



GL Hearn

Daylight and Sunlight Amenity Report in Respect of the Proposed Residential Habitable Rooms

Holbud Investments Ltd

30-32 Gray's Inn Road
London
WC1X 8HR

29 April 2013

Prepared by

GL Hearn Limited
20 Soho Square
London W1D 3QW

T +44 (0)20 7851 4900
F +44 (0)20 7851 4910
glhearn.com

Reference: O:\Building Consultancy\Holbud Limited\Report\2013_04_29_Internal_Analysis_Report_Habitable_Rooms_30-32_Grays_Inn_Road_London_WC1X_8HR.docx

Contents

Section	Page
QUALITY STANDARDS CONTROL	1
1 INSTRUCTIONS AND BRIEF	2
2 PLANNING POLICY	2
3 GUIDANCE	3
3.1 Lighting for Buildings. Code of Practice for daylighting BS 8206-2:1992	
3.2 Daylighting And window design Lighting Guide LG 10 (CIBSE, 1999)	
3.3 BRE Report 209 “Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice” (1991) (‘The Report’)	
4 ASSESSMENT	5
4.1 30-32 Gray’s Inn Road, London, WC1X 8HR	
5 CONCLUSIONS	6
APPENDICES	
APPENDIX A:	
APPENDIX B:	

Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the Originators and approved by a Business or Associate Director.

DATE	ORIGINATORS	APPROVED
29 April 2013	Toby Rogan-Lyons Senior Building Surveyor	Paul Smith Director of Building Consultancy



Limitations

This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of GL Hearn; we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

1. INSTRUCTIONS AND BRIEF

- 1.1 This report has been prepared in support of a planning application by **Holbud Investments Ltd** for the redevelopment of **30-32 Gray's Inn Road, London**. The report assesses the daylight and sunlight amenity to the habitable rooms at ground floor level within the residential apartments.
- 1.2 We have received the following documents and used them in preparing this report:
- MR Partnership Architect's plans, elevations and sections received on 18 April 2013.
 - Ordnance Survey map data.
 - Publically available site imagery.
- 1.3 Our study has been undertaken by preparing a three-dimensional computer model of the site and surrounding buildings and analysing the daylight and sunlight levels received to the proposed accommodation using our bespoke software. Our assessment is based on a visual inspection, the information detailed above and estimates of relevant distances, dimensions and levels which are as accurate as the circumstances allow.

2. PLANNING POLICY

- 2.1 The London Borough of Camden's Core Strategy 2010, Section 1, contains the following statements with regard to daylight and sunlight:

"(5.7) Camden's high level of amenity – the features of a place that contributes to its attractiveness and comfort – is a major factor in the quality of life of the Borough's residents, workers and visitors and fundamental to Camden's attractiveness and success. However, Camden's inner London location, and close proximity of various uses and the presence of major roads and railways can mean that privacy, noise and light can be particular issues in the Borough."

"(5.8) Protecting amenity is, therefore, a key part of successfully managing growth in Camden. We will expect developments to avoid harmful effects on the amenity of existing and future occupiers and nearby properties or, where this is not possible, to take appropriate measures to minimise potential negative impacts."

- 2.2 Policy DP26 – Managing the Impact of Development on Occupiers and Neighbours, contains the following guidance:

"The Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include:"

"(c) Sunlight, daylight and artificial light levels;"

- 2.3 Paragraph 26.3 - Visual Privacy, Overlooking, Overshadowing, Outlook, Sunlight and Daylight states the following:

"A development's impact on visual privacy, overlooking, overshadowing, outlook, access to daylight and sunlight and disturbance from artificial light can be influenced by its design and layout, the distance between properties, the vertical levels of onlookers or occupiers and the angle of views. These issues will also affect amenity of the new occupiers. We will expect that these elements are considered at the design stage of a scheme to prevent potential negative impacts of the development on occupiers and neighbours. To assess whether acceptable levels of daylight and sunlight are available to habitable spaces, the Council will take into account the standards

recommended in the British Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (1991)."

3. GUIDANCE

3.1 British Standard 8206: Part 2 British Standard for Daylighting and the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual: Daylighting and window Design provide advice and guidance on interior daylighting. Appendix C of BRE Report 209 "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" refers to the aforementioned publications. The BRE Report is intended to be used in conjunction with these documents, and its guidance is intended to fit in with their recommendations.

3.2 Lighting for buildings. Part 2: Code of Practice for daylighting BS 8206-2: 2008

3.2.1 Section 2 of the British Standard refers to criteria for the provision of view, for the use of skylight and sunlight for general room lighting and for the design of daylighting for task performance.

3.2.2 In terms of daylight, the publication suggests that the average daylight factor is used as the measure of general illumination from skylight. The Average Daylight Factor assessment (ADF) is a more representative indication of daylight adequacy as, unlike the Vertical Sky Component (which is a 'spot' daylight reading taken on the face of the window), the assessment takes account of:

- The amount of light striking the face of the window
- The size of the window, hence the amount of light able to enter the room
- The size and surface area of the room being tested
- Use of the room being tested
- Reflectance value of the internal room finishes
- Loss of transmittance through the glazing

3.2.3 In terms of sunlight, BS 8206 states that:

"Interiors in which the occupants have a reasonable expectation of direct sunlight should receive at least 25% of probable sunlight hours. At least 5% of probable sunlight hours should be received during the winter months, between 23 September and 21 March."

3.2.4 It should be noted that BS8206-2:2008 is intended to provide guidance with regard to building design and access to daylight. The foreword to the British Standard states that:

"The aim of the standard is to give guidance to architects, builders and others who carry out lighting design. It is recognized that lighting is only one of many matters that influence fenestration. These include other aspects of environmental performance (such as noise, thermal equilibrium and the control of energy use), fire hazards, constructional requirements, the external appearance and the surroundings of the site. The best design for a building does not necessarily incorporate the ideal solution for any individual function. For this reason, careful judgement should be exercised when using the criteria given in the standards for other purposes, particularly town planning control."

3.3 Daylighting and window design. Lighting Guide LG 10: 1999

3.3.1 This publication is primarily intended to provide guidance to those responsible for the design, installation, commissioning, operation and maintenance of building services. Section 2.2: Window and rooflight size, shape and position, provides guidance which can be used at several stages of

the design process and considers methods of predicting daylight and criteria against which to judge the values.

3.3.2 The guide recommends using the average daylight factor to assist in the detailed window design procedure and to determine the required window area for a typical or critical room in the building.

3.3.3 Section 2.2.2.1 states that:

"To start the window sizing process, find the area of glazing required for a given daylit appearance of the space. The average daylight factor is a measure of the amount of skylight in a room. If the room is not too deep or obstructed, an average daylight factor of 5% or more will ensure that an interior looks substantially daylit, except early in the morning, late in the afternoon or on exceptionally dull days. An average daylight factor below 2% generally makes a room look dull; electric lighting is likely to be in frequent use (10). In domestic interiors, however, 2% will still give a feeling of daylight, though some tasks may require electric light."

3.3.4 The guide also states that:

"The BS 8206 code of practice recommends average daylight factors of at least 1% in bedrooms, 1.5% in living rooms and 2% in kitchens, even if a predominantly daylit appearance is not required."

3.4 BRE Report 209 "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" Second Edition (2011) ('The Report')

3.4.1 Principles

3.4.1.1 The Second Edition of the Report replaces the 1991 document of the same name with effect from October 2011.

3.4.1.2 It is important to note that the introduction to the report stresses that the document is provided for guidance purposes only and it is not intended to be interpreted as a strict set of rules. It also suggests that it may be appropriate to adopt a flexible approach and alternative target values in dealing with "special circumstances" 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." This is amplified by the following extracts from the introduction (P1, para. 6) and Section 2.2:

"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 guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design..." (P1, para. 1.6)

"In special circumstances the Developer or Planning Authority may wish to use different target values." (P1, para. 1.6)

"Note that numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylighting in an area viewed against other site layout constraints. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light". (P7 para. 2.2.3)

- 3.4.1.3 The examples given in the Report can be applied to any part of the country: suburban, urban and rural areas. The inflexible application of the target values given in the Report may make reaching the BRE criteria difficult in a tight, urban environment where there is unlikely to be the same expectation of daylight and sunlight amenity as in a suburban or rural environment.
- 3.4.1.4 Appendix C of the Report provides details of BS8206: Part 2 British Standard for Daylighting and the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual: Windows Design which provide advice and guidance on interior daylighting. The BRE Report is intended to be used in conjunction with these documents, and its guidance is intended to fit-in with their recommendations. The British Standard and the CIBSE manual put forward three main criteria for interior daylighting, one of which is the use of the Average Daylight Factor (*df*) calculation. Essentially, the documents recommend that, if a supplementary electric lighting is provided, a *df* value of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms should be attained.
- 3.4.1.5 The British Standard also suggests, that if a predominately daylit appearance is required, then *df* should be 5% or more if there is no supplementary electric lighting. However, in all modern living accommodation supplementary electric lighting is provided and, as such, *df* values detailed above are used as target values.

3.4.2 Sunlight

- 3.4.2.1 The BRE Report advises that new development should take care to safeguard access to sunlight for existing buildings and any non-domestic buildings where there is a particular requirement for sunlight. In summary, the report states:

“If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees 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 affected. This will be the case if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
- receives less than 0.8 times its former sunlight hours during either period and*
- has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours”*

4. ASSESSMENT

- 4.1 We have analysed the daylight and sunlight amenity to the three proposed residential rooms at the rear of the property using the Average Daylight Factor (ADF) and Annual Probable Sunlight Hours (APSH) assessments. This floor would provide the lowest light levels for this type of accommodation within the development. The upper floors will have lower levels of obstruction to the passage of natural light and, as a consequence, higher ADF levels.
- 4.2 A surface reflectance value of 0.5 and a glazing transmittance of 0.65 have been applied. If these values are reduced or increased by the specification of darker or lighter finishes or different glazing types, then the daylighting levels may be reduced or increased accordingly.
- 4.3 The location of the tested rooms and window references are shown on the drawings appended to this report.

- 4.4 In terms of daylight amenity, all of the rooms analysed would comply with the British Standard target values for the respective room type by a comfortable margin.
- 4.5 Turning to sunlight amenity, none of the windows face within 90 degrees of due south and, in line with BRE Report guidance, have not been tested for sunlight amenity.

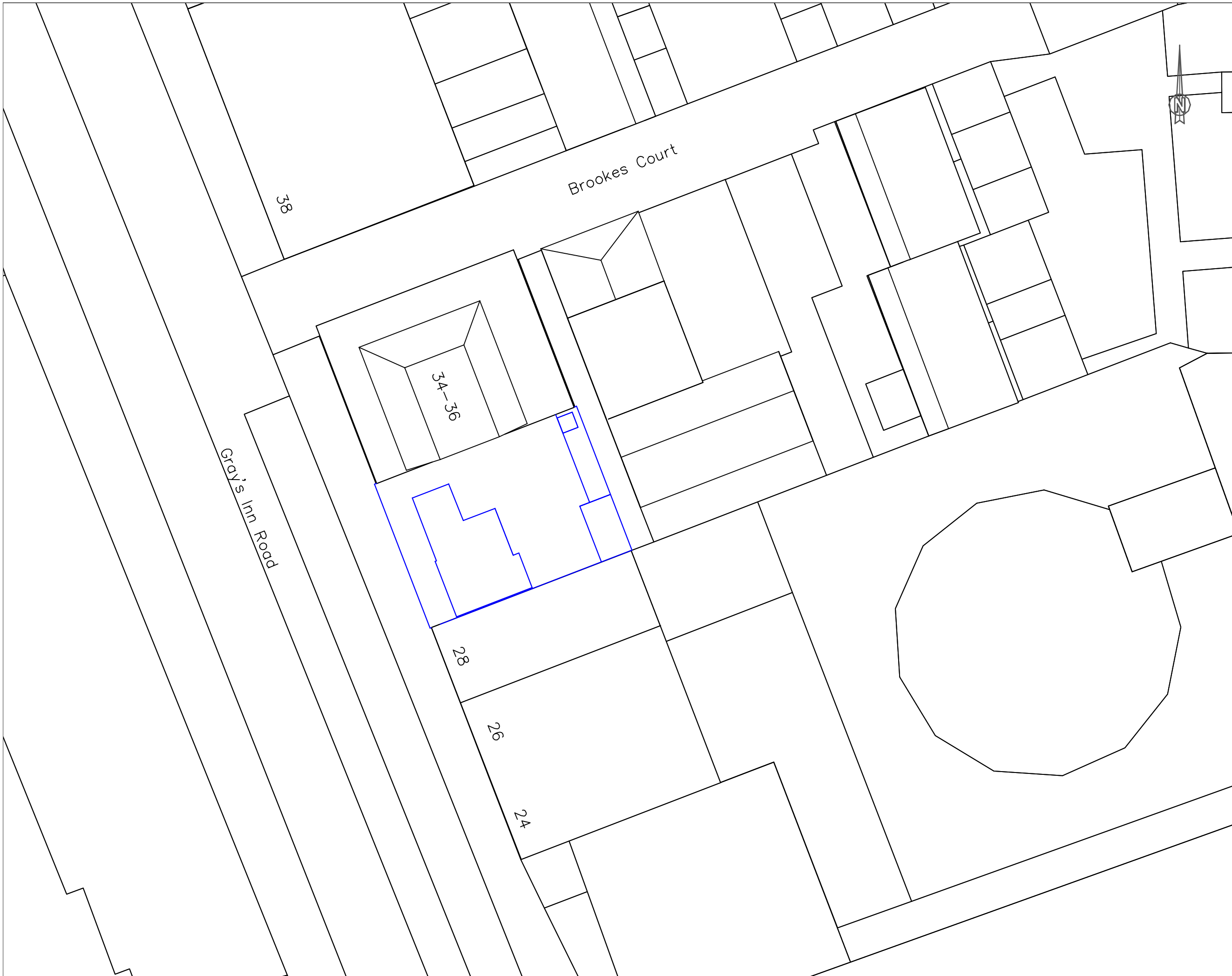
5. CONCLUSION

- 5.1 The foreword to BS 8206-2:1992 states that:

“The aim of the standard is to give guidance to architects, builders and others who carry out lighting design. It is recognised that lighting is only one of many matters that influence fenestration. These include other aspects of environmental performance (such as noise, thermal equilibrium and the control of energy use), fire hazards, constructional requirements, the external appearance and the surroundings of the site. The best design for a building does not necessarily incorporate the ideal solution for any individual function. For this reason, careful judgement should be exercised when using the criteria given in the standards for other purposes, particularly town planning control.”

- 5.2 In terms of daylight amenity, we have analysed the ground floor rooms using the ADF assessment which takes account of the room layout, surface reflectance and size and extent of glazing. All rooms analysed would comfortably meet the target values.
- 5.3 In line with BRE Report guidance, none of the windows serving the analysed rooms require testing for sunlight amenity.
- 5.4 I submit that our analysis demonstrates that the ground floor rooms within the proposed development would receive adequate light when assessed in accordance with the guidelines given in the London Borough of Camden’s Core Strategy, and more specifically, with the guidelines set-out in British Standard 8206, BRE Report 209 and CIBSE Lighting Guide LG 10.

APPENDIX A



© COPYRIGHT NOTICE
 THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART),
 RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN
 CONSENT OF GL HEARN

DO NOT SCALE
 NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.

NOTES :

INFORMATION USED IN ANALYSIS:
 MR Partnership Architects:
 Plans, elevations and sections received
 18/04/13

LAND REGISTRY AND PLANNING
 HISTORY INFO :

REVISION :

PLAN KEY:
 — Surrounding Buildings
 — Existing Buildings



20 Soho Square, London, W1D 3QW
 T: +44 (0)20 7851 4900
 F: +44 (0)20 7851 4910

PROJECT:
**30-32 Gray's Inn Road
 WC1**

CLIENT:
Holbud Investments Ltd

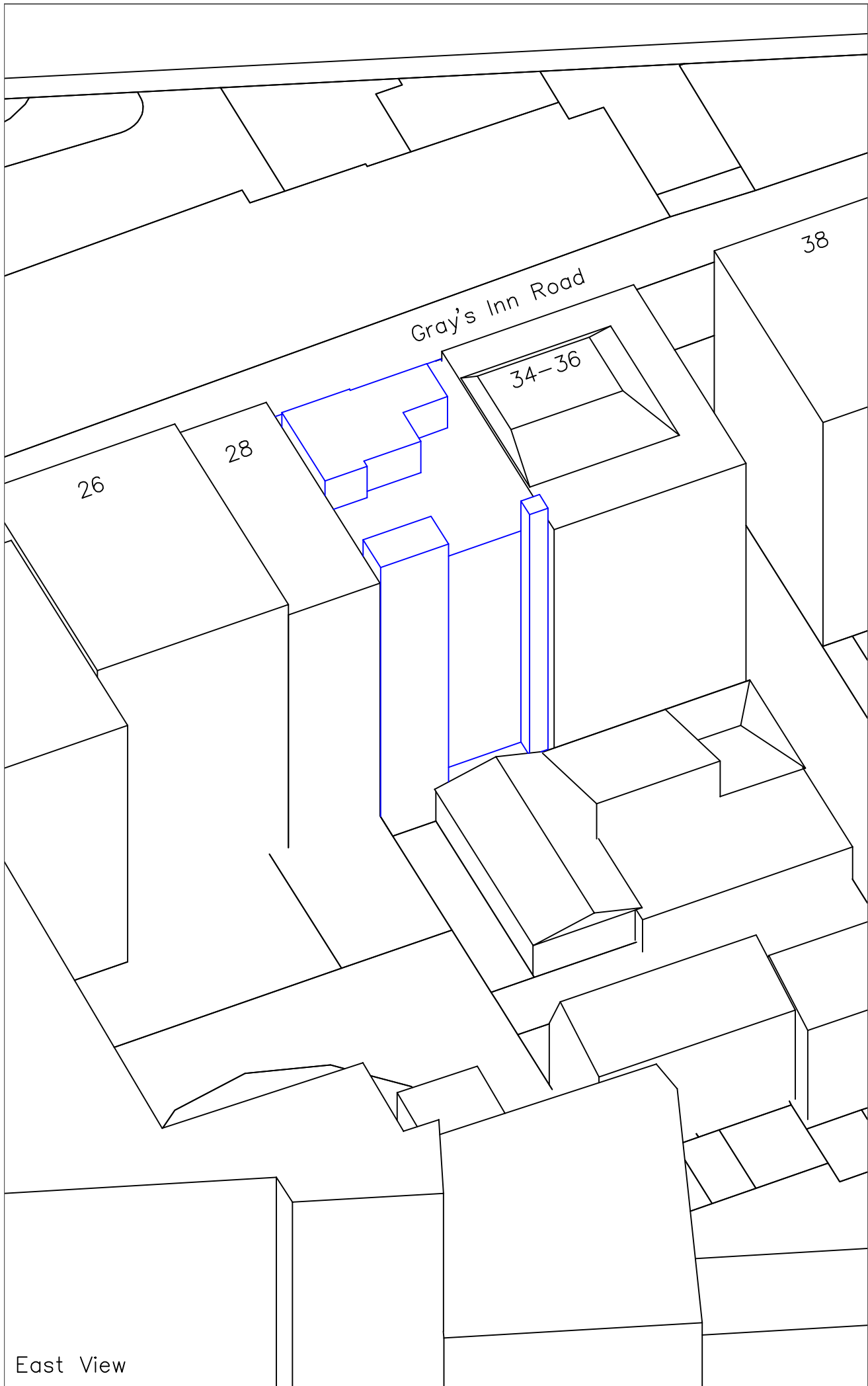
DRAWING TITLE:
Existing Site Plan

DRAWING NO: J029113/01	REVISION:
----------------------------------	-----------

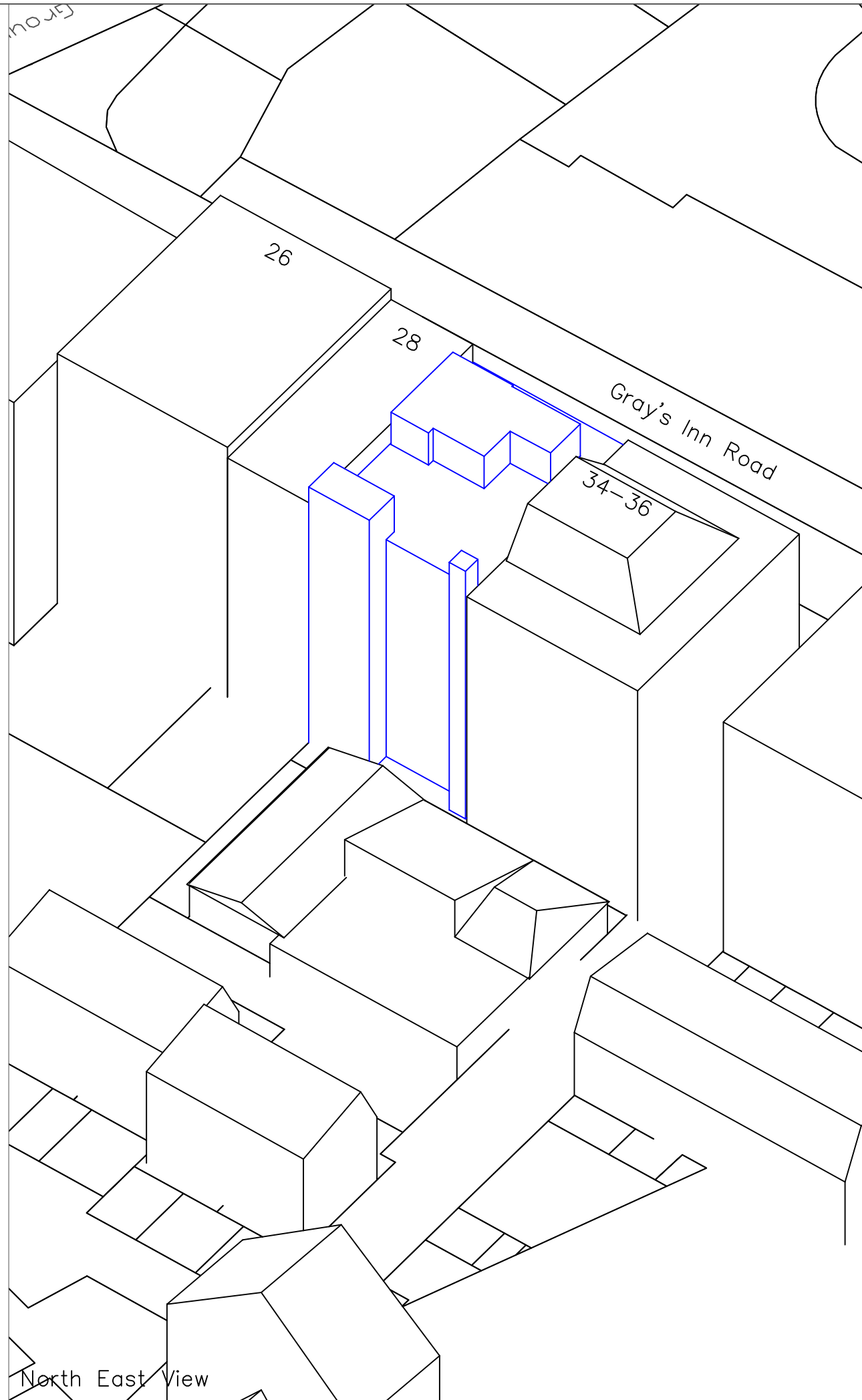
DATE: 19/04/2013	DRAWN BY: IA/LT
----------------------------	---------------------------

SCALE:
 1:250 @ A3

(internal use only)
 O:\Building Consultancy\Holbud
 Limited\Analysis\2013_03_07\Drawings\DWG



East View



North East View

© COPYRIGHT NOTICE
 THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART),
 RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN
 CONSENT OF GL HEARN

DO NOT SCALE
 NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.

NOTES :

INFORMATION USED IN ANALYSIS:
 MR Partnership Architects:
 Plans, elevations and sections received
 18/04/13

LAND REGISTRY AND PLANNING
 HISTORY INFO :

REVISION :

PLAN KEY:
 — Surrounding Buildings
 — Existing Buildings



20 Soho Square, London, W1D 3QW
 T: +44 (0)20 7851 4900
 F: +44 (0)20 7851 4910

PROJECT:
 30-32 Gray's Inn Road
 WC1

CLIENT:
 Holbud Investments Ltd

DRAWING TITLE:
 Existing 3D View

DRAWING NO:
 J029113/02

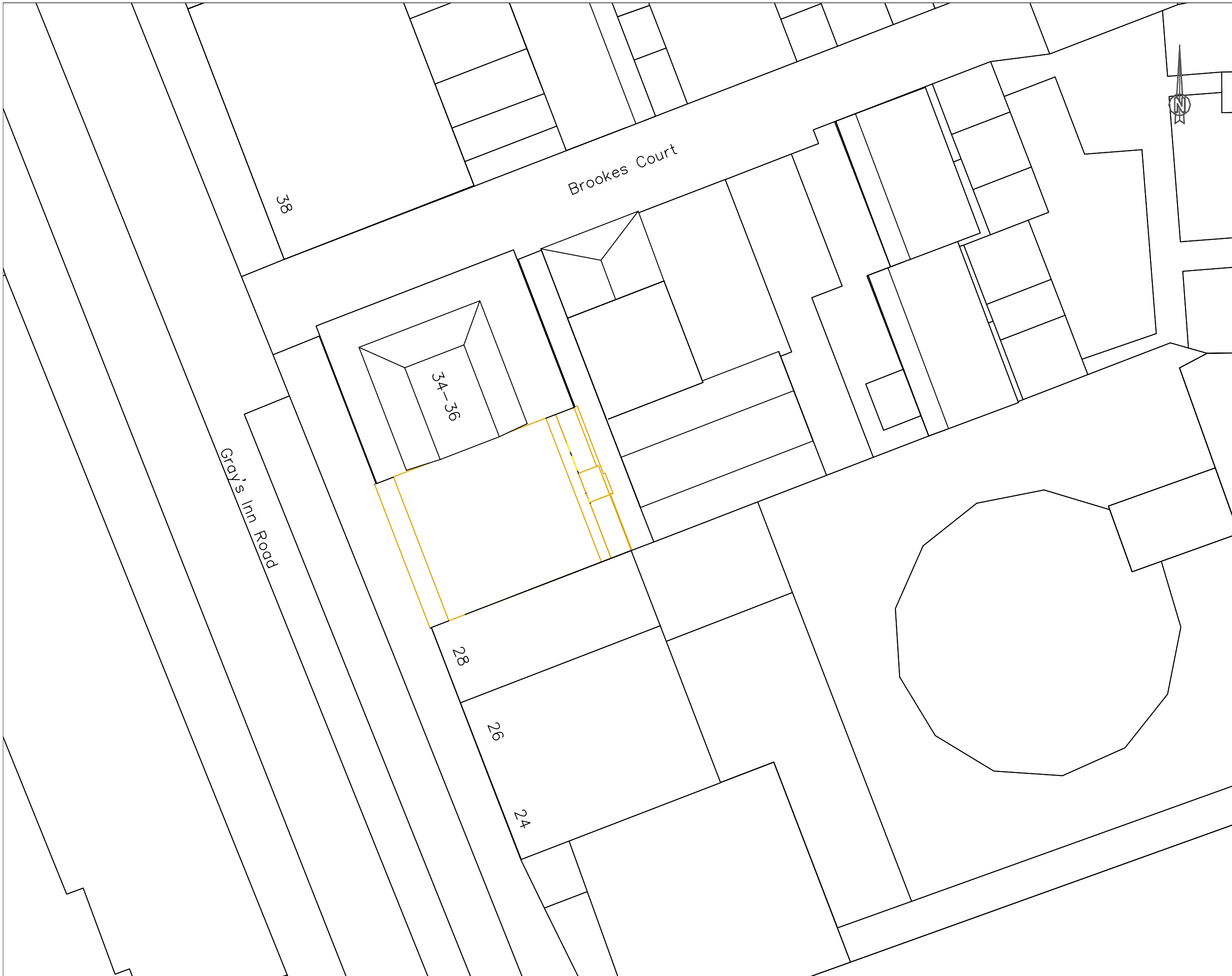
REVISION:

DATE:
 19/04/2013

DRAWN BY:
 IA/LT

SCALE:
 NTS

(internal use only)
 O:\Building Consultancy\Holbud
 Limited\Analysis\2013_03_07\Drawings\DWG



© COPYRIGHT NOTICE
 THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART),
 RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN
 CONSENT OF GL HEARN

DO NOT SCALE
 NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.

NOTES :

INFORMATION USED IN ANALYSIS:
 MR Partnership Architects:
 Plans, elevations and sections received
 18/04/13

LAND REGISTRY AND PLANNING
 HISTORY INFO :

REVISION :

PLAN KEY:
 — Surrounding Buildings
 — Proposed Buildings



20 Soho Square, London, W1D 3QW
 T: +44 (0)20 7851 4900
 F: +44 (0)20 7851 4910

PROJECT:
**30-32 Gray's Inn Road
 WC1**

CLIENT:
Holbud Investments Ltd

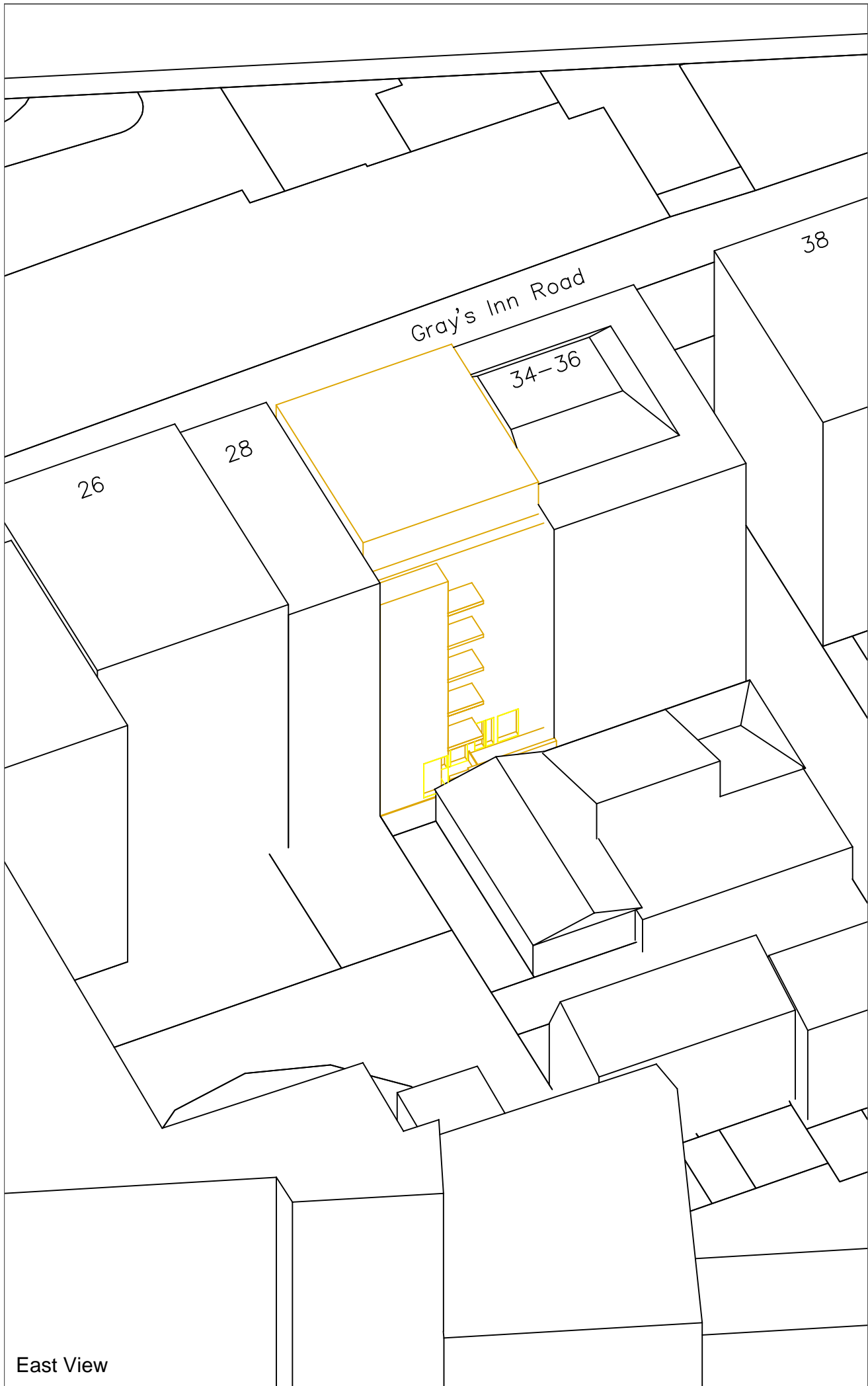
DRAWING TITLE:
Proposed Site Plan

DRAWING NO: J029113/ 03	REVISION:
-----------------------------------	-----------

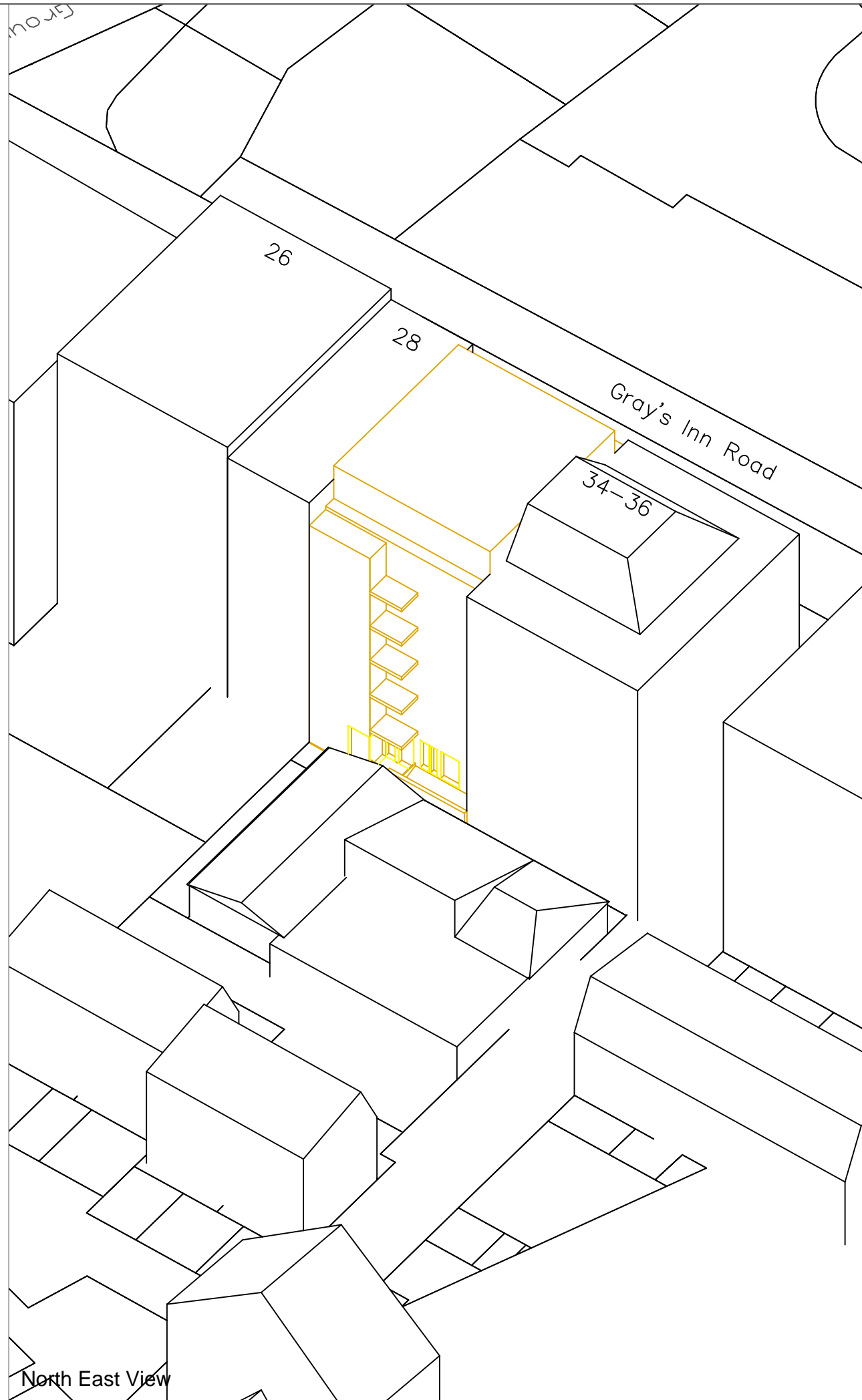
DATE: 19/04/2013	DRAWN BY: IA/LT
----------------------------	---------------------------

SCALE:
 1:250 @ A3

(internal use only)
 O:\Building Consultancy\Holbud
 Limited\Analysis\2013_03_07\Drawings\DWG



East View



North East View

© COPYRIGHT NOTICE
THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART),
RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN
CONSENT OF GL HEARN

DO NOT SCALE
NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.

NOTES :

INFORMATION USED IN ANALYSIS:
MR Partnership Architects:
Plans, elevations and sections received
18/04/13

LAND REGISTRY AND PLANNING
HISTORY INFO :

REVISION :

PLAN KEY:
— Surrounds Buildings
— Proposed Buildings



20 Soho Square, London, W1D 3QW
T: +44 (0)20 7851 4900
F: +44 (0)20 7851 4910

PROJECT:
30-32 Gray's Inn Road
WC1

CLIENT:
Holbud Investments Ltd

DRAWING TITLE:
Proposed 3D View

DRAWING NO:
J029113/04

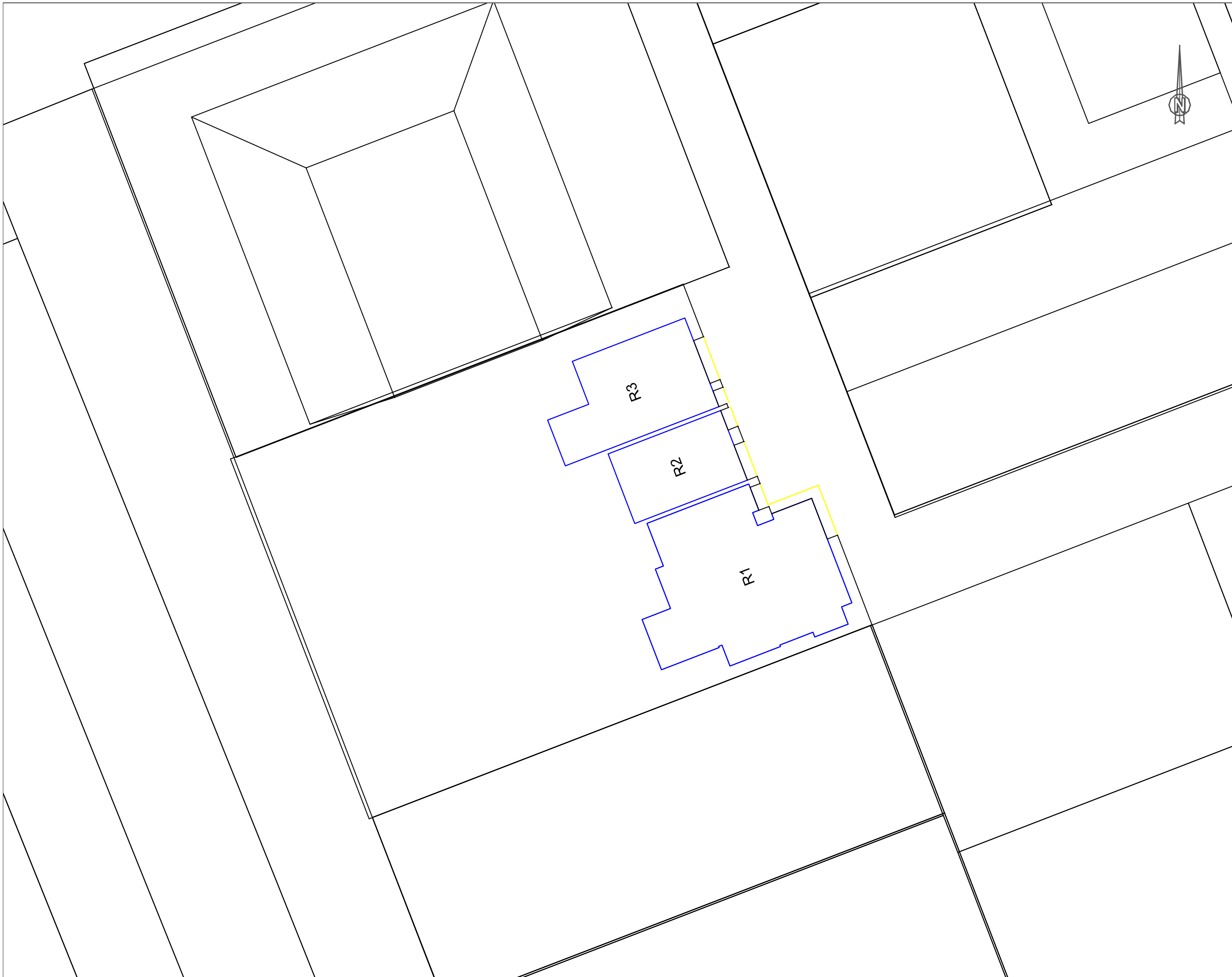
REVISION:
A

DATE:
19/04/2013

DRAWN BY:
IA/LT

SCALE:
NTS

(internal use only)
O:\Building Consultancy\Holbud
Limited\Analysis\2013_03_07\Drawings\DWG




© COPYRIGHT NOTICE
 THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART),
 RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN
 CONSENT OF GL HEARN

DO NOT SCALE
 NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.

NOTES :
 INFORMATION USED IN ANALYSIS:
 MR Partnership Architects:
 Plans, elevations and sections received
 18/04/13

LAND REGISTRY AND PLANNING
 HISTORY INFO :

REVISION :

PLAN KEY:
 ADF Test Location



20 Soho Square, London, W1D 3QW
 T: +44 (0)20 7851 4900
 F: +44 (0)20 7851 4910

PROJECT:
**30-32 Gray's Inn Road
 WC1**

CLIENT:
Holbud Investments Ltd

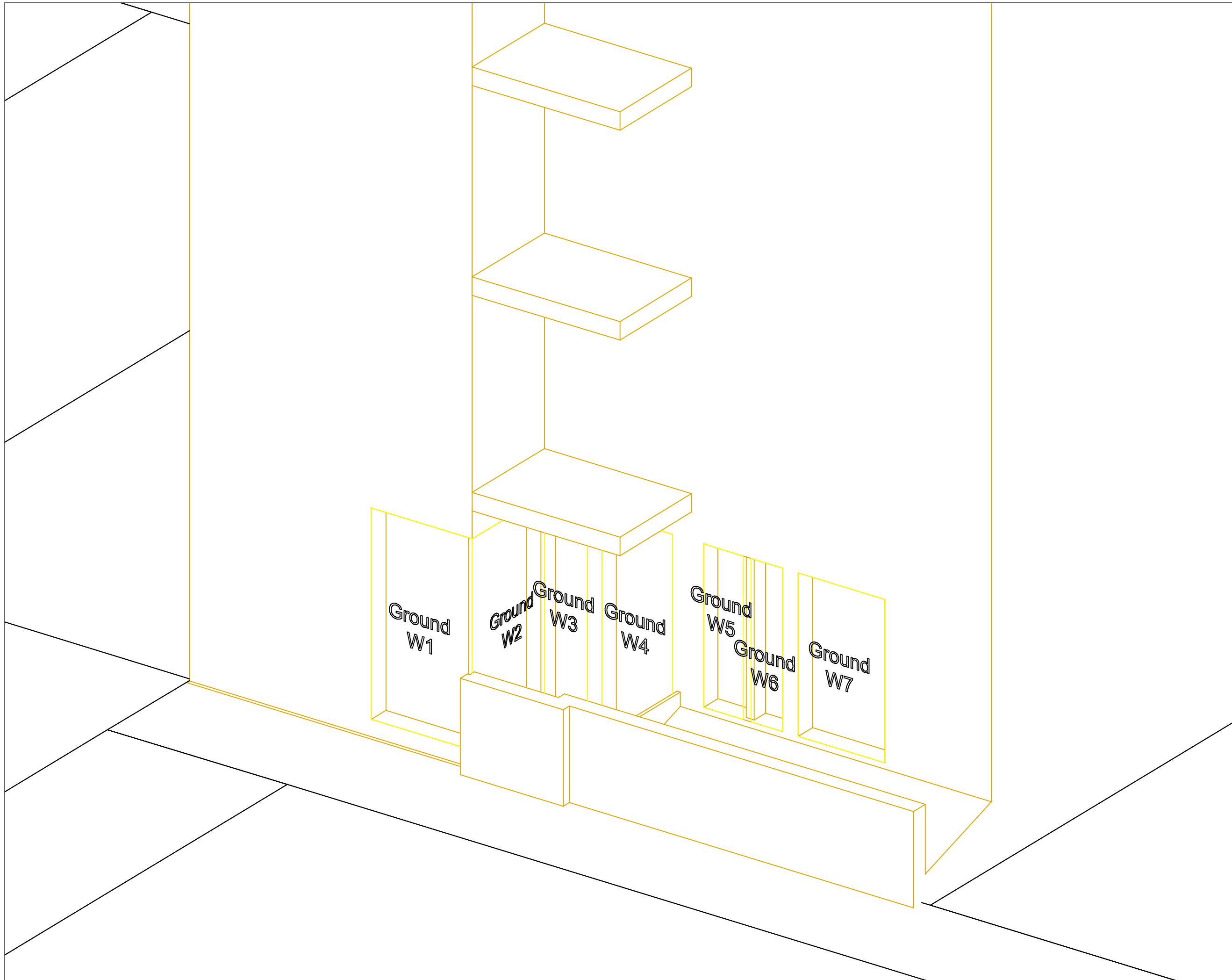
DRAWING TITLE:
Average Daylight Factor

DRAWING NO: J029113/05	REVISION: A
----------------------------------	-----------------------

DATE: 19/04/2013	DRAWN BY: IA/LT
----------------------------	---------------------------

SCALE:
 1:100 @ A3

(internal use only)
 O:\Building Consultancy\Holbud
 Limited\Analysis\2013_03_07\Drawings\DWG



<p>© COPYRIGHT NOTICE THIS DRAWING MAY NOT BE COPIED (IN WHOLE OR IN PART), RETAINED OR DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF GL HEARN</p>	
<p>DO NOT SCALE NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.</p>	
<p>NOTES :</p>	
<p>INFORMATION USED IN ANALYSIS: MR Partnership Architects: Plans, elevations and sections received 18/04/13</p>	
<p>LAND REGISTRY AND PLANNING HISTORY INFO :</p>	
<p>REVISION :</p>	
<p>PLAN KEY:</p>	
	
<p>20 Soho Square, London, W1D 3QW T: +44 (0)20 7851 4900 F: +44 (0)20 7851 4910</p>	
<p>PROJECT: 30-32 Gray's Inn Road WC1</p>	
<p>CLIENT: Holbud Investments Ltd</p>	
<p>DRAWING TITLE: Window Map</p>	
<p>DRAWING NO: J029113/ 06</p>	<p>REVISION:</p>
<p>DATE: 19/04/2013</p>	<p>DRAWN BY: IA/LT</p>
<p>SCALE: NTS</p>	
<p>(internal use only) O:\Building Consultancy\Holbud Limited\Analysis\2013_03_07\Drawings\DWG</p>	

APPENDIX B

Floor Ref.	Room Ref.	Room Use	Window Ref.	ADF Proposed	Req'd Value	Pass/Fail
------------	-----------	----------	-------------	--------------	-------------	-----------

30-32 Grays Inn Road

Ground	R1	LKD	W1-L	0.05	2.0	PASS
			W1-U	1.26		
			W2-L	0.04		
			W2-U	0.73		
			W3-L	0.02		
			W3-U	0.30		
				2.39		
Ground	R2	Bedroom	W4-L	0.07	1.0	PASS
			W4-U	1.38		
			W5-L	0.01		
			W5-U	1.04		
				2.51		
Ground	R3	Bedroom	W6-L	0.00	1.0	PASS
			W6-U	0.63		
			W7-L	0.01		
			W7-U	1.85		
				2.49		