



PROPOSED REPLACEMENT  
DWELLING AT BEACH  
HOLME, KESWICK ROAD,  
BACTON, NORFOLK

FLOOD RISK ASSESSMENT

NOVEMBER 2022

REPORT REF: 3075/RE/11-22/01

Evans Rivers and Coastal Ltd

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## CONTRACT

Evans Rivers and Coastal Ltd has been commissioned by Mr L Mills to carry out a flood risk assessment for a proposed replacement dwelling at Beach Holme, Keswick Road, Bacton, Norfolk.

## QUALITY ASSURANCE, ENVIRONMENT AND HEALTH AND SAFETY

Evans Rivers and Coastal Ltd operates a Quality Assurance, Environmental, and Health and Safety Policy.

This project comprises various stages including data collection; depth analysis; and reporting. Quality will be maintained throughout the project by producing specific methodologies for each work stage. Quality will also be maintained by providing specifications to third parties such as surveyors; initiating internal quality procedures including the validation of third party deliverables; creation of an audit trail to record any changes made; and document control using a database and correspondence log file system.

To adhere to the Environmental Policy, data will be obtained and issued in electronic format and alternatively by post. Paper use will also be minimised by communicating via email or telephone where possible. Documents and drawings will be transferred in electronic format where possible and all waste paper will be recycled. Meetings away from the office of Evans Rivers and Coastal Ltd will be minimised to prevent unnecessary travel, however for those meetings deemed essential, public transport will be used in preference to car journeys.

The project will follow the commitment and objectives outlined in the Health and Safety Policy operated by Evans Rivers and Coastal Ltd. All employees will be equipped with suitable personal protective equipment prior to any site visits and a risk assessment will be completed and checked before any site visit. Other factors which have been taken into consideration are the wider safety of the public whilst operating on site, and the importance of safety when working close to a water source and highway. Any designs resulting from this project and directly created by Evans Rivers and Coastal Ltd will also take into account safety measures within a "designers risk assessment".

Report carried out by:

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## 1. INTRODUCTION

### 1.1 Project Scope

1.1.1 Evans Rivers and Coastal Ltd has been commissioned by Mr L Mills to carry out a flood risk assessment for a proposed replacement dwelling at Beach Holme, Keswick Road, Bacton, Norfolk.

1.1.2 It is understood that this Flood Risk Assessment will be submitted to the Planning Authority and Environment Agency (Agency, hereafter) as part of a planning application. Specifically, this assessment intends to:

- a) Consider the impacts of the 1 in 20 year, 1 in 200 year and 1 in 1000 year flood events (all inclusive of climate change), in accordance with NPPF;
- b) Review any literature and guidance specific to this area such as the SFRA and SMP;
- c) Determine the extents of the aforementioned NPPF Flood Zones across the site, together with depths of floodwater and hazard;
- d) Assess the risks to people and property and propose mitigation measures accordingly;
- e) Review existing evacuation and warning procedures for the area;
- f) Carry out an appraisal of flood risk from any other sources such as groundwater as required by NPPF;
- g) Report findings and recommendations.

1.1.3 This assessment is carried out in accordance with the requirements of the National Planning Policy Framework (NPPF) dated 2021. Other documents which have been consulted include:

DEFRA/EA document entitled Framework and guidance for assessing and managing flood risk for new development Phase 2 (FD2320/TR2), 2005;

Communities and Local Government 2007. Improving the Flood Performance of New Buildings. HMSO.

DEFRA/EA document entitled The flood risks to people methodology (FD2321/TR1), 2006;

EA Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purpose, 2008;

National Planning Practice Guidance – Flood Risk and Coastal Change.

UK Government's climate change allowances guidance.

JBA Consulting 2017. North Norfolk Strategic Flood Risk Assessment.

The Kelling to Lowestoft Ness Shoreline Management Plan (SMP) dated 2012.

North Norfolk District Council study entitled Bacton, Walcott and Ostend Coastal Management Study dated 2014.

North Norfolk District Council study entitled Cromer to Winterton Ness Coastal Management Study dated 2013.

North Norfolk Development Control Guidance Development and Coastal Erosion dated 2009.

North Norfolk District Council study entitled Bacton and Walcott Sea Flooding Study dated 2016.

## 2. DATA COLLECTION

### 2.1 To assist with this report, the data collected included:

Ordnance Survey 1:10,000 street view map (Evans Rivers and Coastal Ltd OS licence number 100066376).

Filtered LIDAR data at 1m resolution.

1:250,000 Soil Map of Eastern England (Sheet 4) published by Cranfield University and Soil Survey of England and Wales 1983.

1:625,000 Hydrogeological Map of England and Wales, published in 1977 by the Institute of Geological Sciences (now the British Geological Survey).

1:125,000 Hydrogeological Map of Northern East Anglia published in 1976 by the Institute of Geological Sciences (now the British Geological Survey).

The tidal surge flood levels (without climate change) for the North Sea via <https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/CoastalDesignSeaLevels&Mode=spatial>

Product 6 flood level data from the Walcott 2018 model provided by the Agency as ascii grid GIS files.

British Geological Survey, Online Geology of Britain Viewer.

British Geological Society, Groundwater Flooding Susceptibility Map obtained via Promap.

Environment Agency defence information via <https://environment.data.gov.uk/asset-management/index.html>

Topographical survey carried out by Topo Land Surveys as shown on Drawing Number TLS034\_D1.

### 3. SITE CHARACTERISTICS

#### 3.1 Existing Site Characteristics and Location

3.1.1 The site is located at Beach Holme, Keswick Road, Bacton, Norfolk. The approximate Ordnance Survey (OS) grid reference for the site is 635221 333349 and the location of the site is shown on Figure 1. The site is within the administrative boundary of North Norfolk District Council.

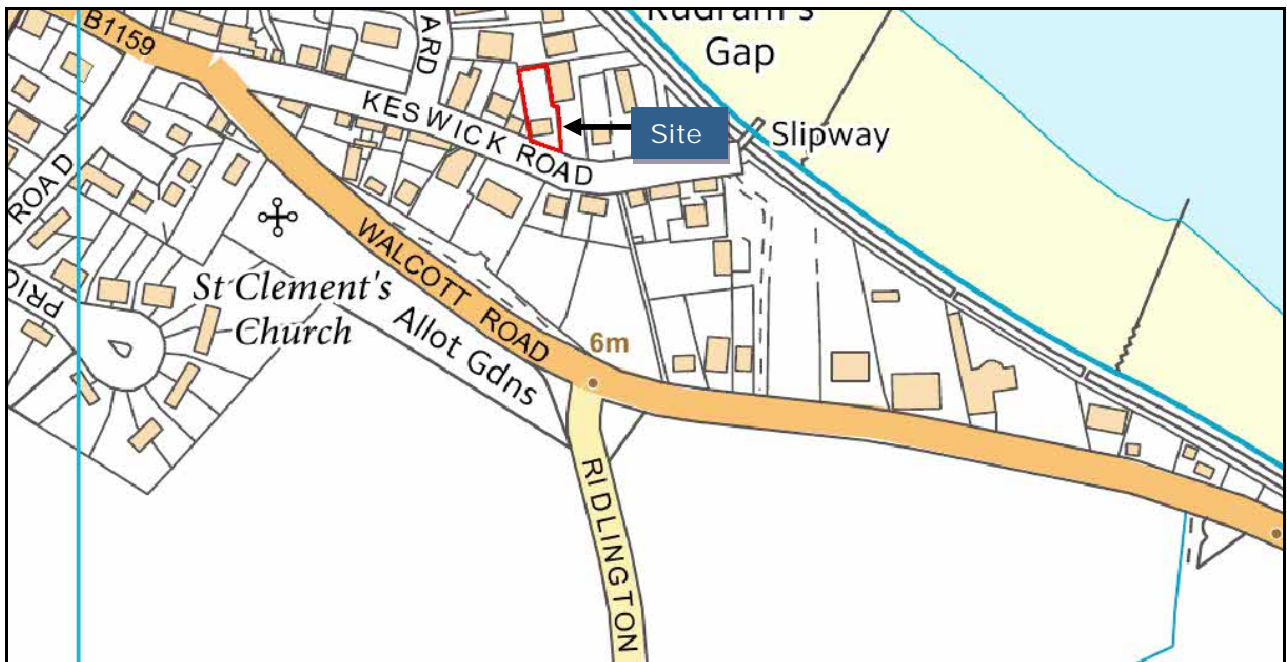


Figure 1: Site location plan (Source: Ordnance Survey)

3.1.2 The site comprises an existing single-storey dwelling known as Beach Holme as shown on Drawing Number 004.

3.1.3 The site is accessed from Keswick Road adjacent to the southern frontage of the site.

3.1.4 A topographical survey has been carried out and can be seen on Drawing Number TLS034\_D1. Filtered LIDAR data at 1m resolution has also been obtained in order to determine and illustrate the topography across the site and surrounding area (Figure 2).

3.1.5 The survey data and site inspections indicate that ground levels gently fall in a southerly direction. The existing ground floor level is set at 6.79m AOD.

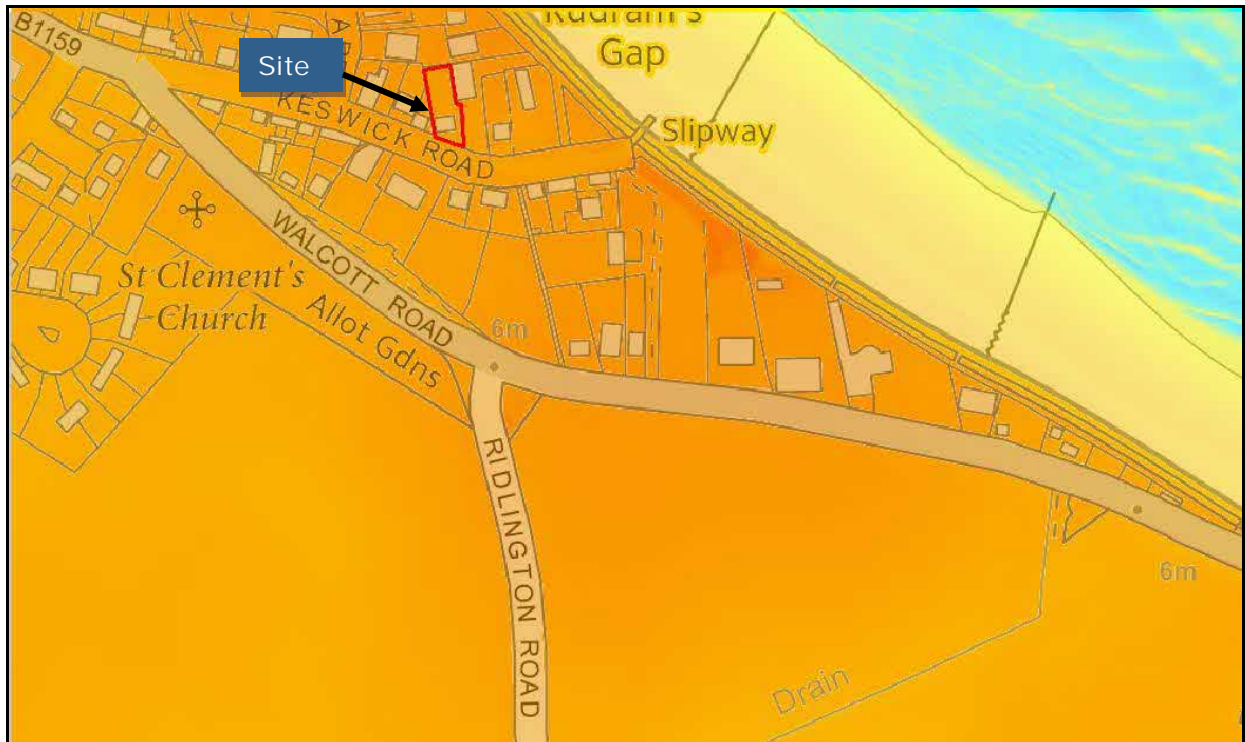


Figure 2: LIDAR survey data where higher ground is denoted as orange and yellow colours and lower areas denoted by blue and green colours

### 3.2 Site Proposals

- 3.2.1 It is the Client's intention to provide a replacement dwelling as shown on Drawing Number 003 and 004.
- 3.2.2 The proposed ground floor level will be set at 7.10m AOD in order to provide safe refuge during the defended climate change 1 in 200 year event and defended climate change 1 in 1000 year event.
- 3.2.3 Paragraph: 066 Reference ID: 7-066-20140306 of the NPPG confirms that residential development is classified as a 'more-vulnerable' use.



#### 4. BASELINE INFORMATION

##### 4.1 Environment Agency Flood Zone Map

4.1.1 The Environment Agency’s Flood Zone Map (Figure 3) and 2017 SFRA flood map NN\_39 shows that the site is located within the NPPF defined Flood Zone 3a, 2 and 1 associated with the North Sea located north of the site.

4.1.2 The site is very partially located within Flood Zone 3a and the existing building and proposed replacement dwelling are located mainly within Flood Zone 1 and partially within Flood Zone 2.

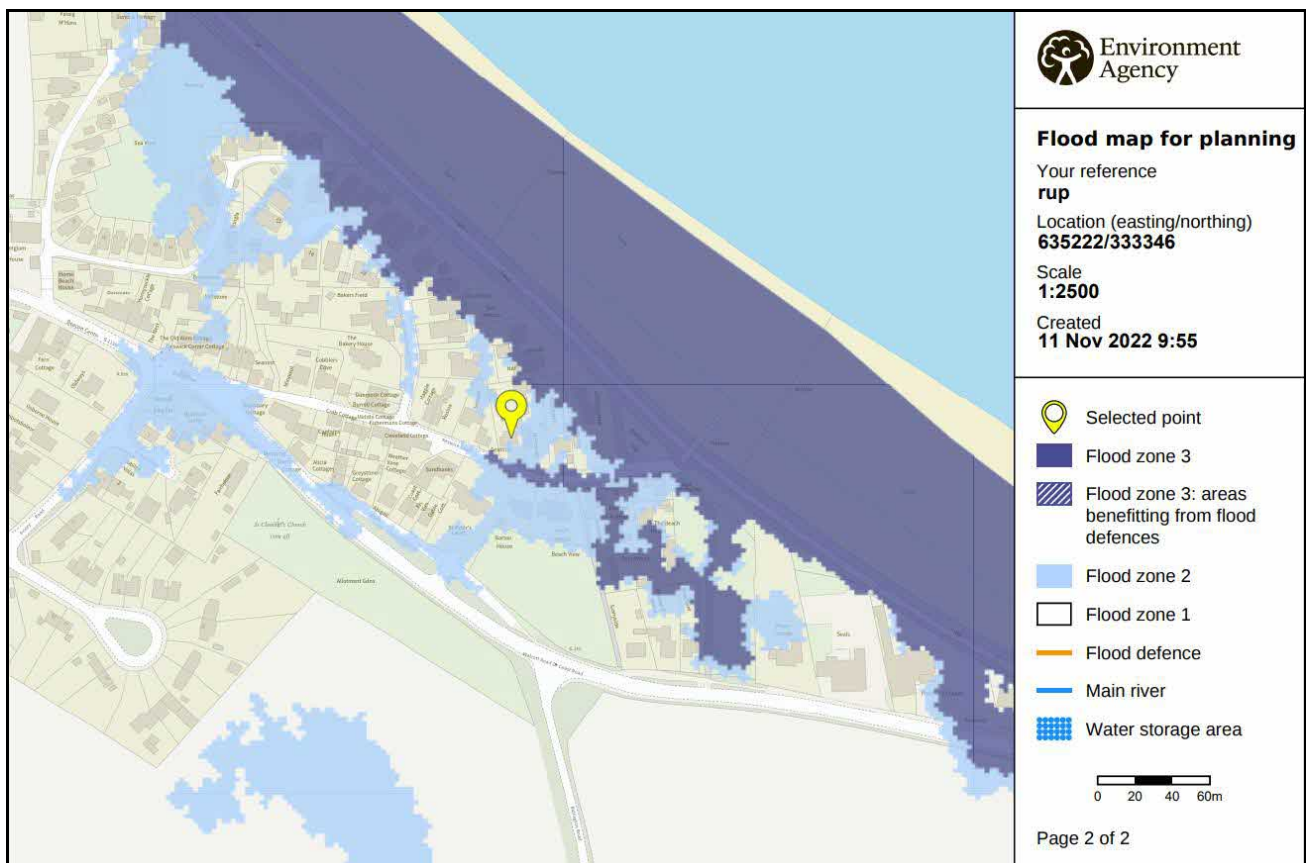


Figure 3: Environment Agency Flood Zone Map (Source: Environment Agency)

##### 4.2 Flood Defences

4.2.1 Figure 1.1 of the North Norfolk District Council study entitled Bacton, Walcott and Ostend Coastal Management Study dated 2014, shows that this part of the coastline is defended by a sea wall and timber groynes which influence the rate of erosion of the coastline.

4.2.2 The Kelling to Lowestoft Ness Shoreline Management Plan (SMP) dated 2012, in which the site is identified to be located in Policy Unit 6.11, recommends that the preferred short term policy (to year 2025) is Hold the Existing Line and that the medium-term policy (to year 2055) is Managed Realignment and long-term policy (to year 2105) is also Managed Realignment.

4.2.3 The SMP states that the long-term plan is to allow the shoreline to retreat once the defences reach the end of their present effective life (i.e. estimated to be between years 20 and 40).

4.2.4 The defences are to be maintained as far as possible within the existing economic justification in the short-term, and in the medium and long-term the ongoing monitoring of the sea wall will be undertaken to investigate the potential impacts on the Broads as the coastline is allowed to retreat.

#### 4.3 Environment Agency Flood Levels

4.3.1 Product 6 flood level data has been provided by the Agency as ascii grid GIS files and the levels across the area intended for the replacement dwelling are summarised in Table 1. The raw GIS data has been taken from the Walcott tidal 2018 model.

4.3.2 The JBA Consulting document which accompanies the modelling entitled East Anglian Coastal Modelling dated 2019, states that only the defended model simulates both still water levels as well as wave overtopping.

Table 1: Tidal surge flood level data at the site

Location	1 in 20 year (mAOD)	1 in 20 year plus climate change (mAOD)	1 in 200 year (mAOD)	1 in 200 year plus climate change (mAOD)	1 in 1000 year (mAOD)	1 in 1000 year plus climate change (mAOD)
Defended	N/A	6.50	N/A	6.59	6.42	6.75

N/A = floodwater does not reach the site

4.3.3 The UK Government’s climate change allowances guidance includes new tidal climate change allowances. It is understood from the EA guidance document entitled Flood risk assessments: Climate change allowances – East Anglia; Essex, Norfolk, Suffolk, Cambridgeshire and Bedfordshire dated March 2022 that for more vulnerable, highly vulnerable and essential infrastructure development the Upper End allowances should be used to assess the flood risk over the lifetime of the proposed development.

4.3.4 It is understood from the Agency that the Upper End climate change allowances applied over the 100 years lifetime of residential development to 2122 result in a flood level 0.34m higher than the climate change flood levels currently used in the existing modelling.

4.3.5 Therefore, applying the Upper End climate change increase of 0.34m yields a defended 200yrCC flood level of 6.93m AOD. The defended 1000yrCC flood level would be 7.09m AOD.

#### 4.4 Flood Warning and Emergency Planning

4.4.1 The site is located within Environment Agency Flood Warning area 054FWCDV2B1 - The Norfolk coast along the B1159 Coast Road from Bacton through Walcott to Ostend.

4.4.2 The Environment Agency has a target to issue flood alerts and warnings 9 hours ahead of the peak of the high tide. However, overtopping can occur in advance of the high tide further reducing the warning time. There is no target lead time for issuing severe flood warnings as these are mostly issued after flooding has already begun. Flood alerts are only issued during daylight hours.

- 4.4.3 Flood Alerts, Flood Warnings and Severe Flood Warnings are issued to residents and businesses within flood risk areas by the Agency’s Floodline Warnings Direct (FWD) service. This system is managed by the Environment Agency and dials out a message to the recipient when a particular category of flood warning is being advised. The message is conveyed by a constant ringing of the telephone or can alternatively be communicated to mobile phones and computers. The Flood Alert system operates during daylight hours, issuing flood warnings and alerts in conjunction with announcements on radio and other media. Owners and occupiers of dwellings or businesses thought to be at risk can sign up to the scheme. The owners must confirm details with the Agency and to sign up for these warnings. The various flood warning codes can be seen on Figure 4.



Figure 4: Flood warning codes (Source: Environment Agency)

- 4.4.4 It is understood that in the event of flooding, evacuation is managed by a multi-agency team in conjunction with the Police. The multi-agency team provides suitable premises for shelter, first aid, refreshments and possible transportation with consideration given to the elderly and vulnerable groups. It is essential that occupants produce robust Emergency Flood Plans to avoid putting themselves or emergency services at risk and that they do not rely solely on emergency services during the event.
- 4.5 December 2013 Flood Event
- 4.5.1 It is understood that the general area may have been affected by flooding during the East Coast storm surge in December 2013 (Figure 5).
- 4.5.2 The North Norfolk District Council study entitled Bacton and Walcott Sea Flooding Study dated 2016 states that the December 2013 event was estimated to be approximately equivalent to the 1 in 500 year event and that it was reported that floodwater remained across the area for 12 hours before draining back into the sea.
- 4.5.3 The report confirms that the access gate in the seawall at the end of Keswick Road (located east of the site) was closed by the Council and that the gate and defences did not breach at this point, despite the water level being at the top of the gate.



Figure 5: Approximate area believed to be affected by floodwater during 2013 event  
(Source: NNDC)

5. COASTAL FLOOD RISK

5.1 The flood levels provided by the Agency in Table 1 reflect the flood level at the site. These levels can therefore be used to assess the flood risk to the site. Table 2 shows the flood depth and hazard across the site.

5.2 Although a hazard rating is not provided by the Agency, in order to determine the flood hazard at the site the hazard categories outlined in Table 13.1 of FD2320/TR2 (Figure 6 below), which is defined by the depth and velocity of the floodwater and the ability of people to evacuate once flooding occurs, has been used (assuming 0.5 m/s velocity). It should be noted that the white cells shown on Figure 6 denote a Very low hazard.

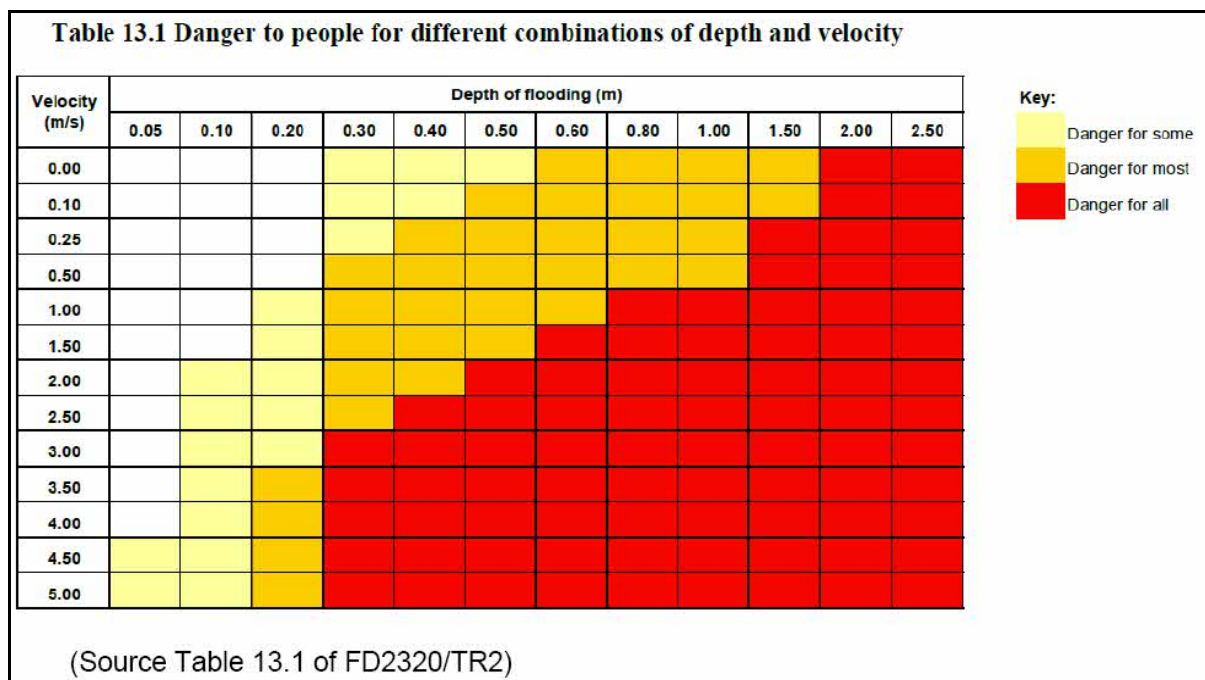


Figure 6: Hazard Classification

Table 2: Flood levels, depths and hazard at the site

Location	1 in 20 year	Updated 1 in 20 year plus climate change	1 in 200 year	Updated 1 in 200 year plus climate change	1 in 1000 year	Updated 1 in 1000 year plus climate change
Defended	N/A	6.84m AOD	N/A	6.93m AOD	6.42m AOD	7.09m AOD
Flood Depth above proposed ground floor level at 7.10m AOD (m)	N/A	0	N/A	0	0	0
	Very low hazard					
	Dangerous for Some					
	Dangerous for Most					
	Dangerous for All					

N/A = floodwater does not reach the site

- 5.3 Table 2 shows that the proposed ground floor would be set above the climate change 1 in 1000 year event. Therefore, safe (dry) refuge will be provided at all times.

## 6. COASTAL FLOOD RISK MITIGATION AND EVACUATION

### 6.1 Reducing Exposure to the Hazard

6.1.1 In order to assess and reduce the exposure to the hazard and the vulnerability to the hazard after the site has been developed, the guidance outlined in the DCLG/DEFRA/EA document entitled Flood Risk Assessment Guidance for New Development Phase 2; Flood Risks to People, Phase 2; Improving the Flood Performance of New Buildings has been consulted.

6.1.2 In accordance with the Agency's recommendations and Paragraph 055 (ID 7-055-20140306) of the NPPF Planning Practice Guidance, the "design" event for which mitigation measures should be designed to is the updated climate change 1 in 200 year flood level of 6.93m AOD. The "extreme" updated climate change 1 in 1000 year flood level is 7.09m AOD.

6.1.3 Paragraph 060 (ID 7-060-20140306) of the NPPF Planning Practice Guidance states that the first preference is to avoid flood risk by raising floor levels above the design flood level.

6.1.4 The proposed ground floor level will be set above the extreme climate change 1 in 1000 year flood level. This will provide safe (dry) refuge during all modelled events.

6.1.5 Therefore, as the PPG advises that the avoidance of flood risk by raising of floor levels should be carried out in the first instance, this is possible at the site and therefore the proposals comply with the policy.

### 6.2 Reducing Vulnerability to the Hazard

6.2.1 It is understood that the police and other emergency services will assist in the evacuation to rest centres operated by the Council. People at the site will need to make a judgment themselves with regards to the flood hazard if evacuation is attempted and not solely rely on the emergency services.

6.2.2 It is recommended that the occupants liaise with the Agency in order to register with the Agency's Flood Warnings Direct service and ensure that they are aware of the flood risk so that they have the option to escape/evacuate upon receipt of a Flood Warning or upon the instruction of the emergency services.



6.2.3 The occupants should develop a Family Flood Plan. Further guidance is offered in the Environment Agency's guidance document entitled What to do before, during and after a flood. The Family Flood Plan should consider, for example, information about vital medication needed and a Flood Kit.

6.2.4 A Flood Kit is a useful precautionary measure especially if evacuation from the site is prolonged. The kit should be stored in an accessible location to ensure that it is not affected by floodwater. The contents should also be checked every 6 months and items replaced if necessary.


6.2.5 It may be sensible to compile two Flood Kit's to suit each eventuality. For example, a smaller kit could be compiled which would allow the occupants to carry it during evacuation. A larger kit could also be compiled which included additional food and beverage items in case of ongoing refuge within the property. Both kits should contain the necessary items as suggested overleaf.

1. Important documents
2. Torch and batteries
3. Mobile phone (fully charged)
4. First-aid kit
5. Wind-up radio
6. Important telephone numbers
7. Bottled water
8. Non-perishable food provisions
9. Rubber Gloves and wellington boots
10. Medication or information relating to medication and its location
11. Blankets, warm clothes
12. Essential toiletries
13. Camera to record any damage
14. Emergency cash

Table 3: Flood Event Action Plan

Environment Agency Flood Warning Code	What to do!	Evacuate?
<p>Flood Alert (Flooding Possible. Be aware/prepared! Watch Out).</p> 	<p>Monitor flood risk through media and Floodline Warnings Direct.</p> <p>Locate family members and inform them of risk. If away from the site make assessment on risk if considering returning to site (i.e. how long it will take to return etc).</p> <p>Check flood kit, check occupants, check pets – BE PREPARED in case the situation gets worse.</p>	<p>Not necessary.</p> <p>Occupants can evacuate themselves if they feel unsafe providing that they make a judgement in relation to any external flood hazard. Take flood kit, occupants and pets with you.</p>
<p>Flood Warning (Flooding of homes, businesses and main roads is expected. Act now!).</p> 	<p>Maintain communication through Floodline Warnings Direct and the media.</p> <p>Begin to implement Flood Plan.</p> <p>Consider advice given from emergency services/Environment Agency.</p> <p>Check insurance, Check flood kit, Check Pets.</p> <p>Check alternative accommodation arrangements.</p>	<p>Occupants can evacuate themselves if they feel unsafe providing that they make a judgement in relation to any external flood hazard. Take flood kit, occupants and pets with you.</p> <p>People who do not evacuate should reside across dwelling.</p> <p>No formal evacuation or rest centre set-up will be undertaken at this warning level, however, if flooding is experienced across the area emergency services will</p>



<p>Severe Flood Warning (Severe flooding is expected. Imminent danger to life and property. Act now!).</p> 	<p>Leave site immediately if not already done so. Take flood kit, occupants and pets with you. Follow advice given by Emergency Services and Council.</p>	<p>rescue people. Leave site according to advice given by Emergency Services and Council. Take flood kit, occupants and pets with you.  If evacuation cannot be undertaken, people should reside across dwelling with flood kit and maintain communication with the emergency services.</p>
<p>Warnings no longer in force (No further flooding is expected in the area. Be careful).</p>	<p>Return to site upon instruction from emergency services and assess any damage. Contact insurance company depending on damage caused. Beware of flood debris. Do not touch sources of electricity. Arrange for utilities to reconnect services.</p>	<p>Not applicable, however site may be uninhabitable.  Return to site upon instruction from emergency services as floodwater may not have receded.</p>

### 6.3 Vulnerable Groups

6.3.1 The occupants at the site may include vulnerable groups such as elderly people, those with sensory or physical disabilities, minority ethnic groups, or the infirm. Priority will need to be given to these people during the flood event.

6.3.2 Vulnerable groups should be identified by the occupants and priority should be given to these groups during the event.

### 6.4 Safe Access/Egress

6.4.1 Safe access/egress would not be available from the site during the peak of the design defended climate change 1 in 200 year event. By reviewing the survey data, together with the Agency’s flood data, the hazard to people would be Dangerous for Most for 343m and Very low thereafter.

6.4.2 A flood response plan will be compiled to ensure that the occupants are aware of the flood risk and procedures to take before, during and after a flood.



Figure 7: Preferred evacuation route in relation to defended 200yrCC flood extent

## 6.5 Insurance

- 6.5.1 The Association of British Insurers (ABI) published a guidance document in 2012 entitled Guidance on Insurance and Planning in Flood Risk Areas for Local Planning Authorities in England.
- 6.5.2 The ABI guidance sets out the requirements of the insurance industry when considering flood risk and insurability of the property. The guidance suggests that properties should be protected for flood events up to the climate change 1 in 100 year event in order to access insurance at a competitive price.
- 6.5.3 The guidance also states that insurers would of course prefer to cover properties which are not at risk of flooding, however, for those properties which are at risk of flooding insurers would prefer that the properties are raised above the flood level, over resistance measures which prevent floodwater from entering the building, or resilience measures which allows floodwater to enter the building.
- 6.5.4 The proposed ground floor is set above the climate change 1 in 1000 year flood level. Therefore, the ABI's requirement of protection during the climate change 1 in 100 year event will be exceeded and there will be a good chance of the property being insured at a competitive rate.

## 7. OTHER SOURCES OF FLOODING

### 7.1 Groundwater Flooding

- 7.1.1 In order to assess the potential for groundwater flooding during higher return period rainfall events, the Jacobs/DEFRA report entitled Strategy for Flood and Coastal Erosion Risk Management: Groundwater Flooding Scoping Study, published in May 2004, was consulted, together with the guidance offered within the document entitled Groundwater flooding records collation, monitoring and risk assessment (ref HA5), commissioned by DEFRA and carried out by Jacobs in 2006.

#### Soil and Geology at the Site

- 7.1.2 It can be seen from the various soil and hydrogeological data that the soil types and geology across the site comprise sand and gravel deposits.

#### Groundwater Flooding Potential at the Site

- 7.1.3 There have been no recorded groundwater flood events across the area between 2000 and 2003, as indicated by the Jacobs study. The BGS Groundwater Flooding Susceptibility Map and 2017 SFRA flood map NN\_39 indicates that there is "Limited Potential for Groundwater Flooding to Occur".
- 7.1.4 It is considered that the evidence suggests an overall low risk of groundwater flooding and the raised floor level of the building will reduce the risk further.

### 7.2 Surface Water Flooding and Sewer Flooding

- 7.2.1 Surface water and sewer flooding across urban areas is often a result of high intensity storm events which exceed the capacity of the sewers thus causing them to surcharge and flood. Poorly maintained sewer networks and blockages can also exacerbate the potential for sewer flooding.
- 7.2.2 The Agency's Surface Water Flooding Map (Figure 8) indicates that across the site there is a very low risk (i.e. chance of flooding less than 1 in 1000 years). The 2017 SFRA flood map NN\_39 shows a very low risk during the climate change 1 in 100 year event.

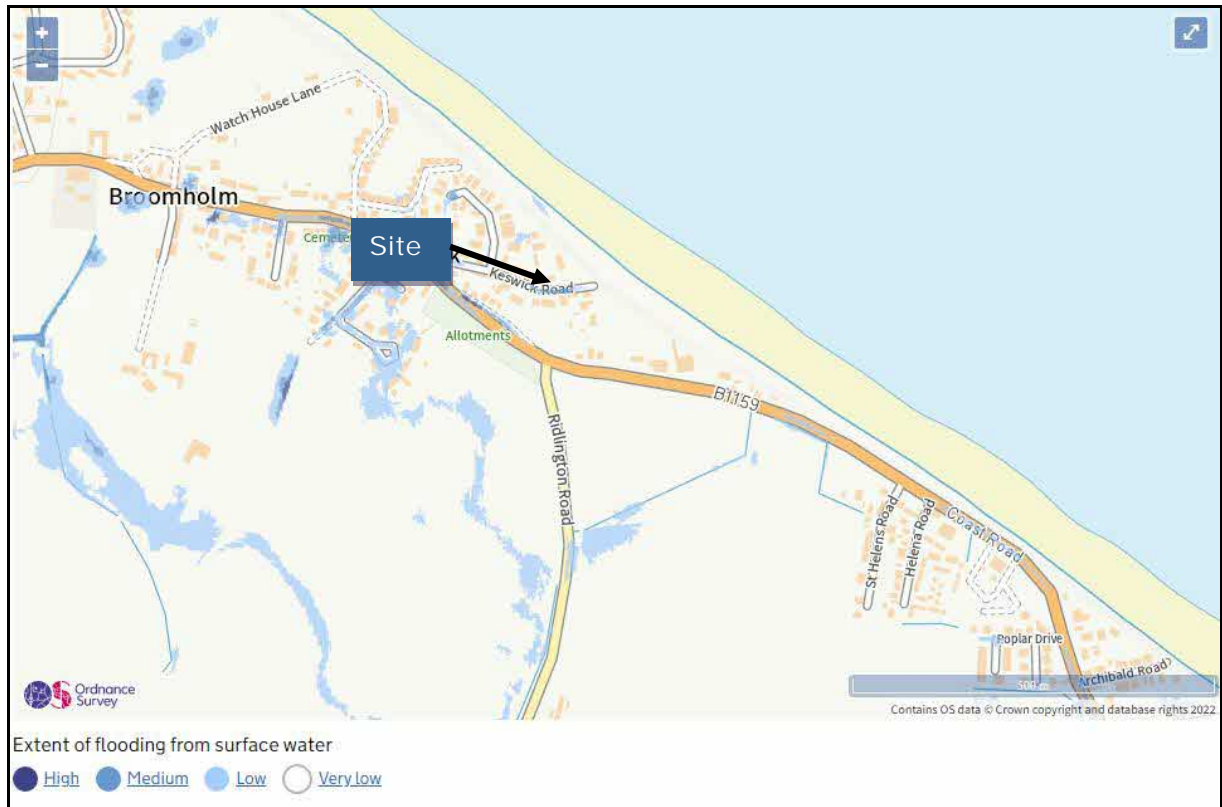


Figure 8: Environment Agency Surface Water Flooding Map (Source: Environment Agency, 2022)

### 7.3 Reservoirs, Canals And Other Artificial Sources

- 7.3.1 The failure of man-made infrastructure such as flood defences and other structures can result in unexpected flooding. Flooding from artificial sources such as reservoirs, canals and lakes can occur suddenly and without warning, leading to high depths and velocities of flood water which pose a safety risk to people and property.
- 7.3.2 The Environment Agency's "Risk of flooding from reservoirs" map suggests that the site is not at risk from such features.

## 8. CONCLUSIONS

The site is located within Flood Zone 3a, 2 and 1. The site is very partially located within Flood Zone 3a and the existing building and proposed replacement dwelling are located mainly within Flood Zone 1 and partially within Flood Zone 2.

Applying the Upper End climate change increase of 0.34m results in a defended 200yrCC flood level of 6.93m AOD and 1000yrCC flood level of 7.09m AOD.

The ground floor level will be set at 7.10m AOD and above the extreme climate change 1 in 1000 year flood level.

A warning and evacuation strategy has been developed within this assessment. It is proposed that the occupants register with the Agency's Flood Warnings Direct and prepare a Family Flood Plan.

Safe access/egress cannot be achieved during the peak of the design event and extreme event, however, it is recommended that the occupants evacuate the site during the early warning stages.

Safe refuge is available during the peak of the flood event.

It is considered that there is a low risk of groundwater flooding at the site from underlying deposits. There is a very low surface water flooding risk.

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## DRAWINGS



635200 E

635225 E

333400 N

333375 N

333350 N

333325 N

333300 N

- Notes:
- GRID AND ELEVATIONS ARE RELATED TO ORDNANCE SURVEY, ACQUIRED FROM THE NATIONAL GNSS NETWORK.
  - TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.

Survey Control Table				
Station	Easting	Northing	Elevation	Description
S1	635203.307	333335.985	6.355	Road Nail
S2	635228.037	333325.971	6.258	Road Nail
S21	635225.704	333339.257	6.412	Road Nail
S22	635224.661	333350.819	6.523	Road Nail

### TOPOGRAPHICAL KEY

**SURVEY CONTROL**

**BANKING**

**GATE**

**KERB CHANNEL**

**ROAD UNKERBERD**

**FOOTPATH**

**CHANGE IN SURFACE**

**FENCE**

**WALL**

**OVERHEAD ELECTRIC**

**HEDGE SPREADS**

**WOODLAND CANOPY**

**STEPS - UP**

**TREES**

**CONTOUR**

**SPOT LEVEL**

**GENERAL ABBREVIATIONS**

BOLLARD	BO	POST	PO
BRICK	BK	POST BOX	P.BOX
BUSHES	BU	RODDING EYE	RE
BUS STOP	BS	RISER	RI
CONTROL BOX	CB	ROAD SIGN	RS
COVER LEVEL	CL	RAIN WATER PIPE	RWP
CABLE RISER	CR	RETAINING WALL	RW
DAIRY PROOF COURSE	DPC	SAPLING	SAP
DRAINAGE CHANNEL	DCH	STREET NAME PLATE	SNP
DROP KERB	DK	STUMP	ST
ELECTRICITY POLE	EP	STOP VALVE	SV
EARTH ROD	ER	SOIL VENT PIPE	SVP
FIRE HYDRANT	FH	TACTILE PAVING	TAC
FLOOR LEVEL	FL	THRESHOLD LEVEL	THL
GAS VALVE	GV	TELECOM POLE	TP
GAS RISER	GR	TICKET MACHINE	TM
GULLY	GY	TOP OF WALL	TOW
INSPECTION COVER	IC	TRAFFIC LIGHT	TL
KERB OUTLET	KO	VENT PIPE	VP
LAMP POST	LP	WATER LEVEL	WL
MANHOLE	MH	WATER METER	WM
MARKER POST	MK	WATER RISER	WR
METER	MT	WATER TAP	WT
PHONE BOX	PB		

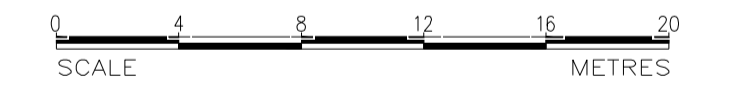
**FENCE ABBREVIATIONS**

BARBED WIRE FENCE	BW	IRON RAILINGS	IR
CLOSE BOARDED FENCE	C/B	POST AND RAIL FENCE	P/R
CORRUGATED IRON FENCE	C/I	POST AND WIRE FENCE	P/W
CHAIN LINK FENCE	CL	WIRE MESH FENCE	W/M

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Rev	Description	DRN	CHKD	Date

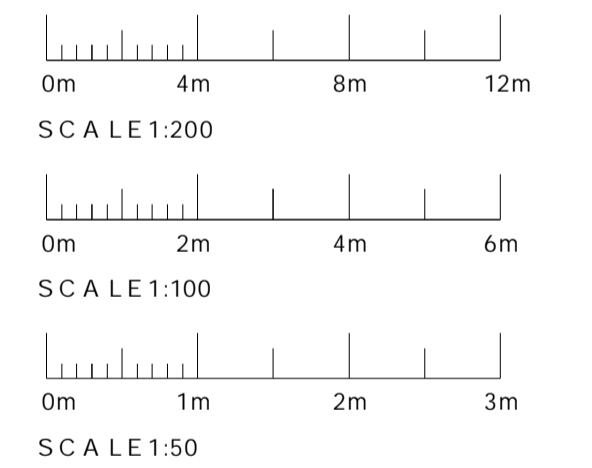
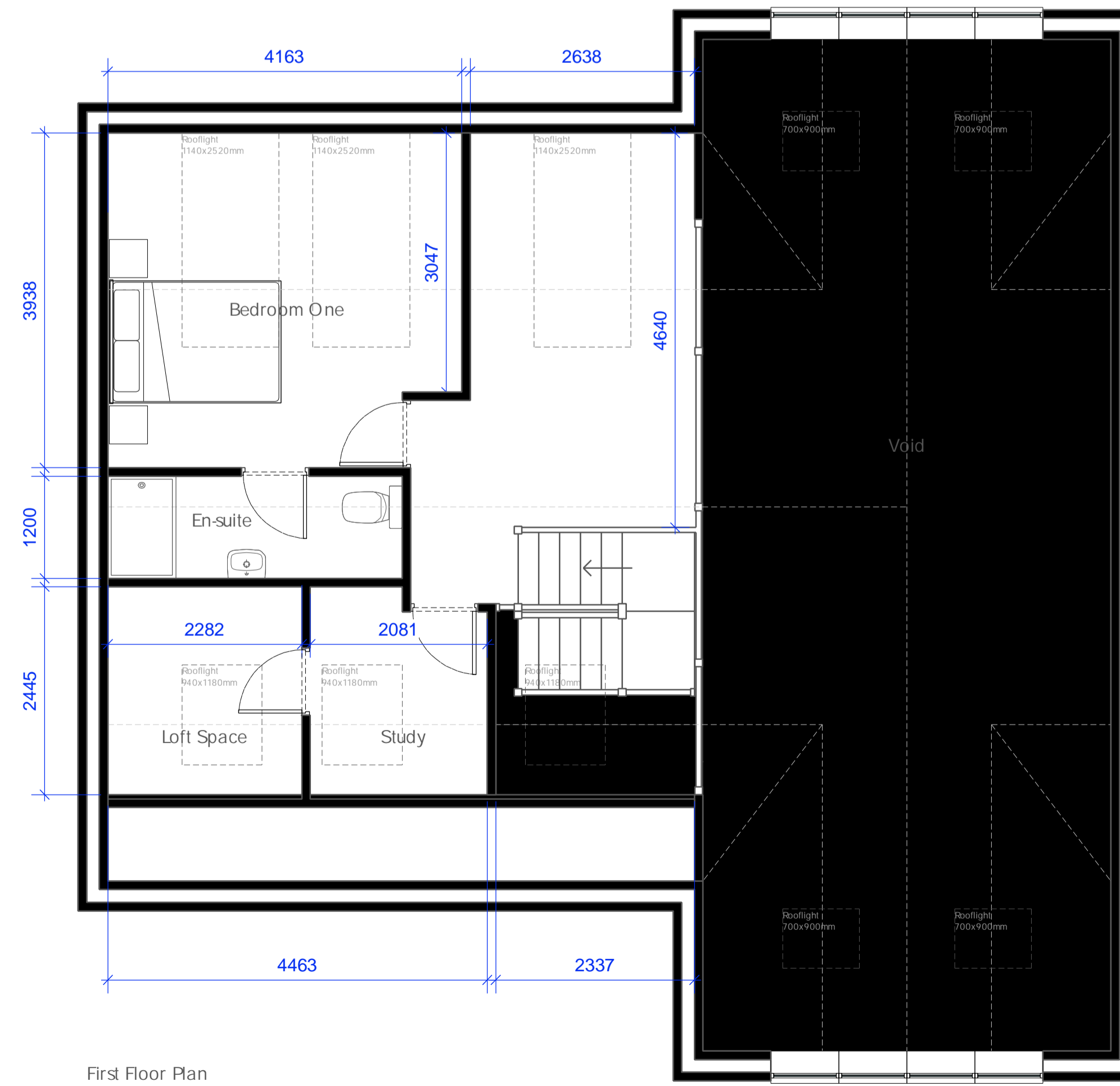
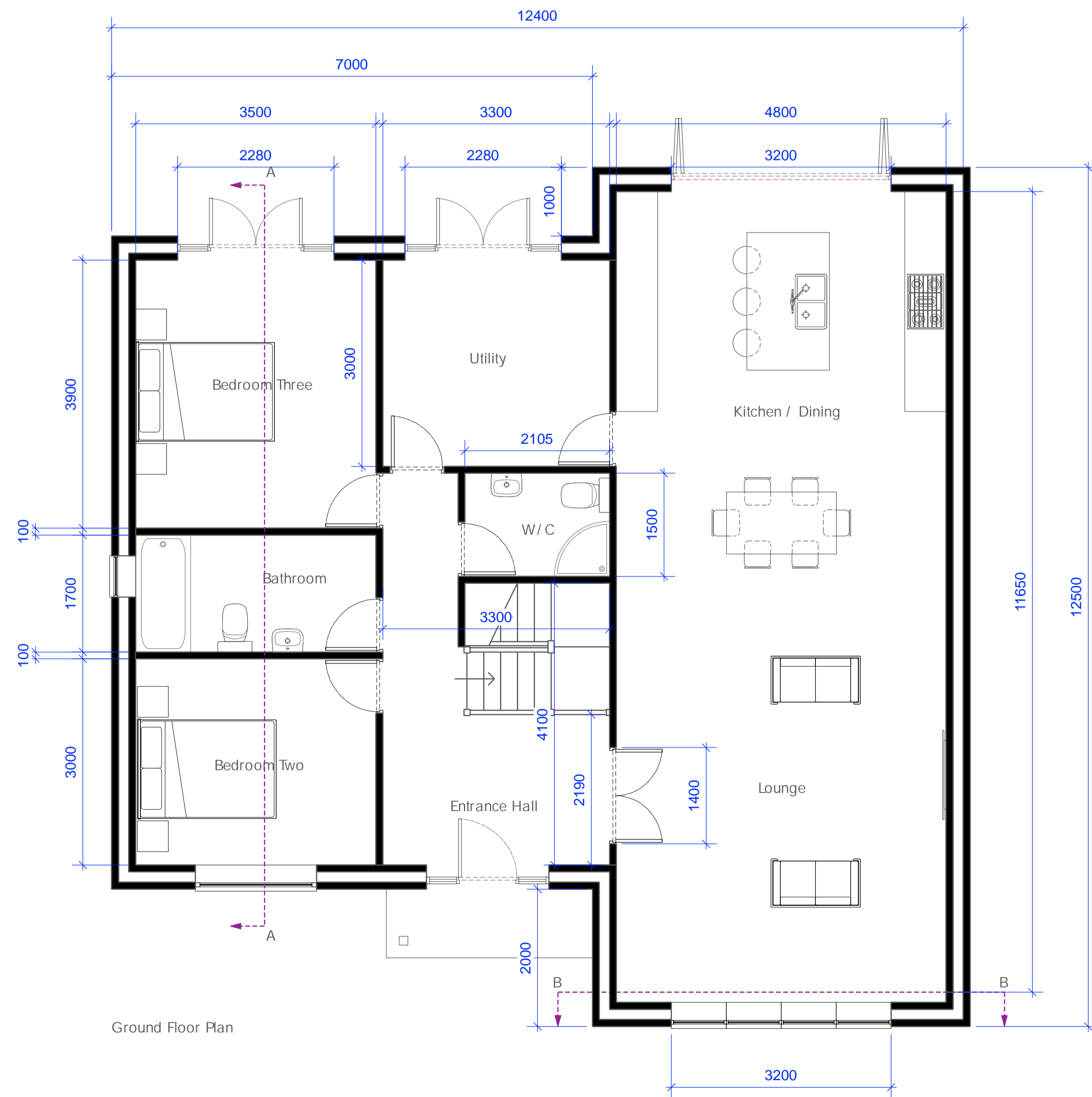
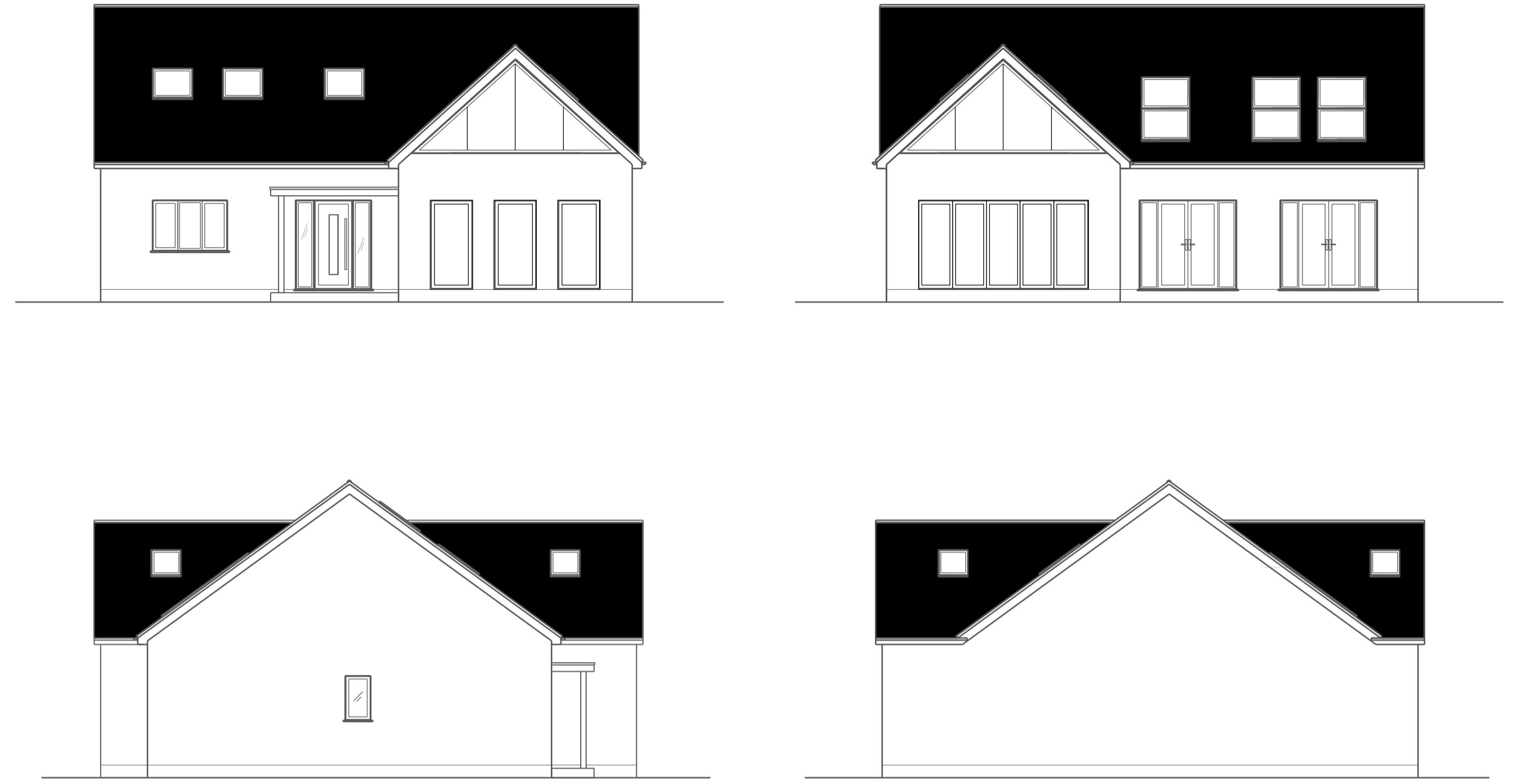


Mr Lloyd Mills

Beach Holme  
Keswick Road  
Bacton

TOPOGRAPHICAL SURVEY

SCALE: 1:200	ORIGINAL SHEET SIZE: A2
DATE OF SURVEY: 07/06/22	
DRAWING No: TLS034_D1	
REV 0	SHEET 1 OF 2



**General Notes:**  
 Do not scale from this drawing  
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Project: **Beech Holme Norfolk**

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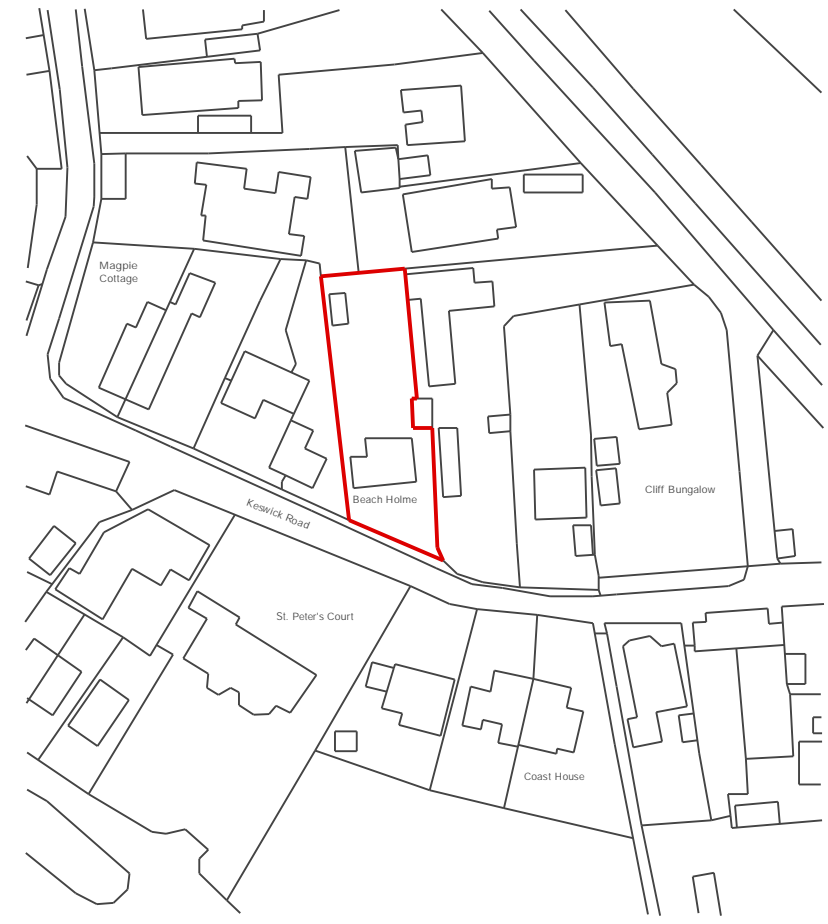
Drawing: **Concept Scheme 5 : Rev A**

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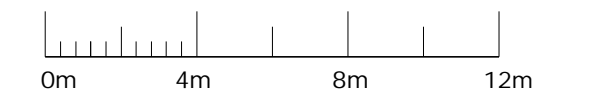
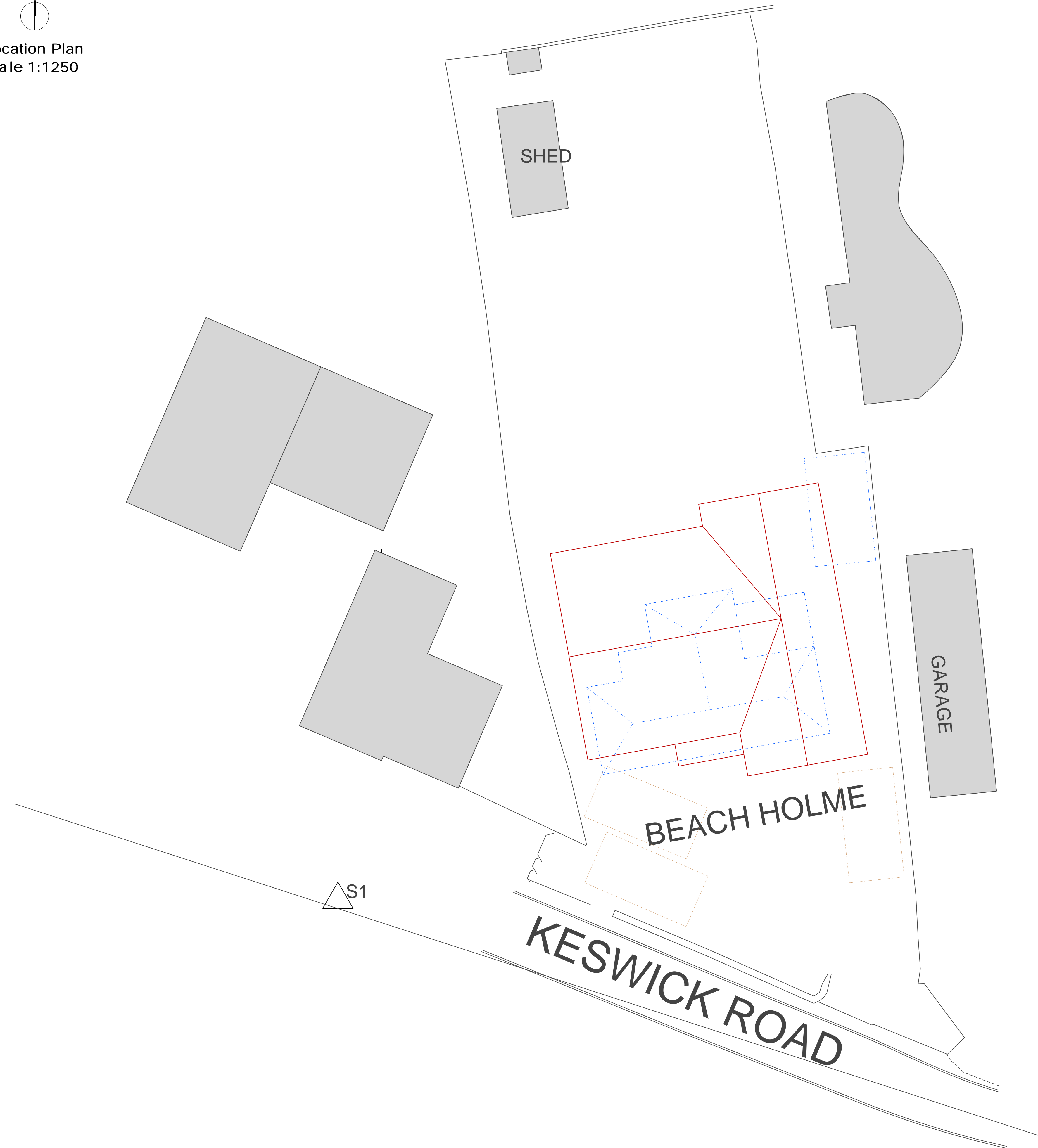
Project No: <b>1274</b>	Drawing No: <b>003</b>	Scale: <b>1:50 &amp; 1:100 @ A1</b>
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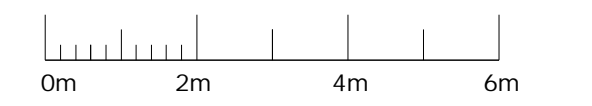
Date: **July 2022**



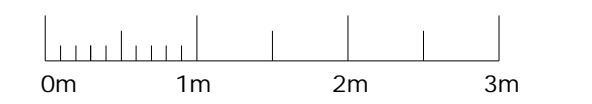
N  
 Location Plan  
 Scale 1:1250



SCALE 1:200



SCALE 1:100



SCALE 1:50

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Project: **Beech Holme  
 Norfolk**

Draw Ing: **Site and Location Plan**

Project No: <b>1274</b>	Draw Ing No: <b>004</b>	Scale: <b>1:100, 1:1250 @ A1</b>
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Date: **November 2022**

