Daylight & Sunlight Report

Client: Boultbee Brooks (Hatton Wall) Ltd

Project: 20-28 Hatton Wall, London EC1N 8JH

Report date: 29th August 2014

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About *MES Building Solutions*

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

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

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

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

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

About the Authors

Alex Hole is the Managing Director of *MES Building Solutions*. Alex is a Fellow of the Royal Institution of Chartered Surveyors having been a member for over 20 years. He has a degree in Estate Management and a Diploma in Non Domestic Energy Assessment. He is also an accredited SAP & Code for Sustainable Homes Assessor and is registered with the Institute of Non Destructive Testing. Alex specialises in Daylighting matters.

Neil Cawood is the head of the *MES Building Solutions* 'Neighbourly Matters' department. He is a Member of the Royal Institution of Chartered Surveyors and undertakes all aspects of neighbourly matters work, which in addition to light analysis, includes the Party Wall Act 1996, access agreements, crane over-sail agreements and schedules of condition. Neil provides consultancy advice to clients and undertakes detailed planning appraisals with regard to all aspects of daylight, sunlight and shadow casting.

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Section 1: Executive Summary

We have carried out calculations following guidance in BRE guide 'Site Layout Planning for Daylight & Sunlight' (SLPDS), PJ Littlefair 2011 to ascertain the impact of the proposed redevelopment of 20-28 Hatton wall, London EC1N 8JH, on the daylight and sunlight in neighbouring properties.

In dense urban locations such as this, site constraints, including the number, height and proximity of other neighbouring buildings means that windows and rooms will often fall short of the guidance figures. However it should be noted that in this case the proposed scheme achieves a high level of compliance with the guidelines.

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

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

In this case the majority of neighbouring windows and rooms comfortably fulfill all the planning guidance. Those that fall outside this have been compared with the effect the existing approved scheme would have on these neighbours. This shows either an improvement on the extant scheme or a very marginal difference that, in practice, would not be noticeable. This would be regarded as a high level of compliance in a dense urban environment such as this.

We have provided further comment and analysis on the spaces reviewed within the main body of our report and associated appendices.

In our opinion the proposals therefore accord with the intent and context of the planning guidance in this case.

Section 2: Introduction

The purpose of this report is to assess the impact of the proposed redevelopment of 20-28 Hatton wall, London EC1N 8JH, on the daylight and sunlight of key neighbours.

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

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

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

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

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

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

Section 3: Description of Development

The scheme comprises the redevelopment of 20-28 Hatton wall, London EC1N 8JH that will increase the height and massing of the existing building.

The propety is located on the north side of Hatton Wall and is situated amongst a number of buildings that include office, residential and retail uses.

Site location and neighbouring properties

Section 4: Assessment Process

The effect on neighbouring properties:

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

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

2) Sunlight:
Annual Probable Sunlight Hours (APSH)

3) Overshadowing (Amenity Space)
On relevant open spaces

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

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

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

The neighbouring properties we have therefore assessed are as follows:

- 17-21 Hatton Wall
- 18 Hatton Wall
- 23-27 Hatton Wall
- 29 Hatton Wall
- 31 Hatton Wall
- 86 Leather Lane
- 88 Leather Lane
- 90-92 Leather Lane
- 94 Leather Lane
- 96 Leather Lane
- 98-100 Leather Lane

Section 5: Daylight

Vertical Sky Component:

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

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

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

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

Where a window has not met the criteria above we have used Appendix F2 (p 62) of the BRE guidance to compare the proposed VSC results to the extant planning permission for the site to see if the proposed impact is better or worse than the existing consented scheme. If the proposed VSC is better than the VSC for the extant scheme this is regarded as acceptable.

VSC Results

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

Detailed results are in Appendix A.

As can be seen the proposed development has relatively little impact on neighbouring properties with the majority of neighbours experiencing a minimal reduction in light:

17-21 Hatton Wall: All windows tested comfortably fulfill the planning guidance.

18 Hatton Wall: All windows tested comfortably fulfill the planning guidance apart from Third R3/W1 which is marginal at 0.79, Fourth R3/W1 and Fifth R2/W1. We have therefore compared these results to the existing consented scheme and two of these windows will receive more light than the consented scheme and the third

is very close to the consented results (the difference would in practice not be noticed by this neighbour).

23-27 Hatton Wall: All windows tested comfortably fulfill the planning guidance.

29 Hatton Wall: All windows tested comfortably the planning guidance apart from Third R1/W2 which is marginal at 0.79 and is better than the consented scheme.

31 Hatton Wall: All windows tested comfortably fulfill the planning guidance.

86 Leather Lane: All windows tested comfortably fulfill the planning guidance.

88 Leather Lane: All windows tested comfortably fulfill the planning guidance.

90-92 Leather Lane: All windows tested comfortably fulfill the planning guidance.

94 Leather Lane: All windows tested comfortably fulfill the planning guidance.

96 Leather Lane: All windows tested comfortably the planning guidance apart from Second R2/W2 which is marginal at 0.78, Second R3/W3 which is marginal at 0.76, Third R2/W2 which is marginal at 0.78 and Third R3/W3 which is again marginal at 0.79. We have also compared these results to the existing consented scheme and although the results are slightly lower, the difference in practice, would not be noticeable by the neighbour.

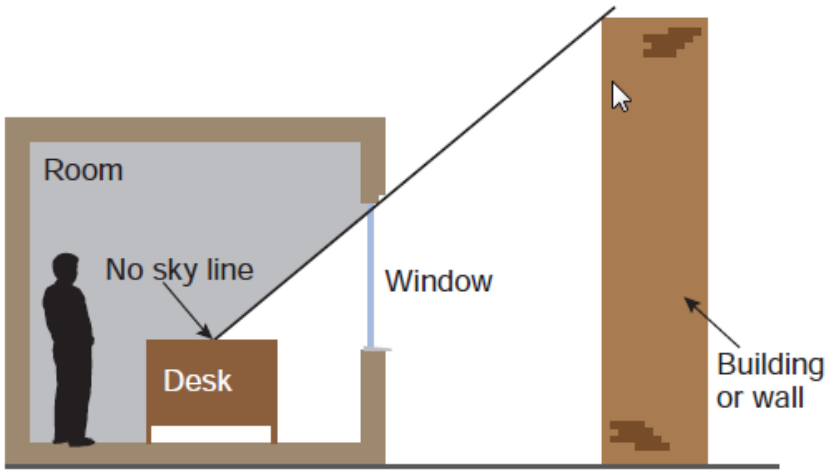
98-100 Leather Lane: All windows tested comfortably the planning guidance apart from Third R1/W1 which is marginal at 0.75, Third R2/W2 which is marginal at 0.79, Fourth R1/W1 which is marginal at 0.75 and Fourth R2/W2 which is again marginal at 0.76. We have also compared these results to the existing consented scheme and although the results are slightly lower the difference would, in practice, not be noticeable by this neighbour.

It should further be noted that the guidance would regard many of these particular neighbouring windows as being built unreasonably close to their own boundary and therefore should not be considered in the same way as windows built a reasonable distance from their boundary.

Daylight Distribution:

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

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



BRE 209

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

We have estimated internal layouts to assess the Daylight Distribution in rooms adjacent to the development.

Daylight Distribution Results

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

Detailed results are in Appendix A:

17-21 Hatton Wall: All rooms tested comfortably fulfill the planning guidance.

18 Hatton Wall: All rooms tested comfortably fulfill the planning guidance.

23-27 Hatton Wall: All rooms tested comfortably fulfill the planning guidance apart from First R2, which is marginal at 0.76 and Third R1 which is marginal at 0.75. We

have also compared these results to the extant scheme and both are better than this.

29 Hatton Wall: Four rooms tested fall just outside the planning Guidance (First R1, First R2, Second R1 and Second R2. However we have also compared these results to the existing consented scheme and all are better.

31 Hatton Wall: All rooms tested comfortably fulfill the planning guidance.

86 Leather Lane: Although 4 rooms fall outside the guidelines when compared to the consented scheme only two are lower. It should also be noted that all the windows tested in this property fulfill the earlier VSC test.

88 Leather Lane: Only one window is outside the guidelines (Second R1), however the effect on this window is no worse than the already consented scheme.

90-92 Leather Lane: All rooms tested comfortably the planning guidance apart from four rooms (Third R1 and Fourth R1, R2 and R3). One of these (Third R1) could be regarded as marginal. It is important to note that in this case the VSC results (above) for each of the windows in this property are comfortably above the planning guidelines.

94 Leather Lane: Three rooms in this property are outside the guidelines, however all windows serving these rooms fulfill the VSC tests above.

96 Leather Lane: All rooms tested comfortably fulfill the planning guidance apart from three rooms (First R1, Second R2 and Third R1). However it is important to note that again these are rooms that have windows that the guidance would regard as being unreasonably close to their own boundary. Therefore greater flexibility should be given when considering the impact on windows such as these.

98-100 Leather Lane: All rooms tested comfortably the planning guidance apart from Fourth R2 which is marginal at 0.78. Also the impact on this room is no worse than the already consented scheme.

It should also be noted that the windows serving many of these rooms have been placed very close to their own boundary. The guidance is clear in this respect, in that there should be significant flexibility ‘when an existing building has windows unusually close to the site boundary and taking more than their fair share of light’.

Section 6: Sunlight

Available Sunlight Hours

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

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

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

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

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

Available Sunlight Hours Results

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

All rooms tested meet the planning guidance as they are either facing with 90° of north or pass the planning test.

Detailed results are in Appendix A.

Section 7: Amenity Space

Recent guidance through the BRE suggests that at least 50% of any garden or open spaces should receive no less than 2 hours of direct sun on the spring equinox (March 21st).

Open spaces would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains

Amenity Space *Results*

There are no applicable amenity spaces and therefore we have not carried out this assessment in this case.

Appendix A

Results:

Vertical Sky Component
Available Sunlight Hours

Daylight Distribution

Results for Vertical Sky Component & Available Sunlight Hours

Project Name: 140807 Hatton Wall Updated Proposal
Project No:
Report Title:
Architect:
Scheme Iteration No: Interation 01
Iteration Description:
Date of Analysis: 11/08/2014
Key drawings:

17-21 Hatton Wall

Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail
Ground	R1	W1	Existing	11.88	1.00	PASS	*North Facing					
			Proposed	11.85								
Ground	R1	W2	Existing	11.48	1.00	PASS	*North Facing					
			Proposed	11.45								
Ground	R1	W3	Existing	11.21	1.00	PASS	*North Facing					
			Proposed	11.17								
Ground	R1	W4	Existing	11.27	1.00	PASS	*North Facing					
			Proposed	11.22								
Ground	R1	W5	Existing	12.39	1.00	PASS	*North Facing					
			Proposed	12.34								
Ground	R1	W6	Existing	10.81	0.99	PASS	*North Facing					
			Proposed	10.75								
Ground	R1	W7	Existing	10.63	0.99	PASS	*North Facing					
			Proposed	10.56								
Ground	R1	W8	Existing	10.45	0.99	PASS	*North Facing					
			Proposed	10.35								
Ground	R1	W9	Existing	11.57	0.99	PASS	*North Facing					
			Proposed	11.43								
First	R1	W1	Existing	19.54	1.00	PASS	*North Facing					
			Proposed	19.45								
First	R2	W2	Existing	17.94	0.99	PASS	*North Facing					
			Proposed	17.78								
First	R3	W3	Existing	17.01	0.98	PASS	*North Facing					
			Proposed	16.73								
Second	R1	W1	Existing	28.29	0.99	PASS	*North Facing					
			Proposed	28.05								
Second	R2	W2	Existing	25.75	0.98	PASS	*North Facing					
			Proposed	25.33								
Second	R3	W3	Existing	24.1	0.97	PASS	*North Facing					
			Proposed	23.39								
Third	R1	W1	Existing	34.8	0.99	PASS	*North Facing					
			Proposed	34.58								
Third	R1	W2	Existing	34.45	0.99	PASS	*North Facing					
			Proposed	34.2								
Third	R1	W3	Existing	34.04	0.99	PASS	*North Facing					
			Proposed	33.75								
Third	R1	W4	Existing	33.57	0.99	PASS	*North Facing					
			Proposed	33.25								
Third	R1	W5	Existing	33.17	0.99	PASS	*North Facing					
			Proposed	32.8								
Third	R1	W6	Existing	32.75	0.99	PASS	*North Facing					
			Proposed	32.33								
Third	R1	W7	Existing	32.35	0.98	PASS	*North Facing					
			Proposed	31.86								
Third	R1	W8	Existing	31.94	0.98	PASS	*North Facing					
			Proposed	31.38								

Project Name: 140807 Hatton Wall Updated Proposal
Project No:
Report Title:
Architect:
Scheme Iteration No: Interation 01
Iteration Description:
Date of Analysis: 11/08/2014
Key drawings:

18 Hatton Wall

Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail
First	R1	W3	Existing	14.24	0.89	PASS	*North Facing					
			Proposed	12.69								
First	R2	W2	Existing	13.93	0.93	PASS	*North Facing					
			Proposed	13								
First	R3	W1	Existing	6.14	0.92	PASS	*North Facing					
			Proposed	5.64								
Second	R1	W3	Existing	20.05	0.89	PASS	*North Facing					
			Proposed	17.89								
Second	R2	W2	Existing	18.65	0.91	PASS	*North Facing					
			Proposed	16.97								
Second	R3	W1	Existing	7.48	0.87	PASS	*North Facing					
			Proposed	6.54								
Third	R1	W3	Existing	27	0.89	PASS	*North Facing					
			Proposed	24.09								
Third	R2	W2	Existing	24.41	0.87	PASS	*North Facing					
			Proposed	21.17								
Third	R3	W1	Existing	9.29	0.79		*North Facing					
			Proposed	7.36								
			Consented Scheme	5.94		PASS						
Fourth	R1	W3	Existing	33.72	0.92	PASS	*North Facing					
			Proposed	30.88								
Fourth	R2	W2	Existing	31.73	0.81	PASS	*North Facing					
			Proposed	25.73								
Fourth	R3	W1	Existing	13.13	0.63		*North Facing					
			Proposed	8.31								
			Consented Scheme	7.49		PASS						
Fifth	R1	W2	Existing	29.48	0.82	PASS	*North Facing					
			Proposed	24.29								
Fifth	R2	W1	Existing	19.97	0.49		*North Facing					
			Proposed	9.82								
			Consented Scheme	10.05		PASS						
Fifth	R2	W3	Existing	28.94	1.00	PASS	57	1.00	PASS	25	1.00	PASS
			Proposed	28.94			57			25		

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Architect:
Scheme Iteration No: Interation 01
Iteration Description:
Date of Analysis: 11/08/2014
Key drawings:

23-27 Hatton Wall

Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail
Ground	R1	W1	Existing	10.13	0.98	PASS	*North Facing					
			Proposed	9.97								
Ground	R1	W2	Existing	12.05	0.98	PASS	*North Facing					
			Proposed	11.85								
Ground	R1	W3	Existing	10.08	0.98	PASS	*North Facing					
			Proposed	9.89								
Ground	R1	W4	Existing	12.02	0.98	PASS	*North Facing					
			Proposed	11.78								
Ground	R2	W5	Existing	10.7	0.98	PASS	*North Facing					
			Proposed	10.44								
Ground	R2	W6	Existing	10.57	0.97	PASS	*North Facing					
			Proposed	10.25								
Ground	R2	W7	Existing	9.9	0.97	PASS	*North Facing					
			Proposed	9.59								
Ground	R2	W8	Existing	11.54	0.97	PASS	*North Facing					
			Proposed	11.14								
First	R1	W1	Existing	16.79	0.96	PASS	*North Facing					
			Proposed	16.2								
First	R2	W2	Existing	16.71	0.95	PASS	*North Facing					
			Proposed	15.91								
First	R2	W3	Existing	18.38	0.94	PASS	*North Facing					
			Proposed	17.36								
First	R2	W4	Existing	16.82	0.95	PASS	*North Facing					
			Proposed	15.94								
First	R2	W5	Existing	18.55	0.94	PASS	*North Facing					
			Proposed	17.39								
First	R3	W6	Existing	17.44	0.94	PASS	*North Facing					
			Proposed	16.33								
Second	R1	W1	Existing	23.48	0.95	PASS	*North Facing					
			Proposed	22.26								
Second	R2	W2	Existing	24.03	0.92	PASS	*North Facing					
			Proposed	22.1								
Second	R3	W3	Existing	24.68	0.90	PASS	*North Facing					
			Proposed	22.24								
Third	R1	W1	Existing	31.07	0.96	PASS	*North Facing					
			Proposed	29.9								
Third	R1	W2	Existing	31.12	0.95	PASS	*North Facing					
			Proposed	29.65								
Third	R2	W3	Existing	31.26	0.94	PASS	*North Facing					
			Proposed	29.45								

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Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail

29 Hatton Wall

First	R1	W1	Existing	17.58	0.93	PASS	*North Facing
			Proposed	16.39			
First	R1	W2	Existing	17.72	0.93	PASS	*North Facing
			Proposed	16.54			
First	R2	W3	Existing	17.79	0.94	PASS	*North Facing
			Proposed	16.68			
Second	R1	W1	Existing	25.71	0.90	PASS	*North Facing
			Proposed	23.18			
Second	R1	W2	Existing	25.92	0.91	PASS	*North Facing
			Proposed	23.48			
Second	R2	W3	Existing	26.05	0.91	PASS	*North Facing
			Proposed	23.78			
Third	R1	W1	Existing	9.39	0.80	PASS	*North Facing
			Proposed	7.5			
Third	R1	W2	Existing	8.15	0.79		*North Facing
			Proposed	6.45			
			Consented Scheme	6.09		PASS	
Third	R1	W3	Existing	33.03	1.00	PASS	*North Facing
			Proposed	32.89			

31 Hatton Wall

Ground	R1	W1	Existing	11.33	0.97	PASS	*North Facing
			Proposed	11.01			
Ground	R2	W2	Existing	10.82	0.98	PASS	*North Facing
			Proposed	10.56			
Ground	R2	W3	Existing	10.98	0.98	PASS	*North Facing
			Proposed	10.76			
First	R1	W1	Existing	15.43	0.97	PASS	*North Facing
			Proposed	14.9			
First	R2	W2	Existing	15.39	0.97	PASS	*North Facing
			Proposed	14.95			
First	R2	W3	Existing	15.37	0.98	PASS	*North Facing
			Proposed	15.08			
Second	R1	W1	Existing	21.55	0.92	PASS	*North Facing
			Proposed	19.9			
Second	R2	W2	Existing	21.39	0.94	PASS	*North Facing
			Proposed	20.06			
Second	R2	W3	Existing	21.13	0.96	PASS	*North Facing
			Proposed	20.29			
Third	R1	W1	Existing	27.42	0.93	PASS	*North Facing
			Proposed	25.54			
Third	R2	W2	Existing	27.47	0.94	PASS	*North Facing
			Proposed	25.92			
Third	R2	W3	Existing	27.32	0.96	PASS	*North Facing
			Proposed	26.25			

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Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail

86 Leather Lane

First	R1	W1	Existing	3.13	0.86	PASS	*North Facing
			Proposed	2.69			
Second	R1	W1	Existing	5.56	0.85	PASS	*North Facing
			Proposed	4.74			
Third	R1	W1	Existing	9.83	0.86	PASS	*North Facing
			Proposed	8.42			
Third	R1	W2	Existing	14.26	0.86	PASS	*North Facing
			Proposed	12.26			
Fourth	R1	W1	Existing	19.29	0.86	PASS	*North Facing
			Proposed	16.54			

88 Leather Lane

Second	R1	W1	Existing	9.01	0.89	PASS	*North Facing
			Proposed	8.04			
Second	R1	W2	Existing	7.3	0.96	PASS	*North Facing
			Proposed	6.98			
Third	R1	W1	Existing	17.1	0.91	PASS	*North Facing
			Proposed	15.62			
Third	R2	W2	Existing	14.35	0.97	PASS	*North Facing
			Proposed	13.98			
Fourth	R1	W1	Existing	30.14	0.86	PASS	*North Facing
			Proposed	25.94			
Fourth	R1	W2	Existing	26.64	0.86	PASS	*North Facing
			Proposed	23.01			

90-92 Leather Lane

First	R1	W3	Existing	3.91	0.98	PASS	*North Facing
			Proposed	3.83			
First	R2	W2	Existing	3.04	1.00	PASS	*North Facing
			Proposed	3.03			
First	R3	W1	Existing	1.4	1.00	PASS	*North Facing
			Proposed	1.4			
Second	R1	W4	Existing	5.67	1.02	PASS	*North Facing
			Proposed	5.8			
Second	R2	W2	Existing	4.46	1.00	PASS	*North Facing
			Proposed	4.48			
Second	R2	W3	Existing	4.74	1.01	PASS	*North Facing
			Proposed	4.8			
Second	R3	W1	Existing	3.42	1.00	PASS	*North Facing
			Proposed	3.42			
Third	R1	W5	Existing	9.44	0.99	PASS	*North Facing
			Proposed	9.3			
Third	R2	W2	Existing	7.35	1.00	PASS	*North Facing
			Proposed	7.36			
Third	R2	W3	Existing	7.62	1.01	PASS	*North Facing
			Proposed	7.66			
Third	R2	W4	Existing	15.54	1.02	PASS	*North Facing
			Proposed	15.83			
Third	R3	W1	Existing	10.29	1.01	PASS	*North Facing
			Proposed	10.43			
Fourth	R1	W3	Existing	17.15	0.94	PASS	*North Facing
			Proposed	16.08			
Fourth	R2	W2	Existing	26.53	0.88	PASS	*North Facing
			Proposed	23.29			
Fourth	R3	W1	Existing	22.96	0.86	PASS	*North Facing
			Proposed	19.74			

Project Name: 140807 Hatton Wall Updated Proposal
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Key drawings:

Floor Ref.	Room Ref.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
							Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail

94 Leather Lane

First	R1	W1	Existing	6.02	0.98	PASS	*North Facing
			Proposed	5.9			
First	R1	W2	Existing	7.72	0.91	PASS	*North Facing
			Proposed	7.05			
Second	R1	W1	Existing	9.8	0.99	PASS	*North Facing
			Proposed	9.72			
Second	R1	W2	Existing	11.32	0.95	PASS	*North Facing
			Proposed	10.81			
Third	R1	W1	Existing	16.56	0.94	PASS	*North Facing
			Proposed	15.55			
Third	R1	W2	Existing	18.2	0.90	PASS	*North Facing
			Proposed	16.43			
Fourth	R1	W1	Existing	26.62	0.86	PASS	*North Facing
			Proposed	22.81			
Fourth	R1	W2	Existing	27.8	0.84	PASS	*North Facing
			Proposed	23.35			

96 Leather Lane

First	R1	W1	Existing	10.09	0.85	PASS	*North Facing
			Proposed	8.6			
First	R1	W2	Existing	12.11	0.82	PASS	*North Facing
			Proposed	9.99			
First	R2	W3	Existing	12.8	0.81	PASS	*North Facing
			Proposed	10.32			
Second	R1	W1	Existing	15.58	0.80	PASS	*North Facing
			Proposed	12.45			
Second	R2	W2	Existing	19.14	0.78	MARGINAL	*North Facing
			Proposed	14.86			
			Consented Scheme	15.3			
Second	R3	W3	Existing	19.82	0.76	MARGINAL	*North Facing
			Proposed	15.16			
			Consented Scheme	15.65			
Third	R1	W1	Existing	24.7	0.80	PASS	*North Facing
			Proposed	19.68			
Third	R2	W2	Existing	25.54	0.78	MARGINAL	*North Facing
			Proposed	20			
			Consented Scheme	20.26			
Third	R3	W3	Existing	26.14	0.79	MARGINAL	*North Facing
			Proposed	20.54			
			Consented Scheme	21.02			

98-100 Leather Lane

First	R1	W1	Existing	6.83	1.05	PASS	*North Facing
			Proposed	7.18			
First	R2	W2	Existing	6.95	1.01	PASS	*North Facing
			Proposed	7			
Second	R1	W1	Existing	11.27	0.87	PASS	*North Facing
			Proposed	9.78			
Second	R2	W2	Existing	10.41	0.85	PASS	*North Facing
			Proposed	8.89			
Third	R1	W1	Existing	18.17	0.75	MARGINAL	*North Facing
			Proposed	13.69			
			Consented Scheme	14.68			
Third	R2	W2	Existing	14.38	0.79	MARGINAL	*North Facing
			Proposed	11.39			
			Consented Scheme	11.84			
Fourth	R1	W1	Existing	25.46	0.75	MARGINAL	*North Facing
			Proposed	18.97			
			Consented Scheme	19.4			
Fourth	R2	W2	Existing	18.82	0.76	MARGINAL	*North Facing
			Proposed	14.37			
			Consented Scheme	14.51			

Results for Daylight Distribution

Project Name: 140807 Hatton Wall Updated Proposal
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Key drawings:

17-21 Hatton Wall

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
Ground	R1	Area m2 % of room	66.94	27.53 41%	27.53 41%	1.00	PASS
First	R1	Area m2 % of room	20.54	11.47 56%	11.47 56%	1.00	PASS
First	R2	Area m2 % of room	19.66	9.65 49%	9.59 49%	0.99	PASS
First	R3	Area m2 % of room	24.94	12.01 48%	11.72 47%	0.98	PASS
Second	R1	Area m2 % of room	20.54	19.55 95%	19.55 95%	1.00	PASS
Second	R2	Area m2 % of room	19.66	16.10 82%	16.04 82%	1.00	PASS
Second	R3	Area m2 % of room	24.94	18.57 74%	18.10 73%	0.97	PASS
Third	R1	Area m2 % of room	39.62	38.40 97%	38.40 97%	1.00	PASS

18 Hatton Wall

First	R1	Area m2 % of room	19.07	16.21 85%	15.65 82%	0.97	PASS
First	R2	Area m2 % of room	15.54	14.22 92%	14.01 90%	0.99	PASS
First	R3	Area m2 % of room	10.42	10.05 96%	10.03 96%	1.00	PASS
Second	R1	Area m2 % of room	19.07	18.45 97%	17.69 93%	0.96	PASS
Second	R2	Area m2 % of room	15.54	14.82 95%	14.22 92%	0.96	PASS
Second	R3	Area m2 % of room	10.42	10.08 97%	10.07 97%	1.00	PASS
Third	R1	Area m2 % of room	19.07	18.79 99%	18.30 96%	0.97	PASS
Third	R2	Area m2 % of room	15.54	15.41 99%	14.85 96%	0.96	PASS
Third	R3	Area m2 % of room	7.33	7.14 97%	7.14 97%	1.00	PASS
Fourth	R1	Area m2 % of room	19.07	19.07 100%	19.07 100%	1.00	PASS
Fourth	R2	Area m2 % of room	15.54	15.54 100%	15.54 100%	1.00	PASS
Fourth	R3	Area m2 % of room	7.33	7.29 99%	7.29 99%	1.00	PASS
Fifth	R1	Area m2 % of room	18.80	18.59 99%	18.59 99%	1.00	PASS
Fifth	R2	Area m2 % of room	24.22	24.19 100%	24.19 100%	1.00	PASS

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Key drawings:

23-27 Hatton Wall

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
Ground	R1	Area m2	15.71	5.01	4.72	0.94	PASS
		% of room		32%	30%		
Ground	R2	Area m2	115.69	12.13	11.93	0.98	PASS
		% of room		10%	10%		
First	R1	Area m2	11.92	8.87	8.17	0.92	PASS
		% of room		74%	69%		
First	R2	Area m2	8.96	6.81	5.19	0.76	
		% of room		76%	58%		
		Consented Scheme			39%		PASS
First	R3	Area m2	10.40	10.11	9.95	0.98	PASS
		% of room		97%	96%		
Second	R1	Area m2	11.92	11.42	10.19	0.89	PASS
		% of room		96%	85%		
Second	R2	Area m2	8.96	8.86	8.77	0.99	PASS
		% of room		99%	98%		
Second	R3	Area m2	10.40	10.18	10.18	1.00	PASS
		% of room		98%	98%		
Third	R1	Area m2	21.19	19.46	14.66	0.75	
		% of room		92%	69%		
		Consented Scheme			66%		PASS
Third	R2	Area m2	17.11	15.66	14.03	0.90	PASS
		% of room		92%	82%		

29 Hatton Wall

First	R1	Area m2	18.47	11.23	8.60	0.77	
		% of room		61%	47%		
		Consented Scheme			41%		PASS
First	R2	Area m2	15.71	9.06	6.88	0.76	
		% of room		58%	44%		
		Consented Scheme			35%		PASS
Second	R1	Area m2	18.47	17.67	12.83	0.73	
		% of room		96%	69%		
		Consented Scheme			63%		PASS
Second	R2	Area m2	15.71	13.92	9.73	0.70	
		% of room		89%	62%		
		Consented Scheme			56%		PASS
Third	R1	Area m2	33.33	31.79	31.42	0.99	PASS
		% of room		95%	94%		

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Architect:
Scheme Iteration No: Iteration 01
Iteration Description:
Date of Analysis: 11/08/2014
Key drawings:

31 Hatton Wall

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
Ground	R1	Area m2	2.53	1.25	1.25	1.00	PASS
		% of room		49%	49%		
Ground	R2	Area m2	25.46	5.71	5.71	1.00	PASS
		% of room		22%	22%		
First	R1	Area m2	4.23	2.49	2.20	0.88	PASS
		% of room		59%	52%		
First	R2	Area m2	23.51	8.06	7.69	0.95	PASS
		% of room		34%	33%		
Second	R1	Area m2	4.23	4.12	3.66	0.89	PASS
		% of room		97%	87%		
Second	R2	Area m2	23.51	13.98	11.34	0.81	PASS
		% of room		59%	48%		
Third	R1	Area m2	4.23	4.08	4.08	1.00	PASS
		% of room		96%	96%		
Third	R2	Area m2	23.51	18.19	14.77	0.81	PASS
		% of room		77%	63%		

86 Leather Lane

First	R1	Area m2	14.98	1.16	0.81	0.70	
		% of room		8%	5%		
		Consented Scheme			5%		PASS
Second	R1	Area m2	14.98	3.69	2.12	0.57	
		% of room		25%	14%		
		Consented Scheme			14%		PASS
Third	R1	Area m2	14.98	7.92	4.19	0.53	
		% of room		53%	28%		
		Consented Scheme			27%		MARGINAL
Fourth	R1	Area m2	14.98	8.61	5.98	0.69	
		% of room		57%	40%		
		Consented Scheme			34%		FAIL

88 Leather Lane

Second	R1	Area m2	18.14	7.31	5.02	0.69	
		% of room		40%	28%		
		Consented Scheme			28%		PASS
Third	R1	Area m2	8.75	4.49	4.11	0.92	PASS
		% of room		51%	47%		
Third	R2	Area m2	6.42	4.45	4.27	0.96	PASS
		% of room		69%	67%		
Fourth	R1	Area m2	18.90	15.12	12.52	0.83	PASS
		% of room		80%	66%		

Project Name: 140807 Hatton Wall Updated Proposal
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Key drawings:

90-92 Leather Lane

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
First	R1	Area m2	10.62	0.36	0.50	1.39	PASS
		% of room		3%	5%		
First	R2	Area m2	2.68	0.10	0.10	1.00	PASS
		% of room		4%	4%		
First	R3	Area m2	11.80	0.53	0.53	1.00	PASS
		% of room		4%	4%		
Second	R1	Area m2	10.62	0.57	0.57	1.00	PASS
		% of room		5%	5%		
Second	R2	Area m2	2.68	0.41	0.41	1.00	PASS
		% of room		15%	15%		
Second	R3	Area m2	9.74	1.57	1.57	1.00	PASS
		% of room		16%	16%		
Third	R1	Area m2	10.62	1.48	1.15	0.78	
		% of room		14%	11%		
		Consented Scheme			12%		MARGINAL
Third	R2	Area m2	2.68	2.68	2.68	1.00	PASS
		% of room		100%	100%		
Third	R3	Area m2	17.06	5.85	5.87	1.00	PASS
		% of room		34%	34%		
Fourth	R1	Area m2	8.38	2.85	1.70	0.60	
		% of room		34%	20%		
		Consented Scheme			21%		MARGINAL
Fourth	R2	Area m2	8.68	8.27	5.27	0.64	
		% of room		95%	61%		
		Consented Scheme			68%		FAIL
Fourth	R3	Area m2	6.35	6.11	3.91	0.64	
		% of room		96%	62%		
		Consented Scheme			69%		FAIL

94 Leather Lane

First	R1	Area m2	17.56	4.24	3.49	0.82	PASS
		% of room		24%	20%		
Second	R1	Area m2	17.56	7.87	5.70	0.72	MARGINAL
		% of room		45%	32%		
		Consented Scheme			34%		
Third	R1	Area m2	17.56	13.96	8.96	0.64	
		% of room		79%	51%		
		Consented Scheme			55%		MARGINAL
Fourth	R1	Area m2	14.78	11.83	8.16	0.69	
		% of room		80%	55%		
		Consented Scheme			59%		MARGINAL

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96 Leather Lane

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
First	R1	Area m2	17.62	13.68	8.40	0.61	
		% of room		78%	48%		
		Consented Scheme			50%		MARGINAL
First	R2	Area m2	2.88	2.62	2.39	0.91	PASS
		% of room		91%	83%		
Second	R1	Area m2	10.42	8.10	4.99	0.62	
		% of room		78%	48%		
		Consented Scheme			50%		MARGINAL
Second	R2	Area m2	4.38	4.15	3.42	0.82	PASS
		% of room		95%	78%		
Second	R3	Area m2	1.92	1.57	1.53	0.97	PASS
		% of room		82%	80%		
Third	R1	Area m2	10.88	10.18	7.04	0.69	
		% of room		94%	65%		
		Consented Scheme			64%		PASS
Third	R2	Area m2	3.27	3.19	3.13	0.98	PASS
		% of room		98%	96%		
Third	R3	Area m2	1.92	1.80	1.80	1.00	PASS
		% of room		94%	94%		

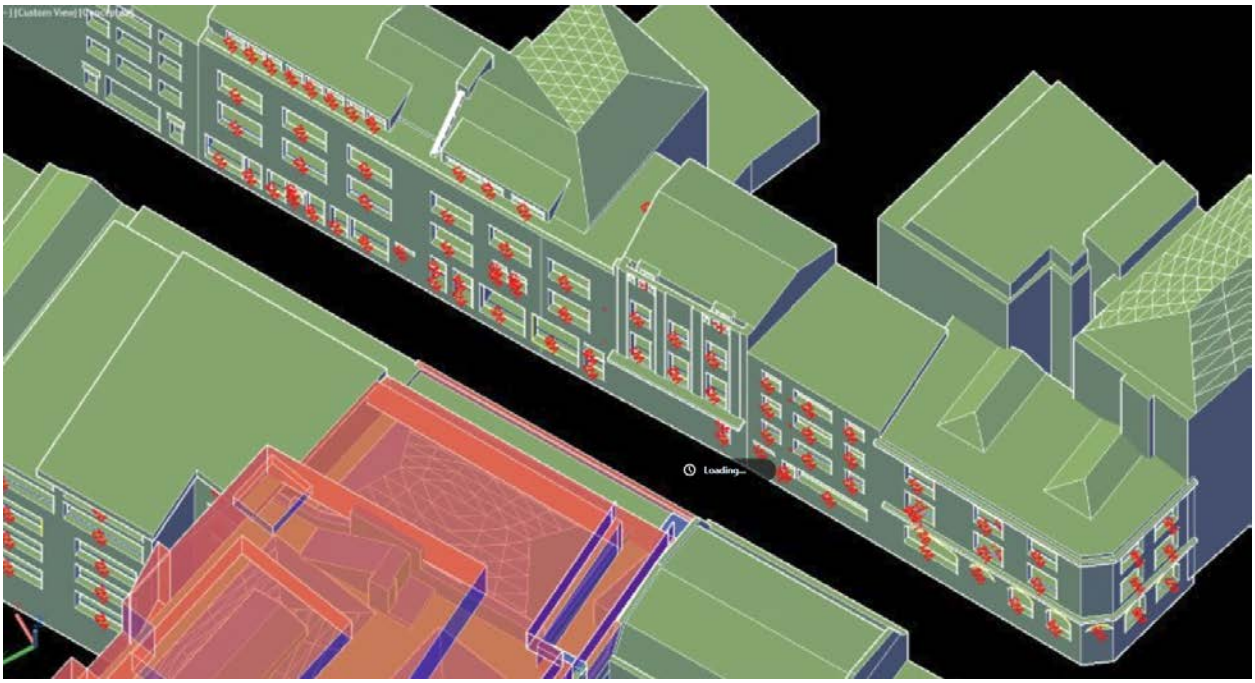
98-100 Leather Lane

First	R1	Area m2	11.52	9.38	8.86	0.94	PASS
		% of room		81%	77%		
First	R2	Area m2	7.69	5.11	5.17	1.01	PASS
		% of room		66%	67%		
Second	R1	Area m2	11.52	10.87	9.40	0.86	PASS
		% of room		94%	82%		
Second	R2	Area m2	7.69	6.21	5.20	0.84	PASS
		% of room		81%	68%		
Third	R1	Area m2	11.52	11.38	10.22	0.90	PASS
		% of room		99%	89%		
Third	R2	Area m2	7.69	6.28	5.40	0.86	PASS
		% of room		82%	70%		
Fourth	R1	Area m2	11.52	11.33	10.77	0.95	PASS
		% of room		98%	93%		
Fourth	R2	Area m2	7.69	6.84	5.36	0.78	
		% of room		89%	70%		
		Consented Scheme			70%		PASS

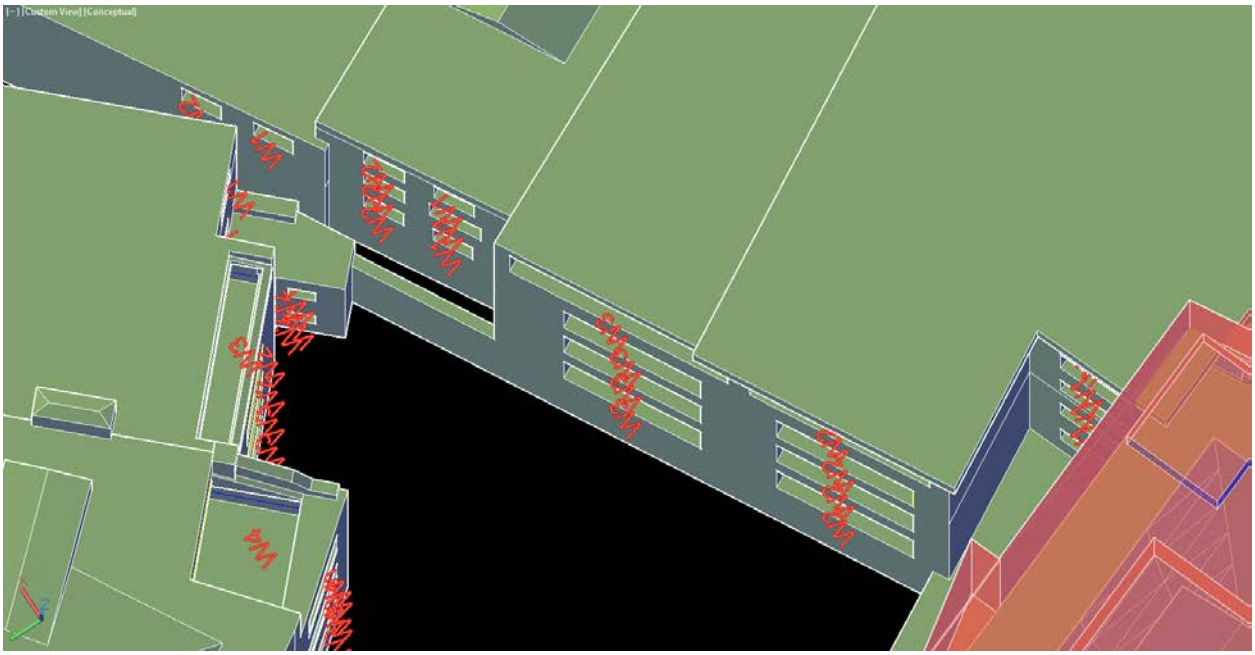
Appendix B

Window & Room References

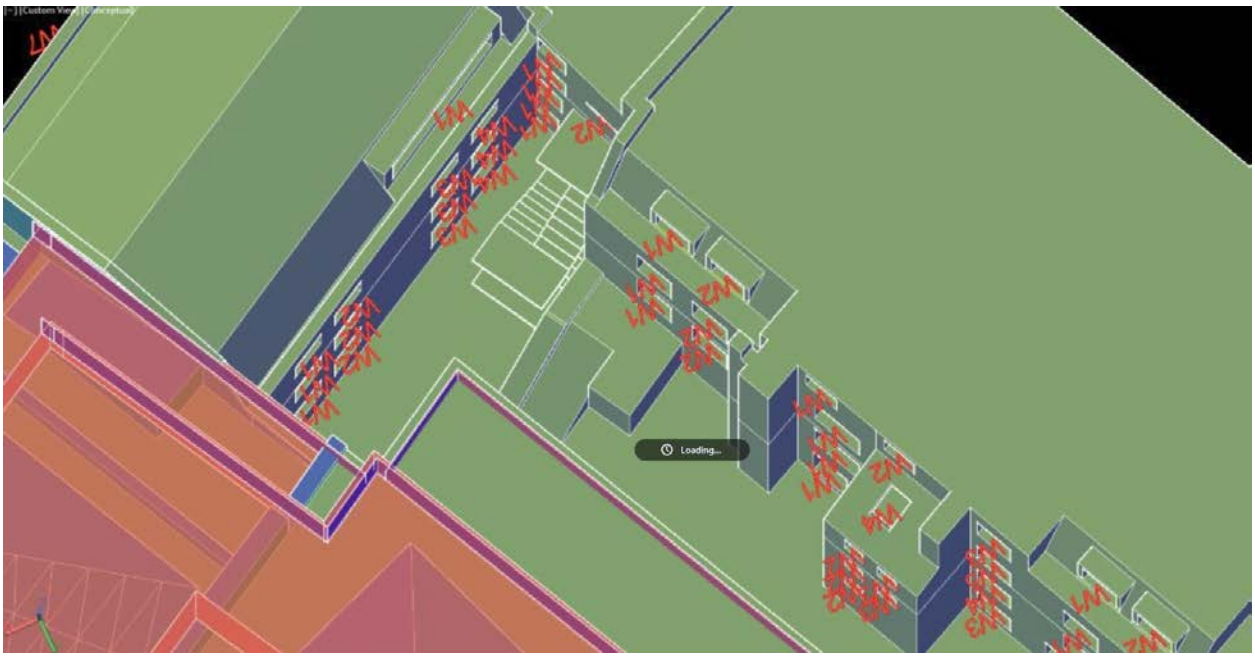
17-21 Hatton Wall, 23-27 Hatton Wall, 29 Hatton Wall, 31 Hatton Wall



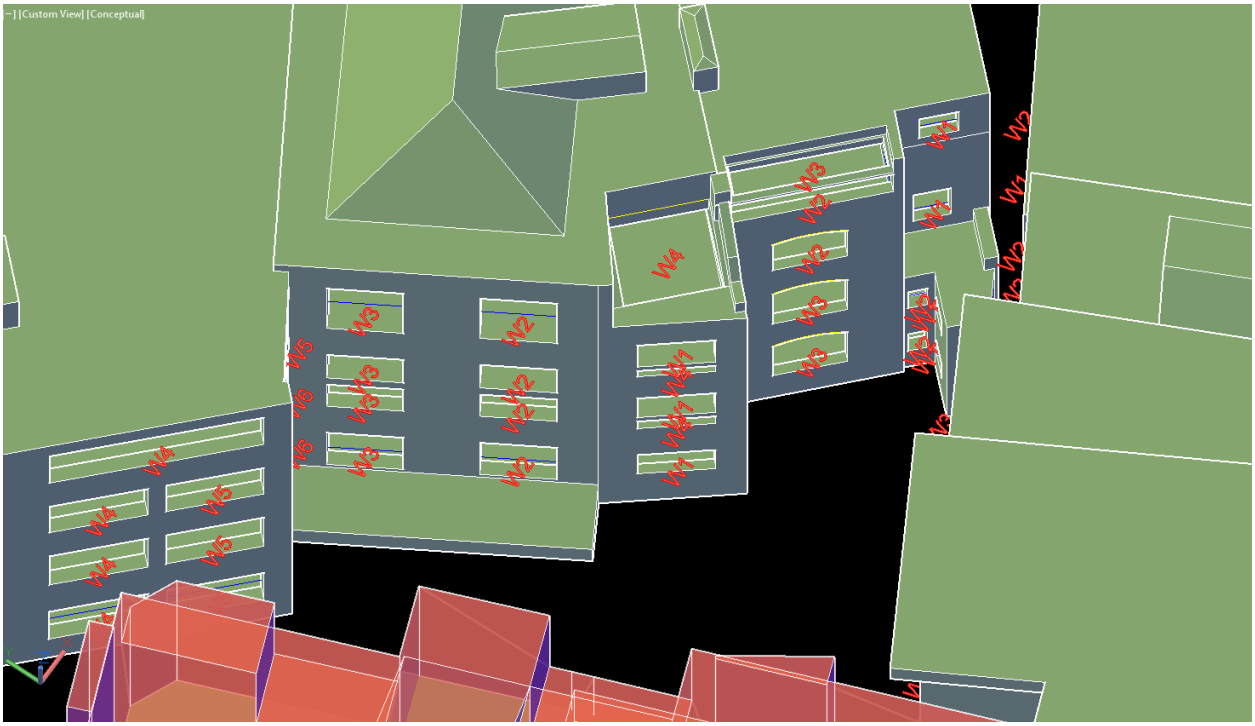
18 Hatton Wall



86 Leather Lane, 88 Leather Lane, 90-92 Leather Lane, 94 Leather Lane



96 Leather Lane, 98-100 Leather Lane



Notes

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

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

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

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