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**Sources of Information**

**EXISTING BUILDING**  
MBS survey 3D Model received 07 June 2018  
MBS16\_841 Broad Street Mall, Reading.dwg

**SURROUNDING BUILDINGS**  
Corstorphine & Wright Architects proposal 3D model  
02 Nov 2018  
16428-3D View - Exploded

Accuties wide area model received 01 April 2018  
000222-Broad Street Mall,Reading\_HD\_MASTER.dwg

**PROPOSED BUILDING**  
AJoining Hosier Street masterplan document  
Hosier St Development Framework.pdf  
received 21 May 2018

**GVA**

08449 02 03 04  
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65 Gresham Street, London, EC2V 7NQ  
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**Project Name**  
BROAD STREET MALL READING

**Client**  
INCEPTION (READING) SARL

**Drawing Title**  
PLAN VIEW  
PROPOSED

|                       |                      |                        |                            |
|-----------------------|----------------------|------------------------|----------------------------|
| <b>Drawn By</b><br>AI | <b>Chk'd By</b><br>- | <b>Scale @ A3</b><br>- | <b>Date</b><br>20 NOV 2018 |
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| <b>Project No.</b><br>BR167/09 | <b>Drawing No.</b><br>BRE/88 | <b>Revision</b><br>- |
|--------------------------------|------------------------------|----------------------|

Daylight

A3



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Project Name  
BROAD STREET MALL READING

Client  
INCEPTION (READING) SARL

Drawing Title  
3D VIEW  
PROPOSED

|                |               |                 |                     |
|----------------|---------------|-----------------|---------------------|
| Drawn By<br>AI | Chk'd By<br>- | Scale @ A3<br>- | Date<br>20 NOV 2018 |
|----------------|---------------|-----------------|---------------------|

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| Project No.<br>BR167/09 | Drawing No.<br>BRE/90 | Revision<br>- |
|-------------------------|-----------------------|---------------|

## Appendix 2

### Principles of Daylight and Sunlight

Daylight & Sunlight Principles

The BRE Guidelines – Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice are well established and are adopted by most Local Authorities as the appropriate scientific and empirical methods of measuring daylight and sunlight in order to provide objective data upon which to apply their planning policies. The Guidelines are not fixed standards but should be applied flexibly to take account of the specific circumstances of each case.

The Introduction of the Guidelines states:

*"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."*

The 'flexibility' recommended in the Guidelines should reflect the specific characteristics of each case being considered. For example, as the numerical targets within the Guidelines have been derived on the basis of a low density suburban housing model, it is entirely appropriate to apply a more flexible approach when dealing with higher rise developments in a denser urban environment where the general scale of development is greater. In addition, where existing and proposed buildings have specific design features such as projecting balconies, deep recesses, bay windows etc., it is also equally valid to apply a degree of flexibility to take account of the effect of these particular design features. This does not mean that the recommendations and targets within the Guidelines can be disregarded but, instead, the 'flexibility' that should be applied should be founded on sound scientific principles that can be supported and justified. This requires a certain level of professional value judgement and experience.

Daylighting

In respect of daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is for the impact on existing neighbouring premises or for measuring the adequacy of proposed new dwellings. For safeguarding the daylight received by existing neighbouring residential buildings around a proposed development, the relevant recommendations are set out in Section 2.2 of the Guidelines.

The adequacy of daylight received by existing neighbouring dwellings is measured using two methods of measurement. First, it is necessary to measure the Vertical Sky Component (VSC) followed by the measurement of internal Daylight Distribution by plotting the position of the 'existing' and 'proposed' no sky line contour.

VSC is measured at the mid-point on the external face of the window serving a habitable room. For the purpose of the Guidelines, a "habitable" room is defined as a Kitchen, Living Room or Bedroom. Bathrooms, hallways and circulation space are excluded from this definition. In addition, many Local Authorities make a further distinction in respect of small kitchens. Where the internal area of a small kitchen limits the use to food preparation and is not of sufficient size to accommodate some other form of "habitable" use such as dining, the kitchen need not be classed as a "habitable" room in its own right.

VSC is a 'spot' measurement taken on the face of the window and is a measure of the availability of light from the sky from over the "existing" and "proposed" obstruction caused by buildings or structures in front of the window. As it is measured on the outside face of the window, one of the inevitable shortcomings is that it does not take account of the size of the window or the size or use of the room served by the window. For this reason, the BRE Guidelines require internal Daylight Distribution to be measured in addition to VSC.

The 'No Sky Line' contour plotted for the purpose of measuring internal Daylight Distribution identifies those areas within the room usually measured on a horizontal working plane set at table top level, where there is direct sky visibility. This therefore represents those parts within the room where the sky can be seen through the window. This second measure therefore takes account of the size of the window and the size of the room but is only more reliable than VSC when the actual room uses, layouts and dimensions are known. When interpreted in conjunction with the VSC value, the likely internal lighting conditions, and hence the quality of lighting within the room, can be assessed.

For VSC, the Guidelines states that:

*"If this Vertical Sky Component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the Vertical Sky Component with the new development in place is both less than 27% and less than 0.8 times its former value, then the occupants of the existing building will notice the reduction in the amount of skylight."*

To put this in context, the maximum VSC value that can be received for a totally unobstructed vertical window is 40%. There are however circumstances where the VSC value is already below 27%. In such circumstances, it is permissible to reduce the existing VSC value by a factor of 0.2 (i.e. 20%) so that the value on the 'proposed' conditions remains more than 0.8 times its former value. The scientific reasoning for this permissible margin of reduction is that existing daylight (and sunlight) levels can be reduced by a factor of 20% before the loss becomes materially noticeable. This factor of reduction applies to VSC, daylight distribution, sunlight and overshadowing.

By contrast, the adequacy of daylight for proposed 'New-Build' dwellings is measured using the standards in the British Standard Code of Practice for Daylighting, BS8206 Part 2.

The British Standard relies upon the use of Average Daylight Factors (ADF) rather than VSC and Daylight Distribution. The use of ADF is referred to in the BRE Guidelines (Appendix C) but its use is usually limited as a supplementary 'check' of internal lighting conditions once the VSC and Daylight Distribution tests have been completed.

ADF is sometimes seen as a more accurate and representative measure of internal lighting conditions as it comprises a greater number of design factors and input variables/coefficients. That is, the value of ADF is derived from:

- The actual amount of daylight received by the window(s) serving the room expressed as the "angle of visible sky" which is derived from the VSC value and therefore represents the amount of light striking the face of the window.
- The loss of transmittance through the glazing.
- The size of the window (net area of glazing).
- The size of the room served by the window(s) (net internal surface area of the room).
- The internal reflectance values of the internal finishes within the room.
- The specific use of the room.

One of the main reasons why ADF is more appropriate for New-Build dwellings is that any of the above input variables can be changed during the course of the design process in order to achieve the required internal lighting values. The ability to make such changes is not usually available when dealing with existing neighbouring buildings.

Unlike the application of VSC and daylight distribution, the British Standard differentiates between different room uses. It places the highest ADF standard on Family Kitchens where the minimum target value is 2% df. Living Rooms should achieve 1.5% df, and Bedrooms 1.0% df.

**Sunlighting**

The requirements for protecting sunlight to existing residential buildings are set out in section 3.2 of the BRE Guidelines.

The availability of sunlight varies throughout the year with the maximum amount of sunlight being available on the summer solstice and the minimum on the winter solstice. In view of this, the internationally accepted test date for measuring sunlight is the spring equinox (21 March), on which day the United Kingdom has equal periods of daylight and darkness and sunlight is available from approximately 08:30hrs to 17:30hrs. In addition, on that date, sunlight received perpendicular to the face of a window would only be received where that window faces within 90° of due south. The BRE Guidelines therefore limit the extent of testing for sunlight where a window faces within 90° of due south.

The sunlight standards are normally applied to the principal Living Room within each dwelling rather than to kitchens and bedrooms.

The recommendation for sunlight is:

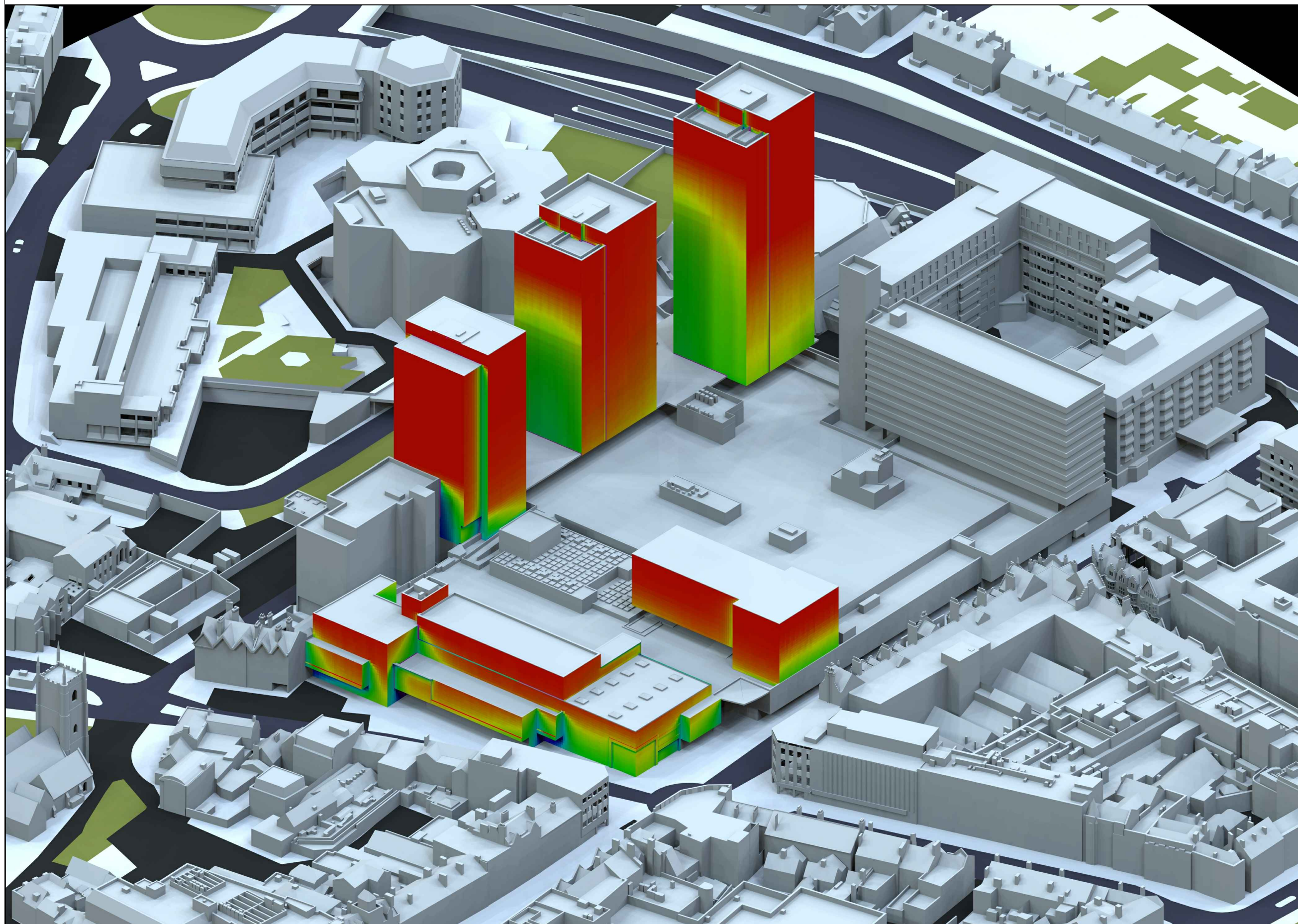
*"If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21 September and 21 March, then the room should still receive enough sunlight .*

*Any reduction in sunlight access below this level should be kept to a minimum. If the availability of sunlight hours are both less than the amounts given and less than 0.8 times their former value, either over the whole year or just during the winter months, then the occupants of the existing building will notice the loss of sunlight."*

A good level of sunlight will therefore be achieved where a window achieves more than 25% APSH, of which 5% should be in the winter months. Where sunlight levels fall below this suggested recommendation, a comparison with the existing condition should be undertaken and if the reduction ratio is less than 0.2, i.e. the window continues to receive more than 0.8 times its existing sunlight levels, the impact on sunlight will be acceptable.

## Appendix 3

### VSC Façade Drawings



#### Sources of Information

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MBS18\_841 Broad Street Mall, Reading.dwg

Corstorphine & Wright Architects proposal 3D model  
02 Nov 2018  
16428-3D View - Exploded

Accuties wide area model received 01 April 2018  
000222-Broad Street Mall,Reading\_HD\_MASTER.dwg

Ajoining Hosier Street masterplan document  
Hosier St Development Framework.pdf  
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#### Vertical Sky Component percentage



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#### Project Name

Broad Street Mall Reading

#### Client

Inception (Reading) SARL

#### Drawing Title

3D view A showing proposed facade vertical  
sky components results

Drawn By  
AC

Chk'd By  
-

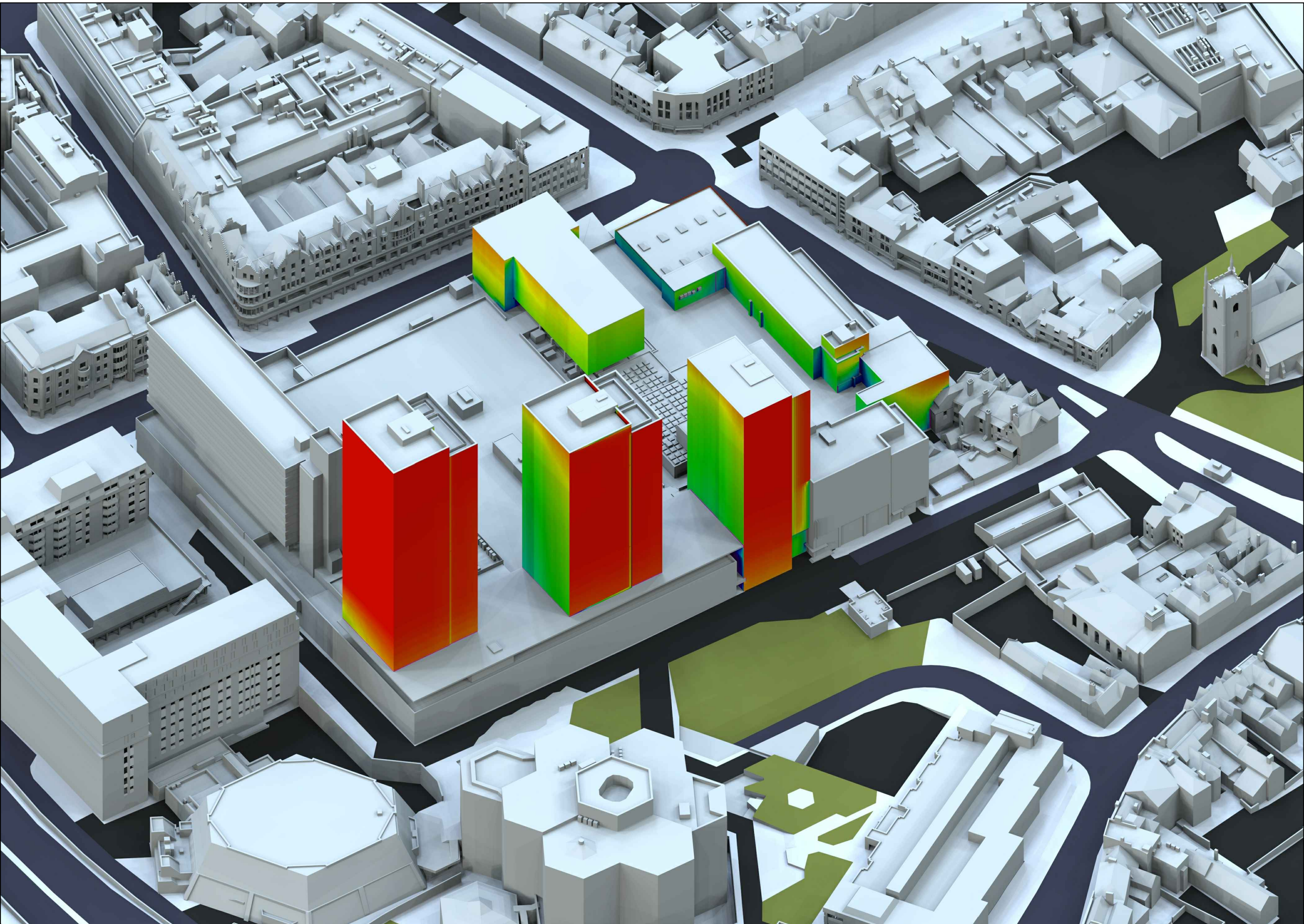
Scale @ A3  
n/a

Date  
27 NOV 2018

Project No.  
BR167\_11

Drawing No.  
BRE\_129

Revision  
-



Sources of Information

MBS survey 3D Model received 07 June 2018  
MBS18\_841 Broad Street Mall, Reading.dwg

Corstorphine & Wright Architects proposal 3D model  
02 Nov 2018  
16428-3D View - Exploded

Accuties wide area model received 01 April 2018  
000222-Broad Street Mall,Reading\_HD\_MASTER.dwg

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received 21 May 2018

Vertical Sky Component percentage

- 0
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40

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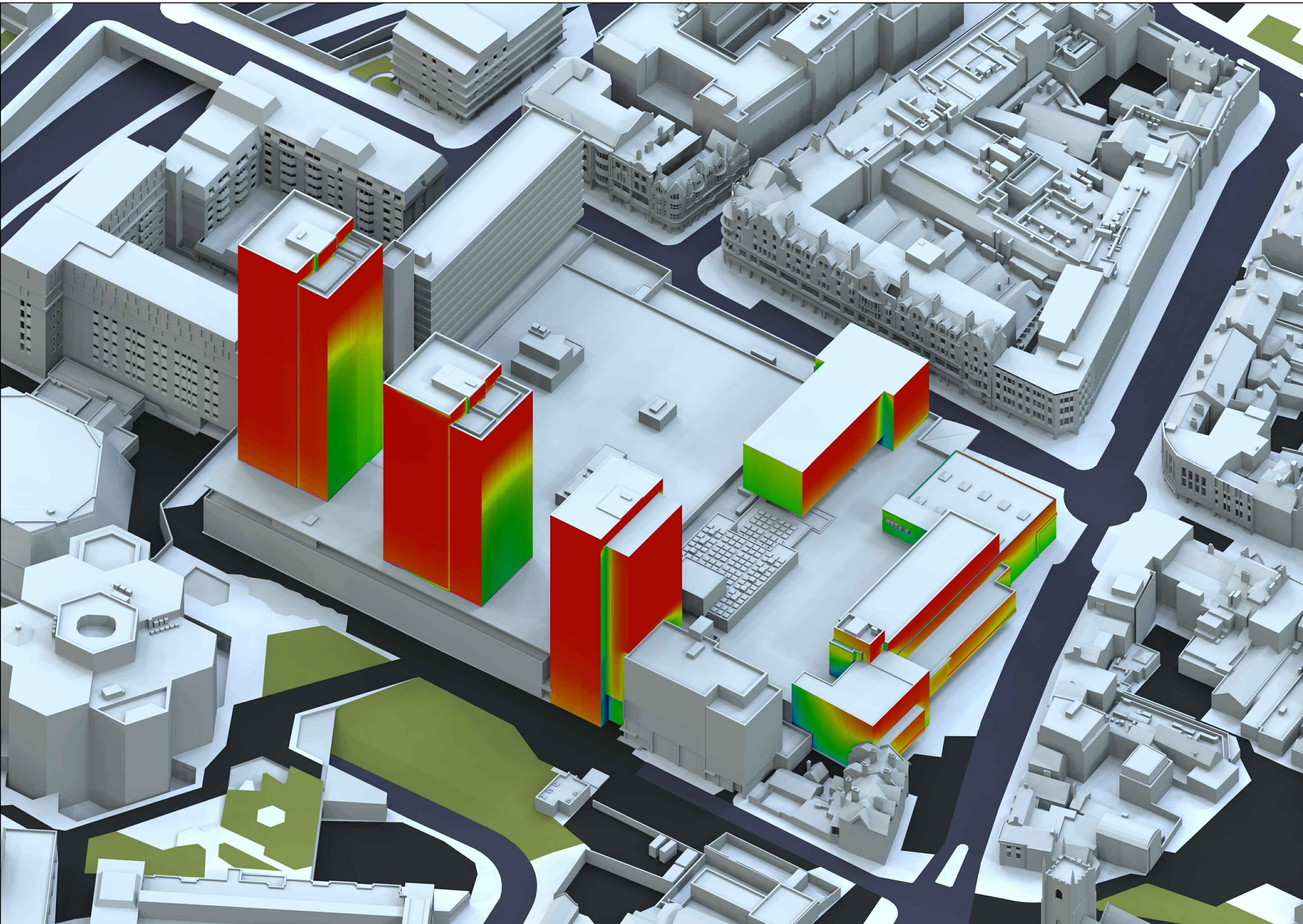
Project Name  
Broad Street Mall Reading

Client  
Inception (Reading) SARL

Drawing Title  
3D view B showing proposed facade vertical  
sky components results

|                |               |                   |                     |
|----------------|---------------|-------------------|---------------------|
| Drawn By<br>AC | Chk'd By<br>- | Scale @ A3<br>n/a | Date<br>27 NOV 2018 |
|----------------|---------------|-------------------|---------------------|

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|-------------------------|------------------------|---------------|
| Project No.<br>BR167_11 | Drawing No.<br>BRE_130 | Revision<br>- |
|-------------------------|------------------------|---------------|



Sources of Information

MBS survey 3D Model received 07 June 2018  
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02 Nov 2018  
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Ajoining Hosier Street masterplan document  
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Vertical Sky Component percentage

- 0
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40



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Project Name

Broad Street Mall Reading

Client

Inception (Reading) SARL

Drawing Title

3D view C showing proposed facade vertical sky components results

Drawn By

AC

Chk'd By

-

Scale @ A3

n/a

Date

27 NOV 2018

Project No.

BR167\_11

Drawing No.

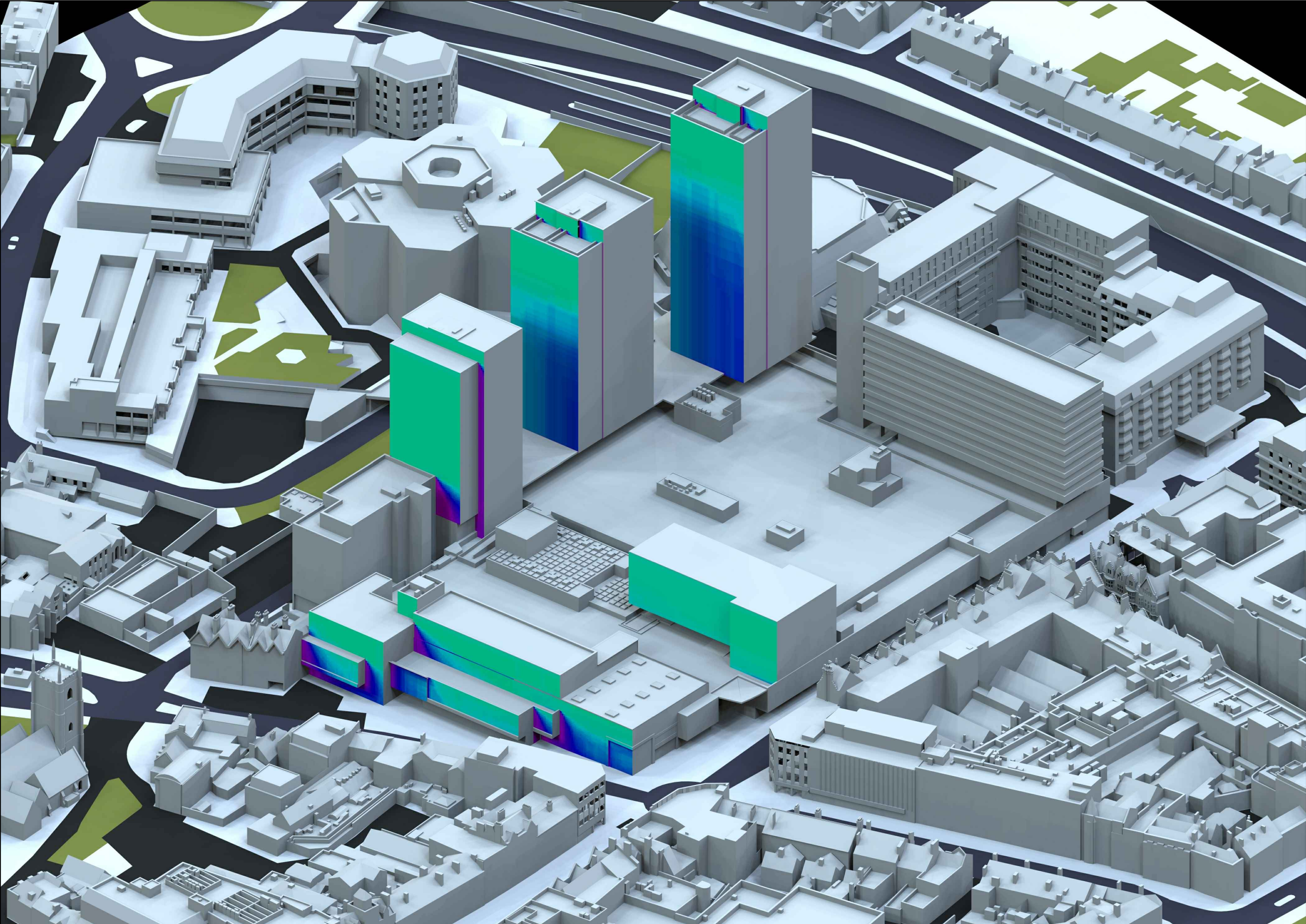
BRE\_131

Revision

-

## Appendix 4

### Sunlight Façade Drawings



Sources of Information

MBS survey 3D Model received 07 June 2018  
MBS18\_841 Broad Street Mall, Reading.dwg

Corstorphine & Wright Architects proposal 3D model  
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Accuties wide area model received 01 April 2018  
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Ajoining Hosier Street masterplan document  
Hosier St Development Framework.pdf  
received 21 May 2018

Annual probable sunlight percentage

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%



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Project Name

Broad Street Mall Reading

Client

Inception (Reading) SARL

Drawing Title

3D view A showing proposed annual probable sunlight results

Drawn By

AC

Chk'd By

-

Scale @ A3

n/a

Date

27 NOV 2018

Project No.

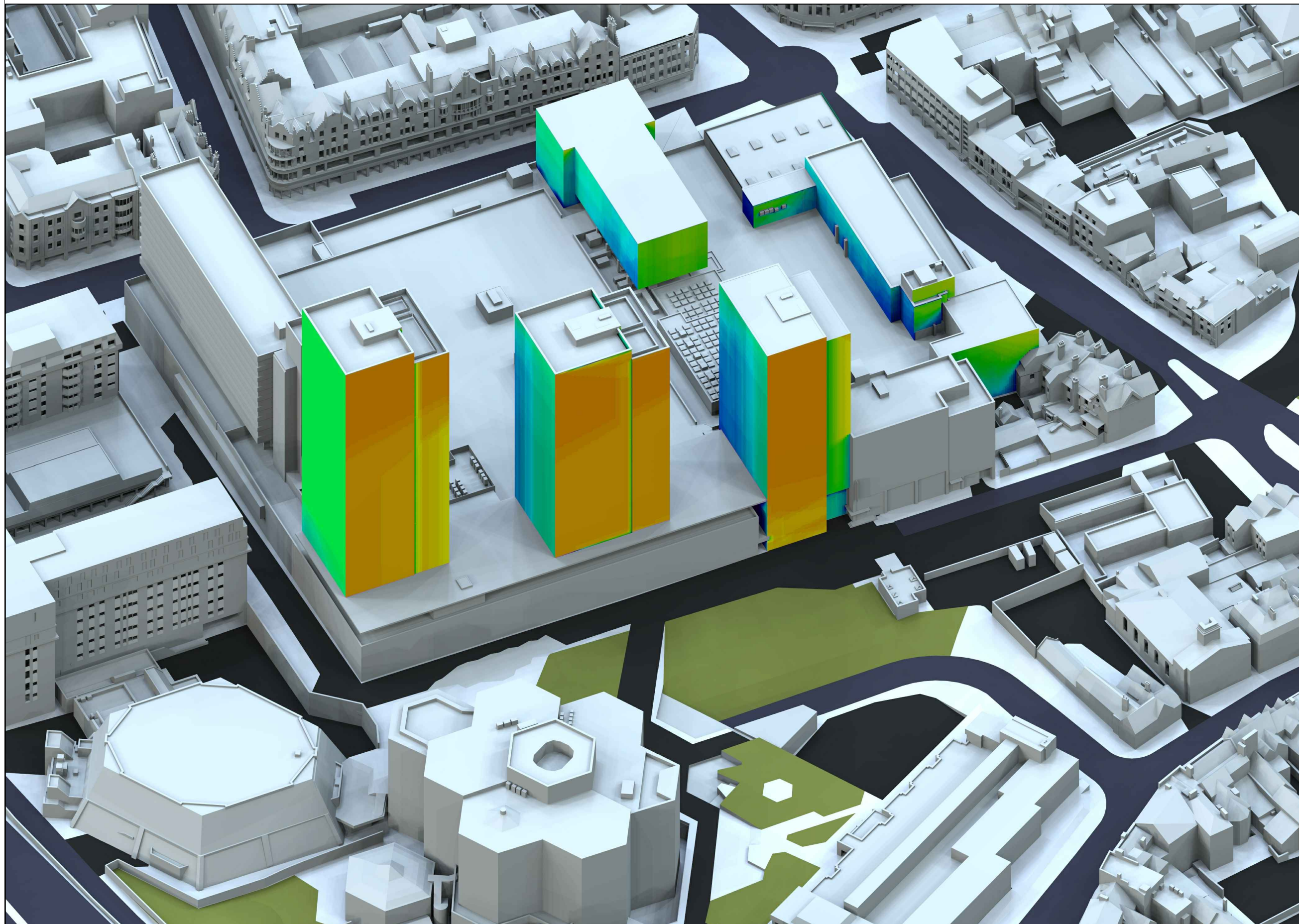
BR167\_12

Drawing No.

BRE\_132

Revision

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#### Sources of Information

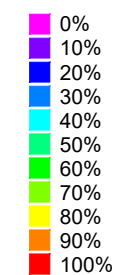
MBS survey 3D Model received 07 June 2018  
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#### Annual probable sunlight percentage



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#### Client

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#### Drawing Title

3D view B showing proposed annual probable  
sunlight results

Drawn By  
AC

Chk'd By  
-

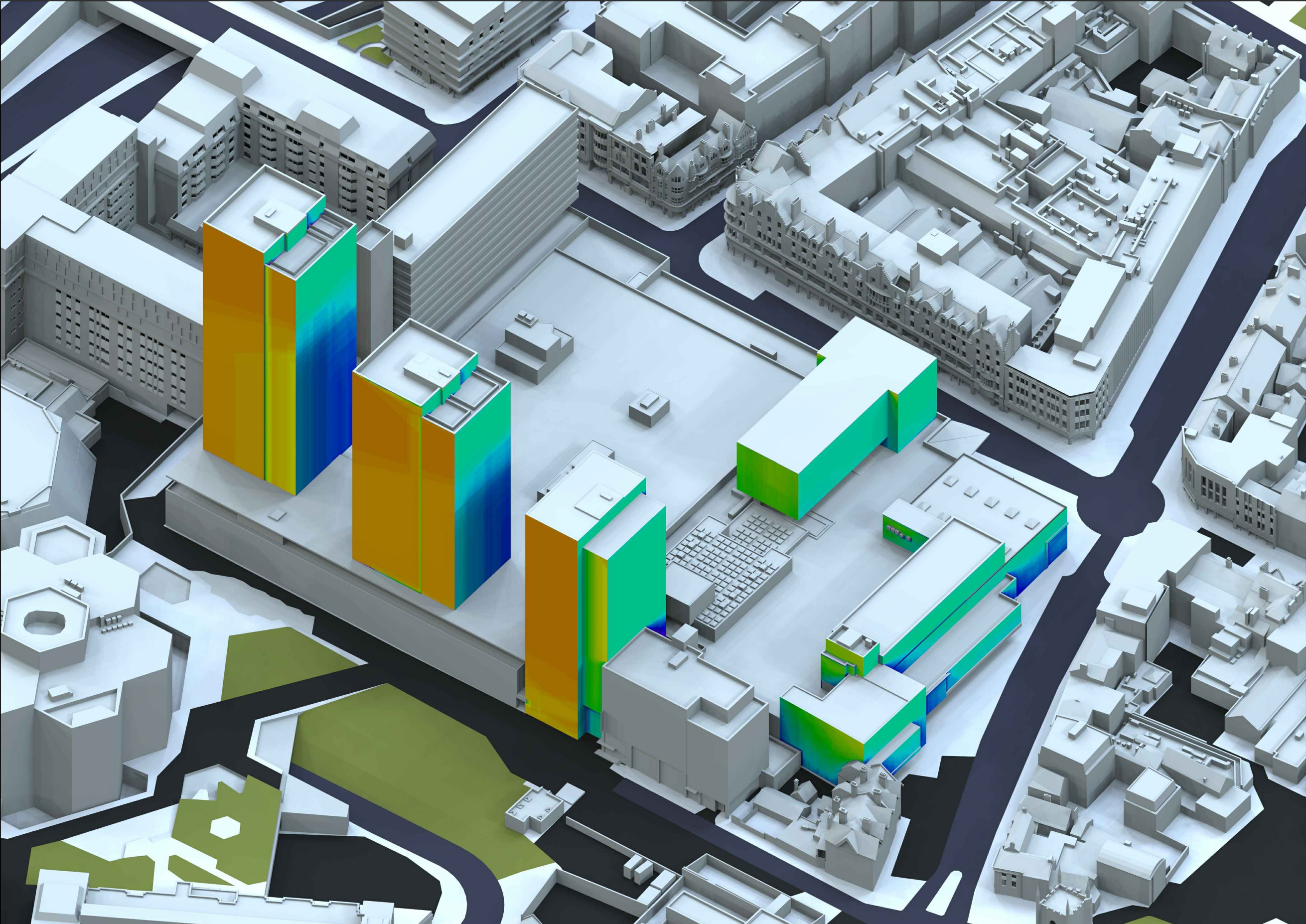
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Date  
27 NOV 2018

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Drawing No.  
BRE\_133

Revision  
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Sources of Information

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Annual probable sunlight percentage

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%



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Drawing Title

3D view C showing proposed annual probable  
sunlight results

Drawn By

AC

Chk'd By

-

Scale @ A3

n/a

Date

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Project No.

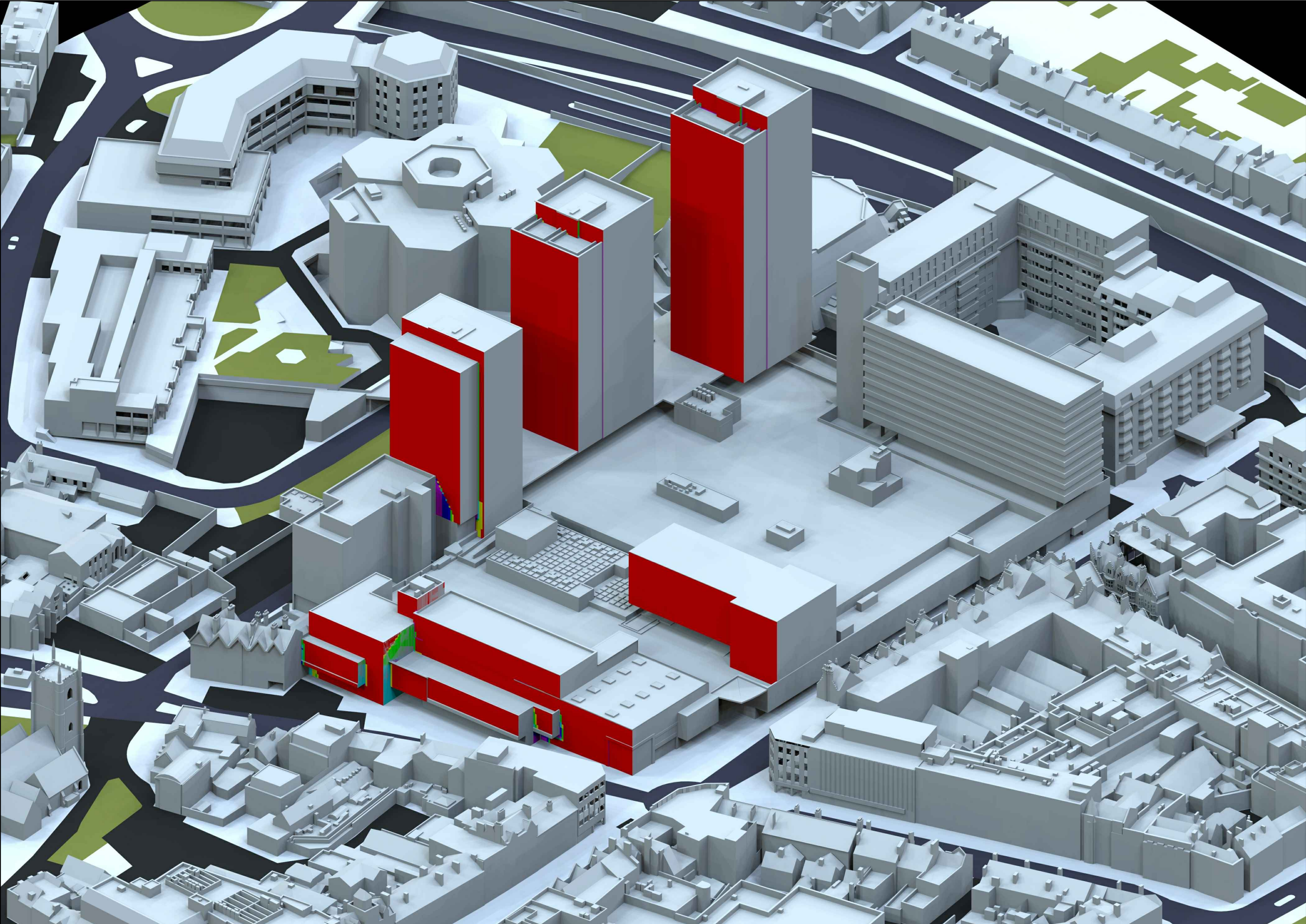
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Drawing No.

BRE\_134

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Annual probable sunlight  
winter percentage

- 0%
- 1%
- 2%
- 3%
- 4%
- 5%

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Project Name  
Broad Street Mall Reading

Client  
Inception (Reading) SARL

Drawing Title  
3D view A showing proposed annual probable  
winter sunlight results

|                |               |                   |                     |
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| Project No.<br>BR167_12 | Drawing No.<br>BRE_208 | Revision<br>- |
|-------------------------|------------------------|---------------|



Sources of Information

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Annual probable sunlight  
winter percentage

- 0%
- 1%
- 2%
- 3%
- 4%
- 5%

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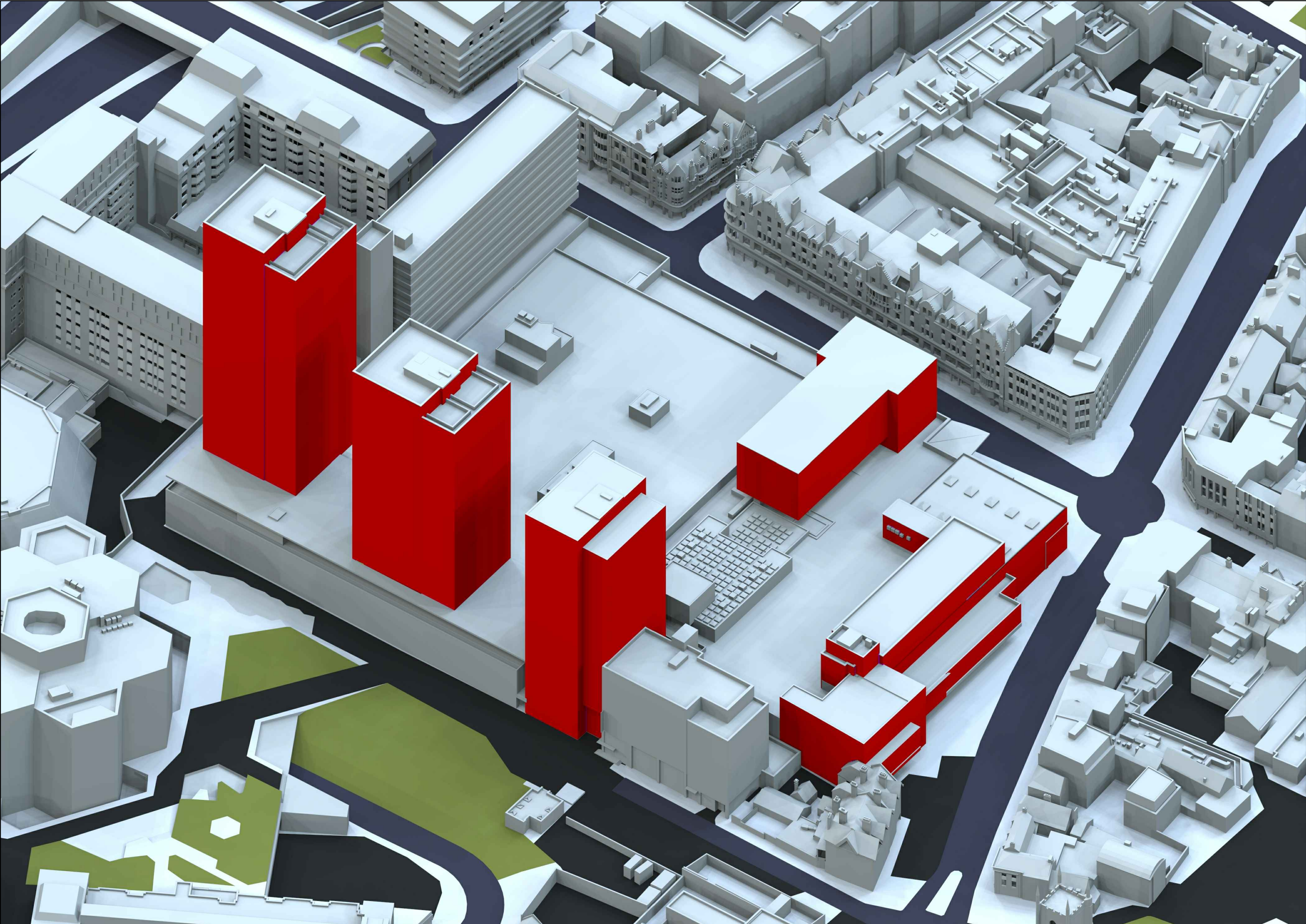
Project Name  
Broad Street Mall Reading

Client  
Inception (Reading) SARL

Drawing Title  
3D view B showing proposed annual probable  
winter sunlight results

|                |               |                   |                     |
|----------------|---------------|-------------------|---------------------|
| Drawn By<br>AC | Chk'd By<br>- | Scale @ A3<br>n/a | Date<br>27 NOV 2018 |
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| Project No.<br>BR167_12 | Drawing No.<br>BRE_209 | Revision<br>- |
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Annual probable sunlight  
winter percentage

- 0%
- 1%
- 2%
- 3%
- 4%
- 5%

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Project Name

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Drawing Title

3D view C showing proposed annual probable  
winter sunlight results

Drawn By

AC

Chk'd By

-

Scale @ A3

n/a

Date

27 NOV 2018

Project No.

BR167\_12

Drawing No.

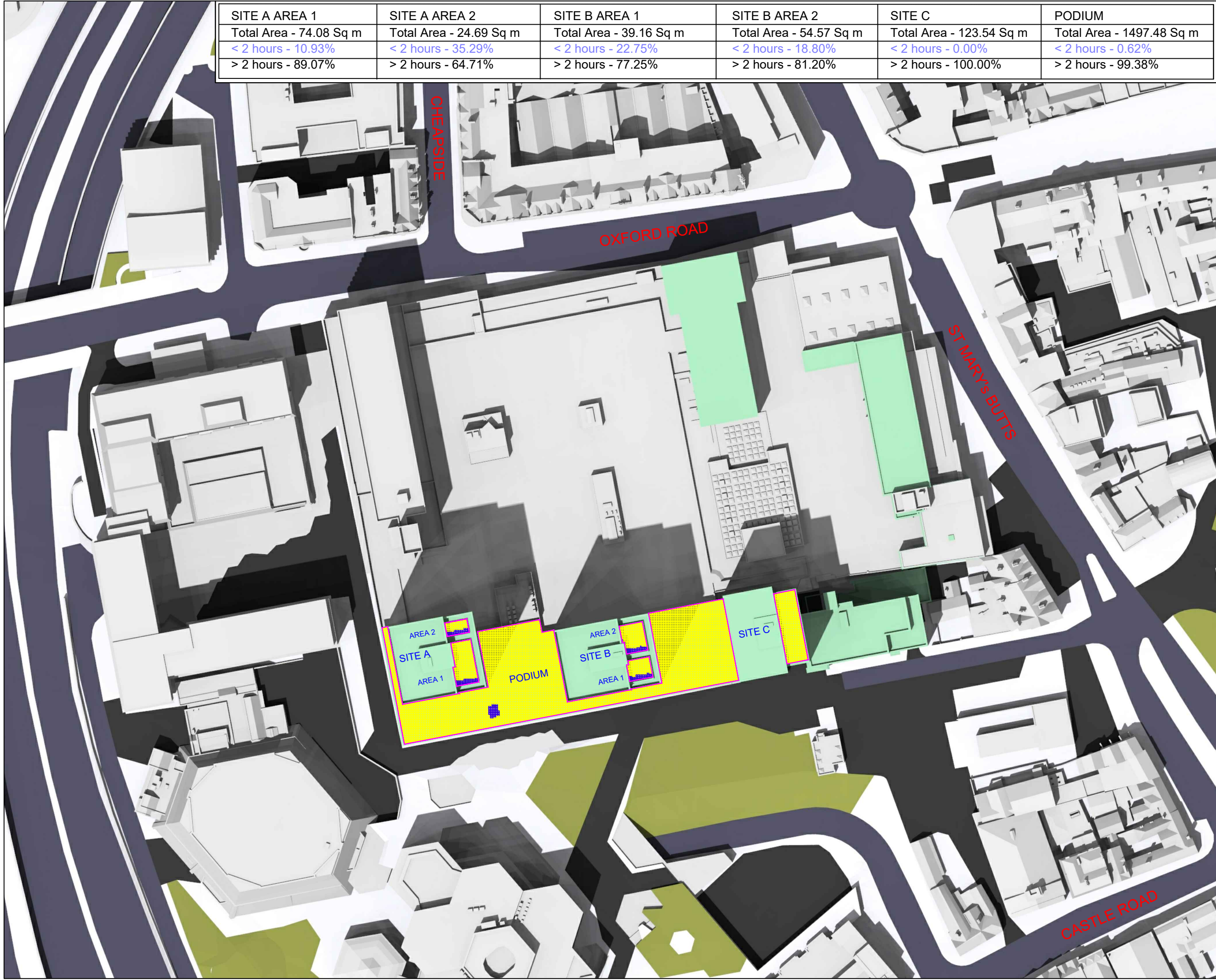
BRE\_210

Revision

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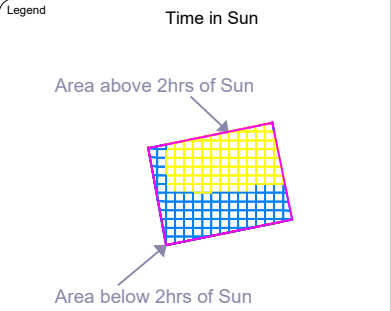
## Appendix 5

### SHOG Drawing



| SITE A AREA 1           | SITE A AREA 2           | SITE B AREA 1           | SITE B AREA 2           | SITE C                   | PODIUM                    |
|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|---------------------------|
| Total Area - 74.08 Sq m | Total Area - 24.69 Sq m | Total Area - 39.16 Sq m | Total Area - 54.57 Sq m | Total Area - 123.54 Sq m | Total Area - 1497.48 Sq m |
| < 2 hours - 10.93%      | < 2 hours - 35.29%      | < 2 hours - 22.75%      | < 2 hours - 18.80%      | < 2 hours - 0.00%        | < 2 hours - 0.62%         |
| > 2 hours - 89.07%      | > 2 hours - 64.71%      | > 2 hours - 77.25%      | > 2 hours - 81.20%      | > 2 hours - 100.00%      | > 2 hours - 99.38%        |

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Project Name

BROAD STREET MALL READING

Client

INCEPTION (READING) SARL

Drawing Title

TIME IN SUN MARCH 21st 0600 to 1800  
SITE A\_C, PODIUM

|          |          |            |             |
|----------|----------|------------|-------------|
| Drawn By | Chk'd By | Scale @ A3 | Date        |
| AI       | -        | -          | 20 NOV 2018 |

|             |             |          |
|-------------|-------------|----------|
| Project No. | Drawing No. | Revision |
| BR167/13    | BRE/135     | -        |





