

Daylight and Sunlight Report for the Proposed Development at Royal Hotel, The Esplanade, Bognor Regis PO21 5BX

Prepared for **Walsingham Planning**
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Daylight and Sunlight Report for the Proposed Development at
Royal Hotel, The Esplanade, Bognor Regis PO21 5BX
Prepared for
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Contents

Page

1.	Executive Summary	2
1.1	Scope	2
1.2	Assessment Criteria.....	2
1.3	Summary of Effect of Proposed Development on Existing Surrounding Buildings.....	2
1.4	Overall.....	3
2.	Introduction	4
2.1	Scope	4
2.2	Planning Policy.....	4
2.3	Assessment Criteria.....	4
2.4	Limitations	5
3.	Assessment & Results – Impact of New Development on Existing, Surrounding Buildings.....	6
3.1	Daylight	6
3.2	Sunlight.....	7
3.3	Overshadowing	8

Appendix A	Assessments to be Applied
Appendix B	Context Drawings
Appendix C	Window/Room Reference Drawings
Appendix D	Daylight Study
Appendix E	Sunlight Study
Appendix F	Overshadowing Study

1. Executive Summary

1.1 Scope

- 1.1.1 We have been instructed by Walsingham Planning to determine the impact upon the daylight and sunlight amenity of the existing surrounding buildings, which may arise from the proposed development at Royal Hotel, The Esplanade, Bognor Regis, PO21 5BX.

1.2 Assessment Criteria

- 1.2.1 To ensure that this assessment can be appropriately evaluated against West Sussex County Council's planning policy, daylight and sunlight calculations have been undertaken in accordance with the Building Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' 2nd Edition, 2011 (the "BRE guide") and also British Standard 8206 – 2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', to which the BRE guide refers. The standards and tests applied within this assessment are briefly described in Appendix A.

1.3 Summary of Effect of Proposed Development on Existing Surrounding Buildings

Daylight

- 1.3.1 Of the 92 windows assessed 87 (95%) will continue to meet the target values as set out in the BRE guide. Four of the shortfalls occur at 2 The Steyne; from our research, we understand that all of the windows serve bedrooms. As the BRE guide considers bedrooms have a lower requirement for daylight, due to the predominant nocturnal use, the significance of the shortfalls becomes less material. Whilst one windows at 4 The Steyne, will fall short of the BRE target value, but only very slightly. This window will experience a marginal ratio reduction shortfall of 0.78, which just below the target of 0.8 ratio reduction from its former value. We therefore consider the shortfalls in meeting the target values to be acceptable.

Sunlight

- 1.3.2 Of the 45 windows assessed 42 (93%) will continue to meet the target values as set out in the BRE guide. Where shortfalls will occur at 2 The Steyne, all affected windows serve bedrooms at first floor level. The BRE guide's sunlight target relates primarily to living rooms. With this in mind, we are therefore of the opinion that the APSH results demonstrate the development will essentially be fully compliant with the recommendations of the BRE guide.

Overshadowing

- 1.3.3 Our results demonstrate that the garden/amenity area assessed will exceed the BRE target criteria for sunlight because 100% of the area will continue to receive at least two hours of direct sunlight on 21 March, and will experience no reduction in area receiving sun with the proposed development in place.

1.4 Overall

- 1.4.1 Overall, the proposed development will have a very minor impact on the daylight currently enjoyed by the surrounding residential properties and no material impact on sunlight. We consider from the findings of our assessments that the daylight impacts are, on an objective basis, acceptable, as the number of rooms not meeting the target values is low and, in most cases, the margin of the shortfalls in compliance are slight.
- 1.4.2 Furthermore, the methodologies and recommendations of the BRE guide, are not intended to be mandatory or applied rigidly, we therefore conclude that the proposals accord with the BRE guide and the Local Authority's planning policy.

2. Introduction

2.1 Scope

- 2.1.1 We have been instructed by Walsingham Planning to determine the impact upon the daylight and sunlight amenity that may arise from the proposed development of Royal Hotel, The Esplanade, Bognor Regis, PO21 5BX in respect of the existing surrounding buildings.

2.2 Planning Policy

- 2.2.1 West Sussex's Structure Plan 2001 – 2016 contains the following policy:

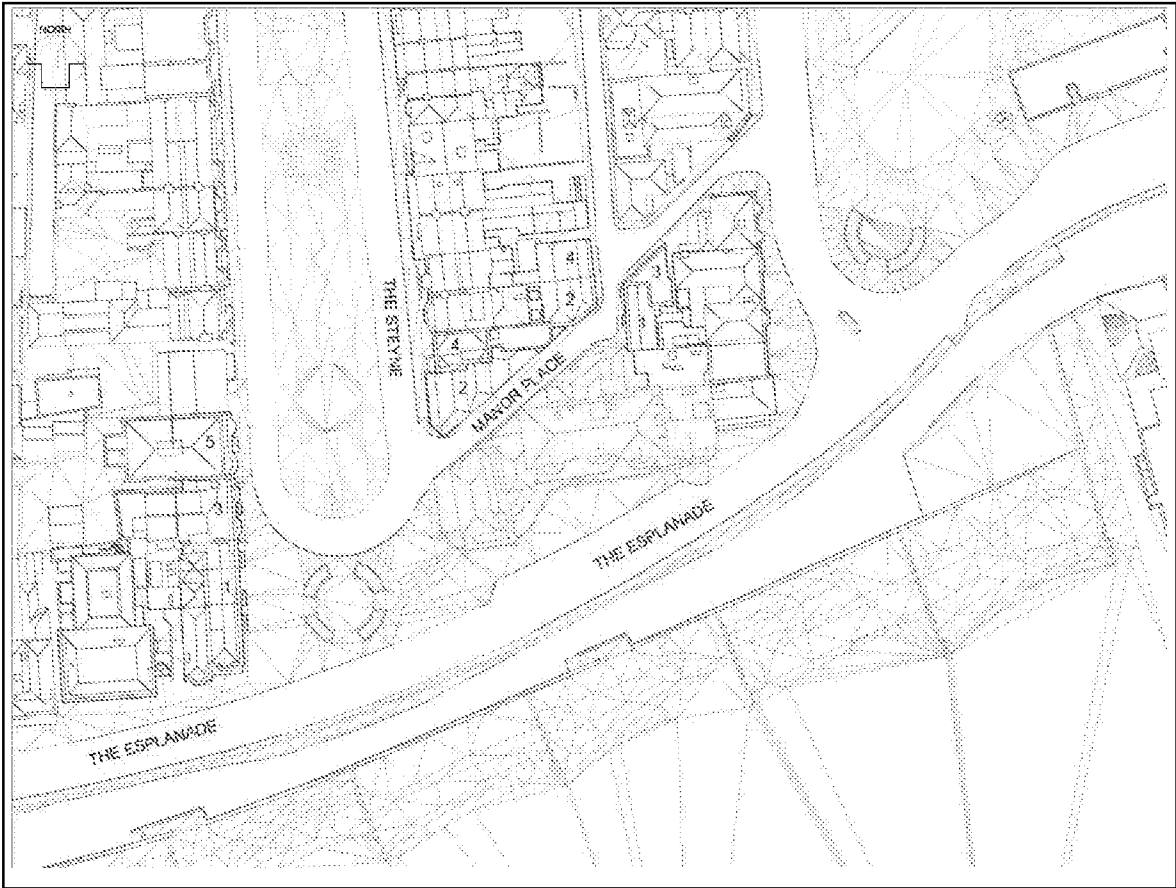
Environment, Resources and Assets

351. Care will be needed to ensure that policies in local plans and any associated guidance do not prevent the best use being made of land and that all development (including the conversion and reuse of existing buildings) is of high quality. This applies to site-specific allocations (both previously-developed land and greenfield sites) as well as general policies such as those relating to design, privacy, sunlight/daylight, roads, layouts and parking.

2.3 Assessment Criteria

- 2.3.1 To ensure that this assessment can be appropriately evaluated against West Sussex's planning policy, daylight and sunlight calculations have been undertaken in accordance with the 'BRE guide' and also on BS8206-2: 2008 to which the BRE guide refers. The standards and tests applied are briefly described in Appendix A.
- 2.3.2 The relevant existing buildings, adjacent to the proposed development site, are shown on the Site Plan (see below) and comprise:

Name/Address of Building	Assumed Use	Position in Relation to the Development
1 The Steyne	Residential	West
3 The Steyne (Ph)	Commercial /Residential	North
5 The Steyne (Richard House)	Residential	West
2 The Steyne	Commercial /Residential	North
4 The Steyne	Residential	North
1 Manor Place	Residential	North
2 Manor Place	Residential	North
3 Manor Place	Residential	North East
4 Manor Place	Residential	North



2.4 Limitations

- 2.4.1 We refer you to our daylighting and sunlighting limitations, as provided with our fee proposal.
- 2.4.2 Our assessment is based on the scheme drawings provided by Randell Design Group Architects as listed below:

Title	Date
<u>Randell Design Group Architects</u>	
Royal Survey Drawings.DWG	06 August 2018
169 The Royal - Level 00 Proposed Outline.DWG	03 September 2018
169 The Royal - Level 01 Proposed Outline.DWG	03 September 2018
169 The Royal - Level 02 Proposed Outline.DWG	03 September 2018
2018.09.03 169 Royal Hotel - Prop.Elev.DWG	03 September 2018
<u>Vertex Mapping.Co.Uk</u>	
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG	23 August 2017

- 2.4.3 Where no elevation survey data has been provided to us, we have estimated approximate window heights and positions in the surrounding existing properties from data gathered at our site inspection.

3. Assessment & Results – Impact of New Development on Existing, Surrounding Buildings

3.1 Daylight

3.1.1 With reference to the BRE guide (see also Appendix A) and our site inspection, the following buildings require assessment:

- 1 The Steyne
- 3 The Steyne (Ph)
- 5 The Steyne (Richard House)
- 2 The Steyne
- 4 The Steyne
- 1 Manor Place
- 2 Manor Place
- 3 Manor Place
- 4 Manor Place

3.1.2 The results of our VSC analysis are shown in full in Appendix D. The following table is a summary of our findings:

Building Address	No. of Windows Analysed	BRE Compliant		Total Percentage BRE Compliant
		Yes	No	
1 The Steyne	13	13	0	100
3 The Steyne (Ph)	7	7	0	100
5 The Steyne (Richard House)	22	22	0	100
2 The Steyne	13	9	4	69
4 The Steyne	11	10	1	91
1 Manor Place	7	7	0	100
2 Manor Place	7	7	0	100
3 Manor Place	8	8	0	100
4 Manor Place	4	4	0	100
Totals	92	87	5	95

3.1.3 Of the 92 windows assessed, 87 will continue to meet the target values as set out in the BRE guide.

3.1.4 Although the results indicate that, with the proposed development in place, the majority of the windows surrounding the site will continue to receive adequate daylight as defined by the BRE guide, a small number fall marginally short of the recommended target. We comment as follows:

2 The Steyne

3.1.5 Of the 13 windows assessed, four will fall short of the BRE target values. From our research, we understand that all four windows serve bedrooms. The BRE guide considers bedrooms have a lower requirement for daylight, due to the predominant nocturnal use. We therefore consider the shortfalls in meeting the target values to be acceptable.

4 The Steyne

- 3.1.6 Of the 11 windows assessed, one will fall short of the BRE target value, namely window Ref. W2 at first floor level. This window will experience a marginal ratio reduction shortfall of 0.78, which is just below the targeted 0.8 ratio reduction from its former value. If the result is rounded to the first decimal place, the result actually complies with the 0.8 ratio reduction. We therefore consider this shortfall to be acceptable.

3.2 Sunlight

- 3.2.1 In accordance with the BRE guide, our analysis of the plans provided and our observations on site, a number of the surrounding buildings require the assessment of Annual Probable Sunlight Hours (APSH) – (see Appendix A). The properties concerned are:

- 1 The Steyne
- 3 The Steyne (Ph)
- 5 The Steyne (Richard House)
- 2 The Steyne
- 4 The Steyne
- 1 Manor Place
- 2 Manor Place
- 3 Manor Place

- 3.2.2 The table below shows a summary of the results of the APSH assessment. Full results are contained in Appendix E.

Building Address	No. of Windows Analysed	BRE Compliant		Total Percentage BRE Compliant
		Yes	No	
1 The Steyne	2	2	0	100
3 The Steyne (Ph)	2	2	0	100
5 The Steyne (Richard House)	6	6	0	100
2 The Steyne	12	9	3	75
4 The Steyne	9	9	0	100
1 Manor Place	6	6	0	100
2 Manor Place	4	4	0	100
3 Manor Place	4	4	0	100
Totals	45	42	3	93

- 3.2.3 Of the 45 windows, assessed 42 (93%) will continue to meet the target values as set out in the BRE guide.

- 3.2.4 Although the results indicate that, with the proposed development in place, the vast majority of the windows surrounding the site will continue to receive adequate sunlight as defined by the BRE guide, a small number (three), serving 2 The Steyne, will fall short of the target requirements. We comment further as follows:

2 The Steyne

- 3.2.5 Of the 12 windows assessed for sunlight, three will fall short of the BRE target values. The windows referenced W3, W4 and W5 at first floor level serve bedrooms, while the BRE guide's sunlight target relates primarily to living rooms. With this in mind, we are therefore of the opinion that the APSH results are fully compliant with the BRE guide.

3.3 Overshadowing

- 3.3.1 In accordance with the BRE guide, we have undertaken overshadowing assessments to the following areas:

- Green On The Esplanade

- 3.3.2 A reference plan and the results of the overshadowing analysis are shown in full in Appendix F. The table below summarises the results:

Building Address	No. of Amenity Areas Analysed	BRE Compliant		Total Percentage BRE Compliant
		Yes	No	
Green On The Esplanade	1	1	0	100
Totals	1	1	0	100

- 3.3.3 Our results demonstrate that the garden/amenity area assessed will meet and exceed the BRE target criteria for sunlight because at least 50% of its area receives at least two hours of direct sunlight on 21 March, and will experience no reduction whatsoever.

Appendix A

Assessments to be Applied



Introduction

The main purpose of the guidelines in the Building Research Establishment Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice 2011, 2nd Edition" ("the BRE guide") is to assist in the consideration of the relationship of new and existing buildings to ensure that each retains a potential to achieve good daylighting and sunlighting levels. That is, by following and satisfying the tests contained in the guidelines, new and existing buildings should be sufficiently spaced apart in relation to their relative heights so that both have the potential to achieve good levels of daylight and sunlight. The guidelines have been drafted primarily for use with low density suburban developments and should therefore be used flexibly when dealing with dense urban sites and extensions to existing buildings, a fact recognised by the BRE Report's author in the Introduction where Dr Paul Littlefair says:

'The Guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design..... In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.....'

In many cases in low-rise housing, meeting the criteria for daylight and sunlight may mean that the BRE criteria for other amenity considerations such as *privacy* and *sense of enclosure* are also satisfied.

The BRE guide states that recommended minimum privacy distances (in cases where windows of habitable rooms face each other in low-rise residential property), as defined by each individual Local Authority's policies, vary widely, from 18-35m¹. For two-storey properties a spacing within this range would almost certainly also satisfy the BRE guide's daylighting requirements as it complies with the 25⁰ rule and will almost certainly satisfy the 'Three times height' test too (as discussed more fully below). However, the specific context of each development will be taken into account and Local Authorities may relax the stated minimum, for instance, in built-up areas where this would lead to an inefficient use of land. Conversely, greater distances may be required between higher buildings, in order to satisfy daylighting and sunlighting requirements. It is important to recognize also that privacy can also be achieved by other means: design, orientation and screening can all play a key role and may also contribute towards reducing the theoretical 'minimum' distance.

A sense of enclosure is also important as the perceived quality of an outdoor space may be reduced if it is too large in the context of the surrounding buildings. In urban settings the BRE guide suggests a spacing-to-height ratio of 2.5:1 would provide a comfortable environment, whilst not obstructing too much natural light: this ratio also approximates the 25⁰ rule.

Daylight

The criteria for protecting daylight to existing buildings are contained in Section 2.2 and Appendix C of the BRE guide. There are various methods of measuring and assessing daylight and the choice of test depends on the circumstances of each particular window. For example, greater protection should be afforded to windows which serve habitable dwellings and, in particular, those serving living rooms and family kitchens, with a lower requirement required for bedrooms. The BRE guide states that circulation spaces and bathrooms need not be tested as

¹ The commonest minimum privacy distance is 21m (Householder Development Consents Review: Implementation of Recommendations – Department for Communities and Local Government – May 2007)

they are not considered to require good levels of daylight. In addition, for rooms with more than one window, secondary windows do not require assessment if it is established that the room is already sufficiently lit through the principal window.

The tests should also be applied to non-domestic uses such as offices and workplaces where such uses will ordinarily have a reasonable expectation of daylight and where the areas may be considered a principal workplace.

The BRE has developed a series of tests to determine whether daylighting levels within new developments and rooms within existing buildings surrounding new developments will satisfy or continue to satisfy a range of daylighting criteria.

Note: Not every single window is assessed separately, only a representative sample, from which conclusions may be drawn regarding other nearby dwellings.

Daylighting Tests

'Three times height' test - If the distance of each part of the new development from the existing windows is three or more times its height above the centre of the existing window then loss of light to the existing windows need not be analysed. If the proposed development is taller or closer than this then the 25° test will need to be carried out.

25° test - a very simple test that should only be used where the proposed development is of a reasonably uniform profile and is directly opposite the existing building. Its use is most appropriate for low density well-spaced developments such as new sub-urban housing schemes and often it is not a particularly useful tool for assessing urban and in-fill sites. In brief, where the new development subtends to an angle of less than 25° to the centre of the lowest window of an existing neighbouring building, it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building. Equally, the new development itself is also likely to have the potential for good daylighting. If the angle is more than 25° then more detailed tests are required, as outlined below.

VSC Test - the VSC is a unit of measurement that represents the amount of available daylight from the sky, received at a particular window. It is measured on the outside face of the window. The 'unit' is expressed as a percentage as it is the ratio between the amount of sky visible at the given reference point compared to the amount of light that would be available from a totally unobstructed hemisphere of sky. To put this unit of measurement into perspective, the maximum percentage value for a window with a completely unobstructed outlook (i.e. with a totally unobstructed view through 90° in every direction) is 40%.

The target figure for VSC recommended by the BRE is 27%. A VSC of 27% is a relatively good level of daylight and the level we would expect to find for habitable rooms with windows on principal elevations. However, this level is often difficult to achieve on secondary elevations and in built-up urban environments. For comparison, a window receiving 27% VSC is approximately equivalent to a window that would have a continuous obstruction opposite it which subtends an angle of 25° (i.e. the same results as would be found utilising the 25° Test). Where tests show that the new development itself meets the 27% VSC target this is a good indication that the development will enjoy good daylighting and further tests can then be carried out to corroborate this (see under).

Through research the BRE have determined that in existing buildings daylight (and sunlight levels) can be reduced by approximately 20% of their original value before the loss is materially noticeable. It is for this reason that they consider that a 20% reduction is permissible in circumstances where the existing VSC value is below the 27% threshold. For existing buildings

once this has been established it is then necessary to determine whether the distribution of daylight inside each room meets the required standards (see under).

Daylight Distribution (DD) Test – This test looks at the position of the “No-Sky Line” (NSL) – that is, the line that divides the points on the working plane (0.7m from floor level in offices and 0.85m in dwellings and industrial spaces) which can and cannot see the sky. The BRE guide suggests that areas beyond the NSL may look dark and gloomy compared with the rest of the room and BS8206 states that electric lighting is likely to be needed if a significant part of the working plane (normally no more than 20%) lies beyond it.

In new developments no more than 20% of a room’s area should be beyond the NSL. For existing buildings the BRE guide states that if, following the construction of a new development, the NSL moves so that the area beyond the NSL increases by more than 20%, then daylighting is likely to be seriously affected.

The guide suggests that in houses, living rooms, dining rooms and kitchens should be tested; bedrooms are deemed less important, although should nevertheless be analysed. In other buildings each main room where daylight is expected should be investigated.

ADF Test – The ADF (Average Daylight Factor) test takes account of the interior dimensions and surface reflectance within the room being tested as well as the amount of sky visible from the window. For this reason it is considered a more detailed and representative measure of the adequacy of light. The minimum ADF values recommended in BS8206 Part 2 are: 2% for family kitchens (and rooms containing kitchens); 1.5% for living rooms; and 1% for bedrooms. This is a test used in assessing new developments, although, in certain circumstances, it may be used as a supplementary test in the assessment of daylighting in existing buildings, particularly where more than one window serves a room.

Room depth ratio test – This is a test for new developments looking at the relative dimensions of each room (principally its depth) and its window(s) to ensure that the rear half of a room will receive sufficient daylight so as not to appear gloomy.

Sunlight

Sunlight is an important ‘amenity’ in both domestic and non-domestic settings. The way in which a building’s windows are orientated and the overall position of a building on a site will have an impact on the sunlight it receives but, importantly, will also have an effect on the sunlight neighbouring buildings receive. Unlike daylight, which is non-directional and assumes that light from the sky is uniform, the availability of sunlight is dependent on direction. That is, as the United Kingdom is in the northern hemisphere, we receive virtually all of our sunlight from the south. The availability of sunlight is therefore dependent on the orientation of the window or area of ground being assessed relative to the position of due south.

In new developments the BRE guide suggests that dwellings should aim to have at least one main living room which faces the southern or western parts of the sky so as to ensure that it receives a reasonable amount of sunlight. Where groups of dwellings are planned the Guide states that site layout design should aim to maximise the number of dwellings with a main living room that meet sunlight criteria. Where a window wall faces within 90° of due south and no obstruction subtends to angle of more than 25° to the horizontal or where the window wall faces within 20° of due south and the reference point has a VSC of at least 27% then sunlighting will meet the required standards: failing that the Annual Probable Sunlight Hours (APSH) need to be analysed. APSH means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloud for the location in question. If the APSH tests reveal that the new development will receive at least one quarter of the available APSH, including at least 5% of APSH during the winter months (from 21 September to

21 March), then the requirements are satisfied. It should be noted that if a room has two windows on opposite walls, the APSH due to each can be added together.

The availability of sunlight is also an important factor when looking at the impact of a proposed development on the existing surrounding buildings. APSH tests will be required where one or more of the following are true:

- The 'Three times height' test is failed (see 'Daylight' above);
- The proposed development is situated within 90° of due south of an existing building's main window wall and the new building subtends to angle of more than 25° to the horizontal;
- The window wall faces within 20° of due south and a point at the centre of the window on the outside face of the window wall (the reference point) has a VSC of less than 27%.

Where APSH testing is required it is similar to the test for the proposed development. That is to say that compliance will be demonstrated where a room receives:

- At least 25% of the APSH (including at least 5% in the winter months), or
- At least 0.8 times its former sunlight hours during either period, or
- A reduction of no more than 4% APSH over the year.

The Guide stresses that the target values it gives are purely advisory, especially in circumstances such as: the presence of balconies (which can overhang windows, obstructing light); when an existing building stands unusually close to the common boundary with the new development and; where the new development needs to match the height and proportion of existing nearby buildings. In circumstances like these a larger reduction in sunlight may be necessary.

The sunlight criteria in the BRE guide primarily apply to windows serving living rooms of an existing dwelling. This is in contrast to the daylight criteria which apply to kitchens and bedrooms as well as living rooms. Having said that, the guide goes on to say that care should be taken not to block too much sun from kitchens and bedrooms. Non-domestic buildings which are deemed to have a requirement for sunlight should also be checked.

Sunlight - Gardens and Open Spaces

As well as ensuring buildings receive a good level of sunlight to their interior spaces, it is also important to ensure that the open spaces between buildings are suitably lit. The recommendations as set out in the BRE guide are meant to ensure that spaces between buildings are not permanently in shade for a large part of the year. Trees and fences over 1.5m tall are also factored into the calculations.

The BRE guidelines state that:

- For a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of the area should receive at least two hours of sunlight on 21 March;
- In addition, if, as result of new development, an existing garden or amenity area does not reach the area target above and the area which can receive two hours of direct sunlight on 21 March is reduced by more than 20% this loss is likely to be noticeable.

Appendix G of the BRE guidelines describes a methodology for calculating sunlight availability for amenity spaces.

Appendix B

Context Drawings



Existing Site Plan

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG
Received 23 August 2017

Rev.	Date	Amendments	Initial
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TITLE

Existing Site Plan

CLIENT

Walsingham Planning

PROJECT

Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX

DRAWN BY	CHECKED
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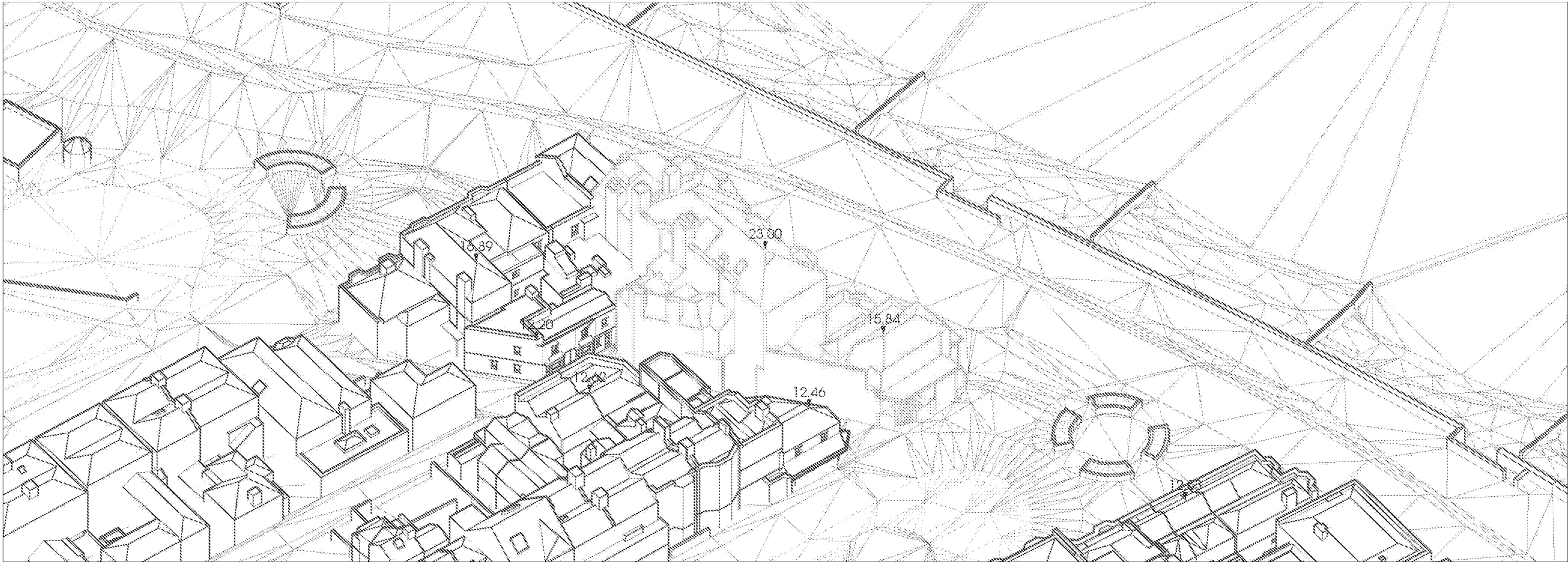
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70919_CTXT_01	2



3D Context View - View from North (Existing)



3D Context View - View from South (Existing)

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
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TITLE

3D Views
Existing Site

CLIENT

Walsingham Planning

PROJECT

Royal Hotel,
The Esplanade, Bognor Regis,
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2



Proposed Site Plan

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
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TITLE
Proposed Site Plan

CLIENT
Walsingham Planning

PROJECT
**Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX**

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3D Context View - View from North (Proposed)



3D Context View - View from South (Proposed)

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
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169 The Royal - Level 00 Proposed Outline.dwg
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ALL HEIGHTS IN METERS AOD

Rev.	Date	Amendments	Initial
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TITLE
**3D Views
Proposed Site**

CLIENT
Walsingham Planning

PROJECT
**Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX**

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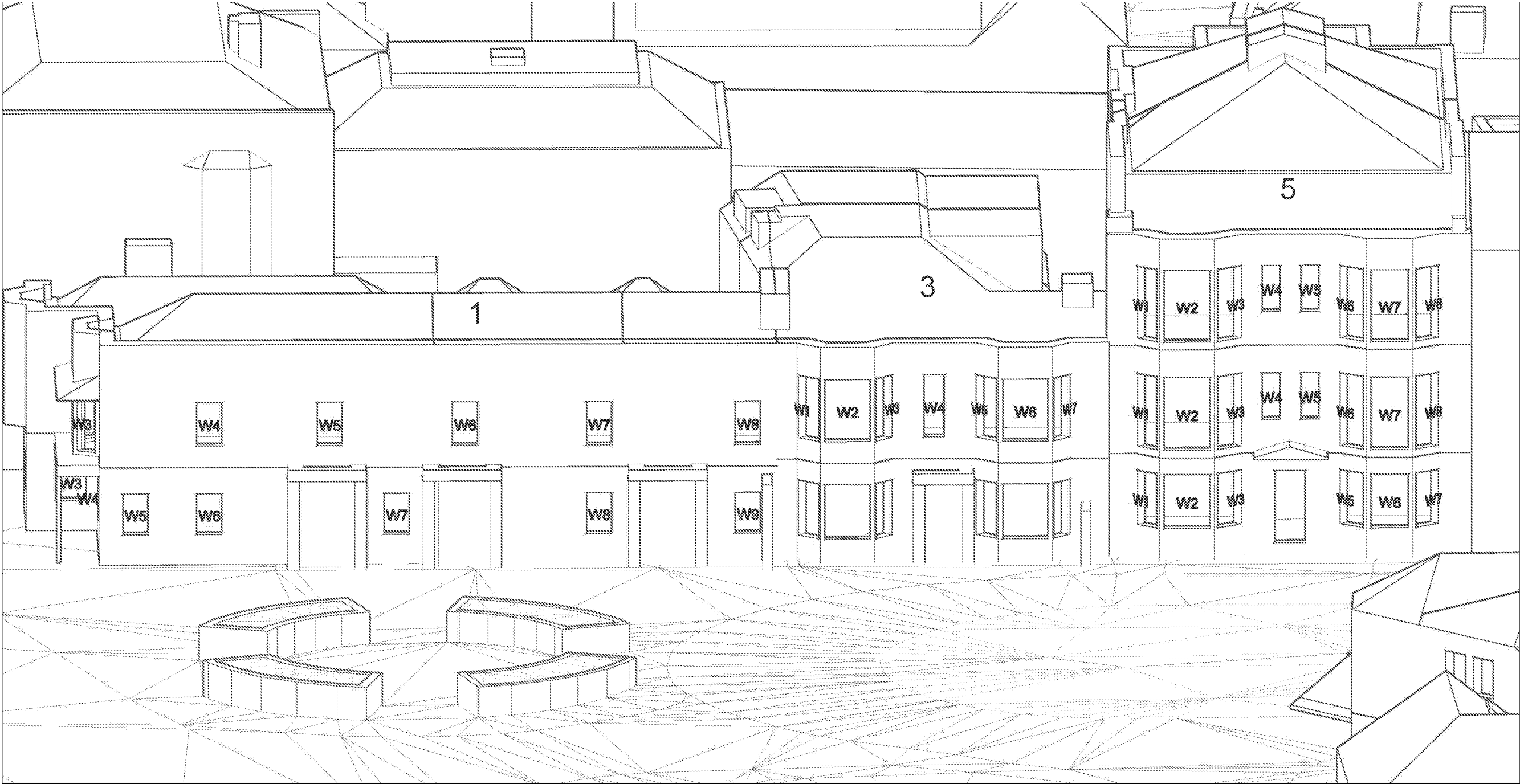
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Appendix C

Window/Room Reference Drawings





1 - 5 The Steyne



3D Context View - North East



3D Context View - South East

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RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
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169 The Royal - Level 00 Proposed Outline.dwg
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TITLE
**Window Referencing Diagrams
1 - 5 The Steyne**

CLIENT
Walsingham Planning

PROJECT
**Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX**

DRAWN BY	CHECKED
SM	EB

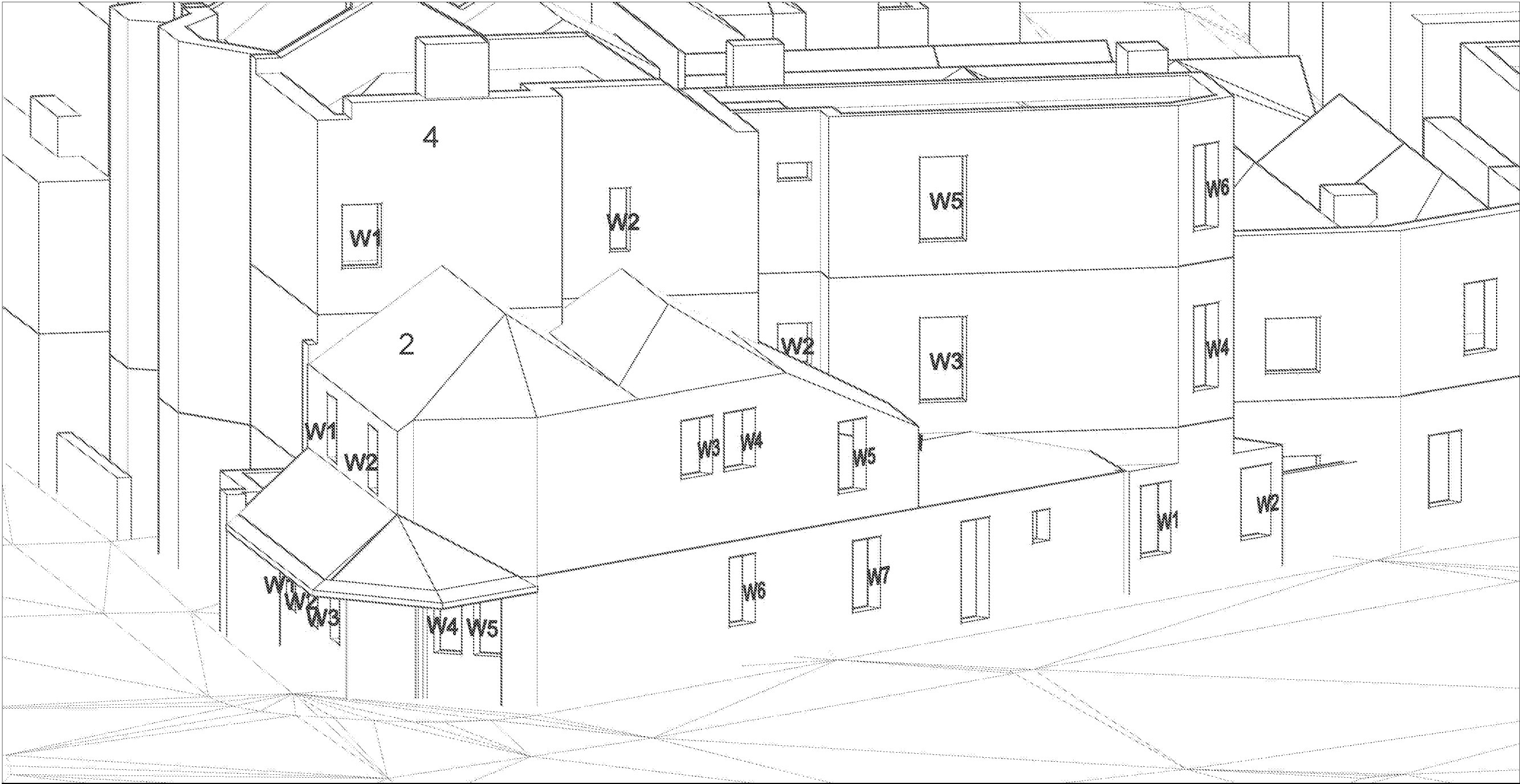
SCALE	DATE
NTS@A3	September 2018

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DRAWING NO. 70919_WR_01	RELEASE NO. 2
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2 - 4 The Steyne



3D Context View - South East



3D Context View - South

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG
Received 23 August 2017

Rev.	Date	Amendments	Initial
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TITLE

**Window Referencing Diagrams
2 - 4 The Steyne**

CLIENT

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PROJECT

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DRAWING NO.	RELEASE NO.
70919_WR_02	2



2 - 4 The Steyne (Continued)



3D Context View - South East



3D Context View - South

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG
Received 23 August 2017

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TITLE
**Window Referencing Diagrams
2 - 4 The Steyne**

CLIENT
Walsingham Planning

PROJECT
**Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX**

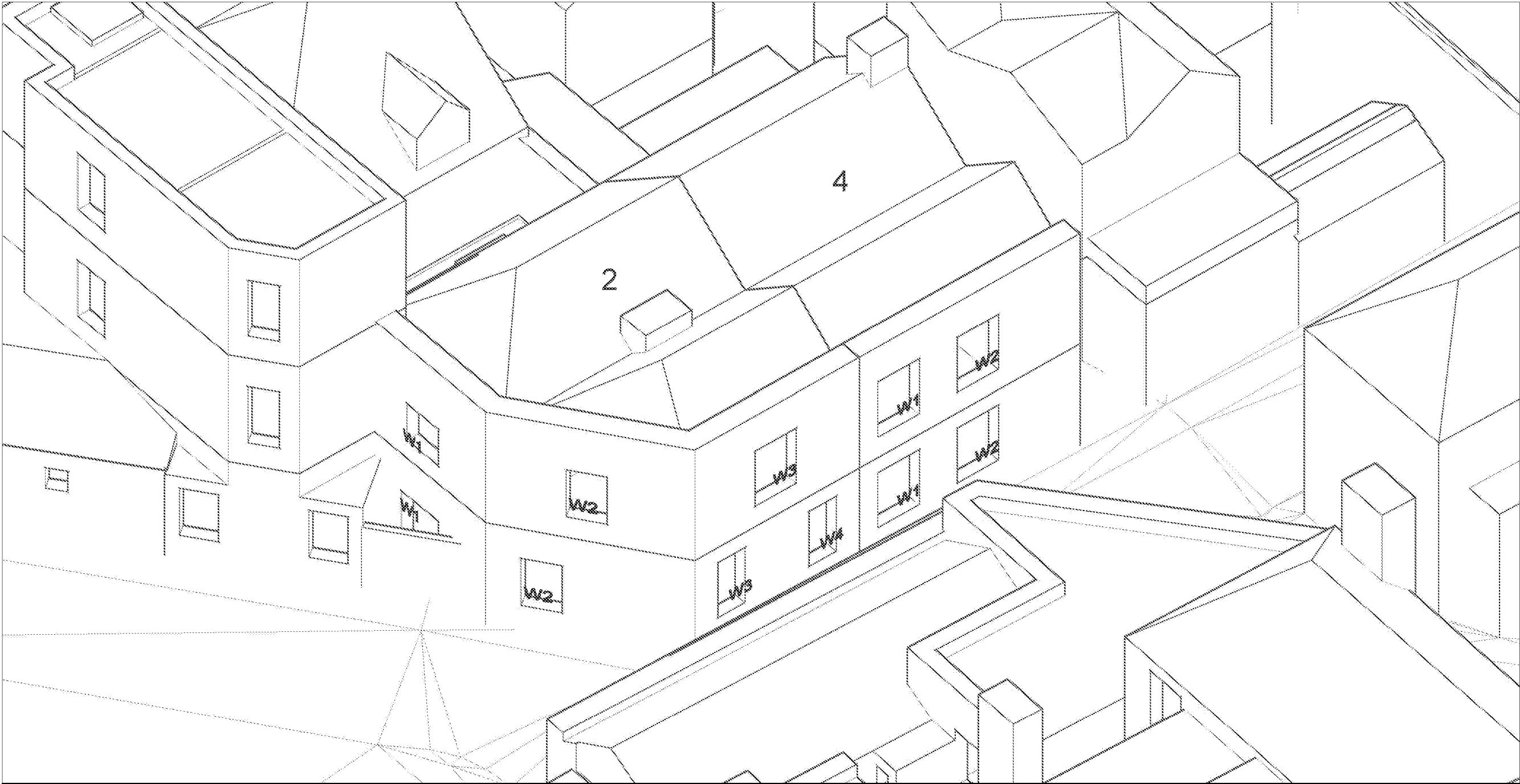
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2 - 4 Manor Place



3D Context View - South East



3D Context View - South

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG
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TITLE
**Window Referencing Diagrams
2 - 4 Manor Place**

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PROJECT
**Royal Hotel,
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PO21 5BX**

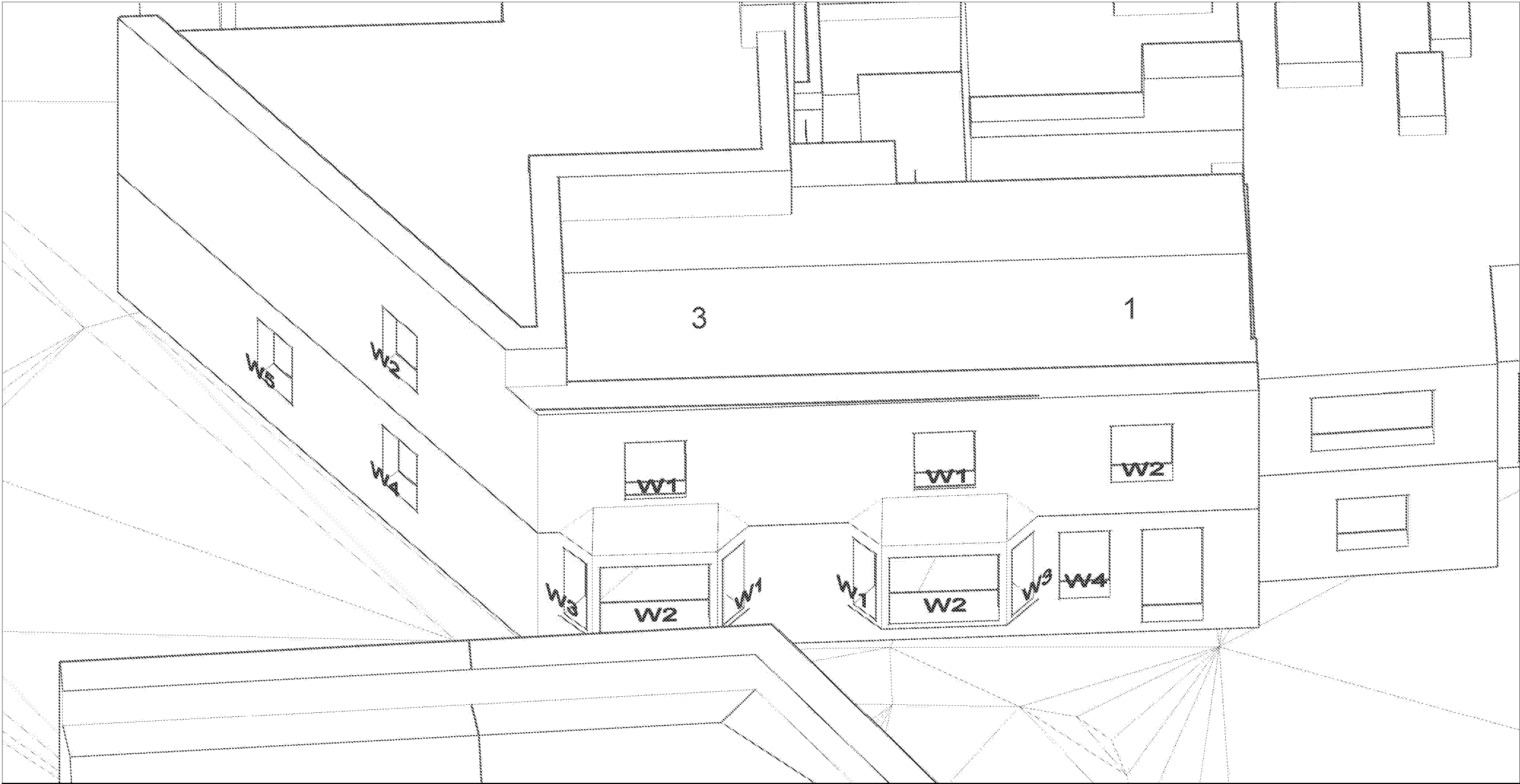
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SCALE	DATE
NTS@A3	September 2018

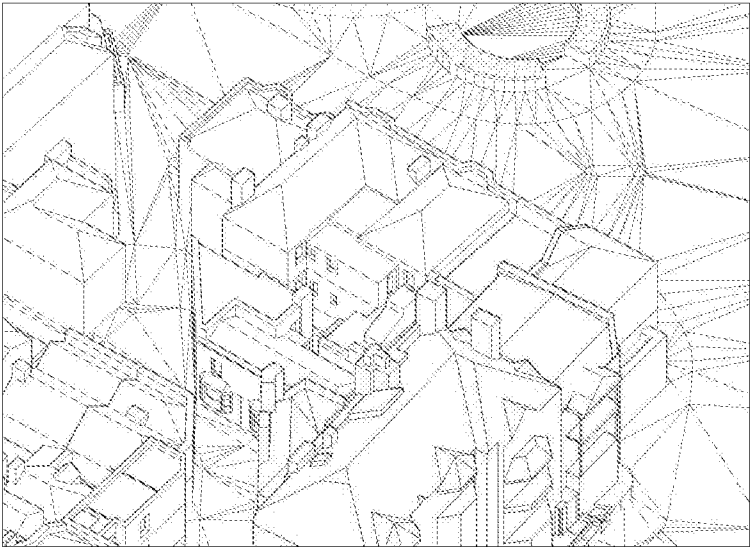
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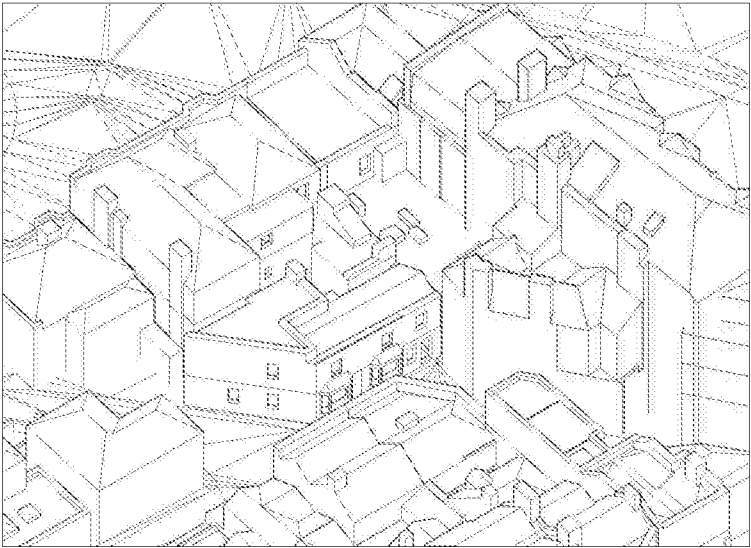
DRAWING NO. 70919_WR_04	RELEASE NO. 2
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1- 3 Manor Place



3D Context View - South West



3D Context View - North West

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
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Received 23 August 2017

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TITLE
**Window Referencing Diagrams
1 - 3 Manor Place**

CLIENT
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PROJECT
**Royal Hotel,
The Esplanade, Bognor Regis,
PO21 5BX**

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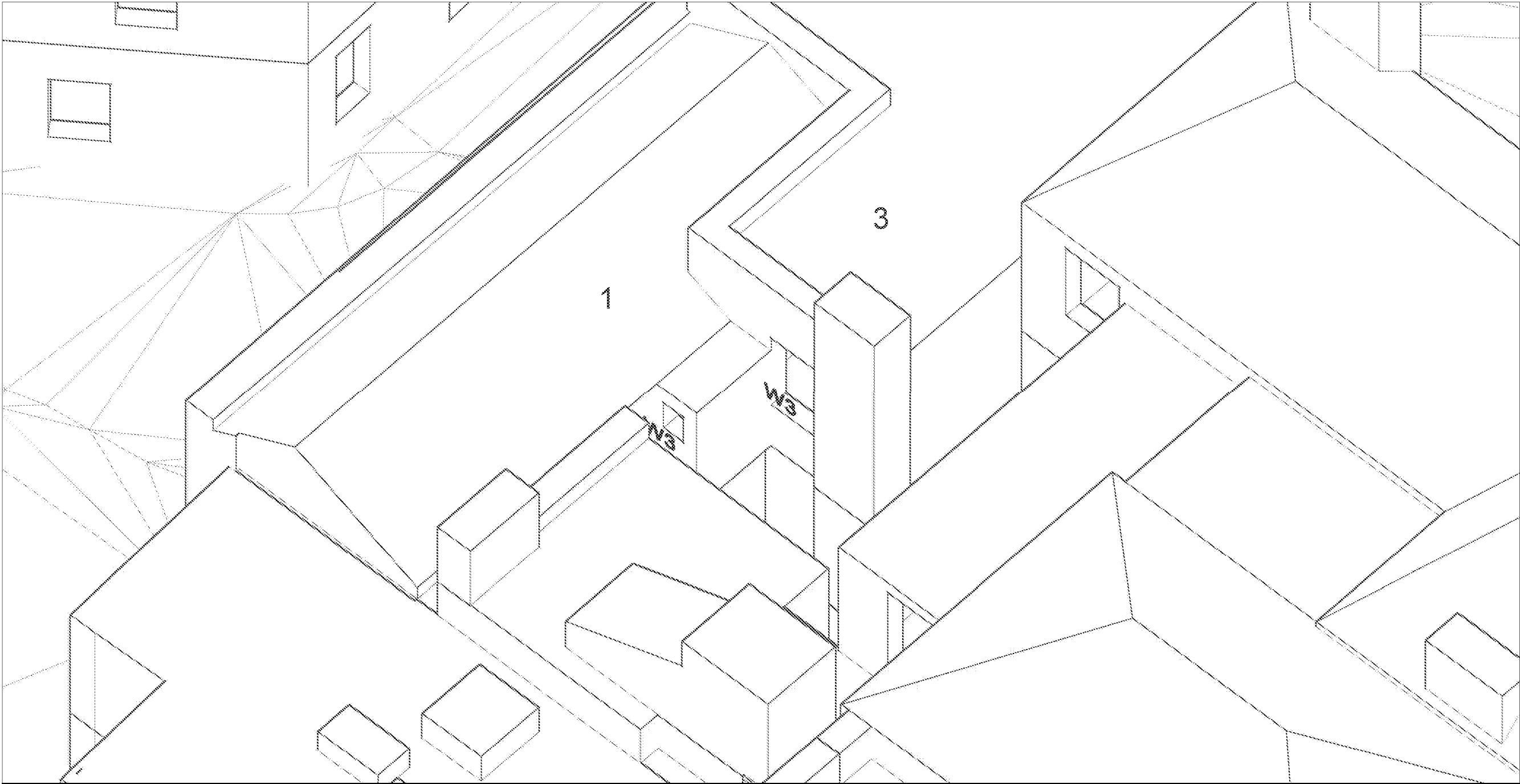
SCALE	DATE
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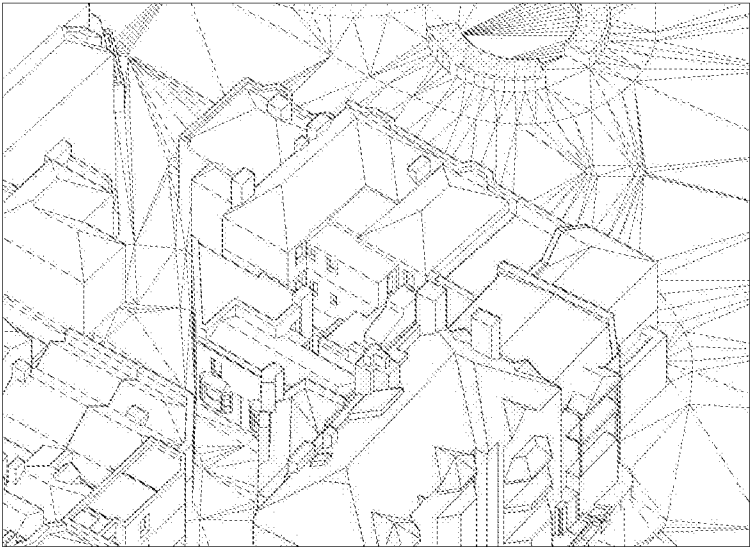
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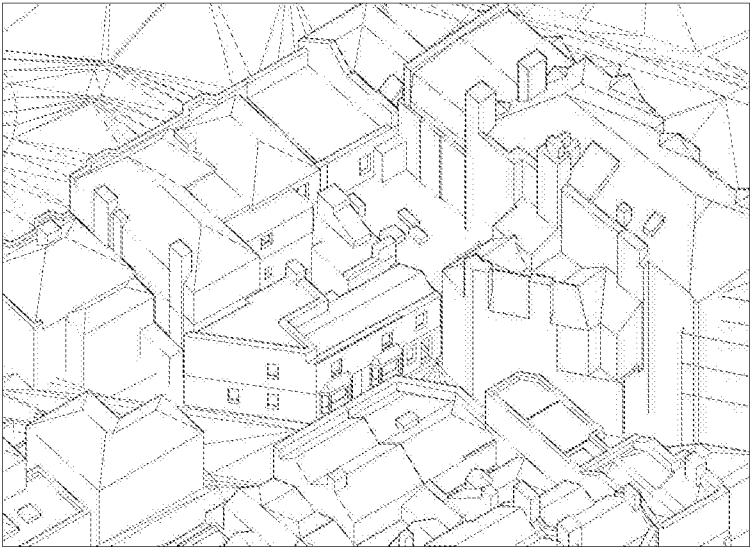
DRAWING NO.	RELEASE NO.
70919_WR_05	2



1 - 3 Manor Place (Continued)



3D Context View - South West



3D Context View - North West

SOURCES OF INFORMATION:
RANDELL DESIGN GROUP ARCHITECTS
Royal Survey Drawings.DWG
Received 06 August 2018
169 The Royal - Level 00 Proposed Outline.dwg
169 The Royal - Level 01 Proposed Outline.dwg
169 The Royal - Level 02 Proposed Outline.dwg
2018.09.03 169 Royal Hotel - Prop.Elev.dwg
Received 03 September 2018
VERTEX MAPPING.CO.UK
14133_Royal_Hotel_Bognor_Regis_MASTER.DWG
Received 23 August 2017

Rev.	Date	Amendments	Initial
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TITLE
**Window Referencing Diagrams
1 - 3 Manor Place**

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Walsingham Planning

PROJECT
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PO21 5BX**

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DRAWING NO. 70919_WR_06	RELEASE NO. 2
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Appendix D

Daylight Study



Vertical Sky Component (VSC) - Numerical Analysis (Existing Buildings)

BRE VSC

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
1 The Steyne					
Ground	W3	14.20	14.20	1.00	Yes
Ground	W4	21.08	21.08	1.00	Yes
Ground	W5	37.28	37.07	0.99	Yes
Ground	W6	36.74	36.49	0.99	Yes
Ground	W7	27.71	27.36	0.98	Yes
Ground	W8	31.50	31.08	0.98	Yes
Ground	W9	22.47	21.98	0.97	Yes
First	W3	19.72	19.72	1.00	Yes
First	W4	37.87	37.71	0.99	Yes
First	W5	37.74	37.49	0.99	Yes
First	W6	37.53	37.21	0.99	Yes
First	W7	37.23	36.86	0.99	Yes
First	W8	36.29	35.82	0.98	Yes
3 The Steyne (Ph)					
First	W1	34.56	34.22	0.99	Yes
First	W2	36.90	36.37	0.98	Yes
First	W3	30.25	29.89	0.98	Yes
First	W4	34.98	34.42	0.98	Yes
First	W5	33.24	32.79	0.98	Yes
First	W6	36.56	35.95	0.98	Yes
First	W7	28.73	28.38	0.98	Yes
5 The Steyne (Richard House)					
Ground	W1	29.64	29.09	0.98	Yes
Ground	W2	34.65	33.98	0.98	Yes
Ground	W3	26.55	26.13	0.98	Yes
Ground	W5	28.22	27.58	0.97	Yes
Ground	W6	34.06	33.39	0.98	Yes
Ground	W7	29.50	29.15	0.98	Yes
First	W1	31.59	31.06	0.98	Yes
First	W2	36.08	35.44	0.98	Yes
First	W3	31.04	30.63	0.98	Yes
First	W4	34.18	33.56	0.98	Yes
First	W5	34.12	33.50	0.98	Yes
First	W6	32.20	31.59	0.98	Yes
First	W7	35.64	35.00	0.98	Yes
First	W8	31.72	31.38	0.98	Yes
Second	W1	36.56	36.08	0.98	Yes
Second	W2	37.64	37.05	0.98	Yes
Second	W3	33.89	33.51	0.98	Yes
Second	W4	36.20	35.63	0.98	Yes
Second	W5	36.16	35.59	0.98	Yes
Second	W6	34.57	34.00	0.98	Yes
Second	W7	37.37	36.78	0.98	Yes
Second	W8	34.73	34.42	0.99	Yes

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
2 The Steyne					
Ground	W1	14.89	14.89	1.00	Yes
Ground	W2	15.11	15.11	1.00	Yes
Ground	W3	15.38	15.38	1.00	Yes
Ground	W4	4.22	4.29	1.01	Yes
Ground	W5	4.11	4.44	1.08	Yes
Ground	W6	8.63	6.65	0.77	No
Ground	W7	7.99	6.62	0.82	Yes
First	W1	35.40	35.38	0.99	Yes
First	W2	35.60	35.58	0.99	Yes
First	W3	15.08	10.33	0.68	No
First	W4	14.47	10.25	0.70	No
First	W5	11.72	9.25	0.78	No
First	W6	12.47	12.44	0.99	Yes
4 The Steyne					
Ground	W1	8.19	7.92	0.96	Yes
Ground	W2	9.39	9.23	0.98	Yes
First	W1	7.95	7.84	0.98	Yes
First	W2	12.38	9.70	0.78	No
First	W3	19.82	17.65	0.89	Yes
First	W4	13.48	13.24	0.98	Yes
Second	W1	35.34	31.68	0.89	Yes
Second	W2	29.29	25.46	0.86	Yes
Second	W3	14.52	14.39	0.99	Yes
Second	W5	26.49	24.22	0.91	Yes
Second	W6	19.57	19.36	0.98	Yes
1 Manor Place					
Ground	W1	17.63	17.62	0.99	Yes
Ground	W2	17.75	17.75	0.99	Yes
Ground	W3	10.03	10.03	1.00	Yes
Ground	W4	13.64	13.64	1.00	Yes
First	W1	26.21	26.21	1.00	Yes
First	W2	17.90	17.90	1.00	Yes
First	W3	10.69	10.64	0.99	Yes
2 Manor Place					
Ground	W1	6.12	6.12	1.00	Yes
Ground	W2	11.25	11.19	0.99	Yes
Ground	W3	17.99	17.92	0.99	Yes
Ground	W4	20.25	20.19	0.99	Yes
First	W1	10.50	10.29	0.97	Yes
First	W2	18.82	18.66	0.99	Yes
First	W3	29.37	29.23	0.99	Yes
3 Manor Place					
Ground	W1	13.80	13.74	0.99	Yes
Ground	W2	15.58	15.53	0.99	Yes
Ground	W3	19.22	19.22	0.99	Yes
Ground	W4	24.61	24.61	1.00	Yes
Ground	W5	24.85	24.85	1.00	Yes
First	W1	27.53	27.48	0.99	Yes
First	W2	33.29	33.29	1.00	Yes

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
First	W3	16.77	16.08	0.95	Yes
4 Manor Place					
Ground	W1	22.12	22.07	0.99	Yes
Ground	W2	23.55	23.51	0.99	Yes
First	W1	30.29	30.18	0.99	Yes
First	W2	30.84	30.75	0.99	Yes

Appendix E

Sunlight Study



Numeric Results for the Annual Probable Sunlight Hours (APSH) Tests - Existing Buildings

Floor Ref.	Window Ref.	Existing		Proposed		Winter Times Former Value	Annual Times Former Value	BRE Compliant
		Winter %	Annual %	Winter %	Annual %			
1 The Steyne								
Ground	W4	25	34	25	34	1.00	1.00	YES
First	W3	21	39	21	39	1.00	1.00	YES
3 The Steyne (Ph)								
First	W1	15	53	15	52	1.00	0.98	YES
First	W5	13	49	13	49	1.00	1.00	YES
5 The Steyne (Richard House)								
Ground	W1	11	41	11	40	1.00	0.97	YES
Ground	W5	12	39	11	36	0.91	0.92	YES
First	W1	11	45	11	45	1.00	1.00	YES
First	W6	13	47	13	47	1.00	1.00	YES
Second	W1	18	58	18	58	1.00	1.00	YES
Second	W6	14	51	14	51	1.00	1.00	YES
2 The Steyne								
Ground	W1	6	18	6	18	1.00	1.00	YES
Ground	W2	7	18	7	18	1.00	1.00	YES
Ground	W3	8	19	8	19	1.00	1.00	YES
Ground	W4	4	4	4	4	1.00	1.00	YES
Ground	W5	6	6	6	6	1.00	1.00	YES
Ground	W6	4	20	4	16	1.00	0.80	YES
Ground	W7	4	19	3	15	0.75	0.78	YES
First	W1	14	48	13	47	0.92	0.97	YES
First	W2	15	48	14	47	0.93	0.97	YES
First	W3	7	32	5	21	0.71	0.65	NO
First	W4	7	32	4	20	0.57	0.62	NO
First	W5	6	26	4	19	0.66	0.73	NO
4 The Steyne								
Ground	W1	2	15	1	14	0.50	0.93	YES
Ground	W2	3	18	2	17	0.66	0.94	YES
First	W2	10	25	5	20	0.50	0.80	YES
First	W3	9	45	6	42	0.66	0.93	YES
First	W4	4	27	4	27	1.00	1.00	YES
Second	W1	26	81	21	76	0.80	0.93	YES
Second	W2	21	62	14	55	0.66	0.88	YES
Second	W5	13	65	11	63	0.84	0.96	YES
Second	W6	5	41	4	40	0.80	0.97	YES
1 Manor Place								
Ground	W2	2	13	2	13	1.00	1.00	YES
Ground	W3	1	7	1	7	1.00	1.00	YES
Ground	W4	0	4	0	4	0.00	1.00	YES
First	W1	2	21	2	21	1.00	1.00	YES
First	W2	0	5	0	5	0.00	1.00	YES
First	W3	0	24	0	24	0.00	1.00	YES
2 Manor Place								
Ground	W1	0	12	0	12	0.00	1.00	YES
Ground	W2	3	23	2	21	0.66	0.91	YES

Floor Ref.	Window Ref.	Existing		Proposed		Winter Times Former Value	Annual Times Former Value	BRE Compliant
		Winter %	Annual %	Winter %	Annual %			
First	W1	1	26	1	26	1.00	1.00	YES
First	W2	4	43	4	43	1.00	1.00	YES
3 Manor Place								
Ground	W1	3	22	3	22	1.00	1.00	YES
Ground	W2	3	18	3	18	1.00	1.00	YES
First	W1	3	29	3	29	1.00	1.00	YES
First	W3	4	36	1	33	0.25	0.91	YES

Appendix F

Overshadowing Study



Numeric assessment of Overshadowing Study (for March 21)

Building Ref	Floor Ref	Amenity Ref	Amenity Area	Existing Lit Area	Proposed Lit Area	Existing %	Proposed %	Pr/Ex	Meets BRE Criteria
Green On The Esplanade	Ground	A1	627.4	627.4	627.4	100.00%	100.00%	1	YES