



**aegaea**

Flood risk, water and environment

National Water Standard Statement  
Building Regulations Part G  
Compliance Report

2123\_TW11\_Teddington\_08

UK Experts in Flood Modelling, Flood Risk  
Assessments, and Surface Water Drainage Strategies

**aegaea**

Flood risk, water and environment

[fra@aegaea.com](mailto:fra@aegaea.com)

02081 641 282

[www.aegaea.com](http://www.aegaea.com)

## Introduction

- 1.1. Aegaea were commissioned by the applicant to undertake a National Water Standard Statement, to support the proposed development. This National Water Standard Statement has been prepared in accordance with the requirements set out in the Part G of Building Regulations 2015 edition (with 2016 amendments) and the additional requirements as set out in the London Borough of Richmond upon Thames Sustainable Construction Checklist with reference to Local Plan Policy LP22.
- 1.2. This report is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

## Site Overview

- 1.3. The site of the proposed development is High Wigsell, 35 Twickenham Road, Teddington, TW11 8AH (Figure 1). The site is currently a row of garages.

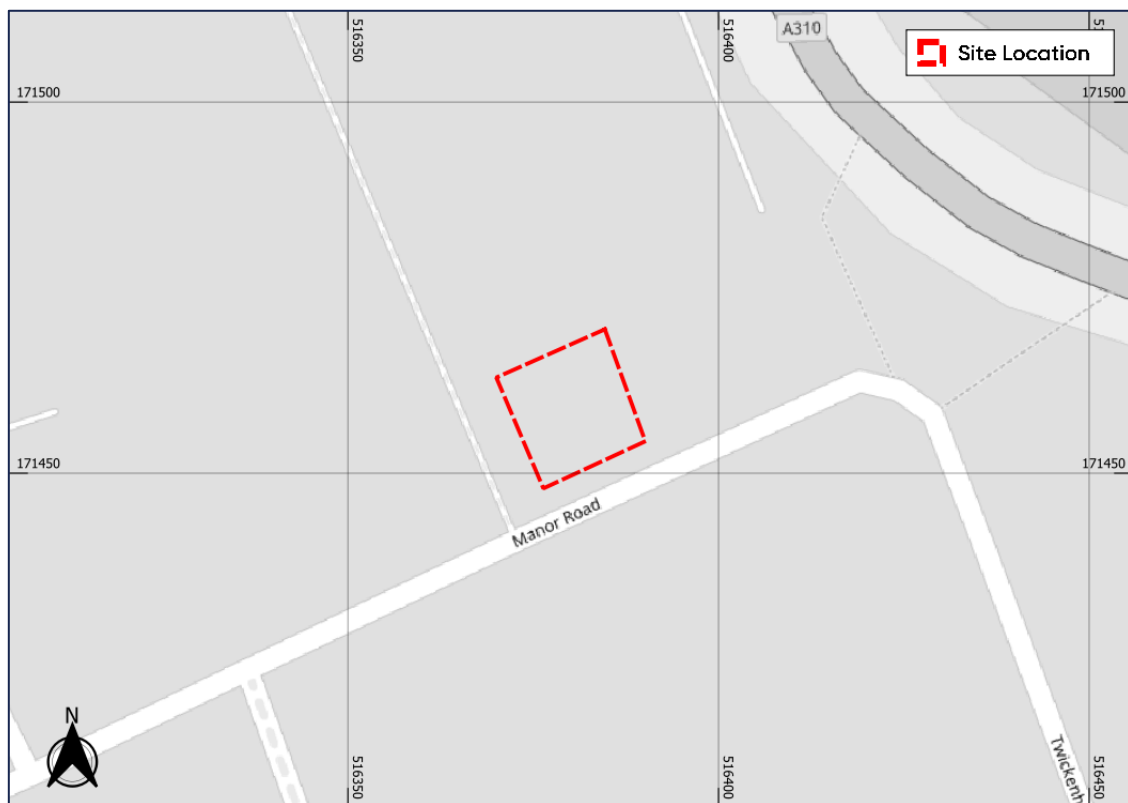


Figure 1: Site Location (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors)

- 1.4. The proposed development is for the demolition of the existing garages and the construction of two houses. See proposed plans in Appendix A.

## Planning Policy and Guidance

- 1.5. In accordance with the Part G of Building Regulations 2015 edition (with 2016 amendments) the document sets out that there is a national requirement for all new dwellings that the estimated consumption of wholesome water of a new dwelling should be no more than 125 litres/person/day or 110 litres/person/day where the optional requirement applies. This includes a fixed factor of water for outdoor use of 5 litres/ person/day.
- 1.6. The London Borough of Richmond, as per local plan policy LP22, promotes maximum water consumption of 110 litres per person per day for homes (including an allowance of 5 litres or less per person per day for external water consumption).

### *Policy LP 22*

*Sustainable Design and Construction A. Developments will be required to achieve the highest standards of sustainable design and construction to mitigate the likely effects of climate change. Applicants will be required to complete the following:*

- 1. Development of 1 dwelling unit or more, or 100sqm or more of non-residential floor space (including extensions) will be required to complete the Sustainable Construction Checklist SPD. A completed Checklist has to be submitted as part of the planning application.*
- 2. Development that results in a new residential dwelling, including conversions, change of use, and extensions that result in a new dwelling unit, will be required to incorporate water conservation measures to achieve maximum water consumption of 110 litres per person per day for homes (including an allowance of 5 litres or less per person per day for external water consumption).***
- 3. New non-residential buildings over 100sqm will be required to meet BREEAM 'Excellent' standard.*
- 4. Proposals for change of use to residential will be required to meet BREEAM Domestic Refurbishment 'Excellent' standard (where feasible). The site is located within Flood Zone 1. However, we understand that the LPA have identified the site to be in an area at risk of groundwater flooding.*

## Building Regulation Part G – Appendix A - Water Efficiency Calculation (WEC)

- 1.7. Water Efficiency Calculation (WEC) undertaken in accordance with Building Regulations Part G – Appendix A, see attached Table 2, based on the fitting consumption rates in Table 1 below shows that the wholesome water consumption by persons occupying each of the new dwellings to be 106.31 litres per person per day.
- 1.8. For reference the fitting consumption rates stated in Table 1 are in line with Clause 2.1/Table 2.1 of Building Regulations Part G2. The rates will be achieved using water efficient fittings and flow limiters.

Table 1 - Fittings for House 01 and House 02 (in brackets)

Fittings	Number of Fittings	Consumption Rates
WC (Dual Flush)	3(2)	4 / 2.6l
Taps (excluding kitchen/ utility room taps)	6(4)	5l/min
Bath	1(1)	170l
Shower	2(1)	8l/min
Kitchen/Utility Room Taps	2(2)	6l/min
Washing Machine	1(1)	8.17l/kg
Dishwasher	1(1)	1.25l/place Setting

### Supporting Comments for Table 1

- 1) Where there are multiple fittings i.e., taps, the consumption rates are multiplied by the number of fittings and this value is divided by the number of fittings to give the average fitting consumption rate. As it is assumed the fitting consumption rates are the same for each unit the average fitting consumption rate corresponds to the to the fitting consumption rate.
- 2) Bathroom taps are excluded as already taken into account in use factor for baths.
- 3) Washing machine - the consumption rate (l/kg) stated above is derived by dividing the stated water usage (according to the energy label I) by the load(kg).
- 5) Dishwasher - the consumption rate (l/place setting) stated above is derived by dividing the stated water usage (according to the energy label I) by the place settings.

**Table 2 -Water Efficiency Calculator (WEC)- Proposed New Dwellings - 35 Twickenham Road, TW11 8AH**

		(1)	(2)	(3)	(4)
Installation Type	Unit of Measure	Capacity/flow rate	Use Factor	Fixed use (litres/person/day)	Litres/person/day= [(1)x(2) +(3)]
WC (single flush)	Flush volume (litres)	0	4.42	0	0.00
WC (dual flush)	Full flush volume (litres)	4	1.46	0	5.84
	Part flush volume (litres)	2.6	2.96	0	7.70
WC (multiple fittings)	Average effective flushing volume (litres)	0	4.42	0	0.00
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	5	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow (litres)	170	0.11	0	18.70
Shower (where bath also present)	Flow rate (litres/minute)	8	4.37	0	34.96
Bath only	Capacity to overflow (litres)	0	0.5	0	0.00
Shower only	Flow rate (litres/minute)	0	5.6	0	0.00
Kitchen/utility room taps	Flow rate (litres/minute)	6	0.44	10.36	13.00
Washing Machine	Litres/kg dry load	8.17	2.1	0	17.16
Dishwasher	Litres/place setting	1.25	3.6	0	4.50
Waste disposal unit	Litres/use (If present = 1. If absent = 0)	0	3.08	0	0.00
Water softener	Litres/person/day	0	1	0	0.00
	(5) Total calculated use (litres/person/day) = (Sum column 4)				111.33
	(6) Contribution from greywater (litres /person/day) from Table 4.6				0.00
	(7) Contribution from rainwater (litres /person/day) from Table 5.5				0.00
	(8) Normalisation factor				0.91
	(9) Total water consumption (litres/person/day) = [(5)-(6)-(7)]x8				101.31
	(10) External water use (litres/person/day)				5.00
	(11) Total water consumption= (9) +(10) (litres/person/day)				106.31



## Summary

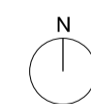
- 1.9. The WEC calculated in accordance with Building Requirement Part G – Appendix A shows that the each of the proposed new dwellings achieve a wholesome water consumption of 105.69 litres/per person/per day including the 5 litres per person per day for external use. This is less than the maximum water consumption 110 litres per person per day and thus satisfies the requirements set out by the Richmond Borough upon Thames Sustainable Checklist and Local Plan 22 – Part A -Criterion 2.
- 1.10. At this stage the fitting consumption rates are assumed. The client/builder must ensure that the selected fittings installed do not exceed the consumption rates stated in Table 1 otherwise re-calculation will be required to confirm compliance with the requirement for maximum consumption of 110 litres per person per day.

# Appendix A

General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
All services to be Contractor's design.  
All works to be in accordance with current Building Regulation requirements and current construction legislation.  
It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

## FLOWER MICHELIN

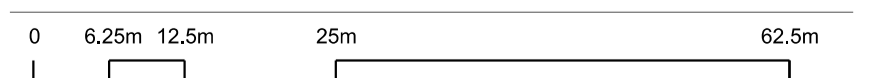
+44(0)20 7751 0444  
studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Existing Location Plan  
**Number** 287\_33\_00

**Status** Planning **Scale** 1:1250 A3/1:625 A1

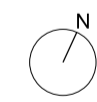
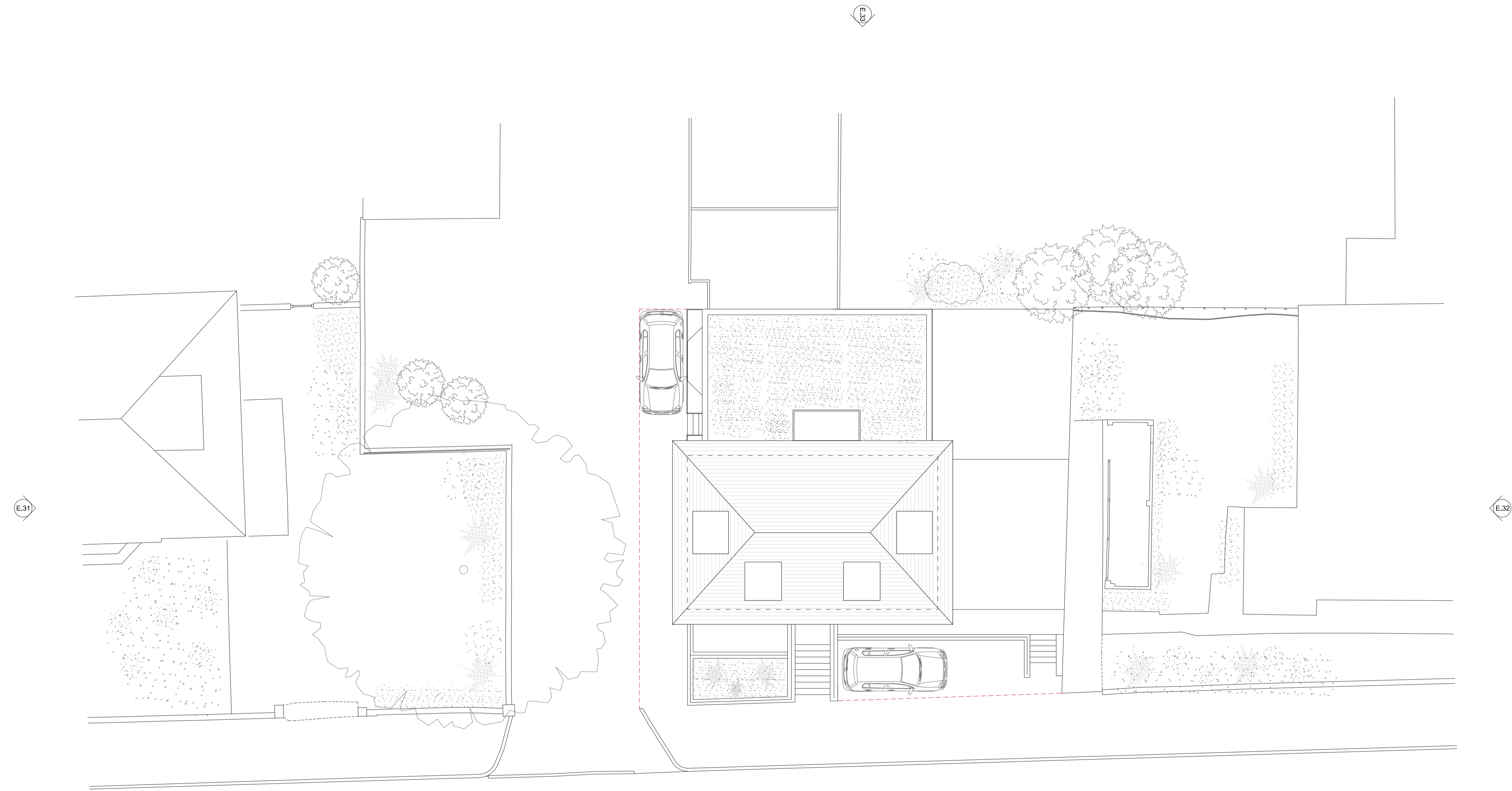




General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
All services to be Contractor's design.  
All works to be in accordance with current Building Regulation requirements and current construction legislation.  
It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
Copyright © Flower Michelin Architects LLP 2021



--- Neighbouring Site Boundary

Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

## FLOWER MICHELIN

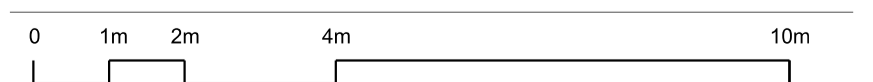
+44(0)20 7751 0444  
studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
flowermichelin.com

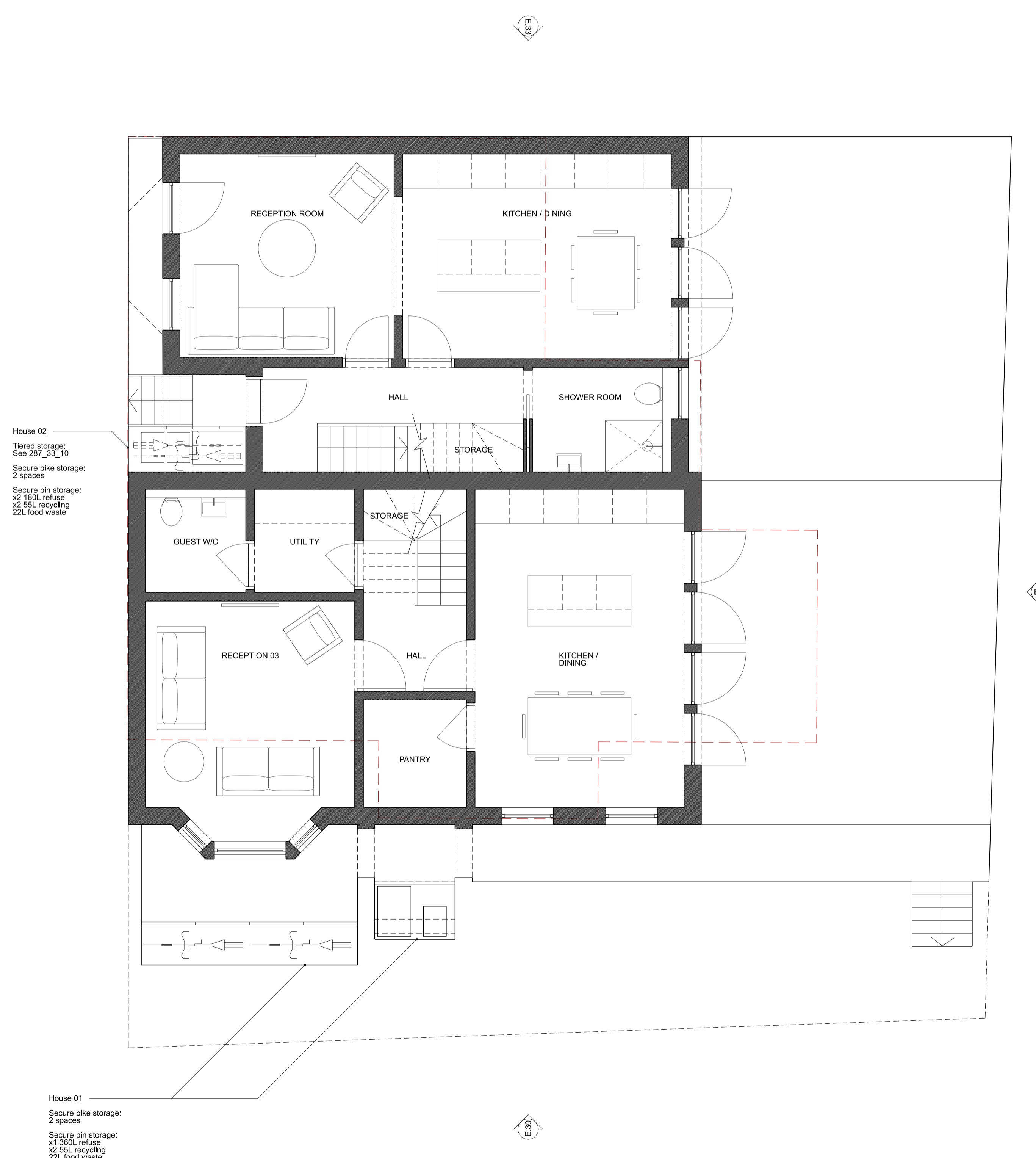


**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Site Plan  
**Number** 287\_33\_01

**Status** Planning **Scale** 1:200 A3/1:100 A1

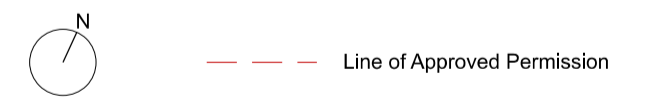


General Notes  
 Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.  
 For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



House 02  
 Tiered storage:  
 See 287\_33\_10  
 Secure bike storage:  
 2 spaces  
 Secure bin storage:  
 x2 180L refuse  
 x2 55L recycling  
 22L food waste

House 01  
 Secure bike storage:  
 2 spaces  
 Secure bin storage:  
 x1 350L refuse  
 x2 55L recycling  
 22L food waste



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

# FLOWER MICHELIN

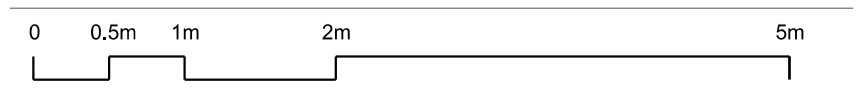
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Lower Ground Floor Plan  
**Number** 287\_33\_09

**Status** Planning **Scale** 1:100 A3/1:50 A1





General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
All services to be Contractor's design.  
All works to be in accordance with current Building Regulation requirements and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.

It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
I	28.09.22	Client Issue
A	14.10.22	Planning Issue

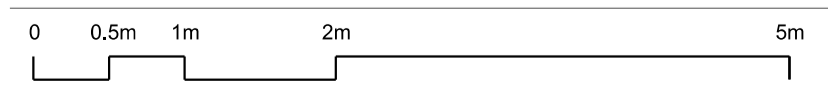
# FLOWER MICHELIN

+44(0)20 7751 0444  
studio@flowermichelin.com  
Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Ground Floor Plan  
**Number** 287\_33\_10

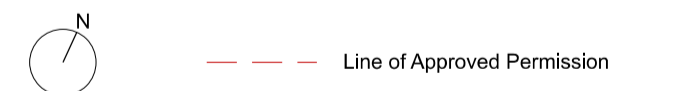
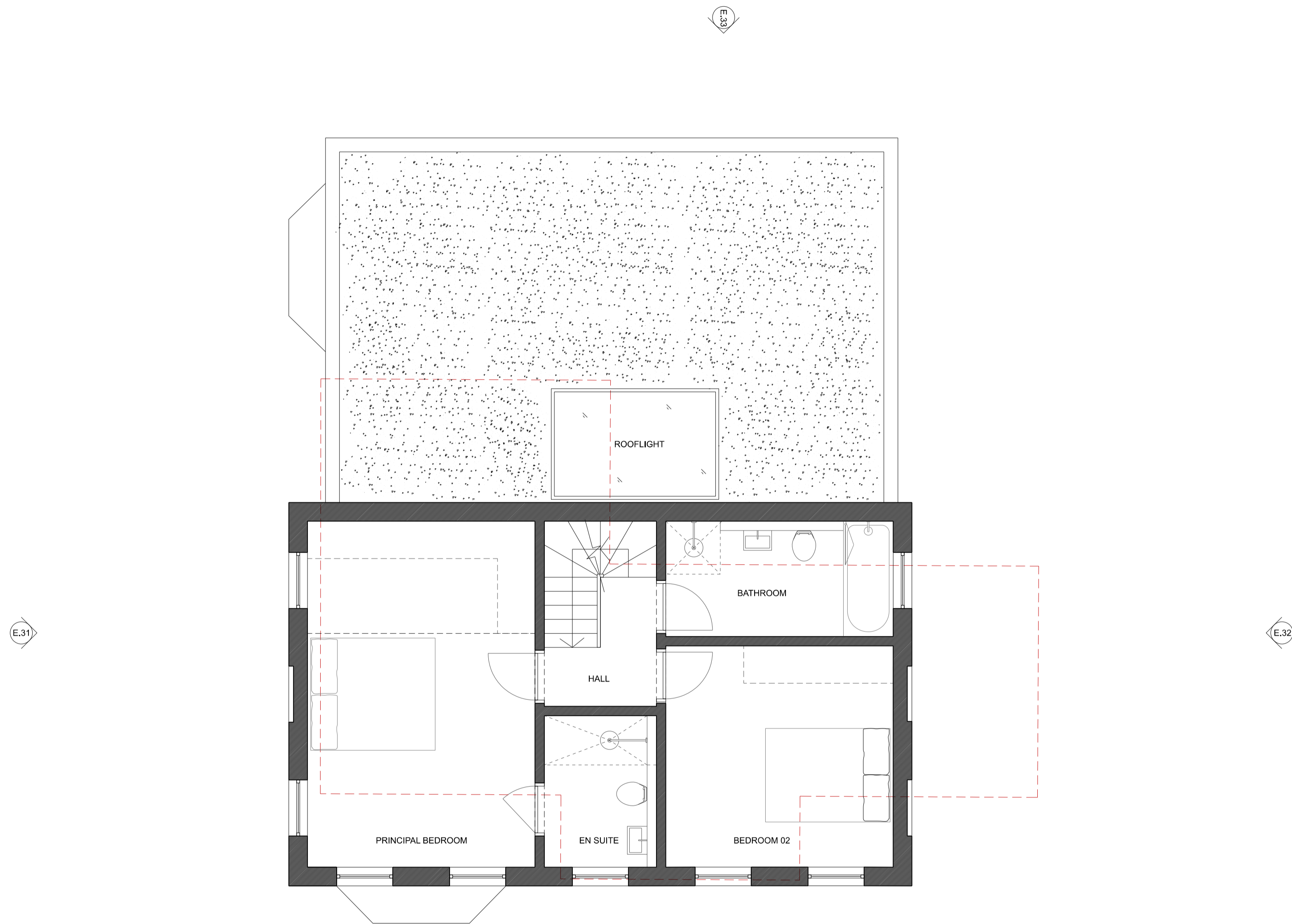
**Status** Planning **Scale** 1:100 A3/1:50 A1



General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

FLOWER MICHELIN

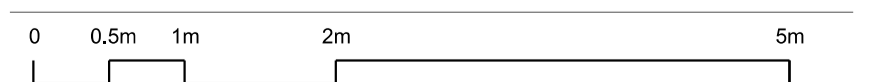
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com

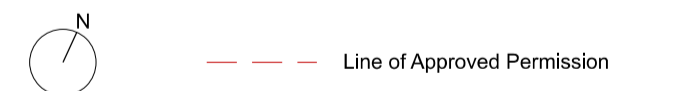
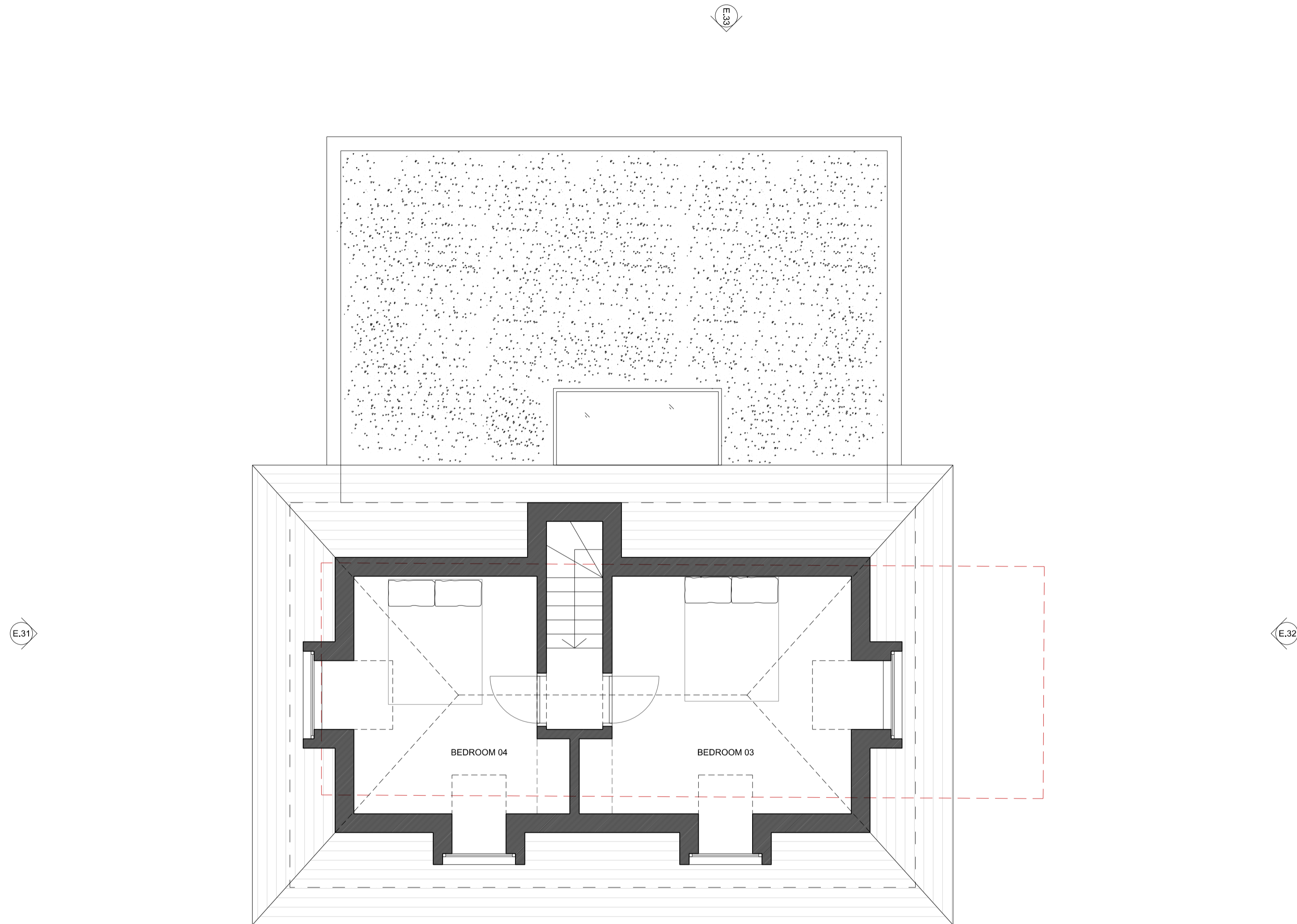


**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed First Floor Plan  
**Number** 287\_33\_11

**Status** Planning **Scale** 1:100 A3/1:50 A1



General Notes  
 Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.  
 For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements and current construction legislation.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
I	28.09.22	Client Issue
A	14.10.22	Planning Issue

## FLOWER MICHELIN

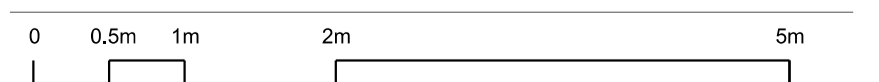
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Second Floor Plan  
**Number** 287\_33\_12

**Status** Planning **Scale** 1:100 A3/1:50 A1

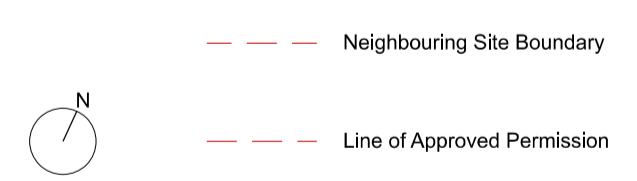
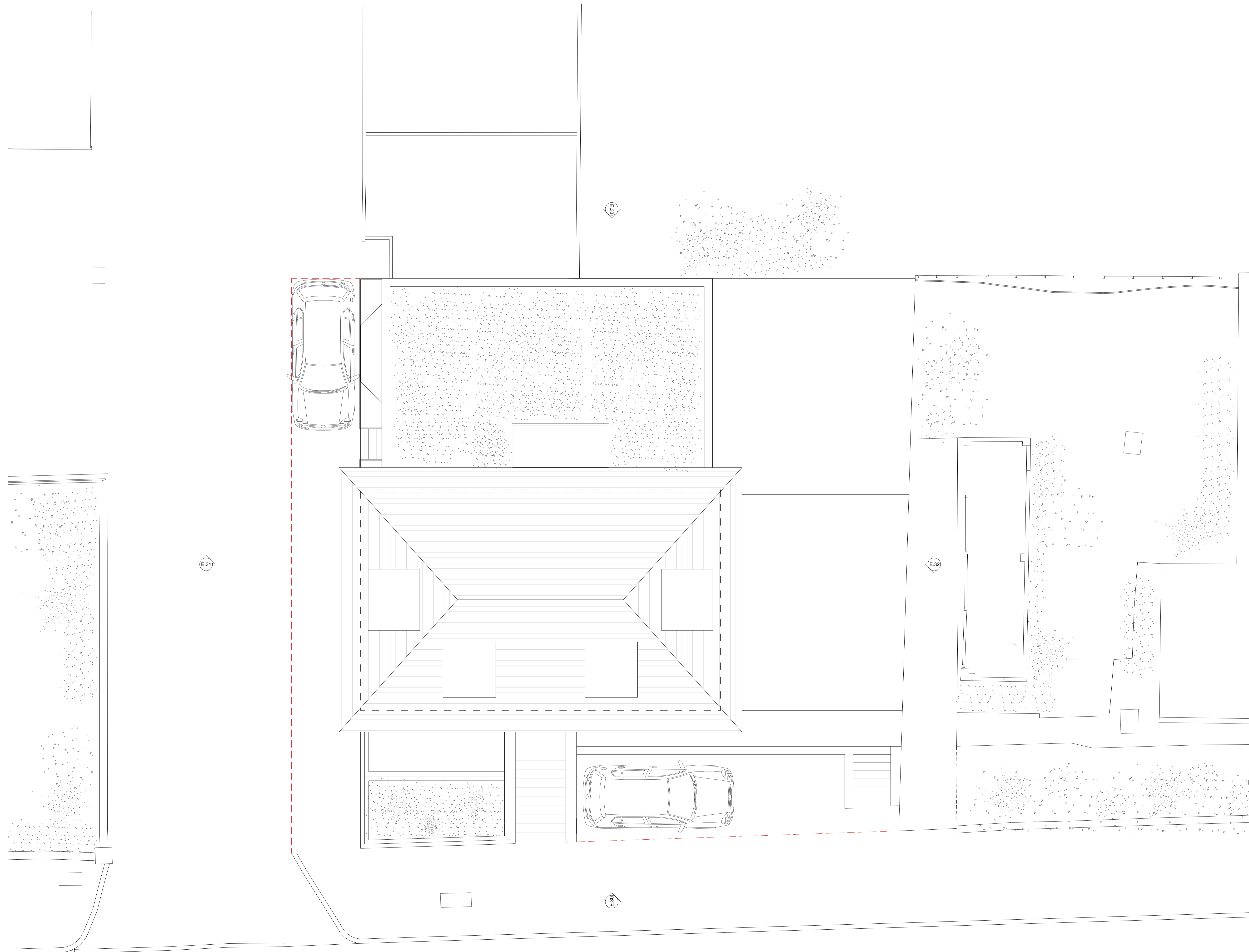




General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
All services to be Contractor's design.  
All works to be in accordance with current Building Regulation requirements and current construction legislation.  
It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
I	28.09.22	Client Issue
A	14.10.22	Planning Issue

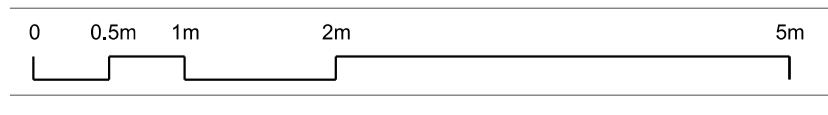
## FLOWER MICHELIN

+44(0)20 7751 0444  
studio@flowermichelin.com  
Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Roof Plan  
**Number** 287\_33\_13

**Status** Planning **Scale** 1:100 A3/1:50 A1





General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



--- Line of Approved Permission

Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

FLOWER MICHELIN

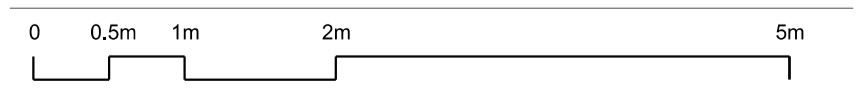
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Front Elevation  
**Number** 287\_33\_30

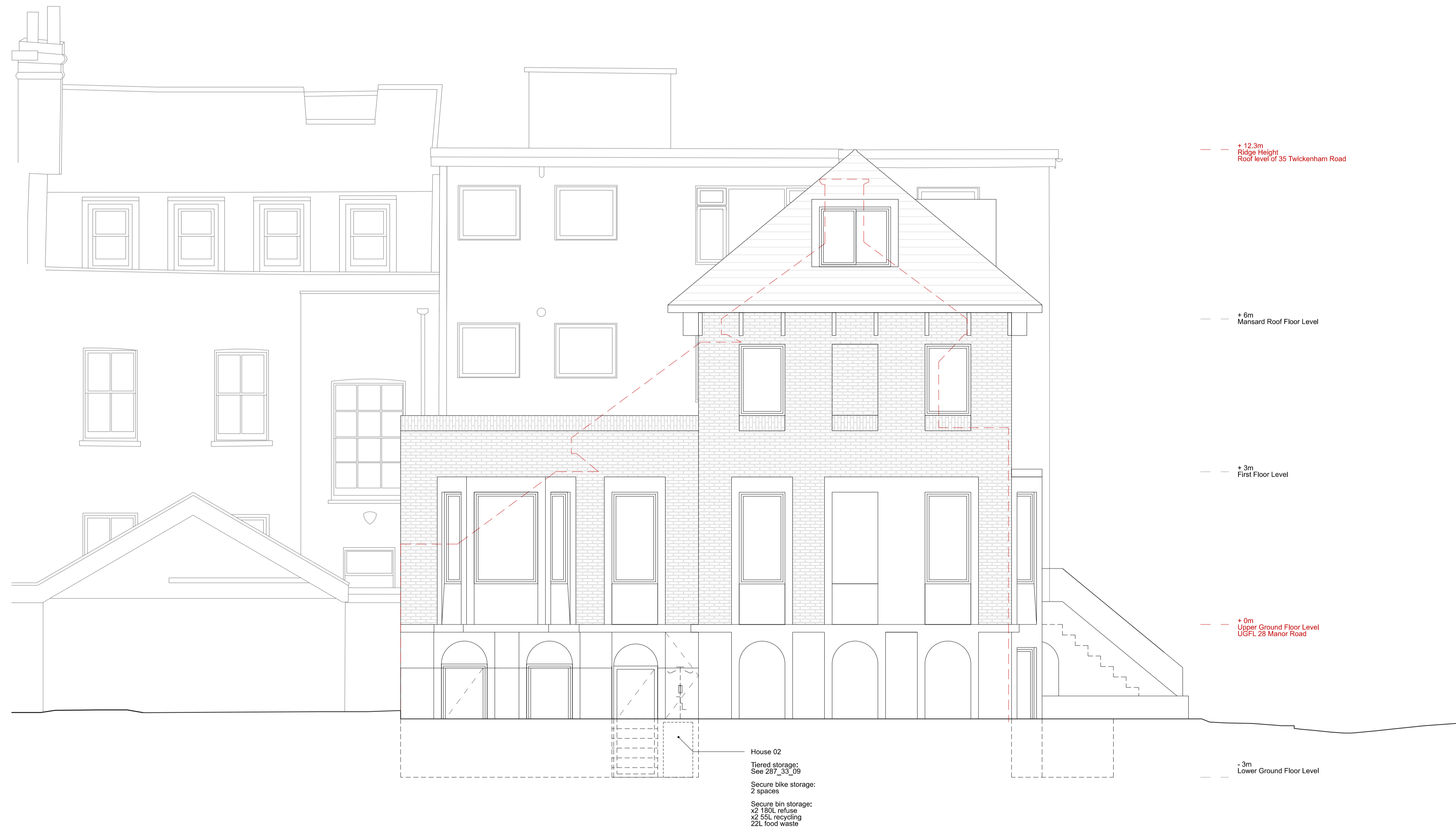
**Status** Planning **Scale** 1:100 A3/1:50 A1



General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements an current construction legislation.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

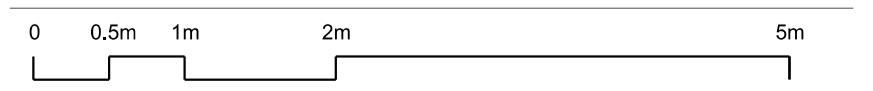
FLOWER MICHELIN

+44(0)20 7751 0444  
 studio@flowermichelin.com  
 Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Side Elevation  
**Number** 287\_33\_31

**Status** Planning **Scale** 1:100 A3/1:50 A1



General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements an current construction legislation.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

FLOWER MICHELIN

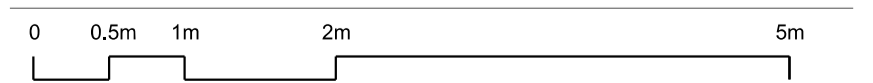
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Side Elevation  
**Number** 287\_33\_32

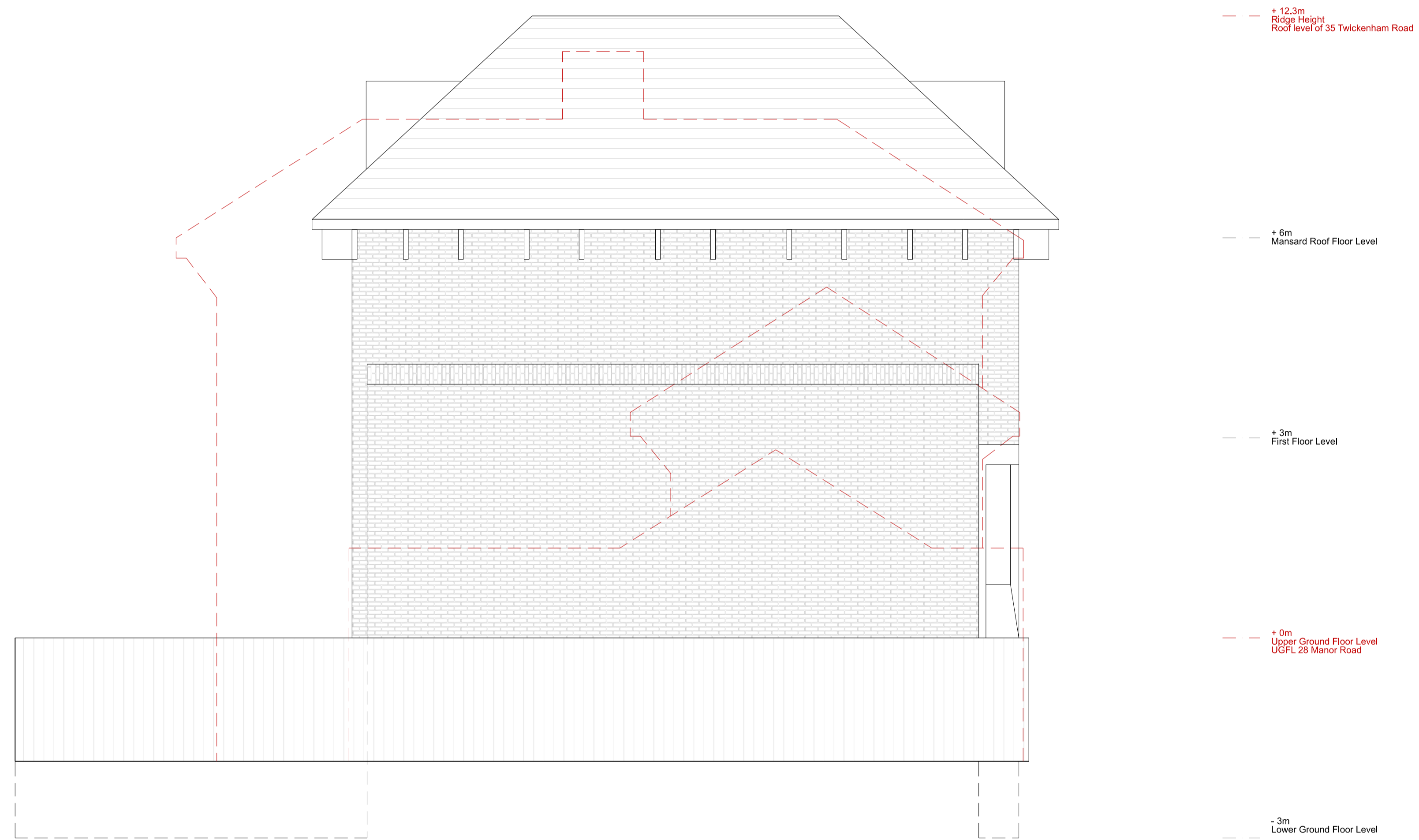
**Status** Planning **Scale** 1:100 A3/1:50 A1



General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
 All services to be Contractor's design.  
 All works to be in accordance with current Building Regulation requirements and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
 Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
 Copyright © Flower Michelin Architects LLP 2021



--- Line of Approved Permission

Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

FLOWER MICHELIN

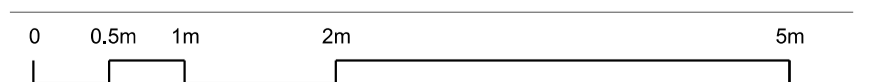
+44(0)20 7751 0444  
 studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
 flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH  
**Title** Proposed Rear Elevation  
**Number** 287\_33\_33

**Status** Planning **Scale** 1:100 A3/1:50 A1





General Notes

Do not scale from this drawing. Drawings are for the purpose of the stage stated at the base of the drawing and therefore not for construction unless specifically stated. All dimensions to be verified on site prior to construction.

For information only unless indicated in status.  
All services to be Contractor's design.  
All works to be in accordance with current Building Regulation requirements and current construction legislation.  
It is the contractor's responsibility to cross-reference all design documents and notify the architect of any inadequacy, discrepancy or divergence in or between the full drawing package/design information.  
Drawings to be read in conjunction with full drawing package issued by Architect and other consultants information.  
Copyright © Flower Michelin Architects LLP 2021



Revision	Date	Description
/	28.09.22	Client Issue
A	14.10.22	Planning Issue

## FLOWER MICHELIN

+44(0)20 7751 0444  
studio@flowermichelin.com

Unit 7-8, 27 Ackmar Road, London, SW6 4UR  
flowermichelin.com



**Project** 35 Twickenham Road, TW11 8AH

**Title** Proposed Street Elevation

**Number** 287\_33\_34

**Status** Planning

**Scale** 1:200 A3/1:100 A1

