9 LYNDHURST TERRACE
LONDON, NW3 5QA

DAYLIGHT AND SUNLIGHT REPORT

DIRECTOR: LIAM DUNFORD
CLIENT: C/O CARUSO ST. JOHN ARCHITECTS
DATE: APRIL 2020
VERSION: V1
PROJECT: P2392

Point 2 Surveyors Limited,
17 Slingsby Place,
London, WC2E 9AB

0207 836 5828
point2.co.uk

POINT 2

Contents

Appendices

1 Introduction

1.1 This report relates to the Caruso St. John Architects designed scheme for the redevelopment of the 9 Lyndhurst Terrace, London, NW3 5QA insofar as it affects the daylight and sunlight amenity to number 11 Lyndhurst Terrace.

1.2 The Local Authority will be informed in this by the BRE document entitled Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011 (the BRE guidelines). This document is the principal guidance in this area and sets out the methodology for measuring light and recommends what it considers to be permitted or unobtrusive levels of change.

1.3 The BRE guidelines are not mandatory, though local planning authorities and planning inspectors will consider the suitability of a proposed scheme for a site within the context of BRE guidance. Consideration will be given to the urban context within which a scheme is located and the daylight and sunlight will be one of a number of planning considerations which the local authority will weigh.

Sources of Information

1.4 In the process of compiling this report, the following sources of information have been used:

Point 2 Surveyors
Site Photography

Brandon Surveys
Survey Info (received 25/03/20)
MS-5033.dwg , MS-5033A.dwg , MS-5033B.dwg

Caruso St John Architects
Proposed Info (received 25/03/20)
474_200321_9_Lyndhurst_Terrace_3D_with_lamscape-3D View—{3D}.dwg

2 Methodology

2.1 It is usual to assess daylight and sunlight in relation to the guidelines set out in the 2011 Building Research Establishment (BRE) Report 'Site layout planning for daylight and sunlight - A guide to good practice' by Paul Littlefair. This document is most widely accepted by planning authorities as the means by which to judge the acceptability of a scheme. One of the primary sources for the BRE Report is the more detailed guidance contained within 'British Standard 8206 Part 2:2008'.

2.2 In relation to the properties surrounding a site, usually the local planning authority will only be concerned with the impact to main habitable accommodation (i.e. living rooms, bedrooms and kitchens) within residential properties.

2.3 To determine whether a neighbouring existing building may be adversely affected, the initial test provided by the BRE is to establish if any part of the proposal subtends an angle of more than 25˚ from the lowest window serving the existing building. If this is the case then there may be an adverse effect, and more detailed calculations are required to quantify the extent of any impact.

2.4 The BRE guidelines provide two principal measures of daylight for assessing the impact on properties neighbouring a site, namely Vertical Sky Component (VSC) and No-Sky Line (NSL). They also detail a third measure of daylight which is primarily used for assessing amenity within proposed accommodation, namely Average Daylight Factor (ADF).

2.5 In terms of sunlight we examine the BRE Annual Probable Sunlight Hours (APSH); and in relation to sunlight amenity to gardens and amenity spaces, we apply the quantitative BRE overshadowing guidance.

2.6 These measures of daylight and sunlight are discussed in the following paragraphs.

Diffuse Daylight

2.7 **Vertical Sky Component (VSC)** – VSC is a measure of the direct skylight reaching a point from an overcast sky. It is the ratio of the illuminance at a point on a given vertical plane to the illuminance at a point on a horizontal plane due to an unobstructed sky.

2.8 For existing buildings, the BRE guideline is based on the loss of VSC at a point at the centre of a window, on the outer plane of the wall.

2.9 The BRE guidelines state that if the VSC at the centre of a window is less than 27%, and it is less than 0.8 times its former value (i.e. the proportional reduction is greater than 20%), then the reduction in skylight will be noticeable, and the existing building may be adversely affected.

2.10 **No-Sky Line (NSL)** - NSL is a measure of the distribution of daylight within a room. It maps out the region within a room where light can penetrate directly from the sky, and therefore accounts for the size of and number of windows by simple geometry.

2.11 The BRE suggest that the area of the working plane within a room that can receive direct skylight should not be reduced to less than 0.8 times its former value (i.e. the proportional reduction in area should not be greater than 20%).

2.12 **Average Daylight Factor (ADF)** - ADF is a measure of the overall amount of diffuse daylight within a room. It is the average of the daylight factors across the working plane within a room. This equates to the ratio of the average illuminance across the working plane, to the illuminance due to an unobstructed sky.

2.13 In addition to accounting for external obstructions, the ADF accounts for the number of windows and their size in relation to the size of the room, the window transmittance and the reflectance of the internal walls, floor and ceiling.

2.14 While the ADF can be calculated from first principles using a lighting simulation software suite such as Radiance, in simple situations it can approximated using the empirical formula detailed in both British Standard 8206 Part 2:2008 and Appendix C of the BRE Report.

2.15 Both the BRE Report and BS 8206 Part 2:2008 provide guidance for acceptable ADF values in the presence of supplementary electric lighting, depending on the room use. These are 1.0% for a bedroom, 1.5% for a living room and 2.0% for a kitchen.

Sunlight

2.16 **Annual Probable Sunlight Hours (APSH)** - In relation to sunlight, the BRE recommends that the APSH received at a given window in the proposed case should be at least 25% of the total available, including at least 5% in winter.

2.17 Where the proposed values fall short of these, and the absolute loss is greater than 4%, then the proposed values should not be less than 0.8 times their previous value in each period (i.e. the proportional reductions should not be greater than 20%).

2.18 The BRE guidelines state that '...all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block out too much sun'.

2.19 The APSH figures are calculated for each window, and where a room is served by more than one window the contribution of each is accounted for in the overall figures for the room. The acceptability criteria are applied to overall room based figures.

3 Standard Survey Limitations

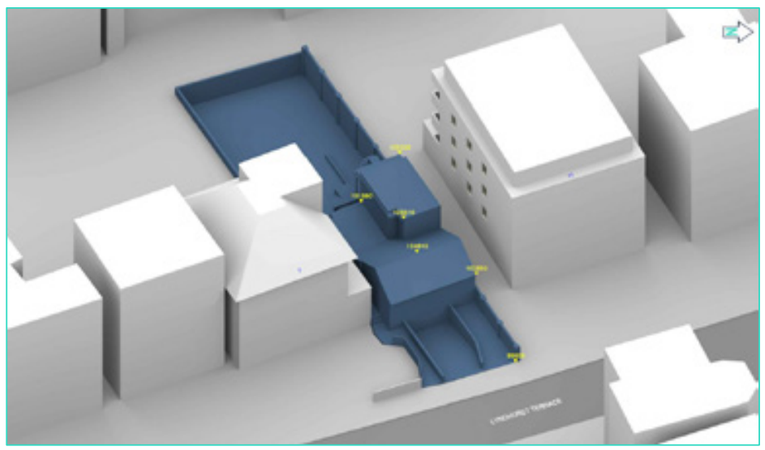
3.1 Although we have undertaken as detailed an inspection as possible, we are required by our professional indemnity insurers to notify you that our report is based upon the Standard Terms and Conditions provided along with our fee proposal. Our understanding of the existing massing, including the surrounding context was established from the sources of information details within Section 3.

3.2 In addition to our standard limitations the following limitations and assumptions also apply.

- Best estimates were made in establishing building use (residential or commercial) and room uses; generally, these were made from external observations and recourse to planning records where available.
- When floor plans of surrounding properties were not available, room depths have been assumed from external observations. Where no indicators of room depth were available a standard of 4m, 6m or 8m depths have been used.
- In accordance with BRE Guidelines balconies, where present have been removed from calculations.

4 The Site

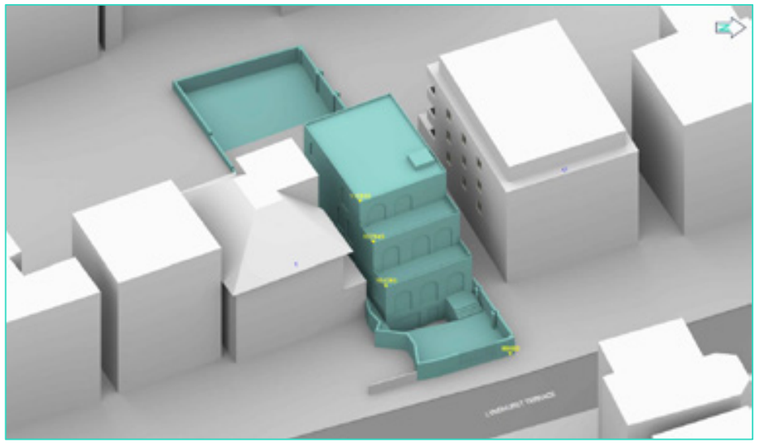
4.1 The site is located in the London Borough of Camden.



Drawing Number: P2392/02 – 3D View – Existing Building

4.2 Our understanding of the site location and existing building(s) that occupy the site are illustrated in drawing numbers P2392/01-03 and located within Appendix 1.

5 The Proposal



Drawing Number: P2362/05 – 3D View – Proposed Scheme

5.1 Our understanding of the proposed scheme is illustrated in drawings P2392/04-06 located within Appendix 1.

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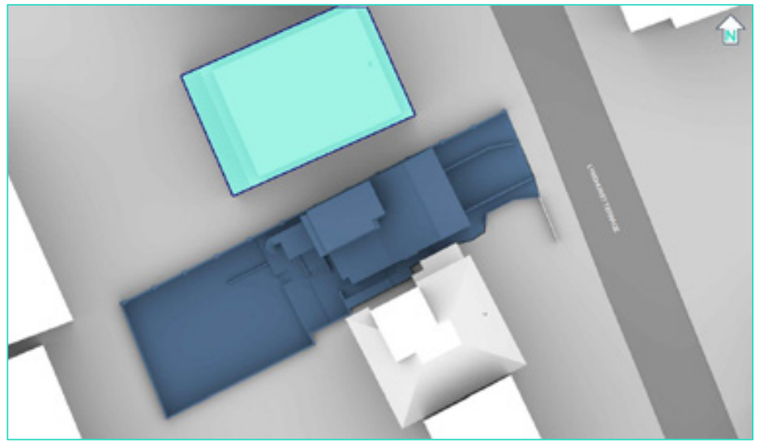
9 Lyndhurst Terrace
April 2020

6 The Surrounding Properties

6.1 The only property within the vicinity of the development site that has been considered in terms of the potential impacts on daylight and sunlight is 11 Lyndhurst Terrace. The location of this property can be seen in turquoise in the drawing below. Interrogation of the VOA council tax and business rates website indicate that this building is purely residential.



Identification Drawing

6.2 This residential apartment block adjoins the site to the north and is arranged over 5 floors. We are not in possession of floor plans for this property, thus room uses and internal configurations have been assumed from external observation. The BRE states that No Sky Line (NSL) should be tested when room layouts are known, as we are not in possession of this data, NSL will not be commented upon as the data would prove potentially inaccurate and misleading. A flank wall overlooks the development and is comprised of 12 windows serving 9 rooms (4 windows and 3 rooms per floor). Drawing extract 01 below highlights the locations of these windows:

Drawing Extract 01: flank of 11 Lyndhurst Terrace

6.3 It appears that the windows on this flank are secondary in nature, the column of windows to the right of the photo appear to be frosted and have a boiler flue associated with them suggesting that they serve WCs or bathrooms (see drawing extract 02 below), which are not material for assessment, however in the absence of layouts they have been tested regardless.

Drawing Extract 02: photo demonstrating probable bathrooms or WCs. Windows W4/101 (first floor) and W4/102 (second floor) highlighted yellow

6.4 The column of window in the centre are most likely associated with secondary bedrooms or circulation spaces. The left hand column appears to be a secondary window associated with a dual aspect reception room – the primary and larger window faces out to the rear. Regardless of room use we have assessed all of these rooms based upon a worst case scenario (that they are all habitable).

Daylight

6.5 Six of the 12 windows experience Vertical Sky Component (VSC) reductions of less than 20% which the BRE considers constitutes an unnoticeable reduction of daylight.

6.6 The remaining 6 windows, all located on the first and second floor, experience noticeable reductions (greater than 20%) of between 41% and 66%. W4/101 and W4/102 (the lower 2 of the right-hand column) experience 59.34% and 41.23% reductions, should these windows indeed transpire as being bathrooms they will not be material for assessment.

6.7 Windows W3/101 and W3/102 (the lower 2 of the central column) experience VSC reductions of 56.66% and 52.35%. These reductions are noticeable however we assess that in a worst case scenario that these windows are associated with secondary bedrooms; It is noted that the BRE considered bedrooms to be of less importance, and secondary bedrooms less so.

6.8 The final 2 derogations are associated with windows W2/101 and W2/102 (the left hand column of windows located on the first and second floor). These windows experience reductions of 61.05% and 48.86%. These windows are most likely associated with reception rooms which appear to be dual aspect, thus these windows are secondary in nature due their smaller size. The BRE states that the larger primary windows (W1/101 & W1/102) are considered the main light giving window, these windows are fully BRE compliant as their VSC alterations are unnoticeable, thus daylight will remain adequate for these rooms.

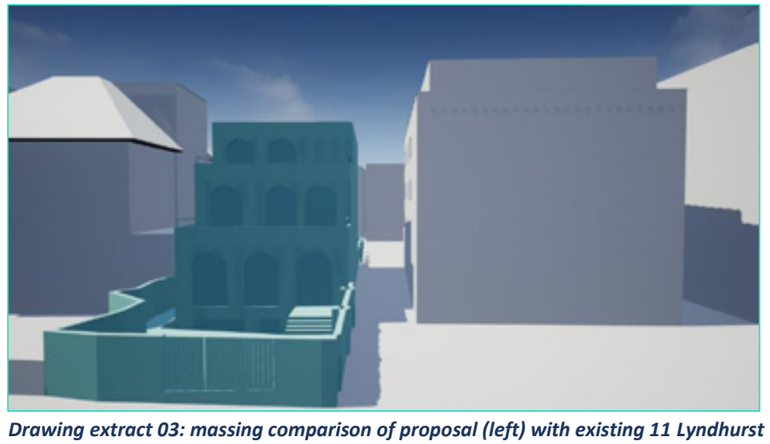
Sunlight

6.9 Of the 9 rooms orientated to with within 90 degrees of due south and material for sunlight assessment, all rooms achieve at least between 25% and 90% Annual Probable Sunlight Hours (APSH) versus a target of 25%. Four rooms derogate for Winter Probable Sunlight Hours (WPSH), however these derogation are minor at between 2 and 4% versus a target of 5%, and in any case the impacted rooms are most likely secondary in nature and at worst are bedrooms where sunlight is considered of less importance.

Alternate Target Values

6.10 Regardless of the secondary nature of these windows and rooms, the BRE sets out criteria on setting alternate target value for the appropriate environment given that the BRE Guidelines are national guidelines need to be interpreted flexibly depending on the locale, these alternate target guidelines are set out with BRE Appendix F. To ensure that a new development matches the height and proportions of existing buildings, the VSC and APSH targets for these windows could be set to those for a mirror image building of the same height and size, an equal distance away on the other side of the boundary.

6.11 Drawing extract 03 (below) demonstrates the proposal (left) and the existing building (right) highlighting their massing:



Drawing extract 03: massing comparison of proposal (left) with existing 11 Lyndhurst Terrace (right)

6.12 It can be observed that the massing of the proposal is significantly less than that of the existing property (11 Lyndhurst Terrace), and should the proposal's massing be uplifted to mirror that of No.11, the daylight alterations discussed in para 6.4 & 6.5 would be substantially worse. We therefore surmise that the proposal is compliant when set against the alternate target values set out in the BRE.

7 Conclusion

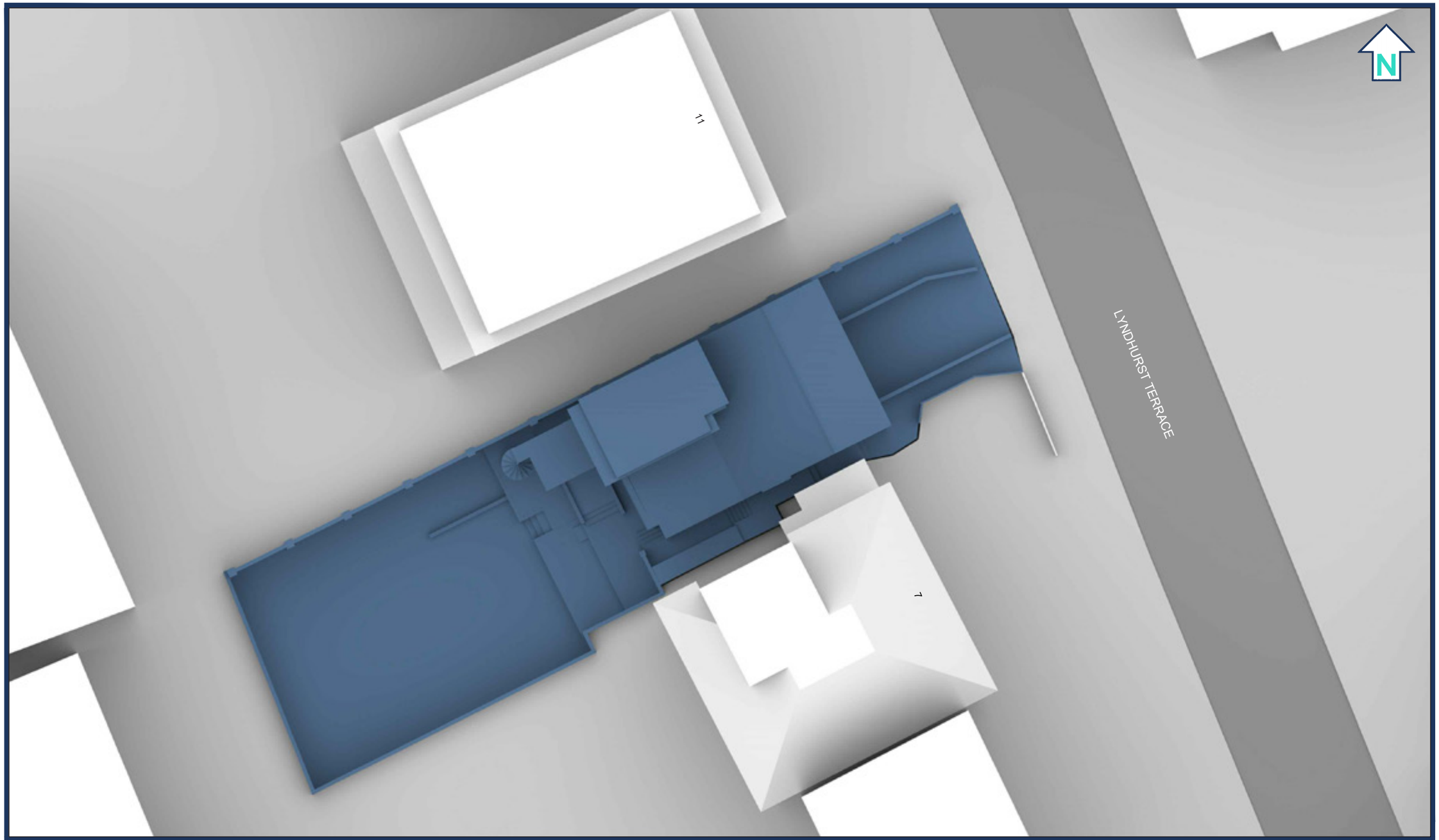
7.1 The development provides an uplift on the existing massing, which is unusually small at 1 floor plus basement, given the surrounding context is comprised of properties of at least 4 floors. Inevitably as the proposal provides an increase in height and massing similar to (but still less) than that of the surrounding context, reductions in daylight will occur. Six of these daylight reductions are considered noticeable, however it is questionable whether at least 2 of these reductions are indeed associated with habitable rooms, however a lack of plans precludes the assumption being proven and a worst case scenario has therefore been adopted. Two windows which experience noticeable losses are assumed to be secondary bedrooms, which the BRE considers to be of less importance, whilst the final 2 are associated with a dual aspect room; these windows are secondary in nature in any case thus are of less importance as the primary windows remain fully BRE compliant.

7.2 Overall, given the secondary nature of these windows the losses in their own right are acceptable, however when a mirror massing review is conducted, it can be seen that the development remains substantially smaller than the existing neighbouring property; should the proposed massing increase to that which is similar to No 11, the reductions to No 11 would be considerably worse. The BRE (para 1.6) highlights that a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings, thus this proposal demonstrates good daylight impacts and proportions when considered against the locale.

7.3 When sunlight is considered, the derogations present only occur in winter. Again noting the secondary nature of the rooms, we consider these reductions to be acceptable.

7.4 We fully support this planning application in terms of daylight and sunlight amenity.

Appendix 1:
Drawings



Sources: Brandon Surveys
Survey Info (received 25/03/20)
MS-5033.dwg , MS-5033A.dwg , MS-5033B.dwg

Caruso St John Architects
Proposed Info (received 25/03/20)
474_200321_9_Lyndhurst_Terrace_3D_with_landscape - 3D View - {3D}.dwg

Key: Existing Buildings
Proposed Scheme

Project: 9 Lyndhurst Terrace
Camden
London

Title: Plan View
Existing Buildings

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	1:200	Apr 20	P2392/01	01

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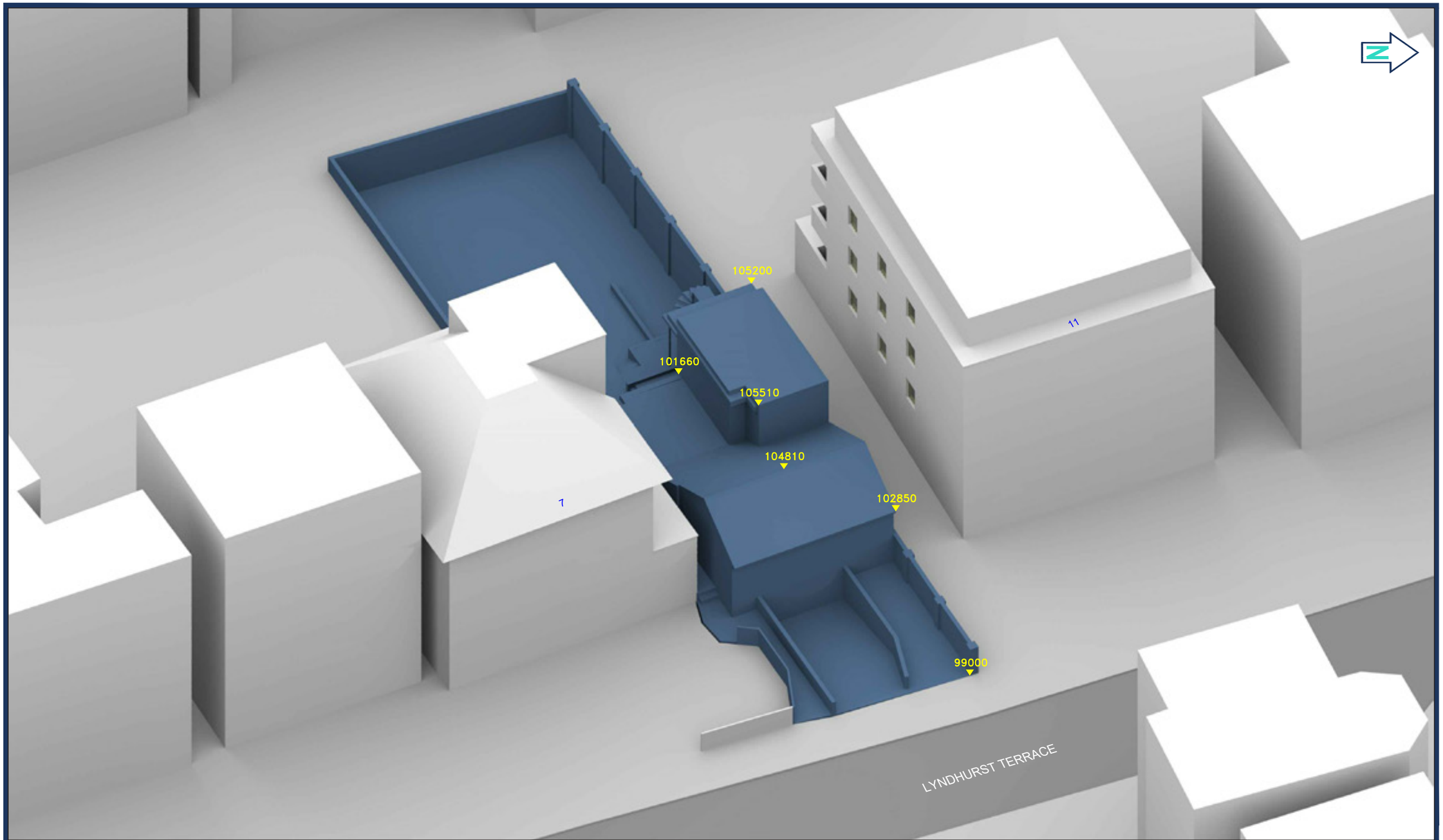

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Key: Existing Buildings
Proposed Scheme

All Heights in mm AOD

Project: 9 Lyndhurst Terrace
Camden
London

Title: 3D View
Existing Buildings

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	NTS	Apr 20	P2392/02	01

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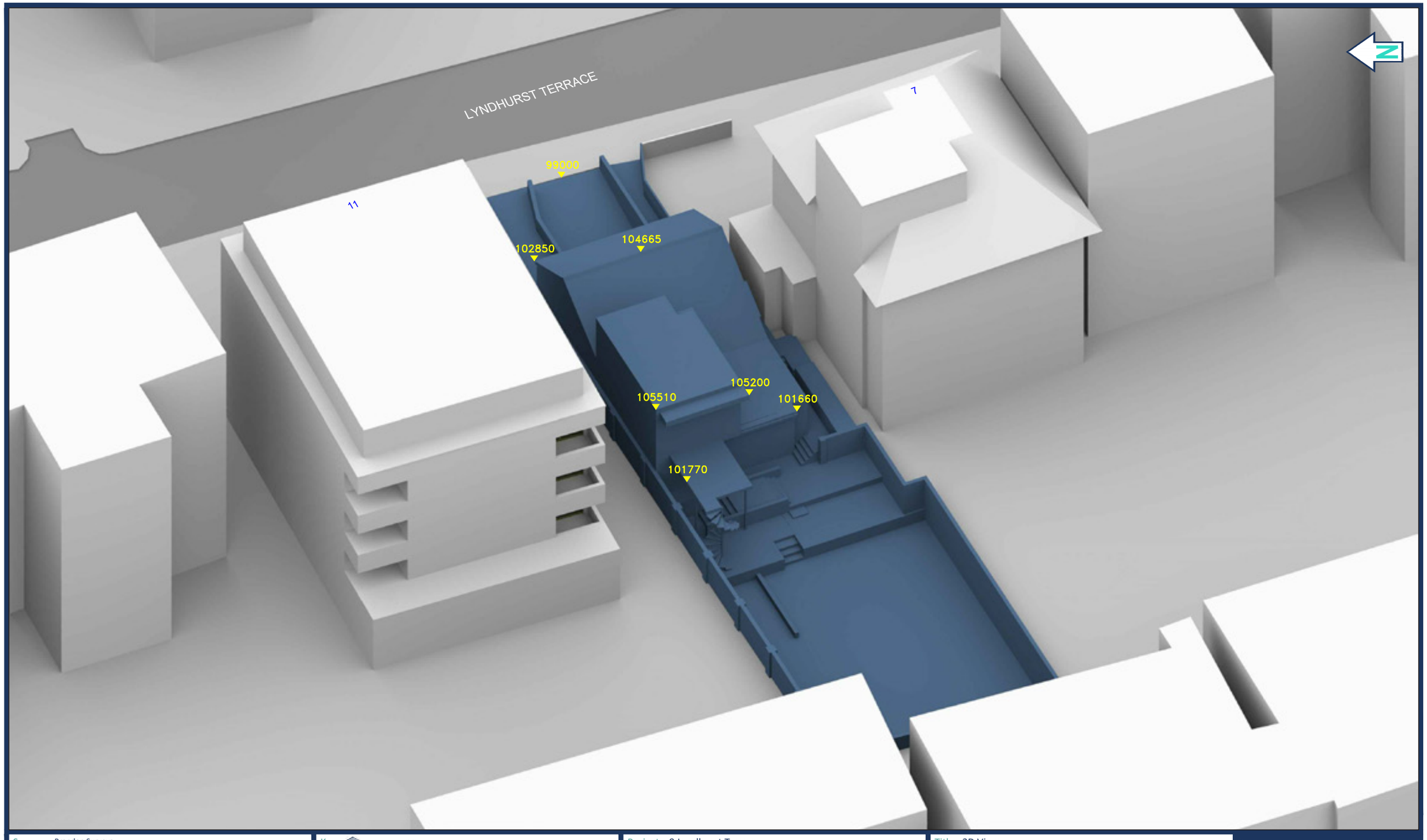

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474_200321_9_Lyndhurst_Terrace_3D_with_landscape - 3D View - {3D}.dwg

Key: Existing Buildings
Proposed Scheme

All Heights in mm AOD

Project: 9 Lyndhurst Terrace
Camden
London

Title: 3D View
Existing Buildings

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	NTS	Apr 20	P2392/03	01

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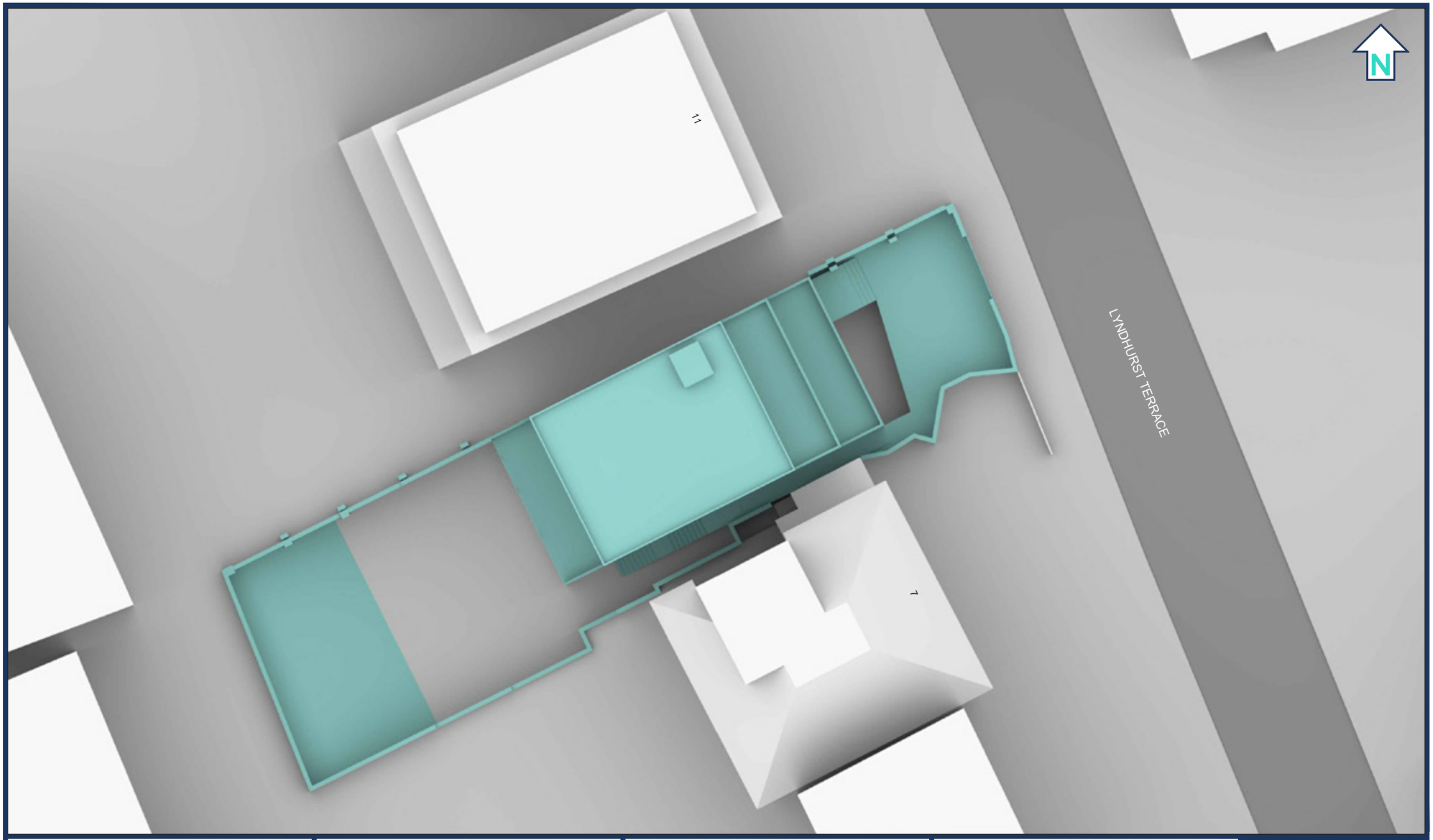

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Key: Existing Buildings
Proposed Scheme

Project: 9 Lyndhurst Terrace
Camden
London

Title: Plan View
Proposed Scheme 25/03/20

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	1:200	Apr 20	P2392/04	01

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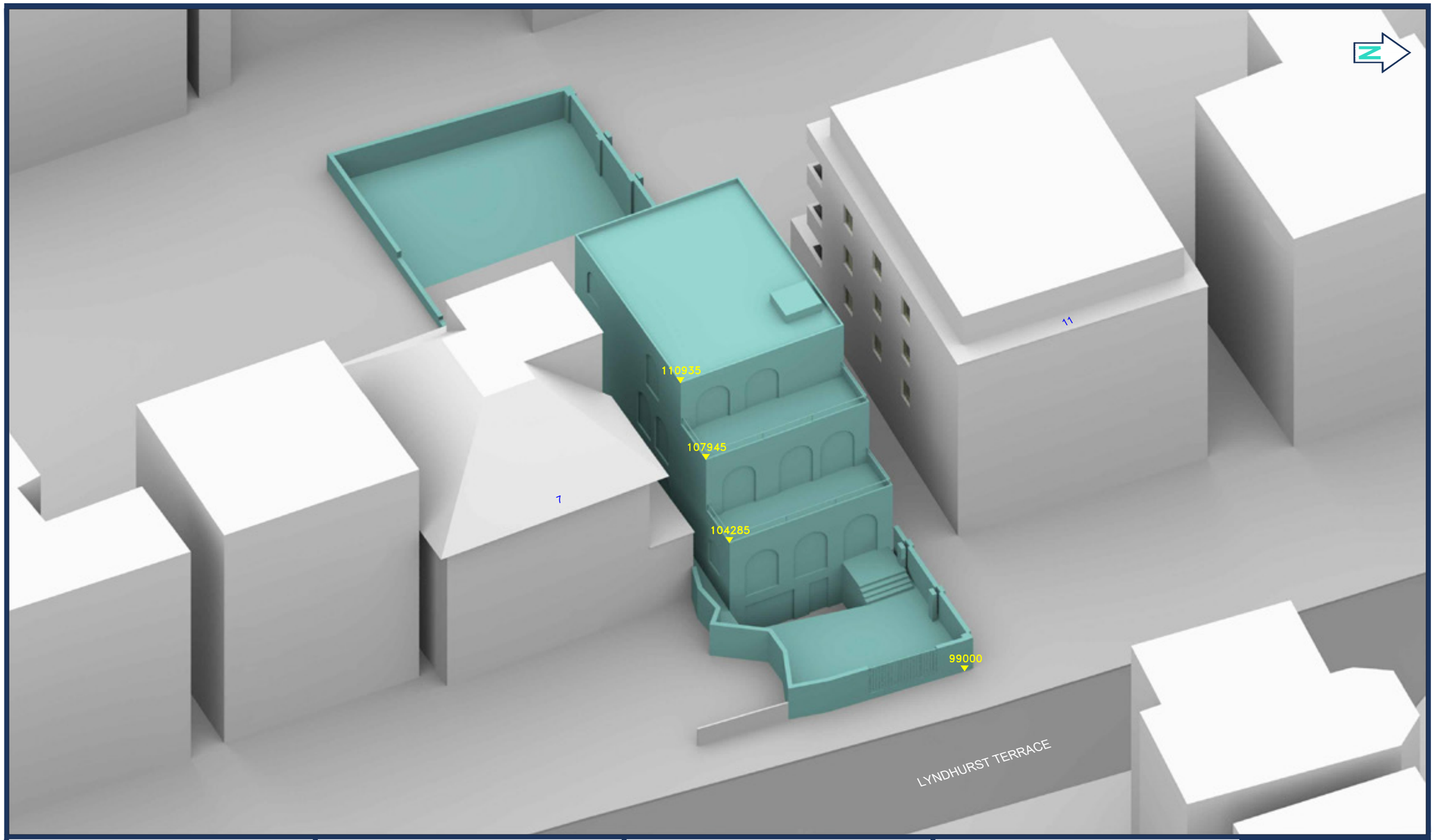

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474_200321_9_Lyndhurst_Terrace_3D_with_landscape - 3D View - {3D}.dwg

Key: Existing Buildings
Proposed Scheme

All Heights in mm AOD

Project: 9 Lyndhurst Terrace
Camden
London

Title: 3D View
Proposed Scheme 25/03/20

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	NTS	Apr 20	P2392/05	01

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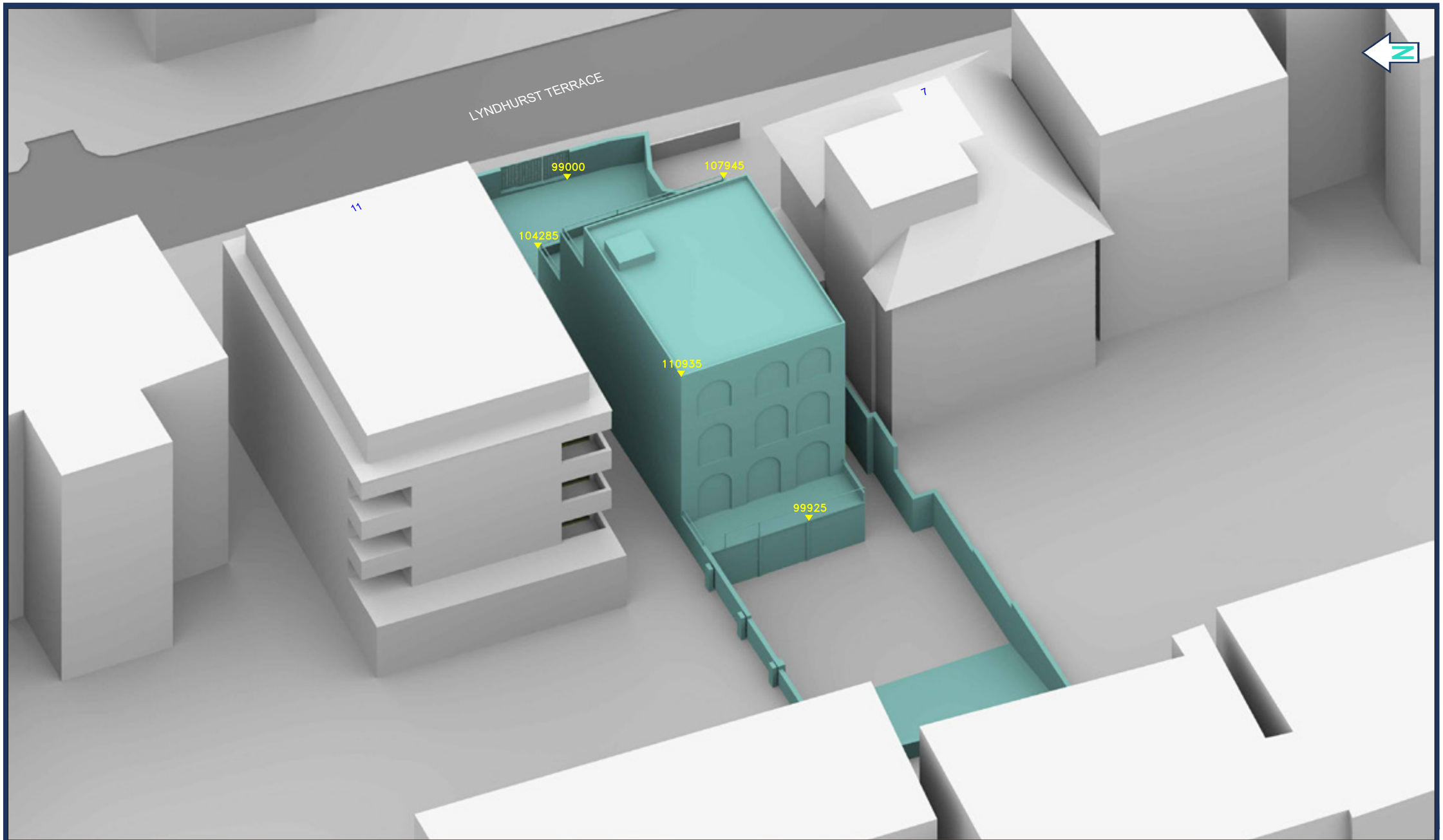

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Caruso St John Architects
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Key: Existing Buildings
Proposed Scheme

All Heights in mm AOD

Project: 9 Lyndhurst Terrace
Camden
London

Title: 3D View
Proposed Scheme 25/03/20

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
-	-	SDJ	NTS	Apr 20	P2392/06	01

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Appendix 2:
Technical Analysis

DAYLIGHT ANALYSIS

9 LYNDHURST TERRACE, CAMDEN

EXISTING vs PROPOSED SCHEME 25/03/20

P2392 - Rel1

Room	Room Use	Window	DAYLIGHT Existing VSC	Proposed VSC	Loss	%Loss
11 LYNDHURST TERRACE						
R1/101	Reception	W1/101	11.40	11.36	0.04	0.35
R1/101	Reception	W2/101	29.47	11.48	17.99	61.05
R2/101		W3/101	27.55	9.46	18.09	65.66
R3/101	WC?	W4/101	28.43	11.56	16.87	59.34
R1/102	Reception	W1/102	14.04	14.00	0.04	0.28
R1/102	Reception	W2/102	34.22	17.50	16.72	48.86
R2/102		W3/102	33.64	16.03	17.61	52.35
R3/102	WC?	W4/102	33.40	19.63	13.77	41.23
R1/103	Reception	W1/103	16.54	16.52	0.02	0.12
R1/103	Reception	W2/103	36.85	30.75	6.10	16.55
R2/103		W3/103	36.49	29.93	6.56	17.98
R3/103	WC?	W4/103	36.31	31.79	4.52	12.45

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DAYLIGHT ANALYSIS

9 LYNDHURST TERRACE, CAMDEN

EXISTING vs PROPOSED SCHEME 25/03/20

P2392 - Rel1

Room	Room Use	Window	DAYLIGHT Existing ADF	Existing Total	Proposed ADF	Proposed Total	Total Loss	%Loss
11 LYNDHURST TERRACE								
R1/101		W1/101	0.94		0.94			
R1/101		W2/101	0.77	1.71	0.37	1.31	0.41	23.71
R2/101		W3/101	0.91	0.91	0.35	0.35	0.56	61.54
R3/101		W4/101	0.93	0.93	0.45	0.45	0.48	51.56
R1/102		W1/102	1.10		1.10			
R1/102		W2/102	0.87	1.97	0.52	1.62	0.35	17.58
R2/102		W3/102	1.06	1.06	0.60	0.60	0.46	43.76
R3/102		W4/102	1.06	1.06	0.71	0.71	0.35	33.11
R1/103		W1/103	1.22		1.22			
R1/103		W2/103	0.92	2.14	0.80	2.02	0.12	5.79
R2/103		W3/103	1.13	1.13	0.97	0.97	0.17	14.55
R3/103		W4/103	1.13	1.13	1.02	1.02	0.11	9.96

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SUNLIGHT ANALYSIS

9 LYNDHURST TERRACE, CAMDEN

EXISTING vs PROPOSED SCHEME 25/03/20

P2392 - Rel1

APSH

Room	Window	Room Use	Window				Winter %Loss	Annual %Loss	Room				Winter %Loss	Annual %Loss
			Existing		Proposed				Existing		Proposed			
			Winter APSH	Annual APSH	Winter APSH	Annual APSH			Winter APSH	Annual APSH	Winter APSH	Annual APSH		
11 LYNDHURST TERRACE														
R1/101	W1/101		16	28	16	28	0.0	0.0						
R1/101	W2/101		17	71	6	28	64.7	60.6	19	81	17	48	10.5	40.7
R2/101	W3/101		13	68	3	25	76.9	63.2	13	68	3	25	76.9	63.2
R3/101	W4/101		15	70	2	30	86.7	57.1	15	70	2	30	86.7	57.1
R1/102	W1/102		18	32	18	32	0.0	0.0						
R1/102	W2/102		24	79	7	45	70.8	43.0	25	89	19	67	24.0	24.7
R2/102	W3/102		24	79	4	44	83.3	44.3	24	79	4	44	83.3	44.3
R3/102	W4/102		22	77	4	53	81.8	31.2	22	77	4	53	81.8	31.2
R1/103	W1/103		20	35	20	35	0.0	0.0						
R1/103	W2/103		28	83	19	74	32.1	10.8	30	95	25	90	16.7	5.3
R2/103	W3/103		27	82	18	73	33.3	11.0	27	82	18	73	33.3	11.0
R3/103	W4/103		26	81	20	75	23.1	7.4	26	81	20	75	23.1	7.4

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SUNLIGHT ANALYSIS

9 LYNDHURST TERRACE, CAMDEN

EXISTING vs PROPOSED SCHEME 25/03/20

P2392 - Rel1

APSH

Room	Window	Room Use	Window				Winter %Loss	Annual %Loss	Room				Winter %Loss	Annual %Loss
			Existing		Proposed				Existing		Proposed			
			Winter APSH	Annual APSH	Winter APSH	Annual APSH			Winter APSH	Annual APSH	Winter APSH	Annual APSH		

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