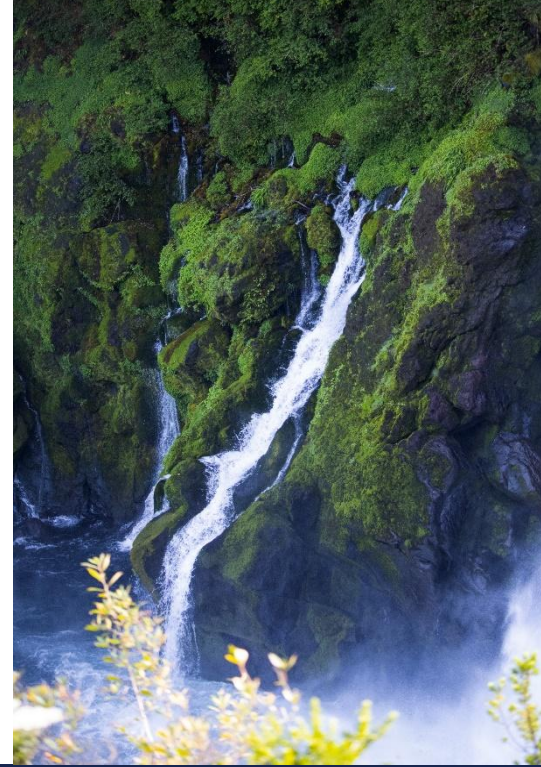




Flood Risk Assessment AEG6585_RH16_HaywardsHeath_01

Site Address: 17 Blackthorns
Haywards Heath
Mid Sussex
West Sussex
RH16 2AX

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



Document Issue Record

Project: Flood Risk Assessment

Prepared for: Matt Daly

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Site Location: 17 Blackthorns, Haywards Heath, Mid Sussex, West Sussex, RH16 2AX

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Summary

Development Description	Existing	Proposed
Development Type	A residential dwelling	The construction of extensions to the existing dwelling.
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Floor Level	The EA 1m LiDAR data shows the ground level elevation of the whole site varies between approximately 37.29m AOD and 38.08m AOD. The ground level elevations of the existing dwelling varies between approximately 37.60m AOD and 37.73m AOD whilst the proposed extensions vary between approximately 37.59m AOD and 37.72m AOD.	No change
Level of Sleeping Accommodation	First floor	No change
Surface Water Drainage	N/A ¹	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as rainwater planters and water butts could be used to provide betterment.
Site Size	Approximately 710m ²	No change
Development Size	N/A	Approximately 50m ²
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 1	Low Risk
Flood Source	Pluvial	Proposed development is considered to be at a moderate risk based on NAFR2 dataset.
SFRA Available	Strategic Flood Risk Assessment Level 1 (Mid Sussex District Council, 2015)	

Management Measures	Summary	Comment
Ground floor level above extreme flood levels	No	Finished Floor Levels (FFLs) to be set no lower than the existing dwelling FFLs.
Safe Access/Egress Route	N/A	Safe access/egress arrangements remain as per existing as proposal is the construction of extensions to the existing dwelling.
Flood Resilient Design	Recommended	See Section 5.
Site Drainage Plan	N/A	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as rainwater planters and water butts could be used to provide betterment.
Flood Warning and Evacuation Plan	N/A	Recommended that occupier monitor Met Office Weather Warnings for extreme weather events.
Offsite Impacts	Summary	Comment
Displacement of floodwater	Negligible	Development is classified as a Minor Development in terms of flood risk and therefore in isolation should not result in an increase in flood risk elsewhere in accordance with Paragraph 051 of the NPPG.
Increase in surface run-off generation	Negligible	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as rainwater planters and water butts could be used to provide betterment.
Impact on hydraulic performance of channels	Negligible	The nearest EA Main River is the Scrase Stream which borders the northwest of the site. However, the proposed development is set

		approximately 35m from the Scrase Stream.
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¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Matt Daly to undertake a Flood Risk Assessment (FRA) to facilitate a planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA 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 17 Blackthorns, Haywards Heath, Mid Sussex, West Sussex, RH16 2AX (Figure 1). The site consists of an existing residential dwelling which is situated within the south-eastern half of the site.

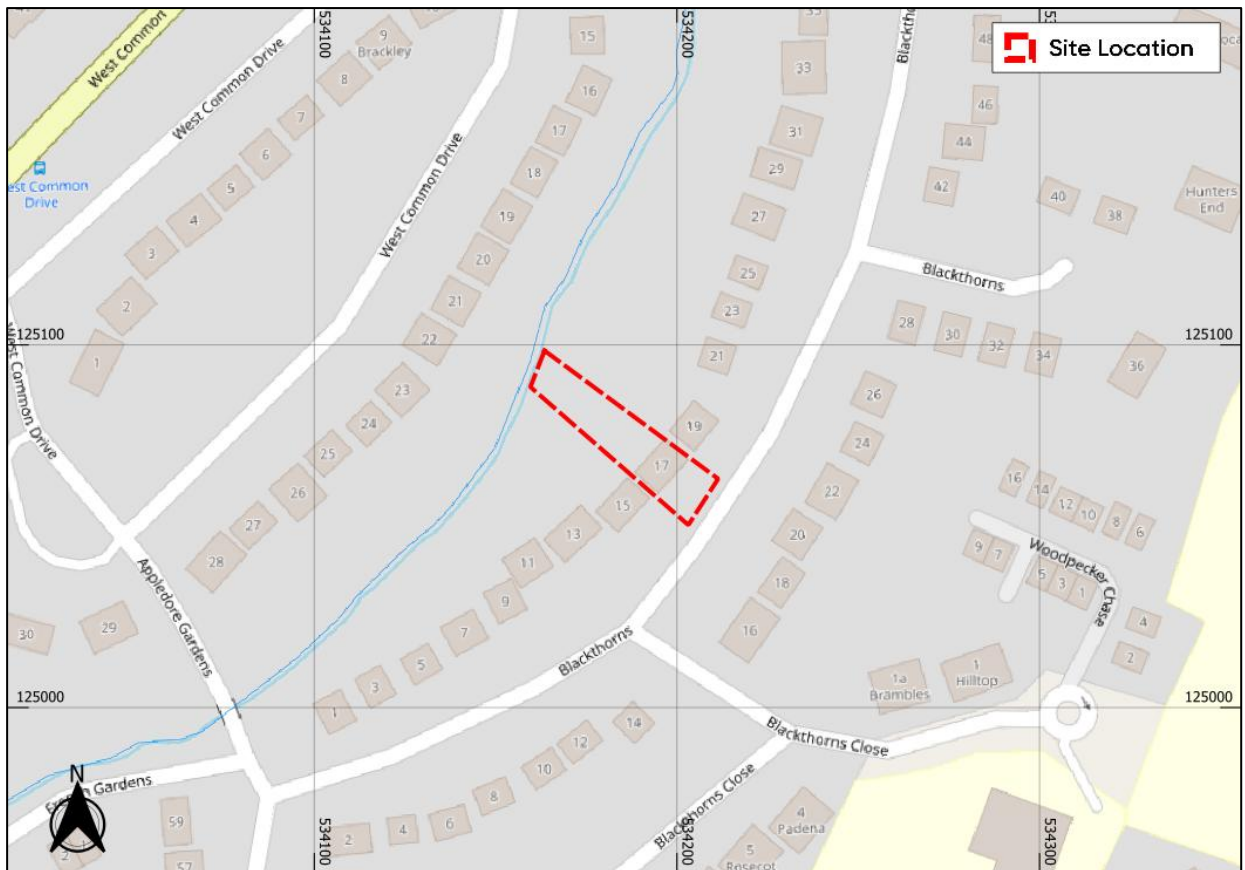


Figure 1: Site Location (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.4. The proposed development includes the construction of a part single and two storey rear extension with internal alterations to allow for a greater habitable space including an open plan kitchen diner and snug on the ground floor. The internal alterations also include the partial conversion of the existing garage to create a utility and W/C. The second-floor extension includes the addition of a master bedroom and en-suite.
- 1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model (DTM) has been used to review the topography of the site. The LiDAR data shows the ground elevation of the site varies between approximately 37.29m AOD (metres Above Ordnance Datum) and 38.08m AOD, with a gentle downwards slope travelling in the north-west direction (Figure 2). The existing residential dwelling is situated between approximately 37.60m AOD and 37.72m AOD. The proposed extensions are situated between approximately 37.59m AOD and 37.72m AOD.
- 1.6. The lowest parts of the site are associated with the Scrase Stream, which flows from the north to south past the west boundary of the site. The site boundary may include the banks of the watercourse, therefore may not be fully reflective of the site's topography.

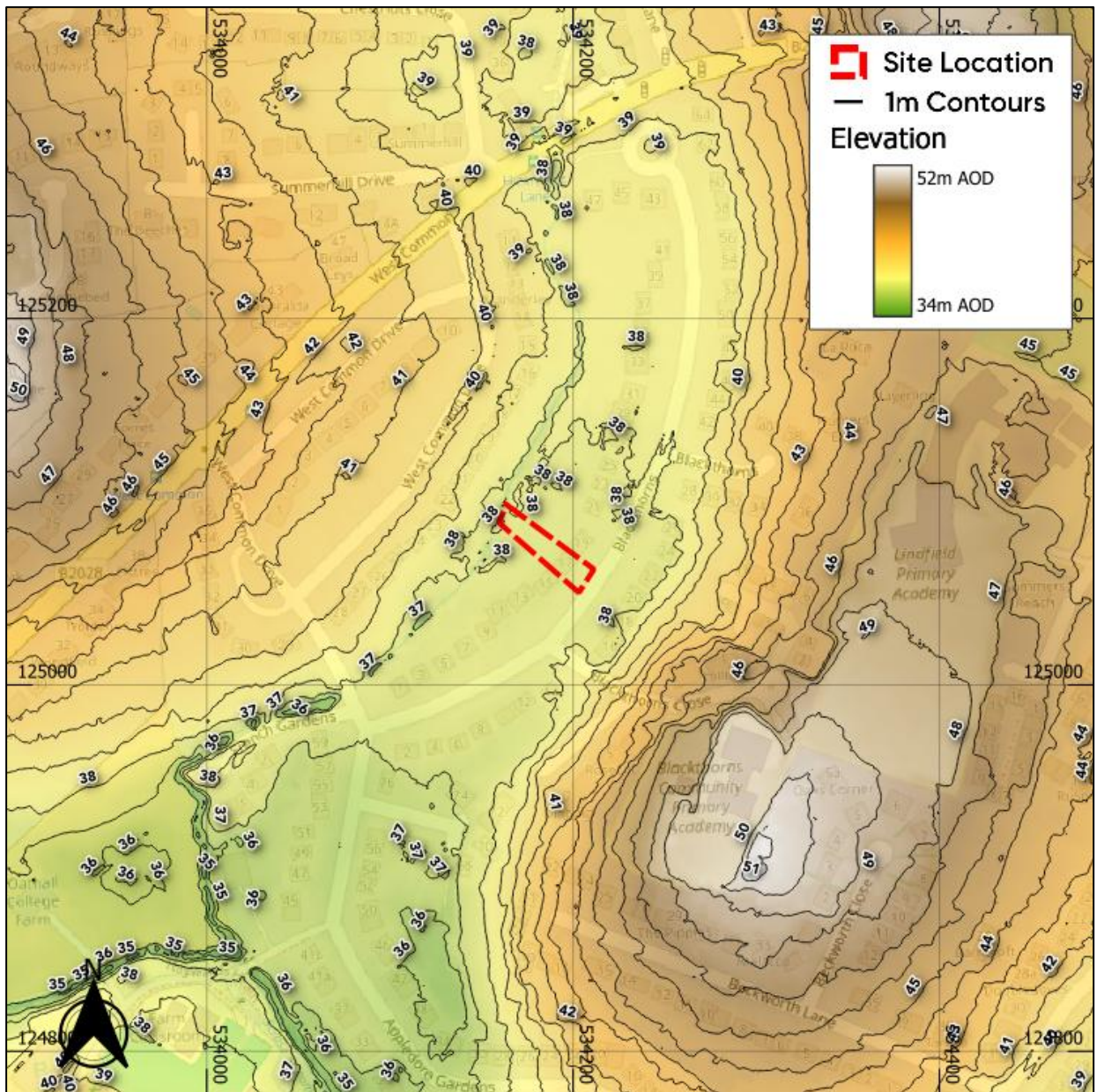


Figure 2: Site Topography (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.7. Mid Sussex District Council ([MSDC](#)) is the Local Planning Authority (LPA) for the site and West Sussex County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Solent and South Downs region.

Planning Policy and Guidance

1.8. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.9. The site has been shown to be located in an area at risk from pluvial flooding. It is understood that MSDC have requested an FRA to accompany the application in accordance with the NPPF.

1.10. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial/tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

¹<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

2. Planning Policy

- 2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework² (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

170. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

²<https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

- d) any residual risk can be safely managed; and
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

176. Applications for some **minor development** and changes of use should also not be subject to the sequential test, nor the exception test [set out below], but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.

2.3. Footnote 63 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor development means:

- minor non-residential extensions (industrial/commercial/leisure etc): extensions with a floorspace not in excess of 250 square metres.
- alterations: development that does not increase the size of buildings, e.g. alterations to external appearance.
- householder development: for example, sheds, garages, games rooms etc within the curtilage of the existing dwelling, **in addition to physical extensions to the existing dwelling itself**. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling (e.g. subdivision of houses into flats) or any other development with a purpose not incidental to the enjoyment of the dwelling.

2.5. As such, the proposal would be considered a Minor Development under the PPG.

2.6. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

- 2.7. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 2.8. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

Local Plan

- 2.9. The Local Plan prepared by the Local Planning Authority, Mid Sussex District Council, sets out the policies for development in the local area.
- 2.10. Policy DP41 Flood Risk and Drainage outlines the requirements for new development within the area. It states:

Strategic Objectives:

- 1. To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; and*
- 2. To support sustainable communities which are safe, healthy and inclusive.*

Evidence Base:

- 1. Gatwick Sub Region Water Cycle Study; Strategic Flood Risk Assessment; Water. People. Places SuDS guidance.*

Proposals for development will need to follow a sequential risk-based approach, ensure development is safe across its lifetime and not increase the risk of flooding elsewhere. The District Council's Strategic Flood Risk Assessment (SFRA) should be used to identify areas at present and future flood risk from a range of sources including fluvial (rivers and streams), surface water (pluvial), groundwater, infrastructure and reservoirs.

Particular attention will be paid to those areas of the District that have experienced flooding in the past and proposals for development should seek to reduce the risk of flooding by achieving a reduction from existing run-off rates.

Sequential and Exception Tests

- 2.11. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

- 2.12. The proposed development is viewed as minor development in accordance with the EA standing advice. In accordance with NPPF paragraph 176, minor developments should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments.

Summary

- 2.13. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Consultation and Review

Documents and Online Mapping

- 3.1. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.2. The following sources of information have been reviewed for this assessment:
- Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2024)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Department for Levelling Up, Housing and Communities, 2022)
 - Geoindex Onshore (British Geological Survey, 2023)
 - Mid Sussex District Plan 2014-2031³ (Mid Sussex District Council, 2018)
 - Preliminary Flood Risk Assessment Addendum⁴ (West Sussex County Council, 2017) and West Sussex Preliminary Flood Risk Assessment⁵ (West Sussex County Council, 2011)
 - Strategic Flood Risk Assessment Level 1⁶ (Mid Sussex District Council, 2015)

³ <https://www.midsussex.gov.uk/media/3406/mid-sussex-district-plan.pdf>

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/698548/PFRA_West_Sussex_County_Council_2017.pdf

⁵ https://www.westsussex.gov.uk/media/1626/west_sussex_pfra.pdf

⁶ <https://www.midsussex.gov.uk/media/2609/strategic-flood-risk-assessment.pdf>

- West Sussex Local Flood Risk Management Strategy (2013-2018)⁷ (West Sussex County Council, 2014)

Preliminary Flood Risk Assessment (PFRA)

- 3.3. The PFRA, published in 2011 and 2017, is a high-level appraisal of flood risk across Lead Local Flood Authority West Sussex County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.4. The PFRA summarises historical flood incidents in West Sussex County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.5. The SFRA, published in 2015, provides the evidence base for the Local Planning Authority Mid Sussex District Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.6. The SFRA mapping provided by Mid Sussex District Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

- 3.7. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.
- 3.8. The West Sussex County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

⁷ <https://www.westsussex.gov.uk/fire-emergencies-and-crime/dealing-with-extreme-weather/flooding/flood-risk-management/local-flood-risk-management-strategy/>

4. Sources of Flood Risk

Fluvial

- 4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.

Main Rivers and Ordinary Watercourses

- 4.2. The nearest EA Main River is the Scrase Stream which borders the northwest of the site. The Scrase Stream is open channel as it flows past the site in the southwest direction but is culverted to flow under Appledore Gardens, approximately 120m downstream from the site.
- 4.3. There are no other watercourses in the vicinity of the site.

EA Flood Map for Planning

- 4.4. Based on the EA Flood Map for Planning, the site is located wholly within Flood Zone 1 (Figure 3). Flood Zone 1 is classified as the lowest risk, indicating a less than 0.1% annual probability of flooding. The closest Flood Zone is Flood Zone 3, which borders the north west of the site. However, this is confined within the Scrase Stream channel.

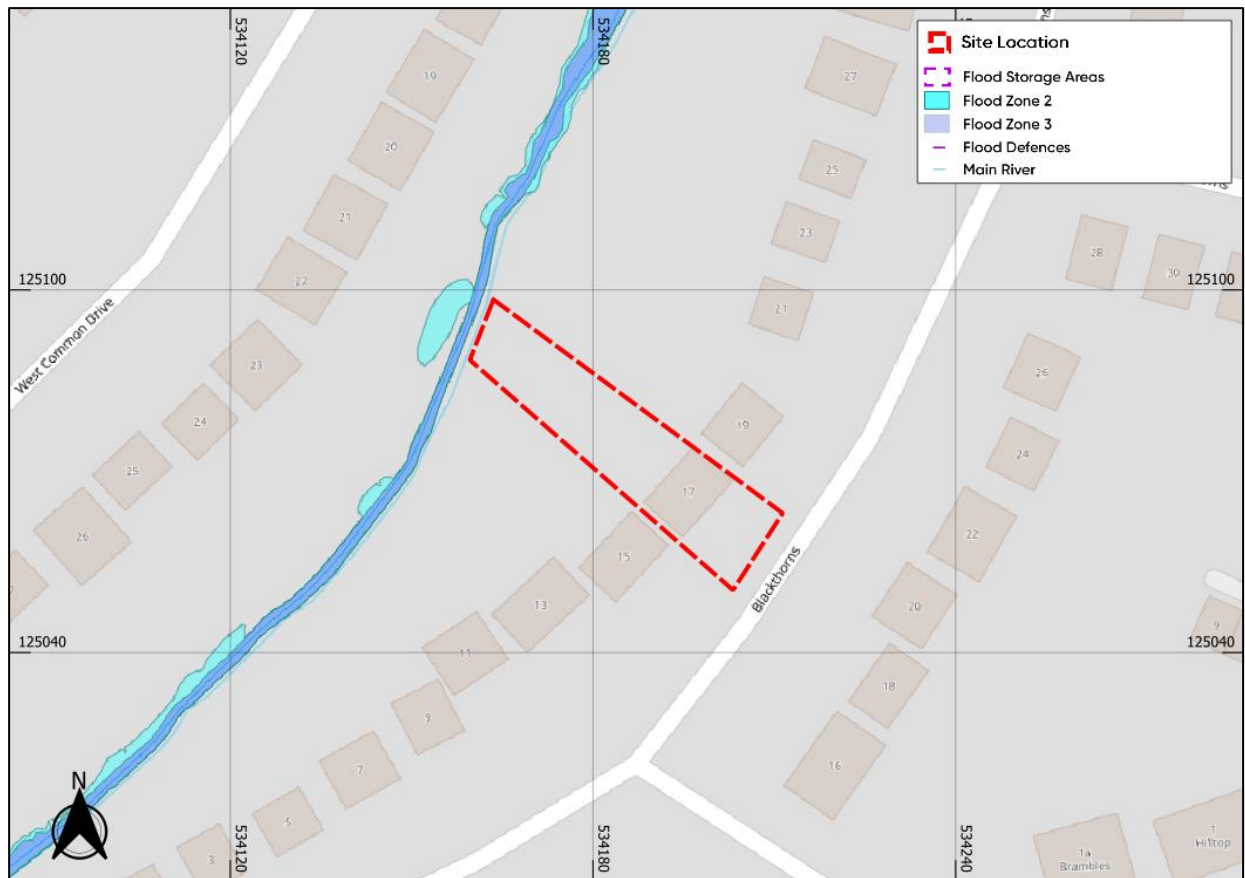


Figure 3: EA Flood Map for Planning (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Historical Fluvial Flooding

- 4.5. Based on the EA Historic Flood Map and Recorded Outlines, there is no record of historical fluvial flooding on the site (Figure 4).

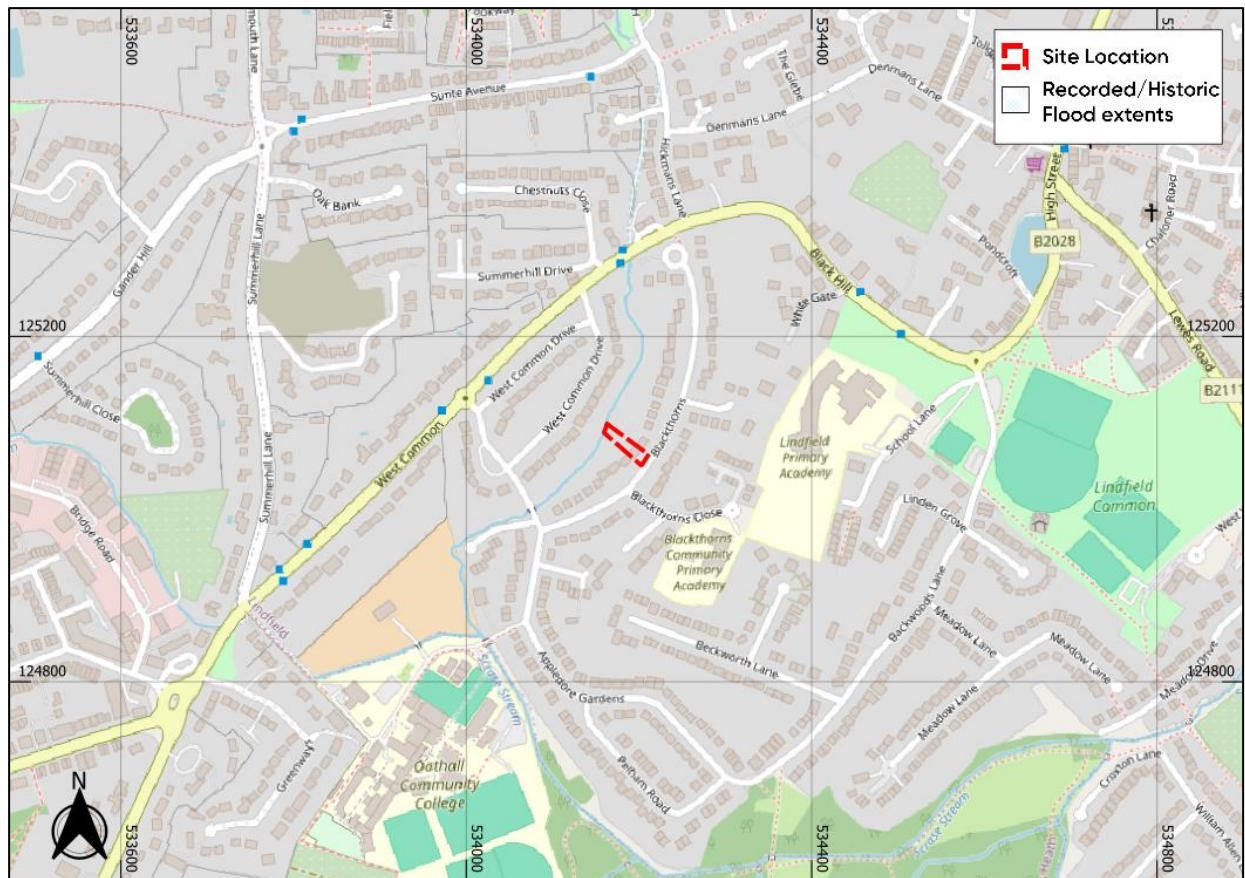


Figure 4: EA Historic Flood Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Fluvial Flood Risk Summary

- 4.6. Based on the above, the fluvial flood risk to the site is considered to be low.

Tidal

- 4.7. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.
- 4.8. The site is a significant distance from any tidal source and above the anticipated extreme tidal levels, even when considering the impacts of climate change.
- 4.9. Therefore, the risk of flooding from tidal sources is considered to be low.

Canals

- 4.10. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.
- 4.11. No CRT canals were identified within 1km of the site according to the UK Canal River Trust Map⁸.
- 4.12. Therefore, the risk of flooding to this site from canals is considered to be low.

Pluvial

- 4.13. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

Risk of Flooding from Surface Water Mapping

- 4.14. The new National Flood Risk Assessment (NaFRA2), published in Jan 2025, has updated the Risk of Flooding from Surface Water (RoFSW) products which show the chance of flooding from surface water to areas of land.
- 4.15. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).
- 4.16. Risk is displayed as one of three likelihood categories:
 - High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
 - Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
 - Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

⁸ <https://canalrivertrust.org.uk/canals-and-rivers>

- 4.17. The new RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at the following intervals from 20cm to 120cm:
- 0.2m, 0.3m, 0.6m, 0.9m, 1.2m
- 4.18. As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

Present Day

- 4.19. The EA Online ‘Flood Risk from Surface Water’ map (Jan 2025) indicates that the site and proposed development is at a ‘low’ and ‘medium’ risk of surface water flooding (Figure 5).

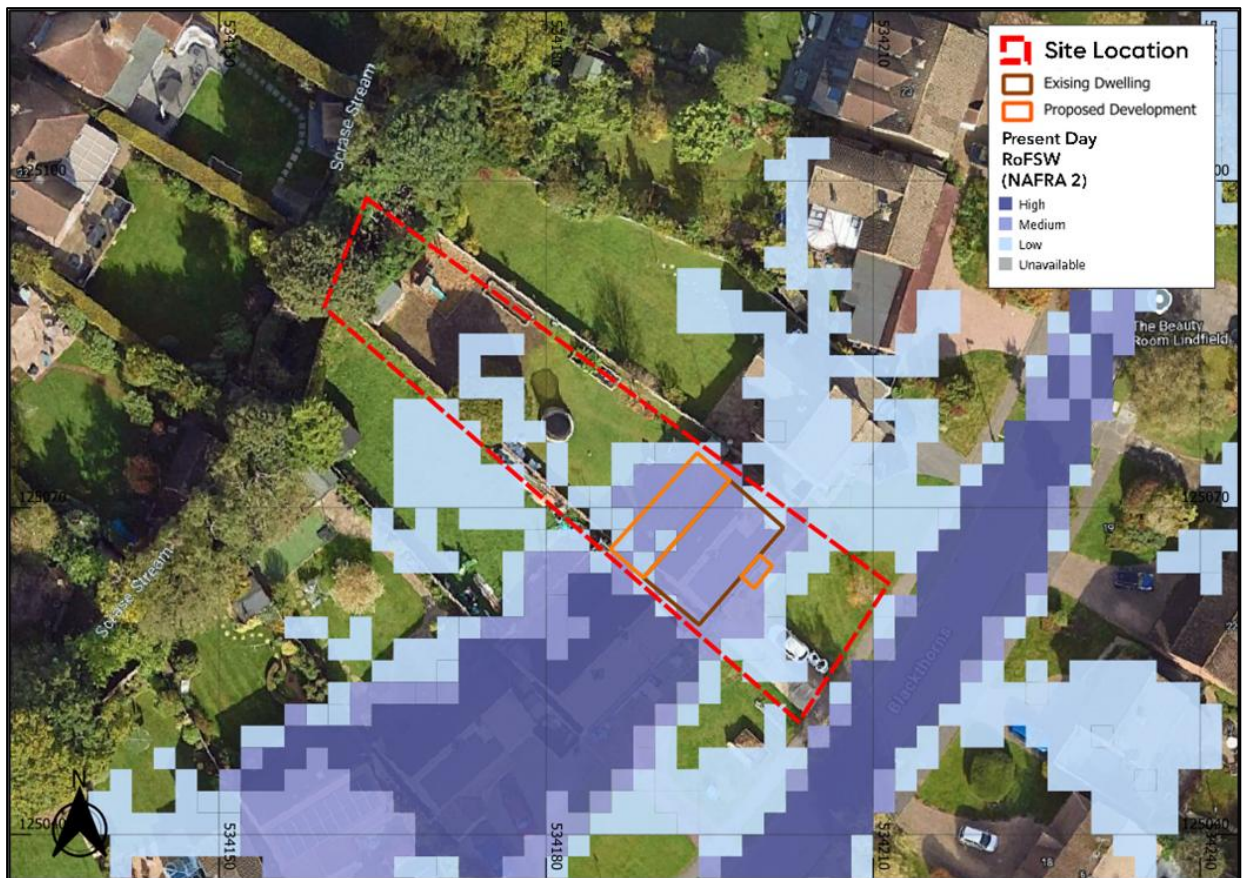


Figure 5: EA Surface Water Flood Risk Mapping Present Day Extent. Existing footprint shown as brown outline. Proposed extension shown as orange outline (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 4.20. Analysis of the present day RoFSW flood depth map shows that the site and proposed development footprint is not considered to be at risk of surface water flood depth exceeding 0.2m (Figure 6).



Figure 6: EA Surface Water Flood Risk Mapping Present Day Depth >0.2m. Existing footprint shown as brown outline. Proposed extension shown as orange outline (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Climate Change

- 4.21. The EA Online 'Flood Risk from Surface Water - Climate Change' map (Jan 2025) indicates that the site and proposed development is at a 'low' and 'medium' risk of surface water flooding (Figure 7).

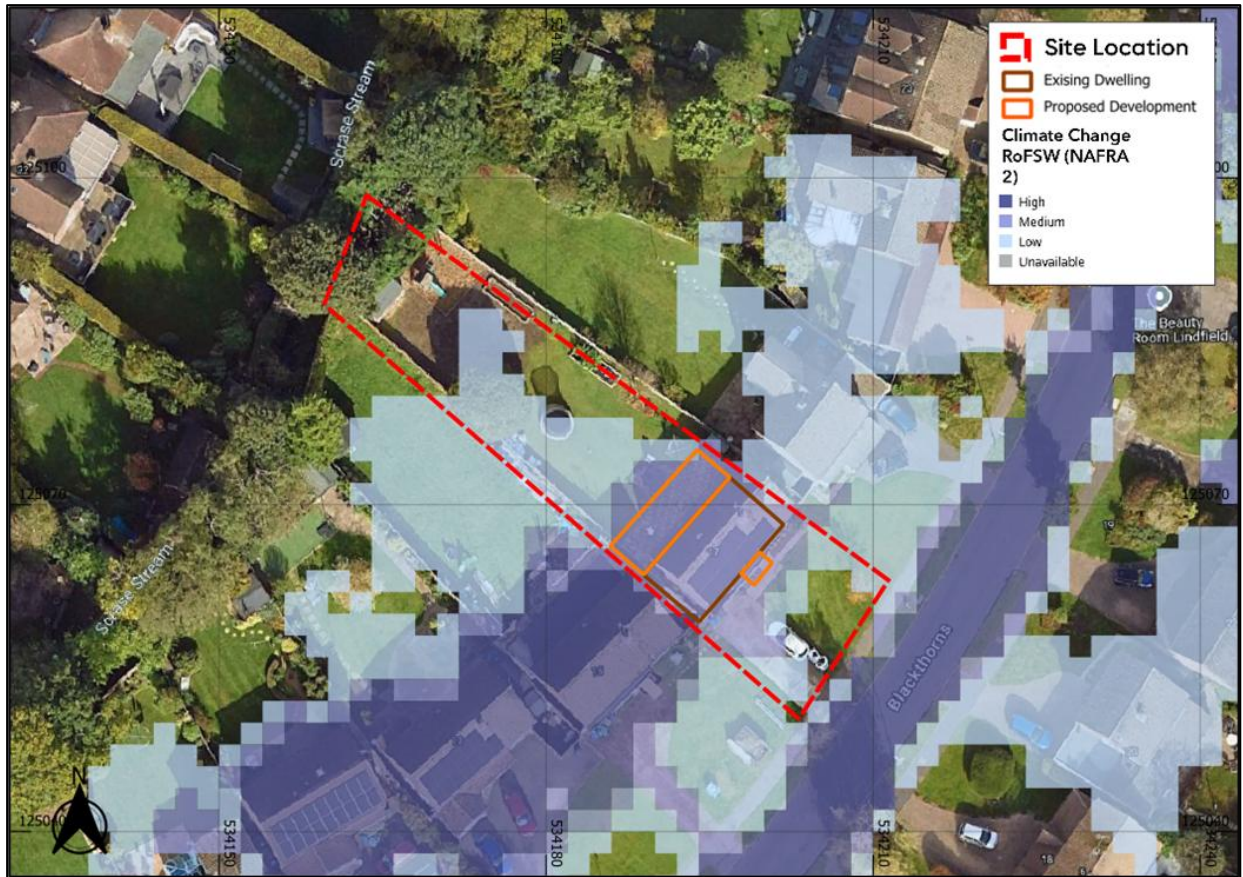


Figure 7: EA Surface Water Flood Risk Mapping Climate Change Extent. Existing footprint shown as brown outline. Proposed extension shown as orange outline (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 4.22. Analysis of the climate change RoFSW flood depth map shows that the proposed development footprint is not considered to be at risk of surface water flood depth exceeding 0.2m (Figure 8).



Figure 8: EA Surface Water Flood Risk Mapping Climate Change Depth >0.2m. Existing footprint shown as brown outline. Proposed extension shown as orange outline (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Pluvial Flood Risk Summary

- 4.23. Based on the information above the proposed development is considered to be at a medium risk of pluvial flooding, but not considered to be at risk of flooding of depths exceeding 0.2m.
- 4.24. Given the risk to the site is considered moderate, mitigation measures are recommended and detailed in Section 5 of this report.

Reservoirs

- 4.25. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely the consequences would be significant, leading to rapid inundation of the downstream floodplain.

- 4.26. According to the EA's Flood Risk from Reservoirs mapping the site is outside modelled flood extents in the event of reservoir flooding (Figure 9).

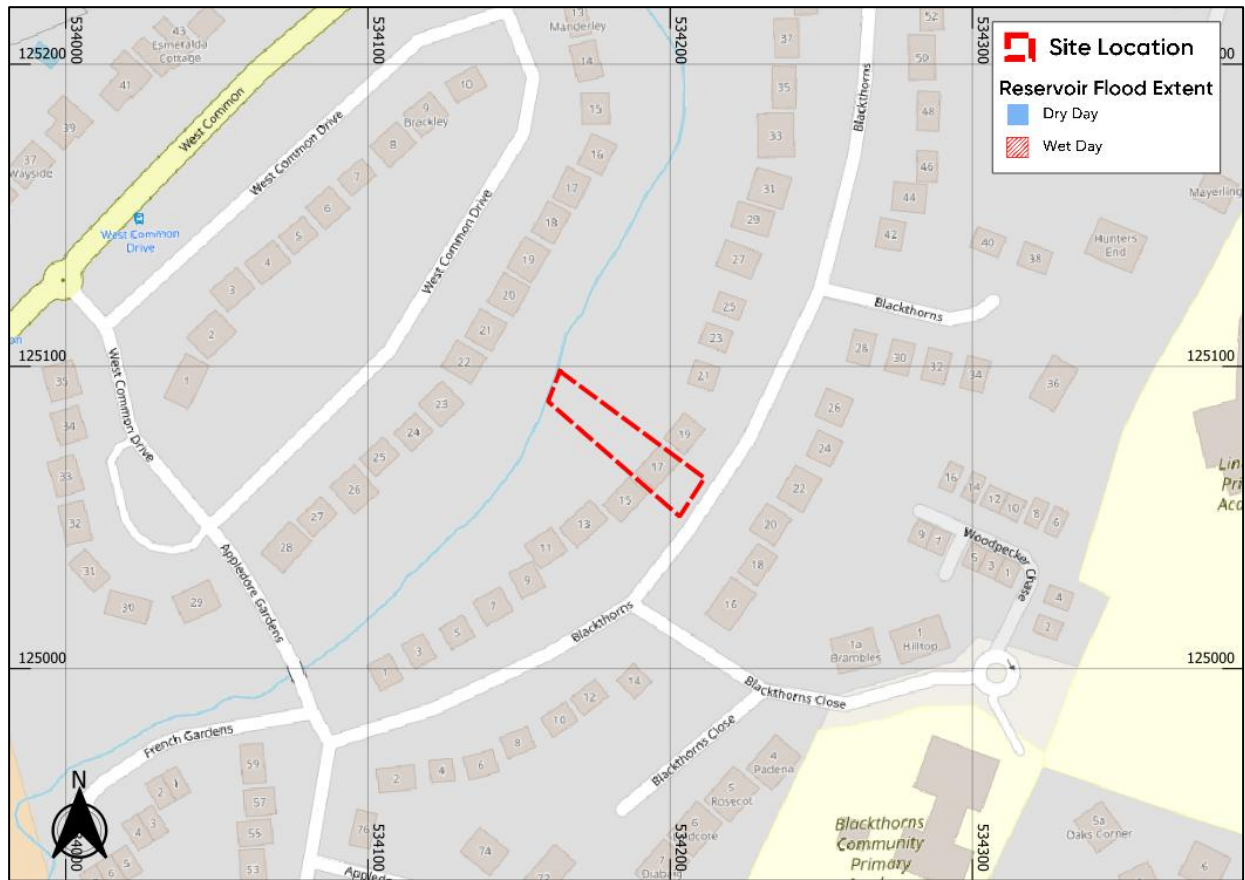


Figure 9: EA Reservoir Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©<https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.27. Therefore, the site is considered to be at low risk from reservoir flooding.

Groundwater

- 4.28. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.
- 4.29. The British Geological Survey (BGS) mapping shows superficial deposits of Alluvium comprised of clay, silt, sand and gravel underlying the site. The bedrock underlying the site is mapped as Upper Tunbridge Wells Sand comprised of sandstone and siltstone, imbedded.
- 4.30. No publicly available historical BGS boreholes were identified in the vicinity of the site (500m radius).

4.31. The SFRA (2015) states:

Only a limited number of historical flood records, where the cause had been documented as groundwater flooding were obtained.

4.32. The SFRA (2015) also details the following on groundwater flooding within the area of Haywards Heath:

*Land in this location overlies a minor aquifer and therefore **high groundwater vulnerability** will need to be addressed in any SuDS design.*

4.33. The development does not include any subterranean elements. As such, the risk from groundwater to the proposed development is considered to be low.

Sewers

4.34. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.35. The SFRA (2015) states:

Information with historic flood incident data was received by West Sussex County Council in January and February 2011 as part of their Local Drainage Asset Survey and other flood incident data shared by local groups. This data identified incidents in Bolney, Burgess Hill, Cuckfield, Fulking, Horsted Keynes, Poynings, Turners Hill, Twineham and West Hoathly.

4.36. There is no evidence to suggest that the site has been affected by sewer flooding incidents.

4.37. The development is therefore considered to be at low risk of flooding from sewers.

5. Flood Risk Mitigation

Pluvial

- 5.1. Given that the proposed development is considered to be at a moderate risk from pluvial sources and a Minor Development, the development should adhere to the EA Standing Advice which states:

We recommend floor levels are set at least 600 millimetres (mm) above the estimated flood level.

- 5.2. Due to the nature of the development (minor extension), level access will be needed from the ground floor of the existing property to the extension. The EA Standing Advice for minor extensions also states:

If you cannot raise the floor levels in this way, you will also need to include extra flood resistance and resilience measures. These measures should protect the property to at least 600mm above the estimated flood level.

- 5.3. As such, it is recommended that the extension floor levels are set no lower than the existing and should be fitted with flood resistance and resilience measures in accordance with *Improving the Flood Performance of New Buildings – Flood Resilient Construction*⁹. The following measures are recommended, but not limited to, to be incorporated into the design where practical:

- *FFLs of the extension should be set no lower than existing.*
- *Raised wiring and power outlets at ground level. Sockets should be raised to 300mm above the predicted flood level (not expected to exceed 0.2m) to 0.5m.*
- *Engineering bricks to be used up to the predicted flood level (not expected to exceed 0.2m) plus one course of bricks to provide freeboard (up to maximum of 0.6m depth above floor level); this will increase resistance to water penetration.*

⁹ https://assets.publishing.service.gov.uk/media/5a797ab2ed915d07d35b5da4/flood_performance.pdf

- *Air brick covers to be installed.*
- *External renders are effective barriers to water penetration and should be used with blocks (or bricks) to at least the predicted flood level (not expected to exceed 0.2m), ideally with an additional 0.3m freeboard. External cement renders with lime content (in addition to cement) can induce faster surface drying.*
- *Damp proof membranes should be included within the design of the dwelling to minimise the passage of water through ground floors. Impermeable polythene membranes should be at least 1200 gauge to minimise ripping. Effective methods of joining membrane sections are overlaps of 300mm, and also taping (mastic tape with an overlap of 50mm minimum). Care should be taken not to stretch the membrane in order to retain a waterproof layer.*
- *All new plumbing insulation to be of closed cell design.*
- *Cavity insulation should preferably incorporate rigid closed cell materials as these retain integrity and have low moisture take-up.*
- *Non-return valves should be installed on the new drainage systems throughout the new development. It is also recommended that these valves are retrofitted on to any reused existing sewer connections to prevent backflow of diluted sewage. Maintenance of these valves is important to ensure their continued effectiveness so should be maintained in line with manufactures recommendations.*
- *Windows and patio doors are vulnerable to flood water and similar measures to those used for doors should be taken. Special care should be taken to ensure adequate sealing of any PVC window/door sills to the fabric of the house. Of concern would be excessive water pressure on the glazing of patio doors. Double glazing conforming to the relevant standards would, in principle, adequately resist the pressures generated by flood waters.*

5.4. It is noted that safe access/egress is affected in the modelled 1 in 100 'design' pluvial event as flood depths of up to 600mm are present. Therefore, refuge should be taken on site at the highest possible floor in the event of a flood event. However, the proposed development is for

a Minor Development, and as such, the access/egress arrangement would not differ from the existing scenario.

Fluvial, Tidal, Reservoirs, Groundwater and Sewers

- 5.5. Flood risk to the proposed development from other sources is considered to be low, therefore further mitigation is not required.

Increase to Flood Risk Elsewhere

- 5.6. The proposed development is for the construction of an extension to the existing dwelling on site. The development includes the construction of a part single and two storey rear extension with internal alterations. As such, the proposal constitutes a Minor Development under the NPPF.
- 5.7. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor developments are unlikely to raise significant flood issues unless:

- they would have an adverse effect on a watercourse, floodplain or its flood defences;*
- they would impede access to flood defence and management facilities, or;*
- where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.*

- 5.8. As such, the proposed development in isolation should have a negligible impact on flood risk elsewhere.

Flood Warnings

- 5.9. The site is not in an area where the EA provide specific flood alerts and warnings. The occupant of the dwelling should monitor Met Office Weather Warnings to be prepared for extreme weather events.
- 5.10. The Met Office is the national meteorological service of the UK; they issue weather warnings up to 5 days in advance, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. It is also possible to stay up to date with

weather warnings through the Met Office app (available on both Apple and Android), social media (e.g. X (formerly Twitter) or Facebook) or email alerts.

- 5.11. During periods of bad weather, residents should monitor local weather reports and sign up for the Met Office UK weather warnings. Procedures should be formalised (if not already) in the event of a severe weather warning or flooding.

6. Conclusions

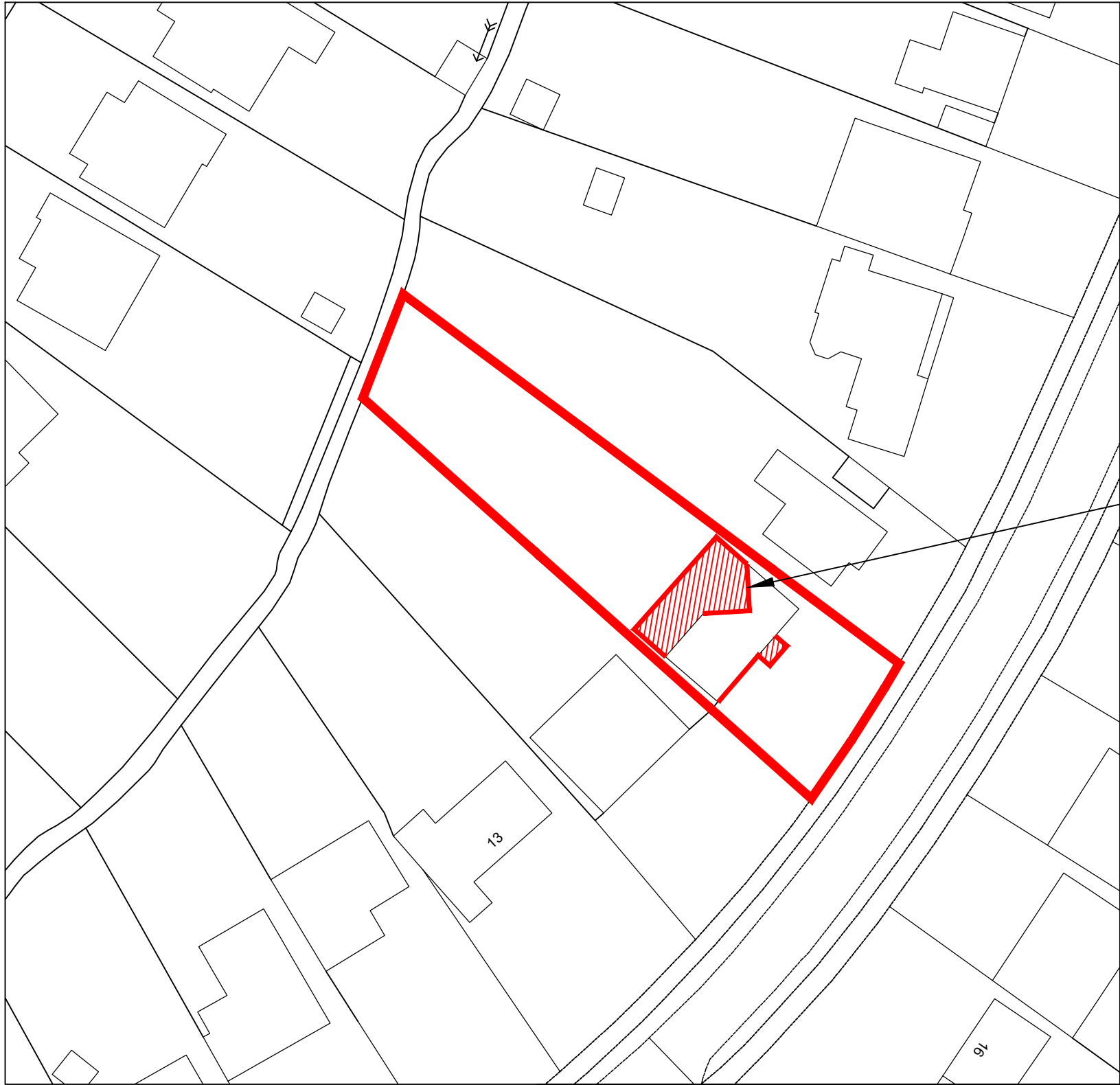
- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 17 Blackthorns, Haywards Heath, Mid Sussex, West Sussex, RH16 2AX. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Pluvial	Examination of the EA's Flood Risk from Surface Water mapping indicates that the site is located within the 'Moderate Risk' of pluvial flooding. Based on the information above the proposed development is considered to be at a medium risk of pluvial flooding, but not considered to be at risk of flooding of depths exceeding 0.2m. Given the risk to the site is considered moderate, mitigation measures are recommended and detailed in Section 5 of this report.. Therefore, mitigation measures are recommended in accordance with <i>Improving the Flood Performance of New Buildings – Flood Resilient Construction</i>.
Fluvial Tidal Reservoirs Groundwater Sewers Canals	The site is considered to be at low risk from other sources.

- 6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.

- 6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals

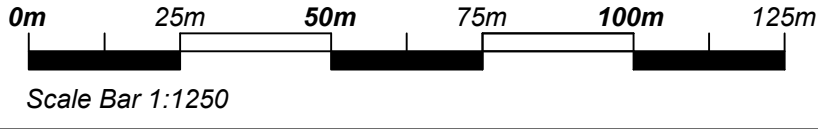


SITE BLOCK PLAN (1:500)



RED LINE
DENOTES
PROPOSED
SITE
BOUNDARY

HATCHED
AREA
DENOTES
PROPOSED
NEW
EXTENSION



SITE LOCATION PLAN (1:1250)

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CLIENT

MR MATTHEW DALY

PROJECT

PART SINGLE AND TWO STOREY REAR EXTENSION WITH
INTERNAL ALTERATIONS.

P1

ISSUED FOR PLANNING APPROVAL

04.09.2024

REV

DESCRIPTION

DATE

DRAWING

SITE LOCATION & BLOCK PLAN

17, BLACKTHORNS, LINDFIELD, HAYWARDS HEATH,
WEST SUSSEX RH16 2AX

SCALE @ A3

1:500, 1:1250

DATE

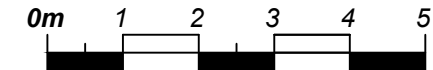
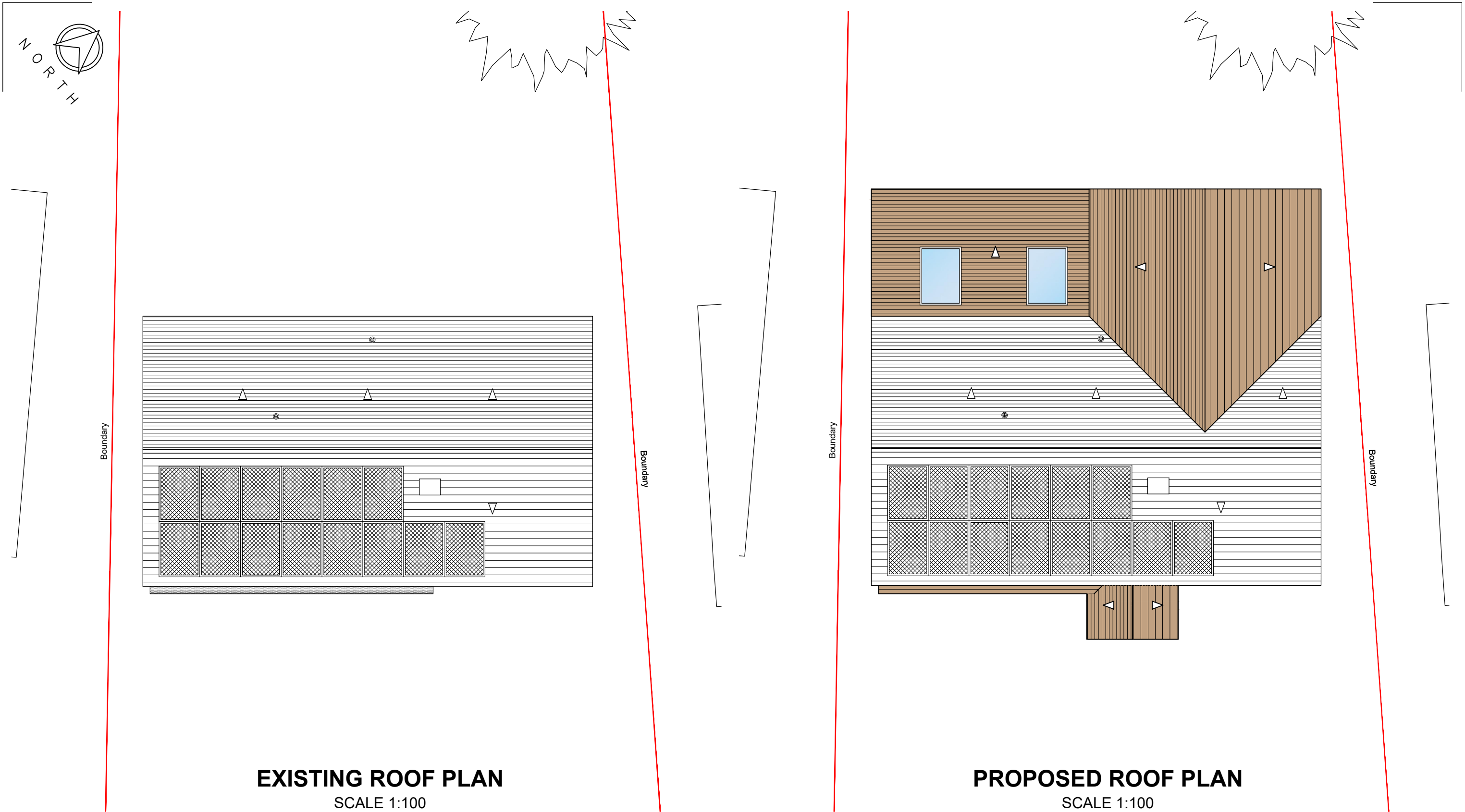
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Scale Bar 1:100

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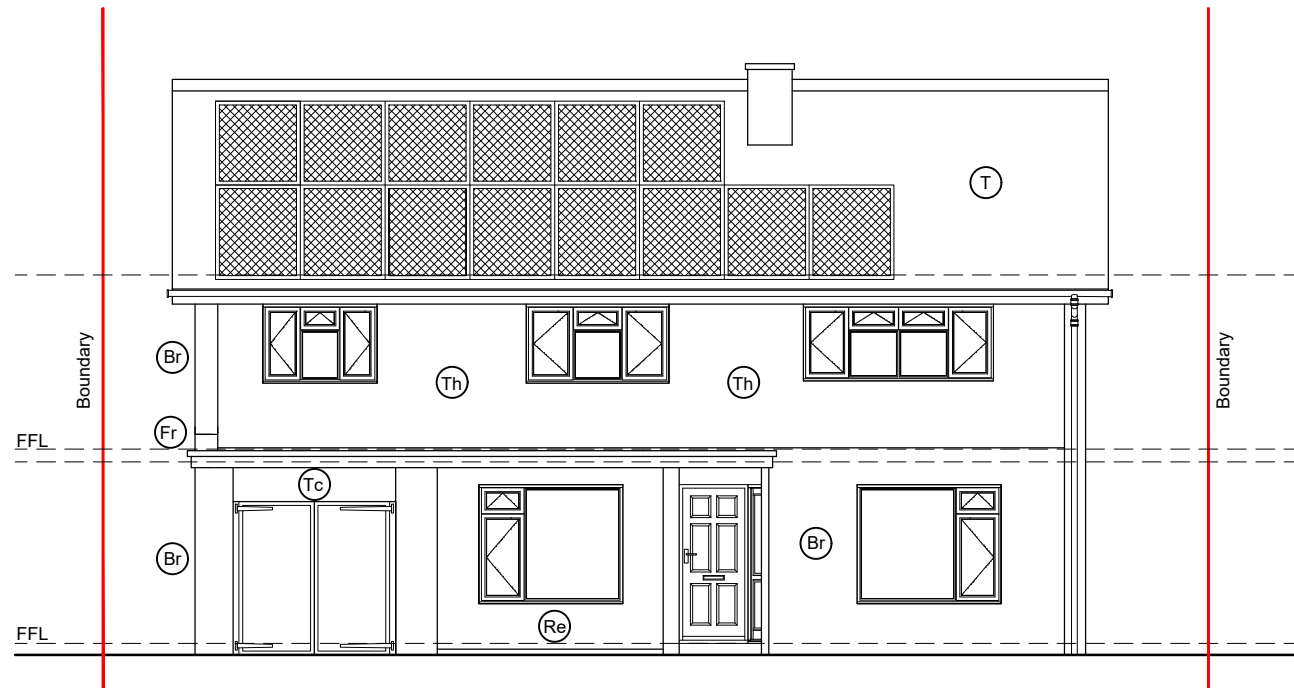
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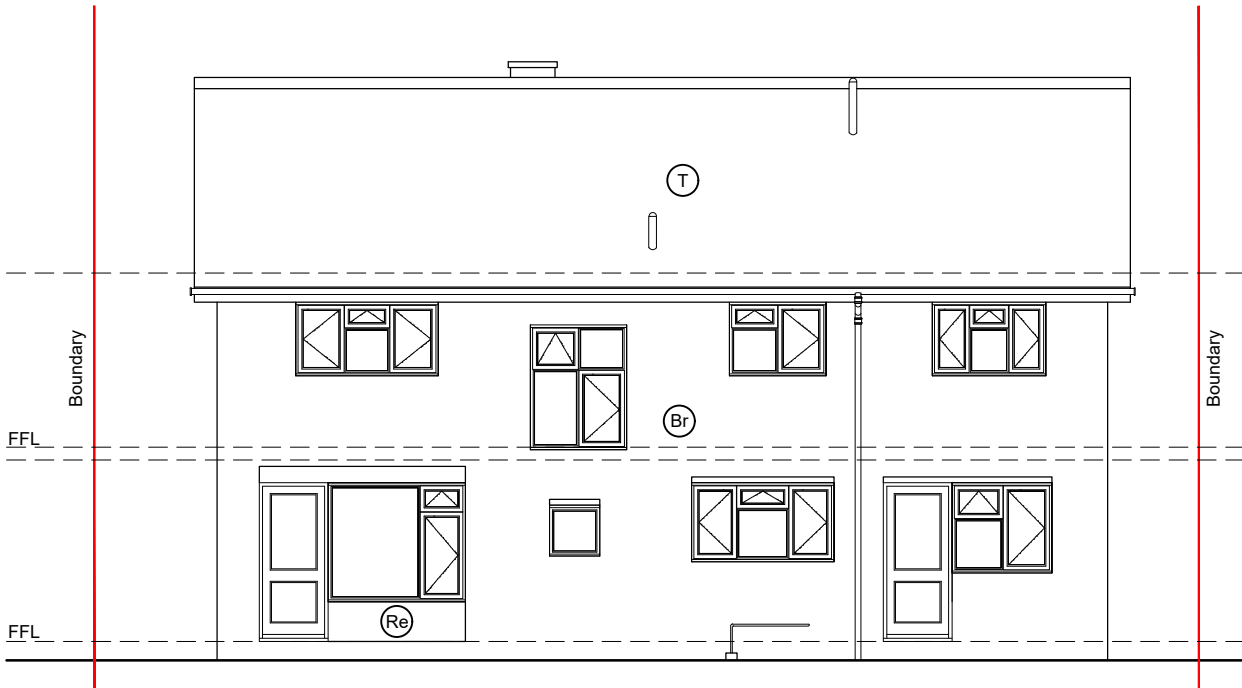
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PROJECT				
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				REVISION
				P1



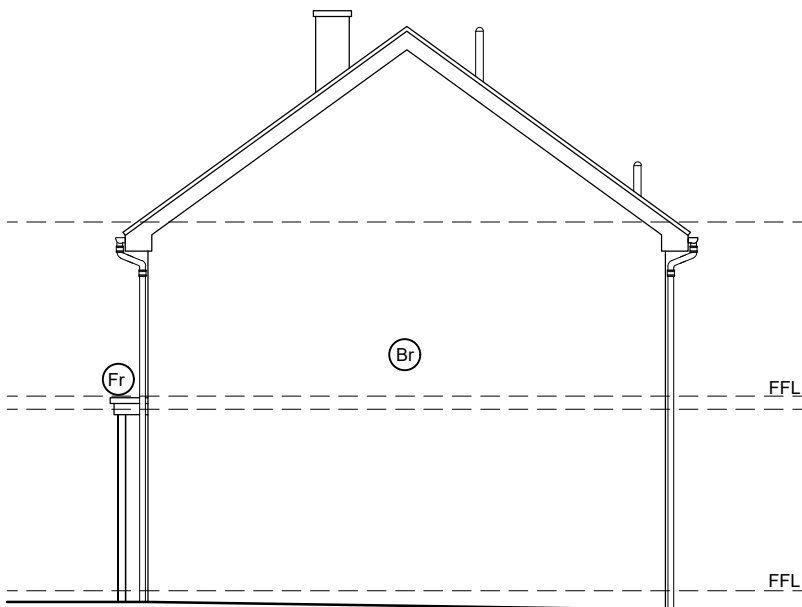
EXISTING FRONT ELEVATION

SCALE 1:100



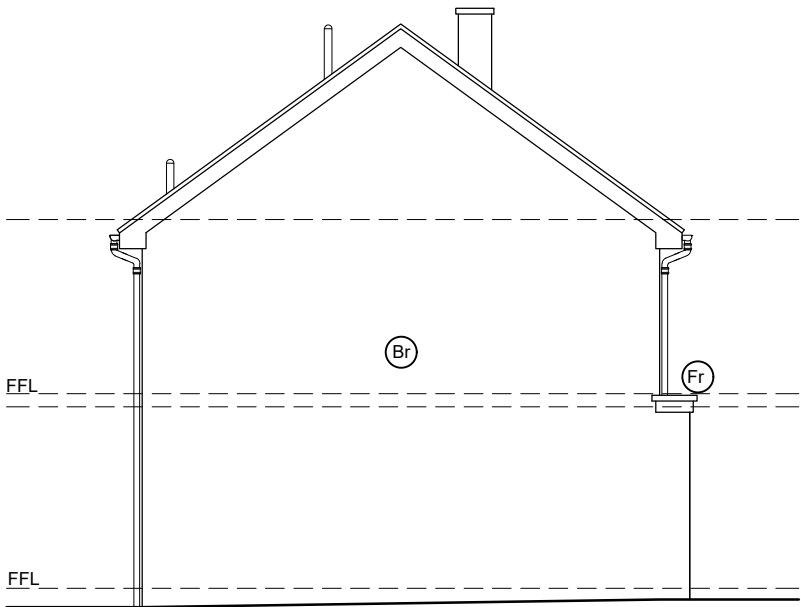
EXISTING REAR ELEVATION

SCALE 1:100



EXISTING SIDE ELEVATION

SCALE 1:100



EXISTING SIDE ELEVATION

SCALE 1:100

MATERIALS KEY:	
(T)	Concrete interlocking tile roof.
(Pl)	Plain clay tile roof.
(Fr)	Flat Roof.
(Zr)	Zinc Seam Roof.
(Sr)	Shingle Roof.
(St)	Slate Tile Roof.
(Br)	Facing Brickwork.
(Th)	Tile hanging.
(Re)	Render Finish.
(C)	Cladding.
(Pc)	PVC Cladding.
(Sn)	Stone Finish
(Pr)	Pebble Dash Render
(Uw)	uPVC sealed double glazed casement units.
(Us)	Sealed double glazed sliding sash all bar.
(Og)	Obscure glazed.
(Bd)	Bi-Fold doors - PC Aluminium
(Pd)	Patio Doors
(Vw)	Velux window.



Scale Bar 1:100

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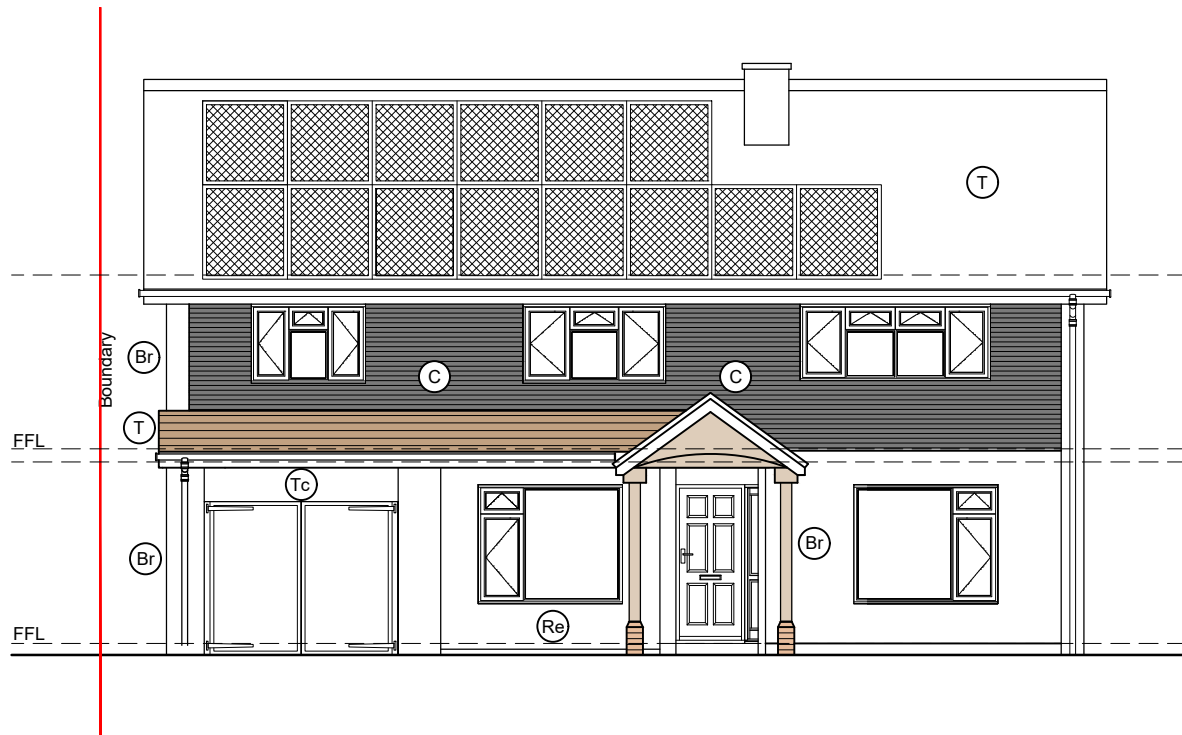
CLIENT

MR MATTHEW DALY

PROJECT

PART SINGLE AND TWO STOREY REAR EXTENSION WITH
INTERNAL ALTERATIONS.

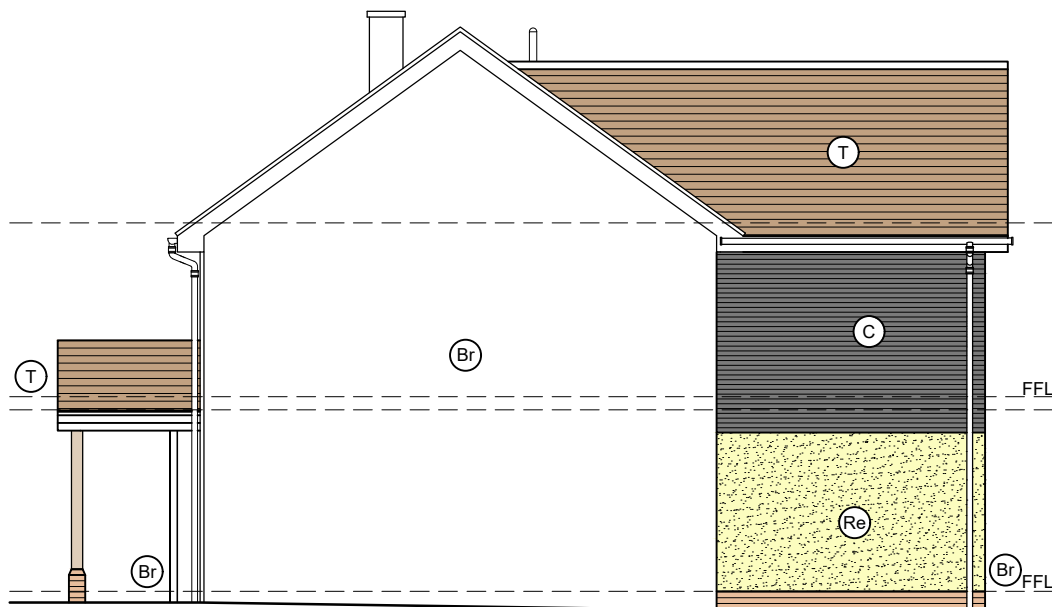
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REV	DESCRIPTION	DATE
DRAWING EXISTING ELEVATIONS		
17, BLACKTHORNS, LINDFIELD, HAYWARDS HEATH, WEST SUSSEX RH16 2AX		
SCALE @ A3 1:100	DATE SEPT 2024	DRG No TM082 / 03
		REVISION P1



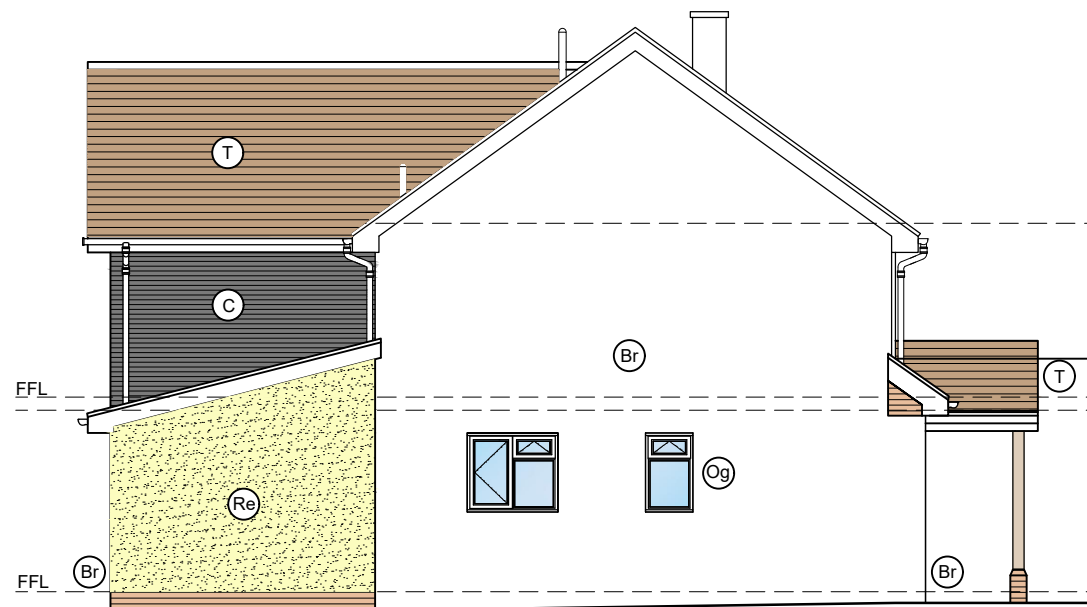
PROPOSED FRONT ELEVATION
SCALE 1:100



PROPOSED REAR ELEVATION
SCALE 1:100

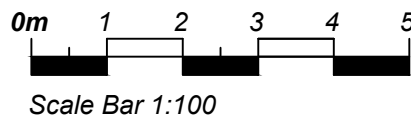


PROPOSED SIDE ELEVATION
SCALE 1:100



PROPOSED SIDE ELEVATION
SCALE 1:100

MATERIALS KEY:	
(T)	Concrete interlocking tile roof.
(Pl)	Plain clay tile roof.
(Fr)	Flat Roof.
(Zr)	Zinc Seam Roof.
(Sr)	Shingle Roof.
(St)	Slate Tile Roof.
(Br)	Facing Brickwork.
(Th)	Tile hanging.
(Re)	Render Finish.
(C)	Cladding.
(Pc)	PVC Cladding.
(Sh)	Stone Finish
(Pr)	Pebble Dash Render
(Uw)	uPVC sealed double glazed casement units.
(Us)	Sealed double glazed sliding sash all bar.
(Og)	Obscure glazed.
(Bd)	Bi-Fold doors - PC Aluminium
(Pd)	Patio Doors
(Vw)	Velux window.



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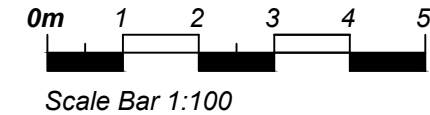
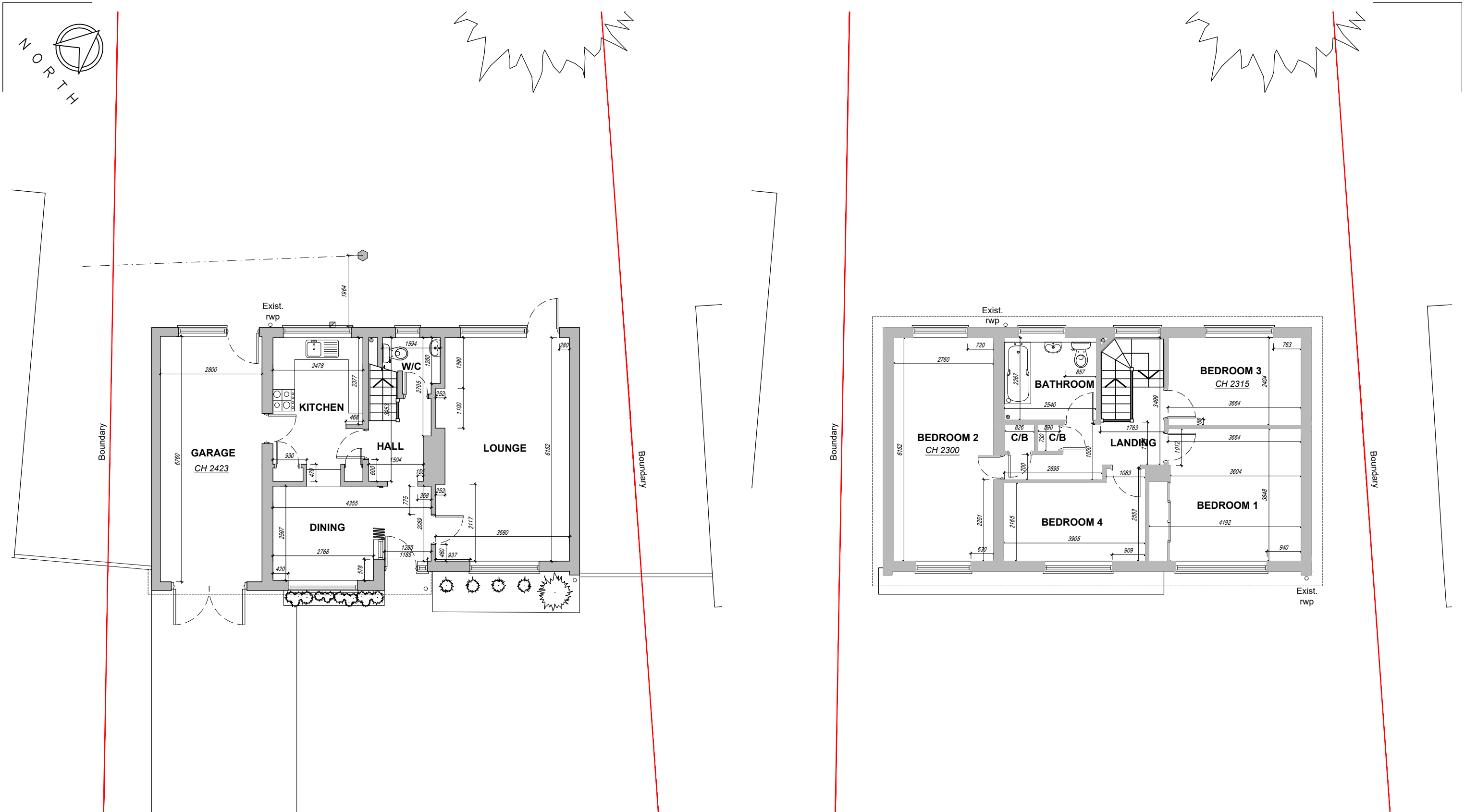
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CLIENT
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PROJECT
PART SINGLE AND TWO STOREY REAR EXTENSION WITH
INTERNAL ALTERATIONS.

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REV	DESCRIPTION	DATE
DRAWING PROPOSED ELEVATIONS		
17, BLACKTHORNS, LINDFIELD, HAYWARDS HEATH, WEST SUSSEX RH16 2AX		
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CLIENT
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PROJECT
PART SINGLE AND TWO STOREY REAR EXTENSION WITH
INTERNAL ALTERATIONS.

P1	ISSUED FOR PLANNING APPROVAL	04.09.2024
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DRAWING		
EXISTING FLOOR PLANS		
17, BLACKTHORNS, LINDFIELD, HAYWARDS HEATH, WEST SUSSEX RH16 2AX		
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1:100	SEPT 2024	TM082 / 02
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A diagram of a 5m track divided into five segments. The segments are labeled 1, 2, 3, 4, and 5. Segment 1 is white, segment 2 is black, segment 3 is white, segment 4 is black, and segment 5 is black. The total length is 5m.

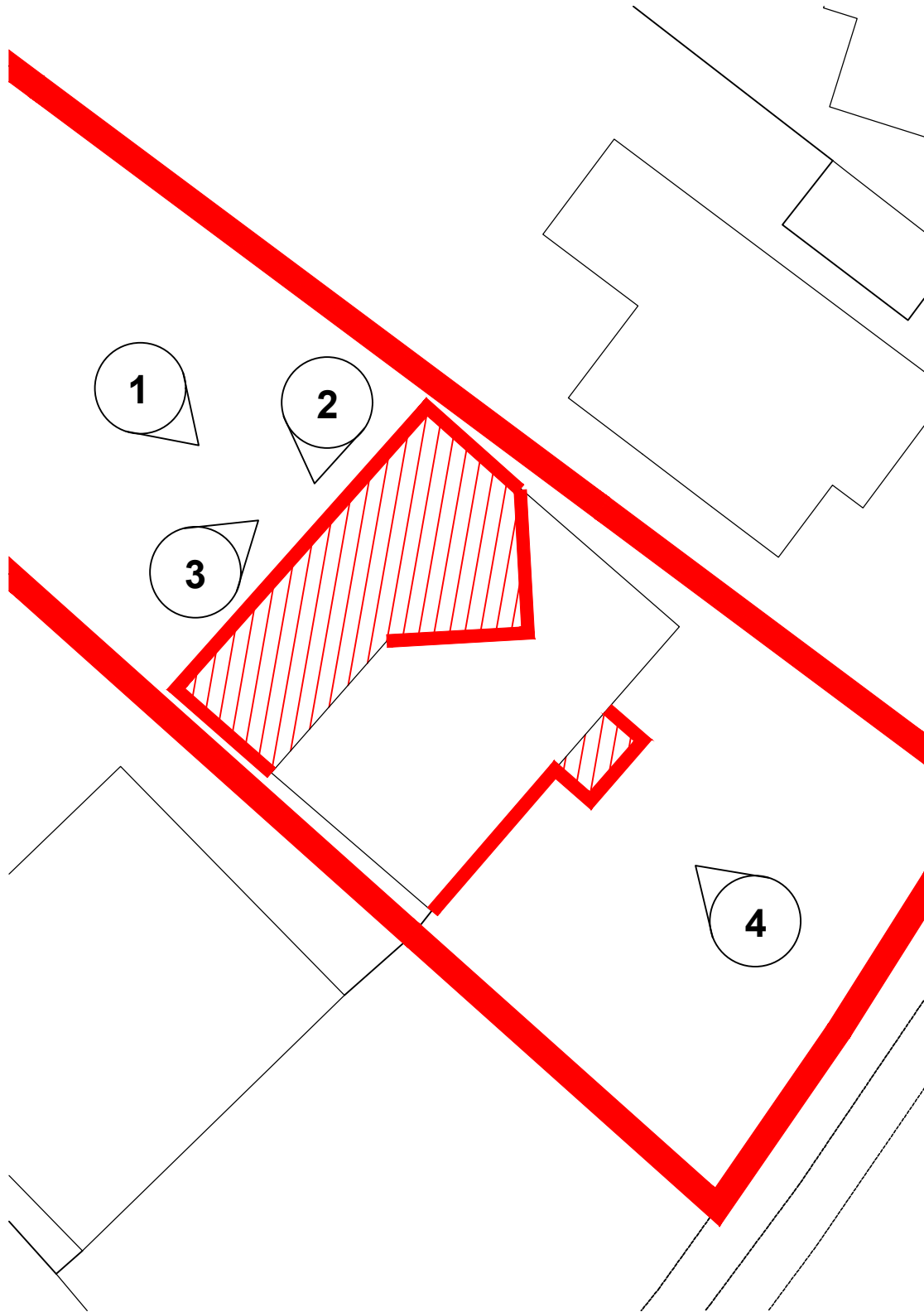
Scale Bar 1:100

SCALE 1:100

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						SCALE @ A3 1:100		DATE SEPT 2024	DRG No TM082 / 04	REVISION P1



1 - Rear elevation



2 - Rear elevation looking to 15 Blackthorns



3 - Rear elevation looking to 19 Blackthorns



4 - Front elevation

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CLIENT
MR MATTHEW DALY

PROJECT
PART SINGLE AND TWO STOREY REAR EXTENSION WITH
INTERNAL ALTERATIONS.

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NTS	SEPT 2024	TM082 / 07	P1