

**FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT AT
MILL LANE, DONINGTON**

FINAL REPORT

ECL1087/DENNIS

DATE JULY 2023

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1.0 INTRODUCTION

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of Mr & Mrs G Wilson in respect of a development that consists of a replacement dwelling at Mill Lane, Donington.

A planning application for the proposed development is to be submitted.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is situated at 12 Mill Lane, Donington, Spalding, Lincolnshire, PE11 4TL. The National Grid Reference of the site is 52122/33546.

The location of the site is shown on Figure 1.

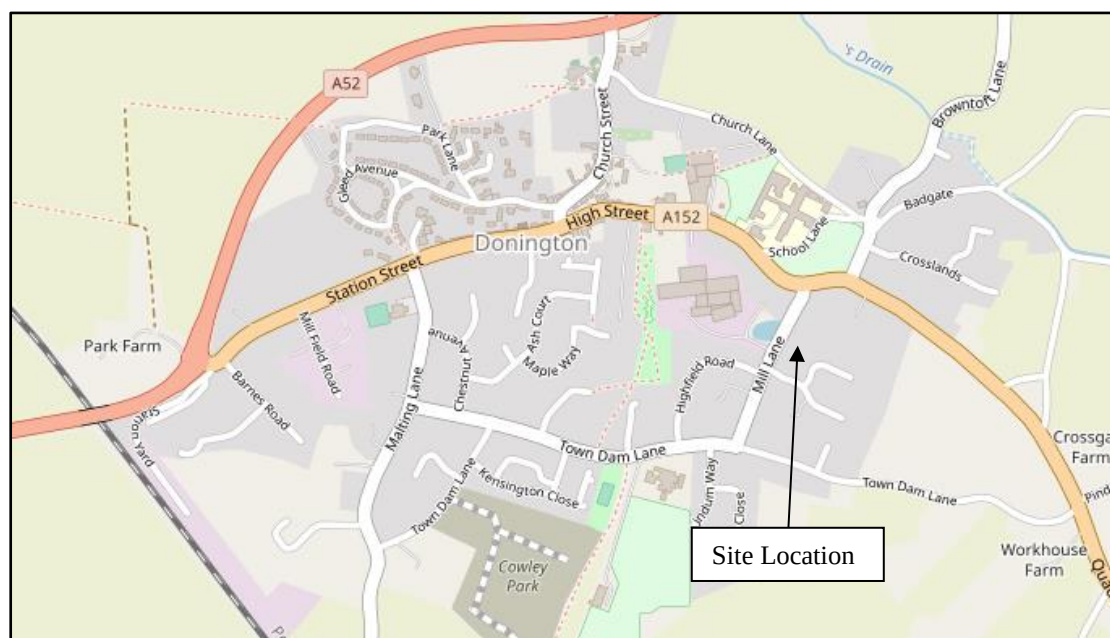


Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the eastern side of Mill Lane. The site is a residential plot that consists of a bungalow and the surrounding garden. The site is surrounded by residential dwellings. The area of development is 0.07 hectares.

Environment Agency LiDAR data shows that the site is flat with typical ground levels between +3.2m OD and +3.3m OD. The carriageway level of Mill Lane adjacent to the site is +3.0m OD.

The site is in the Black Sluice Internal Drainage Board's (IDB) district. Surface water at the site would naturally drain through soakaway and hence to the IDB drain system. Adjacent to the site there is a pond on the western side of Mill Lane which has an outlet to a riparian watercourse. This riparian watercourse discharges to an IDB maintained watercourse 'Branch North to Flinders Park' 200m west of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by Oxford Clay Formation - Mudstone. The superficial deposits at the site are Clay and Silt.

2.3 Proposed Development

The proposed development consists of a replacement dwelling. The dwelling will be single storey. Details of the proposed development are provided in Attachment 1.

2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding.

2.5 Available Flood Risk Information

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. Part of the site is located within Flood Zone 2, an area with a medium probability of flooding.

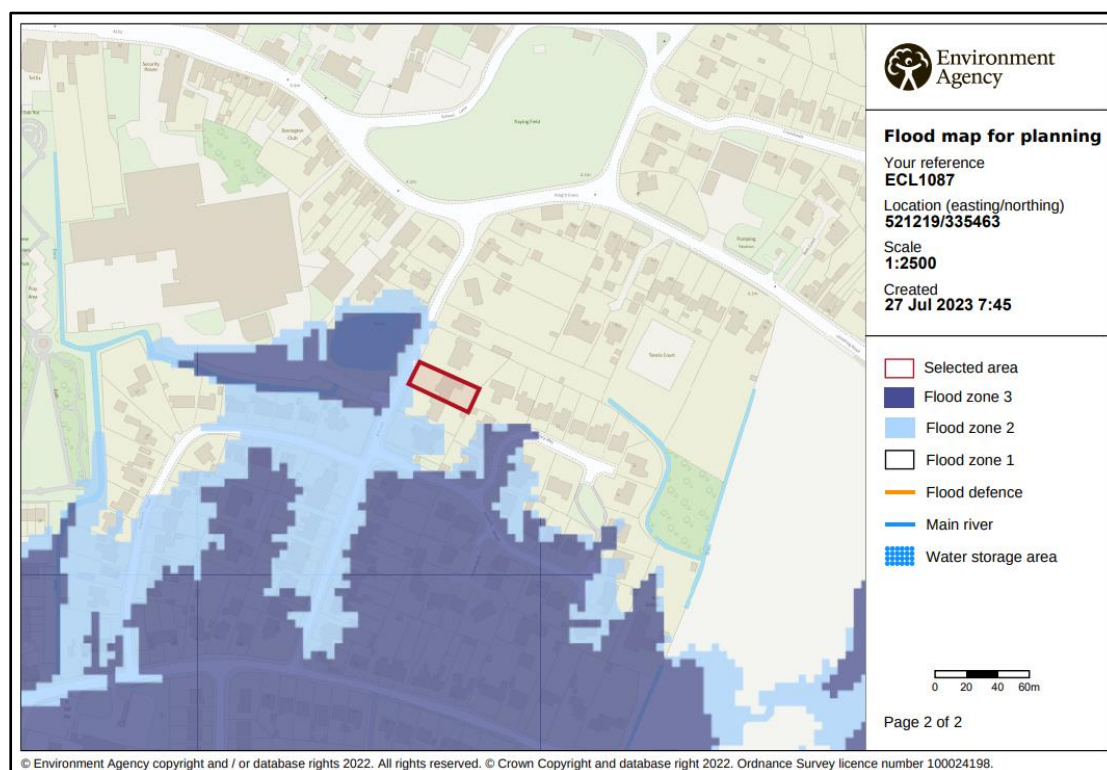


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk Maps show that:

- the site has a very low risk of flooding from rivers or the sea (annual probability less than 0.1%);
- part of the site has a low risk of surface water flooding (annual probability between 0.1% and 1%); and
- the site is not within an area at risk of reservoir flooding.

Table 1 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is outside the 'Low Hazard' area	The site is outside the 'Low Hazard' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The site is outside the area at risk during a breach	The site is outside the area at risk during a breach

Table 1 – Flood Risk within SFRA Maps

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of buildings used for dwellings and is classified as 'More Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is in Flood Zone 2 and the development is 'More Vulnerable' therefore it is not necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

The proposed development is a replacement dwelling and as such it is not necessary to apply the Sequential Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is 9.1km north west of the tidal River Welland downstream of Spalding. The nearest main river is the South Forty Foot Drain which is 3.8km west of the site.

The River Welland and South Forty Foot Drain are the responsibility of the Environment Agency. There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by Black Sluice IDB. The nearest IDB watercourse is 200m west of the site. The site and surrounding land drains by gravity through the North Ing Pump Drain to Donington North Ing Pumping Station. The pumping station is operated and maintained by Black Sluice IDB.

During the operation and maintenance of its pumping stations, associated structures, and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Board's assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the Black Sluice IDB's and the Environment Agency's defences are generally good.

4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 2.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps the risk is very low.
Fluvial Flooding	The risk is assessed in Section 4.3 & Section 4.5.
Tidal Flooding	The site is 9km from the tidal River Welland and therefore not at risk.
Reservoir Flooding	The residual risk of a breach of defences is assessed in section 4.5.
Groundwater Flooding	Based upon the local drainage network the risk is low.

Table 2 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the Black Sluice IDB drainage system is low due to the maintenance standards achieved and managed by the IDB.

Failure of Donington North Ing Pumping Station could lead to an increased level of risk in the IDB catchment.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the Black Sluice IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The defences on the South Forty Foot Drain provide protection against the 1% annual probability (1 in 100 chance each year) event.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded.

4.5 Climate Change and Residual Risk

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the local drainage network.

The defences on the South Forty Foot Drain protect the site during the 1% annual probability (1 in 100 chance each year) event including climate change. In summary the existing systems and defences are appropriate for the design life of the development (i.e., 100 years).

There is a residual risk of flooding to land close to the South Forty Foot Drain should a breach occur in the defences. The South East Lincolnshire SFRA includes maps demonstrating the impact of a breach in 2116. The Residual Peak Depth maps within the SFRA indicate the maximum flood depths associated with a breach and overtopping of defences. The site is not at risk during a breach of the South Forty Foot Drain.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Donington North Ing Pumping Station could lead to an increase level of risk at the site.

The probability of the site flooding from any Environment Agency system is less than 1% annual probability (1 in 100 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development it is not anticipated that the site would flood.

The SFRA considers the residual risk associated with overtopping or a breach in the defences in 2116. The site is not at risk.

The proposed development increases the impermeable area and therefore there is an increased volume of surface water that has the potential to increase flood risk.

5.2 Mitigation Measures

The site has a low 'actual risk' of flooding. Based upon the information available during the preparation of this flood risk assessment it is recommended that the finished floor level of the dwelling is 0.3m above the surrounding ground level. It is recommended that there should be 0.3m of flood resilient construction above finished floor level.

The developer should ensure that the eventual occupier of the dwelling is sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency operates a flood warning system for properties at risk of flooding to enable householders to protect life or take actions to manage the effect of flooding on property. Floodline Warnings Service is a national system run by the Environment Agency for broadcasting flooding warnings. The occupier of the dwelling should register to receive flood warnings.

It is recommended that surface water run-off is managed so that stormwater from the site will not affect any adjoining properties or increase the flood risk elsewhere.

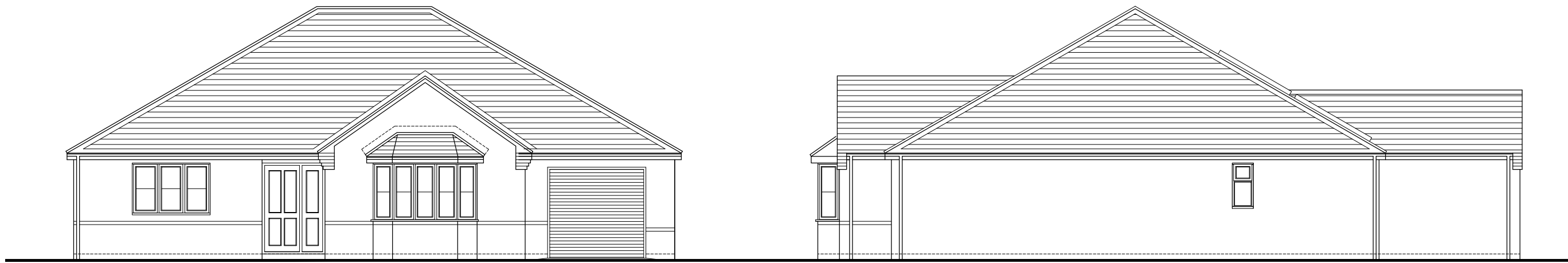
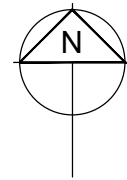
6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

- The proposed development consists of a single storey replacement dwelling at 12 Mill Lane, Donington.
- The site is located within an Internal Drainage Board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 and 1 in 100 years, respectively.
- The proposed development is partly in Flood Zone 2 as defined in the NPPF. The site benefits from defences on the South Forty Foot Drain that provide protection during the 1% annual probability (1 in 100 chance each year) fluvial event including climate change.
- It is recommended that the finished floor level of the dwelling is 0.3m above typical site levels and there is 0.3m of flood resilient construction above finished floor level.
- The development passes the Sequential Test and is therefore suitable for the proposed location.

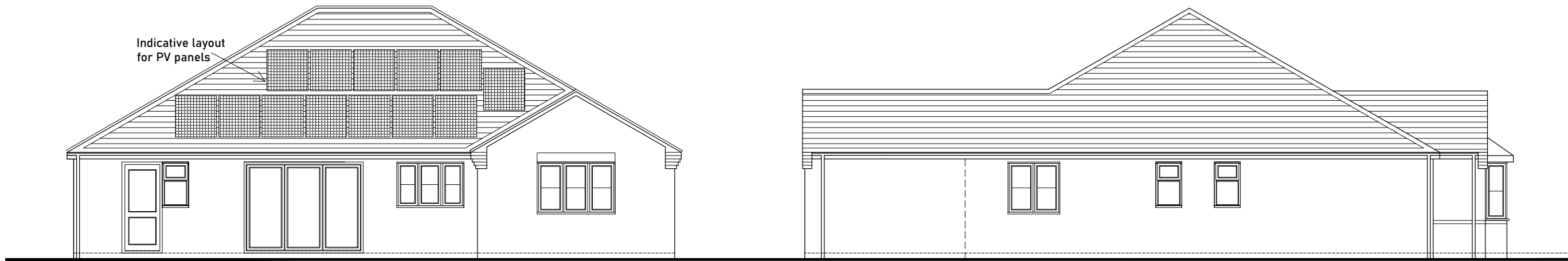
ATTACHMENT 1

**PROPOSED PLAN, ELEVATIONS,
BLOCK & LOCATION PLANS
(Dwg GW-PD-02)**



Front Elevation - From Mill Lane

Side Elevation

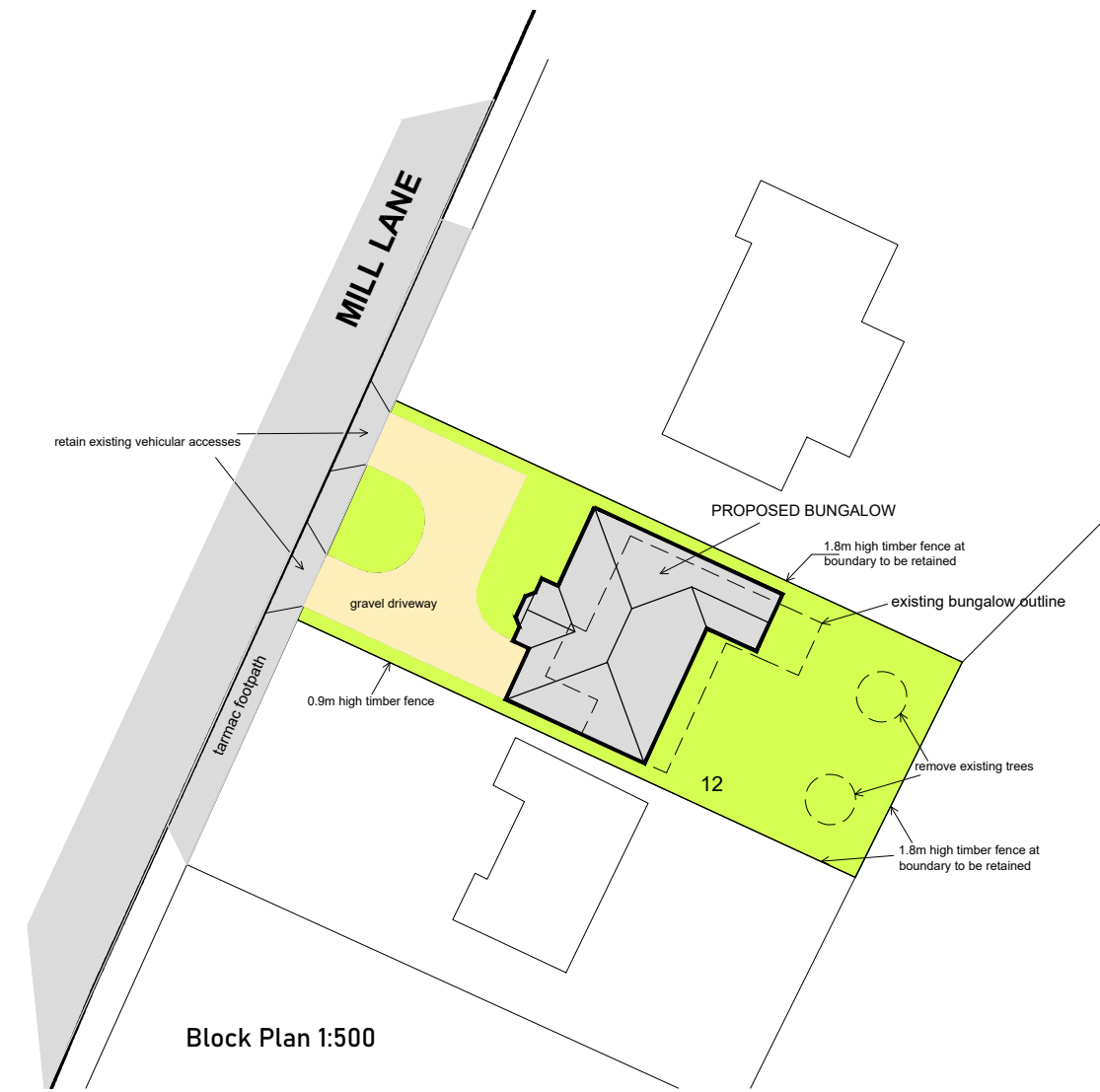


Rear Elevation

Side Elevation



Location Plan 1:1250



Block Plan 1:500

Proposed Replacement Dwelling at 12 Mill Lane, Donington. PE11 4TL	
For: Mr & Mrs G Wilson	
Proposed Plan, Elevations, Block & Location Plan	
July 2023	1:100, 1:1250 & 1:500 @A2
GW-PD-02	