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DAYLIGHT & SUNLIGHT ASSESSMENT

**152-154 Uxbridge Road
London
UB4 0JH**

Consultant: Nicholas Gardner
Position: Sustainability Consultant
Report Ref: 215516DAY – Rev1
Report Date: January 2022





REPORTS 4 PLANNING

A DIVISION OF BROWN FISHER ENVIRONMENTAL LLP

External Daylight and Sunlight Study

Client: Kumarasamy Sivakumaran
68 Roth Drive
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CM13 2UE

Site Details: 152 – 154 Uxbridge Road
Hayes
UB4 0JH

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Appendix A:	Existing Plans and Surrounding Neighbouring Elevations
Appendix B:	Proposed Plans

Report Details:

Prepared by	Checked by	Date	Job Number
Nicholas Gardner	Peter Kinsella	11.01.2022	9104 Rev1

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1. Introduction & Methodology

The daylight study is to ensure the comfort, health and safety of building occupants as well as visitors and others within the vicinity of the building is acceptable. It is also to enhance the quality of life in dwellings by recognising those factors that encourage a healthy and safe internal environment for occupants.

Using industry standard methodology as prescribed by BRE and British Standard guidance, we have made numerical analyses to ensure compliance with the recommended levels of change in daylight.

The main criteria used in this analysis to show compliance are the:

Vertical Sky Component (VSC)

VSC measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.

The relevant BRE recommendations for daylight and sunlight are:

The Vertical Sky Component measured at the centre of a window should be no less than 80% of its former value, where the window(s) do not meet this criteria, BRE Guidelines states that if the VSC at the centre of a window is more than 27% of available light, then the diffuse daylighting will not be adversely affected.

Annual Probable Sunlight Hours (APSH)

APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well lit.

The BRE Guidance is not an instrument of planning policy; therefore, whilst the methods given are technically robust, some level of flexibility should be applied where appropriate.

We must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.

2. Proposed Development

There are proposals for the demolition of an existing building to make way for the construction of a three - storey development containing 9 apartments and 1 retail unit at 152 – 154 Uxbridge Road, Hayes, UB4 0JH.

Location Plan



3. Modelling the site & Window Schedule

An analysis model is created of the proposed development and the existing development allowing analysis, calculations are then run. The outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable percentage of daylight and sunlight, we can then establish if the proposal will have the required daylighting levels stipulated by BRE guidelines.

It is important to note that not all nearby features have been modelled, only those that will affect the daylighting, in accordance with BRE recommendations.

The reference document for this analysis, BRE Digest 209, provides the methodology for undertaking the calculations as well as benchmark figures for the acceptable reduction in the daylight/sunlight.

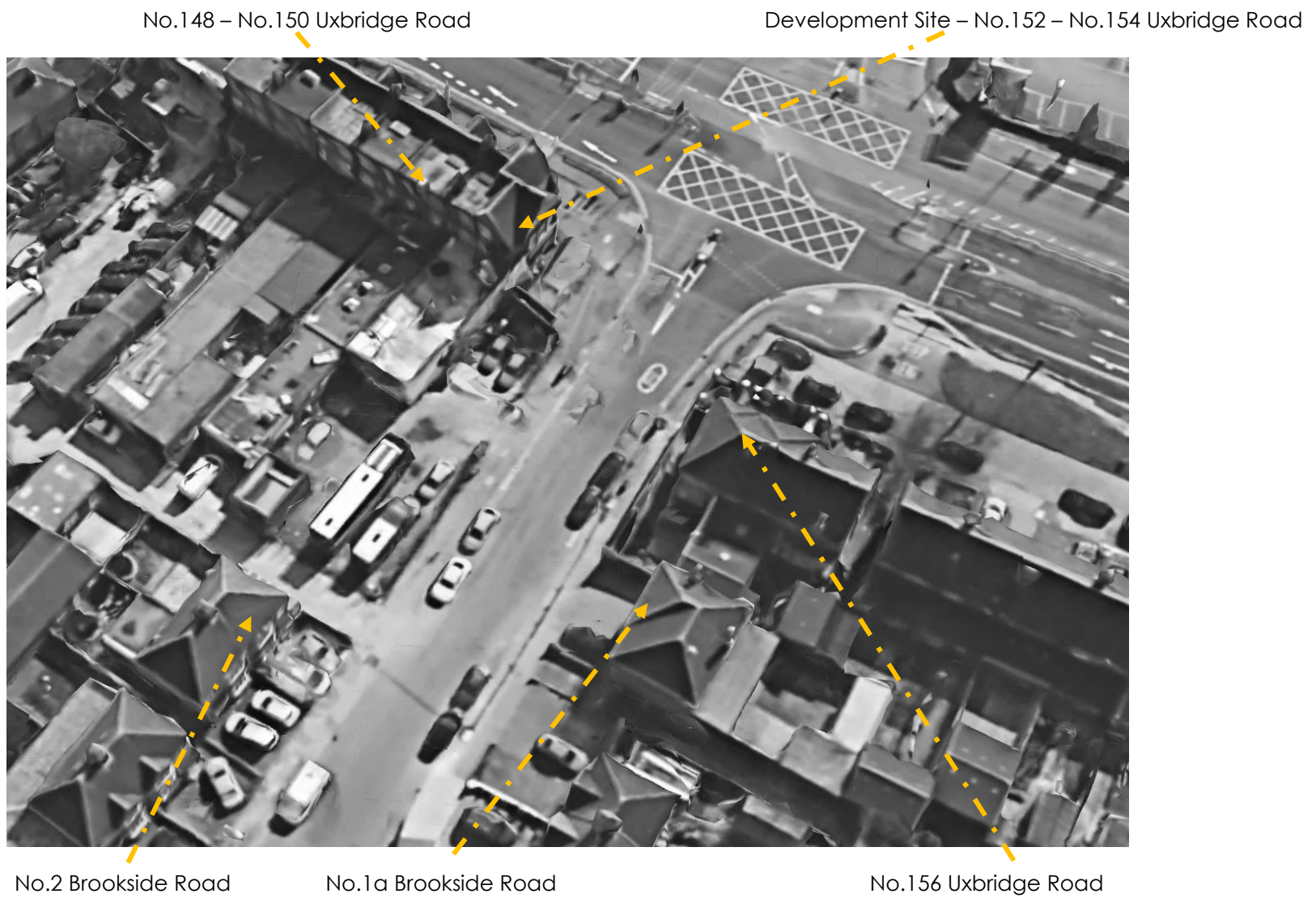
In order to complete an accurate model of the existing and proposed site we have used a combination of the following plans and information. These consist of:

- ¶ Topographical Survey
- ¶ Proposed plans
- ¶ Supporting plans and information regarding the surrounding neighbouring dwellings
- ¶ Google Earth and Big Maps used for reference points

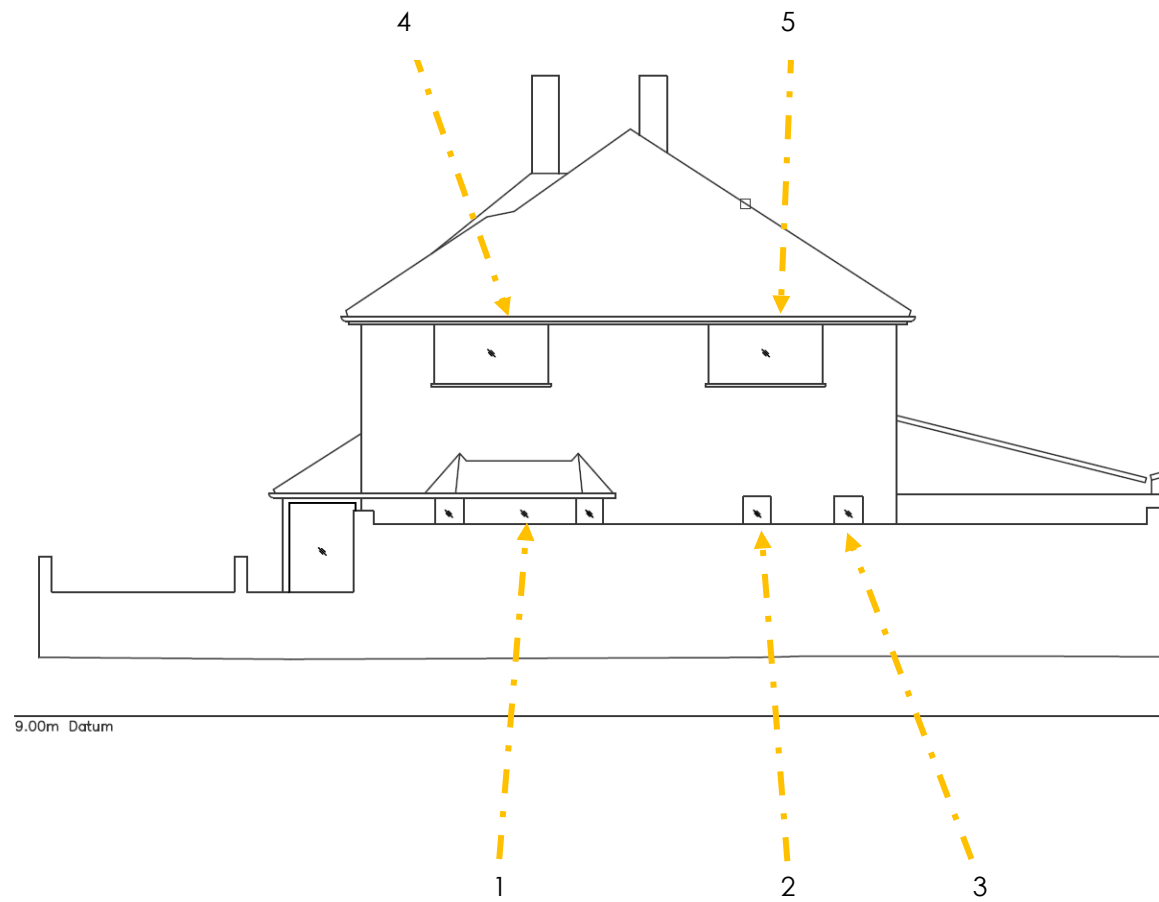
The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight. The immediate neighbouring dwellings that have been identified for analysis being No.148 – No.150 Uxbridge Road, No.156 Uxbridge Road, No.1a and No.2 Brookside Road. These dwellings are considered 'worst case' due to their position in relation to the proposed development, therefore, if the analysis shows that these dwellings meet the requirements for levels of change in daylight in accordance with BRE guidelines then all additional surrounding dwellings that sit at a further distance or higher elevation will meet these requirements by default.

For a full location and window schedule please see below.

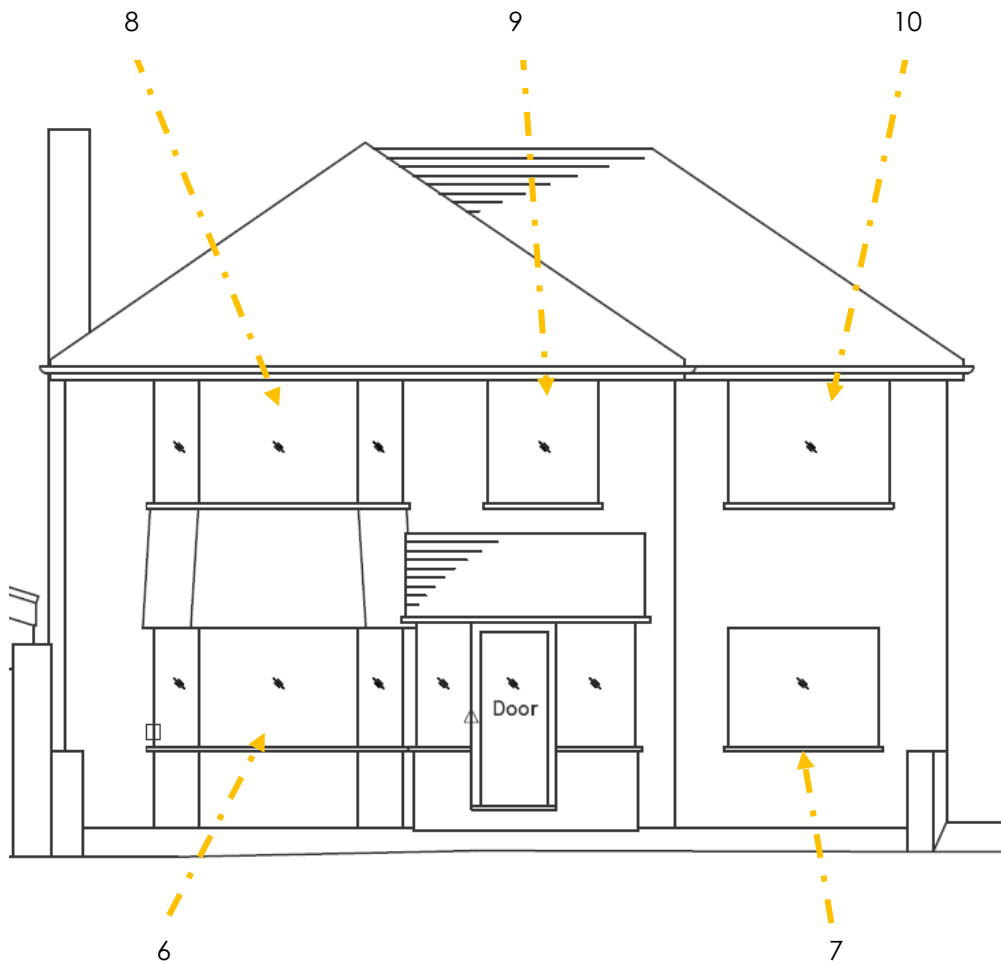
Target Study Area



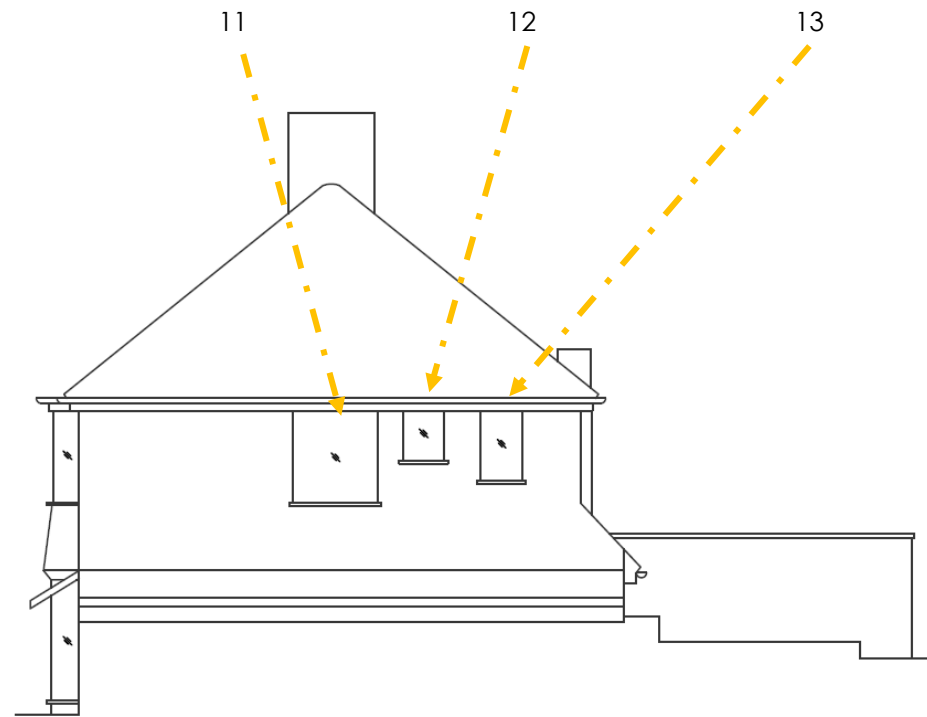
No.156 Uxbidge Road – Side / East Elevation



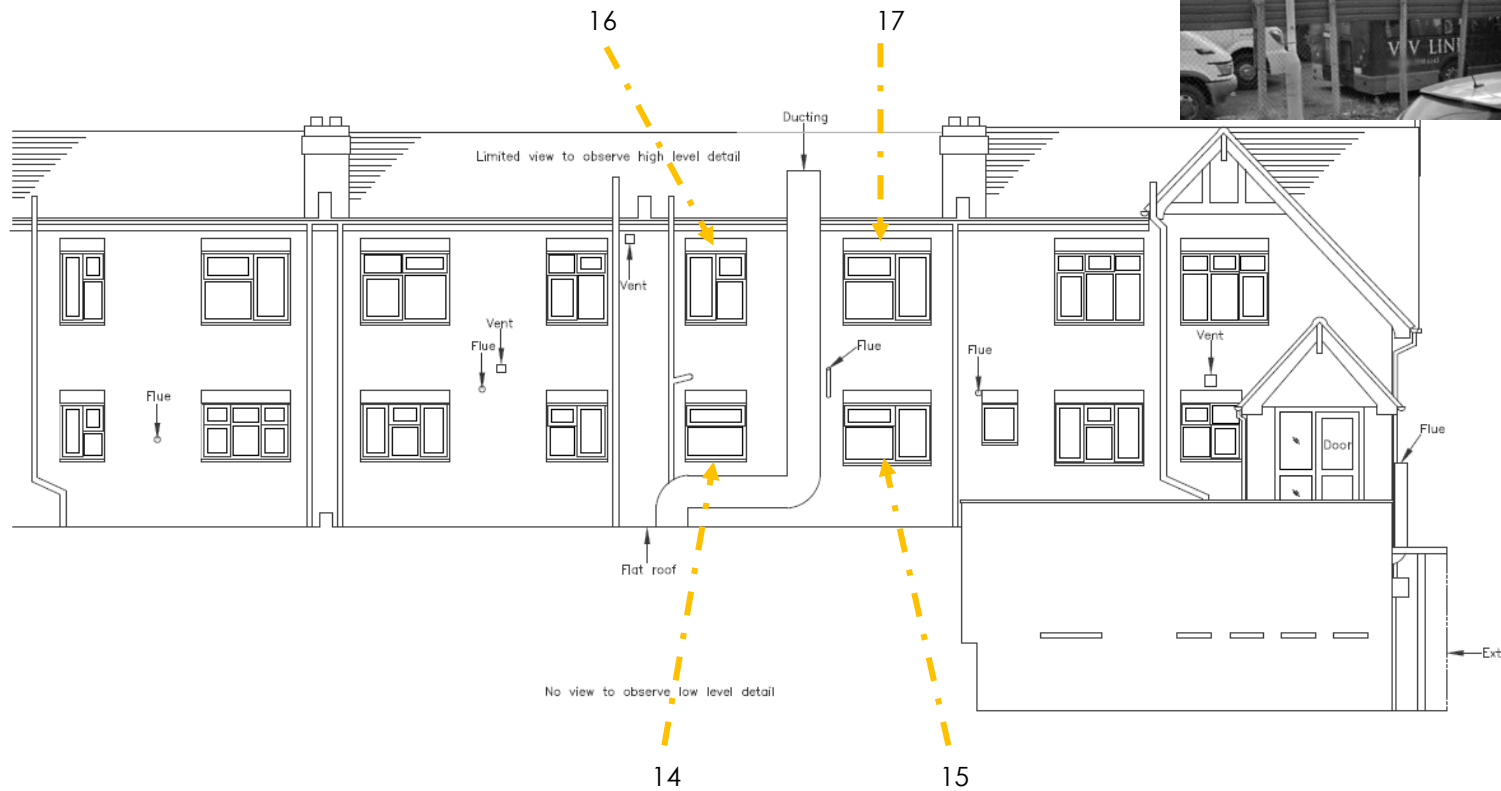
No.1a Brookside Road - Front / East Elevation



No.2 Brookside Road – Side/ South Elevation



No.148 – No.150 Uxbridge Road – Rear / North Elevation



As can be seen, there are 17 relevant window receptors of concern that may experience an impact in terms of daylight and sunlight from the proposed development.

- ¶ Receptors 1 – 5 located to the side elevation of No.156 Uxbridge Road
- ¶ Receptors 6 – 10 located to the front elevation of No.1 Brookside Road
- ¶ Receptors 11 – 13 located to the side elevation of No.2 Brookside Road
- ¶ Receptors 14 – 17 located to the rear of No.148 – No.150 Uxbridge Road

Remaining Windows within the target study area

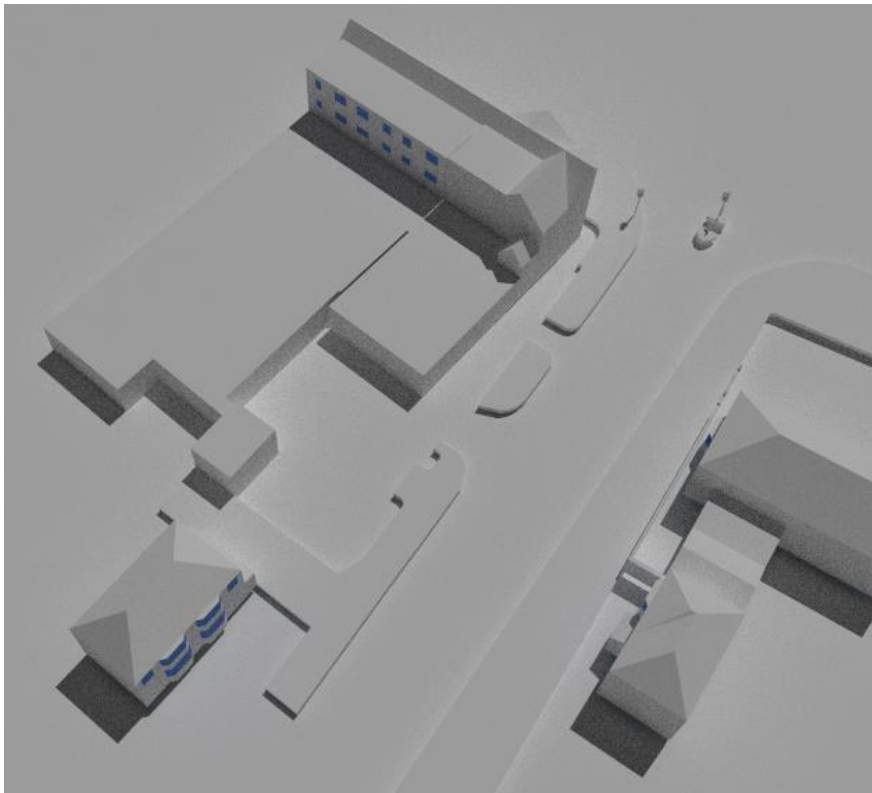
All window receptors labelled above are considered 'worst case', therefore, if they pass the assessment, under BRE Guidelines, any other windows within the vicinity that may be under question will also pass by default as they are either positioned at a higher elevation or further distance than those assessed and therefore less obstructed.

4. Vertical Sky Component Analysis

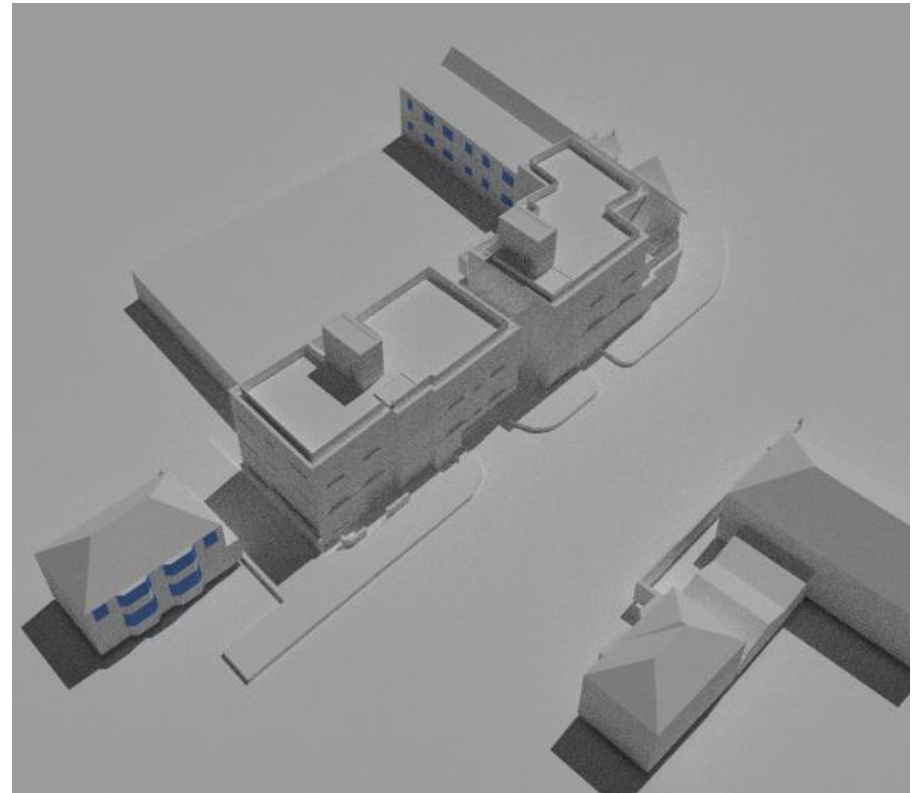
Stage 1 of the analysis is to model the existing site condition and then the proposal in 3 dimensions, thus allowing us to analyse the current situation and compare with relative ease the proposed situation.

The 3D model that has been created is then imported into specialist daylight analysis software from which calculations are then run for both the existing and proposed. We have isolated the three dwellings of concern and taken a screen shot which is displayed below.

Existing Conditions



Proposed Conditions



5. Vertical Sky Component Benchmark & Results

As previously stated, even though the benchmark figures provided by BRE may provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole. Locations that may be considered dense urban areas or City Centre developments are often exposed to larger constraints in comparison to low-rise suburban areas. With that said, there is a higher scope for potential obstructions and loss of daylight in these areas. Higher density developments, such as the one in question, generally experience lower daylight and sunlight levels.

Interpretation of the scale of impact

As discussed, the windows of the neighbouring dwelling may or may not achieve the targets set by BRE, however, what BRE does not provide is an idea of the significance that these results will have on the assessed neighbouring dwellings. Therefore, using professional experience, if we apply a scale to judge the implication these results may have on the dwelling, we can better understand the impact that may be experienced. The scale below is based on the BRE baseline target of 80% daylight retention.

Scale of Impact

Where the loss of daylight and sunlight fully meets the BRE Guidance Values, the impact is assessed as **Negligible**

Where the loss of daylight and sunlight is reduced within 20 – 35% of the BRE Guidance Values, the impact can be classed as **Minor**

Where the loss of daylight and sunlight is reduced within 35 – 50% of the BRE Guidance Values, the impact can be classed as **Moderate**

Where the loss of daylight and sunlight is reduced within 50 – 100% of the BRE Guidance Values, the impact can be classed as **Major**

**The guidance above has been taken from BRE daylight and sunlight book for the nature and scale section 5. Ref: Site Layout Planning for Daylight and Sunlight, Appendix 1 Environmental Impact Assessment, page 73.*

6. Vertical Sky Component Analysis Results

The Vertical Sky Component has been calculated for the openings labelled in section 3 of this report for both the existing and proposed conditions. As previously stated, these window receptors are considered 'worst case', therefore, any other windows that sit at a greater distance or higher elevation than those that have passed the analysis within this report, under BRE Guidelines, will also pass by default.

Receptor	Existing %	Proposed %	% Retained
Window 1	14.06	14.06	100.00%
Window 2	34.57	30.30	88.00%
Window 3	34.66	30.35	88.00%
Window 4	38.32	34.30	90.00%
Window 5	38.45	34.24	89.00%
Window 6	36.11	30.79	85.00%
Window 7	36.47	32.19	88.00%
Window 8	38.68	35.02	91.00%
Window 9	38.53	35.25	91.00%
Window 10	38.71	35.76	92.00%
Window 11	38.22	26.02	68.00%
Window 12	38.30	27.85	73.00%
Window 13	38.25	28.83	75.00%
Window 14	39.32	35.6	91.00%
Window 15	39.30	33.57	85.00%
Window 16	39.52	37.46	95.00%
Window 17	39.56	36.22	92.00%

Vertical Sky Component Results Summary

As can be seen above, the results show that, with the exception of receptor 11, all window receptors meet and are in excess of the minimum requirements as set by BRE Guidelines.

When we apply the scale of impact as detailed in section 5, page 12 of this report, we can see that these window receptors may experience the following level of impact:

- ¶ Receptors 1 – 10 and 12 - 17 may experience a '*Negligible*' impact in terms of daylight
- ¶ Receptor 11 may experience a '*Minor*' impact in terms of daylight

7. Annual Probable Sunlight Hours Results

As stated in section 3 of this report, APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well lit. As can be seen, the results show that all receptors tested continue to receive over the minimum amount of sunlight hours required annually and in the winter months.

Annual Hours	Existing %	Proposed %	% of Existing
Window 1	21.00	21.00	100.00%
Window 2	47.00	39.00	83.00%
Window 3	47.00	40.00	85.00%
Window 4	48.00	46.00	96.00%
Window 5	49.00	45.00	92.00%
Window6	50.00	43.00	86.00%
Window 7	45.00	41.00	91.00%
Window 8	52.00	50.00	96.00%
Window 9	51.00	49.00	96.00%
Window 10	52.00	50.00	96.00%
Window 11	86.00	67.00	78.00%
Window 12	86.00	71.00	83.00%
Window 13	86.00	73.00	85.00%

Winter Hours	Existing %	Proposed %	% of Existing
Window 1	7.00	7.00	100.00%
Window 2	13.00	12.00	92.00%
Window 3	13.00	12.00	92.00%
Window 4	13.00	13.00	100.00%
Window 5	14.00	13.00	93.00%
Window6	14.00	12.00	86.00%
Window 7	9.00	6.00	67.00%
Window 8	15.00	13.00	87.00%
Window 9	14.00	12.00	86.00%
Window 10	15.00	13.00	87.00%
Window 11	30.00	11.00	37.00%
Window 12	30.00	15.00	50.00%
Window 13	30.00	17.00	57.00%

As can be seen above, all window receptors tested meet the minimum criteria for sunlight hours both annually and in the winter months and therefore satisfy BRE Guidelines.

8. Conclusion

There are proposals for the demolition of an existing building to make way for the construction of a three - storey development containing 9 apartments and 1 retail unit at 152 – 154 Uxbridge Road, Hayes, UB4 0JH.

The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight as detailed in section 3 of this report.

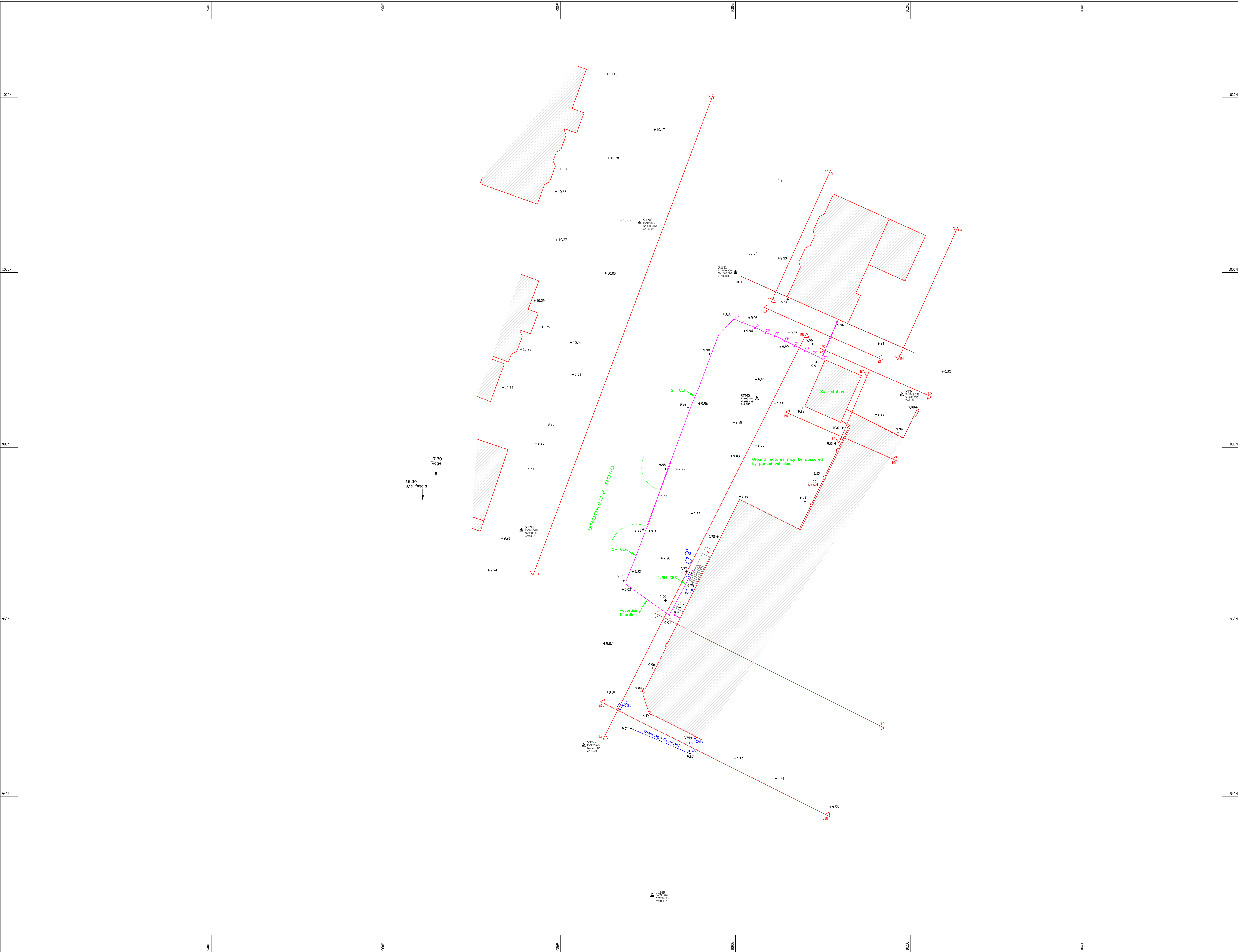
Using industry standard methodology, we have completed numerical analysis to calculate the recommended levels of change in daylight for the window receptors detailed in section 3 of this report.

The main criteria used in this analysis to demonstrate compliance is the Vertical Sky Component and Annual Probably Sunlight Hours for the effect on a neighbouring dwelling's habitable windows.

The analysis shows that, with the exception of receptor 11, all receptors tested meet and are in excess of the minimum requirements in accordance with BRE Guidelines and will only experience a *negligible* impact in terms of daylight and sunlight incidence. In the case of receptor 11, despite failing to meet minimum requirements for daylight (Vertical Sky Component), the overall impact on this window will be classed as *minor* in line with the scale of impact as detailed in section 5, page 12 of this report.

Appendices

Appendix A: Existing Plans and Surrounding Neighbouring Elevations

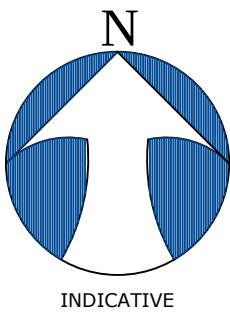


NOTES

All dimensions are to be checked on site by the contractor before any work is commenced.
In the case of apparent discrepancy refer immediately to Twickenham Surveys.
The accuracy and completeness of this survey is dependent on the original survey brief including the scale intended.
The type and extent of information and the survey accuracy will have been matched to the client's original requirements.
Twickenham Surveys accepts no responsibility or liability to later users without prior consent.
Surveyed boundary features may not represent the extent of legal ownership.
The detail of this survey was established for a brief requiring a 1:200 plot. It is therefore suitable for plotting or planning/designing at scales of 1:200 or smaller.
The survey grid is not related to Ordnance Survey National Grid.
Level positions are indicated by a cross.
Levels relate to TBM 10.00m STN1 nailhead , as shown on plan.
This survey did not include locating underground services and equipment.
Tree girths are representative only and reference should be made to the tree schedule if included in the survey brief.
Tree species (where shown) should be treated with caution and expert identification is advised.
Levels are taken on b/s kerb unless otherwise indicated.

LEGEND

AV Air valve	IC Inspection chamber
BB Bellish beacon	IL Invert level
Bdy Boundary	IRF Iron railing fence
BH Borehole	KIG Kerb inlet gully
BL Bed level	LP Lamp post
BO Bollard	MH Manhole
BPV Brick paviers	MP Metal post
BS Bus stop	OBF Open boarded fence
BT British Telecom Cover	GF Gutter
BWF Barbed wire fence	OSBM Ordnance Survey bench mark
CATV Cable television cover	PM Parking meter
CBF Close boarded fence	POHM Post Office manhole
CL Cover level	PS Pub sign
CLF Chain link fence	FWF Post and wire fence
CO Crossover	RG Road gully
CON Concrete	RP Rodding point
Corr Corrugated	RS Road sign
CP Concrete post	RTW Retaining wall
CPF Chestnut paling fence	SP Signpost
CPS Concrete paving slabs	SPS Stone paving slabs
DC Drainage channel	STP Standpipe
ELM Electricity manhole	STN Survey station
EP Electricity pole	SV Sluice valve
ER Earth rod	T Tree
FB Flowerbed	TA Tarmac
FCL Finished ceiling level	TBM Temporary bench mark
FPL Finished floor level	TP Telegraph pole
FH Fire hydrant	TL Traffic light
FHMk Fire hydrant marker	U/s Up side
FS Flagstaff	UTL Unable to lift
G Gully	VP Vent pipe
GR Grass	WL Water level
GRV Gravel	WM Water meter
GV Gas valve	WMF Wire mesh fence
H High	WP Wooden post
H.L. High level	WV Water valve
Bush	Line tree spread
Deciduous tree spread	Road sign
Double gate	Service box
Electricity pylon	Telephone call box
Gate	Trial pit
Letter box	Waste bin

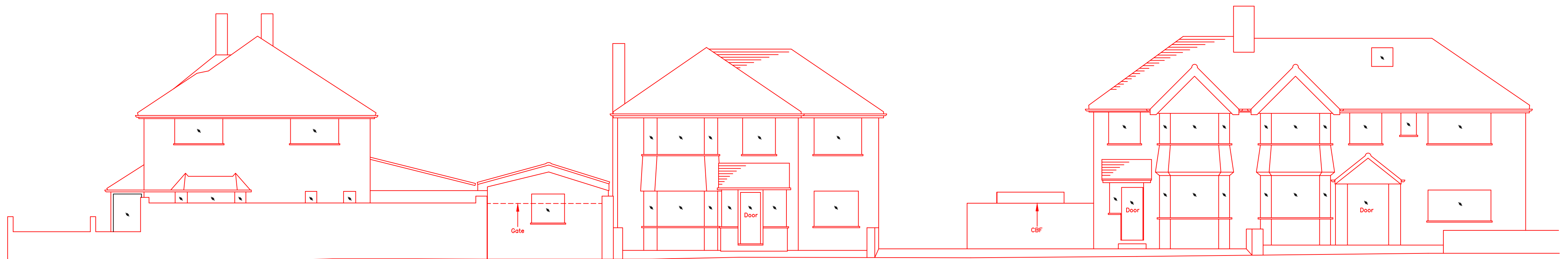
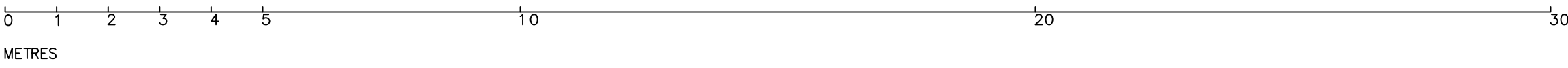


TOPOGRAPHICAL SURVEY

152-154 UXBRIDGE ROAD
HAYES
UB4

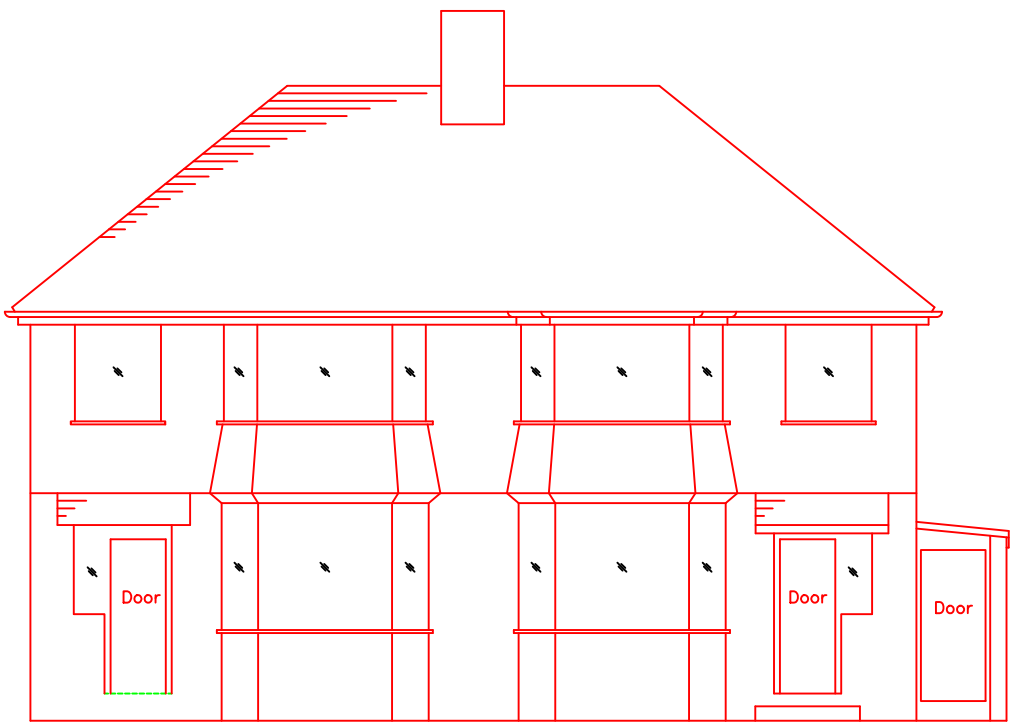
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Scale : refer grid
Date : December 2020
Drawn by : JWHD
Checked by : SC

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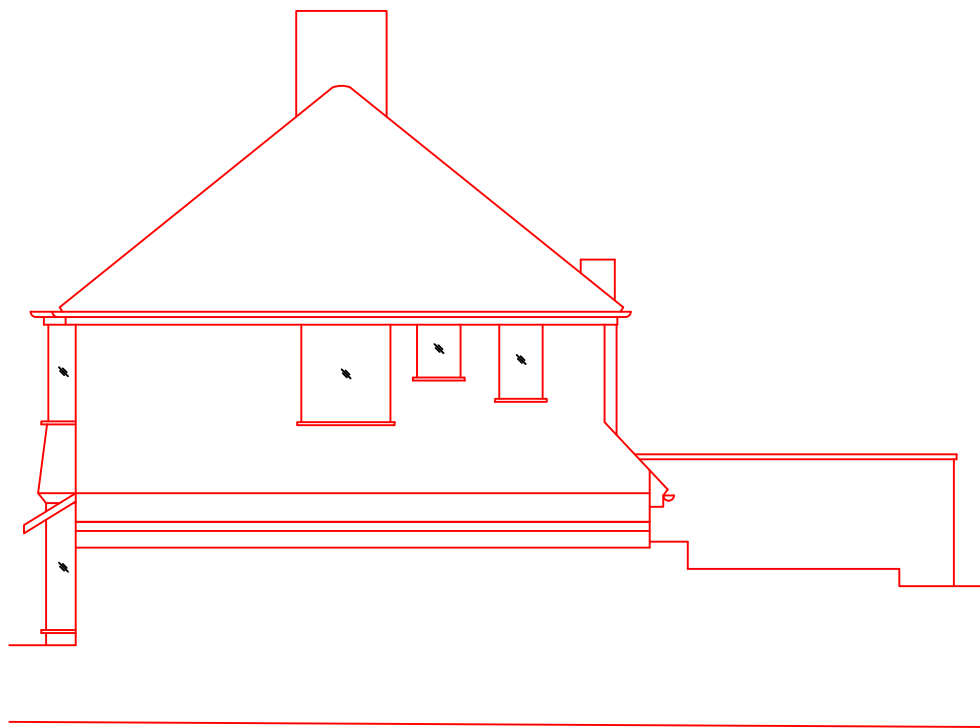
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ELEVATION 1



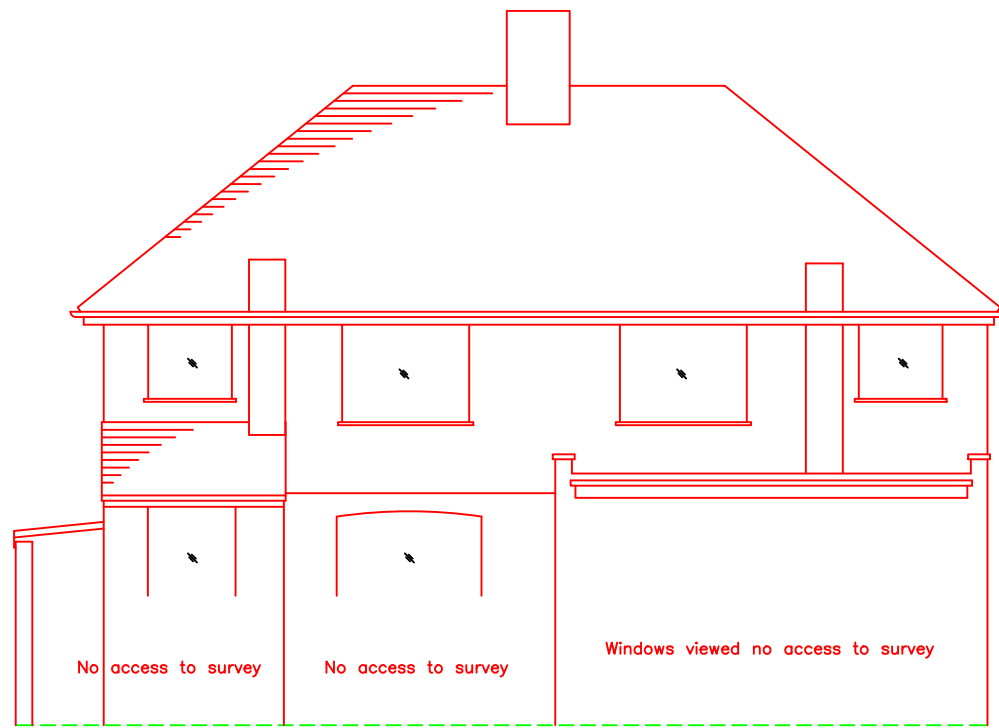
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ELEVATION 2



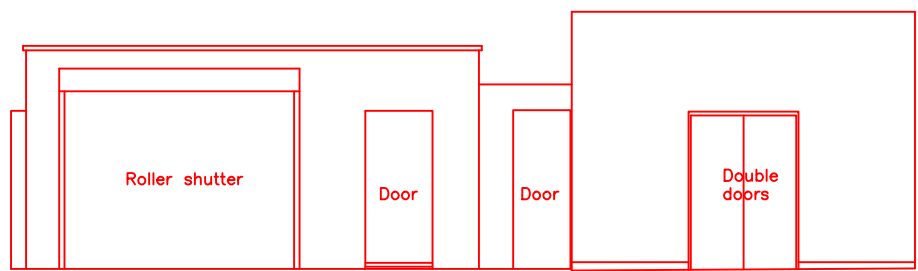
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ELEVATION 3



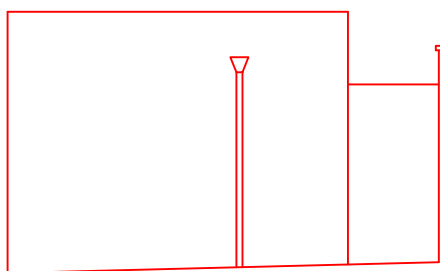
9.00m Datum

ELEVATION 4



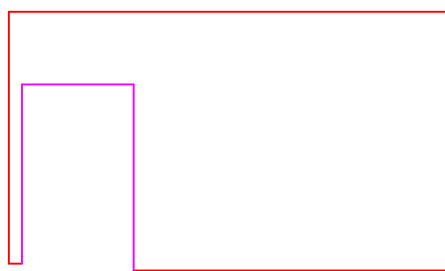
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ELEVATION 5



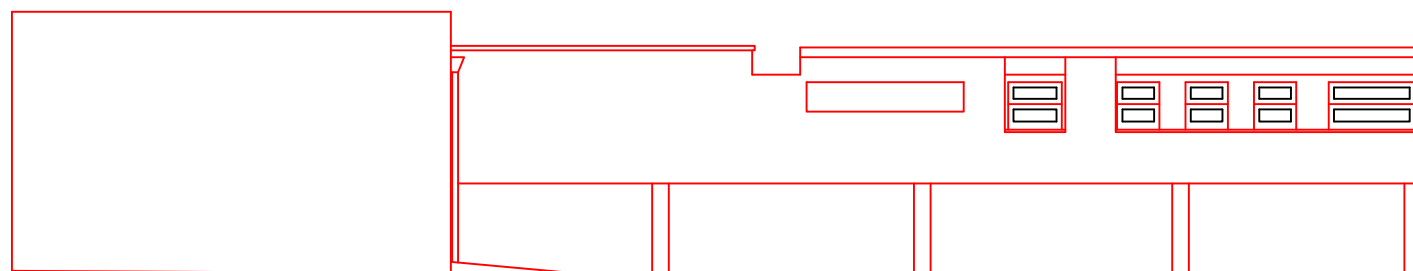
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ELEVATION 6



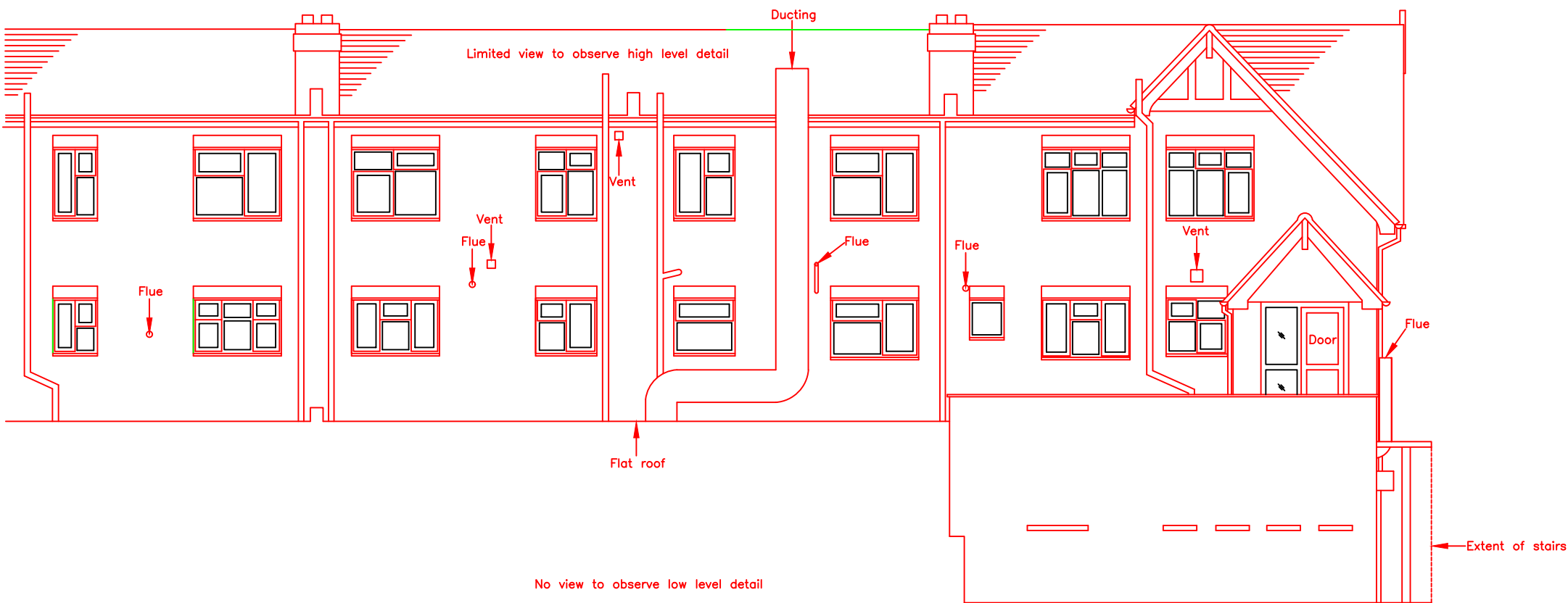
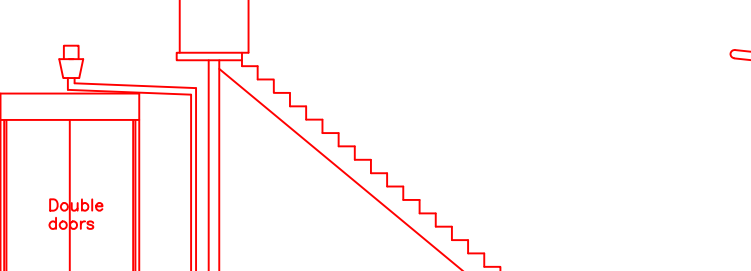
9.00m Datum

ELEVATION 7



9.00m Datum

ELEVATION 8



9.00m Datum

ELEVATION 9



9.00m Datum

ELEVATION 10

NOTES

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Levels relate to TBM 10.00m STN1 nailhead, as shown on drawing 20157LS.

ELEVATIONS

152-154 UXBRIDGE ROAD
HAYES
UB4

Drawing No. : 20157E
Scale : refer scale bar
Date : December 2020
Drawn by : JWH
Checked by : SC

TWICKENHAM SURVEYS
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Site Details:

152-154 UXBRIDGE ROAD,
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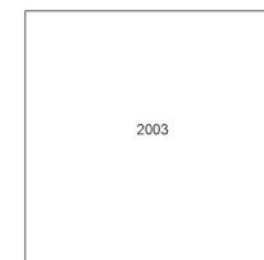
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Report Ref: GS-8359870
Grid Ref: 511414, 180814

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Groundsure Insights
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E: info@groundsure.com
W: www.groundsure.com

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Production date: 25 November 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Appendix B: Proposed Plans

NOTE: Report all errors and omissions to the Architect. All dimensions to be checked on site before fabrication.

Contractors must verify all dimensions on site before setting out, commencing work, or making any shop drawings.

- All dimensions must be checked on site
 - All setting out to be checked on site
 - All levels must be checked on site and their datum confirmed
 - This drawing must be read in conjunction with the relevant specification clauses
 - This drawing must not be used for land transfer purposes

MATERIALS LEGEND

- 1 Facing brickwork - Red (to match existing)
- 2 Glazed Brick - Grey/Blue
- 3 Zinc cladding - Grey
- 4 Aluminium windows - White
- 5 Aluminium windows/ doors - Grey
- 6 Concrete interlocking plain roof tiles - Brown
- 7 Pressed aluminium coping - Grey
- 8 Glazed balustrade with stainless steel handrail
- 9 Metal balustrade - Black
- 10 PVCu gutters & downpipes - Black
- 11 Enamel backed glass - Grey
- 12 Colten Steel Pattern Screens
- 13 Cladding - to match neighbouring dormers



Front Elevation
1 : 100

P5	Updated to Fire Consultants requirements	MAS	22.12.2021	MAS
P4	Planning Submission 01	MAS	22.11.2021	MAS
P3	Pre-App01 Submission	MAS	05.03.2021	MAS
P2	01/Route omitted & WCD En-route added to clients request	MAS	11.02.2021	MAS
P1	Preliminary Issue	MAS	08.02.2021	MAS
Revision	Description	Drawn	Date	Checked

Client's Name
Kumarasamy Sivakumaran
Visvanathan Yoganathan
Ganesh Jeyakumar

Job Title
152-154 Uxbridge Road, Hayes

Drawing Title
Proposed Elevations - Sheet 1

Scale
1 : 100 @A1

Job No **5005** Drawing No **400**

Status **PLANNING SUBMISSION** Rev **P5**

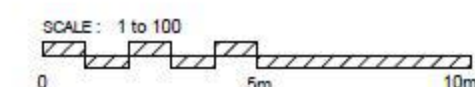


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 M| +44 (0)777 208 3303
 E| mike.ms4architects.co.uk



Side Elevation (Left)
1 : 100



Note: This maybe a reduced sized print, check scales below

NOTE: Report all errors and omissions to the Architect. All dimensions to be checked on site before fabrication.

Contractors must verify all dimensions on site before setting out, commencing work, or making any shop drawings.

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- All setting out to be checked on site
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- This drawing must be read in conjunction with the relevant specification clauses
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- MATERIALS LEGEND
- 1 Facing brickwork - Red (to match existing)
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 - 9 Metal balustrade - Black
 - 10 PVCu gutters & downpipes - Black
 - 11 Enamel backed glass - Grey
 - 12 Coten Steel Pattern Screens
 - 13 Cladding - to match neighbouring domers

Rear Elevation
1 : 100

P5	Updated to Fire Consultants requirements	MAS	20.12.2021	MAS
P4	Planning Submission 01	MAS	22.11.2021	MAS
P3	Pre-App01 Submission	MAS	05.03.2021	MAS
P2	SPRforms omitted & WQ2 En-suite added to clients request	MAS	11.02.2021	MAS
P1	Preliminary Issue	MAS	08.02.2021	MAS
Revision	Description	Drawn	Date	Checked



Side Elevation (Right)
1 : 100

Client's Name
Kumarasamy Sivakumaran
Visvanathan Yoganathan
Ganesh Jeyakumar

Job Title
152-154 Uxbridge Road, Hayes

Drawing Title
Proposed Elevations - Sheet 2

Scale
1 : 100 @A1

Job No
5005

Drawing No
401

Status
PLANNING SUBMISSION

Rev
P5



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SCALE: 1 to 100

0 5m 10m

Note: This maybe a reduced sized print, check scales below