

Flood Risk Assessment

Risk: Very Low to Low

The Site is mapped within the EA's fluvial and tidal Flood Zone 1 (Low probability), which indicates there is a Low probability of fluvial and tidal flooding.

The risk of flooding from rivers and the sea is Very Low, taking flood defences into account.

Following analysis of the baseline data the Site is considered to be at a Very Low risk of surface water flooding, a Negligible to Low risk of groundwater flooding and a Very Low risk of flooding from artificial sources (reservoirs, canals and sewers).

Mitigation measures are recommended in this report to reduce the risks to an acceptable level over the lifetime of the development.



Report prepared for

Catherine Vaughan
The Old Bakery
Collingbourne Kingston
Wiltshire, SN8 3SD

Site Address

The Old Bakery
Collingbourne Kingston
Wiltshire, SN8 3SD

Date

24/07/2026

Site Area

1219 m²

Grid Reference

423842, 155709

Report Status

FINAL

Report Reference

91163R1

Version Control

Report Version	Date	Report Author	Report Checker & Reviewer
91163R1	24/07/2026	Cian Greatorex Consultant	Jessica Bayliff Principal Consultant

1. Executive summary

A review has been undertaken of national environmental data sets to assess the flood risk to the Site from all sources of flooding in accordance with the National Planning Policy Framework (NPPF) (2024) and National Planning Practice Guidance (NPPG) (published in 2014 and updated in September 2025). A site-specific flood risk assessment, to assess the flood risk to and from the development Site, is provided within this concise interpretative report written by an experienced GeoSmart consultant. Baseline flood risk and residual risks that remain after the flood risk management and mitigation measures are implemented are summarised in the table below.

Site analysis

Source of Flood Risk	Baseline ¹	After analysis ²	After Mitigation ³
River (fluvial) flooding	Very Low		N/A
Sea (coastal/tidal) flooding	Very Low		N/A
Surface water (pluvial) flooding	Very Low		N/A
Groundwater flooding	Negligible	Negligible to Low	Negligible
Other flood risk factors present	No		No
Is any other further work recommended?	Yes (see below)		

1 BASELINE risks assigned for the whole Site, using national risk maps, including the benefit of EA flood defences and the impacts of climate change.

2 AFTER ANALYSIS modification of risk assessment based on detailed site specific analysis including some or all of the following: flood model data, high resolution mapping, building location, access routes, topographic and CCTV surveys. Reasons for the change in classification are provided in the text.

3 AFTER MITIGATION risks include risks to proposed development / asset and occupants if mitigation measures recommended in this report are implemented, including the impacts of climate change.

*N/A indicates where mitigation is not required.

Summary of existing and proposed development

The Site is currently used within a residential capacity as a five-bedroom detached property.

Development proposals comprise the creation of annexe accommodation within the existing dwelling. The demolition of the existing single-storey lean-to extensions to north and west is proposed as well as the erection of replacement single-storey extensions. A new roof to the existing lean-to to the north is also proposed. Site plans are included within Appendix A.

Summary of flood risks

The flood risks from all sources have been assessed as part of this report and are as follows:

River (fluvial) and Sea (Estuarine/Coastal) flooding

According to the Environment Agency's (EA) Flood Map for Planning Purposes, the Site is located within a fluvial and tidal Flood Zone 1 (Low Probability) and is not located within the 'flood zone plus climate change' extent.

According to the EA's Risk of Flooding from Rivers and Sea (RoFRS) map, which considers the type, condition and crest height of flood defences, the Site has a Very Low risk of fluvial and tidal flooding during both the present day and climate change (2036 to 2069) scenarios.

Surface Water (Pluvial) flooding

According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping, the Site has a Very Low risk of pluvial flooding in the present day scenario, which remains the same during the climate change (2050s) scenario.

Flooding would not affect the area proposed for development in the 1 in 100 year present day or climate change events.

A SuDS strategy has been prepared separately (ref: 91163.01) to ensure surface water runoff from the Site is managed over the lifetime of the proposed development.

Groundwater flooding

Groundwater Flood Risk screening data indicates there is a Negligible potential risk of groundwater flooding at the surface in the vicinity of the Site during a 1 in 100 year event.

The Site is directly underlain by high permeability chalk bedrock which may facilitate the rising of groundwater during periods of prolonged rainfall recharge. The risk of groundwater flooding is therefore considered to be Negligible to Low.

Artificial sources of flooding

The risk of flooding from artificial (man-made) sources such as reservoirs, sewers and canals has been assessed:

- The EA's Risk of Flooding from Reservoir map confirms the Site is not at risk of reservoir flooding.
- Ordnance Survey (OS) data confirms there are no canals near to the Site.
- Table 5-2 of the SFRA does not include any information regarding flooding events from sewers in the SN8 3 area (JBA, 2024).

The risk of flooding from artificial sources is considered to be Very Low.

The risk to the development has been assessed over its expected 100 year lifetime, including appropriate allowances for the impacts of climate change which could increase the flood risk to the Site. Risks identified include increased potential for surface water flooding, and appropriate mitigation measures are proposed.

Recommendations

Recommendations for flood mitigation are provided below, based upon the proposed development and the flood risk identified at the Site.

- As there is a risk of flooding from groundwater sources at the surface, risk to buried infrastructure should be considered along with standard flood resilient design and non-return valves on the sewer inlet. French drains and/or pumping systems may also be considered.
- The ongoing management and maintenance of existing and any proposed drainage networks, under the riparian ownership of the developer, should be undertaken in perpetuity with the development.

GeoSmart recommend the mitigation measures discussed within this report are considered as part of the proposed development where possible and evidence of this is provided to the Local Planning Authority as part of the planning application.

2. Introduction

Background and purpose

A site-specific flood risk assessment has been undertaken, to assess the flood risk to and from the development Site. This assessment has been undertaken by firstly compiling information concerning the Site and the surrounding area. The information gathered was then used to construct a 'conceptual site model', including an understanding of the appropriateness of the development as defined in the NPPF (2024) and the source(s) of any flood risk present, guided by the NPPG (Published in 2014 and updated in September 2025). Finally, a preliminary assessment of the steps that can be taken to manage flood risk to the development was undertaken.

This report has been prepared with reference to the NPPF (2024) and NPPG (2025).

"The National Planning Policy Framework set out the Government's planning policies for England and how these are expected to be applied" (NPPF, 2024).

The NPPF (2024) and NPPG (2025) promote a sequential, risk based approach to the location of development. This also applies to locating a development within a Site which has a variable risk of flooding.

"The approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding" (Paragraph: 023. NPPG, 2025).

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.

Report scope

In accordance with the requirements set out within NPPG 2025 (Paragraph: 021 Reference ID: 7-021-20220825), a thorough review of publicly and commercially available flood risk data and EA supplied data indicating potential sources of flood risk to the Site from rivers and coastal sources, surface run-off (pluvial), groundwater and reservoirs, including historical flood information and modelled flood extent. Appropriate measures are recommended to manage and mitigate the flood risk to the property.

Information obtained from the EA and a review of the Wiltshire Core Strategy (Wiltshire Council, 2015) and Wiltshire Council Level 1 Strategic Flood Risk Assessment (JBA, 2024) are used to ascertain local flooding issues and, where appropriate, identify information to support a Sequential and/or Exception test required as part of the NPPF (2024).

The existing and future flood risk to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.

An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. A drainage strategy to control runoff can be commissioned separately if identified as a requirement within this report.

Report limitations

It is noted that the findings presented in this report are based on a desk study of information supplied by third parties. Whilst we assume that all information is representative of past and present conditions, we can offer no guarantee as to its validity and a proportionate programme of site investigations would be required to fully verify these findings.

The basemap used is the OS Street View 1:10,000 scale, however the Site boundary has been drawn using BlueSky aerial imagery to ensure the correct extent and proportion of the Site is analysed.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Datasets

The following table shows the sources of information that have been consulted as part of this report:

Table 1. Datasets consulted to obtain confirmation of sources of flooding and risk

Source of flooding	Datasets consulted			
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency	OS Data
Historical	X	X	X	
River (fluvial) / Sea (tidal/coastal)	X	X	X	
Surface water (pluvial)	X	X	X	
Groundwater	X	X		
Sewer		X		
Culvert/bridges		X		X
Reservoir		X	X	

*Local guidance and policy, referenced below, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

Local policy and guidance

For this report, several documents have been consulted for local policy and guidance and relevant information is outlined below:

Wiltshire Core Strategy (Wiltshire Council, 2015):

Core Policy 67 Flood Risk

Development proposed in Flood Zones 2 and 3 as identified within the Strategic Flood Risk Assessment will need to refer to the Strategic Housing Land Availability Assessment when providing evidence to the local planning authority in order to apply the sequential test in line with the requirements of national policy and established best practice.

All new development will include measures to reduce the rate of rainwater run-off and improve rainwater infiltration to soil and ground (sustainable urban drainage) unless site or environmental conditions make these measures unsuitable.

Wiltshire Council Level 1 Strategic Flood Risk Assessment (JBA, 2024):

The groundwater flooding in Wiltshire is primarily due to flooding mechanisms in the chalk and occurs mainly in the south and south-east of the county.

The chalk aquifer can take several weeks or months to become saturated and does not react quickly to intense rainfall, however once the groundwater level has reached the surface, flooding can last for several months. Often there is little that can be done to prevent groundwater flooding and protecting properties at risk can be both difficult and expensive.

Historical groundwater flooding has been caused both directly by water levels rising aboveground level, or indirectly as high groundwater causing flooding of rivers which are dominated by water emerging from aquifers (base flow).

Guidance

Strategic Flood Risk Assessments are carried out by local authorities, in consultation with the Environment Agency, to assess the flood risk to the area from all sources both now and in the future due to climate change. They are used to inform planning decisions to ensure inappropriate development is avoided (NPPF, 2024).

3. Site analysis

Site information

The Site is located in Collingbourne Kingston in a setting of residential land use at National Grid Reference SU 23842 55709.

Figure 1. Aerial imagery of the Site (Bluesky, 2026)



Figure 2 indicates ground levels within 500 m of the Site fall in an easterly direction.

Figure 2. Site Location and Relative Elevations (GeoSmart, 2026)

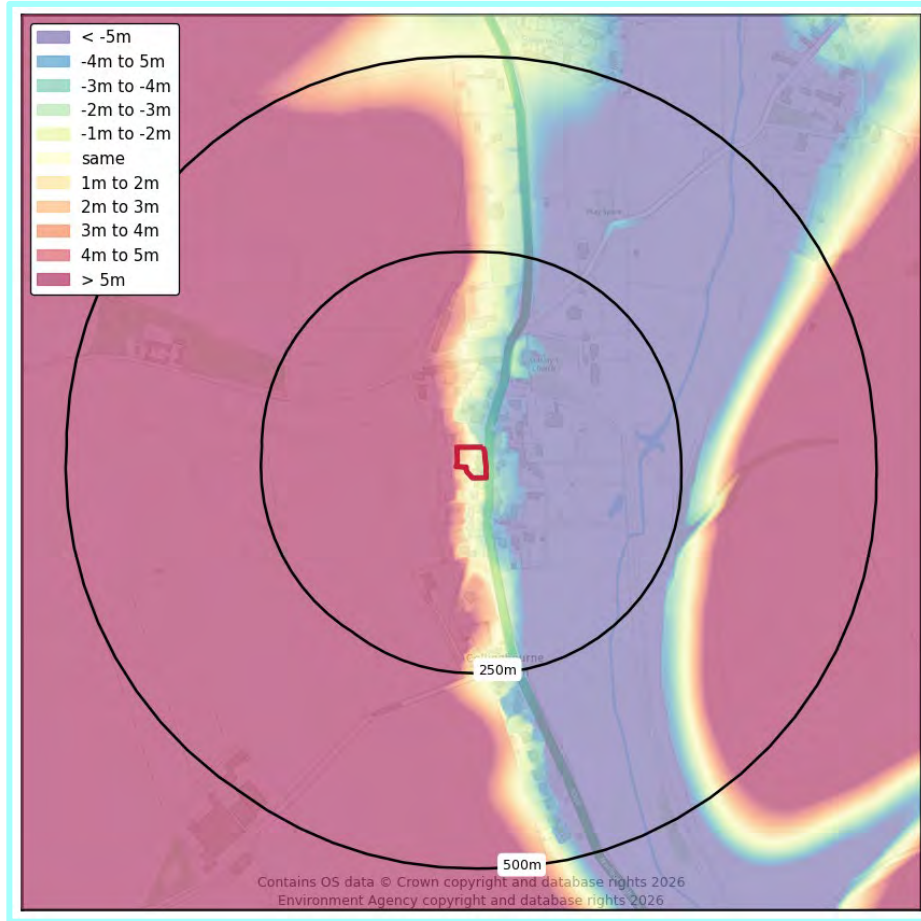
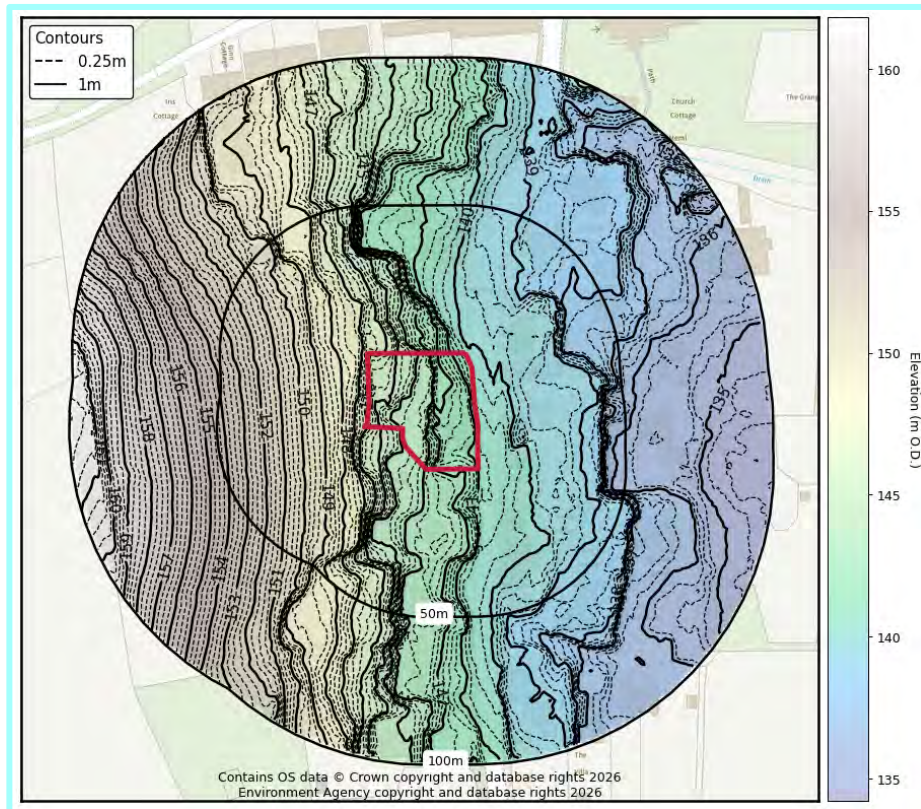


Figure 3 indicates that the general ground levels on the Site are between 140.24 and 146.45 mAOD with the Site falling gradually in an easterly direction. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ± 0.15 m.

Figure 3. Environment Agency LiDAR ground elevation data (GeoSmart, 2026)



Development

The Site is currently used within a residential capacity as a five-bedroom detached property.

Development proposals comprise the creation of annexe accommodation within the existing dwelling. The demolition of the existing single-storey lean-to extensions to north and west is proposed as well as the erection of replacement single-storey extensions. A new roof to the existing lean-to to the north is also proposed. Site plans are included within Appendix A.

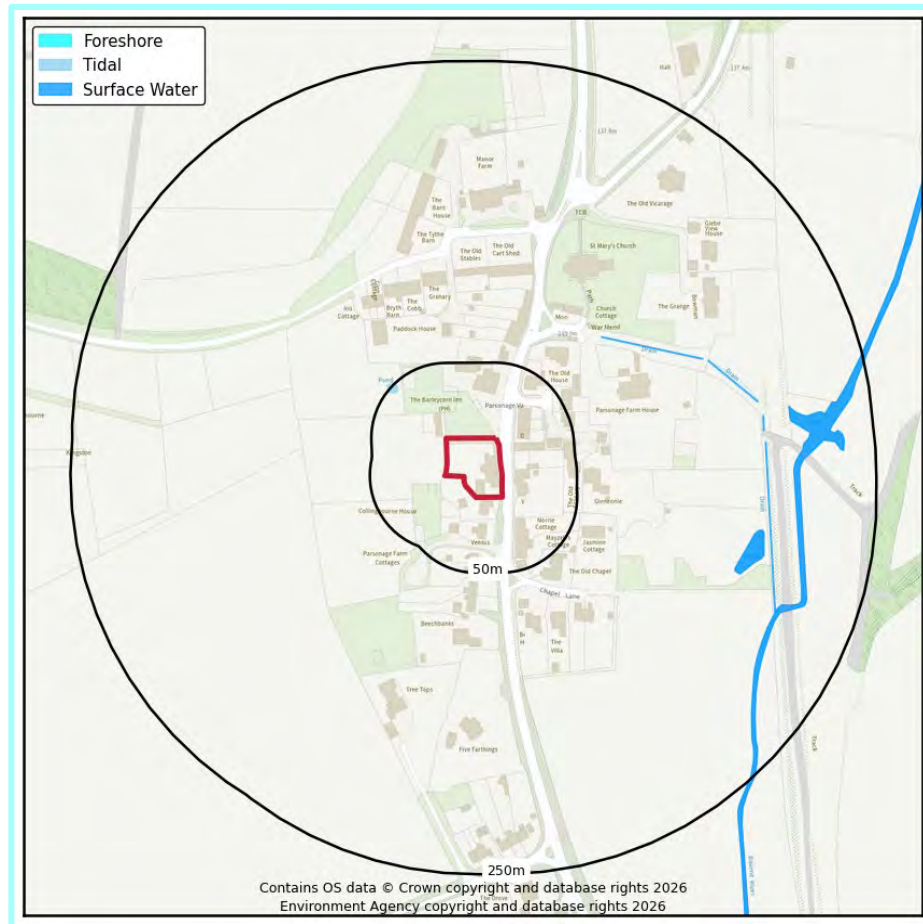
The effect of the overall development will result in an increase in number of occupants and/or users of the building but will not result in the change of use, nature or times of occupation. According to Annex 3 of the NPPF (2024), the vulnerability classification of the existing development is More Vulnerable and proposed development is More Vulnerable. The estimated lifespan of the development is 100 years.

Hydrological features

According to Ordnance Survey (OS) mapping included in Figure 4, there are numerous surface water features within 500 m of the Site.

- An unnamed pond is located c. 45 m north-west of the Site. Another pond is located c. 170 m east of the Site.
- A drainage ditch is located c. 135 m north-east of the Site.
- The River Bourne is located c. 195 m east of the Site, flowing in a southerly direction.

Figure 4. Surface water features (EA, 2026)



Proximity to relevant infrastructure

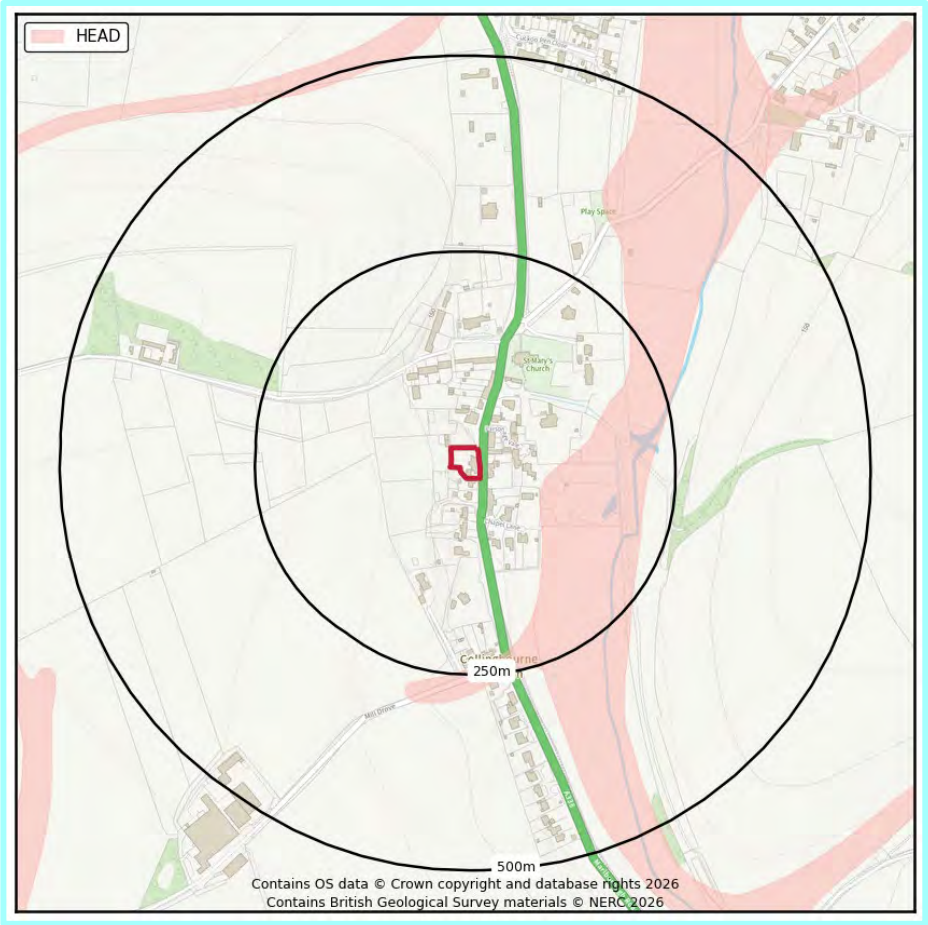
Infrastructure has been identified within proximity of the Site which could influence the risks of flooding to existing or future occupants. These include:

- The nearby drainage ditch is culverted c. 145 m north-east of the Site.
- The River Bourne is culverted c. 200 m south-east of the Site.

Hydrogeological features

British Geological Survey (BGS) mapping indicates there is no underlying superficial geology at the Site (BGS, 2026) (Figure 5). Head (HEAD), which comprises gravel (BGS, 2026), is located within 250 m of the Site. These deposits are classified by the EA as a Secondary (A) Aquifer, which indicates it is likely to comprise permeable layers capable of supporting water supply at a local rather than strategic scale.

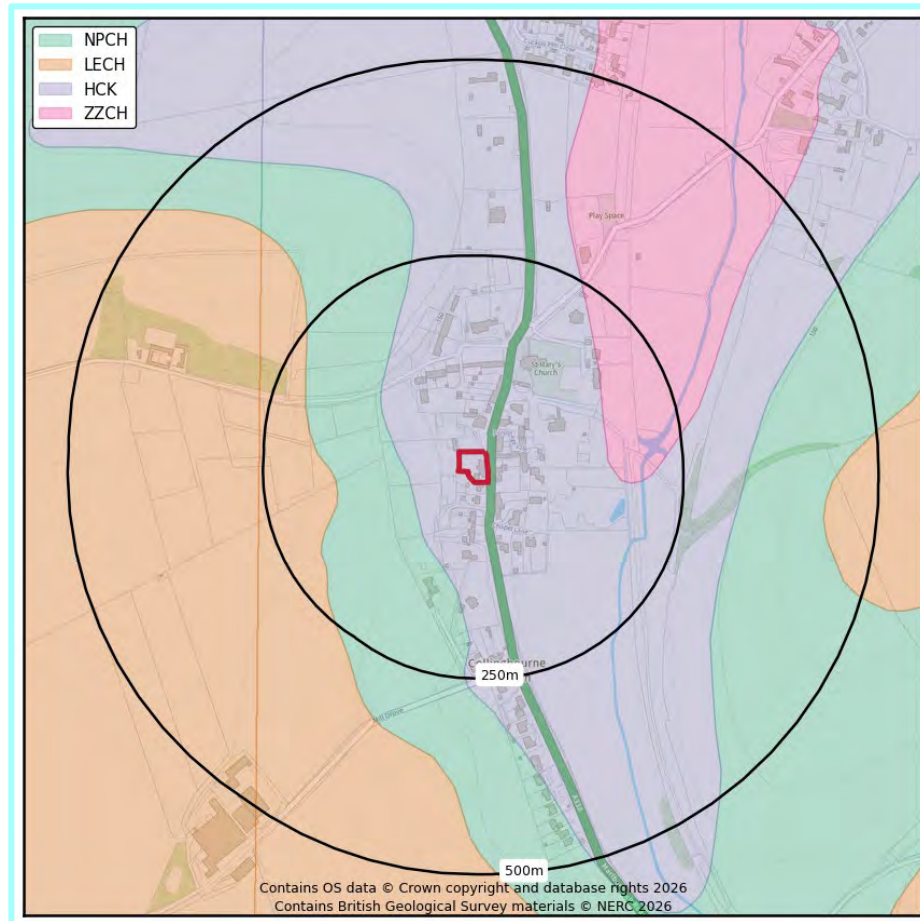
Figure 5. Superficial Geology (BGS, 2026)



BGS mapping indicates the underlying bedrock geology (Figure 6) consists of the Holywell Nodular Chalk Formation (HCK), which comprises chalk (BGS, 2026). This bedrock geology is classified by the EA as a Principal Aquifer, which indicates it is likely to have a high permeability and provide a high level of water storage.

Zig Zag Chalk Formation (ZZCH), New Pit Chalk Formation (NPCH) and Lewes Nodular Chalk Formation (LECH) are all located within 250 m of the Site. All of these deposits are classified by the EA as Principal Aquifers, which indicates it is likely to have a high permeability and provide a high level of water storage.

Figure 6. Bedrock Geology (BGS, 2026)



Geological conditions

Site-specific ground investigation was undertaken at the Site in June 2026 (Paddock Geo Engineering; report included within Appendix B), which included 2 trial pits to a maximum depth of 1.20 m bgl. The results of the investigation are summarised within the table below:

Table 1. Summary of Site Investigation (Paddock Geo Engineering, 2026)

Strata encountered	Trial Pit SA01		Trial Pit SA02	
	Depth to base of stratum (m bgl)	Strata composition	Depth to base of stratum (m bgl)	Strata composition
Topsoil	0.30	Dark grey brown clayey organic fine to coarse SAND with occasional brick fragments and frequent rootles. (TOPSOIL LIKE MADE GROUND)	0.50	Grass onto dark grey brown clayey organic fine to coarse SAND with occasional brick and concrete fragments and frequent rootles. (TOPSOIL LIKE MADE GROUND)
Holywell Nodular Chalk Formation	> 1.00 (base of trial pit)	Extremely weak, fissured, off-white to white CHALK recovered as slightly silty sandy fine to coarse subangular to subrounded Gravel. Clasts are extremely weak, low density. Fissures are very closed spaced partially infilled with comminuted chalk. (HOLYWELL NODULAR CHALK FORMATION)	> 1.20 (base of trial pit)	Extremely weak, fissured, off-white to white CHALK recovered as slightly silty sandy fine to coarse subangular to subrounded Gravel. Clasts are extremely weak, low density. Fissures are very closed spaced partially infilled with comminuted chalk. (HOLYWELL NODULAR CHALK FORMATION)

Groundwater

On-Site trial pits ref: SA01 and SA02, undertaken as part of Site-specific ground investigation (Paddock Geo Engineering, 2026; report included within Appendix B), did not encounter groundwater to a proven depth of 1.20 m in June 2026, subject to seasonal variations.

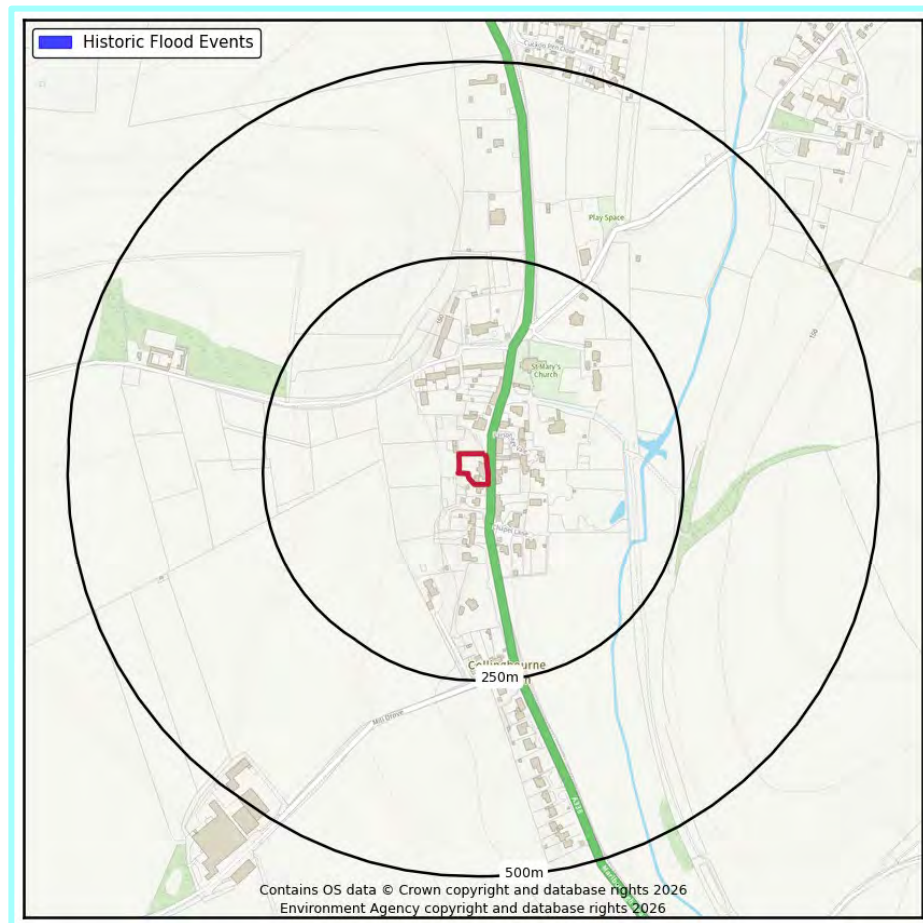
4. Flood risk to the development

Historical flood events

According to the EA's Historical Flood Map (Figure 7) and Appendix J of the SFRA (JBA, 2024), no flooding events have historically affected the Site.

The purpose of historical flood data is to provide information on where and why flooding may have occurred in the past. The absence of any recorded events does not mean flooding has never occurred on-Site or that flooding will never occur at the Site.

Figure 7. EA Historic Flood Map (EA, 2026)

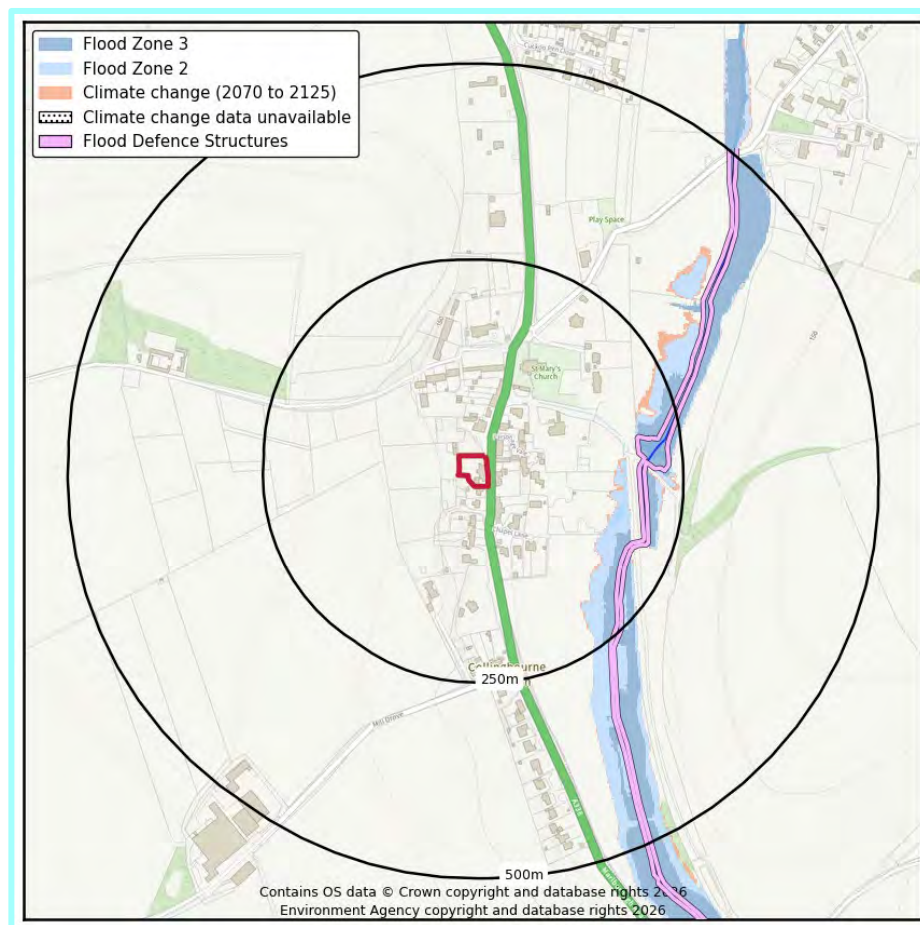


Rivers (fluvial) / Sea (coastal) / Estuarine (tidal) flooding

According to the EA's Flood Map for Planning Purposes (Figure 8), the Site is located within fluvial and tidal Flood Zone 1 and is therefore classified as having a Low probability of fluvial flooding.

The Flood Map for Planning also confirms the Site is not located within the 'flood zone plus climate change' extent.

Figure 8. EA Flood Map for Planning Purposes (EA, 2026)



Guidance

As defined in the NPPF (2024):

Ignoring the presence of any defences, land located in a Flood Zone 1 is considered to have a Low probability of flooding, with less than a 1 in 1000 annual probability of fluvial or coastal flooding in any one year.

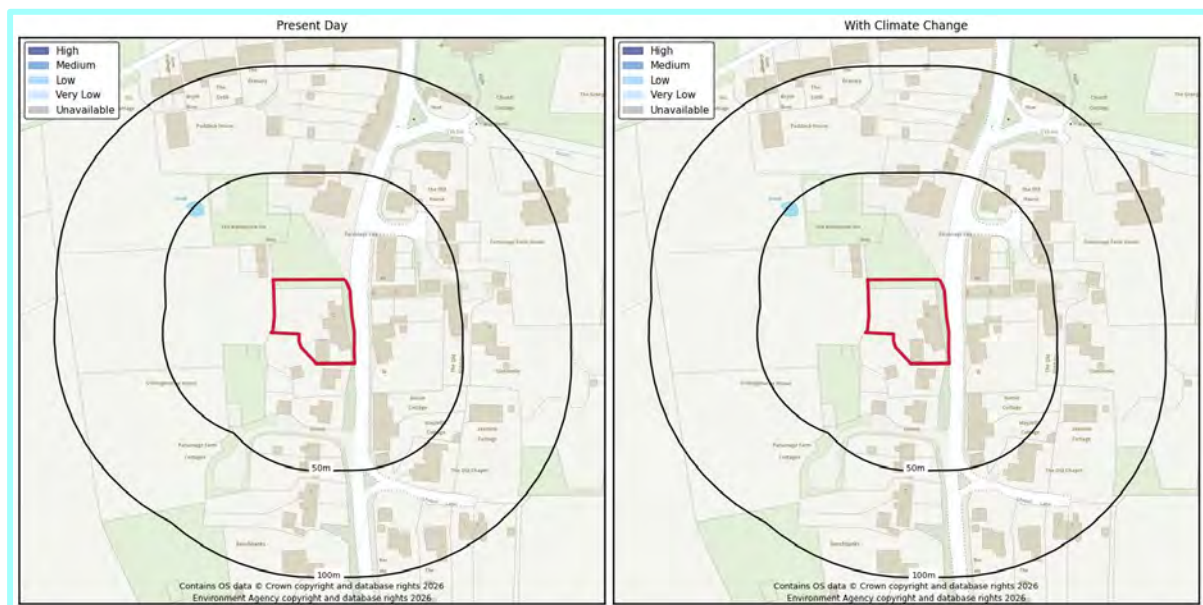
Development of all uses of land is appropriate in this zone (see glossary for terminology).

Flood risk including the benefit of defences

The type and condition of existing flood defences influence the ‘actual’ risk of fluvial flooding to the Site, albeit the long-term residual risk of flooding (ignoring the defences) should be considered when proposing new development.

According to the EA’s RoFRS map (Figure 9), the Site has a Very Low risk of fluvial and tidal flooding during both the present day and climate change (2036 to 2069) scenarios.

Figure 9. Risk of Flooding from Rivers and Sea map present day and future (2036 to 2069) (EA, 2026)



Surface water (pluvial) flooding

Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and coastal floodplains.

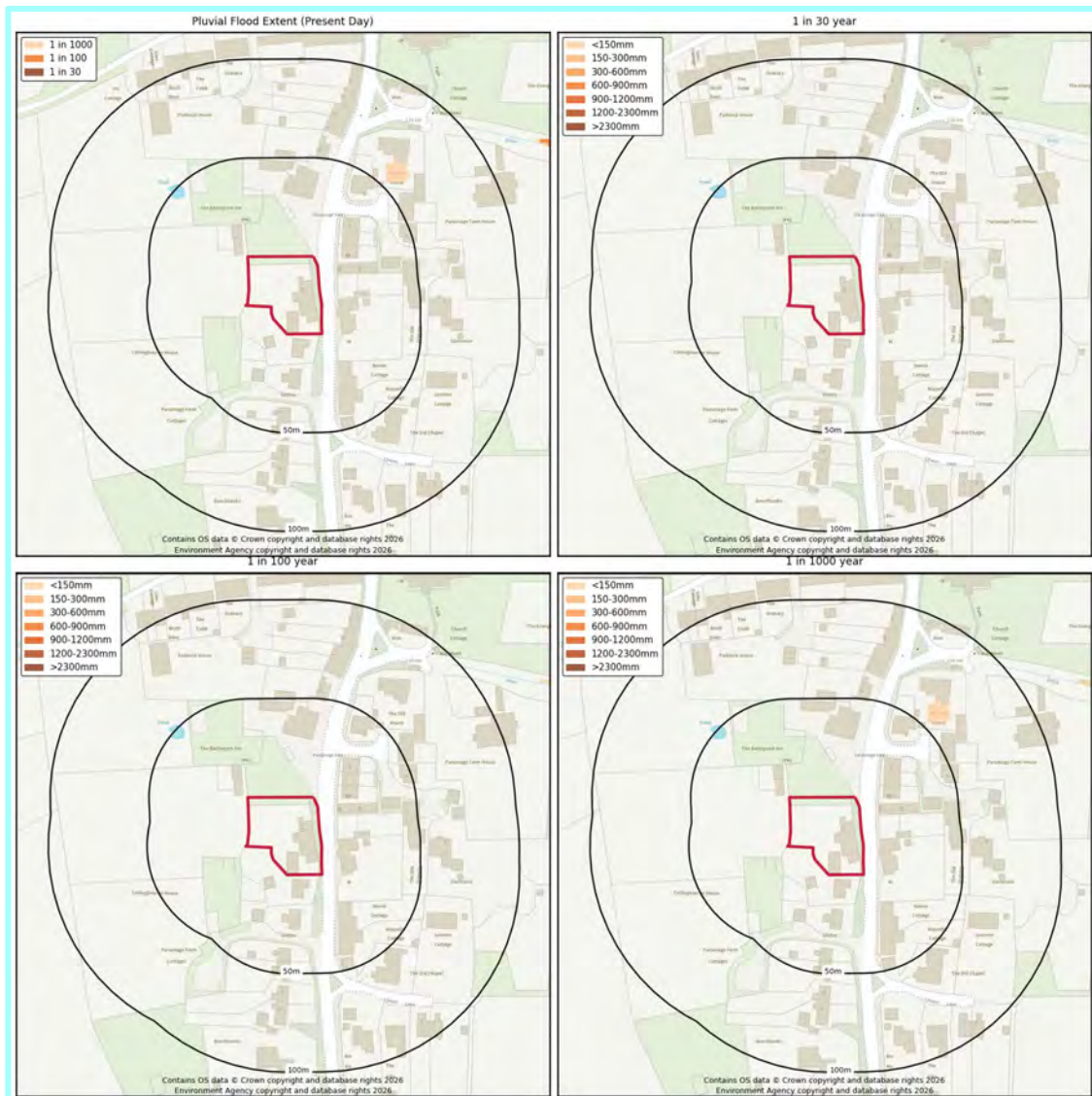
According to the EA’s Risk of Flooding from Surface Water (pluvial) flood mapping, the Site has a Very Low risk of pluvial flooding¹.

Guidance

According to EA’s surface water flood risk map, the Site is at Very Low risk - chance of flooding of less than 1 in 1000 (0.1%).

¹ Environment Agency (2025). Risk of flooding from surface water – understanding and using the map. Accessed from: <https://www.gov.uk/government/publications/flood-risk-maps-for-surface-water-how-to-use-the-map>

Figure 10. EA present day surface water flood extent and depth map (EA, 2026)



The presence of areas of Critical Drainage are not discussed within the SFRA (JBA, 2024).

Surface water flooding flow routes

Analysis of OS mapping, ground elevation data and the EA's pluvial flow route mapping in the 1 in 1000 year (Low probability) event and Overland Flow Pathways mapping confirms the Site is not located on a potential overland flow route.

Climate change factors

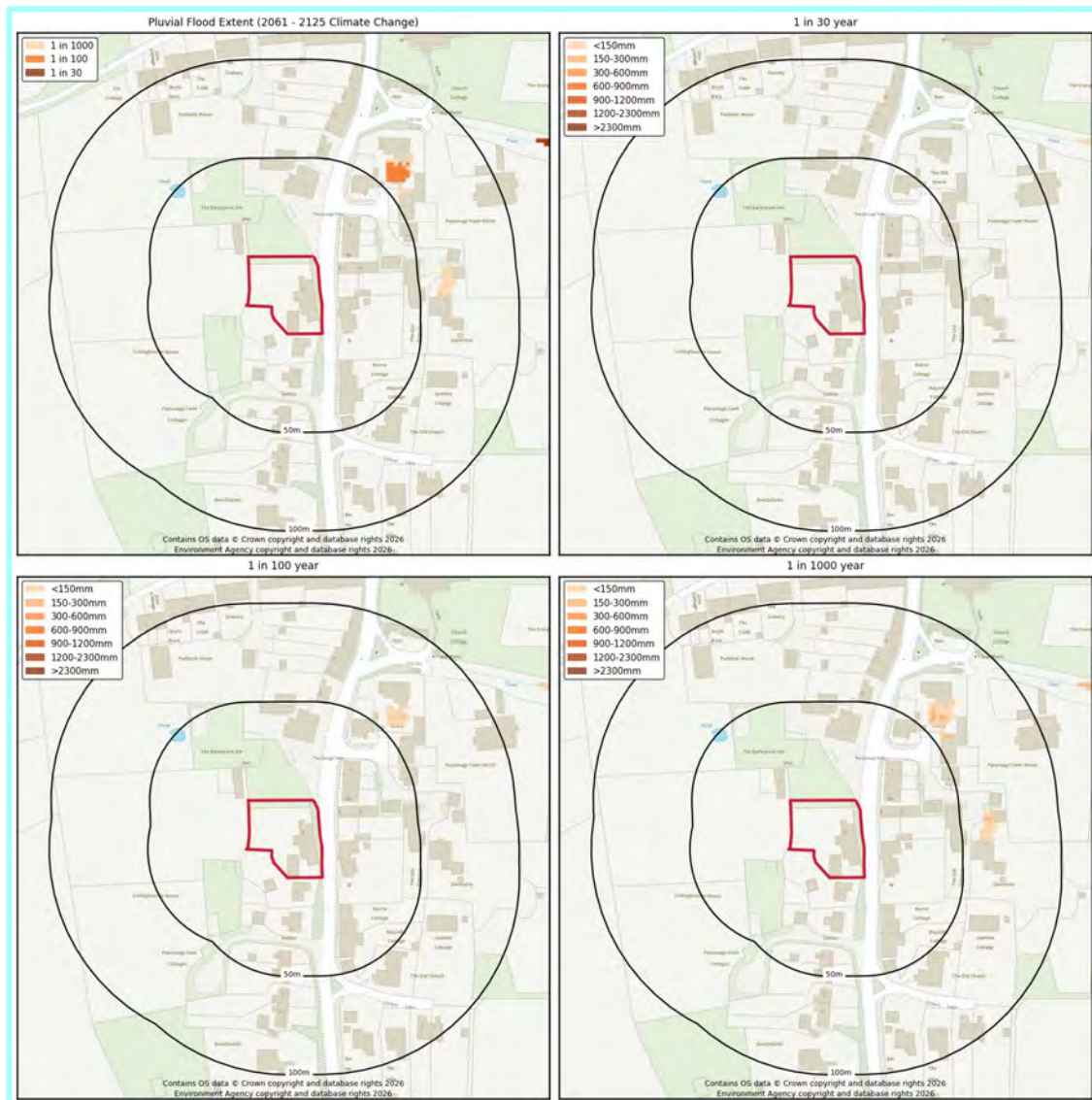
Paragraph 002 of the National Planning Practice Guidance (2025) requires consideration of the 1% AP (1 in 100 year) event, including an appropriate allowance for climate change.

As the Site is located within the Avon Hampshire Management Catchment and the proposed development is classed as More Vulnerable, where the proposed lifespan is approximately 100 years, the Upper End (45%) allowance is required to determine a suitable climate change factor to apply to rainfall data.

As part of RoFSW mapping, climate change modelling has been applied exclusively for the central allowance up to the 2050s epoch. Whilst it should be noted that the risk of pluvial flooding is likely to be greater than this dataset indicates for the lifetime of the development, in the absence of more extensive modelling scenarios this data is considered the best resource at the time of writing.

According to the RoFSW climate change modelling (Figure 11), the Site is modelled to be unaffected by pluvial flooding.

Figure 11. EA future (2040 to 2060) surface water flood extent and depth map (EA, 2026)

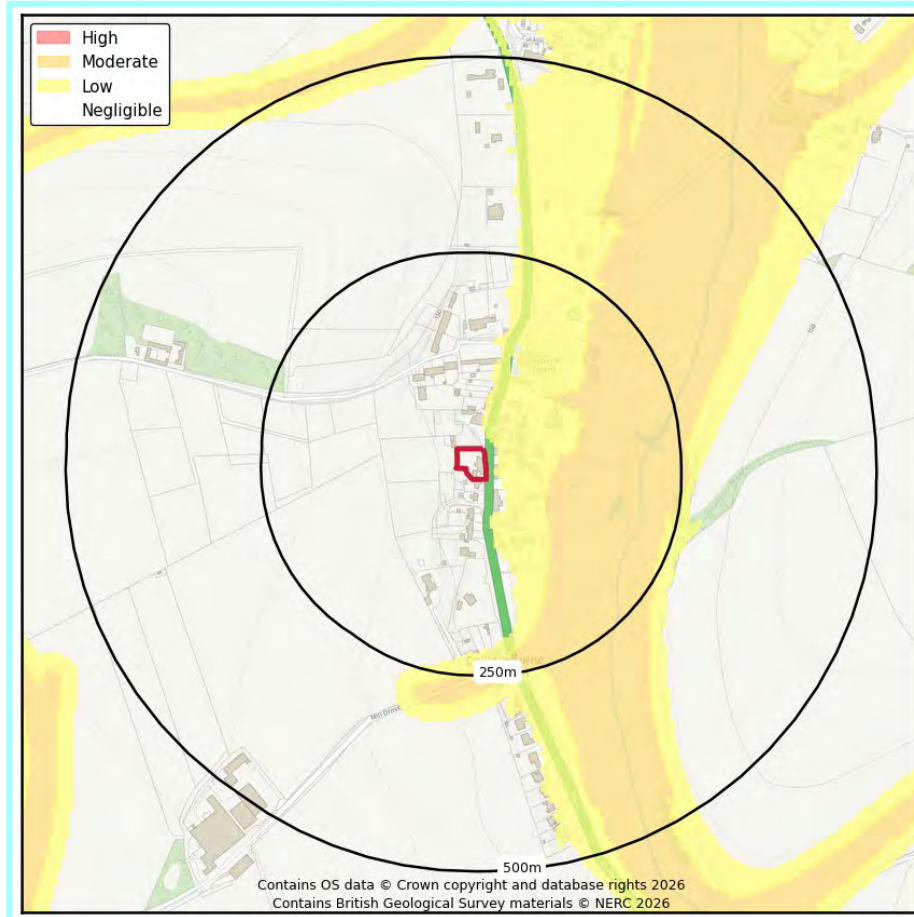


Groundwater flooding

Groundwater flooding occurs when sub-surface water emerges from the ground at the surface or into Made Ground and structures. This may be as a result of persistent rainfall that recharges aquifers until they are full; or may be as a result of high river levels, or tides, driving water through near-surface deposits. Flooding may last a long time compared to surface water flooding, from weeks to months. Hence the amount of damage that is caused to property may be substantially higher.

Groundwater Flood Risk screening data (Figure 12) indicates there is a Negligible risk of groundwater flooding at the surface in the vicinity from permeable bedrock aquifer during a 1 in 100 year event.

Figure 12. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2026)



Mapped classes within the screening map combine likelihood, possible severity and the uncertainty associated with predicting the subsurface system. The map is a national scale screening tool to prompt site-specific assessment where the impact of groundwater flooding would have significant adverse consequences. Mapping limitations and a number of local factors may reduce groundwater flood risk to land and property even where it lies within mapped groundwater flood risk zones, which do not mean that groundwater floods will occur across the whole of the risk area.

A site-specific assessment has been undertaken to refine the groundwater risk screening information on the basis of site-specific datasets (see Section 3) to develop a conceptual groundwater model. The risk rating is refined further using the vulnerability of receptors including occupants and the existing and proposed Site layout, including the presence of basements and buried infrastructure. The presence of any nearby or on-Site surface water features such as drainage ditches, which could intercept groundwater, have also been considered.

It is understood there are no existing basements, and a basement is not proposed as part of the development.

According to a review of the hydrogeology (Section 3), the Site is underlain by permeable bedrock. Groundwater levels may rise in the bedrock and superficial aquifers in a seasonal response to prolonged rainfall recharge which may cause an unusually high peak in groundwater levels during some years.

Despite the presence of an aquifer, the Site would only be at risk of groundwater flooding if the water table reaches the base of the Site development or the ground surface, when groundwater seepage could lead to overland flow and ponding. The surrounding topography suggests that groundwater seepage is more likely to occur downgradient of the Site within the valley associated with the River Bourne c. 200 m east.

On-Site trial pits ref: SA01 and SA02, undertaken as part of Site-specific ground investigation (Paddock Geo Engineering, 2026; report included within Appendix B), did not encounter groundwater to a proven depth of 1.20 m in June 2026, subject to seasonal variations.

Although it is hard to tell due to the coarseness of the mapping, Appendix G of the SFRA (JBA, 2024) (which includes the JBA Groundwater Emergence mapping) indicates that the Site is located in an area where “There is a risk of flooding to subsurface assets but surface manifestation of groundwater is unlikely.”

Spring lines have not been identified in close proximity to the Site.

The hydrogeological characteristics suggest there is potential for a groundwater table beneath the Site.

The baseline groundwater flood risk rating is Negligible. However, on the basis of the site-specific assessment the groundwater flood risk is considered to be Negligible to Low.

Guidance

Negligible to Low Risk - There will be a remote possibility that incidence of groundwater flooding could lead to damage to property or harm to other sensitive receptors at, or near, this location.

Climate change predictions suggest an increase in the frequency and intensity of extremes in groundwater levels.

- Rainfall recharge patterns will vary regionally resulting in changes to average groundwater levels.

The impact of climate change on groundwater levels beneath the Site is linked to the variation in rainfall recharge, which is uncertain.

Flooding from artificial sources

Artificial sources of flood risk include waterbodies or watercourses that have been amended by means of human intervention rather than natural processes. Examples include reservoirs (and associated water supply infrastructure), docks, sewers and canals. The flooding mechanism associated with flood risk from artificial sources is primarily related to breach or failure of structures (reservoir, lake, sewer, canal, flood storage areas, etc.)

Sewer flooding

Flooding from the sewer network can occur when flow entering the system exceeds its available discharge capacity, the system becomes blocked or it cannot discharge due to a high water level in the receiving watercourse. Water then begins to back up through the sewers and surcharge through manholes, potentially flooding highways, and properties.

Table 5-2 of the SFRA does not include any information regarding flooding events from sewers in the SN8 3 area (JBA, 2024).

Guidance

Properties classified as “at risk” are those that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system either once or twice in the ten year reference period. Records held by the sewage utility company provide information relating to reported incidents, the absence of any records does not mean that the Site is not at risk of flooding.

Canal failure

Canals typically present a residual risk to Site rather than a direct flood risk due to the water levels being highly managed within an operating zone. Flooding can still occur from canals as a result of overtopping due to prolonged rainfall or embankment failure.

According to Ordnance Survey (OS) mapping, there are no canals within 500 m of the Site and therefore the risk is considered to be Negligible.

Water supply infrastructure

Water supply infrastructure is comprised of a piped network to distribute water to private houses or industrial, commercial or institution establishments and other usage points. In urban areas, this represents a particular risk of flooding due to the large amount of water supply infrastructure, its condition and the density of buildings.

The risks of flooding to properties from burst water mains cannot be readily assessed.

If more information regarding the condition and history of the water supply infrastructure within the vicinity of the Site is required, then it is advisable to contact the local water supplier (Wessex Water).

Culverts and bridges

The blockage of watercourses or structures by debris (that is, any material moved by a flowing stream including vegetation, sediment and man-made materials or refuse) reduces flow capacity and raises water levels, potentially increasing the risk of flooding. High water levels can cause saturation, seepage and percolation leading to failure of earth embankments or other structures. Debris accumulations can change flow patterns, leading to scour, sedimentation or structural failure.

5. Flood risk from the development

Floodplain storage

Where flood storage from any source of flooding is to be lost as a result of development, on-Site level-for-level compensatory storage, accounting for the predicted impacts of climate change over the lifetime of the development, should be provided. Where it is not possible to provide compensatory storage on-Site, it may be acceptable to provide it off-Site if it is hydraulically and hydrologically linked.

The loss of floodplain storage is less likely to be a concern in areas benefitting from appropriate flood risk management infrastructure or where the source of flood risk is solely tidal.

Drainage and run-off

Based on the topography and Very Low surface water flood risk in the vicinity, interference or interaction with overland flow paths and inflows from off-Site is considered unlikely.

The proposed development involves an increase of impermeable surfaces at the Site. An estimation of run-off is therefore required to permit effective Site water management and prevent any increase in flood risk to off-Site receptors from the Site.

A Sustainable Drainage Strategy has been prepared separately by GeoSmart (ref: 91163.01) to manage the increase in runoff from the Site.

6. Suitability of the proposed development

The information below outlines the suitability of proposed development in relation to national and local planning policy.

National policy and guidance

The aims of the national planning policies are achieved through application of the Sequential Test and in some cases the Exception Test.

Guidance

Sequential test: The aim of this test is to steer new development towards areas with the lowest risk of flooding (NPPF, 2024). Reasonably available sites located in Flood Zone 1 should be considered before those in Flood Zone 2 and only when there are no reasonably available sites in Flood Zones 1 and 2 should development in Flood Zone 3 be considered.

Exception test: In some cases, this may need to be applied once the Sequential Test has been considered. For the exception test to be passed it must be demonstrated that the development would provide wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Suitability of the proposed development, and whether the Sequential and Exception Tests are required, is based on the Flood Zone the Site is located within and the flood risk vulnerability classification of the existing and proposed development. Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

This report has been produced to assess all development types, prior to any development. The vulnerability classification and Flood Zones are compared within the table overleaf (Table 2 of the NPPG (2025)).

As the Site is located within Flood Zone 1, all types of development listed within the Table overleaf are acceptable according to National Policy.

Table 2. Flood risk vulnerability and flood zone ‘incompatibility’ (taken from NPPG, 2025)

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Zone 1 – low probability	✓	✓	✓	✓	✓
	Zone 2 – medium probability	✓	✓	Exception test required	✓	✓
	Zone 3a - high probability	Exception test required	✓	X	Exception test required	✓
	Zone 3b – functional flood plain	Exception test required	✓	X	X	X

7. Resilience and mitigation

Based on the flood risk identified at the Site, the national and local policies and guidance and proposed development, the mitigation measures outlined within this section of the report are likely to help protect the development from flooding.

Sea (coastal/tidal) flood mitigation measures

As the Site is not identified as being at risk of flooding from sea (coastal/tidal) sources, mitigation measures are not required.

Rivers (fluvial) flood mitigation measures

As the Site is not identified as being at risk of flooding from fluvial sources, mitigation measures are not required.

Surface water (pluvial) flood mitigation measures

As the Site is not identified as being at risk of pluvial flooding, mitigation measures are not required.

Groundwater flood mitigation measures

A Negligible to Low risk of groundwater flooding has been identified at the Site. In order to ensure the development includes sufficient flood mitigation measures to reduce the risk of groundwater flooding over its lifetime, the following mitigation measures are recommended:

- Interceptor drains;
- Non-return flap valves on the proposed foul and surface water sewer lines.

If these mitigation measures are implemented, this could reduce the flood risk to the development from Negligible - Low to Negligible.

Reservoir flood mitigation measures

The Site is not at risk of flooding from reservoirs; therefore, mitigation measures are not required.

Other flood risk mitigation measures

As the Site is not identified as at risk from other sources, mitigation measures are not required.

Residual flood risk mitigation measures

The risk to the Site has been assessed from all sources of flooding and appropriate mitigation and management measures proposed to keep the users of the development safe over its lifetime. There is, however, a residual risk of flooding associated with the potential for failure of mitigation measures if regular maintenance and upkeep are not undertaken. If mitigation measures are not implemented or maintained, the risk to the development will remain as the baseline risk.

Further flood mitigation information

More information on flood resistance, resilience and water entry can be found here: http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf

Flood warnings

The EA operates a flood warning service in all areas at risk of flooding; this is available on their website: <https://www.gov.uk/check-flood-risk>. However, as the Site is not at risk of fluvial or tidal flooding, the Site is not located within an EA Flood Alerts/Warning coverage area so is able to receive alerts and warnings.

Other relevant information

It is recommended that main communication lines required for contacting the emergency services, electricity sockets/meters, water supply and first aid stations and supplies are not compromised by flood waters. Where possible these should all be raised above the extreme flood level.

8. Conclusions and recommendations

Source of Flood Risk	Baseline ¹	After analysis ²	After Mitigation ³
River (fluvial) flooding	Very Low		N/A
Sea (coastal/tidal) flooding	Very Low		N/A
Surface water (pluvial) flooding	Very Low		N/A
Groundwater flooding	Negligible	Negligible to Low	Negligible
Other flood risk factors present	No		No
Is any other further work recommended?	Yes (see below)		

1 BASELINE risks assigned for the whole Site, using national risk maps, including the benefit of EA flood defences and the impacts of climate change.

2 AFTER ANALYSIS modification of risk assessment based on detailed site specific analysis including some or all of the following: flood model data, high resolution mapping, building location, access routes, topographic and CCTV surveys. Reasons for the change in classification are provided in the text.

3 AFTER MITIGATION risks include risks to proposed development / asset and occupants if mitigation measures recommended in this report are implemented, including the impacts of climate change.

*N/A indicates where mitigation is not required.

The table overleaf provides a summary of where the responses to key questions are discussed in this report.

More Vulnerable developments in a Flood Zone 1 are acceptable according to the NPPF and providing the recommended mitigation measures are put in place (see previous sections) it is likely that flood risk to this Site will be reduced to an acceptable level.

Table 3. Summary of responses to key questions in the report

Key sources of flood risks identified	Groundwater (see Section 4).
Are standard mitigation measures likely to provide protection from flooding to/from the Site?	Yes (see Section 7).
Is any further work recommended?	Yes (See exec summary and Section 7).

9. Further information

The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products		
	Additional assessment: 	Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective. Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements. Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions. Please contact info@geosmartinfo.co.uk for further information.

10. References and glossary

References

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LiDAR Survey Open Data (2026). Accessed from: <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey> on 24/07/2026.

Glossary

General terms

BGS	British Geological Survey
EA	Environment Agency
GeoSmart groundwater flood risk model	GeoSmart's national groundwater flood risk model takes advantage of all the available data and provides a preliminary indication of groundwater flood risk on a 50 m grid covering England and Wales. The model indicates the risk of the water table coming within 1 m of the ground surface for an indicative 1 in 100 year return period scenario.
Dry-Island	An area considered at low risk of flooding (e.g. In a Flood Zone 1) that is entirely surrounded by areas at higher risk of flooding (e.g. Flood Zone 2 and 3)
Flood resilience	Flood resilience or wet-proofing accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly. Mitigation measures that reduce the damage to a property caused by flooding can include water entry strategies, raising electrical sockets off the floor, hard flooring.
Flood resistance	Flood resistance, or dry-proofing, stops water entering a building. Mitigation measures that prevent or reduce the likelihood of water entering a property can include raising flood levels or installation of sandbags.
Flood Zone 1	This zone has less than a 0.1% annual probability of river flooding
Flood Zone 2	This zone has between 0.1 and 1% annual probability of river flooding and between 0.1% and 0.5 % annual probability sea flooding
Flood Zone 3	This zone has more than a 1% annual probability of river flooding and 0.5% annual probability of sea flooding
Functional Flood Plain	An area of land where water has to flow or be stored in times of flood.
Hydrologic model	A computer model that simulates surface run-off or fluvial flow. The typical accuracy of hydrologic models such as this is ± 0.25 m for estimating flood levels at particular locations.
OS	Ordnance Survey
Residual Flood Risk	The flood risk remaining after taking mitigating actions.
SFRA	Strategic Flood Risk Assessment. This is a brief flood risk assessment provided by the local council
SuDS	A Sustainable drainage system (SuDS) is designed to replicate, as closely as possible, the natural drainage from the Site (before development) to ensure that the flood risk downstream of the Site does not increase as a result of the land being developed. SuDS also significantly improve the quality of water leaving the Site and can also improve the amenity and biodiversity that a Site has to offer. There are a range of SuDS options available to provide effective surface water management that intercept and

store excess run-off. Sites over 1 Ha will usually require a sustainable drainage assessment if planning permission is required. The current proposal is that from April 2014 for more than a single dwelling the drainage system will require approval from the SuDS Approval Board (SABs).

Aquifer Types

Principal aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.
Secondary A aquifer	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
Secondary B aquifer	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.
Secondary undifferentiated	Has been assigned in cases where it has not been possible to attribute either category A or B to a rock type due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.

NPPF (2024) terms

Exception test	Applied once the sequential test has been passed. For the exception test to be passed it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
Sequential test	Aims to steer new development to areas with the lowest probability of flooding.
Essential infrastructure	Essential infrastructure includes essential transport infrastructure, essential utility infrastructure and wind turbines.
Water compatible	Water compatible land uses include flood control infrastructure, water-based recreation and lifeguard/coastal stations.
Less vulnerable	Less vulnerable land uses include police/ambulance/fire stations which are not required to be operational during flooding and buildings used for shops/financial/professional/other services.
More vulnerable	More vulnerable land uses include hospitals, residential institutions, buildings used for dwelling houses/student halls/drinking establishments/hotels and sites used for holiday or short-let caravans and camping.
Highly vulnerable	Highly vulnerable land uses include police/ambulance/fire stations which are required to be operational during flooding, basement dwellings and caravans/mobile homes/park homes intended for permanent residential use.

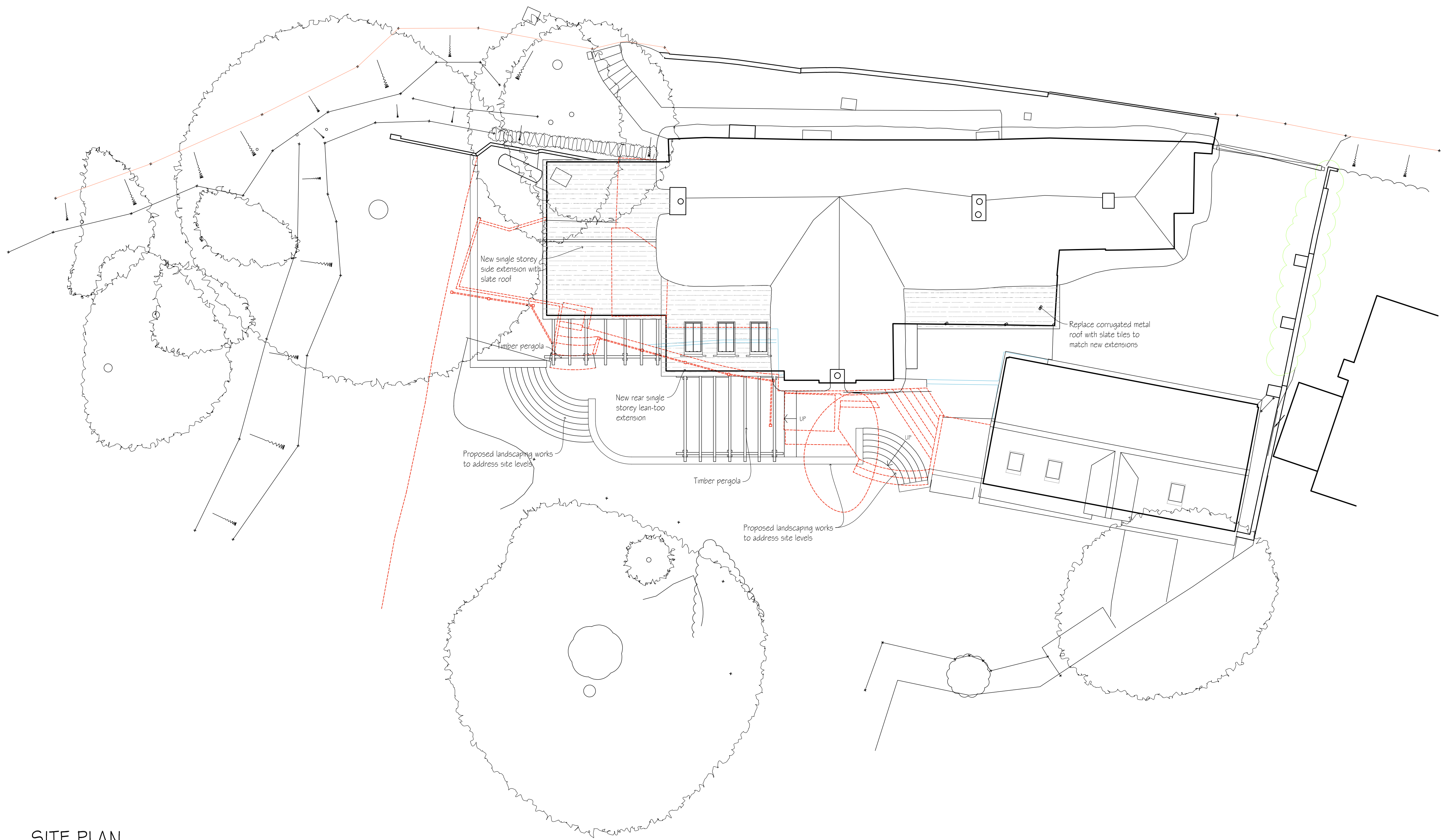
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Location Plan	Contains Ordnance Survey data © Crown copyright and database right 2026
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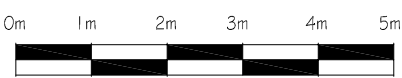
11. Appendices

Appendix A

Site plans



SITE PLAN
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E	Client amendments	AL	23.06.26
D	Client amendments	AL	22.06.26
C	Client amendments	AL	03.06.26
B	Design Scheme updated (AL 18/05/26)	MR	22.05.26
A	Bob Edwards comments	AL	03.10.25

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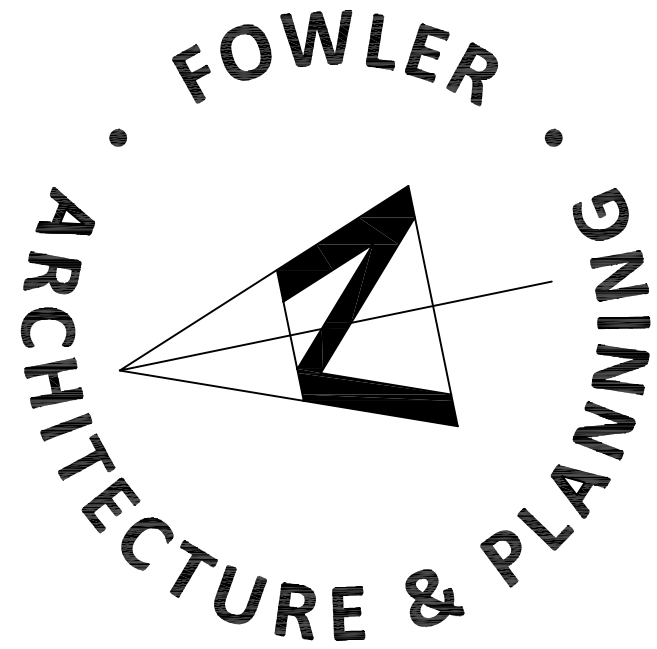
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Collingbourne Kingston

preliminary

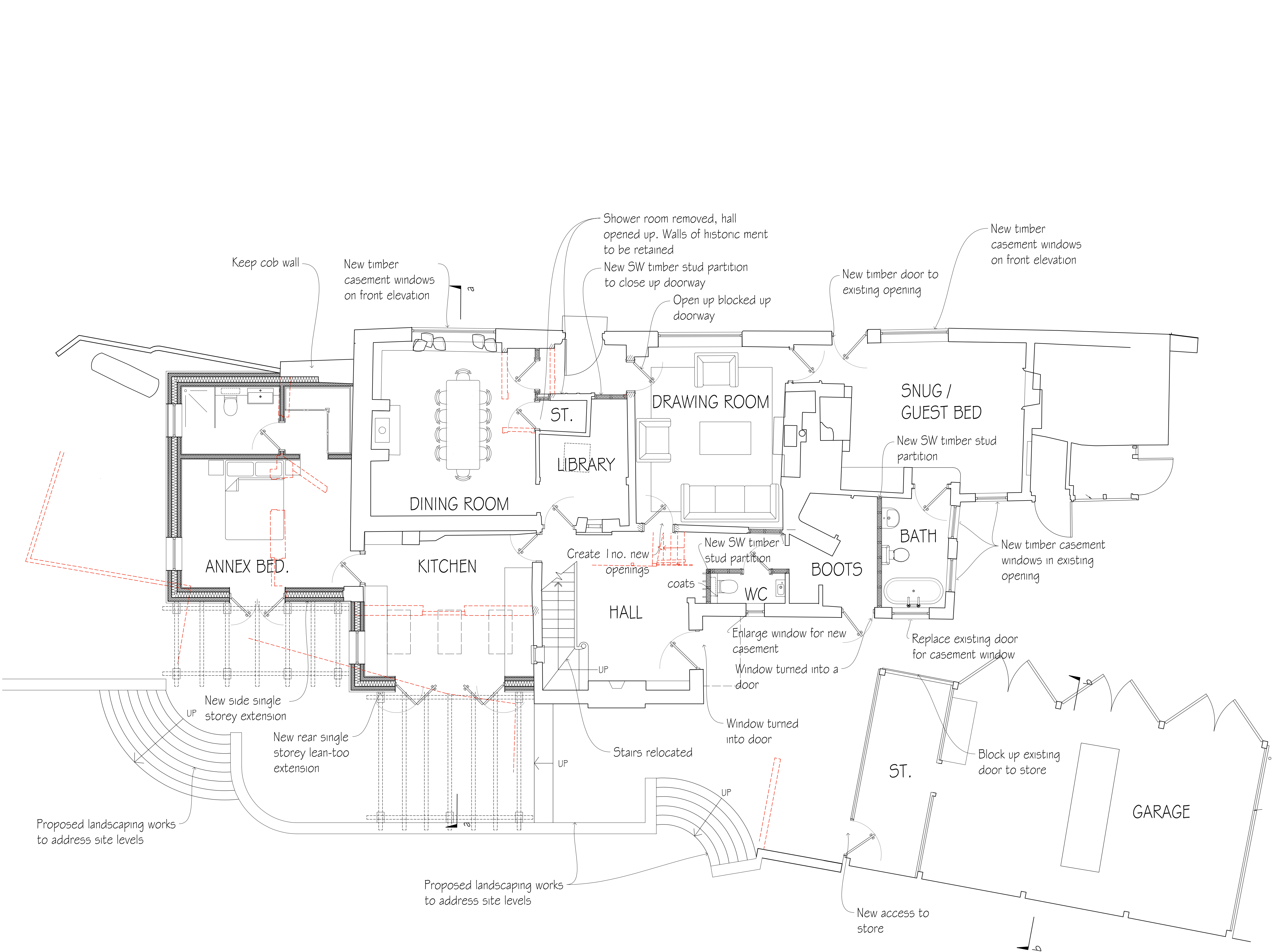
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PROPOSED SITE PLAN

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- KEY
- Existing Wall
 - New Wall
 - New or adjusted opening in existing wall
 - Wall to be demolished
 - Rooflight or ceiling feature
 - Head height line (1.5m/2m)

F	Bob Edwards comments	AL	17.07.26
E	Client amendments	AL	11.06.26
D	Client amendments	AL	04.06.26
C	Client amendments	AL	03.06.26
B	Design Scheme updated (AL 18/05/26)	MR	22.05.26
A	Bob Edwards Comments	AL	03.10.25

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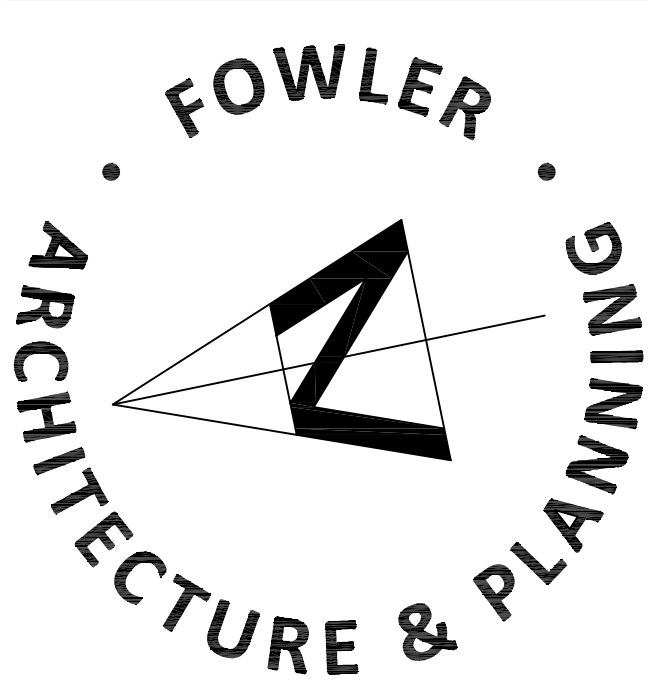
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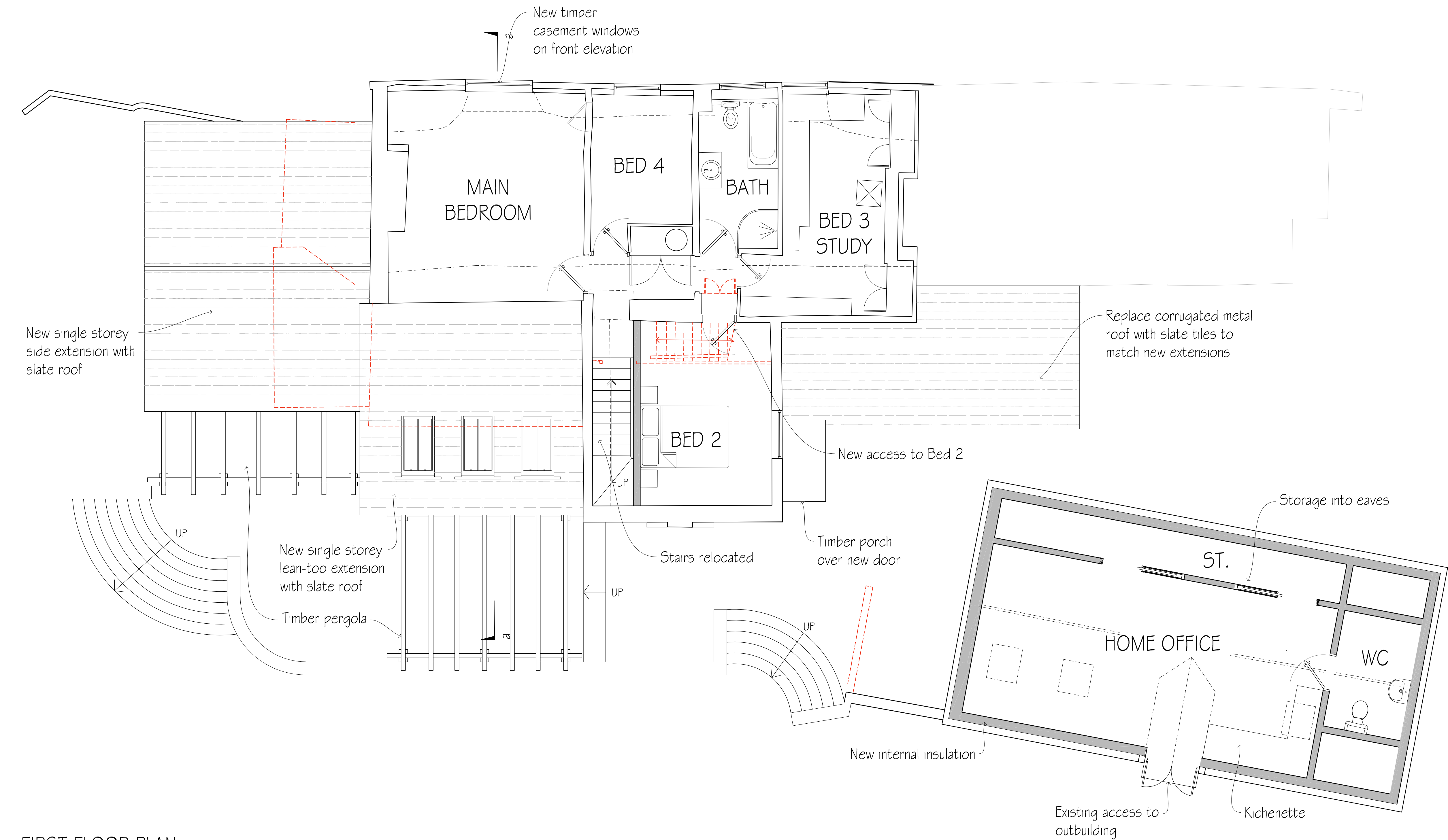
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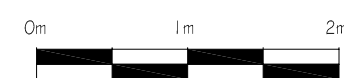
GROUND FLOOR PLAN
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FIRST FLOOR PLAN

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E	Client amendments	AL	22.06.26
D	Client amendments	AL	04.06.26
C	Client amendments	AL	03.06.26
B	Design Scheme updated (AL 18/05/26)	MR	22.05.26
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FF Plan

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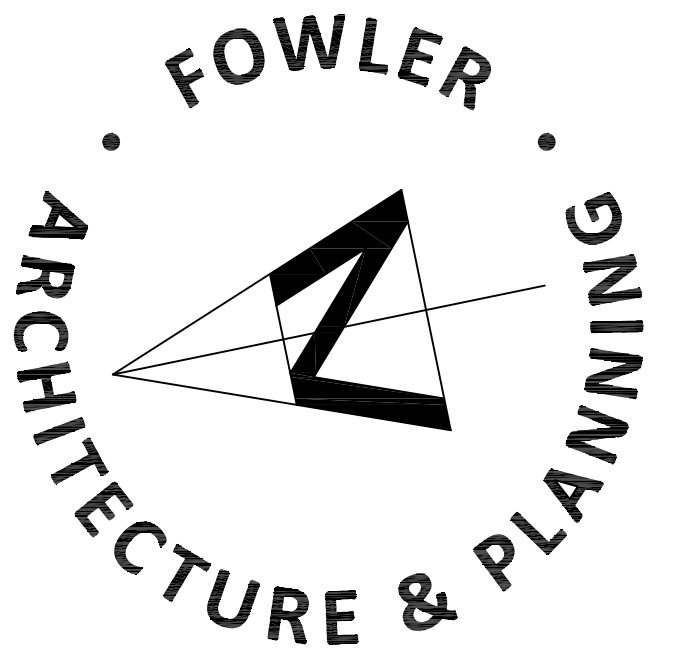
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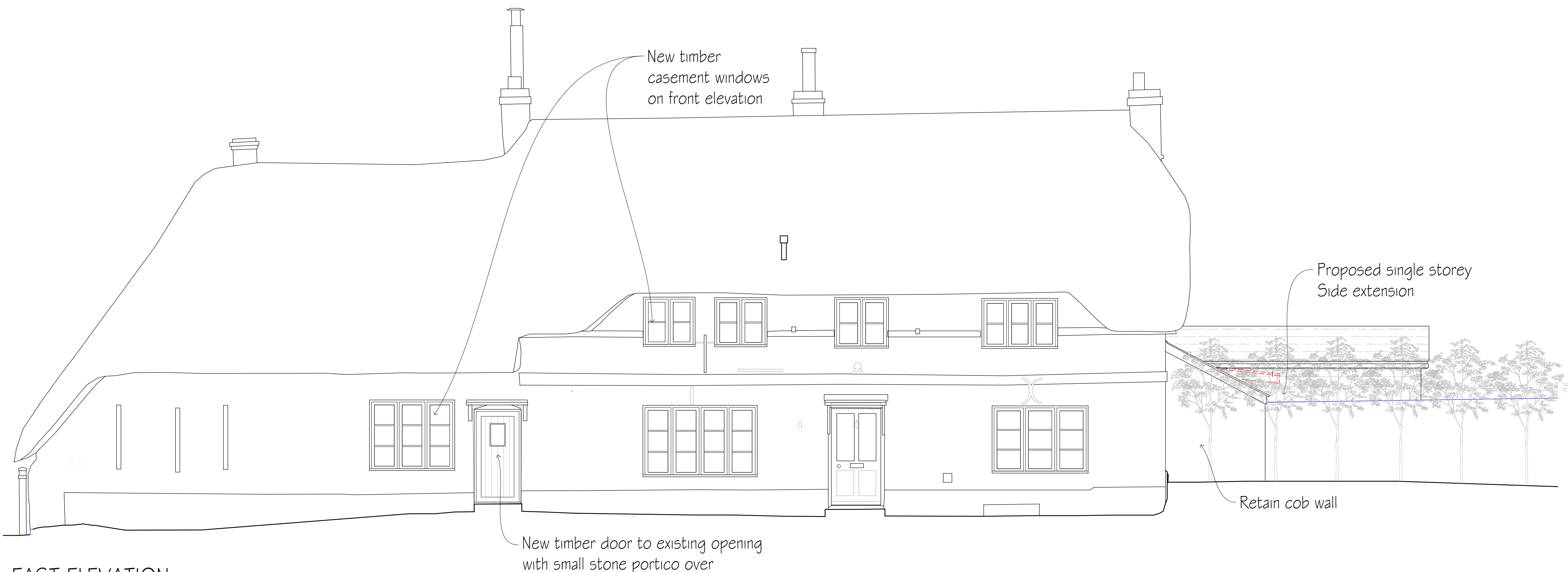


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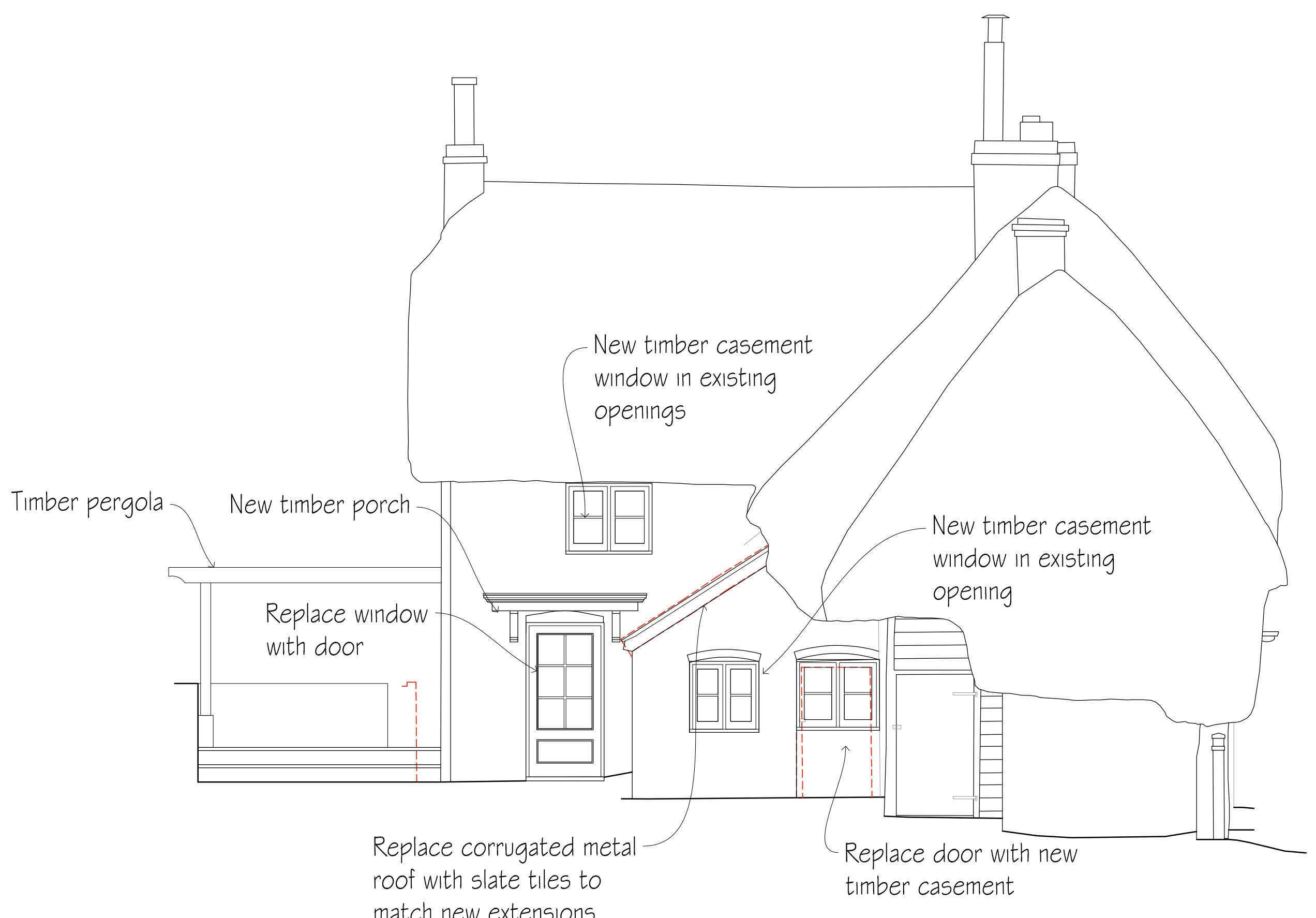
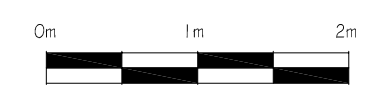
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EAST ELEVATION
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SOUTH ELEVATION
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F	Window review	AL	22.07.26
E	Client amendments	AL	23.06.26
D	Client amendments	AL	11.06.26
C	Client amendments	AL	03.06.26
B	Design Scheme updated (AL 18/05/26)	MR	22.05.26
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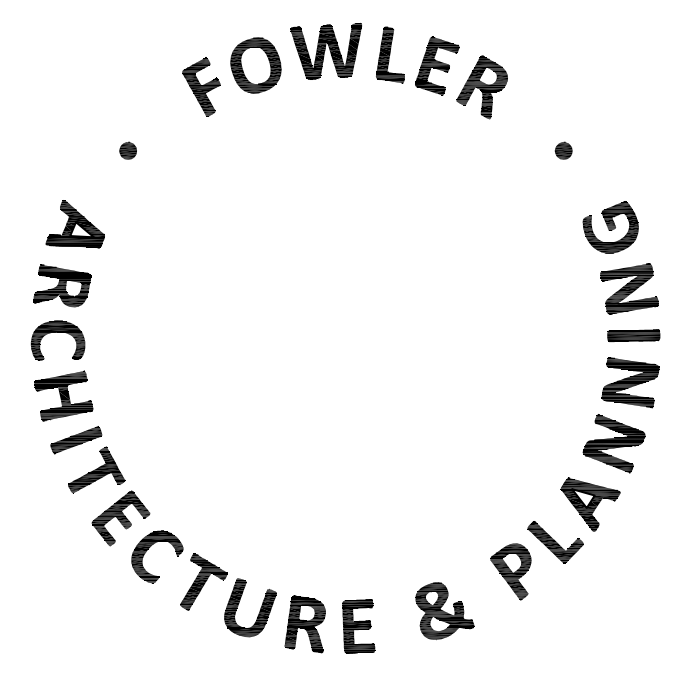
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Elevations 1**

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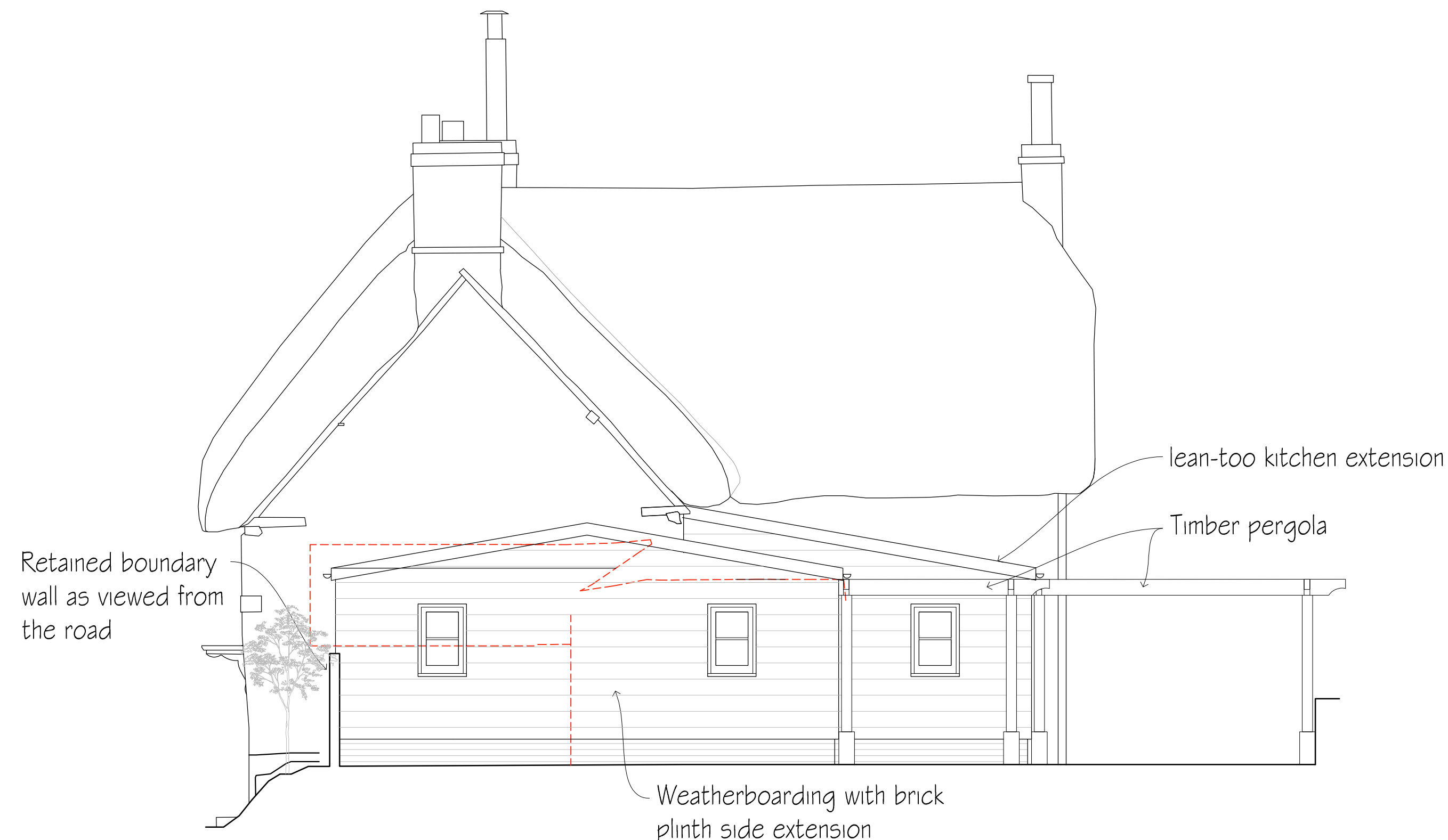
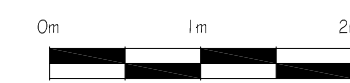


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WEST ELEVATION

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NORTH ELEVATION

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	Wall to be demolished
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	Head height line (1.5m/2m)

H	Window review	AL	22.07.26
G	Client amendments	AL	23.06.26
F	Client amendments	AL	22.06.26
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C	Client amendments	AL	03.06.26
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Appendix B

Infiltration testing report (Paddock Geo Engineering, 2026)

The Old Bakery, 61 Collingbourne Kingston, Marlborough, SN8 3SD

BRE365 INFILTRATION TESTING



Catherine Vaughan

June 2026

P26-117inf

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CONTENTS

1.0	INTRODUCTION	2
1.1	Objectives	2
1.2	Scope of Works	2
1.3	Terms of Reference	2
2.0	SITE DESCRIPTION	2
2.1	Sitework	2
2.2	Encountered Strata	3
2.3	Groundwater Details	3
3.0	LABORATORY ANALYSIS	3
4.0	INFILTRATION TESTING	3
4.1	BRE365, Surface Water Soakaway Testing	3

TABLES

Table 1: Encountered Strata	3
Table 2: Infiltration Factors	4

ISSUE	DATE	Written by:	Comment
0	10/06/2026	Edoardo Angelone MSc FGS	-
		Reviewed and approved by	
		Matt Paddock MSc FGS	
For and on behalf of Paddock Geo Engineering Limited			

APPENDICES

A	Exploration Point Location Plan
B	Trial Pit Logs
C	Laboratory Analysis Results – Not used
D	Infiltration Testing Results
E	Site Photographs

1.0 INTRODUCTION

Further to instructions received from Catherine Vaughan; the Client, infiltration testing has been carried out to the BRE365 methodology in relation to assessing the infiltration properties of the underlying ground on the subject site referred as The Old Bakery, 61 Collingbourne Kingstone, Marlborough, SN8 3SD.

1.1 Objectives

This assessment has been carried out to a scope of works as detailed by the Client prior to commencement. The assessment has been designed to assess the infiltration properties of the near surface strata and determine feasibility of soakaways.

1.2 Scope of Works

The works comprised the forming of 2no. machine excavated trial pit, with infiltration testing carried out in accordance with the BRE365 methodology.

1.3 Terms of Reference

The assessment has been carried out generally in accordance with the following guidance.

- BRE Digest 365 – Soakaway Design 2016
- BS5930: 2015 - Code of Practice for Site Investigations, British Standards Institution

2.0 SITE DESCRIPTION

The site is located within the village of Collingbourne Kingston, at approximately 6.5km north of Tidworth town centre. The subject site comprises an irregular plot, sloping moderately towards east in trend with the surrounding topography. The site is occupied by a large building located broadly within the eastern area of the site. The site is bounded to the north, west and south by a mixture of wooden fences and vegetation with occasional semi-mature and semimature trees while the eastern site boundary is marked by Marlborough Road.

The immediate surrounding area includes residential properties with associated gardens in all directions. The wider surrounding area comprises open countryside with sporadic pockets of woodland. Access to the site is gained directly from Marlborough Road.

2.1 Sitework

The siteworks were carried out on 9th June 2026 and comprised the excavation of 2no. machine excavated trial pits (SA01 and SA02) to depths between 1.00m and 1.20m below ground level (bgl) respectively with infiltration testing conducted in accordance with BRE365 methodology.

A micro excavator was employed to access the site. Therefore, the test pits were formed to a generally shallower depth than usual due to the reach of the smaller excavator employed.

The trial pits were formed in areas clear of obstruction and any buried services following a Cable Avoidance Tool (CAT) and Signal Generator survey. The testing locations are indicated on the enclosed Exploratory Point Location Plan presented in Appendix A.

The trial pit arisings were logged by a Geotechnical Engineer generally in accordance with BS5930:2015. No samples were recovered from the trial pits.

The trial pits were reinstated upon completion of testing with compacted arisings.

2.2 Encountered Strata

The Trial Pit logs and an Exploratory Point Location Plan showing the investigation positions are presented in Appendices B and A respectively.

The strata encountered within the Trial Pits is summarised in the table below. These details are also included on the Trial Pit Logs presented in Appendix B.

Table 1: Encountered Strata

Encountered Strata – Trial Pit Strata	SA01	SA02
TOPSOIL LIKE MADE GROUND Dark grey brown clayey organic fine to coarse SAND with occasional brick fragments and frequent rootles.	0.30	0.50
HOLYWELL NODULAR CHALK FORMATION Extremely weak, fissured, off-white to white CHALK recovered as slightly silty sandy fine to coarse subangular to subrounded Gravel. Clasts are extremely weak, low density. Fissures are very closed spaced partially infilled with comminuted chalk.	1.00	1.20
Total Depth (m bgl)	1.00	1.20

2.3 Groundwater Details

No groundwater was encountered within any of the trial pits to the full depth investigated of 1.20m.

It should be noted that groundwater levels may vary seasonally and with other factors. The reviewer should satisfy themselves with the groundwater levels at the time of any construction works.

3.0 LABORATORY ANALYSIS

Samples were not recovered from the arisings, and laboratory analysis was not carried out.

4.0 INFILTRATION TESTING

4.1 BRE365, Surface Water Soakaway Testing

Infiltration testing was carried out within the trial pits (SA01 and SA02) to the BRE365 methodology to provide an estimate infiltration factor for the subject site. The trial pits were formed at depths of comprised between 1.00m and 1.20m bgl and filled with of 0.40m of water at its base to limit the amount of water used and reduce the likelihood of trial pit instabilities.

Three test cycle were completed within both trial pits, and the test results are summarised in the table below.

Full testing results are presented within Appendix D.

Table 2: Infiltration Factors

Trial Pit	Soil Tested	Tested Depth (m bgl)	Infiltration Factor (ms^{-1})		
			Cycle 1	Cycle 2	Cycle 3
SA01	Holywell Nodular Chalk Formation	0.60 – 1.00	3.37×10^{-5}	2.79×10^{-5}	2.13×10^{-5}
SA02		0.80 – 1.20	6.89×10^{-5}	4.61×10^{-5}	3.59×10^{-5}

Based on the infiltration testing results, soakaway drainage is considered feasible within the tested Holywell Nodular Chalk Formation at the subject site.

General Notes

This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it.

The conclusions and recommendations given in this report are based on our understanding of the future plans for the site and based on a scope of works agreed by the Client and afforded by the agreed budget. No responsibility is accepted for conditions not encountered, which are between exploratory points or outside of the agreed scope of work or if construction is commenced before regulatory approval of designs.

The report has been prepared following the guidelines and principles established in the British Standards, BS 5930, CIRIA Guidance and NHBC Standards. It necessarily relies on the co-operation of other organisations and the free availability of information and total access. No responsibility can, therefore, be accepted for conditions arising from information that was inaccurate or not available to the investigating team as a result of information being withheld or access being denied.

This report may suggest an opinion on a suspected configuration of strata or conditions between exploratory points and below the maximum depth of investigation. However, this is for guidance only and no liability can be accepted for its accuracy. Comments on the groundwater conditions are based on observations made at the time of the investigation unless otherwise stated. It should be noted, however, that groundwater levels might vary due to seasonal or other effects.

APPENDIX A

Exploration Points Location Plan

Exploratory Point Location Plan

P26-117

The Old Bakery,
61 Collingbourne Kingstone,
Marlborough,
SN8 3SD

Catherine Vaughan

June 2026

Legend:



Infiltration testing
Locations

Notes:

- 1) Not to scale
- 2) Dimensions as shown
- 3) All positions are approximate
- 4) Drawing to be viewed in colour
- 5) Drawing to be viewed digitally
- 6) Not for construction detail
- 7) Based on plans provided the Client

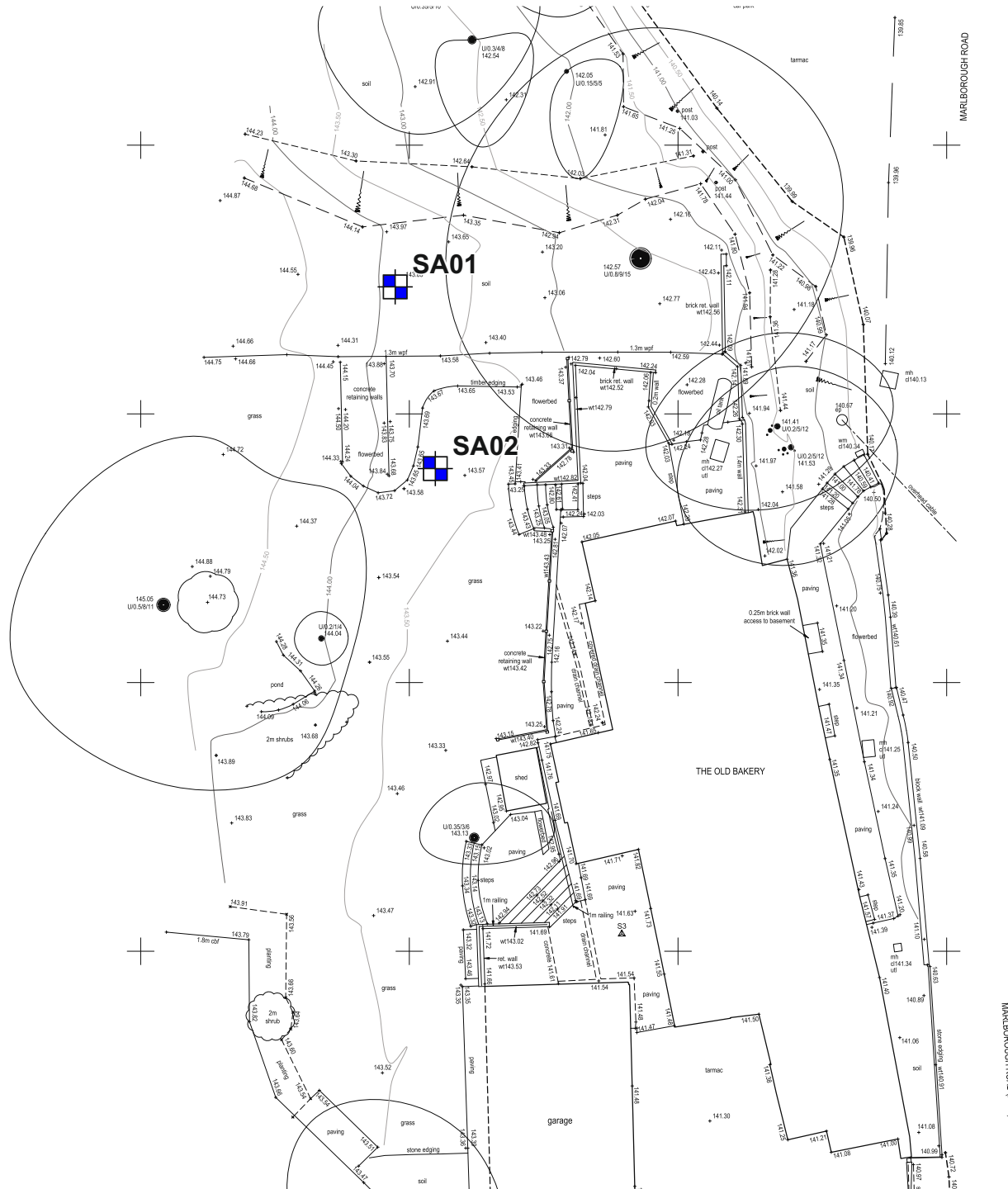
155730mN

155720mN

155710mN

155700mN

S1



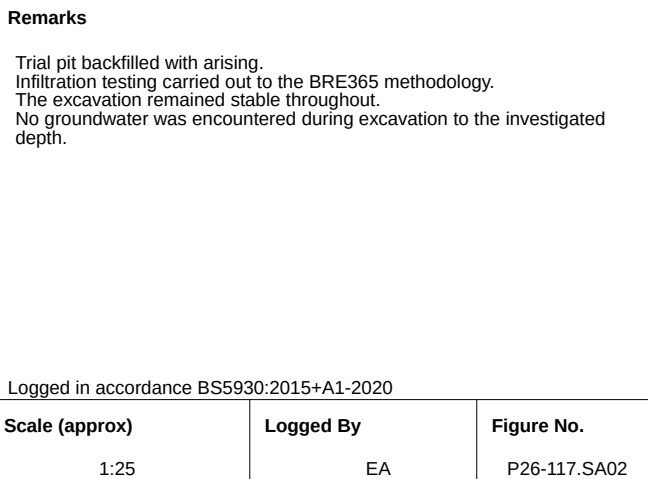
APPENDIX B

Trial Pit Logs

						Site The Old Bakery, 61 Collingbourne Kingstone, Marlborough, SN8 3SD		Trial Pit Number SA01			
Excavation Method 750 kg Excavator		Dimensions 0.35 x 1.30		Ground Level (mOD)		Client Catherine Vaughan		Job Number P26-117			
		Location		Dates 09/06/2026		Engineer		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
					(0.30) 0.30 (0.70) 1.00	Dark grey brown clayey organic fine to coarse SAND with occasional brick fragments and frequent rootles. (TOPSOIL LIKE MADE GROUND) Extremely weak, fissured, off-white to white CHALK recovered as slightly silty sandy fine to coarse subangular to subrounded Gravel. Clasts are extremely weak, low density. Fissures are very closed spaced partially infilled with comminuted chalk. (HOLYWELL NODULAR CHALK FORMATION) Complete at 1.00m		 			
						Remarks Trial pit backfilled with arising. Infiltration testing carried out to the BRE365 methodology. The excavation remained stable throughout. No groundwater was encountered during excavation to the investigated depth. Logged in accordance BS5930:2015+A1-2020					
						Scale (approx) 1:25		Logged By EA		Figure No. P26-117.SA01	

Client Catherine Vaughan	Job Number P26-117
Engineer	Sheet 1/1

Description	Legend	Water
Grass onto dark grey brown clayey organic fine to coarse SAND with occasional brick and concrete fragments and frequent rootles. (TOPSOIL LIKE MADE GROUND)		
Extremely weak, fissured, off-white to white CHALK recovered as slightly silty sandy fine to coarse subangular to subrounded Gravel. Clasts are extremely weak, low density. Fissures are very closed spaced partially infilled with comminuted chalk. (HOLYWELL NODULAR CHALK FORMATION)		
Complete at 1.20m		



APPENDIX C

Laboratory Analysis Results – Not Used

APPENDIX D

Infiltration Testing Results

Infiltration Test to BRE365 - SA01 - TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.60
	1	43	0.61
	2	118	0.64
	4	224	0.67
	6	389	0.70
	11	638	0.74
	13	802	0.75
	16	943	0.77
	25	1517	0.81
	47	2809	0.90

Location: SA01

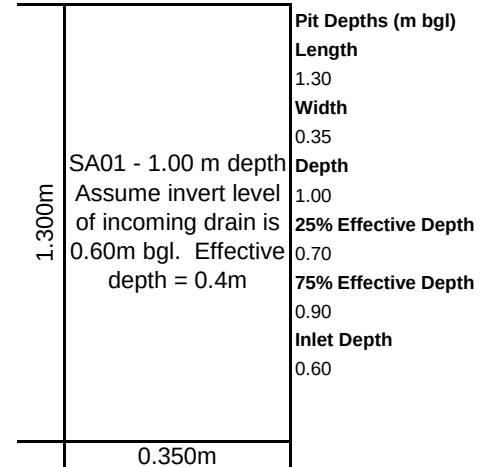
TEST 1

Weather: Drizzle

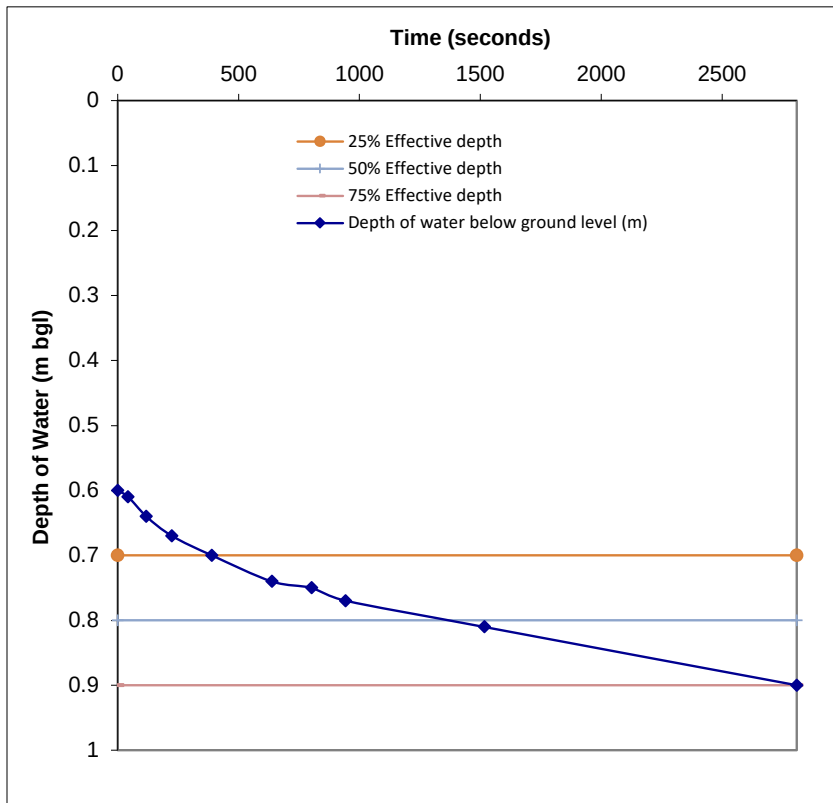
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION



Invert Level of incoming pipe (m): 0.60



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.30 \times 0.35 \times (0.9 - 0.7) = 0.091$$

$$ap_{50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.30 \times) + 2(0.35 \times) + (1.30 \times 0.35) = 1.115$$

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth

$$= 2420 \text{ secs}$$

$$f = 3.37E-05 \text{ m/s}$$

Comment



Client: Catherine Vaughan
 Project No: P26-117
 Project: The Old Bakery, 61 Collingbourne Kingstone, Marlborough, SN8 3SD

Infiltration Test to BRE365 - SA01 - TEST 2

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.60
	2	145	0.65
	8	478	0.70
	10	611	0.72
	16	959	0.76
	21	1248	0.78
	30	1773	0.81
	39	2316	0.84
	57	3402	0.90

Location: SA01

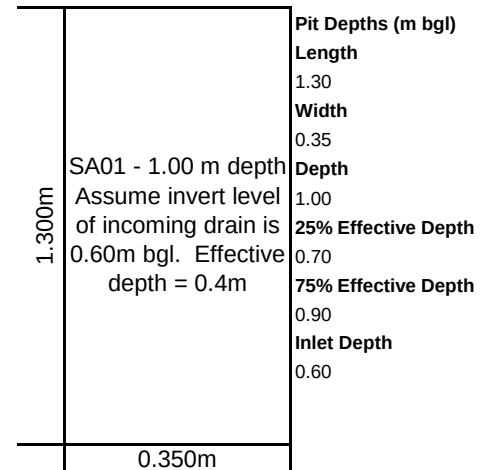
TEST 2

Weather: Drizzle

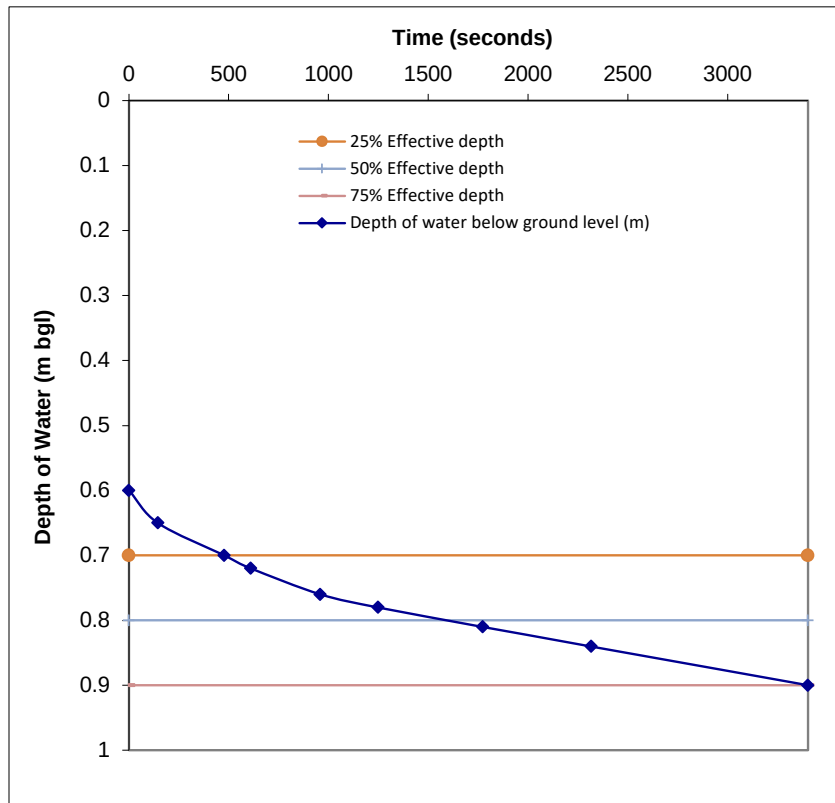
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION



Invert Level of incoming pipe (m): 0.60



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.30 \times 0.35 \times (0.9 - 0.7) = \mathbf{0.091}$$

$$ap_{50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.30 \times) + 2(0.35 \times) + (1.30 \times 0.35) = \mathbf{1.115}$$

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth

$$= \mathbf{2924 \text{ secs}}$$

$$f = \mathbf{2.79E-05 \text{ m/s}}$$

Comment

Infiltration Test to BRE365 - SA01 - TEST 3

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.53
	8	469	0.65
	11	679	0.70
	20	1202	0.75
	28	1653	0.79
	59	3566	0.86
	76	4546	0.88
	88	5308	0.90

Location: SA01

TEST 3

Weather: Drizzle

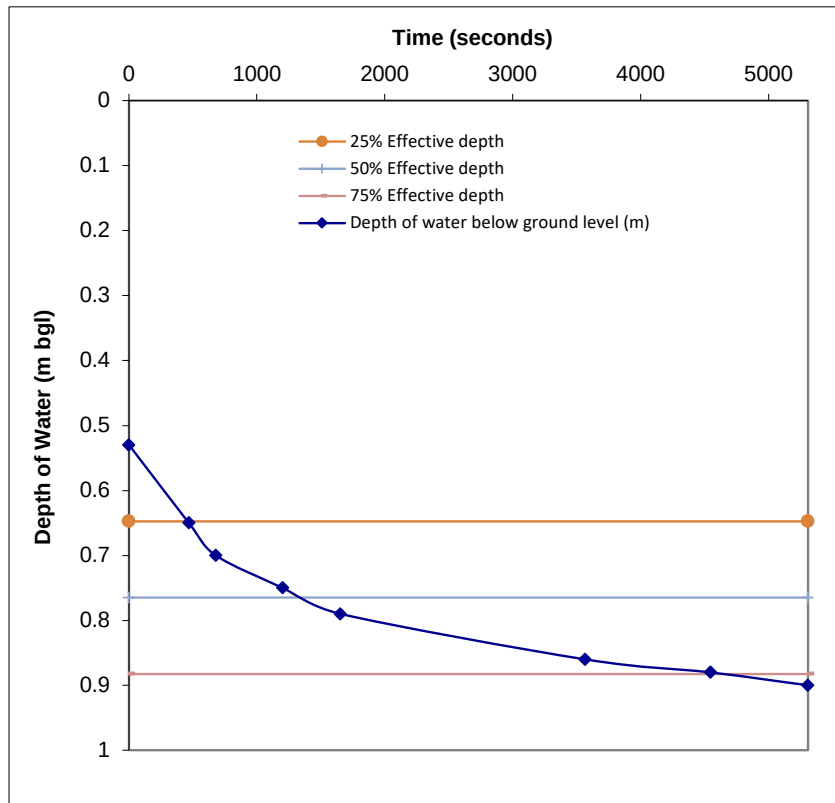
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION

1.300m	SA01 - 1.00 m depth Assume invert level of incoming drain is 0.53m bgl. Effective depth = 0.47m	Pit Depths (m bgl)
		Length
		1.30
		Width
		0.35
		Depth
		1.00
		25% Effective Depth
		0.65
		75% Effective Depth
0.88		
Inlet Depth		
0.53		
	0.350m	

Invert Level of incoming pipe (m): 0.53



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.30 \times 0.35 \times (0.8825 - 0.6475) = 0.106925$$

$$ap_{50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.30 \times) + 2(0.35 \times) + (1.30 \times 0.35) = 1.2305$$

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth

$$= 4077 \text{ secs}$$

$$f = 2.13E-05 \text{ m/s}$$

Comment



Client: Catherine Vaughan
 Project No: P26-117
 Project: The Old Bakery, 61 Collingbourne Kingstone, Marlborough, SN8 3SD

Infiltration Test to BRE365 - SA02 - TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.80
	1	36	0.83
	3	173	0.89
	3	202	0.90
	5	273	0.93
	8	456	0.97
	11	681	1.01
	14	840	1.03
	23	1397	1.10

Location: SA02

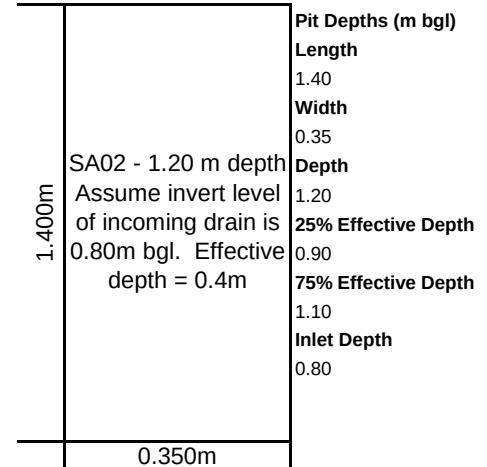
TEST 1

Weather: Drizzle

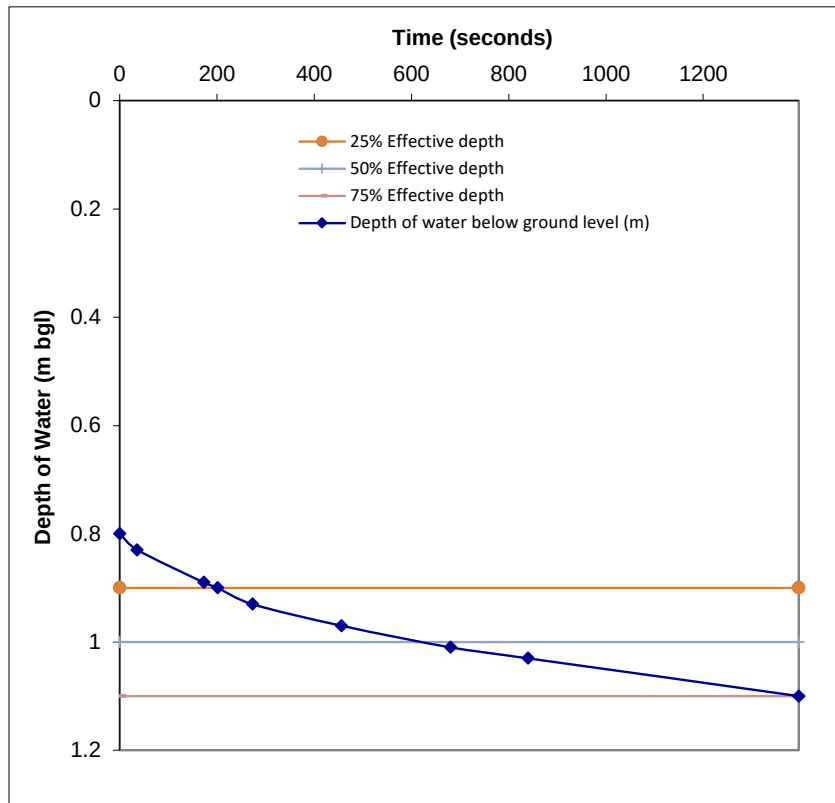
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION



Invert Level of incoming pipe (m): 0.80



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.40 \times 0.35 \times (1.1 - 0.9) = 0.098$$

$$ap_{50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.40 \times) + 2(0.35 \times) + (1.40 \times 0.35) = 1.19$$

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth

$$= 1195 \text{ secs}$$

$$f = 6.89E-05 \text{ m/s}$$

Comment



Client: Catherine Vaughan
 Project No: P26-117
 Project: The Old Bakery, 61 Collingbourne Kingstone, Marlborough, SN8 3SD

Infiltration Test to BRE365 - SA02 - TEST 2

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.80
	2	101	0.83
	4	226	0.87
	6	374	0.90
	10	571	0.94
	13	751	0.97
	15	899	0.99
	20	1207	1.02
	24	1445	1.04
	36	2159	1.10

Location: SA02

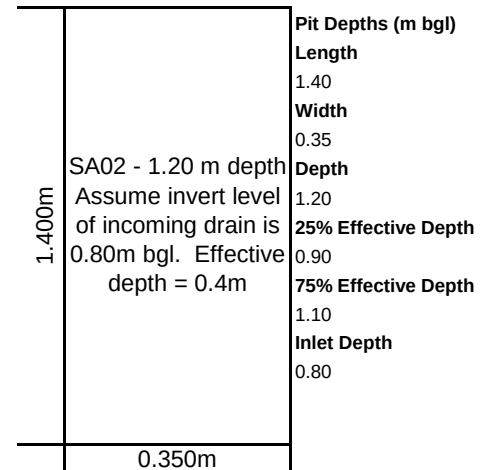
TEST 2

Weather: Drizzle

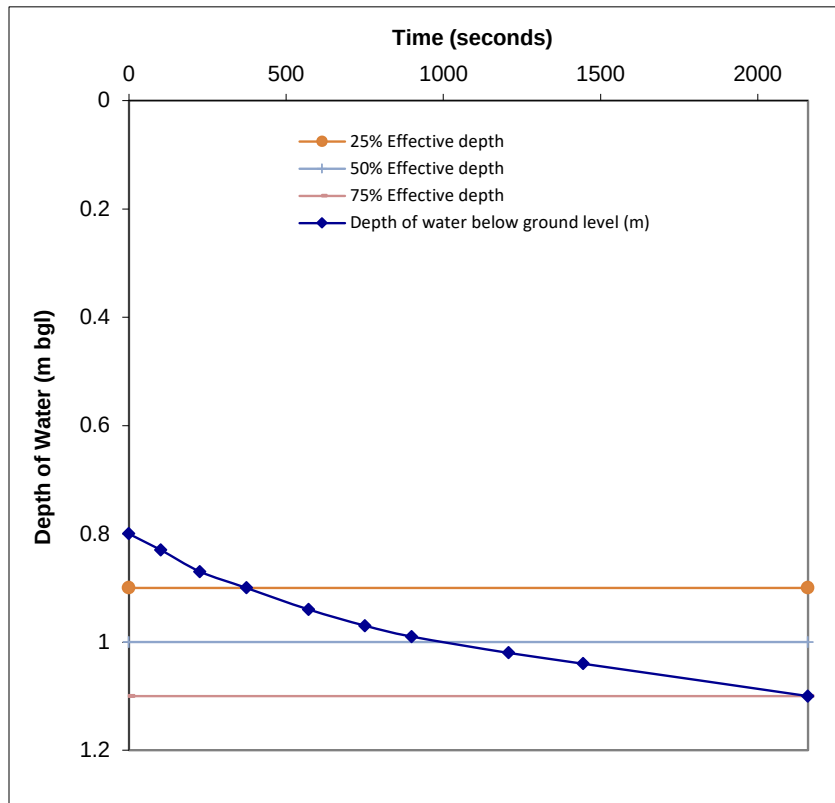
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION



Invert Level of incoming pipe (m): 0.80



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.40 \times 0.35 \times (1.1 - 0.9) = 0.098$$

$$ap_{50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.40 \times) + 2(0.35 \times) + (1.40 \times 0.35) = 1.19$$

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth

$$= 1785 \text{ secs}$$

$$f = 4.61E-05 \text{ m/s}$$

Comment

Infiltration Test to BRE365 - SA02 - TEST 3

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0	0	0.77
	3	170	0.84
	5	316	0.88
	7	403	0.90
	10	587	0.93
	17	1018	0.98
	21	1233	1.00
	28	1708	1.03
	34	2044	1.05
	38	2286	1.07
	45	2679	1.09

Location: SA02

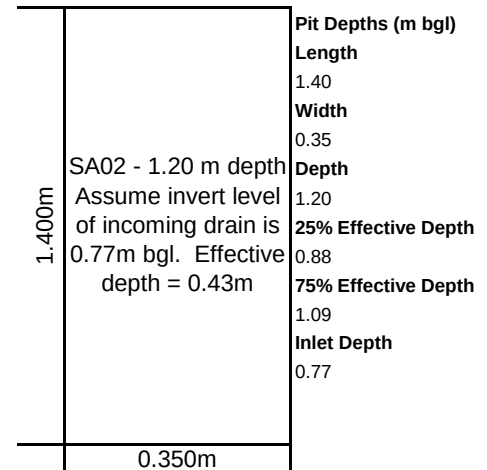
TEST 3

Weather: Drizzle

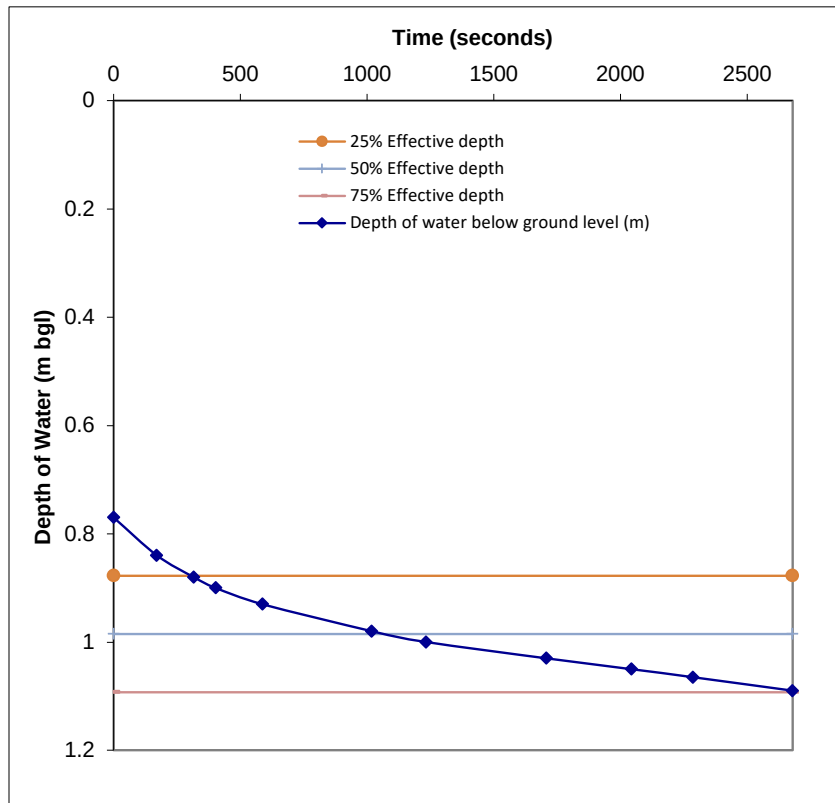
Engineer: EA

Date: 09/06/2026

Strata Tested HOLYWELL NODULAR CHALK FORMATION



Invert Level of incoming pipe (m): 0.77



CALCULATION:

$$\text{Soil Infiltration Rate}(f) = \frac{V_{p75-25}}{(a_{p50} \times t_{p75-25})}$$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.40 \times 0.35 \times (1.0925 - 0.8775) = 0.10535$$

$$a_{p50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.40 \times) + 2(0.35 \times) + (1.40 \times 0.35) = 1.2425$$

t_{p75-25} = the time for water level to fall from 75% - 25% effective depth

$$= 2364 \text{ secs}$$

$$f = 3.59E-05 \text{ m/s}$$

Comment

APPENDIX E

Site Photographs



Photo of the investigated area facing west



Photo of the investigated area facing east



Photo of the investigated area facing southwest



Photo of the investigated area facing north



Photo of trial pit SA01



Photo of trial pit SA01 Arising





Photo of trial pit SA02



Photo of trial pit SA02 Arising

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The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

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- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

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Liz Lloyd

Finance Manager

GeoSmart Information Limited

Suite 1, 1 Bellstone Court Bellstone

Shrewsbury, SY1 1JB

Tel: 01743 298 100

support@geosmartinfo.co.uk

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