that fall short of the BRE guidance targets, but the majority of these are currently in receipt of levels of natural light well below the recommended levels expected for naturally lit rooms and will therefore already be reliant on artificial light. For most, the absolute reduction in daylight & sunlight is small. Further comment can be found in Section 5 and 6 with calculated absolute reductions for both VSC and DD now included in the full results tables in the appendices. The proposed 5th Quad development will therefore not have a significant real world impact in many of these spaces. The Middlesex Hospital Annex will experience little noticeable daylight & sunlight impact.

1.9 The full results spreadsheets in section 7 have been updated to highlight changes to the impact on daylight and sunlight resulting from the additional of the sloped glazing enclosing the east and west terraces.

1.10 The recent rear extension to Astor College introduced a significant obstruction to light reaching windows within the existing Astor College building, making them overly reliant on light from across the south courtyard, which forms part of the Sainsbury Wellcome Centre site. The internal layout of the extension to Astor Collage also means that habitable rooms within it are overly reliant on light from across the Sainsbury Wellcome Centre site.

1.11 In addition; the location & scale of the new Middlesex Hospital Annex development has had a significant effect on the amount of daylight entering the south courtyard and available to both the Sainsbury Wellcome Centre and Astor College.

1.12 These two recent developments have had the effect of reducing natural light availability across the Sainsbury Wellcome site that they themselves both rely upon. The proposed 5th Quad development is not the primary cause of low light levels within Astor Collage.

1.13 The guidance would therefore regard all these particular neighbouring windows as being built unreasonably close to their own boundary and therefore any impact due to the proposed development should not be considered in the same way as would be the case if the windows were a reasonable distance from the boundary and not so overly reliant on natural light across the development site.

1.14 We have provided our further comments and detail in the following sections of this report.

1.15 In our opinion the proposals for the 5th Quad accord with the intent and context of the planning guidance in this case.

2. Introduction

2.1 The purpose of this report is to assess the impact of the proposed 5th Quad extension to the Sainsbury Wellcome Centre, 25 Howland St, Fitzrovia, London W1T 4JG, on the daylight and sunlight of Astor College, Hall of Residence, 99 Charlotte St and the proposed new Middlesex Hospital Annex on the site of the former Cleveland Street Workhouse at 44 Cleveland St.

2.2 This report considers the daylight and sunlight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 published by the BRE (Building Research Establishment).

  The SLPDS is the culmination of research undertaken by the BRE to determine whether or not a new development will adversely affect the light to nearby properties. The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

- BS 8206-2- Code of practice for skylighting.

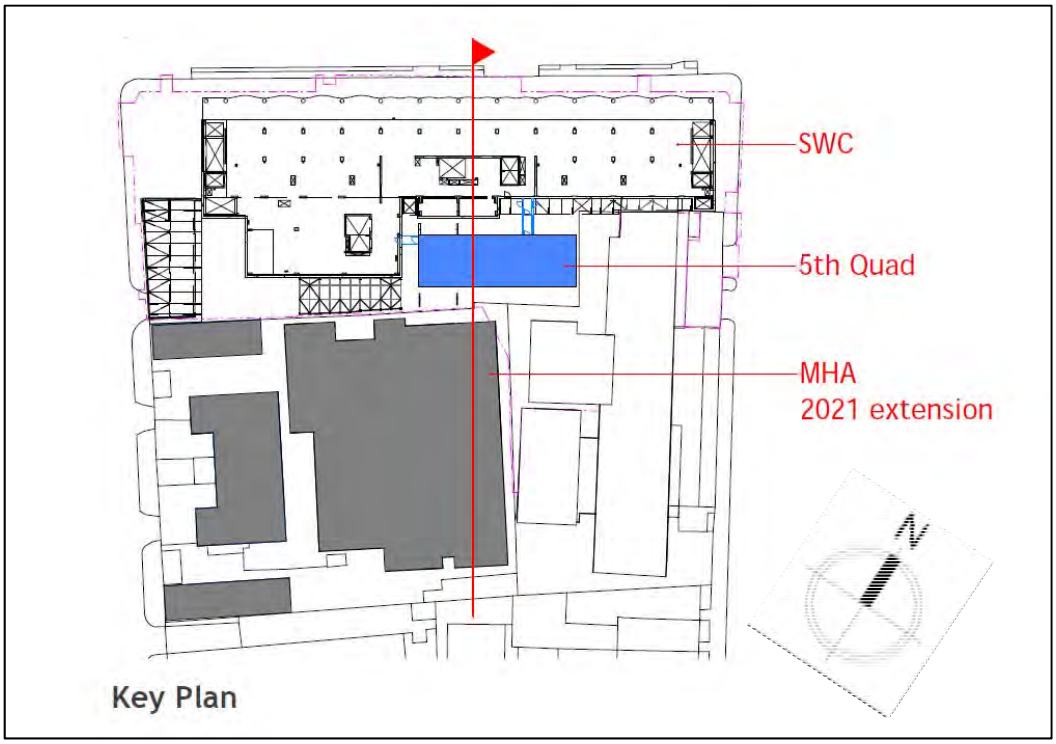
2.3 There are no minimum mandatory requirements for sunlight & skylight in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating sunlight & skylight.

2.4 It is worthy of note that SLPDS was first published in 1991 and BS 8206-2 in 1992. However SLPDS was updated in Oct 2011 and we have therefore undertaken this study on the basis of this guidance document.

3. Description of Development

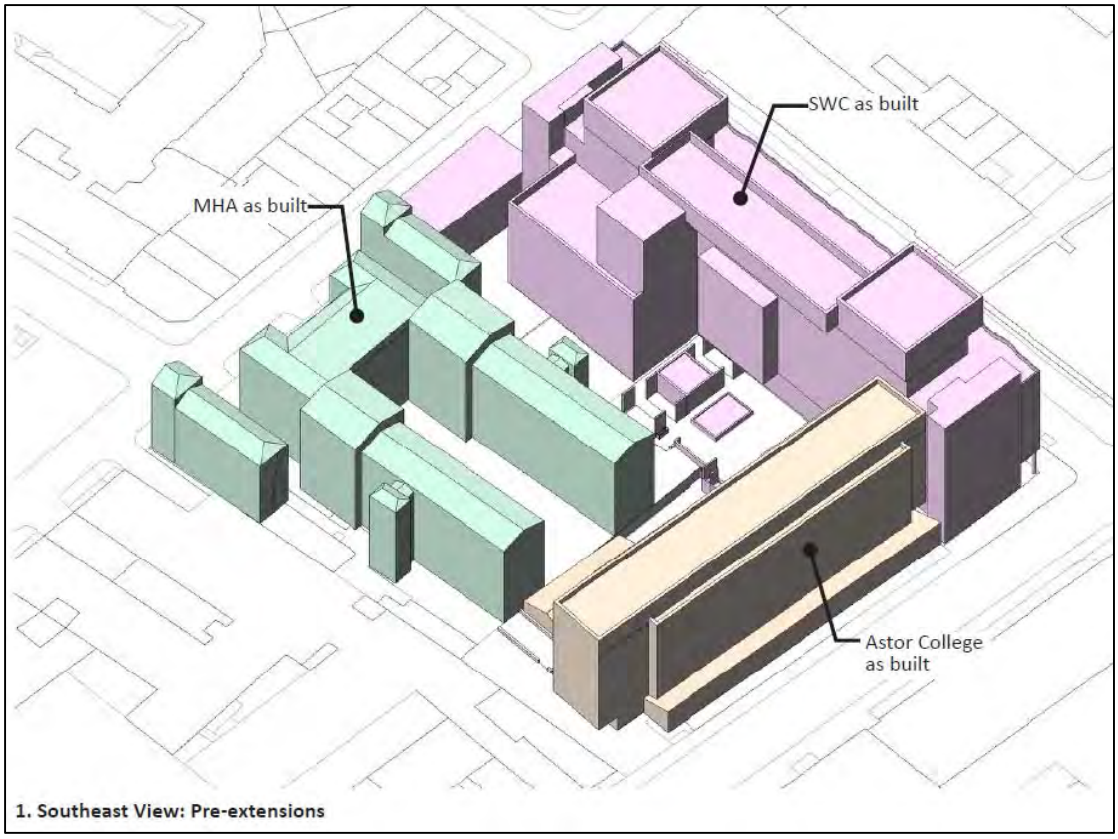
3.1 The development comprises of an extension to the Sainsbury Wellcome Centre comprising a five storey building for scientific, academic and teaching (sui generis) along with associated works and landscaping.

3.2 The 5th Quad extension is to be located within an enclosed south courtyard bounded by the existing Sainsbury Wellcome Centre buildings to the north and west, Astor College Hall of Residence to the east and the approved new Middlesex Hospital Annex to the south.

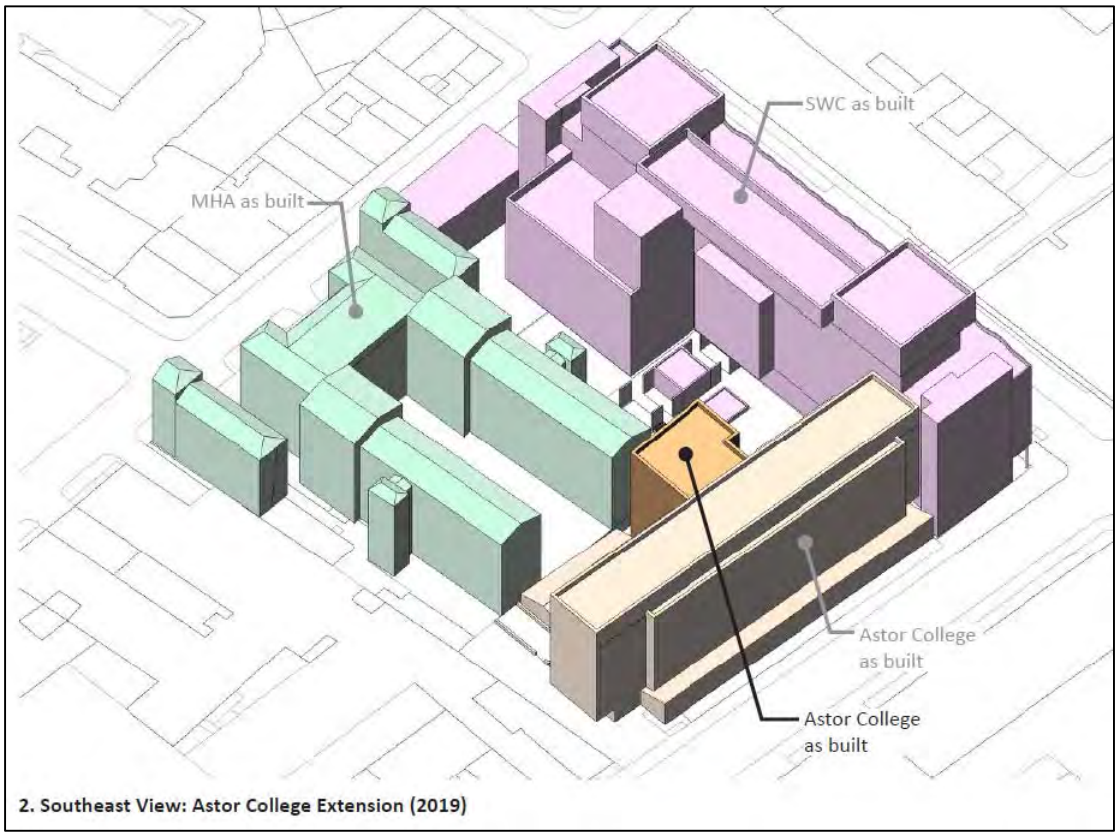


Location of Proposed 5th Quad

3.3 A recent extension to Astor College and the approved Middlesex Hospital Annex extension significantly increases the massing around the development site. The following series of images show the relative scales of the three developments. They also illustrate that the main contributors to reduced daylight within the development site, and surrounding south courtyard are the recent neighbouring developments, and not the proposed 5th Quad extension to the Sainsbury Wellcome Centre.

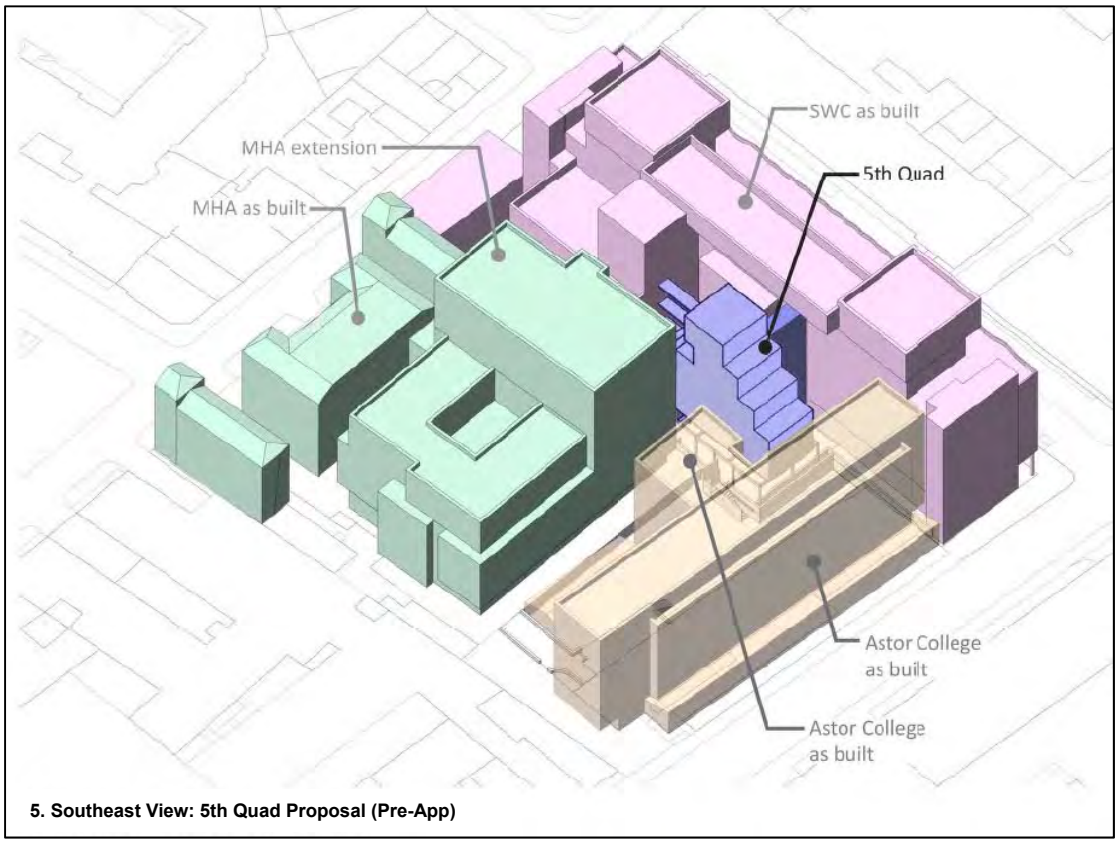


1. Southeast View: Pre-extensions

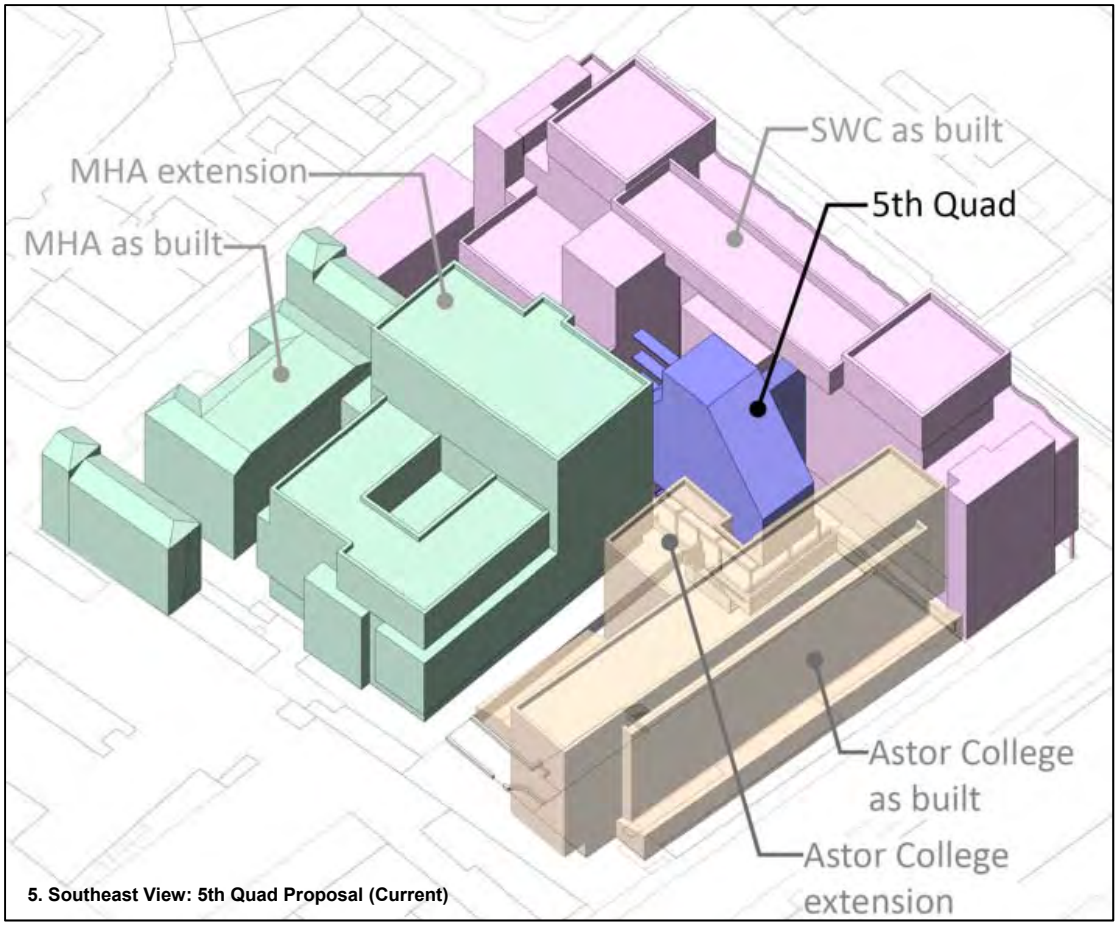


2. Southeast View: Astor College Extension (2019)

3. Southeast View: MHA extension (2021)



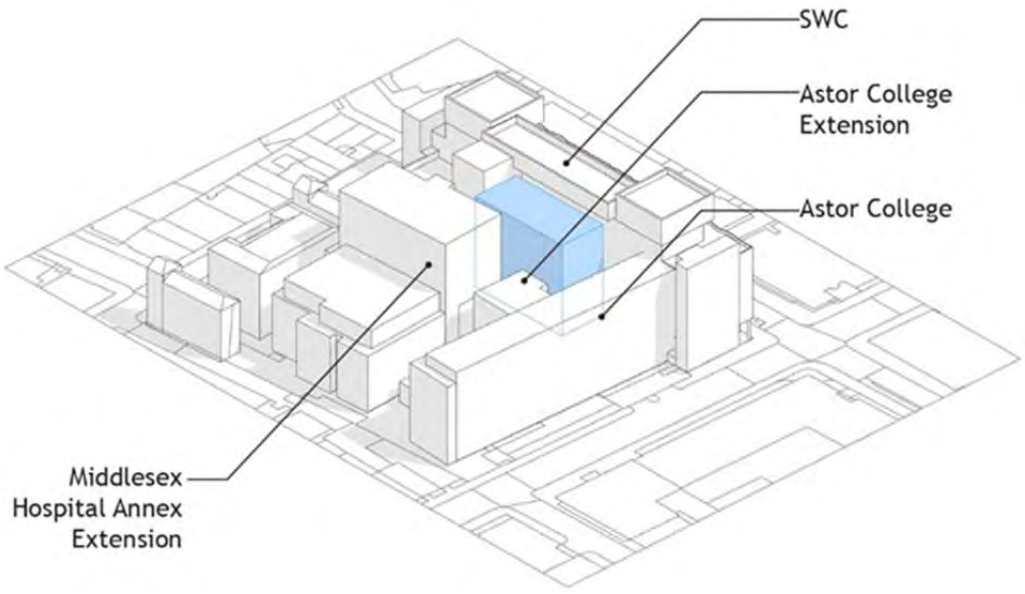
5. Southeast View: 5th Quad Proposal (Pre-App)



5. Southeast View: 5th Quad Proposal (Current)

3.4 The 5th Quad is designed as an extension to the SWC in support of the growing and changing research undertaken there. Existing operations on floors 1-5 require more area for additional research groups and support space. It is essential that these associated operations are located on the same floor to maintain efficiency and collaboration between complimentary research teams. As a result, the 5th Quad is one storey lower than the original SWC building as Level 6 roof plant areas are not required. There is also no requirement for expansion at Ground Floor hence this will be retained as a partly sheltered external space.

3.5 The proposed location of the 5th Quad in the south courtyard, places the new building above two storeys of basement. The existing basement structural grid is projected through to form a transfer structure at level 1 approximately 10.5m x 27.0m in plan. The projected volume is illustrated in blue in the diagram below.

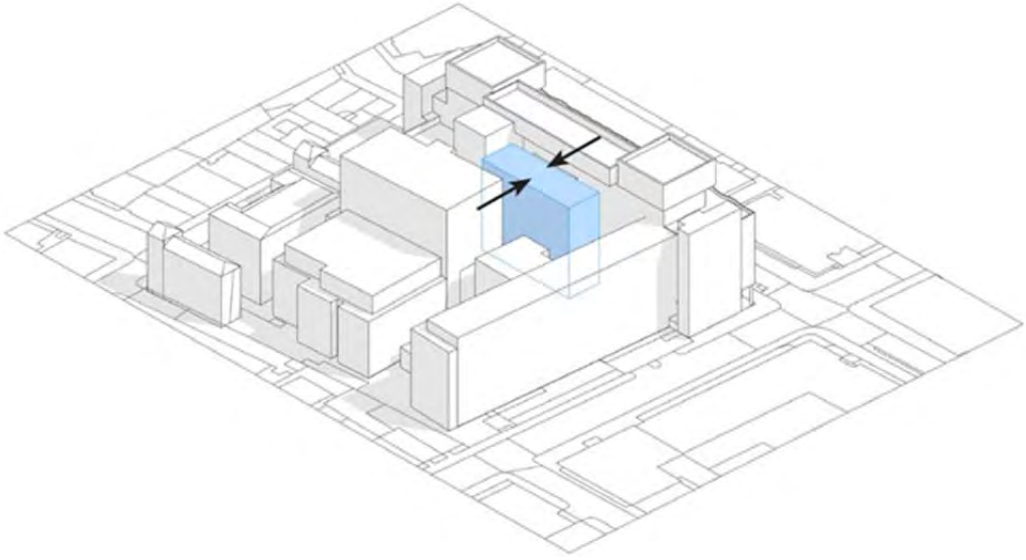


Volumetric Diagram 1: Projected Volume

3.6 The first development to the building's massing in order to reduce its impact on the daylight reaching neighbouring buildings was to reduce the width of the building in a North-South Direction. The transfer structure at L1 is used to offset the structure of the inhabited floors (L1-5) from the column grid of the basement and L1 external space below. A reduction of 1.6m can be achieved in this manner.

3.7 A reduction in width in this manner benefits Astor College to the East by reducing the number of windows to which the east façade stands directly opposite.

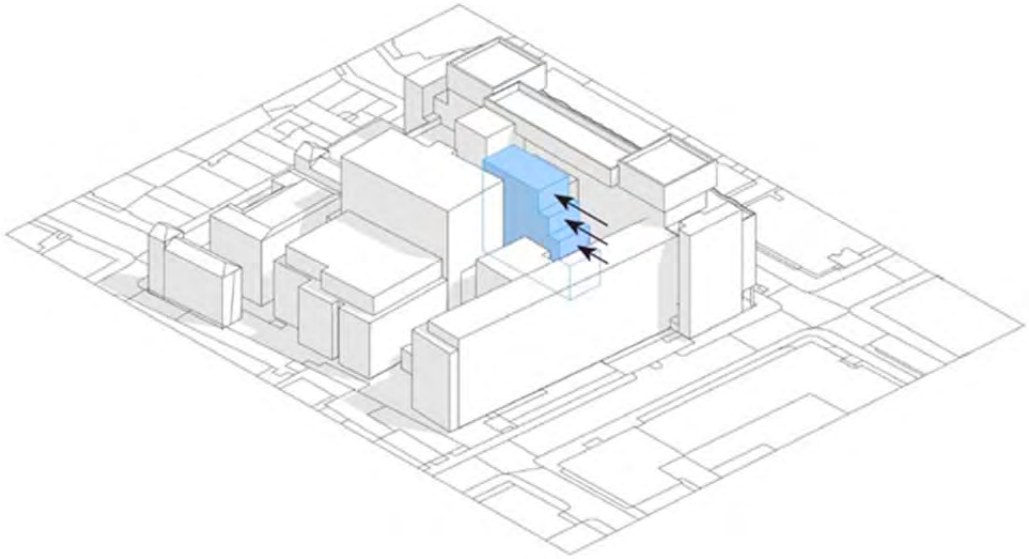
3.8 The buildings to the south (Astor College Extension and the proposed Middlesex Hospital Annex) also benefit as the reduced width North-South pulls the south façade of the 5th Quad further away from the boundary, increasing the vertical sky component to the windows in Astor College extension that face North.



Volumetric Diagram 2: Reduction to Width in Response to Daylight and Sunlight

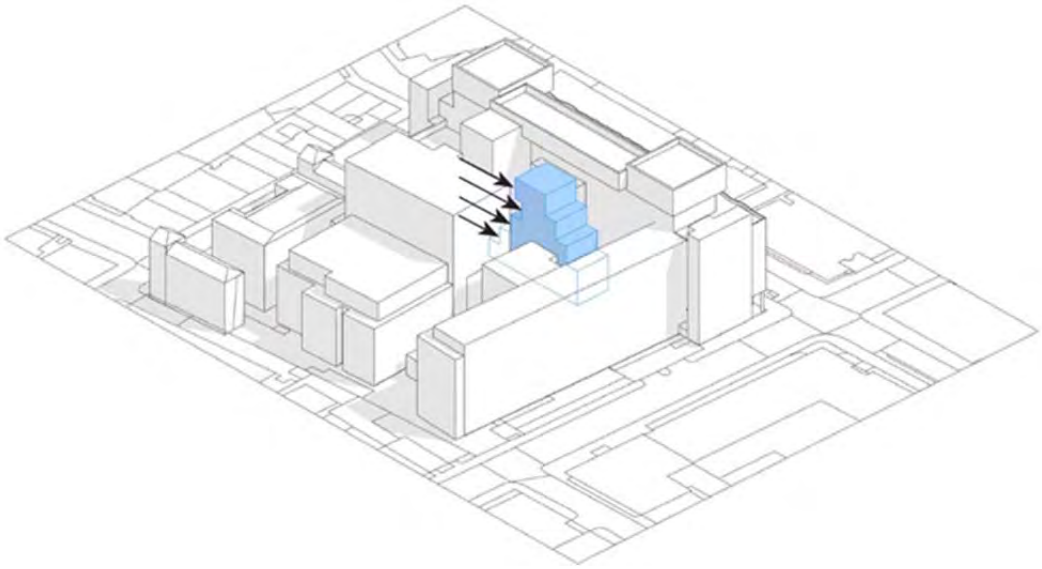
3.9 To further improve the vertical sky component to Astor College to the East, the building's eastern façade has been stepped back, at levels 3, 4 and 5, away from the boundary. This results in the parapet at level 5 setting back approximately 9.6m further from the boundary than the vertical wall on levels 1 and 2 of the 5th Quad. As the distance and height of the parapet at level 5 informs the angle at which sky becomes visible to the windows opposite, stepping the building in this way improves the daylight and visible sky to Astor College while retaining the proposed accommodation available at the lower floors.

3.10 Stepping the façade in this way also provides a benefit to the buildings to the south, particularly the Astor College Extension. Stepping the eastern façade reduces the south façade area from 620m² by approximately 88m², with most of this being taken from the upper floors. This increases the quantity of sky visible to rooms facing North from the Astor College Extension when compared with the starting point.



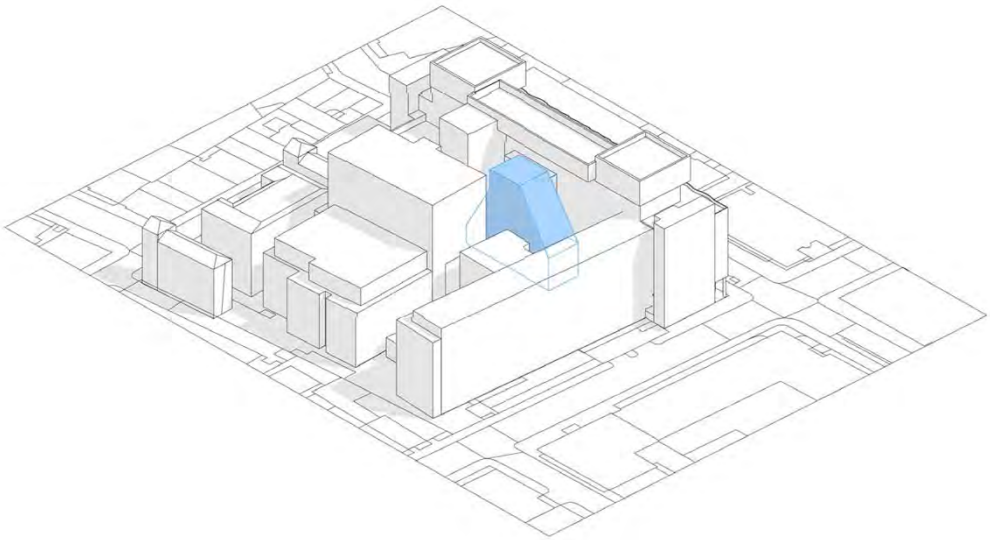
Volumetric Diagram 3: Stepping East Facade

3.11 In a similar manner to the east facade, the proposed 5th Quad's western façade is stepped from levels 2-5. This reduces the area of the south façade by a further 140m². This increases the quantity of sky visible to rooms facing North from proposed Middlesex Hospital Annex when compared with the starting point volume.



Volumetric Diagram 4: Stepping West Facade

3.12 As explained in Section 1.7 the building form submitted for the Pre-Application has been modified to replace the stepped profile to east and west facades with a sloping profile. The external terraces have become part of the internal floor area helping to deliver the space available for research and support functions. This is on the basis that the Sainsbury Wellcome Centre is already well provided with external space at level 5. Enclosing the small 5th Quad roof terraces using inclined glazing retains the overall tapering building form with only minimal impact on the neighbouring properties.



Volumetric Diagram 5: Sloping East and West Facade

3.13 The proposed design for the 5th Quad responds to the initial daylight and sunlight analysis carried out. The shaping of the initial volume described and illustrated above seeks to optimise the balance between consideration of the neighbouring buildings and their respective extensions and the delivery of a viable and much needed extension to the Sainsbury Wellcome Centre.

4. Assessment Process

Relevant Planning Policy:

CAMDEN LOCAL PLAN 2017 - SECTION 6 Protecting amenity

A1 Managing the impact of development
(f) sunlight daylight and overshadowing,

6.5 sunlight daylight and overshadowing.

> *Loss of daylight and sunlight can be caused if spaces are overshadowed by development. To assess whether acceptable levels of daylight and sunlight are available to habitable, outdoor amenity and open spaces, the Council will take into account the most recent guidance published by the Building Research Establishment (currently the Building Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011). Further detail can be found within our supplementary planning document Camden Planning Guidance on amenity.*

CAMDEN PLANNING GUIDANCE: Amenity January 2021

3. Daylight and Sunlight

Assessing daylight and sunlight levels

3.4 *Daylight and sunlight levels are affected by the location of a proposed development and its position in relation to, the windows in nearby properties.*

3.5 *In order to demonstrate that adequate levels of daylight and sunlight are being provided in accordance with Policy A1, the Council may require applicants to submit daylight and sunlight reports informed by BRE's Site layout planning for daylight and sunlight: A guide to good practice (the 'BRE guidance') or any updated best practice/technical guidance on the assessment of light impacts*

3.6 *The BRE guidance contains numerous tools, techniques and recommended standards relating to daylight and sunlight that are relevant to both minor and major developments. Officers will use the 45 degree and 25 degree assessment (as set out in the BRE guidelines) to make an initial judgement on the impact of a proposal.*

Flexible consideration of daylight and sunlight

3.14 *The Council notes the intention of the BRE document is to provide advice to developers and decision makers and therefore it should be regarded as a guide rather than policy.*

3.15 ***While we support the aims of the BRE methodology for assessing sunlight and daylight we will consider the outcomes of the assessments flexibility where appropriate, taking into account site specific circumstances and context. For example, to enable new development to respect the existing layout and form in some historic areas, or dense urban environments, it may be necessary to consider exceptions to the recommendations cited in the BRE guidance. Any exceptions will be assessed on a case-by-case basis.***

The effect on neighbouring properties:

4.1 The SLPDS describes three parameters to be assessed in order to measure the impact of the proposed new building on Daylight/Sunlight availability to the key adjacent properties. The three parameters to be assessed are as follows:

1) Daylight:
Vertical Sky Component (VSC)
Daylight Distribution (DD)

2) Sunlight:
Annual Probable Sunlight Hours (APSH)

3) Overshadowing (Amenity Space)
On relevant open spaces

4.2 The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. Although these spaces are not defined, examples are given of the type of non-domestic buildings that would normally fall into this category. These include schools, hospitals, hotels and hostels, small workshops and *some* offices.

4.3 As it is difficult to be sure of the specific use of neighbouring spaces we have taken a view on the relevance of the spaces adjacent to the proposed development. If we have been in any doubt we have carried out the assessment. However it should be noted some of the spaces we have assessed could fall outside the test requirement criteria.

3.4 It is important to note that the numerical values in the guidance are advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

3.5 The neighbouring properties we have assessed are as follows:

- Astor College Hall of residence
- Middlesex Hospital Annex (MHA)

4.6 The assessment is based on a site visit and 3D laser scan survey along with updated drawings, of the proposed 5th Quad support building provided by Ian Ritchie Architects and additional drawings of the neighbouring properties obtained from the Planning Portal.

Drawing References:

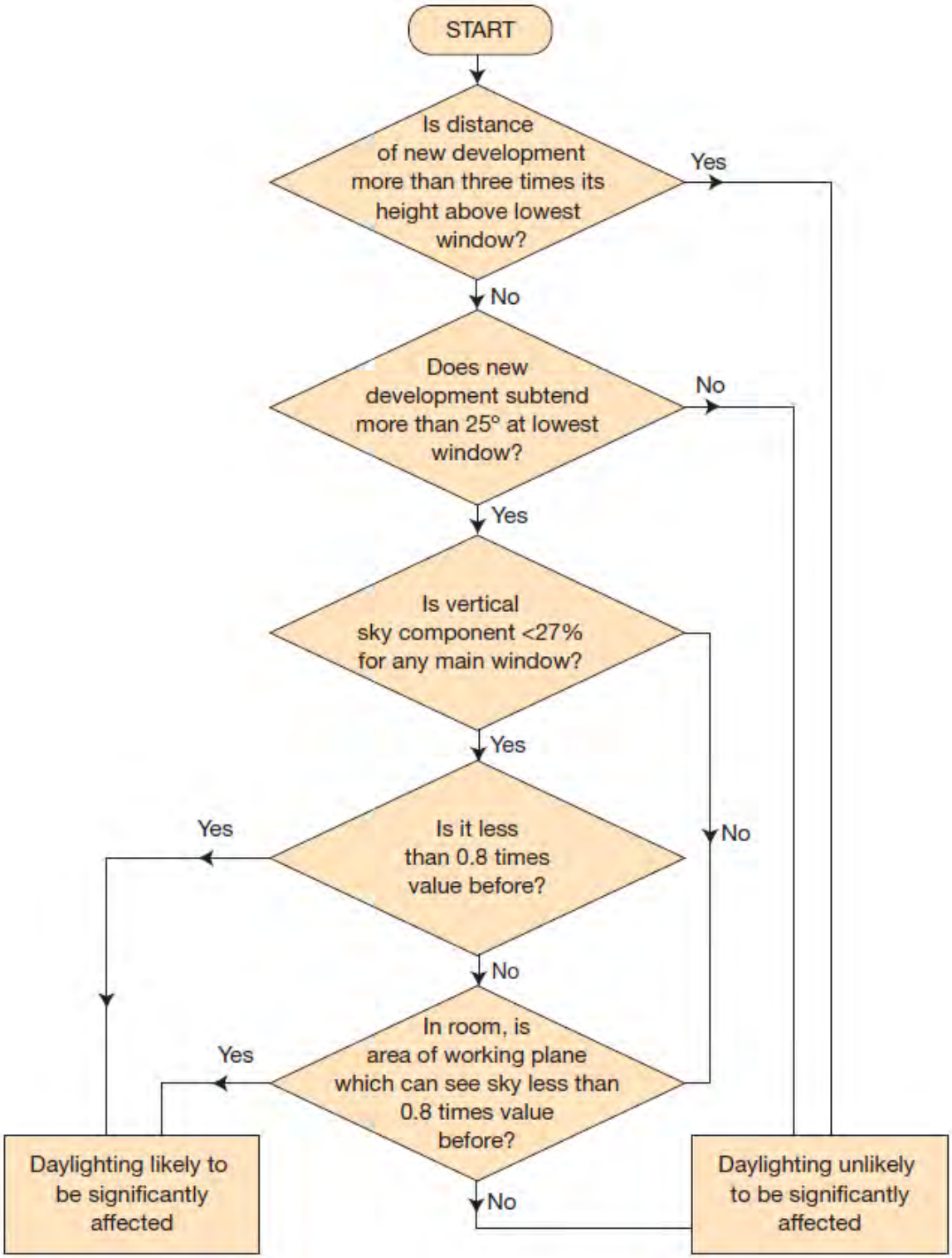
Proposed Development
780-IRAL-DR-08-0001
780-IRAL-DR-08-0002
780-IRAL-DR-08-2000
780-IRAL-DR-08-2001
780-IRAL-DR-08-2002
780-IRAL-DR-08-2003
780-IRAL-DR-08-2004
780-IRAL-DR-08-2005
780-IRAL-DR-08-2006
780-IRAL-DR-08-2010
780-IRAL-DR-08-2101
780-IRAL-DR-08-2102
780-IRAL-DR-08-2103
780-IRAL-DR-08-2201
780-IRAL-DR-08-2202
780-IRAL-DR-08-2203
780-IRAL-DR-08-2204

Astor College
2869 L099 P19
2869 L100 P19
2869 L250 P14
2869 L251 P14

Middlesex Hospital Annex (MHA)
LD15 078.00 E00 01-02 A
LD15 078.00 E01 03-04 B
LD15 078.00 S01 AA-BB B
LD15 078.00 S02 CC-DD A
LD15 078.00 S03 EE-FF
LD15 078.00 S04 GG-HH A
LD15 078.00 S05 JJ-LL B
LD15 078.00 P GA B1 A
LD15 078.00 P GA 00
LD15 078.00 P GA 01 A
LD15 078.00 P GA 02 B
LD15 078.00 P GA 03
LD15 078.00 P GA 04
LD15 078.00 P GA 05 A
LD15 078.00 P GA 06 A
LD15 078.00 P GA 07 A
LD15 078.00 P GA 08 A
LD15 078.00 P GA LR A

5. Daylight

5.1 Site Layout Planning for Daylight & Sunlight contains the following flow chart showing the steps which should be taken in order to establish whether a building will receive adequate daylight:



Distance Check:

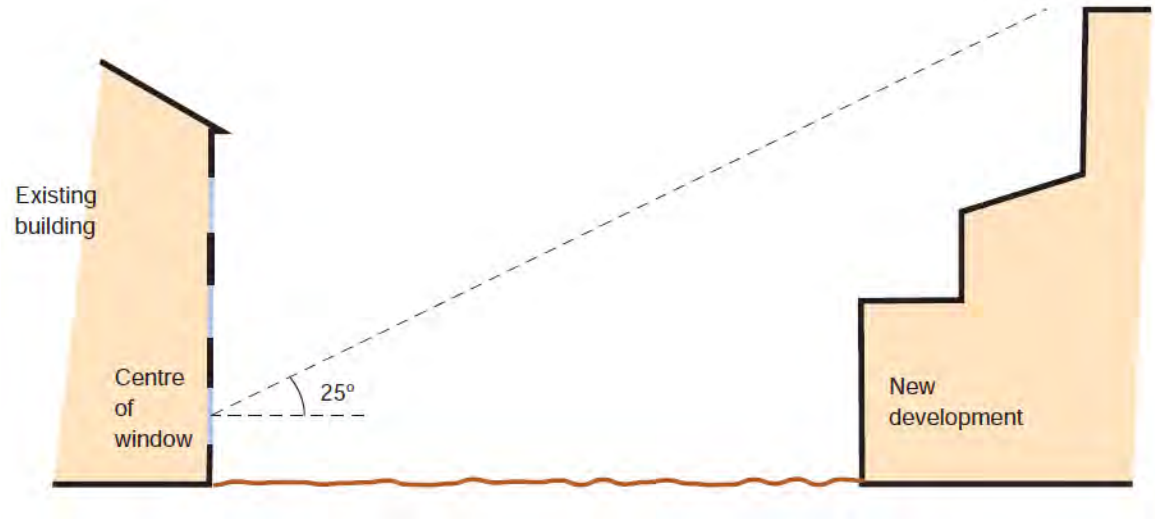
5.2 Site Layout Planning for Daylight & Sunlight (2011) states: "Loss of light to existing windows need not be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window."

Distance Check Results

5.3 On this occasion the ratio of the height of the proposed building to its distance from the centre of the lowest existing window is less than 1:3 and the 25° rule must be applied.

25° Rule:

5.4 The angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window should be no greater than 25°. If this is the case then it is unlikely to have a noticeable effect on diffuse skylight enjoyed by the existing building.



5.5 If, for any part of the development, the angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building:

25° Rule Results

5.6 On this occasion the angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window will be greater than 25° and the following, more detailed checks, are necessary:

Vertical Sky Component:

5.7 Daylight is the light received from the sun which is diffused through the sky's clouds. Even on a cloudy day when the sun is not visible a room will continue to be lit with light from the sky. This is also known as 'diffuse light'. Any reduction in the total amount of daylight can be calculated by finding the 'Vertical Sky Component'.

5.8 The Vertical Sky Component (VSC) is the ratio of the direct skylight illuminance falling on a vertical face at a reference point (usually the centre of a window), to the simultaneous horizontal illuminance under an unobstructed sky.

5.9 The guidance states that the VSC will be adversely affected if after a development it is both less than 27% of the overall available diffuse light and less than 0.8 times its former value.

5.10 Therefore if the VSC is more than 27% then enough light would still be reaching the window of the neighbouring building. However if the VSC is less than 27% as well as less than 0.8 times its former value the occupants will notice the reduction in the amount of skylight.

VSC Results

5.11 Calculations were undertaken for the modified design for the 5th Quad with sloping glazing replacing the stepped east and west facade in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

5.12 Detailed results are in Section 7. A summary of our findings is as follows:

5.12.1 **Astor College:** We have assessed one hundred and seventeen windows, serving ninety four rooms within this building. Of the windows assessed, fifty five meet the BRE guidance for vertical sky component.

5.12.2 Of the remaining windows; four serve non-habitable spaces and another nine would be considered marginal as the reduction in daylight is between 20% and 25%.

5.12.3 Of the windows serving habitable spaces that fall short of the BRE guidance; eleven serve the ground floor communal lounge and, although these windows fall short of the guidance for VSC, the room itself comfortably meets the guidance for daylight distribution, suggesting that the low VSC scores do not have an adverse effect on the daylight provision within the room.

5.12.4 All but one of the remaining windows that fall short of the guidance serve study bedrooms on the ground to sixth floors. It should be noted that all of these rooms currently have VSC scores well below the BRE guidance target of 27% for naturally lit rooms and so it is likely that they will currently be reliant on artificial light. As a result the new development is unlikely to have a significant impact in real terms. The final room is a third floor kitchen which could be considered marginal.

5,12.5 The introduction of the sloping glazing to enclose the east and west façade has resulted in a very small increase in the number of windows falling short of the VSC target, with an additional five windows, now falling short compared to the previous, stepped, scheme. It should be noted however that the absolute reductions in VSC have only increased by a very small amount, which would be unnoticeable in reality.

5.12.6 Current VSC levels within these rooms are very low with all of the windows below 20% VSC and almost half being below 10% VSC. It should also be noted that the absolute reduction in VSC within these rooms is small.

5.12.7 As is illustrated by the images in Section 3 of this report; the recent rear extension to Astor College introduced a significant obstruction to light into windows within the existing Astor College building, making them overly reliant on light from across the south courtyard, which forms part of the Sainsbury Wellcome Centre site. The internal layout of the extension itself also means that habitable rooms within it are overly reliant on light from across the Sainsbury Wellcome Centre site.

5.12.8 The location & scale of the new Middlesex Hospital Annex development has also had a significant effect on the amount of daylight entering the south courtyard and available to both the Sainsbury Wellcome Centre and Astor College.

5.12.9 These two recent developments have had the effect of reducing natural light availability across the Sainsbury Wellcome site that they themselves both rely upon. The proposed 5th Quad development is not the primary cause of low light levels within Astor Collage.

5.12.10 The guidance would therefore regard all these particular neighbouring windows as being built unreasonably close to their own boundary and therefore any impact due to the proposed development should not be considered in the same way as would be the case if the windows were a reasonable distance from the boundary and not so overly reliant on natural light across the development site.

5.12.11 Elevations showing windows that fall short of one or more elements of the BRE guidance highlighted in blue can be found in Section 7.

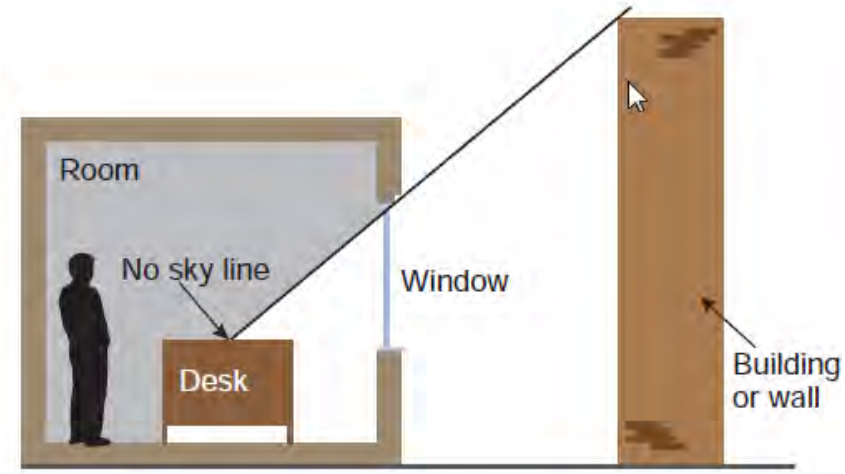
5.12.12 **MHA:** We have assessed one hundred and thirty five windows serving fifty two rooms within this building. Of the windows assessed one hundred and six meet the BRE planning guidance for VSC. Of the remaining twenty nine windows; eighteen serve open plan commercial office spaces at first second and third floor levels, all of which meet the guidance for daylight distribution. A further two windows serve a ground floor, non-habitable, plant room. Of the nine windows that fall short of the guidance that serve habitable residential rooms; 2 serve a 4th floor living room (R4), two serve the same room (R4) on the 5th floor and two serve the same room (R4) on the 6th floor (although one of these could be considered marginal). These rooms are all served by five windows each, the remaining windows serving these rooms meet the BRE guidance and provide the rooms they serve with a good level of daylight, as can be seen by the daylight distribution results (See Section 7). Of the three remaining windows; one serves a 4th floor kitchen (R5), and could be considered marginal, one serves a 4th floor LKD (R8), and the third is one of five serving the 7tt floor living room (W9) Again; the room this window serves receives a good level of daylight, as can be seen by the daylight distribution results (See Section 7).

5.12.13 The introduction of the sloping glazing to enclose the east and west façade has resulted in a very small increase in the number of windows falling short of the VSC target, with an additional six windows, now falling short compared to the previous, stepped, scheme. It should be noted however that the absolute reductions in VSC have only increased by a very small amount, which would be unnoticeable in reality.

Daylight Distribution:

5.13 Where room layouts are known (or estimated) the impact on daylighting distribution can be found by plotting what is known as the 'no sky line' in each of the main rooms. These are the same rooms as used for the VSC test.

5.14 The no sky line effectively divides the points on the working plane (0.85m high for residential properties and 0.7m high for offices) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.



BRE 209

5.15 If, following the construction of a new development, the no sky line moves so that the area of the existing room, which does not receive direct skylight, is reduced to less than 0.8 times its former value, this will be noticeable to the occupants.

5.16 We have where possible obtained internal layouts from the planning submission documents for the Astor College extension and Middlesex Hospital Annex development.

Daylight Distribution Results

5.17 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

5.18 Detailed results are in Section 7. A summary of our findings is as follows:

5.18.1 **Astor College:** We have assessed ninety four rooms within this building. Of the rooms assessed sixty six meet the BRE guidance for daylight distribution.

5.18.2 There is no recommended minimum standard for daylight distribution within the BRE guidance. However it is generally agreed that at least 80% of a room should have a view of the sky for rooms designed to rely partially, or totally, on natural light (CIBSE Lighting Guide LC10). Of the twenty eight rooms assessed that fall short of the BRE guidance, eighteen fall below this 80% threshold prior to the introduction of the 5th Quad into the south courtyard and so will already rely on artificial work lighting. The impact of proposed development is likely therefore to be less than might otherwise be suggested by the results of the analysis. A further two windows could be considered marginal.

5.18.3 It should also be noted that the guidance would regard all twenty eight of these particular neighbouring rooms as being served by windows that are unreasonably close to their own boundary and therefore any impact due to the proposed development should not be considered in the same way as would be the case if the windows were a reasonable distance from the boundary. (SLPDS Section 2.3).

5.18.4 The introduction of the sloping glazing to enclose the east and west façade has resulted in a very small increase in the number of rooms falling short of the daylight distribution target, with an additional seven rooms, now falling short compared to the previous, stepped, scheme. It should be noted however that the absolute reductions in daylight distribution have only increased by a very small amount, which would be unnoticeable in reality.

5.18.5 Elevations showing windows/rooms that fall short of one or more elements of the BRE guidance highlighted in blue can be found in Section 7.

5.18.6 **MHA:** All fifty two rooms assessed comfortably meet the BRE guidance for daylight distribution.

6. Sunlight

Available Sunlight Hours

6.1 Guidance for minimum sunlight values can be found in Section 3 of Site Layout Planning for Daylight and Sunlight (SLPDS).

6.2 Habitable rooms in domestic buildings that face within 90° of due south are tested, as are rooms in non-domestic buildings that have a particular requirement for sunlight.

6.3 The recommendations are that applicable windows should receive a minimum of 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months between 21st September to the 21st March (the approximate dates of the spring and autumn equinoxes).

6.4 However if this is not possible (or the amount of sunlight is already reduced because of the effect of existing obstructions) then a further reduction in sunlight availability will be noticeable to an occupier if the total number of sunlight hours is below the target 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months, ***and*** is less than 0.8 times its former value prior to the development.

6.5 There is no requirement for windows that face within 90° of due north so windows that fall into this category have not been considered for sunlight calculations.

Available Sunlight Hours Results

6.6 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

6.7 Detailed results are in Section 7. A summary of our findings is as follows:

6.7.1 **Astor College:** Of the one hundred and seventeen windows assessed within this building, sixty meet the BRE guidance for annual sun, while eighty three meet the guidance for winter sun. Of the windows that fall short of the guidance, eleven serve the ground floor shared lounge. This room currently receives levels of sunlight well below the BRE recommendations prior to the introduction of the 5th Quad into the south courtyard and as such cannot really be considered a sunlit room. The resulting reduction due to the proposed 5th Quad development is therefore likely to have minimal real-world impact.

6.7.2 All of the remaining habitable rooms that fall short of the guidance are study, bedrooms. As with the shared lounge, many of these also currently receive very low levels of sunlight. Given that during the daytime these rooms are used for work purposes, as an office, their daylight & sunlight requirements could be considered to be commercial in nature. Direct sunlight is not desirable in office spaces due to unwanted glare on computer screens.

6.7.3 Elevations showing windows that fall short of one or more elements of the BRE guidance highlighted in blue can be found in Section 7.

6.7.4 **MHA:** Of the one hundred and thirty five windows assessed in this building, just one falls short of the BRE planning guidance for availably sunlight hours. This window is one of eleven that serve a 3rd floor open plan commercial office space. The remaining ten windows serving this space comply with the BRE guidance.

7. Appendices

Results:

Vertical Sky Component
Available Sunlight Hours

Daylight Distribution

Key to colour coding:

Meets BRE guidance

Marginal or falls short of guidance but is currently below recommended minimum requirement and/or absolute reduction is small. Therefore the 5th Quad development is not the primary cause of low light levels.

Falls Short of BRE guidance

In order to highlight changes to daylight levels since pre-app, and following the addition of the sloped glazing enclosing the east and west terraces, figures for both PR/EX and absolute reductions in VSC and DD are highlighted. **Green** text is used where results have improved; **black** is used for results which have remained the same and **red** where the reduction in daylight has increased. Where a window or room falls short of the guidance where previously is did not, a red box highlights this.

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
Astor College															
Gnd	R1	Residential	Lounge	W1	Existing	5.84	11.00%	5.18	NO	7.00	0.00	NO	0.00	1.00	YES
					Proposed	0.66				0.00			0.00		
				W2	Existing	5.97	8.00%	5.49	NO	9.00	0.00	NO	0.00	1.00	YES
					Proposed	0.48				0.00			0.00		
				W3	Existing	6.17	9.00%	5.63	NO	9.00	0.00	NO	0.00	1.00	YES
					Proposed	0.54				0.00			0.00		
				W4	Existing	6.21	14.00%	5.32	NO	10.00	0.00	NO	0.00	1.00	YES
					Proposed	0.89				0.00			0.00		
				W5	Existing	5.88	26.00%	4.34	NO	12.00	0.17	NO	0.00	1.00	YES
					Proposed	1.54				2.00			0.00		
				W6	Existing	6.10	32.00%	4.15	NO	11.00	0.09	NO	0.00	1.00	YES
					Proposed	1.95				1.00			0.00		
				W7	Existing	6.03	40.00%	3.63	NO	12.00	0.25	NO	0.00	1.00	YES
					Proposed	2.41				3.00			0.00		
				W8	Existing	5.63	47.00%	2.97	NO	12.00	0.33	NO	0.00	1.00	YES
					Proposed	2.66				4.00			0.00		
				W9	Existing	6.00	50.00%	3.01	NO	13.00	0.38	NO	0.00	1.00	YES
					Proposed	2.99				5.00			0.00		
				W10	Existing	5.70	55.00%	2.55	NO	11.00	0.45	NO	0.00	1.00	YES
					Proposed	3.15				5.00			0.00		
				W11	Existing	3.28	35.00%	2.12	NO	9.00	0.22	NO	0.00	1.00	YES
					Proposed	1.16				2.00			0.00		
	R2	Residential	Study/Bed	W12	Existing	2.93	60.00%	1.18	NO	9.00	0.22	NO	0.00	1.00	YES
					Proposed	1.75				2.00			0.00		
	R3	Residential	Study/Bed	W13	Existing	2.17	78.00%	0.47	MARGINAL	2.00	0.00	YES	0.00	1.00	YES
					Proposed	1.69				0.00			0.00		
	R4	Residential	Study/Bed	W14	Existing	4.43	42.00%	2.57	NO	14.00	0.36	NO	1.00	1.00	YES
					Proposed	1.87				5.00			1.00		
	R5	Residential	Study/Bed	W15	Existing	4.81	32.00%	3.25	NO	11.00	0.36	NO	1.00	1.00	YES
					Proposed	1.56				4.00			1.00		
	R6	Residential	Study/Bed	W16	Existing	4.97	29.00%	3.53	NO	10.00	0.50	NO	1.00	1.00	YES
					Proposed	1.43				5.00			1.00		
	R7	Residential	Circulation	W17	Existing	2.17	69.00%	0.68	NO	5.00	0.20	YES	0.00	1.00	YES
					Proposed	1.49				1.00			0.00		
1st	R1	Residential	Bath	W1	Existing	0.98	0.00%	0.98	NO	3.00	0.00	YES	2.00	0.00	NO
					Proposed	0.00				0.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	1.20	1.00%	1.18	NO	2.00	0.00	YES	1.00	0.00	NO
					Proposed	0.01				0.00			0.00		
				W3	Existing	1.37	4.00%	1.31	NO	2.00	0.00	YES	0.00	1.00	YES
					Proposed	0.06				0.00			0.00		
	R3	Residential	Study/Bed	W4	Existing	1.37	73.00%	0.37	NO	2.00	0.50	YES	1.00	0.00	NO
					Proposed	1.01				1.00			0.00		
	R4	Residential	Study/Bed	W5	Existing	1.23	96.00%	0.04	YES	2.00	1.00	YES	2.00	1.00	YES
					Proposed	1.19				2.00			2.00		
	R5	Residential	Study/Bed	W6	Existing	1.74	59.00%	0.72	NO	3.00	0.67	YES	0.00	1.00	YES
					Proposed	1.02				2.00			0.00		
	R6	Residential	Study/Bed	W7	Existing	3.46	67.00%	1.13	NO	10.00	0.60	YES	0.00	1.00	YES
					Proposed	2.34				6.00			0.00		
	R7	Residential	Study/Bed	W8	Existing	2.90	86.00%	0.40	YES	4.00	0.50	YES	0.00	1.00	YES
					Proposed	2.50				2.00			0.00		
	R8	Residential	Study/Bed	W9	Existing	5.81	47.00%	3.06	NO	15.00	0.33	NO	1.00	1.00	YES
					Proposed	2.76				5.00			1.00		
	R9	Residential	Study/Bed	W10	Existing	6.32	37.00%	3.98	NO	16.00	0.38	NO	1.00	1.00	YES
					Proposed	2.35				6.00			1.00		
	R10	Residential	Study/Bed	W11	Existing	6.70	32.00%	4.57	NO	16.00	0.44	NO	1.00	1.00	YES
					Proposed	2.13				7.00			1.00		
	R11	Residential	Circulation	W12	Existing	2.84	72.00%	0.80	NO	7.00	0.14	NO	0.00	1.00	YES
					Proposed	2.04				1.00			0.00		
2nd	R1	Residential	Study/Bed	W1	Existing	10.67	41.00%	6.32	NO	10.00	0.00	NO	1.00	0.00	NO
					Proposed	4.35				0.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	11.45	40.00%	6.89	NO	15.00	0.07	NO	2.00	0.00	NO
					Proposed	4.56				1.00			0.00		
	R3	Residential	Study/Bed	W3	Existing	11.70	43.00%	6.72	NO	16.00	0.25	NO	0.00	1.00	YES
					Proposed	4.98				4.00			0.00		
	R4	Residential	Study/Bed	W4	Existing	11.18	67.00%	3.69	NO	18.00	0.44	NO	1.00	1.00	YES
					Proposed	7.49				8.00			1.00		
	R5	Residential	Study/Bed	W5	Existing	10.01	71.00%	2.88	NO	20.00	0.65	NO	2.00	1.00	YES
					Proposed	7.13				13.00			2.00		
	R6	Residential	Study/Bed	W6	Existing	1.91	71.00%	0.55	NO	3.00	0.67	YES	0.00	1.00	YES
					Proposed	1.35				2.00			0.00		
	R7	Residential	Kitchen	W7	Existing	4.94	83.00%	0.82	YES	11.00	0.82	YES	0.00	1.00	YES
					Proposed	4.12				9.00			0.00		
				W8	Existing	3.90	95.00%	0.18	YES	6.00	0.83	YES	0.00	1.00	YES
					Proposed	3.72				5.00			0.00		
	R8	Residential	Study/Bed	W9	Existing	6.96	55.00%	3.16	NO	11.00	0.00	NO	0.00	1.00	YES
					Proposed	3.80				0.00			0.00		
	R9	Residential	Study/Bed	W10	Existing	7.67	42.00%	4.48	NO	12.00	0.00	NO	0.00	1.00	YES
					Proposed	3.19				0.00			0.00		
	R10	Residential	Study/Bed	W11	Existing	8.19	33.00%	5.48	NO	11.00	0.09	NO	0.00	1.00	YES
					Proposed	2.71				1.00			0.00		
	R11	Residential	Circulation	W12	Existing	3.71	76.00%	0.90	MARGINAL	8.00	0.25	NO	0.00	1.00	YES
					Proposed	2.82				2.00			0.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
Astor College															
3rd	R1	Residential	Study/Bed	W1	Existing	12.39	53.00%	5.86	NO	14.00	0.07	NO	1.00	0.00	NO
					Proposed	6.53				1.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	13.32	53.00%	6.24	NO	18.00	0.11	NO	2.00	0.00	NO
					Proposed	7.08				2.00			0.00		
	R3	Residential	Study/Bed	W3	Existing	13.51	54.00%	6.19	NO	19.00	0.32	NO	0.00	1.00	YES
					Proposed	7.32				6.00			0.00		
	R4	Residential	Study/Bed	W4	Existing	12.86	73.00%	3.43	NO	21.00	0.62	NO	1.00	1.00	YES
					Proposed	9.43				13.00			1.00		
	R5	Residential	Study/Bed	W5	Existing	11.32	76.00%	2.69	MARGINAL	23.00	0.74	NO	3.00	0.67	NO
					Proposed	8.63				17.00			2.00		
	R6	Residential	Study/Bed	W6	Existing	2.25	76.00%	0.54	MARGINAL	3.00	1.00	YES	0.00	1.00	YES
					Proposed	1.71				3.00			0.00		
	R7	Residential	Kitchen	W7	Existing	6.00	89.00%	0.64	YES	13.00	0.92	YES	0.00	1.00	YES
					Proposed	5.37				12.00			0.00		
				W8	Existing	4.96	99.00%	0.03	YES	9.00	0.89	YES	0.00	1.00	YES
					Proposed	4.93				8.00			0.00		
	R8	Residential	Study/Bed	W9	Existing	8.70	65.00%	3.02	NO	17.00	0.35	NO	1.00	0.00	NO
					Proposed	5.68				6.00			0.00		
	R9	Residential	Study/Bed	W10	Existing	9.59	52.00%	4.57	NO	18.00	0.17	NO	1.00	0.00	NO
					Proposed	5.02				3.00			0.00		
	R10	Residential	Study/Bed	W11	Existing	10.21	40.00%	6.09	NO	17.00	0.12	NO	0.00	1.00	YES
					Proposed	4.13				2.00			0.00		
	R11	Residential	Kitchen	W12	Existing	4.50	79.00%	0.95	MARGINAL	10.00	0.40	NO	0.00	1.00	YES
					Proposed	3.55				4.00			0.00		
4th	R1	Residential	Study/Bed	W1	Existing	14.26	61.00%	5.61	NO	15.00	0.20	NO	1.00	0.00	NO
					Proposed	8.64				3.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	15.51	62.00%	5.95	NO	22.00	0.32	NO	3.00	0.00	NO
					Proposed	9.56				7.00			0.00		
	R3	Residential	Study/Bed	W3	Existing	15.91	64.00%	5.74	NO	24.00	0.58	NO	1.00	0.00	NO
					Proposed	10.17				14.00			0.00		
	R4	Residential	Study/Bed	W4	Existing	15.08	77.00%	3.40	MARGINAL	24.00	0.71	NO	3.00	0.33	NO
					Proposed	11.68				17.00			1.00		
	R5	Residential	Study/Bed	W5	Existing	13.05	80.00%	2.63	YES	26.00	0.81	YES	3.00	0.67	NO
					Proposed	10.42				21.00			2.00		
	R6	Residential	Study/Bed	W6	Existing	2.78	81.00%	0.52	YES	3.00	1.00	YES	0.00	1.00	YES
					Proposed	2.27				3.00			0.00		
	R7	Residential	Kitchen	W7	Existing	7.32	92.00%	0.61	YES	16.00	0.94	YES	1.00	0.00	NO
					Proposed	6.71				15.00			0.00		
				W8	Existing	6.40	100.00%	0.00	YES	12.00	1.00	YES	0.00	1.00	YES
					Proposed	6.40				12.00			0.00		
	R8	Residential	Study/Bed	W9	Existing	10.91	76.00%	2.64	MARGINAL	22.00	0.64	NO	2.00	0.00	NO
					Proposed	8.27				14.00			0.00		
	R9	Residential	Study/Bed	W10	Existing	12.00	63.00%	4.50	NO	22.00	0.27	NO	2.00	0.00	NO
					Proposed	7.50				6.00			0.00		
	R10	Residential	Study/Bed	W11	Existing	12.65	49.00%	6.44	NO	23.00	0.13	NO	2.00	0.00	NO
					Proposed	6.21				3.00			0.00		
	R11	Residential	Circulation	W12	Existing	5.52	83.00%	0.96	YES	13.00	0.46	NO	2.00	0.50	NO
					Proposed	4.56				6.00			1.00		
				W13	Existing	5.52	83.00%	0.96	YES	13.00	0.46	NO	2.00	0.50	NO
					Proposed	4.56				6.00			1.00		
5th	R1	Residential	Study/Bed	W1	Existing	16.43	68.00%	5.20	NO	19.00	0.37	NO	3.00	0.00	NO
					Proposed	11.23				7.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	18.09	70.00%	5.47	NO	24.00	0.54	NO	3.00	0.00	NO
					Proposed	12.62				13.00			0.00		
	R3	Residential	Study/Bed	W3	Existing	18.83	73.00%	5.11	NO	29.00	0.69	NO	2.00	0.00	NO
					Proposed	13.72				20.00			0.00		
	R4	Residential	Study/Bed	W4	Existing	18.04	82.00%	3.19	YES	31.00	0.81	YES	4.00	0.25	NO
					Proposed	14.84				25.00			1.00		
	R5	Residential	Study/Bed	W5	Existing	15.39	84.00%	2.42	YES	33.00	0.85	YES	6.00	0.50	NO
					Proposed	12.97				28.00			3.00		
	R6	Residential	Study/Bed	W6	Existing	3.70	87.00%	0.46	YES	4.00	1.00	YES	0.00	1.00	YES
					Proposed	3.23				4.00			0.00		
	R7	Residential	Kitchen	W7	Existing	9.05	94.00%	0.53	YES	18.00	0.94	YES	3.00	0.67	YES
					Proposed	8.52				17.00			2.00		
				W8	Existing	8.46	100.00%	0.00	YES	16.00	1.00	YES	1.00	1.00	YES
					Proposed	8.46				16.00			1.00		
	R8	Residential	Study/Bed	W9	Existing	13.88	85.00%	2.09	YES	29.00	0.79	MARGINAL	3.00	0.00	NO
					Proposed	11.79				23.00			0.00		
	R9	Residential	Study/Bed	W10	Existing	15.02	73.00%	4.03	NO	29.00	0.62	NO	3.00	0.00	NO
					Proposed	11.00				18.00			0.00		
	R10	Residential	Study/Bed	W11	Existing	15.66	59.00%	6.47	NO	30.00	0.33	NO	3.00	0.00	NO
					Proposed	9.18				10.00			0.00		
	R11	Residential	Circulation	W12	Existing	6.83	86.00%	0.94	YES	15.00	0.60	NO	4.00	0.25	NO
					Proposed	5.89				9.00			1.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
Astor College															
6th	R1	Residential	Study/Bed	W1	Existing	18.93	77.00%	4.38	MARGINAL	24.00	0.63	NO	3.00	0.00	NO
					Proposed	14.55				15.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	21.14	78.00%	4.63	MARGINAL	31.00	0.74	NO	4.00	0.00	NO
					Proposed	16.51				23.00			0.00		
	R3	Residential	Study/Bed	W3	Existing	22.37	81.00%	4.24	YES	36.00	0.83	YES	4.00	0.25	NO
					Proposed	18.13				30.00			1.00		
	R4	Residential	Study/Bed	W4	Existing	22.16	88.00%	2.74	YES	41.00	0.88	YES	7.00	0.43	NO
					Proposed	19.42				36.00			3.00		
	R5	Residential	Study/Bed	W5	Existing	19.30	90.00%	2.02	YES	38.00	0.92	YES	9.00	0.67	YES
					Proposed	17.28				35.00			6.00		
	R6	Residential	Study/Bed	W6	Existing	5.90	94.00%	0.38	YES	8.00	0.88	YES	1.00	0.00	NO
					Proposed	5.52				7.00			0.00		
	R7	Residential	Kitchen	W7	Existing	11.85	97.00%	0.41	YES	24.00	0.96	YES	5.00	0.80	YES
					Proposed	11.44				23.00			4.00		
				W8	Existing	11.99	100.00%	0.00	YES	21.00	1.00	YES	2.00	1.00	YES
					Proposed	11.99				21.00			2.00		
	R8	Residential	Study/Bed	W9	Existing	17.87	90.00%	1.76	YES	34.00	0.85	YES	5.00	0.20	NO
					Proposed	16.11				29.00			1.00		
	R9	Residential	Study/Bed	W10	Existing	18.83	83.00%	3.16	YES	36.00	0.75	YES	5.00	0.00	NO
					Proposed	15.67				27.00			0.00		
	R10	Residential	Study/Bed	W11	Existing	19.36	69.00%	5.96	NO	39.00	0.56	NO	5.00	0.00	NO
					Proposed	13.40				22.00			0.00		
	R11	Residential	Circulation	W12	Existing	8.63	90.00%	0.84	YES	16.00	0.69	NO	5.00	0.20	NO
					Proposed	7.79				11.00			1.00		
7th	R1	Residential	Study/Bed	W1	Existing	22.04	86.00%	3.13	YES	31.00	0.84	YES	3.00	0.00	NO
					Proposed	18.92				26.00			0.00		
	R2	Residential	Study/Bed	W2	Existing	24.75	86.00%	3.37	YES	38.00	0.89	YES	5.00	0.20	NO
					Proposed	21.38				34.00			1.00		
	R3	Residential	Study/Bed	W3	Existing	26.37	89.00%	3.02	YES	45.00	0.91	YES	7.00	0.43	NO
					Proposed	23.35				41.00			3.00		
	R4	Residential	Study/Bed	W4	Existing	27.17	93.00%	1.98	YES	47.00	0.94	YES	9.00	0.67	YES
					Proposed	25.19				44.00			6.00		
	R5	Residential	Study/Bed	W5	Existing	26.75	95.00%	1.38	YES	51.00	0.96	YES	13.00	0.85	YES
					Proposed	25.36				49.00			11.00		
	R6	Residential	Study/Bed	W6	Existing	11.73	98.00%	0.25	YES	18.00	0.94	YES	3.00	0.67	NO
					Proposed	11.48				17.00			2.00		
	R7	Residential	Kitchen	W7	Existing	18.37	99.00%	0.24	YES	42.00	1.00	YES	10.00	1.00	YES
					Proposed	18.13				42.00			10.00		
				W8	Existing	18.90	100.00%	0.00	YES	34.00	1.00	YES	5.00	1.00	YES
					Proposed	18.90				34.00			5.00		
	R8	Residential	Study/Bed	W9	Existing	22.88	94.00%	1.31	YES	47.00	0.94	YES	10.00	0.70	YES
					Proposed	21.56				44.00			7.00		
				W10	Existing	0.00	100.00%	0.00	YES	0.00	1.00	YES	0.00	1.00	YES
					Proposed	0.00				0.00			0.00		
	R9	Residential	Study/Bed	W11	Existing	23.54	90.00%	2.25	YES	46.00	0.89	YES	10.00	0.50	YES
					Proposed	21.29				41.00			5.00		
	R10	Residential	Study/Bed	W12	Existing	23.85	81.00%	4.49	YES	48.00	0.77	YES	10.00	0.20	NO
					Proposed	19.36				37.00			2.00		
	R11	Residential	Circulation	W13	Existing	11.30	94.00%	0.63	YES	22.00	0.86	YES	7.00	0.57	NO
					Proposed	10.68				19.00			4.00		
8th	R1	Residential	Circulation	W1	Existing	23.98	94.00%	1.52	YES	39.00	0.95	YES	4.00	0.50	NO
					Proposed	22.46				37.00			2.00		
				W2	Existing	22.90	93.00%	1.56	YES	39.00	0.95	YES	4.00	0.50	NO
					Proposed	21.34				37.00			2.00		
	R2	Residential	Kitchen	W3	Existing	23.53	93.00%	1.56	YES	44.00	0.95	YES	8.00	0.75	MARGINAL
					Proposed	21.97				42.00			6.00		
				W4	Existing	29.95	96.00%	1.29	YES	47.00	0.98	YES	10.00	0.90	YES
					Proposed	28.66				46.00			9.00		
	R3	Residential	Study/Bed	W5	Existing	31.92	97.00%	0.84	YES	56.00	1.00	YES	13.00	1.00	YES
					Proposed	31.08				56.00			13.00		
	R4	Residential	Study/Bed	W6	Existing	32.43	98.00%	0.53	YES	60.00	1.00	YES	16.00	1.00	YES
					Proposed	31.91				60.00			16.00		
				W7	Existing	32.56	99.00%	0.35	YES	61.00	1.00	YES	17.00	1.00	YES
					Proposed	32.21				61.00			17.00		
	R5	Residential	Study/Bed	W8	Existing	32.60	99.00%	0.22	YES	62.00	1.00	YES	18.00	1.00	YES
					Proposed	32.38				62.00			18.00		
	R6	Residential	Study/Bed	W9	Existing	32.81	100.00%	0.12	YES	63.00	1.00	YES	19.00	1.00	YES
					Proposed	32.69				63.00			19.00		
	R7	Residential	Study/Bed	W10	Existing	33.47	100.00%	0.07	YES	64.00	1.00	YES	19.00	1.00	YES
					Proposed	33.40				64.00			19.00		
	R8	Residential	Study/Bed	W11	Existing	34.19	100.00%	0.03	YES	66.00	1.00	YES	21.00	1.00	YES
					Proposed	34.15				66.00			21.00		
	R9	Residential	Study/Bed	W12	Existing	34.81	100.00%	0.02	YES	65.00	1.00	YES	20.00	1.00	YES
					Proposed	34.80				65.00			20.00		
				W13	Existing	35.23	100.00%	0.00	YES	65.00	1.00	YES	20.00	1.00	YES
					Proposed	35.23				65.00			20.00		
	R10	Residential	Study/Bed	W14	Existing	35.73	100.00%	0.00	YES	65.00	1.00	YES	20.00	1.00	YES
					Proposed	35.73				65.00			20.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
MHA															
Gnd	R1	Residential	OP Office	W1	Existing	4.11	99.00%	0.03	YES		*North*			*North*	
					Proposed	4.08									
				W2	Existing	3.82	98.00%	0.06	YES		*North*			*North*	
					Proposed	3.76									
				W3	Existing	3.05	95.00%	0.15	YES		*North*			*North*	
					Proposed	2.90									
	R2	Residential	Plant	W4	Existing	2.41	71.00%	0.71	NO		*North*			*North*	
					Proposed	1.70									
				W5	Existing	1.94	73.00%	0.53	NO	1.00	1.00	YES	0.00	1.00	YES
					Proposed	1.42				1.00			0.00		
1st	R1	Residential	OP Office	W1	Existing	1.27	100.00%	0.00	YES		*North*			*North*	
					Proposed	1.27									
				W2	Existing	0.97	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.97									
				W3	Existing	0.75	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.75									
				W4	Existing	0.57	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.57									
				W5	Existing	0.45	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.45									
				W6	Existing	0.39	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.39									
				W7	Existing	0.32	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.32									
				W8	Existing	0.27	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.27									
				W9	Existing	5.73	30.00%	4.00	NO	10.00	0.70	YES	1.00	1.00	YES
					Proposed	1.73				7.00			1.00		
				W10	Existing	5.49	39.00%	3.35	NO	9.00	0.78	YES	1.00	1.00	YES
					Proposed	2.14				7.00			1.00		
				W11	Existing	5.11	47.00%	2.71	NO	6.00	0.83	YES	0.00	1.00	YES
					Proposed	2.39				5.00			0.00		
				W12	Existing	4.14	57.00%	1.78	NO	0.00	1.00	YES	0.00	1.00	YES
					Proposed	2.35				0.00			0.00		
2nd	R1	Residential	OP Office	W1	Existing	9.72	98.00%	0.19	YES		*North*			*North*	
					Proposed	9.53									
				W2	Existing	7.61	96.00%	0.33	YES		*North*			*North*	
					Proposed	7.28									
				W3	Existing	6.00	90.00%	0.60	YES		*North*			*North*	
					Proposed	5.40									
				W4	Existing	5.77	83.00%	0.97	YES		*North*			*North*	
					Proposed	4.80									
				W5	Existing	6.37	74.00%	1.62	NO		*North*			*North*	
					Proposed	4.74									
				W6	Existing	7.50	71.00%	2.19	NO		*North*			*North*	
					Proposed	5.31									
				W7	Existing	8.39	34.00%	5.51	NO	14.00	0.71	YES	1.00	1.00	YES
					Proposed	2.88				10.00			1.00		
				W8	Existing	8.30	41.00%	4.88	NO	13.00	0.77	YES	1.00	1.00	YES
					Proposed	3.42				10.00			1.00		
				W9	Existing	7.99	54.00%	3.64	NO	8.00	1.00	YES	0.00	1.00	YES
					Proposed	4.35				8.00			0.00		
				W10	Existing	7.46	66.00%	2.55	NO	6.00	1.00	YES	0.00	1.00	YES
					Proposed	4.92				6.00			0.00		
				W11	Existing	6.07	73.00%	1.66	NO	1.00	1.00	YES	0.00	1.00	YES
					Proposed	4.41				1.00			0.00		
	R2	Residential	Bed	W12	Existing	3.09	97.00%	0.09	YES	1.00	1.00	YES	0.00	1.00	YES
					Proposed	3.00				1.00			0.00		
3rd	R1	Residential	OP Office	W1	Existing	12.48	99.00%	0.17	YES		*North*			*North*	
					Proposed	12.31									
				W2	Existing	9.63	97.00%	0.32	YES		*North*			*North*	
					Proposed	9.31									
				W3	Existing	7.71	92.00%	0.58	YES		*North*			*North*	
					Proposed	7.13									
				W4	Existing	7.44	87.00%	0.93	YES		*North*			*North*	
					Proposed	6.51									
				W5	Existing	8.26	79.00%	1.72	MARGINAL		*North*			*North*	
					Proposed	6.54									
				W6	Existing	9.84	75.00%	2.50	MARGINAL		*North*			*North*	
					Proposed	7.34									
				W7	Existing	11.18	39.00%	6.87	NO	21.00	0.62	NO	1.00	1.00	YES
					Proposed	4.31				13.00			1.00		
				W8	Existing	11.06	49.00%	5.60	NO	20.00	0.70	NO	1.00	1.00	YES
					Proposed	5.46				14.00			1.00		
				W9	Existing	10.70	67.00%	3.50	NO	19.00	0.79	YES	1.00	1.00	YES
					Proposed	7.21				15.00			1.00		
				W10	Existing	10.09	76.00%	2.41	MARGINAL	15.00	0.87	YES	0.00	1.00	YES
					Proposed	7.68				13.00			0.00		
				W11	Existing	8.12	78.00%	1.78	MARGINAL	6.00	0.83	YES	0.00	1.00	YES
					Proposed	6.34				5.00			0.00		
	R2	Residential	Bed	W12	Existing	4.80	99.00%	0.06	YES	4.00	0.75	YES	0.00	1.00	YES
					Proposed	4.73				3.00			0.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
MHA															
4th	R1	Residential	LKD	W1	Existing	4.00	100.00%	0.00	YES		*North*			*North*	
					Proposed	4.00									
				W2	Existing	13.80	98.00%	0.23	YES		*North*			*North*	
					Proposed	13.57									
				W3	Existing	12.42	98.00%	0.30	YES		*North*			*North*	
					Proposed	12.12									
	R2	Residential	Bed	W4	Existing	0.00	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.00									
				W5	Existing	0.10	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.10									
	R3	Residential	Bed	W6	Existing	0.11	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.11									
	R4	Residential	Living	W7	Existing	1.54	100.00%	0.00	YES		*North*			*North*	
					Proposed	1.54									
				W8	Existing	11.63	86.00%	1.68	YES		*North*			*North*	
					Proposed	9.95									
				W9	Existing	13.61	81.00%	2.65	YES		*North*			*North*	
					Proposed	10.96									
				W10	Existing	14.99	46.00%	8.03	NO	31.00	0.58	NO	2.00	1.00	YES
					Proposed	6.96				18.00			2.00		
				W11	Existing	14.84	62.00%	5.65	NO	31.00	0.71	NO	2.00	1.00	YES
					Proposed	9.19				22.00			2.00		
	R5	Residential	Kitchen	W12	Existing	14.14	76.00%	3.45	MARGINAL	28.00	0.82	YES	1.00	1.00	YES
					Proposed	10.69				23.00			1.00		
	R6	Residential	Bed	W13	Existing	13.47	81.00%	2.57	YES	27.00	0.81	YES	2.00	1.00	YES
					Proposed	10.91				22.00			2.00		
	R7	Residential	Bed	W14	Existing	10.85	84.00%	1.78	YES	16.00	0.88	YES	0.00	1.00	YES
					Proposed	9.07				14.00			0.00		
	R8	Residential	LKD	W15	Existing	11.42	73.00%	3.06	NO		*North*			*North*	
					Proposed	8.36									
				W16	Existing	6.98	100.00%	0.00	YES	15.00	1.00	YES	6.00	1.00	YES
					Proposed	6.98				15.00			6.00		
	R9	Residential	Bed	W17	Existing	8.23	99.00%	0.06	YES	10.00	0.90	YES	0.00	1.00	YES
					Proposed	8.17				9.00			0.00		
5th	R1	Residential	LKD	W1	Existing	6.97	100.00%	0.00	YES		*North*			*North*	
					Proposed	6.97									
				W2	Existing	20.02	99.00%	0.17	YES		*North*			*North*	
					Proposed	19.86									
				W3	Existing	18.58	99.00%	0.23	YES		*North*			*North*	
					Proposed	18.35									
	R2	Residential	Bed	W4	Existing	0.03	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.03									
				W5	Existing	0.45	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.45									
	R3	Residential	Bed	W6	Existing	0.41	100.00%	0.00	YES		*North*			*North*	
					Proposed	0.41									
	R4	Residential	Living	W7	Existing	2.77	100.00%	0.00	YES		*North*			*North*	
					Proposed	2.77									
				W8	Existing	17.76	91.00%	1.51	YES		*North*			*North*	
					Proposed	16.25									
				W9	Existing	19.50	87.00%	2.62	YES		*North*			*North*	
					Proposed	16.88									
				W10	Existing	18.90	56.00%	8.33	NO	45.00	0.60	YES	5.00	1.00	YES
					Proposed	10.57				27.00			5.00		
				W11	Existing	18.72	71.00%	5.47	NO	41.00	0.73	YES	4.00	1.00	YES
					Proposed	13.24				30.00			4.00		
	R5	Residential	Kitchen	W12	Existing	18.20	80.00%	3.59	YES	39.00	0.79	YES	3.00	1.00	YES
					Proposed	14.61				31.00			3.00		
	R6	Residential	Bed	W13	Existing	17.42	86.00%	2.50	YES	35.00	0.83	YES	3.00	1.00	YES
					Proposed	14.92				29.00			3.00		
	R7	Residential	Bed	W14	Existing	14.27	89.00%	1.60	YES	27.00	0.78	MARGINAL	1.00	1.00	YES
					Proposed	12.67				21.00			1.00		
	R8	Residential	LKD	W15	Existing	13.23	80.00%	2.67	YES		*North*			*North*	
					Proposed	10.56									
				W16	Existing	12.50	100.00%	0.00	YES	27.00	1.00	YES	11.00	1.00	YES
					Proposed	12.50				27.00			11.00		
	R9	Residential	Bed	W17	Existing	19.34	100.00%	0.01	YES	49.00	1.00	YES	11.00	1.00	YES
					Proposed	19.33				49.00			11.00		
				W18	Existing	21.31	100.00%	0.06	YES	54.00	0.98	YES	13.00	1.00	YES
					Proposed	21.25				53.00			13.00		
				W19	Existing	37.83	100.00%	0.00	YES	61.00	1.00	YES	16.00	1.00	YES
					Proposed	37.83				61.00			16.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
MHA															
6th	R1	Residential	LKD	W1	Existing	29.82	100.00%	0.09	YES		*North*			*North*	
					Proposed	29.73									
				W2	Existing	29.23	100.00%	0.13	YES		*North*			*North*	
					Proposed	29.10									
	R2	Residential	Bed	W3	Existing	6.97	100.00%	0.00	YES		*North*			*North*	
					Proposed	6.97									
				W4	Existing	8.56	100.00%	0.00	YES		*North*			*North*	
					Proposed	8.56									
	R3	Residential	Bed	W5	Existing	7.60	100.00%	0.00	YES		*North*			*North*	
					Proposed	7.60									
	R4	Residential	Living	W6	Existing	5.77	100.00%	0.00	YES		*North*			*North*	
					Proposed	5.77									
				W7	Existing	28.20	96.00%	1.10	YES		*North*			*North*	
					Proposed	27.10									
				W8	Existing	28.67	93.00%	2.14	YES		*North*			*North*	
					Proposed	26.53									
				W9	Existing	24.35	64.00%	8.72	NO	59.00	0.63	YES	11.00	0.91	YES
					Proposed	15.63				37.00			10.00		
				W10	Existing	24.25	78.00%	5.45	MARGINAL	56.00	0.71	YES	10.00	1.00	YES
					Proposed	18.80				40.00			10.00		
	R5	Residential	Kitchen	W11	Existing	23.81	87.00%	3.08	YES	53.00	0.81	YES	8.00	1.00	YES
					Proposed	20.72				43.00			8.00		
	R6	Residential	Bed	W12	Existing	23.05	92.00%	1.92	YES	50.00	0.84	YES	6.00	1.00	YES
					Proposed	21.13				42.00			6.00		
	R7	Residential	Bed	W13	Existing	19.50	94.00%	1.09	YES	40.00	0.93	YES	4.00	1.00	YES
					Proposed	18.41				37.00			4.00		
	R8	Residential	LKD	W14	Existing	15.50	88.00%	1.81	YES		*North*			*North*	
					Proposed	13.68									
				W15	Existing	12.51	100.00%	0.00	YES	27.00	1.00	YES	14.00	1.00	YES
					Proposed	12.51				27.00			14.00		
	R9	Residential	Bed	W16	Existing	24.32	100.00%	0.00	YES	59.00	1.00	YES	15.00	1.00	YES
					Proposed	24.32				59.00			15.00		
				W17	Existing	26.07	100.00%	0.00	YES	62.00	1.00	YES	16.00	1.00	YES
					Proposed	26.07				62.00			16.00		
				W18	Existing	38.45	100.00%	0.00	YES	65.00	1.00	YES	20.00	1.00	YES
					Proposed	38.45				65.00			20.00		
7th	R1	Residential	LKD	W1	Existing	36.98	100.00%	0.02	YES		*North*			*North*	
					Proposed	36.97									
				W2	Existing	36.88	100.00%	0.03	YES		*North*			*North*	
					Proposed	36.85									
	R2	Residential	Bed	W3	Existing	11.37	100.00%	0.01	YES		*North*			*North*	
					Proposed	11.36									
				W4	Existing	13.62	100.00%	0.00	YES		*North*			*North*	
					Proposed	13.62									
	R3	Residential	Bed	W5	Existing	12.19	100.00%	0.00	YES		*North*			*North*	
					Proposed	12.19									
	R4	Residential	Living	W6	Existing	7.39	100.00%	0.00	YES		*North*			*North*	
					Proposed	7.39									
				W7	Existing	36.02	99.00%	0.49	YES		*North*			*North*	
					Proposed	35.53									
				W8	Existing	35.65	97.00%	1.13	YES		*North*			*North*	
					Proposed	34.53									
				W9	Existing	29.62	78.00%	6.60	MARGINAL	68.00	0.84	YES	17.00	0.76	YES
					Proposed	23.02				57.00			13.00		
				W10	Existing	29.65	88.00%	3.64	YES	68.00	0.87	YES	17.00	0.88	YES
					Proposed	26.01				59.00			15.00		
	R5	Residential	Kitchen	W11	Existing	29.49	94.00%	1.63	YES	66.00	0.94	YES	16.00	1.00	YES
					Proposed	27.86				62.00			16.00		
	R6	Residential	Bed	W12	Existing	28.96	97.00%	0.85	YES	61.00	0.97	YES	16.00	1.00	YES
					Proposed	28.11				59.00			16.00		
	R7	Residential	Bed	W13	Existing	25.43	98.00%	0.41	YES	51.00	0.96	YES	13.00	1.00	YES
					Proposed	25.02				49.00			13.00		
	R8	Residential	LKD	W14	Existing	17.80	96.00%	0.75	YES		*North*			*North*	
					Proposed	17.05									
				W15	Existing	13.76	100.00%	0.00	YES	33.00	1.00	YES	19.00	1.00	YES
					Proposed	13.76				33.00			19.00		
	R9	Residential	LKD	W16	Existing	29.48	100.00%	0.00	YES	67.00	1.00	YES	20.00	1.00	YES
					Proposed	29.48				67.00			20.00		
				W17	Existing	30.72	100.00%	0.00	YES	68.00	1.00	YES	19.00	1.00	YES
					Proposed	30.72				68.00			19.00		
				W18	Existing	38.84	100.00%	0.00	YES	67.00	1.00	YES	22.00	1.00	YES
					Proposed	38.84				67.00			22.00		
				W19	Existing	38.97	100.00%	0.00	YES	66.00	1.00	YES	21.00	1.00	YES
					Proposed	38.97				66.00			21.00		
				W20	Existing	39.17	100.00%	0.00	YES	67.00	1.00	YES	22.00	1.00	YES
					Proposed	39.17				67.00			22.00		

MES Building Solutions - Daylight & Sunlight Calculations (VSC & APSH)
Project : Sansbury Wellcome Centre -Sloped East & West Facade
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		VSC	Pr/Ex	Absolute reduction	Meets BRE Guidance	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
MHA															
8th	R1	Residential	LKD	W1	Existing	38.96	100.00%	0.00	YES		*North*			*North*	
					Proposed	38.96									
				W2	Existing	38.89	100.00%	0.00	YES		*North*			*North*	
					Proposed	38.89									
	R2	Residential	Bed	W3	Existing	12.83	100.00%	0.00	YES		*North*			*North*	
					Proposed	12.83									
				W4	Existing	15.15	100.00%	0.00	YES		*North*			*North*	
					Proposed	15.15									
	R3	Residential	Bed	W5	Existing	13.31	100.00%	0.00	YES		*North*			*North*	
					Proposed	13.31									
	R4	Residential	Living	W6	Existing	7.80	100.00%	0.00	YES		*North*			*North*	
					Proposed	7.80									
				W7	Existing	38.36	100.00%	0.00	YES		*North*			*North*	
					Proposed	38.36									
				W8	Existing	38.15	100.00%	0.00	YES		*North*			*North*	
					Proposed	38.15									
				W9	Existing	34.67	100.00%	0.00	YES	77.00	1.00	YES	24.00	1.00	YES
					Proposed	34.67				77.00			24.00		
				W10	Existing	34.69	100.00%	0.01	YES	77.00	1.00	YES	24.00	1.00	YES
					Proposed	34.68				77.00			24.00		
	R5	Residential	Kitchen	W11	Existing	34.61	100.00%	0.01	YES	77.00	1.00	YES	24.00	1.00	YES
					Proposed	34.60				77.00			24.00		
	R6	Residential	Bed	W12	Existing	34.31	100.00%	0.01	YES	75.00	1.00	YES	23.00	1.00	YES
					Proposed	34.29				75.00			23.00		
	R7	Residential	Bed	W13	Existing	30.89	100.00%	0.01	YES	58.00	1.00	YES	19.00	1.00	YES
					Proposed	30.88				58.00			19.00		
	R8	Residential	LKD	W14	Existing	20.56	100.00%	0.06	YES		*North*			*North*	
					Proposed	20.50									
				W15	Existing	24.27	100.00%	0.00	YES	55.00	1.00	YES	22.00	1.00	YES
					Proposed	24.27				55.00			22.00		
	R9	Residential	LKD	W16	Existing	34.40	100.00%	0.00	YES	73.00	1.00	YES	25.00	1.00	YES
					Proposed	34.40				73.00			25.00		
				W17	Existing	34.95	100.00%	0.00	YES	76.00	1.00	YES	25.00	1.00	YES
					Proposed	34.95				76.00			25.00		
				W18	Existing	39.21	100.00%	0.00	YES	68.00	1.00	YES	23.00	1.00	YES
					Proposed	39.21				68.00			23.00		
				W19	Existing	39.28	100.00%	0.00	YES	68.00	1.00	YES	23.00	1.00	YES
					Proposed	39.28				68.00			23.00		
				W20	Existing	39.38	100.00%	0.00	YES	68.00	1.00	YES	23.00	1.00	YES
					Proposed	39.38				68.00			23.00		

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
Astor College									
Gnd	R1	Lounge	Area m2	118.95	104.56	86.81			
			% of room		88%	73%	15%	83.00%	YES
	R2	Study/Bed	Area m2	10.41	2.05	1.61			
			% of room		20%	16%	4%	79.00%	MARGINAL
	R3	Study/Bed	Area m2	10.30	1.75	1.57			
			% of room		17%	15%	2%	90.00%	YES
	R4	Study/Bed	Area m2	10.05	1.61	1.28			
			% of room		16%	13%	3%	80.00%	YES
	R5	Study/Bed	Area m2	10.08	1.70	1.00			
			% of room		17%	10%	7%	59.00%	NO
	R6	Study/Bed	Area m2	11.75	1.78	0.60			
			% of room		15%	5%	10%	34.00%	NO
	R7	Circulation	Area m2	23.35	0.30	0.30			
			% of room		1%	1%	0%	99.00%	YES
1st	R1	Bath	Area m2	7.44	2.52	0.00			
			% of room		34%	0%	34%	0.00%	NO
	R2	Study/Bed	Area m2	19.63	10.77	3.08			
			% of room		55%	16%	39%	29.00%	NO
	R3	Study/Bed	Area m2	13.99	8.49	8.38			
			% of room		61%	60%	1%	99.00%	YES
	R4	Study/Bed	Area m2	20.95	11.42	11.42			
			% of room		55%	55%	0%	100.00%	YES
	R5	Study/Bed	Area m2	19.56	3.50	2.53			
			% of room		18%	13%	5%	72.00%	NO
	R6	Study/Bed	Area m2	10.41	2.01	1.65			
			% of room		19%	16%	3%	82.00%	YES
	R7	Study/Bed	Area m2	10.30	1.78	1.65			
			% of room		17%	16%	1%	92.00%	YES
	R8	Study/Bed	Area m2	10.05	1.62	1.32			
			% of room		16%	13%	3%	81.00%	YES
	R9	Study/Bed	Area m2	9.43	1.71	1.09			
			% of room		18%	12%	7%	64.00%	NO
	R10	Study/Bed	Area m2	11.75	1.79	0.71			
			% of room		15%	6%	9%	40.00%	NO
	R11	Circulation	Area m2	23.35	0.34	0.34			
			% of room		1%	1%	0%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
Astor College									
2nd	R1	Study/Bed	Area m2	10.36	7.15	1.52			
			% of room		69%	15%	54%	21.00%	NO
	R2	Study/Bed	Area m2	10.60	8.08	1.46			
			% of room		76%	14%	62%	18.00%	NO
	R3	Study/Bed	Area m2	10.67	7.79	2.12			
			% of room		73%	20%	53%	27.00%	NO
	R4	Study/Bed	Area m2	10.45	7.67	6.83			
			% of room		73%	65%	8%	89.00%	YES
	R5	Study/Bed	Area m2	11.80	7.92	7.22			
			% of room		67%	61%	6%	91.00%	YES
	R6	Study/Bed	Area m2	9.98	2.64	2.11			
			% of room		26%	21%	5%	80.00%	YES
	R7	Kitchen	Area m2	25.98	3.41	3.09			
			% of room		13%	12%	1%	91.00%	YES
	R8	Study/Bed	Area m2	10.08	1.39	1.16			
			% of room		14%	12%	2%	84.00%	YES
	R9	Study/Bed	Area m2	9.43	1.44	1.03			
			% of room		15%	11%	4%	71.00%	NO
	R10	Study/Bed	Area m2	11.75	1.55	0.73			
			% of room		13%	6%	7%	47.00%	NO
	R11	Circulation	Area m2	23.35	0.34	0.34			
			% of room		1%	1%	0%	100.00%	YES
3rd	R1	Study/Bed	Area m2	10.36	7.54	2.02			
			% of room		73%	20%	53%	27.00%	NO
	R2	Study/Bed	Area m2	10.60	8.43	2.08			
			% of room		80%	20%	60%	25.00%	NO
	R3	Study/Bed	Area m2	10.67	8.18	2.65			
			% of room		77%	25%	52%	32.00%	NO
	R4	Study/Bed	Area m2	10.45	7.91	7.05			
			% of room		76%	67%	8%	89.00%	YES
	R5	Study/Bed	Area m2	11.80	8.15	7.40			
			% of room		69%	63%	6%	91.00%	YES
	R6	Study/Bed	Area m2	9.98	2.75	2.30			
			% of room		28%	23%	4%	84.00%	YES
	R7	Kitchen	Area m2	25.98	3.76	3.50			
			% of room		14%	13%	1%	93.00%	YES
	R8	Study/Bed	Area m2	10.08	1.62	1.49			
			% of room		16%	15%	1%	92.00%	YES
	R9	Study/Bed	Area m2	9.43	1.71	1.39			
			% of room		18%	15%	3%	81.00%	YES
	R10	Study/Bed	Area m2	11.75	1.87	1.16			
			% of room		16%	10%	6%	62.00%	NO
	R11	Circulation	Area m2	23.35	0.42	0.42			
			% of room		2%	2%	0%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
Astor College									
4th	R1	Study/Bed	Area m2	10.36	8.17	2.70			
			% of room		79%	26%	53%	33.00%	NO
	R2	Study/Bed	Area m2	10.60	9.15	2.93			
			% of room		86%	28%	59%	32.00%	NO
	R3	Study/Bed	Area m2	10.67	8.92	4.10			
			% of room		84%	38%	45%	46.00%	NO
	R4	Study/Bed	Area m2	10.45	8.28	7.39			
			% of room		79%	71%	9%	89.00%	YES
	R5	Study/Bed	Area m2	11.80	8.51	7.78			
			% of room		72%	66%	6%	91.00%	YES
	R6	Study/Bed	Area m2	9.98	2.83	2.56			
			% of room		28%	26%	3%	91.00%	YES
	R7	Kitchen	Area m2	25.98	4.94	4.57			
			% of room		19%	18%	1%	93.00%	YES
	R8	Study/Bed	Area m2	10.08	2.09	2.06			
			% of room		21%	20%	0%	99.00%	YES
	R9	Study/Bed	Area m2	9.43	2.21	1.98			
			% of room		23%	21%	2%	90.00%	YES
	R10	Study/Bed	Area m2	11.75	2.42	1.78			
			% of room		21%	15%	5%	73.00%	NO
	R11	Circulation	Area m2	23.35	0.47	0.47			
			% of room		2%	2%	0%	100.00%	YES
5th	R1	Study/Bed	Area m2	10.36	8.68	3.31			
			% of room		84%	32%	52%	38.00%	NO
	R2	Study/Bed	Area m2	10.60	9.89	3.81			
			% of room		93%	36%	57%	39.00%	NO
	R3	Study/Bed	Area m2	10.67	9.57	5.79			
			% of room		90%	54%	35%	60.00%	NO
	R4	Study/Bed	Area m2	10.45	8.73	7.84			
			% of room		84%	75%	9%	90.00%	YES
	R5	Study/Bed	Area m2	11.80	8.86	8.17			
			% of room		75%	69%	6%	92.00%	YES
	R6	Study/Bed	Area m2	9.98	2.96	2.81			
			% of room		30%	28%	2%	95.00%	YES
	R7	Kitchen	Area m2	25.98	6.18	5.76			
			% of room		24%	22%	2%	93.00%	YES
	R8	Study/Bed	Area m2	10.08	2.54	2.54			
			% of room		25%	25%	0%	100.00%	YES
	R9	Study/Bed	Area m2	9.43	2.74	2.70			
			% of room		29%	29%	0%	99.00%	YES
	R10	Study/Bed	Area m2	11.75	3.03	2.46			
			% of room		26%	21%	5%	81.00%	YES
	R11	Circulation	Area m2	23.35	0.57	0.57			
			% of room		2%	2%	0%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
Astor College									
6th	R1	Study/Bed	Area m2	10.36	9.47	4.81			
			% of room		91%	46%	45%	51.00%	NO
	R2	Study/Bed	Area m2	10.60	10.37	5.52			
			% of room		98%	52%	46%	53.00%	NO
	R3	Study/Bed	Area m2	10.67	10.20	8.00			
			% of room		96%	75%	21%	78.00%	MARGINAL
	R4	Study/Bed	Area m2	10.45	9.46	8.79			
			% of room		90%	84%	6%	93.00%	YES
	R5	Study/Bed	Area m2	11.80	9.49	9.00			
			% of room		80%	76%	4%	95.00%	YES
	R6	Study/Bed	Area m2	9.98	3.53	3.52			
			% of room		35%	35%	0%	100.00%	YES
	R7	Kitchen	Area m2	25.98	8.97	8.53			
			% of room		35%	33%	2%	95.00%	YES
	R8	Study/Bed	Area m2	10.08	3.68	3.68			
			% of room		37%	37%	0%	100.00%	YES
	R9	Study/Bed	Area m2	9.43	3.81	3.81			
			% of room		40%	40%	0%	100.00%	YES
	R10	Study/Bed	Area m2	11.75	4.35	4.02			
			% of room		37%	34%	3%	93.00%	YES
	R11	Circulation	Area m2	23.35	0.64	0.64			
			% of room		3%	3%	0%	100.00%	YES
7th	R1	Study/Bed	Area m2	10.36	10.05	8.18			
			% of room		97%	79%	18%	81.00%	YES
	R2	Study/Bed	Area m2	10.60	10.40	8.16			
			% of room		98%	77%	21%	79.00%	MARGINAL
	R3	Study/Bed	Area m2	10.67	10.48	9.24			
			% of room		98%	87%	12%	88.00%	YES
	R4	Study/Bed	Area m2	10.45	9.97	9.71			
			% of room		95%	93%	2%	97.00%	YES
	R5	Study/Bed	Area m2	11.80	10.88	10.84			
			% of room		92%	92%	0%	100.00%	YES
	R6	Study/Bed	Area m2	9.98	3.80	3.79			
			% of room		38%	38%	0%	100.00%	YES
	R7	Kitchen	Area m2	25.98	15.00	14.99			
			% of room		58%	58%	0%	100.00%	YES
	R8	Study/Bed	Area m2	10.08	5.34	5.34			
			% of room		53%	53%	0%	100.00%	YES
	R9	Study/Bed	Area m2	9.43	5.41	5.41			
			% of room		57%	57%	0%	100.00%	YES
	R10	Study/Bed	Area m2	11.75	6.18	6.16			
			% of room		53%	52%	0%	100.00%	YES
	R11	Circulation	Area m2	23.35	0.81	0.81			
			% of room		3%	3%	0%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
Astor College									
8th	R1	Circulation	Area m2	14.80	7.94	7.24			
			% of room		54%	49%	5%	91.00%	YES
	R2	Kitchen	Area m2	10.17	9.77	9.77			
			% of room		96%	96%	0%	100.00%	YES
	R3	Study/Bed	Area m2	10.78	10.47	10.47			
			% of room		97%	97%	0%	100.00%	YES
	R4	Study/Bed	Area m2	18.96	18.79	18.79			
			% of room		99%	99%	0%	100.00%	YES
	R5	Study/Bed	Area m2	10.63	9.26	9.26			
			% of room		87%	87%	0%	100.00%	YES
	R6	Study/Bed	Area m2	10.63	9.61	9.61			
			% of room		90%	90%	0%	100.00%	YES
	R7	Study/Bed	Area m2	10.63	9.60	9.60			
			% of room		90%	90%	0%	100.00%	YES
	R8	Study/Bed	Area m2	10.62	9.33	9.33			
			% of room		88%	88%	0%	100.00%	YES
	R9	Study/Bed	Area m2	18.96	18.77	18.77			
			% of room		99%	99%	0%	100.00%	YES
	R10	Study/Bed	Area m2	10.78	10.51	10.51			
			% of room		97%	97%	0%	100.00%	YES
MHA									
Gnd	R1	OP Office	Area m2	140.87	14.63	14.47			
			% of room		10%	10%	0%	99.00%	YES
	R2	Plant	Area m2	172.16	20.49	18.66			
			% of room		12%	11%	1%	91.00%	YES
1st	R1	OP Office	Area m2	377.70	94.38	92.01			
			% of room		25%	24%	1%	97.00%	YES
2nd	R1	OP Office	Area m2	360.39	41.46	37.69			
			% of room		12%	10%	1%	91.00%	YES
	R2	Bed	Area m2	13.56	1.61	1.53			
			% of room		12%	11%	1%	95.00%	YES
3rd	R1	OP Office	Area m2	360.39	50.34	46.79			
			% of room		14%	13%	1%	93.00%	YES
	R2	Bed	Area m2	13.56	3.16	3.08			
			% of room		23%	23%	1%	97.00%	YES
4th	R1	LKD	Area m2	22.98	6.90	6.90			
			% of room		30%	30%	0%	100.00%	YES
	R2	Bed	Area m2	13.38	0.00	0.00			
			% of room		0%	0%	0%	100.00%	YES
	R3	Bed	Area m2	10.99	0.07	0.07			
			% of room		1%	1%	0%	100.00%	YES
	R4	Living	Area m2	21.94	10.32	9.90			
			% of room		47%	45%	2%	96.00%	YES
	R5	Kitchen	Area m2	7.50	2.40	1.96			
			% of room		32%	26%	6%	82.00%	YES
	R6	Bed	Area m2	9.86	2.38	2.04			
			% of room		24%	21%	3%	86.00%	YES
	R7	Bed	Area m2	11.89	3.75	3.15			
			% of room		32%	26%	5%	84.00%	YES
	R8	Bed	Area m2	23.98	18.06	18.06			
			% of room		75%	75%	0%	100.00%	YES
	R9	Bed	Area m2	13.56	3.14	3.10			
			% of room		23%	23%	0%	99.00%	YES

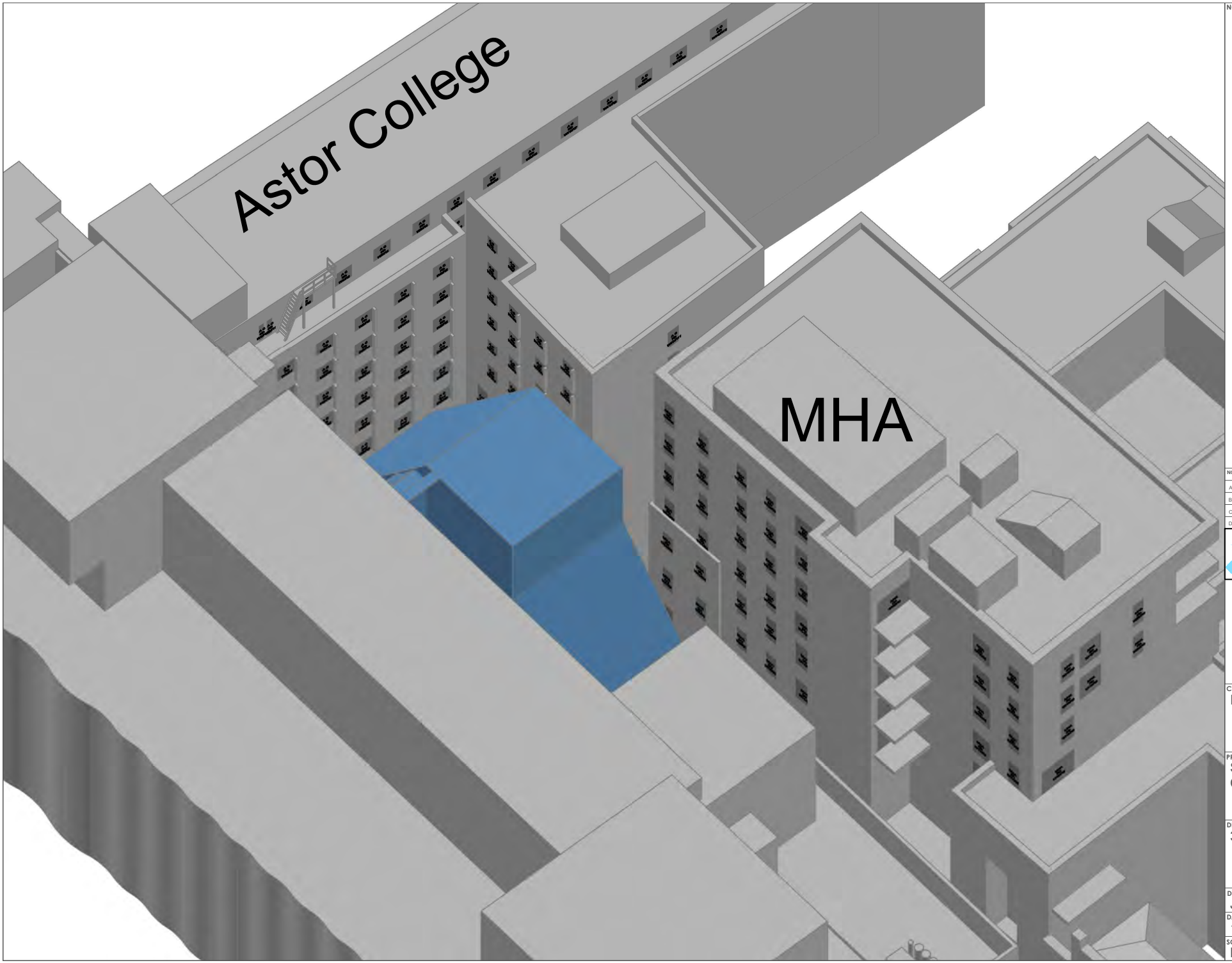
MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
MHA									
5th	R1	LKD	Area m2	22.98	9.81	9.81			
			% of room		43%	43%	0%	100.00%	YES
	R2	Bed	Area m2	13.38	0.04	0.04			
			% of room		0%	0%	0%	100.00%	YES
	R3	Bed	Area m2	10.99	0.38	0.38			
			% of room		3%	3%	0%	100.00%	YES
	R4	Living	Area m2	21.94	14.62	13.44			
			% of room		67%	61%	5%	92.00%	YES
	R5	Kitchen	Area m2	7.50	3.81	3.28			
			% of room		51%	44%	7%	86.00%	YES
	R6	Bed	Area m2	9.86	3.58	3.29			
			% of room		36%	33%	3%	92.00%	YES
	R7	Bed	Area m2	11.89	5.33	4.83			
			% of room		45%	41%	4%	91.00%	YES
	R8	LKD	Area m2	23.98	19.90	19.90			
			% of room		83%	83%	0%	100.00%	YES
	R9	Bed	Area m2	17.45	17.39	17.39			
			% of room		100%	100%	0%	100.00%	YES
6th	R1	LKD	Area m2	14.01	13.92	13.92			
			% of room		99%	99%	0%	100.00%	YES
	R2	Bed	Area m2	13.38	13.06	13.06			
			% of room		98%	98%	0%	100.00%	YES
	R3	Bed	Area m2	10.99	10.38	10.38			
			% of room		94%	94%	0%	100.00%	YES
	R4	Living	Area m2	21.94	21.62	21.62			
			% of room		99%	99%	0%	100.00%	YES
	R5	Kitchen	Area m2	7.50	6.82	6.71			
			% of room		91%	89%	1%	98.00%	YES
	R6	Bed	Area m2	9.86	6.25	6.24			
			% of room		63%	63%	0%	100.00%	YES
	R7	Bed	Area m2	11.89	8.85	8.84			
			% of room		74%	74%	0%	100.00%	YES
	R8	LKD	Area m2	23.98	20.66	20.65			
			% of room		86%	86%	0%	100.00%	YES
	R9	Bed	Area m2	13.99	13.89	13.89			
			% of room		99%	99%	0%	100.00%	YES
7th	R1	LKD	Area m2	14.01	13.92	13.92			
			% of room		99%	99%	0%	100.00%	YES
	R2	Bed	Area m2	13.38	13.12	13.12			
			% of room		98%	98%	0%	100.00%	YES
	R3	Bed	Area m2	10.99	10.44	10.44			
			% of room		95%	95%	0%	100.00%	YES
	R4	Living	Area m2	21.94	21.92	21.92			
			% of room		100%	100%	0%	100.00%	YES
	R5	Kitchen	Area m2	7.50	6.85	6.85			
			% of room		91%	91%	0%	100.00%	YES
	R6	Bed	Area m2	9.86	9.49	9.49			
			% of room		96%	96%	0%	100.00%	YES
	R7	Bed	Area m2	11.89	11.56	11.56			
			% of room		97%	97%	0%	100.00%	YES
	R8	LKD	Area m2	23.98	22.20	22.20			
			% of room		93%	93%	0%	100.00%	YES
	R9	LKD	Area m2	39.27	37.04	37.04			
			% of room		94%	94%	0%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project: Sainsbury Wellcome Centre - Sloping East and West façade.
Date of Analysis: 16/07/2021

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Absolute Reduction	Pr/Ex	Meets BRE Guidance
MHA									
8th	R1	LKD	Area m2	14.01	13.92	13.92			
			% of room		99%	99%	0%	100.00%	YES
	R2	Bed	Area m2	13.38	13.13	13.13			
			% of room		98%	98%	0%	100.00%	YES
	R3	Bed	Area m2	10.99	10.52	10.52			
			% of room		96%	96%	0%	100.00%	YES
	R4	Living	Area m2	21.94	21.92	21.92			
			% of room		100%	100%	0%	100.00%	YES
	R5	Kitchen	Area m2	7.50	6.86	6.86			
			% of room		91%	91%	0%	100.00%	YES
	R6	Bed	Area m2	9.86	9.50	9.50			
			% of room		96%	96%	0%	100.00%	YES
	R7	Bed	Area m2	11.89	11.57	11.57			
			% of room		97%	97%	0%	100.00%	YES
	R8	LKD	Area m2	23.98	23.84	23.84			
			% of room		99%	99%	0%	100.00%	YES
	R9	LKD	Area m2	39.27	38.39	38.39			
			% of room		98%	98%	0%	100.00%	YES

Window and Room References



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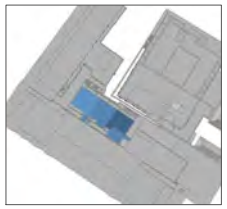

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CLIENT
Ian Richie Architects

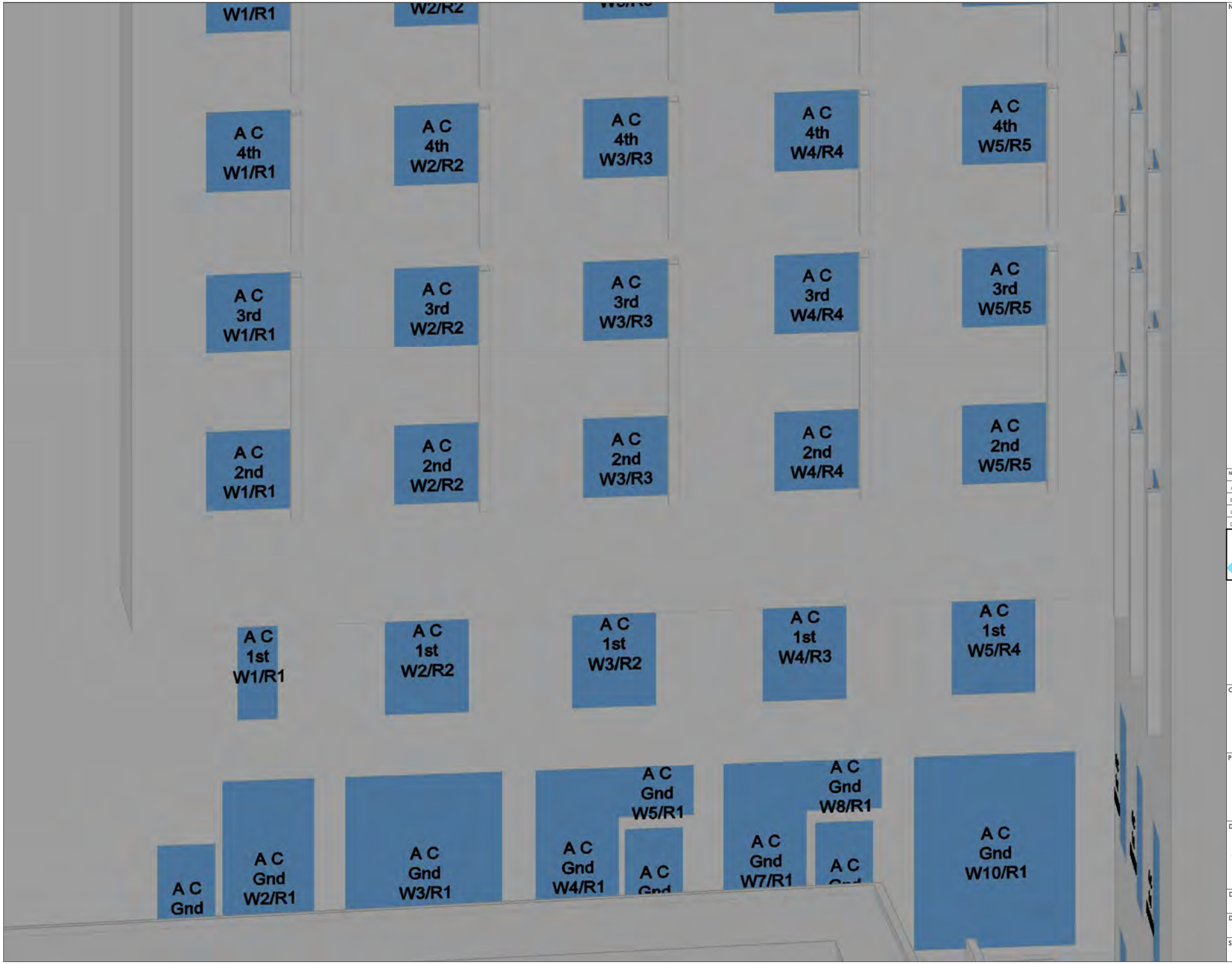
PROJECT
Sainsbury's Welcome Centre

DRAWING TITLE
3D Overview

DRAWN BY	CHECKED BY
JB	AP & CJ

DATE	DRAWING NO.
11/10/2021	-

SCALE
NTS



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CLIENT
Ian Ritchie Architects

PROJECT
Sainsbury Wellcome Centre

DRAWING TITLE
Window Labels
Astor College

DRAWN BY	CHECKED BY
JB	AP & CJ
DATE	DRAWING NO.
16/07/2021	-
SCALE	
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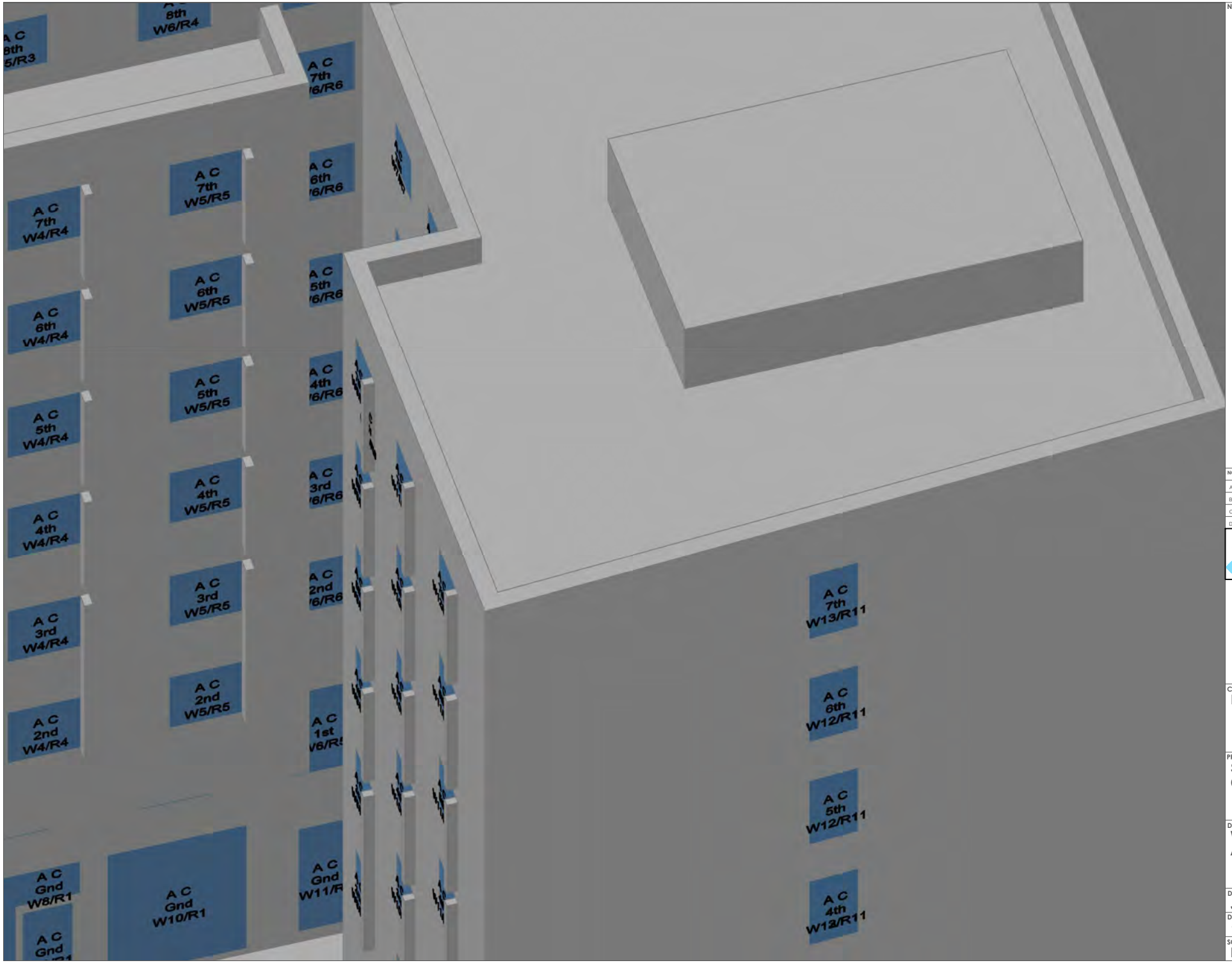

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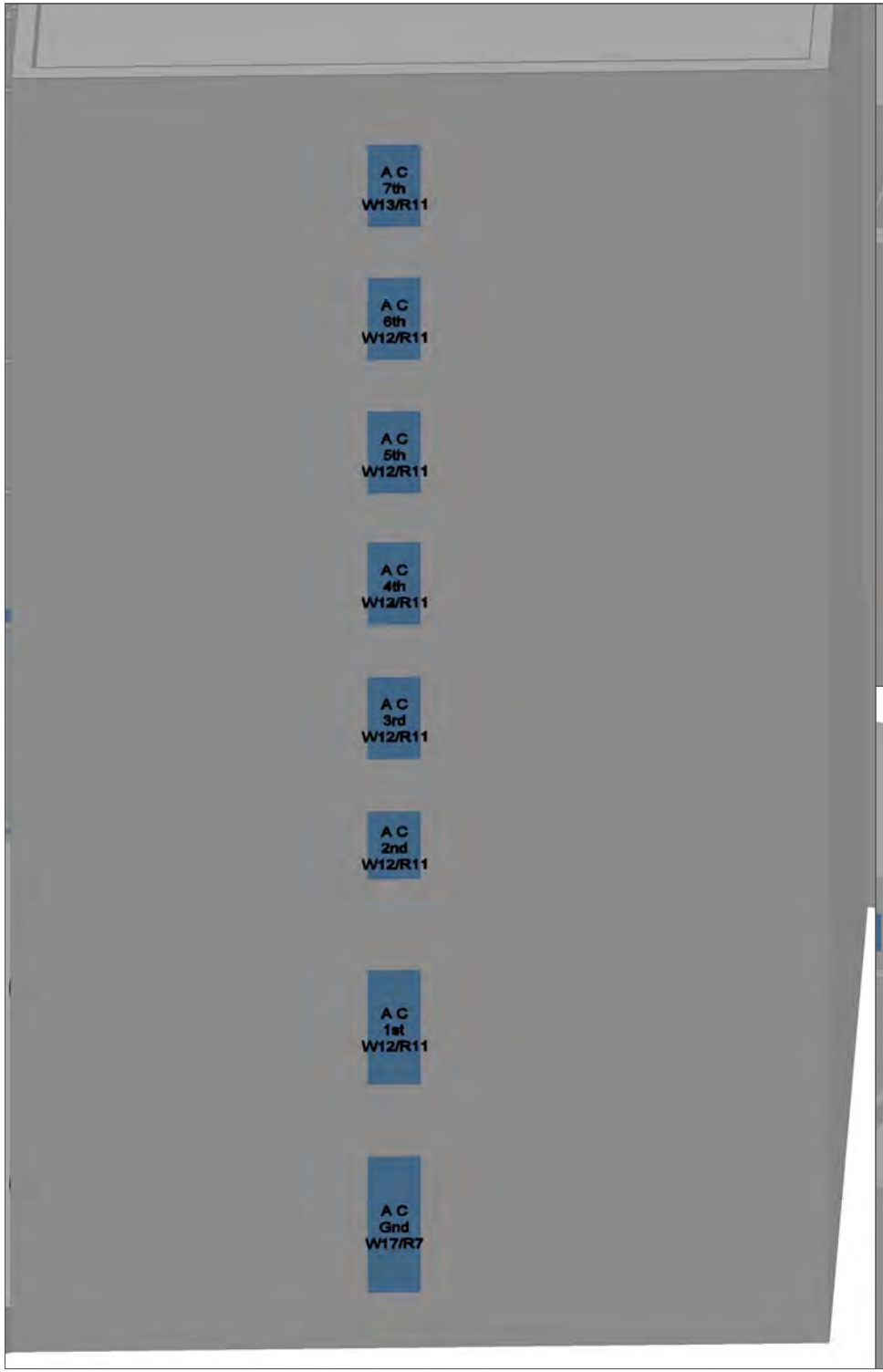

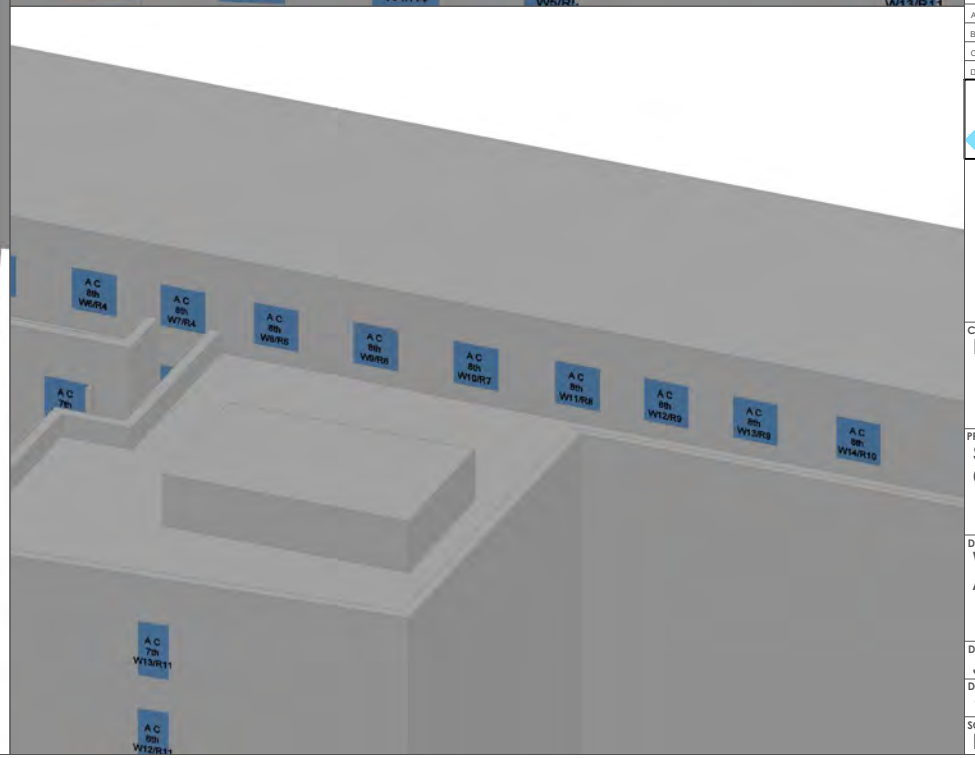

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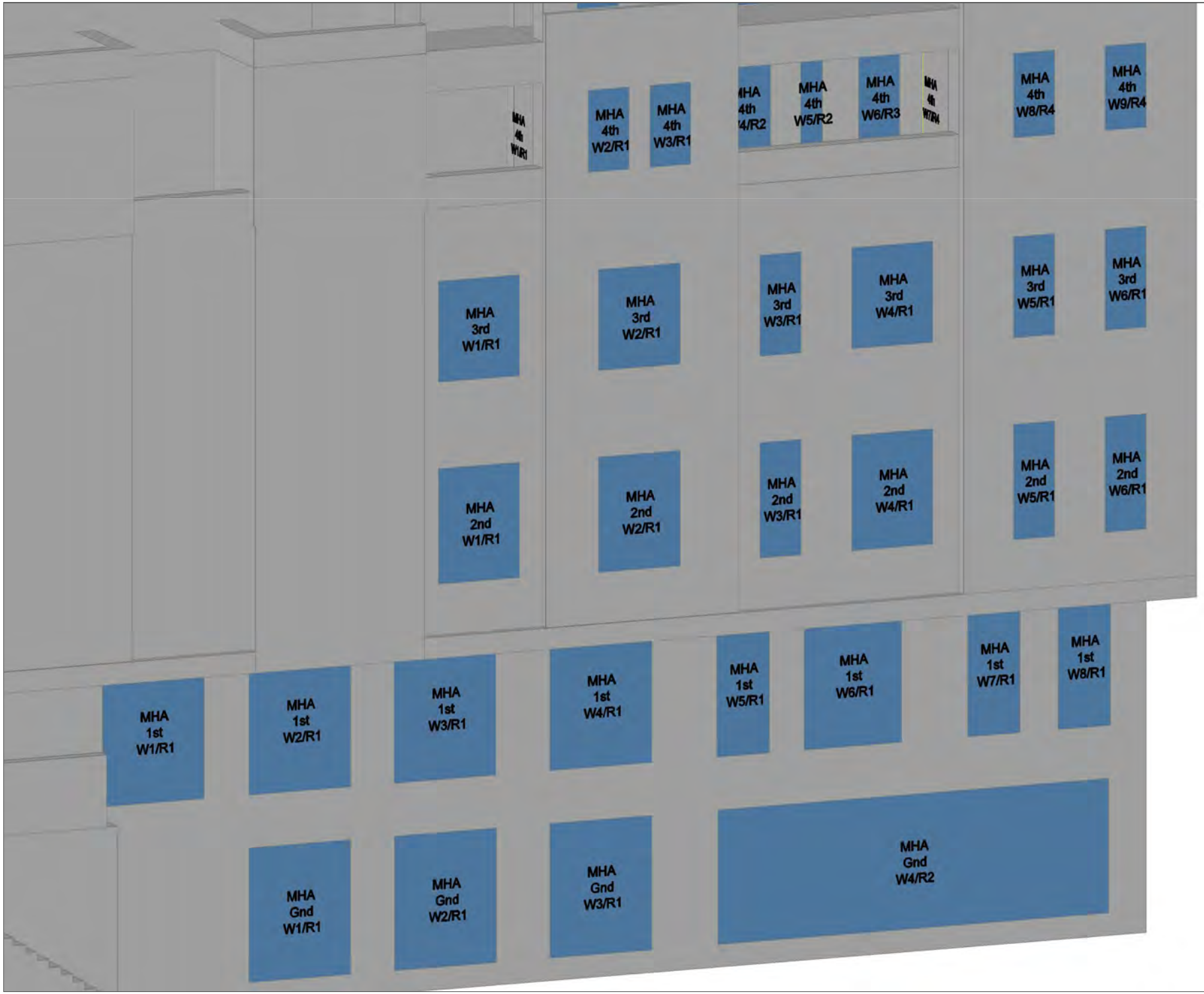

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PROJECT
Sainsbury Wellcome Centre

DRAWING TITLE
Window Labels
MHA Building

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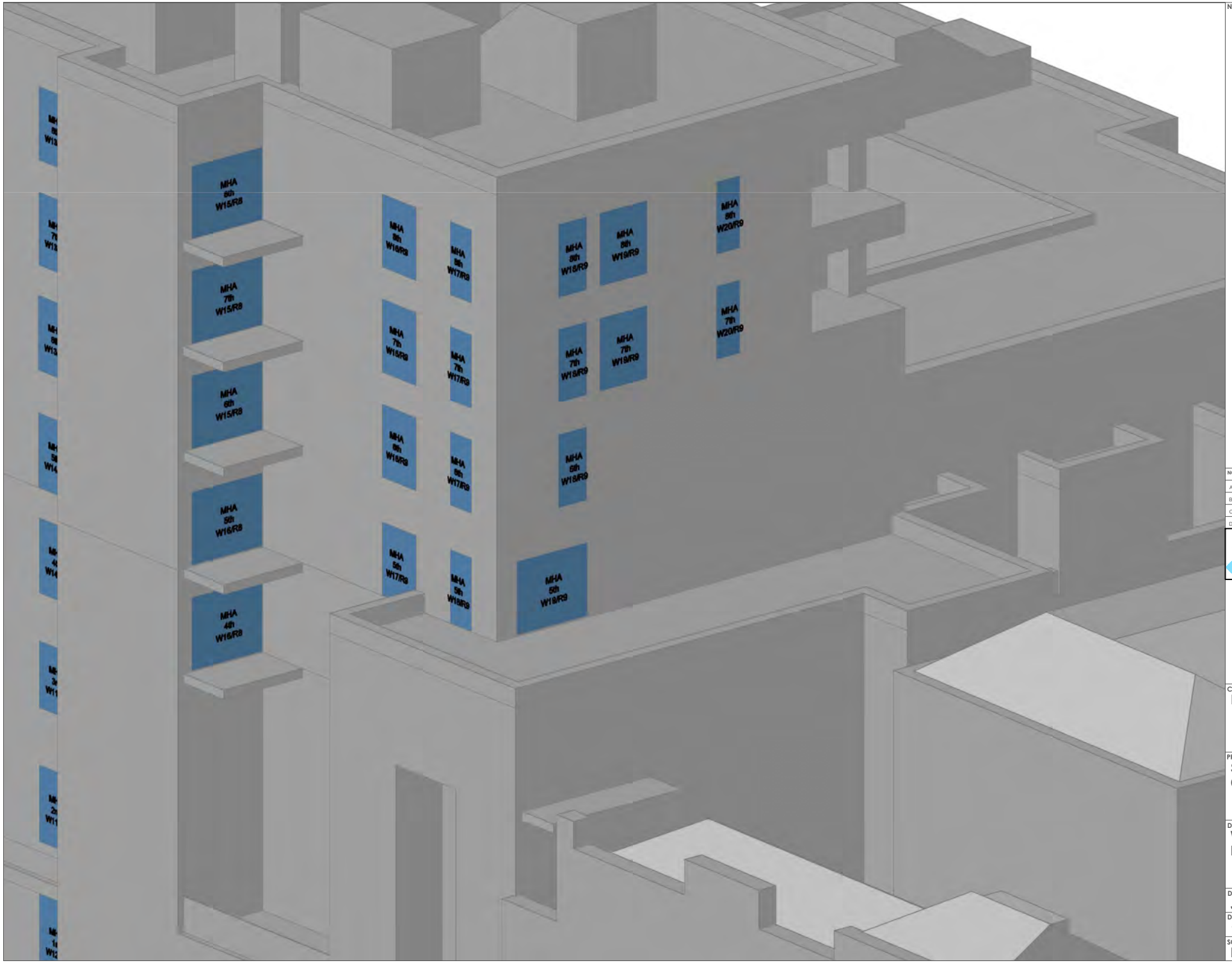

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Window Labels
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SCALE
NTS

The following drawings are elevation drawings of Astor College showing Windows/ Rooms that fall short of one or more elements of the BRE planning guidance highlighted in BLUE.

Material Key:

1 - Brick type 1
2 - Brick type 2
3 - Brick type 2, textured
4 - Pre-cast stone cladding
5 - New window with aluminum frame
6 - Glazed ceramic panels
7 - Fair faced concrete
8 - Glazed ceramic baguettes
9 - Back painted glass
10 - Render
11 - Metal spandrel
12 - Metal fin
13 - New opaque window
14 - Existing windows
15 - Metal fascia
16 - Acoustic screen to plant
17 - Steel handrail
18 - Steel railing
19 - Air brick

0 1m 2m 3m 4m 5m

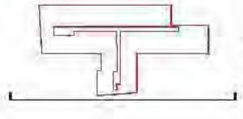
standard notes

1. Do not scale this drawing.
2. All dimensions must be checked on site and any discrepancies verified with the architect.
3. Unless shown otherwise, all dimensions are to structural surfaces.

THIS IS NOT A CONSTRUCTION DRAWING, IT IS UNSUITABLE FOR THE PURPOSE OF CONSTRUCTION AND MUST ON NO ACCOUNT BE USED AS SUCH.

drawing notes

Key @1:1000 -



revisions

P1	23.07.14	First issue to Design Team
P2	20.08.14	Issue to Design Team
P3	29.08.14	Stage C Report
P4	30.09.14	Revised windows and cladding
P5	06.10.14	Pre-App Meeting
P6	10.11.14	Revisions following planner's feedback
P7	13.11.14	Plinth material and extension windows revised
P8	27.11.14	Material revisions
P9	05.12.14	Minor revisions following client feedback
P10	09.12.14	Principals meeting
P11	09.12.14	Issue to design team
P12	18.12.14	For Design Team comment
P13	19.01.15	Planning pack to UCL
P14	23.01.15	Issue for Planning

ASTOR COLLEGE, UCL
Charlotte Street, W1T 4QB

date: July 2014
client: UCL
scale: 1:100@A1
drawing: Proposed South West Elevation
drawn: FH
checked: KS
drawing number: 2889 L 251
rev: P14

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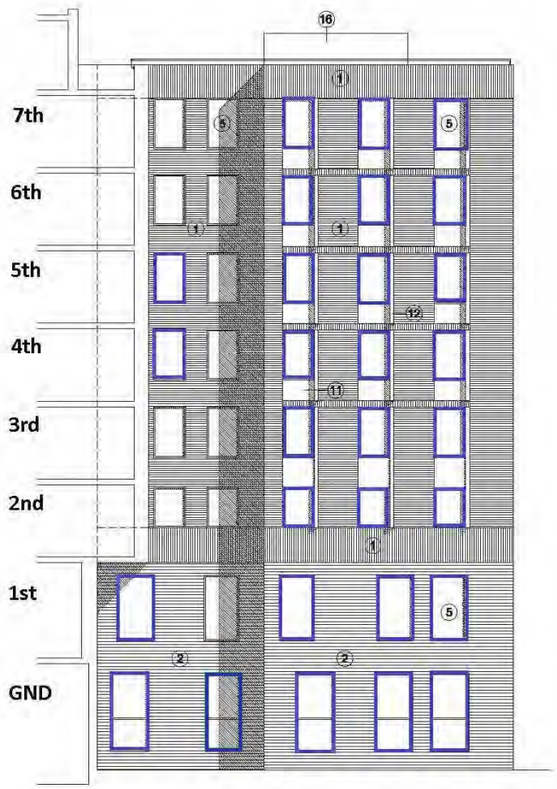
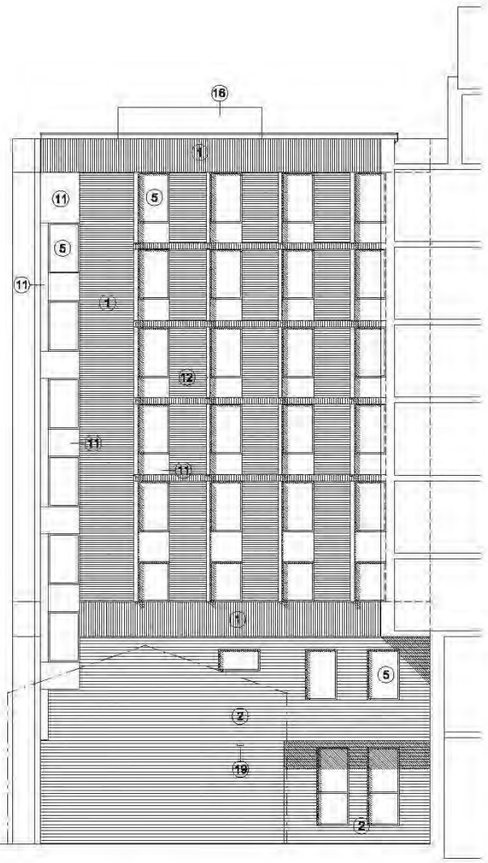
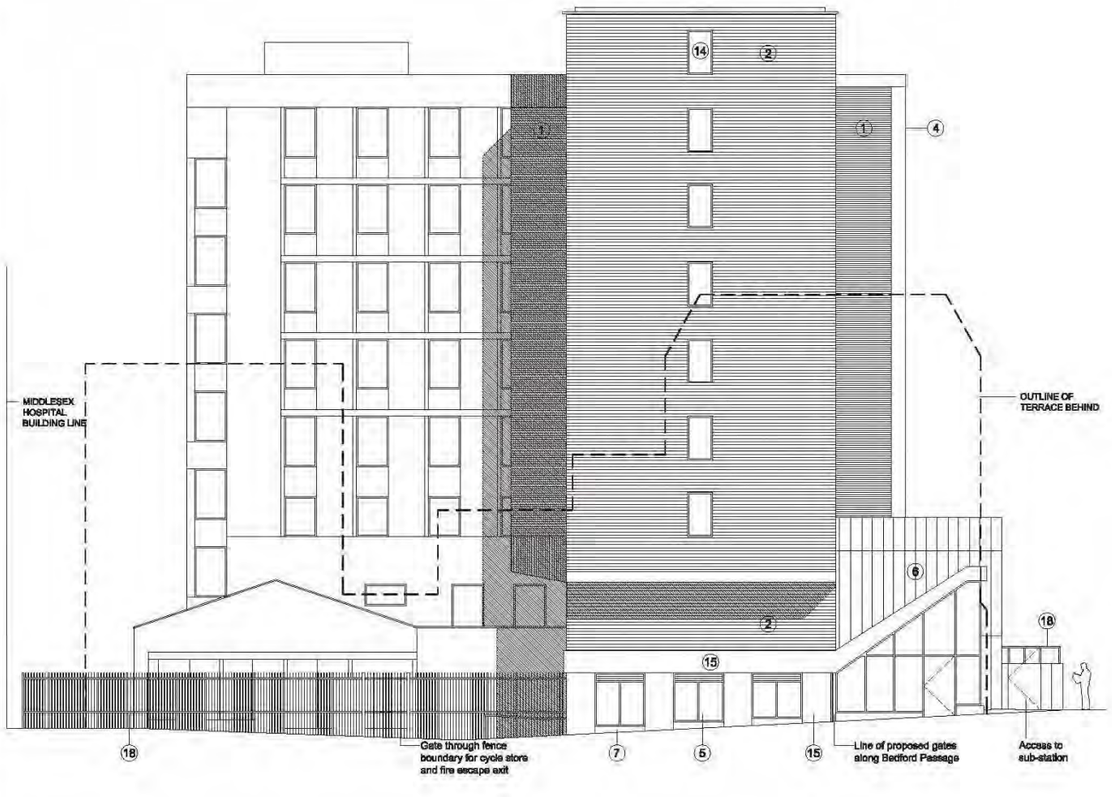


North West Elevation X - X



South East Elevation Y - Y



South East Elevation Z - Z

Material Key:

1 - Brick type 1
2 - Brick type 2
3 - Brick type 2, textured
4 - Pre-cast stone cladding
5 - New window with aluminum frame
6 - Glazed ceramic panels
7 - Fair faced concrete
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12 - Metal fin
13 - New opaque window
14 - Existing windows
15 - Metal fascia
16 - Acoustic screen to plant
17 - Steel handrail
18 - Steel railing
19 - Air brick

0 5m
1m 2m 3m 4m

standard notes

1. Do not scale this drawing.
2. All dimensions must be checked on site and any discrepancies verified with the architect.
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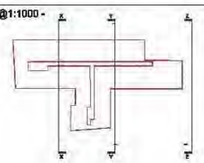
drawing notes

Key @1:1000 -



revisions

P1	23.07.14	First issue to Design team
P2	20.08.14	Issue to Design team
P3	29.08.14	Stage C Report
P4	30.09.14	Cladding and window revisions
P5	06.10.14	Pre-App Meeting
P6	10.11.14	Revisions following planner's feedback
P7	13.11.14	Plinth material and extension windows revised
P8	27.11.14	Material revisions
P9	05.12.14	Minor revisions following client feedback
P10	08.12.14	Principals meeting
P11	09.12.14	Issue to design team
P12	19.12.14	For Design Team comment
P13	19.01.15	Planning pack to UCL
P14	23.01.15	Issue for Planning

ASTOR COLLEGE, UCL

Charlotte Street, W1T 4QB

date July 2014
client UCL
scale 1:100@A1
drawing Proposed Rear Elevations
drawn FH **checked** KS **drawing number** 2869 L 252 **rev** P14

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\\bdata\KP-PROJECTS\2869 Astor College\CAD\1.0 Live Files\1.1 Models\01 Architecture\01 ArchiCAD\02 Drawings

Levitt Bernstein

8. Notes

8.1 This report has been prepared for the sole use of the Client. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.

8.2 Where full access was not available we have made reasonable estimations of internal layouts, floor areas, window sizes and positions etc.

8.3 Our calculations model has been built from a combination of architect's plans, partial site survey, site and aerial photographs.

8.4 We are not aware of any conflicts of interest between ourselves and any other party concerning this project.