7 Warwick Court, London WC1

Internal Daylight Report

30th September, 2016

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Internal Daylight Report

7 Warwick Court

London

WC1

Prepared for:-

GFZ Properties

c/o Marek Wojciechowski Architects

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London

W1W 8SR

Prepared by	**Date**
James M A Crowley	30th September, 2015

Contents

Appendices

This report is solely for the benefit of **GFZ Properties** and the benefit cannot be transferred to any other party without the express written consent of CHP Surveyors Limited.

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1.0 Executive Summary

1.1 In accordance with our instructions by GFZ Properties, we have considered the level of daylight the proposed accommodation will achieve with reference to the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice*" (2011) (the '**BRE Guidelines**', the Mayor of London's Housing SPG (November 2011) and BS8206 Part 2.

1.2 The standards and tests applied within this assessment are briefly described in Appendix A.

1.3 Whilst all rooms do not achieve the recommended ADF, taking into account that the property is listed so it restricts the access to daylight itself and that the property is located in a dense urban location, it is considered that it achieves the aims of the BRE Guidelines in trying to maximise the access to daylight.

2.0 Instruction

2.1 We have been instructed by GFZ Properties to establish the level of daylight the proposed residential accommodation will enjoy.

3.0 Assessment

3.1 To ensure that this assessment has been appropriately considered, the level of daylight the proposed accommodation will enjoy, an analysis set out in the BRE Guidelines and BS8206 Part 2 has been undertaken.

3.2 These publications set out recommendations as to the minimum level of daylight a room should enjoy, depending on its use, by calculating the Average Daylight Factor.

3.3 The Average Daylight Factor is the average illuminance on the working plan in the room and takes into account the amount of unobstructed sky the window serving the room can see,

the size of the window, the size of the room, the reflectance expected from the surfaces within the room and the reduction in daylight that will occur as it passes through the glazing.

4.0 Information

4.1 We have made reference to the following information:-

Ordnance Survey

Site Plan.

Marek Wojciechowski Architects

Drawing numbers 14029_ P_01, P_02, P_03, P_04, P_05 and P_06

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Site visit and online research.

5.0 Proposals

5.1 GFZ Properties are submitting a Planning Application for the construction of an extension to the existing building and a change of use to provide residential accommodation.

6.0 Methodology

6.1 From the survey information provided, we have produced a 3D computer model of the existing site. We have then produced a 3D computer model of the proposed structures for the site, including the proposed windows and internal configuration.

6.2 Using a specialist computer programme, we have undertaken the required analysis as set out in the BRE Guidelines.

7.0 Daylight

7.1 With regard to the level of daylight proposed accommodation can enjoy, BS8206 Part 2 sets out recommended levels of daylight depending on the room use. The daylight levels are established by calculating the Average Daylight Factor.

7.2 ADF is calculated using the formula:

$D = T W O M / [A (1 - R^2]$

Where:

T = Transmittance for glass

W = Net area of window glass

M = Maintenance factor, allowing for effects of dirt

A = Total area of indoor surfaces

R = Average Reflectance of area A

7.3 The recommended level of ADF depends on the room use, with these being 2% for a kitchen, 1.5% for a living room and 1% for a bedroom.

7.4 As the proposed accommodation is to be provided within an existing listed building, this imposes restrictions on the level of daylight can be achieved within the property. In addition the property is located within a dense urban location.

7.5 Our analysis has considered each habitable room and the results are set out in the table attached at Appendix B with the rooms analysed indicated on Drawing Number 1970-01 attached at Appendix B. Fifteen rooms were analysed and our analysis demonstrates that even with the conditions referred to above that restrict the access of daylight, eleven rooms will achieve the recommended level of ADF. Of the four rooms that do not, three are bedrooms which are considered less important. The one living room that does not achieve the required level of daylight is at ground floor level and access to daylight cannot be increased as alterations to the fenestration are not possible.

8.0 Conclusion

8.1 Our analysis has considered fifteen habitable rooms and demonstrates that eleven will achieve the recommended ADF and with three of the four that do not being bedrooms which are less important. Taking into account the listed nature of the building and the dense urban location within which it is located, it is considered that the proposals provide accommodation of an appropriate nature.

8.2 It is therefore considered that the aims of the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice*", the Mayor of London's Housing SPG and BS 8206 are met.

Appendix A

Principles of Daylight and Sunlight

In 2011 the Building Research Establishment (BRE) published a handbook titled "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice" to provide advice to building designers on site layout planning in order to achieve good daylight and sunlight amenity to the proposed development, the open spaces between the proposed blocks and the existing surrounding properties.

As stated within the Introduction of this document, the aim of these guidelines is:- "*To help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.*"

The application of the BRE Guidelines are suited more to low density suburban development sites where there is a greater flexibility for site layout planning. In dense urban development sites, these are usually constrained often by adjacent buildings and the guidelines state that these should be applied more flexibly in these instances, as contained within the introduction of the BRE Guidelines:- "*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 designer. Although it gives numerical guides, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design…*"

It must therefore be appreciated and as can be seen from the above extracts and which is reiterated throughout, the handbook is for guidance only.

Daylight

Daylight assessments should be undertaken to habitable rooms where the occupants can expect to receive a reasonable amount of daylight.

The first assessment is to establish whether the proposals will subtend an angle of 25° from the centre of the window. If it does not, then it is considered there will be good daylight. The BRE Guidelines advise:- "*If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of a lowest window, subtends an angle of more than 25° to the horizontal may be affected.*"

This assessment is most appropriate for well spaced, low density or low rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments where the existing building on the development site

already subtends at an angle greater than 25º to the horizontal from the subject window. It is for this reason that this 25º assessment is generally dispensed with and the more detailed analysis outlined below is undertaken.

- **Vertical Sky Component (VSC)**

The Vertical Sky Component (VSC) analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for the analysis being the centre of the window, on the plane of the outer window wall.

The VSC is the amount of direct sky a window enjoys, expressed as a percentage of the amount of direct sky a horizontal, unobstructed rooflight would receive.

The maximum percentage of direct skylight a vertical window can receive is 40%. The BRE have determined that where a VSC of 27% is achieved, then daylight should reach the window of an existing building.

Where a VSC of less than 27%, is either before the implementation of the proposals enjoyed, or it is enjoyed following the implementation, then the BRE Guidelines state that provided the new value is greater than 0.8 times the existing value, daylight will not be significantly affected.

- **Daylight Distribution**

The Daylight Distribution analysis is undertaken at working plane level, with this set at 0.85m above floor level of a dwelling.

The BRE Guidelines state that provided a significant area of the room, which is considered to be 80% is in front of the No Sky Line (the point behind which at desk top level no sky is visible) or at least 0.8 times the existing area, then the room will enjoy good daylight distribution.

If in the existing situation this is not the case, the BRE Guidelines state that provided that the area following the implementation of the proposals is at least 0.8 times the existing area, there will not be a significant affect.

Sunlight

This analysis is undertaken in a similar method to calculating VSC. Within residential accommodation the analysis for a sunlight analysis relates to the main windows that are within 90° of due south. It is considered that sunlight to kitchens and bedrooms is less important, although care should be taken not to block out too much.

Within commercial or non-domestic buildings, the use of the building will determine whether a sunlight assessment is required.

In relation to neighbouring residential buildings, if a window is facing within 90° of due south and overlooking any part of the proposals subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlight of the existing dwelling may be affected.

- **Annual Probable Sunlight Hours (APSH)**

  The 'Probable Sunlight Hours' can be defined as the total number of hours in the year that sun is expected to shine.

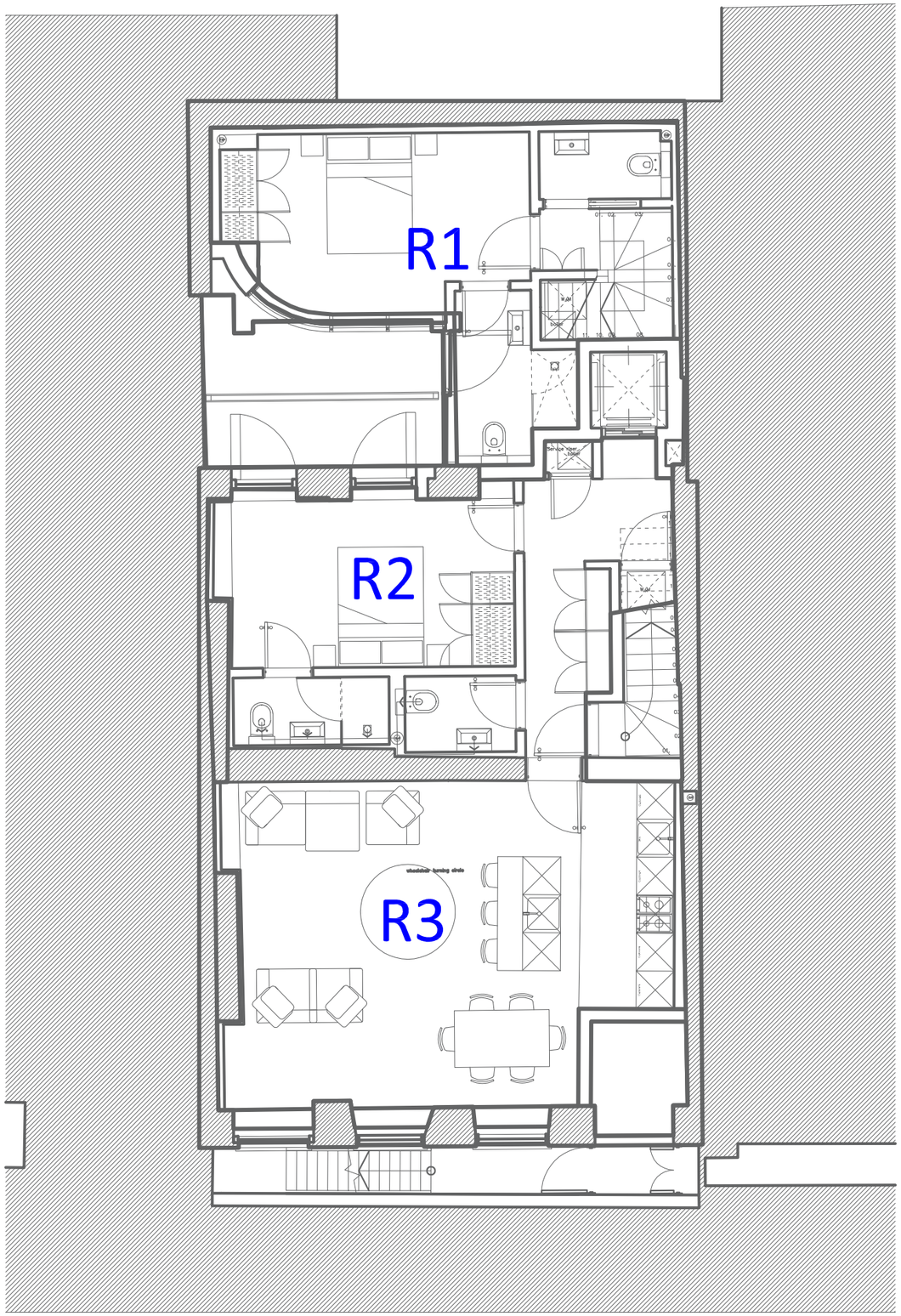
  The APSH assessment is undertaken to the main window of residential buildings, where the window faces 90° of due south. Within the BRE Guidelines it sets out the criteria for this assessment:-

  "*If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely effected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, received in the year less than one quarter (25%) of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March, and less than 0.8 times its former sunlight hours during either period.*"

  In summary, if it does not achieve the specific numerical values, the sunlight to an existing building may be reduced by 20% in either the annual or winter periods before that loss becomes noticeable as a result of a proposed development.

Appendix B

Sources



Lower Ground Floor

KEY

CHP Surveyors Ltd
2-6 Boundary Row, London, SE1 8HP www.chp.gb.com

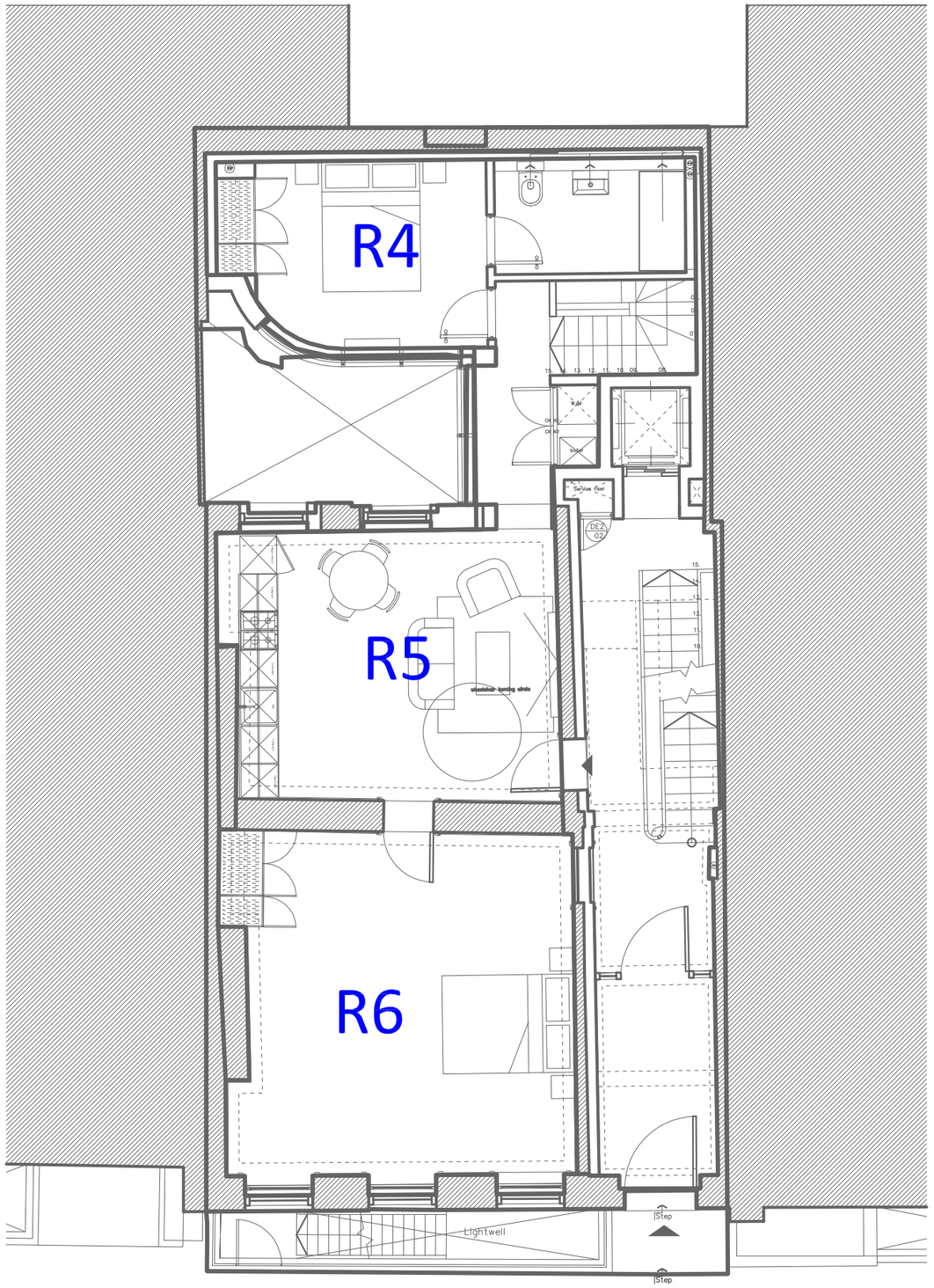
PROJECT TITLE
Warick Court

DRAWING TITLE
Proposed Internal Room Maps

SCALE	DATE	ISSUE
NTS	30-09-2016	-

DWG NO	REV
1970_100	A

Sources



Ground Floor

KEY

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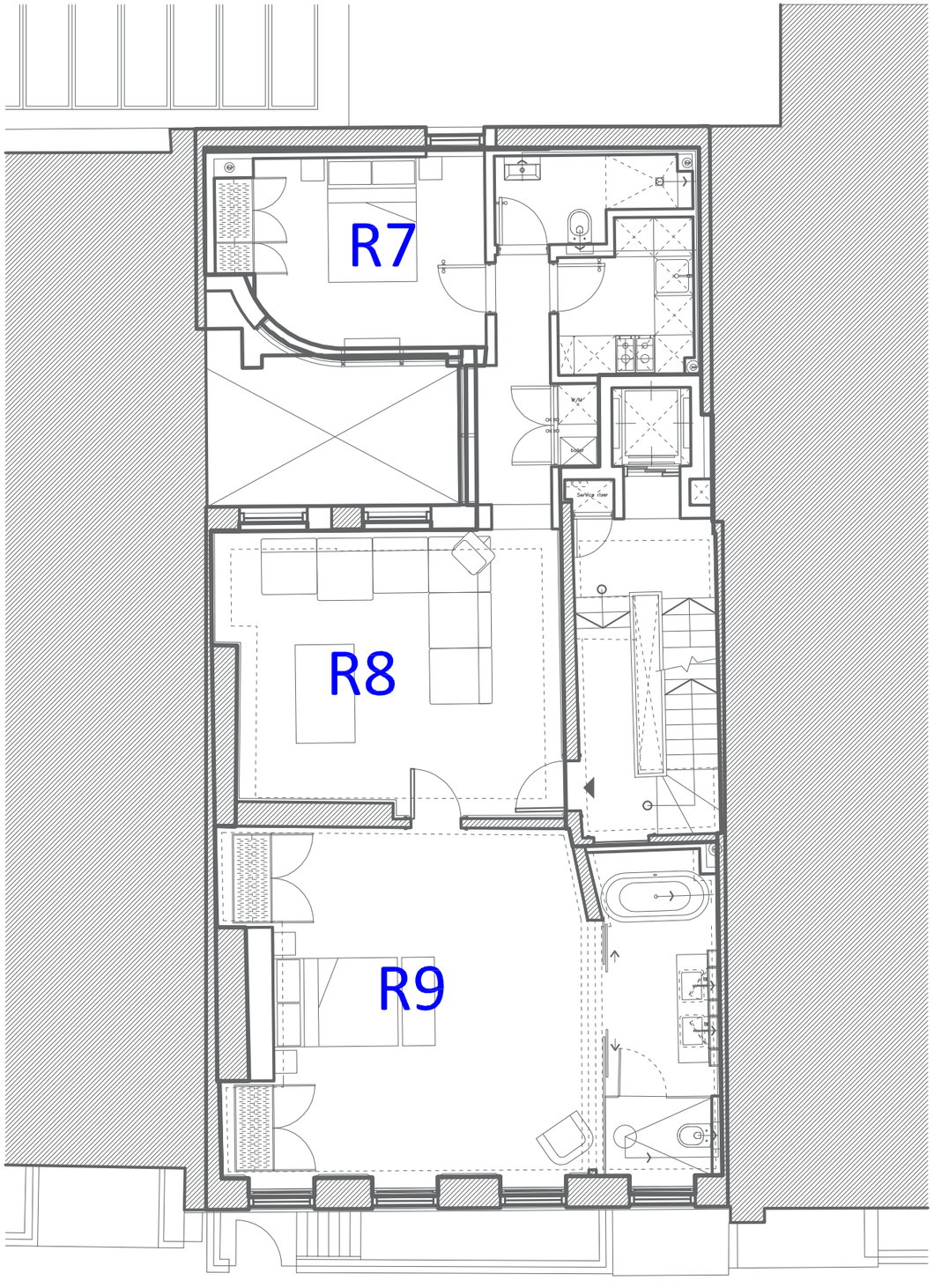
PROJECT TITLE
Warick Court

DRAWING TITLE
Proposed Internal Room Maps

SCALE	DATE	ISSUE
NTS	30-09-2016	-

DWG NO	REV
1970_101	A

Sources



First Floor

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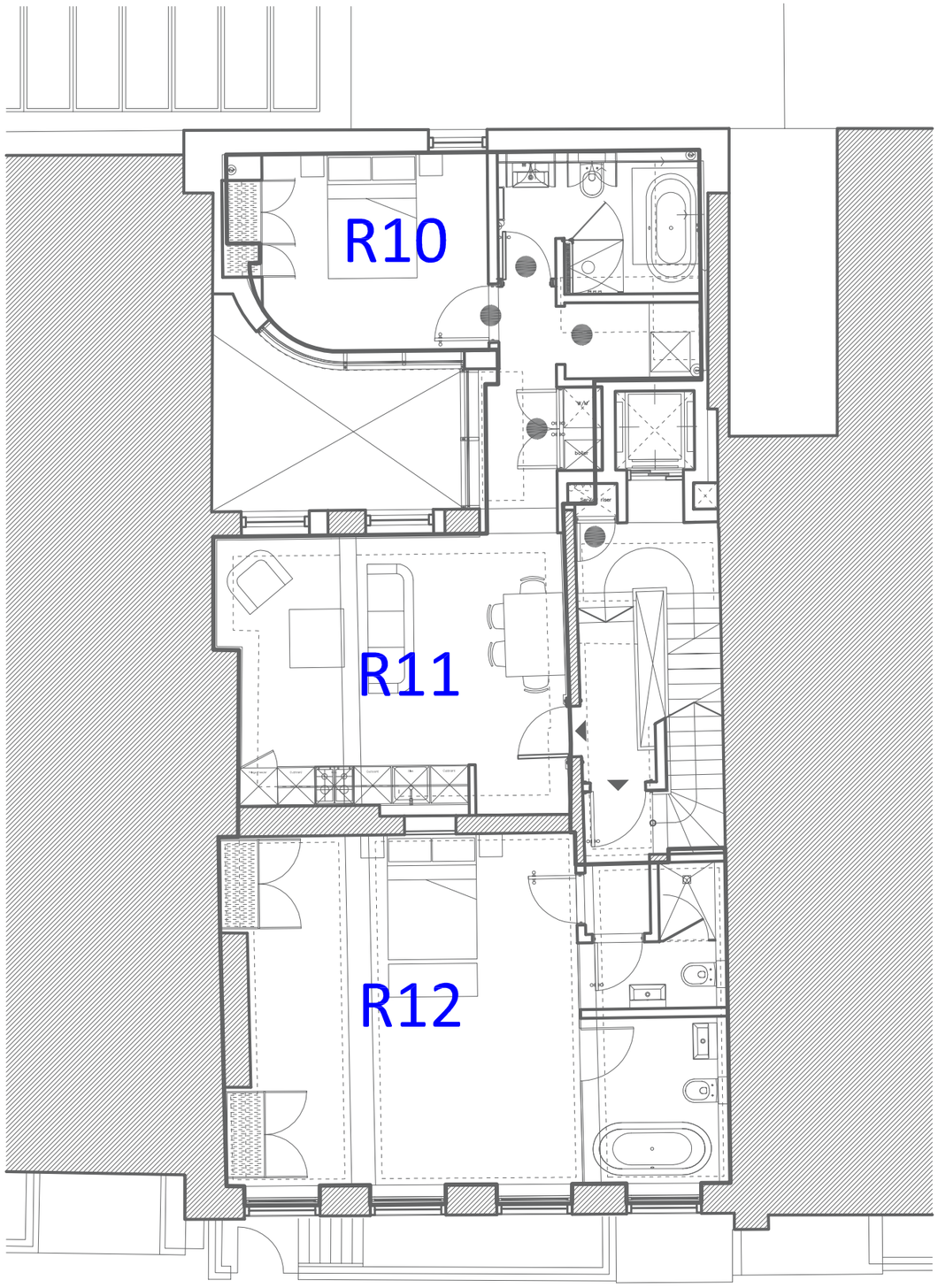
PROJECT TITLE
Warick Court

DRAWING TITLE
Proposed Internal Room Maps

SCALE	DATE	ISSUE
NTS	30-09-2016	-

DWG NO	REV
1970_102	A

Sources



Second Floor

KEY

CHP Surveyors Ltd
2-6 Boundary Row, London, SE1 8HP www.chp.gb.com

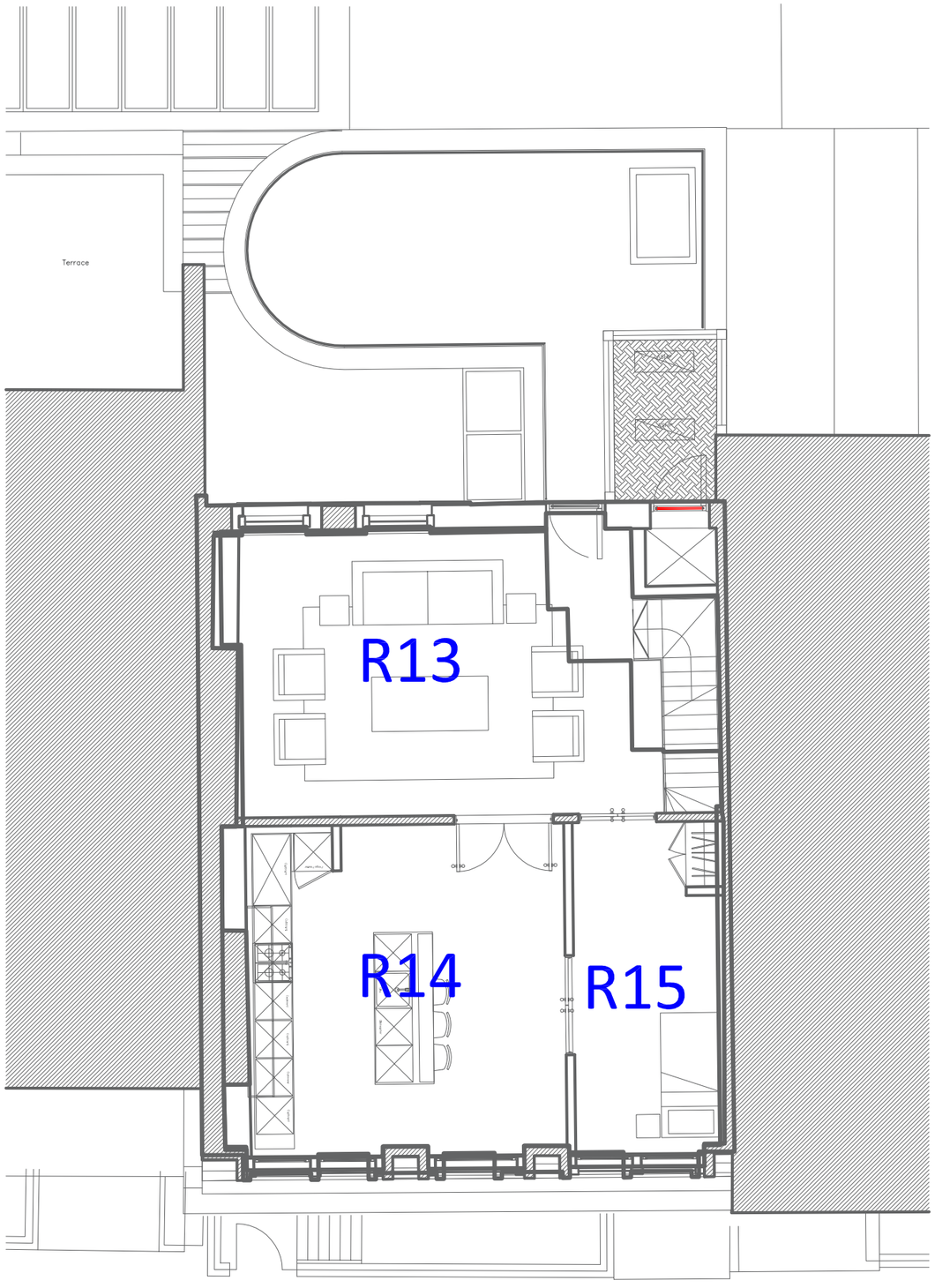
PROJECT TITLE
Warick Court

DRAWING TITLE
Proposed Internal Room Maps

SCALE	DATE	ISSUE
NTS	30-09-2016	-

DWG NO	REV
1970_103	A

Sources



Third Floor

KEY

CHP Surveyors Ltd
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PROJECT TITLE
Warick Court

DRAWING TITLE
Proposed Internal Room Maps

SCALE	DATE	ISSUE
NTS	30-09-2016	-

DWG NO	REV
1970_104	A

Appendix C

7 Warwick Court, London WC1

Internal Daylight Analysis

			ADF	
LEVEL	ROOM	ROOM USE	REQUIRED	PROPOSED
Basement	R1	Bedroom	1.0	0.1
	R2	Bedroom	1.0	0.5
	R3	Living room	1.5	1.5
Ground	R4	Bedroom	1.0	0.4
	R5	Living Room	1.5	1.5
	R6	Bedroom	1.0	2.0
First	R7	Bedroom	1.0	1.0
	R8	Living Room	1.5	1.5
	R9	Bedroom	1.0	2.4
Second	R10	Bedroom	1.0	1.7
	R11	Living Room	1.5	4.0
	R12	Bedroom	1.0	2.5
Third	R13	Living Room	1.5	4.2
	R14	Kitchen	2.0	2.0
	R15	Bedroom	1.0	1.7