

2580 - Summerleaze Cottage, Magor

Planning Application for Replacement Dwelling

Mr John Williams

Longlands Farm

Flood Consequence Assessment

4th Issue

June 2025



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Revision History

Revision	Revision date	Details	Authorized by	Position
1 st	15/08/2024	First Issue	Patryk Obermajer	Civil Engineer
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4 th	20/06/2025	Layout revised	Patryk Obermajer	Civil Engineer

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1. Introduction

PHG Consulting are involved with a project located in Magor and have been appointed to undertake a flood consequences assessment report in support of a planning application for a replacement dwelling at Summerleaze Cottage, Magor.

The FCA is compliant with TAN15 (2004) and Planning policy Wales. The new Flood Map for Planning (in line with TAN15 2023) has been investigated and due to the positioning of the site within TAN15 Defended Zones, additional model data was obtained from NRW. The model output information is based on CaldicotAndWentlooge_5_V1.0_2016. Tidal information has been provided by the NRW in form of both report and model outputs, referenced 2014s1466 Caldicot_and_Wentlooge_Model.

This report has been updated to reflect the latest proposals. The previous scheme included retaining the existing cottage as a home office and studio, with a new dwelling alongside. Following feedback from Newport City Council, the current proposal now involves the complete replacement of the existing cottage with a single new three-bedroom dwelling. All supporting plans and assessments have been updated accordingly.

Existing Site

The existing site is brownfield and covers an area of 0.138 ha. The site is located just off Green Street, Redwick, Newport, Wales, at the National Grid reference ST421849. The site location is presented in Figure 1 below.



Figure 1. Site Location Plan. OS Grid Reference ST421849

Development Proposals

The proposed development involves the demolition of the existing cottage and its replacement with a new three-bedroom dwelling, together with associated infrastructure.

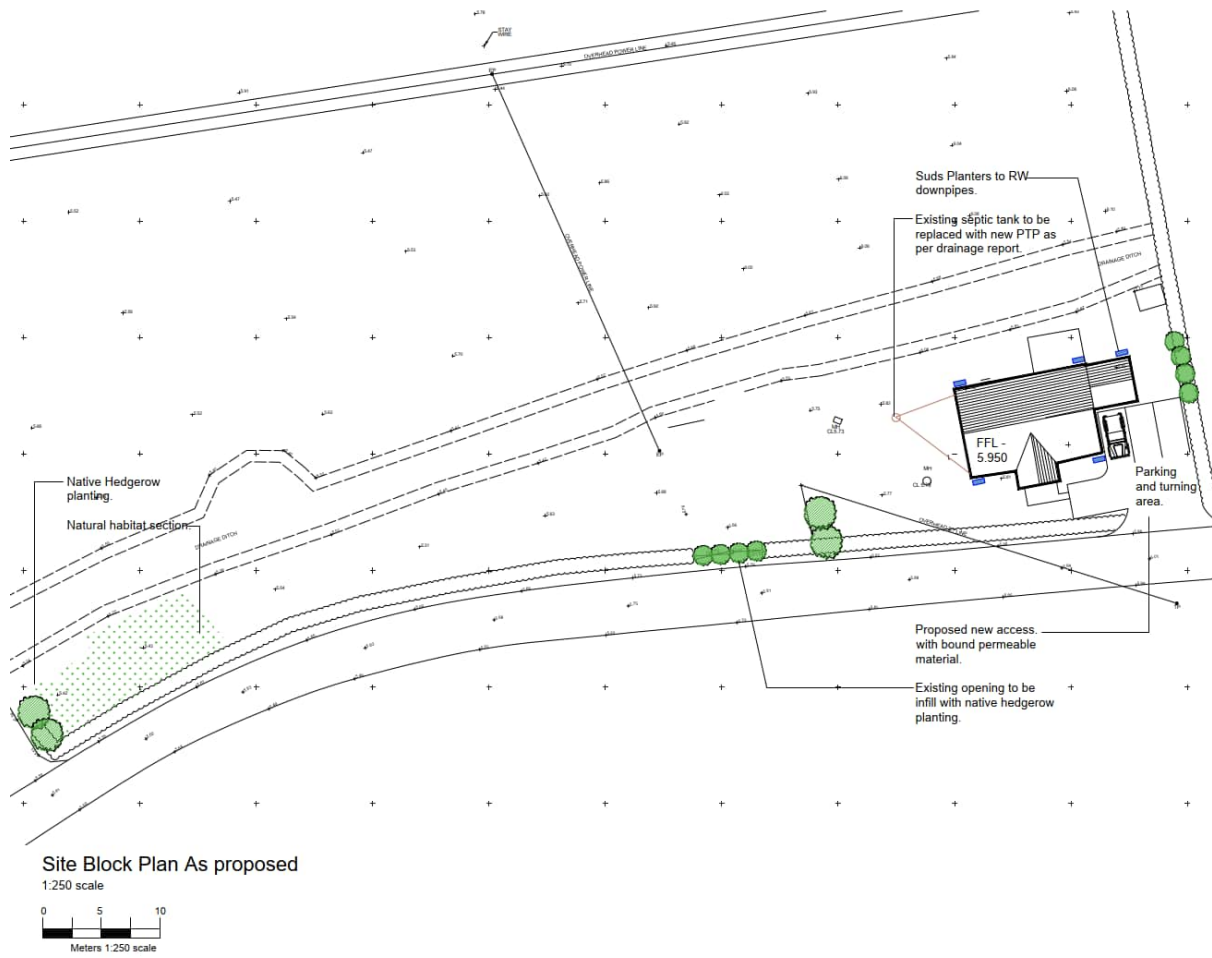


Figure 2. Proposed site plan. Now comprises the demolition of the existing cottage and its replacement with a single new three-bedroom dwelling

2. Flood Consequence Assessment

This assessment has been prepared to examine all potential sources of flooding pertaining the site and the immediate vicinity, determine the risk (flood frequency) and the effects (flood consequences) of flooding. In Wales, planning policy relating to flooding is governed by Technical Advice Note (TAN) 15: development and flood risk.

This assessment has been prepared in accordance with the New TAN15, which came into force in March 2025. The flood events in the report include climate change allowances as per the latest advice.

Flood Maps – DAM

Natural Resources Wales (NRW) have produced the Development Advice Map (DAM) that is in accordance with old TAN15, all of Wales has been assigned a flood zone. The DAM is the currently used map to accompany the current TAN15 (2004).

According to DAM the site is positioned within Flood Zone C1, i.e., an area, which benefits from flood defences.



Figure 3. DAM

Table 1 in conjunction with maps included in Appendix B illustrates the Flood Risks associated with the site from all sources according to TAN15 (2004) – deprecated and kept in the report for consistency.

As per TAN15 (deprecated, 2004 version), Figure 1:

Table 1. Technical Advice Note (TAN) 15: development and flood risk *Figure 1*

Description of Zone		Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/coastal flooding.	A	Used to indicate that justification test is not applicable and no need to consider flood risk further.
Areas known to have been flooded in the past evidenced by sedimentary deposits.	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.
Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.	C1	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.
Areas of the floodplain without significant flood defence infrastructure.	C2	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

Development Category – Flood Zones Compatibility to Flood Map for Planning

The development site is classified as *Highly vulnerable development*¹ and its design life is 100 years². The Flood Map for Planning (FMfP) maps, which are advisory, have been included in the assessment. As confirmed in the letter from Welsh Government dated 15 December 2021, the FMfP represents better and more up-to-date information on areas at flood risk than the DAM.

The FMfP accompanies the New TAN15, implemented in March 2025. The below scenarios include climate change allowances.

Flood Map for Planning - Rivers

The site is located in DAM Zone C1 as per Technical Advice Note 15. The site has been checked against the flood zones of the Flood Map for Planning to assess the risk of flooding from rivers, see Figure 6 below. The proposed building is outside the flood zone, i.e. Flood Zone 1. It is noted that the Flood Zone 2 partially encroaches on the proposed site in the north-eastern corner.



¹ Technical Advice Note15: Development and Flood Risk (December 2021), Figure 3

² Guidance on Climate Change Allowances for Planning Purposes, CL-03-16, Welsh Government

Figure 4. NRW – Flood Map for Planning - Flood Zone Rivers

Flood Map for Planning - Seas

The site is located in TAN15 Defended Zone from Sea, which aligns with the DAM. The site is also within Zone 3 from Sea.



Figure 5. NRW – Flood Map for Planning - Flood Zone Seas

Flood Map for Planning - Surface Water and Small Water Courses

The site is outside the Flood Zone from Surface Water and Small Watercourses.



Figure 6. NRW – Flood Map for Planning - Surface Water and Small Watercourses

Product 6 assessment based on Natural Resources Wales model outputs

Introduction

The Development Advice Map has been used to evaluate potential flood risk, in accordance with Planning Policy Wales and the currently in force Technical advice note (TAN) 15: development, flooding and coastal erosion, 2025. The site is located in Defended Zone from Sea, which indicates it benefits from flood defences.

Flood depths, extents, and risk hazard have been examined based on detailed model output data of the Hydraulic Model, as provided by NRW.

Hydraulic modelling availability - Tidal model

A data request was made to NRW for Product 5 and Product 6 (Model Reports and Outputs). The latest model output data, CaldicotAndWentlooge_5_V1.0_2016, was obtained. It was prepared by JBA. The model was developed using software solver TUFLOW. Simulation output data in ASCII file format provided as part of Model Outputs, which is included in this report, and has been processed using QGIS software for this report.

Model Output Data at the Development Site

The tidal model examines various scenarios, encompassing both defended and undefended flooding, with and without the climate change allowance.

Tidal Flooding based on CaldicotAndWentlooge 5 V1.0 2016 model

The development site is in an area, which benefits from flood defences. The FMfP indicates that the site benefits from flood defences against tidal flooding. In this assessment, the tidal scenarios for 0.1% AEP plus climate change are presented.

Figure 7 below shows the maximum extents of flooding during a 1 in 1000 year event (0.1% AEP) plus climate. The extents of the flood risk areas for the said events are in line with the extents of Flood Zone 2 (0.1% AEP plus CC) of the Flood Map for Planning.

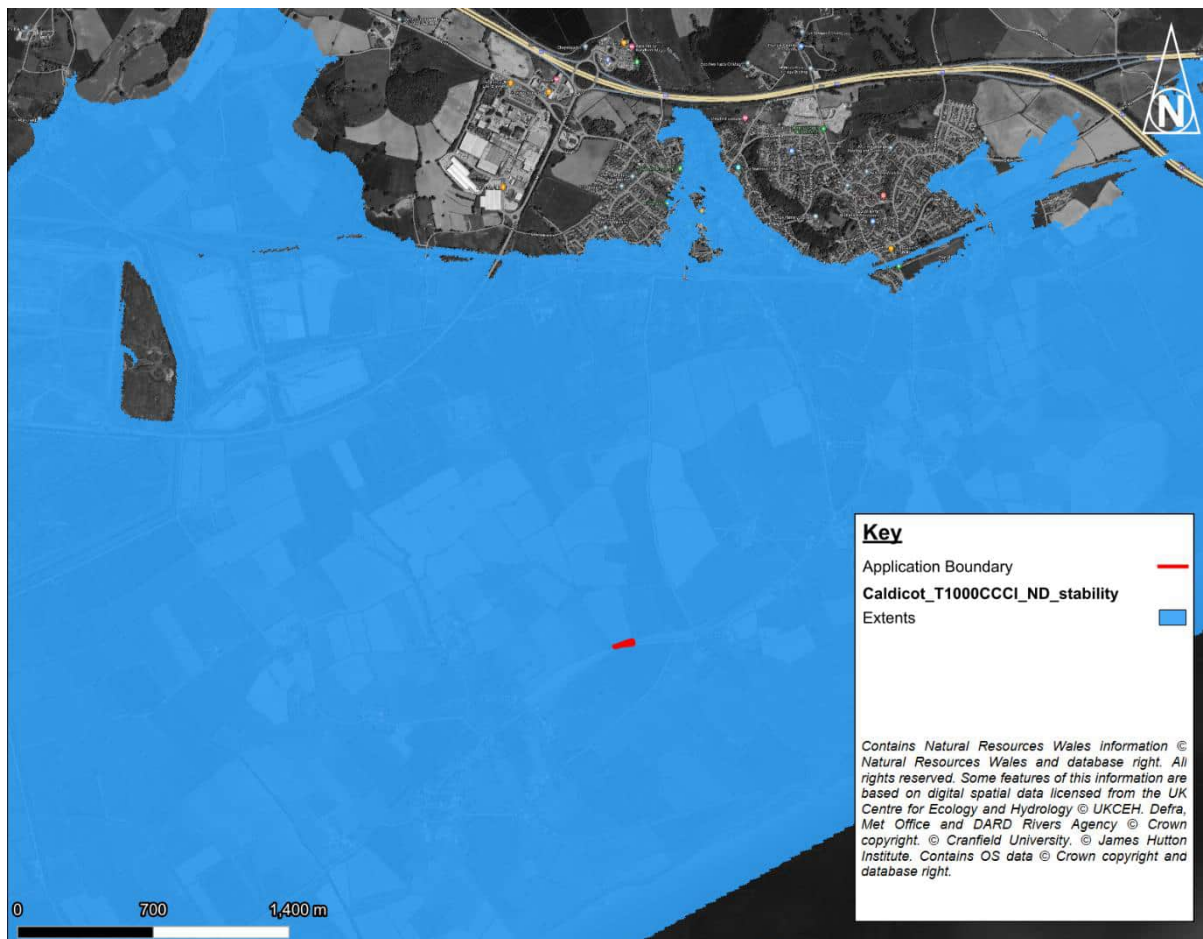


Figure 7. 1 in 1000 event plus climate change. Tidal Extents

Figure 8 below shows the extents and depths of a 0.1% AEP plus CC change flooding. The flooding reaches levels up to 5.560 m (5560 mm) within the building footprint and the adjacent areas.

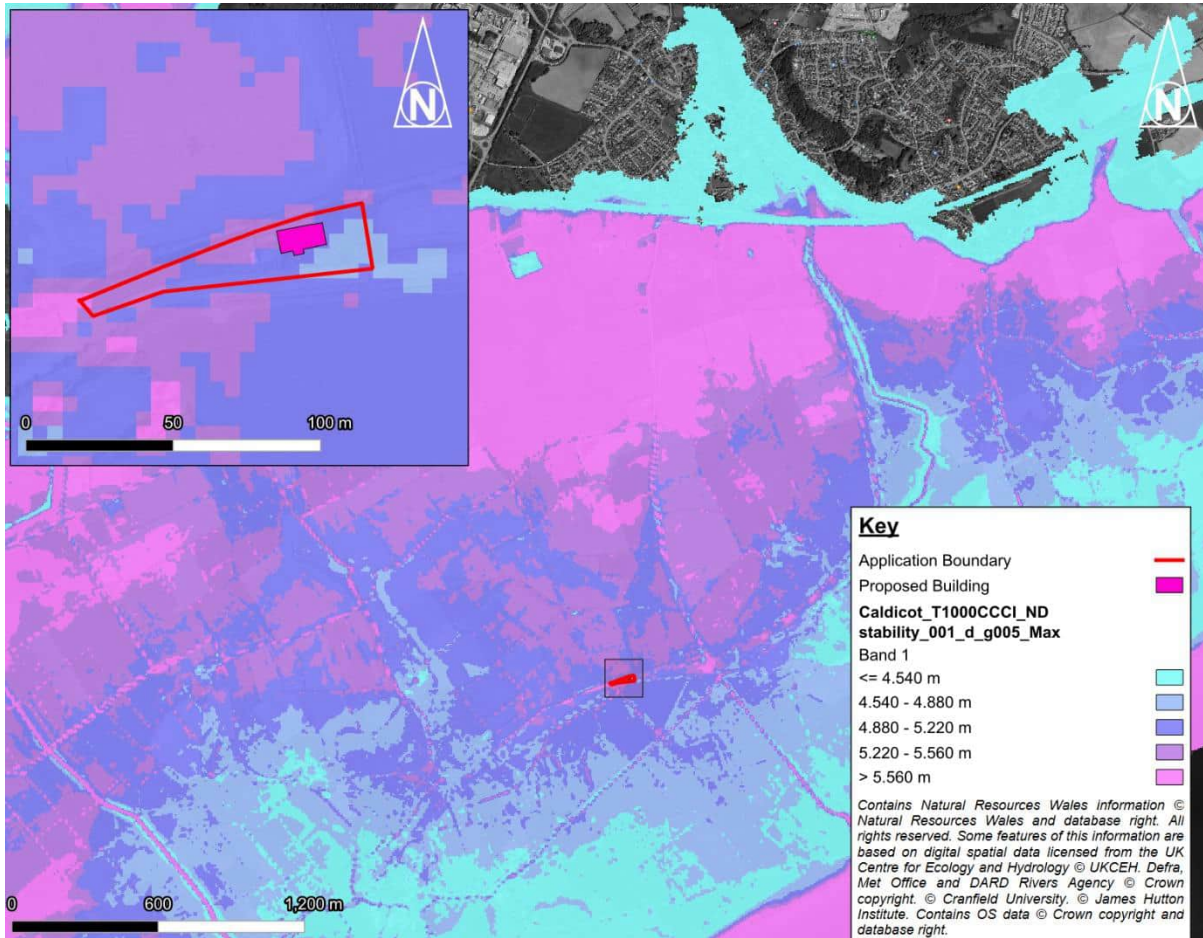


Figure 8. 1 in 1000 tidal event, + CC - Depths.

Figure 9 below shows absolute maximum level of flooding within the building footprint. The maximum flood level is estimated at 10.79 m AOD.

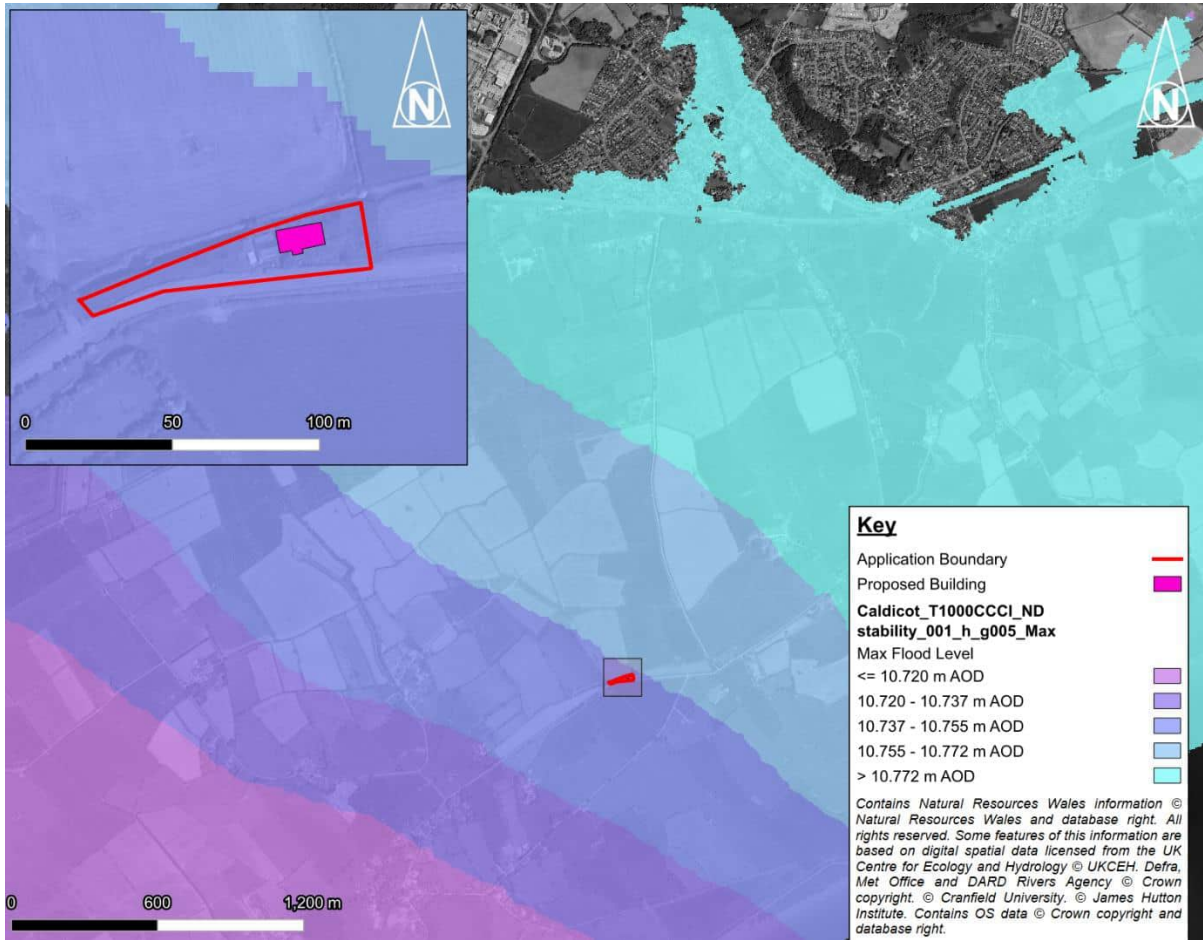


Figure 9. Maximum flood level (m AOD) for 0.1% AEP + CC

Figure 10 below shows the hazard rating and the potential evacuation route for 0.1% AEP plus CC allowance. The route is approx. 3 km long. The majority of the Evacuation Route passes through Danger for All areas. It is concluded that this route is not practical.



Figure 10. 0.1% AEP +CC Hazard Rating and Potential Evacuation Route

Proposed Evacuation Route

The Proposed Evacuation Route shows the quickest route to the nearest area unaffected by flooding during a 0.1% AEP event plus climate change. It passes through the Danger for All area.

Proposed Finished Floor Level

The proposed finished floor level is set at 5.95 m AOD. This is an increase of 250mm above the existing (5.70m) and will allow some resilience without affecting the wider area.

Impact on flooding elsewhere

In line with TAN15, the development must insure no increase in flooding elsewhere.

Given the small scale of the development and the small building footprint, the displaced volume of flooding would be minimal. Additionally, the land topography is flat, i.e. the impact of the elevated levels on adjacent properties will be negligible.

Therefore, it is considered that in an event of flooding, the development will not result in an increase of flooding elsewhere.

Mitigation measures

The following mitigation measures are proposed:

1. Easy access to the first floor to be provided for safe refuge in an event of extreme flood.
2. NRW Flood Warning Service can be used by end users of the residential units to receive warnings regarding flood risk on site.
3. Resilience measures to be introduced, i.e., raised electrics where possible, and hard surfaced flood resilient flooring within areas susceptible to flood risk.

Acceptability Criteria Assessment

Acceptability criterion	Comments	Status: Achieved/not achieved
Acceptable consequences for nature of use	Site is at risk of flooding for 1 in 200-year event plus climate change due to tidal flooding but located within Defended Zone. Proposed development is of a residential nature and is classed as previously developed. The proposed development is residential.	Achieved
Occupiers aware of flood risk	NRW Flood Warning Service to be used. Emergency Flood Plan to be prepared.	Achieved
Escape/evacuation routes present	Evacuation route has been prepared to the nearest area outside Flood Zone. The evacuation route will not be usable for 0.1% AEP.	Not Achieved
Effective flood warning provided	NRW Flood Warning Service is recommended to be used.	Achieved
Flood emergency plans and procedures	Emergency Flood Plan is recommended. Evacuation route has been suggested. The Flood Evacuation Route has been proposed but it has been found to be unviable.	Partially Achieved
Flood resistant design	Resilience measures are recommended.	Achieved

No increase in flooding elsewhere	The development will not increase the risk of flooding elsewhere.	Achieved
Less than 600 mm of flooding for 0.1% AEP event within the building footprint	The flood level exceeds 600 mm for the 0.1% AEP + CC event	Not achieved
Structural damage to the building to be minimised	Resilience measures are recommended.	Achieved

Meteorological Office and to act upon the guidance provided.

Appendix D provides the means to record your planned actions in relation to the flood alert levels. Additional guidance, *What to do in a flood*, can be found on NRW website:

<https://naturalresources.wales/flooding/what-to-do-in-a-flood/>.

Below is an extract from the *What to do in a flood* guidance (© 2024 Natural Resources Wales).

What to do if you get a flood warning or alert

Flood alert. Be prepared.



- prepare a flood kit of essential items
- monitor local river levels
- check the 5 day flood risk.
- farmers should consider moving livestock and equipment away from areas likely to flood

Flood Warning. Immediate action required



- move family, pets, and valuables to a safe place
- turn off gas, electricity and water supplies if it is safe to do so
- put flood protection equipment in place

Severe Flood Warning. Danger to life.



- stay in a safe place with a means of escape
- be ready to leave your home
- cooperate with the emergency services
- call 999 if you are in immediate danger

Effect of proposed works on flood risk within the property

As part of the proposed works, a number of flood resilient measures have been proposed, which are in accordance with the Communities and Local Government document 'Improving the Flood Performance of New Buildings Flood Resilient Construction. These measures will reduce the risk to life and ensure, during and after a flood event, the consequences are reduced as far as practical;

- Any plasterboard fitted at ground floor internally shall be placed horizontally, given the poor post-flood integrity, these sections can be removed should flooding occur.
- Flood proof doors to be used as external doors; would be self-sealing when left shut. This means that in the event of flooding occurring, no additional actions would need to be undertaken to protect doorways.
- Where practical, kitchen appliances should be kept above the floor level.
- All electrical sockets should be a minimum of 600mm above finished floor level at ground floor.

3. Conclusions

- The proposed development now comprises the demolition of the existing cottage and its replacement with a single new three-bedroom dwelling, together with associated infrastructure. The site area remains at 0.138 hectares, and the proposal maintains the continuity of residential land use on previously developed land.
- The site lies within the TAN15 (2025) Defended Zone from the sea. This assessment is based on the latest Technical Advice Note (TAN) 15: Development, Flooding and Coastal Erosion, which came into force in March 2025.
- The data obtained from the model pertain to fluvial and tidal flooding. The maximum depth, velocity and hazard rating have been determined.
- During a 0.1% AEP, the wider area surrounding the site is likely to flood. A Flood Emergency Plan should be undertaken. NRW Flood Warning Service should be used by the end users of the proposed units.
- The proposed finished floor level is to be set at 5.95m AOD. This is 250mm above the existing level of 5.70m AOD.
- The proposed development will not result in an increase in flooding elsewhere.
- Resilience measures have been recommended.
- Acceptability criteria have been assessed with all the aspects set out in Appendix 1 and Section 7 (TAN15 2004) and have not been fully met.

Appendix A Site Location Plan

Site Location Plan

1 in 4000 @ A4



Key

Application Boundary 

Project: Summerleaze Cottage,
Green Street, Redwick

Produced by: Pat Obermajer

OS Grid Reference: ST421849

PHG Consulting
107 Cowbridge Rd East,
Cardiff
CF11 9AG



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Appendix B NRW Maps

Development Advice Map (TAN15 2004)

Flood Map for Planning

Development Advice Map

1 in 15000 @ A3







Project: 2580 - Summerleaze Cottage, Magor
Produced by: Pat Obermajer
Printed on: 12.08.2024

OS Grid Reference: ST421849

PHG Consulting
107 Cowbridge Rd East,
Cardiff
CF11 9AG

Key

- Application Boundary 
- Development Advice Map
- Zone B 
- Zone C1 
- Zone C2 



The **Development Advice Map (DAM)** shows areas at risk of flooding for the purposes of land-use planning.

Zone A Considered to be at little or no risk of fluvial or tidal/coastal flooding.

Zone B Areas known to have been flooded in the past, evidenced by sedimentary deposits.

Zone C Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal, or coastal)

Zone C1 Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.

Zone C2 Areas of the floodplain without significant flood defence infrastructure.

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Flood Map for Planning

1 in 15000 @ A3



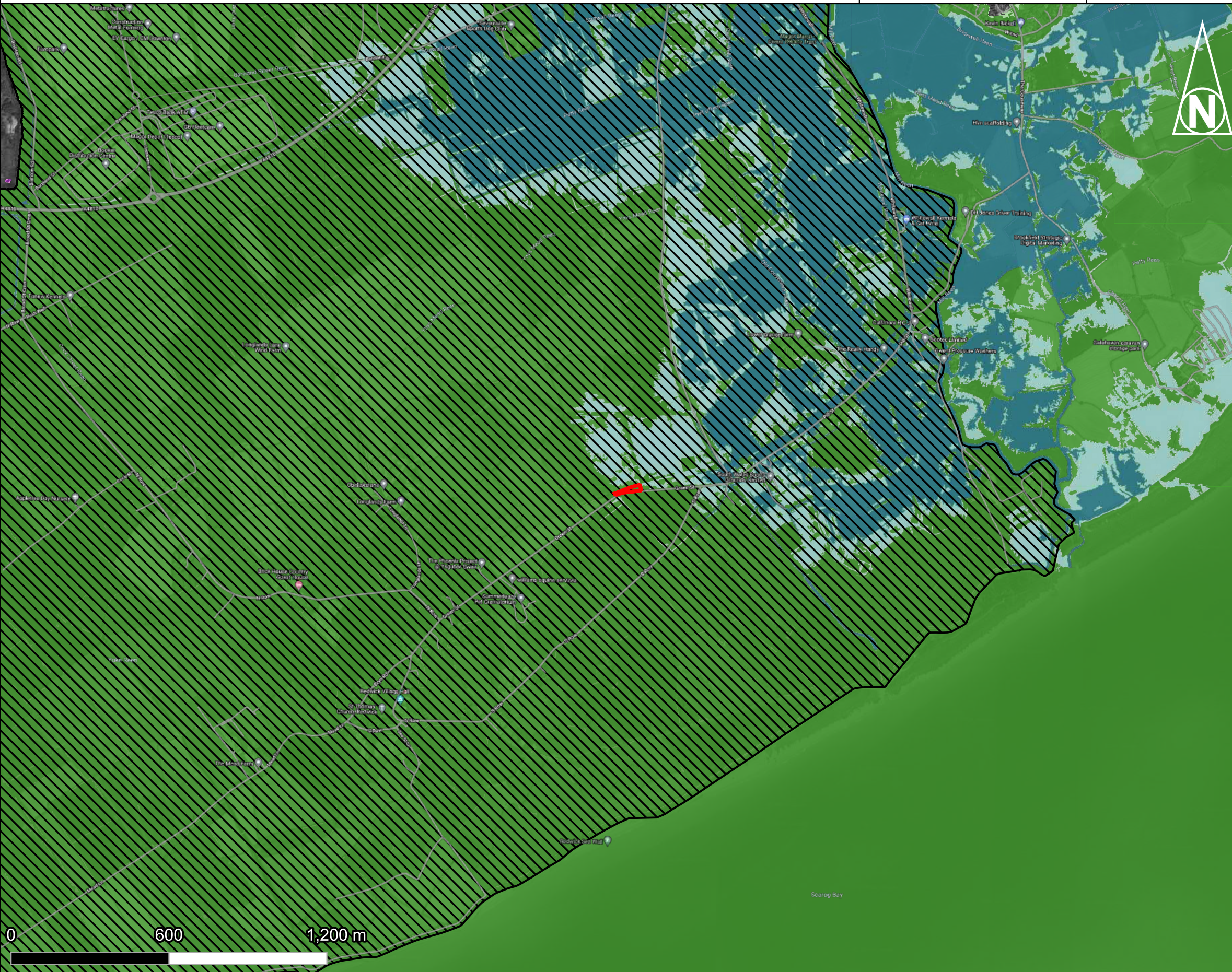
Project: 2580 - Summerleaze Cottage,
Magor
Produced by: Pat Obermajer
Printed on: 10.08.2024

OS Grid Reference: ST421849

PHG Consulting
107 Cowbridge Rd East,
Cardiff
CF11 9AG

Key

- Application Boundary —
- Flood Map for Planning**
- Rivers**
- Flood Zone 2 ■
- Flood Zone 3 ■
- Seas**
- Flood Zone 2 ■
- Flood Zone 3 ■
- Surface Water and Small Watercourses**
- Flood Zone 2 ■
- Flood Zone 3 ■
- TAN15 Defended Zones**
- Rivers ▨
- Sea ▨



Flood Zone 3 displays the extent of flooding from:

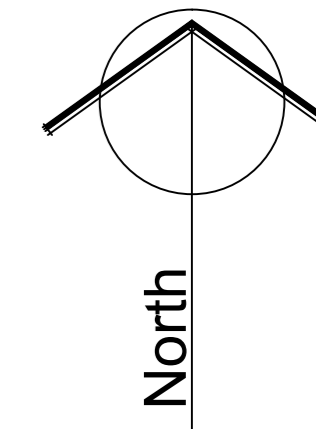
- rivers with a 1% (1 in 100) chance or greater of happening in any given year, including an allowance for climate change.
- the sea with a 0.5% (1 in 200) chance or greater of happening in any given year, including an allowance for climate change.
- Surface water & small watercourses with a 1% (1 in 100) chance or greater of happening in any given year, including an allowance for climate change.

Flood Zone 2 displays the extent of flooding from:

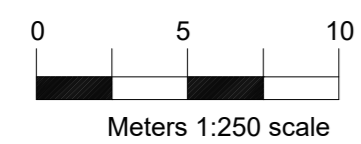
- Rivers with less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance of happening in any given year, including an allowance for climate change.
- the Sea with less than 0.5% (1 in 200) but greater than or equal to 0.1% (1 in 1,000) chance of flooding in any given year, including an allowance for climate change.
- Surface water & small watercourses with less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance of happening in any given year, including an allowance for climate change.

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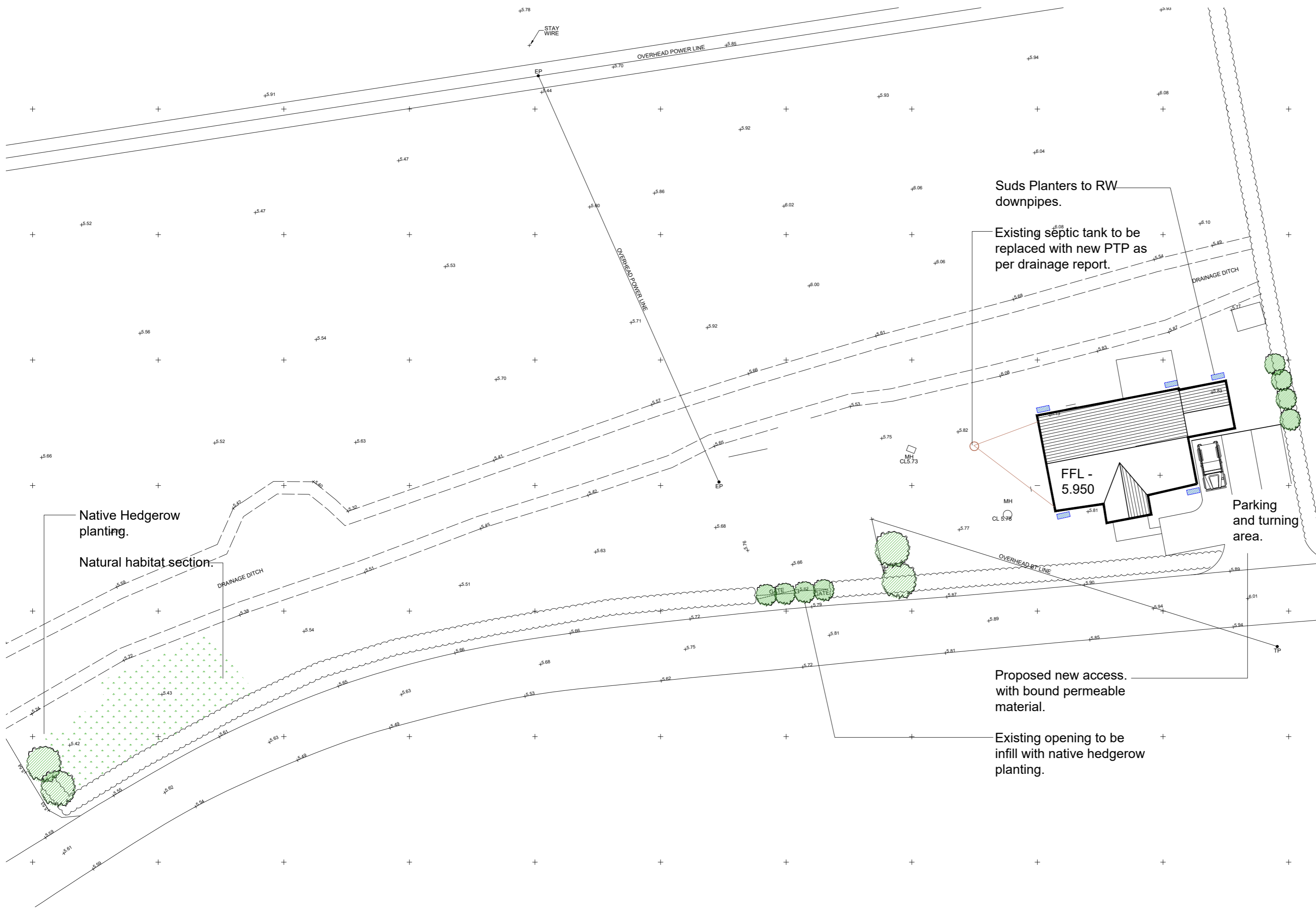
Appendix C Architect Layouts



Site Block Plan As existing
1:250 scale

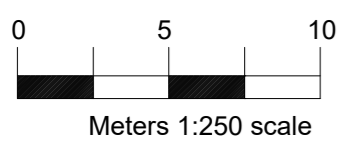


GriffithsDesign Architectural Technologists. Tel: 07969446621 Email: griffithsdesign@outlook.com	
Client	Messrs Williams
Project	Rural enterprise dwelling; Longlands Farm, Longlands lane, Redwick NP26 3DX
Drawing	Existing site block plan.
Date	May 2024
Scale	1:250 @ A2
Drawn by	JG
Checked by	***
Revision	
Drawing No	[PP] 02A



Site Block Plan As proposed

1:250 scale



Proposed hedge planting schedule and specification to be used where appropriate for infill & repair of existing hedgerow.

(i) Ground preparation:
Clear the planting area of weeds and rubble. Dig over the planting area, turning over any turf and planting in the upturned soil.

(ii) Species:
Hedge plants purchased will be 45-60cm whips. The mix of local species will be as follows:

Hedge Plants:

Hawthorn	<i>Crataegus monogyna</i>	40%
Hazel	<i>Corylus avellana</i>	25%
Holly	<i>Ilex aquifolium</i>	15%
Field Maple	<i>Acer campestre</i>	10%
Dogwood	<i>Cornus sanguinea</i>	5%
Guelder Rose	<i>Viburnum opulus</i>	3%
Spindle	<i>Euonymus europaeus</i>	2%

(iii) Numbers and Spacing:
Hedge plant spacing to be at 0.3m intervals in two rows, 0.3m apart. Planting should be staggered so that a plant in the second row is mid-way between plants in the first row. This would give about 6 plants per running metre of (double) hedge-line.

(iv) Planting season:
Hedge plants to be supplied bare rooted and planted in the winter months from November to March, when the roots are dormant.

(v) Maintenance:
Protection:
Spiral guards for the hedge plants to be installed.
Weeding: will be carried out for the first 3 years, either by hand or by chemical spraying.

Beating up (replacement of failed plants): Will be undertaken as required in order to maintain the continuity of the hedge line.

Pruning: The hedge will be pruned after the first or second year to encourage extra-thick multiple growth.

Trimming:
Sides will be trimmed from year 3 onwards, in order to maintain good shape to the sides and maintain the hedge line. Hedge will be left to attain a height of 2 metres.



EM1 Wildflower mix

- Biodiversity enhancements**
- Native hedgerow planting.
 - Wildflower meadows



SUDs Planter

Revision B - May 2025.
Existing access to be infill. Parking area shown.

Revision A - May 2025.
Floor level indicated.

GriffithsDesign Architectural Technologists.			
		Tel: 07969446621 Email: griffithsdesign@outlook.com	
Client	Messrs Williams		
Project	Replacement dwelling; Summerleaze Cottage Green Street Caldicot NP26 3DE		
Drawing	Proposed block plan		
Date	May 2024	Scale	As Shown @ A2
Drawn by	JG	Drawing No	[PP] 05B
Checked by	***		
Revision			

Appendix D Personal Flood Plan Template



Name:

Useful numbers:

General contact list	Company name	Contact name	Telephone
Floodline	Natural Resources Wales		0345 988 1188
Electricity provider			
Gas provider			
Water company			
Telephone provider			
Insurance company & policy number			
Local council			
Local radio station			
Travel / weather info			

Key locations:

Service cut-off	Description of location
Electricity	
Gas	
Water	

Who can help / who can you help?

Relationship	Name	Contact details	How can they / you help?
Relative			
Friend or neighbour			

What can you do if a flood is expected in your area?

Actions	Location
Home Move furniture and electrical items to safety	
Put flood boards, polythene and sandbags in place	
Make a list now of what you can move away from the risk	
Turn off electricity, water and gas supplies	
Roll up carpets and rugs	
Unless you have time to remove them hang curtains over the rods	
Move sentimental items to safety	
Put important documents in polythene bags and move to safety	
Garden and outside Move your car out of the flood risk area	
Move any large or loose items or weigh them down	
Business Move important documents, computers and stock	
Alert staff and request their help	
Farmers move animals and livestock to safety	
Evacuation – prepare a flood kit in advance Inform your family or friends that you may need to leave your home	
Get your flood kit together and include a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons	

What can I do now?

Put important documents out of flood risk and protect in polythene <input type="checkbox"/>	Look at the best way of stopping floodwater entering your property <input type="checkbox"/>
Check your insurance covers you for flooding <input type="checkbox"/>	Make a flood plan and prepare a flood kit <input type="checkbox"/>
Find out where you can get sandbags <input type="checkbox"/>	Identify what you would need to take with you if you had to leave your home <input type="checkbox"/>
Identify who can help you / who you can help <input type="checkbox"/>	Understand the flood warning codes <input type="checkbox"/>

Are you signed up to receive flood warnings?

If not call Floodline on **0345 988 1188** to see if your area receives free flood warnings.

Let us know when you've completed your flood plan by calling Floodline on **0345 988 1188**. This will help us learn more about how people are preparing for flooding.

There are a range of flood protection products on the market to help you protect your property from flood damage. A directory of these is available from the National Flood Forum at www.bluepages.org.uk