



# 80 Norman Way, Colchester

## Flood Risk Assessment

Job Number: 1044

Date	Version	Notes/Amendments
May 2021	DRAFT	-

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<b>Acronyms</b>	
<b>AOD</b>	Above Ordnance Datum
<b>EA</b>	Environment Agency
<b>FRA</b>	Flood Risk Assessment
<b>NPPF</b>	National Planning Policy Framework
<b>PPG</b>	Planning Practice Guidance
<b>SFRA</b>	Strategic Flood Risk Assessment

*Report by: Tom Quigg BSc MSc CEng MICE*

## Introduction

Flume Consultants have been appointed to undertake a Flood Risk Assessment for the proposed development adjoining 80 Norman Way, Point Clear Bay, St Osyth, CO16 8LX.

This FRA has been carried out in accordance with the National Planning Policy Framework (NPPF) and the Planning Practice Guidance 'Flood Risk and Coastal Change'. This FRA also incorporates advice and guidance from the Environment Agency (EA), the Strategic Flood Risk Assessment (SFRA) produced by Tendring District Council (2017) and CIRIA documents.

The Environment Agency's (EA) indicative floodplain map shows that the site is located in Flood Zone 3, in an area which benefits from flood defences. Our assessment will therefore focus on the flood risk to the site from watercourses from a breach in defences or from overtopping.

Tendring District Council (TDC) were also consulted as part of a pre-application *20/30188/PREAPP*. This report will address these statements, and any additional comments from TDC.

## Site Description and Location

The existing site includes an existing plot which was previously developed, and remains a brownfield site which has been undeveloped for over 10 years. The site has a small concrete slab which is now redundant, and an area of soft landscape surrounding this outline. A small parking area and a series of one-storey buildings surround the development.

An ordinary watercourse runs along the north of the development, with the primary source of flood risk from the sea, also impacting a large area of Point Clear Bay and the adjacent existing developments.

The development is surrounded by other developments typically single-storey, and there is currently no street parking available at present.

The site postcode is CO16 8LX and the OS grid reference is TM 08925 15411.

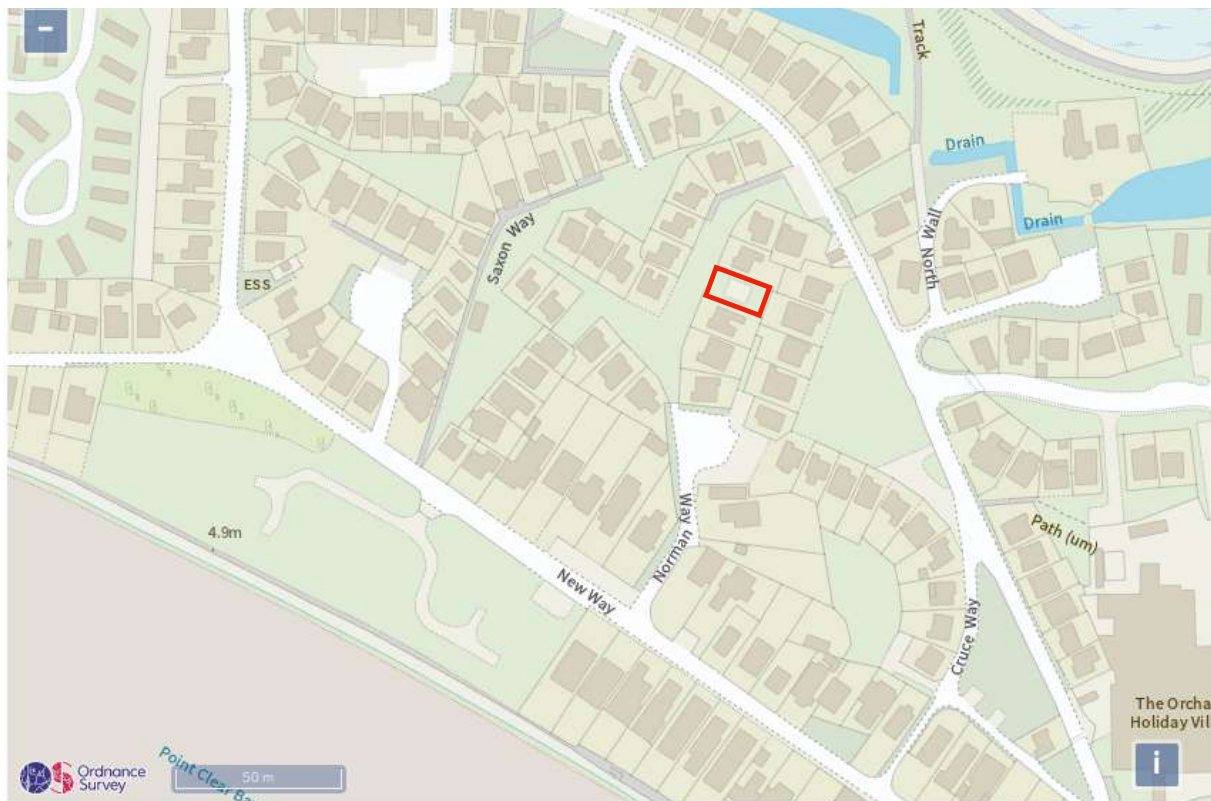


FIGURE 1. SITE LOCATION

## Development Proposal

The developed proposals involve a new two-storey dwelling with associated landscaping works. The new building will also improve the ecological provisions and reduce the overall flood risk to residents in the proposed scenario. The proposed building will replace the existing hardstanding drained area (existing concrete ground floor slab).

The proposed building's living space will be raised above the flood level in accordance with the recommendations set forth by the Environment Agency (EA), and will be accessed via main entrance. Vehicular access will be maintained and remain unchanged from the existing case (via Norman Way). Pedestrian street access is also unaffected.

Refer to Appendix A for the Architectural drawings.

\*Kate to include Architectural plans\*

**FIGURE 2. PROPOSED BUILDING**

\*Kate to include Architectural plans\*

**FIGURE 3. PROPOSED BUILDING AND ASSOCIATED ELEVATIONS**

## Flood Risk Assessment

### Flood Risk from Watercourses

The EA's indicative floodplain map shows that the site is located in Flood Zone 3 (High flood risk) from the North Sea, and as such the Local Planning Authority has requested a site specific Flood Risk Assessment to be carried out. Land in this flood zone is assessed as having annual probability of river flooding greater than 1%. The EA's indicative fluvial/tidal flood risk maps, Figure 4, suggest that the site is in an area which benefits from flood defences which act to protect up to the 1:200 year standard. The EA's website also states that not all defences are shown on the map.

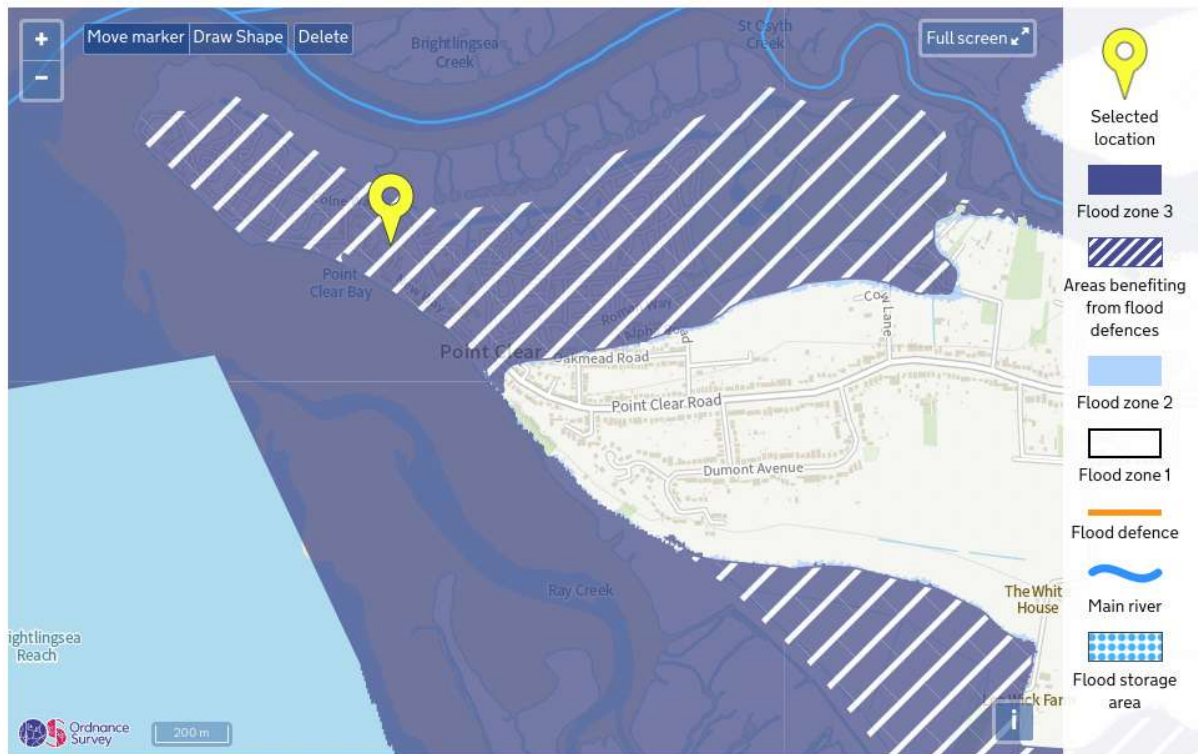


FIGURE 4. ENVIRONMENT AGENCY FLOOD RISK FROM RIVERS OR SEA MAP (GOV.UK, 2020)

Tidal flood risk is extensive, but at present Point Clear is fully defended from flooding from the sea with a 0.5% (1 in 200) chance in any given year. The EA have provided Flume with the latest Flood Modelling files in the form of Product 6, where the flood levels are derived.

*Model: Colne and Blackwater Date: 2018*

*Consultant: JBA*

More on flood risk from breach and failure of defence is outlined in the chapter “*Flood Risk from Infrastructure Failure*”. Furthermore, this report will also outline all other sources of flood risk, in accordance with the requirements of the SFRA, the NPPF and the Planning Practice Guidance: Flood Risk and Coastal Change (PPG).

## Sequential and Exception Test

### Sequential Test

In accordance with the NPPF, before planning permission can be granted the risk-based Sequential Test should be applied and accepted. This needs to be carried out for those developments in Zone 2 or 3, and for all but minor developments.

The NPPF states plans should ‘...support the sustainable growth and expansion of all types of business and enterprise in rural areas, both through conversion of existing buildings and well designed new buildings...’. It goes on further to say that a ‘pragmatic approach should be taken when applying the Sequential Test’. Therefore, the proposals for this development are in accordance with this approach.

TDC’s new housing strategy 2020-2025 “Delivering Homes to Meet the Needs of Local People”, identifies the need to boost the supply of housing stating “*Tendring is an area where housing growth has stalled in recent years and the number of homes delivered has not met targets*”.

According to the Tendring District Council website<sup>1</sup>, there is a substantial number of 'Empty Homes' or 'long-term empty properties' which have been vacant for six months or longer: “*As of June 2015, there were approximately 760 long-term privately owned empty homes in the Tendring District (excluding second homes) and at the same time the number of households waiting on the housing register was over 1,000. Whilst bringing these empty homes back into use will not solve the housing shortage completely, it could help to reduce the gap. The cost to bring an existing empty property back into use in most instances is far less than building new properties.*”

Furthermore, according to a recent report, Home building in Tendring has slowed due to the impact of the pandemic and has exacerbated the shortage of affordable homes in the area<sup>2</sup>.

Therefore, the development should be considered suitable for housing development, under the same rules and regulations underpinning the TDC Housing Strategy 2020-25 and NPPF.

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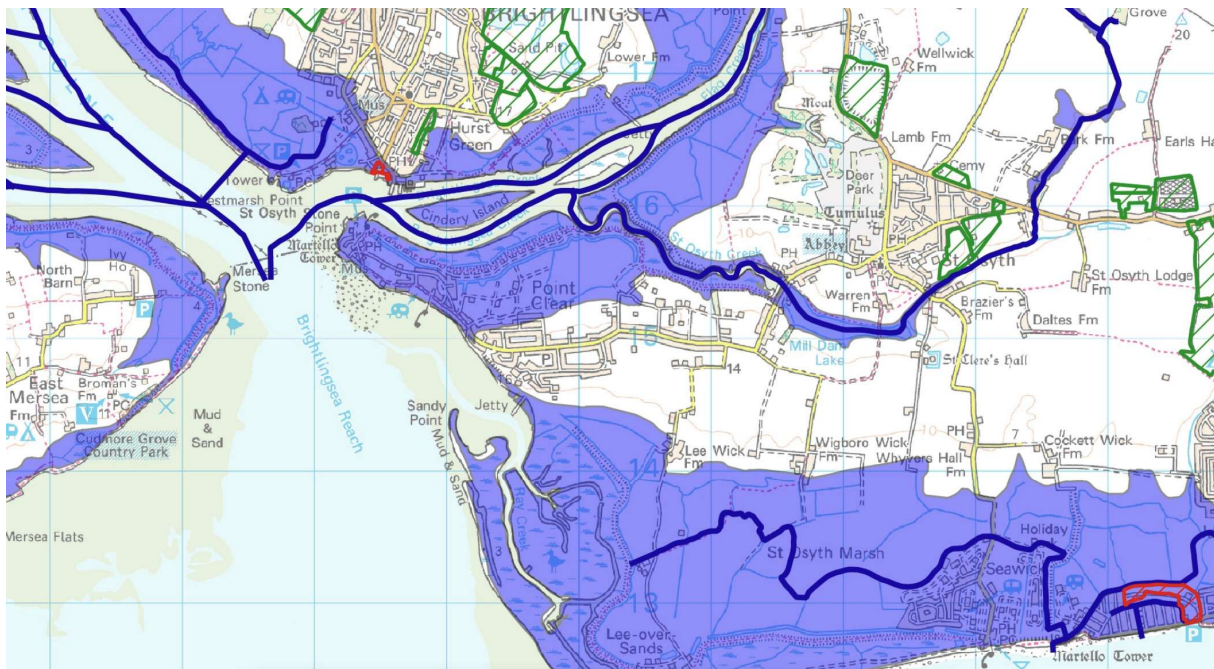
<sup>1</sup> <https://www.tendringdc.gov.uk/housing/private-rented-or-owned-housing/empty-homes>

<sup>2</sup> <https://www.clactonandfrintongazette.co.uk/news/19029609.home-building-tendring-hit-covid-19-pandemic/>

Possible alternative sites were reviewed by assessing information available from the Tendring District Council's Strategic Housing and Land Availability Assessment (SHLAA, November 2017), with the aim of identifying 'reasonably available' alternative sites. However, the SHLAA notes that includes "*only housing sites with the potential for 10 or more (net) dwellings in the assessment, which will be consistent with the threshold for allocating specific sites in the new version of the Draft Local Plan*". Furthermore, the SHLAA has provided a list of sites which were considered deliverable within 5 year timeframe within the borough with the general assessment on suitability, availability and achievability. The SHLAA sites are generally larger (most of them greater than 0.10 ha). The sites listed were appropriate for residential development and were considered suitable for only large-scale developments of residential houses and flats.

Therefore, the sites listed will not be appropriate for the scale of the proposed development of a single residential dwelling. It is therefore reasonable to conclude that the SHLAA sites will not be suitable for considering as the alternative sites of the proposal site at 80 Norman Way.

In Essex County Council's review of available SHLAA sites in the county (Figure 5 and 6), there were 2 no. sites in Flood Zone 3 which were deemed acceptable for development. However, each of these were for large housing developments, rather than the replacement of an existing derelict building site, which the applicant is aiming to provide a high-quality building which is flood resilient and safe for proposed future use.



**FIGURE 5. FLOOD ZONES + SHLAA SITES (ESSEX COUNTY COUNCIL)**



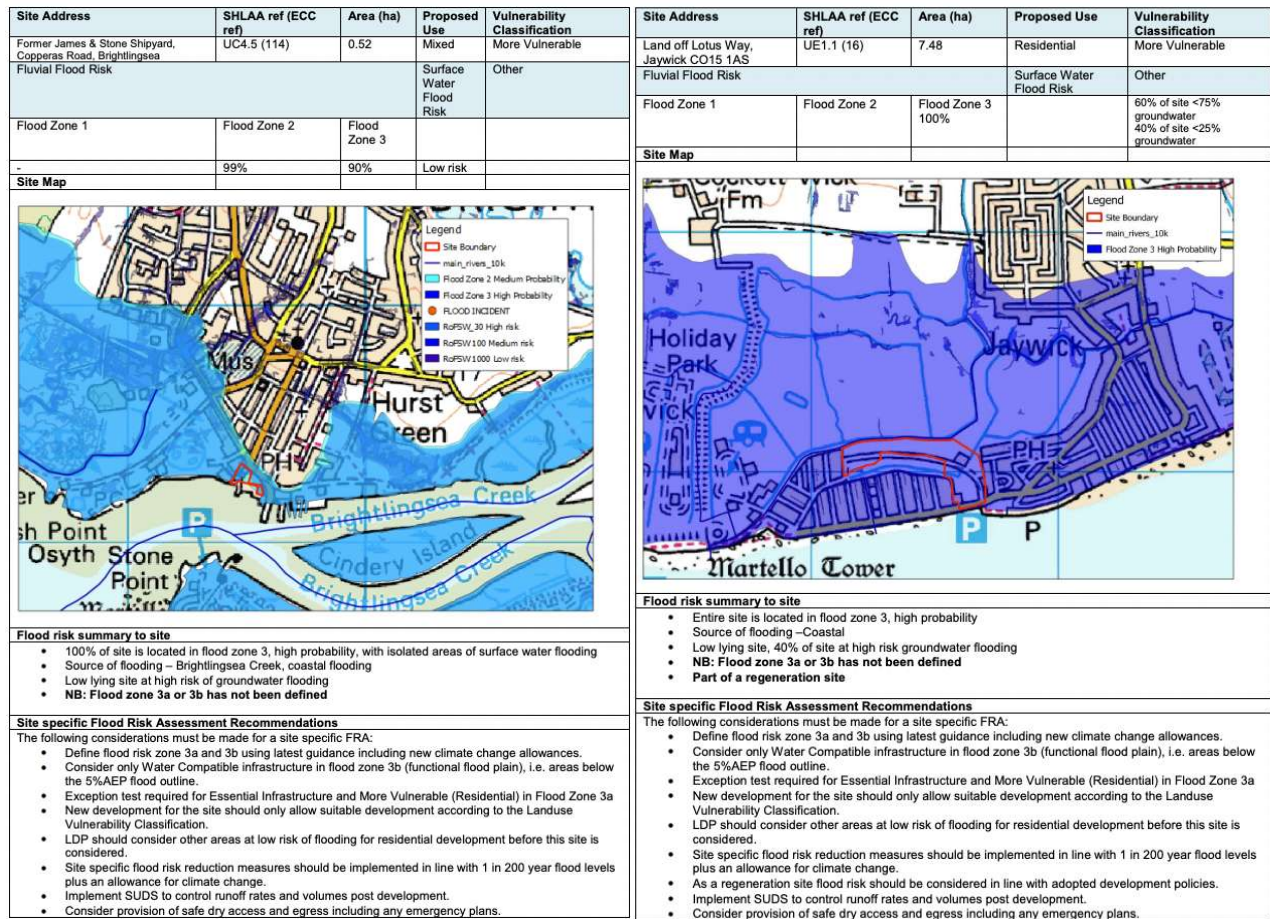


FIGURE 6. SHLAA SITES IN FLOOD ZONE 3 (ESSEX COUNTY COUNCIL)

In summary, there are currently no sequentially preferable sites available in lower flood risk areas for the proposed development at 80 Norman Way. The council have admitted<sup>3</sup> that the policy aimed at strictly controlling development has failed to bring about any positive changes in the area particularly in respect of flood risk. Going further to note that “the Council, the Environment Agency and other partners have agreed that lifting some of the planning restrictions and moving towards flexible policies aimed at encouraging developers to provide high-quality, resilient and innovative new homes in the area is a better approach.”

The proposal site is therefore appropriate for the proposed residential development and therefore passes the Sequential Test in accordance with the NPPF guidelines.

<sup>3</sup> Planning Committee Report for 138 Point Clear Road St Osyth Clacton On Sea Essex CO16 8JA

## Exception Test

This development has a vulnerability classification of More Vulnerable, and so as can be seen from Table 3, the exception test will be required.

Table 3

Flood Risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Flood Zone 1	✓	✓	✓	✓	✓
	Flood Zone 2	✓	✓	Exception test required	✓	✓
	Flood Zone 3a	Exception test required	✓	✗	Exception test required	✓
	Flood Zone 3b - Functional Floodplain	Exception test required	✓	✗	✗	✗
<b>Key: ✓ Development is appropriate</b> <b>✗ Development should not be permitted</b>						

In accordance with the NPPF clause 102, both the following elements must be demonstrated to pass the Exception Test:

- I. “the proposed development provides wider sustainability benefits to the community that outweigh the flood risk”; and
- II. “a site specific FRA has been carried out and can demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere”

The development will provide quality housing that redevelops a vacant plot in a district that aims to address these empty and vacant developments, encouraging more efficient use of land while protecting and enhancing the countryside area and landscape quality by bringing to life a vacant plot and ensuring it's constructed in a sustainable and flood resilient way. Furthermore, the development aims to protect and enhance the built character of the existing settlements, minimising the impact of new development on the amenity of the existing community and on existing land uses.

The proposed new dwelling will replace an existing demolished and derelict site with a more environmentally sustainable, unobtrusive and cohesive property, which blends with the landscape and nearby properties. The design approach is to incorporate a much more sustainable rainwater harvesting tank is also proposed, reducing water demand. It is also proposed to introduce surface water attenuation, reducing the peak run-off rates of surface water to the sewer.

Development proposals follow the Sequential Approach and has restricted *More Vulnerable* development to the First and Second Floors, including bedroom accommodation. The proposed development ensures that no ground floor residential dwellings are proposed.

Flood Warning and Evacuation Plans will be in place to inform the site users of the evacuation procedures in an emergency. If not already listed, it is recommended that the property is registered with the EA's Flood Warning Service.

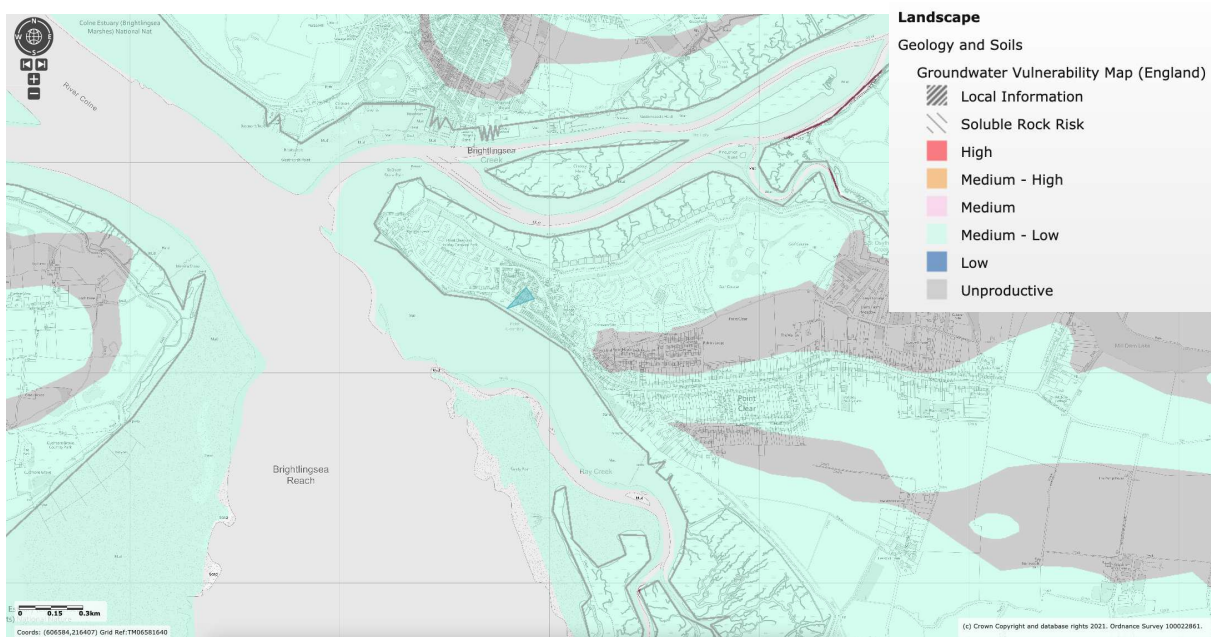
The proposed building seeks to reduce the residual risk of flooding through design, whilst also aiming to achieve wider objectives for sustainable living and place-making, and it is therefore considered that the scheme can satisfy the first part of the Exception Test, having wider sustainability benefits to the community.

Therefore, the proposed development meets the first part of the Exception Test. The following FRA has been carried out to satisfy the second condition.

## Flood Risk from Groundwater

Flooding from groundwater typically occurs following prolonged periods of wet weather within low lying areas underlain by permeable aquifers. When aquifers are fully saturated, flooding at surface level can occur from the sub-surface strata.

The susceptibility or vulnerability of the particular area, is highlighted on the groundwater vulnerability map (Figure 7), which indicates a *medium-low* risk of groundwater flooding in the area.



**FIGURE 7. DEFRA'S GROUNDWATER VULNERABILITY MAP (DEFRA.GOV.UK, 2020)**

However, these maps consider very large areas of the underlying geology, and ignore subtle shifts in local geology and ground levels. Furthermore, according to the SFRA there are no recorded instances of flooding relating to groundwater in the vicinity of the proposed site.

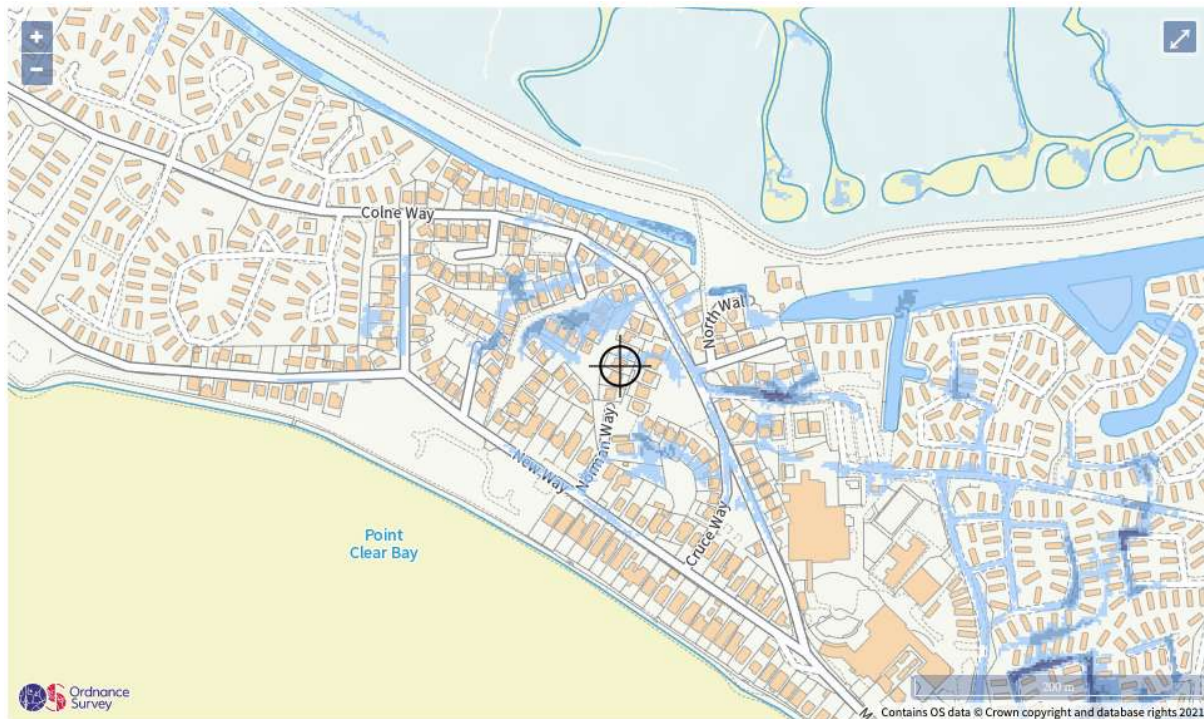
Groundwater flooding is an important consideration for subterranean basements. However, this is a small building and no basements are proposed in this instance.

Further *Flood Mitigation Measures* are noted in the respective chapter below. Therefore, the likelihood of groundwater flooding at ground level is considered to be low risk.

## Flood Risk from Surface Water and Overland Flows

Surface water flooding occurs when intense rainfall is unable to infiltrate into the ground or overwhelms the drainage system. This surface water runs across the surface of the ground causing flooding. The Environment Agency's Surface Water Flood Risk Map can also reflect surface water flooding along the line of small ordinary watercourses. Overland flows can also be generated by burst water mains, failed dams and any failure in a system storing or transferring water.

The EA's indicative Surface Water Flooding Map, Figure 8, shows that the site is at *very low* risk of surface water flooding.



Extent of flooding from surface water

High
  Medium
  Low
  Very low
  Location you selected

**FIGURE 8. ENVIRONMENT AGENCY FLOOD RISK FROM SURFACE WATER MAP (GOV.UK, 2020)**

Flooding from surface water is difficult to predict, or indeed model accurately, as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding. Furthermore, as part of the proposed building, permeable paving and other SuDS features should be promoted within the design. External ground levels immediately outside of the building will fall away from the building thresholds, ensuring the minimisation of storm water ingress. This can be achieved by either reducing the external ground levels below internal floor levels, and/or incorporating channel drainage system along the entrance into the building to positively drain overland flows.

Therefore, the likelihood of surface water flooding is considered low risk.

### Flood Risk from Reservoir Failure

The EA’s information states that reservoir flooding is extremely unlikely to happen and there has been no loss of life in the UK from reservoir flooding since 1925. The Reservoir Act of 1975 ensures that reservoirs are inspected regularly and essential safety work is carried out.



Extent of flooding from reservoirs

- Maximum extent of flooding
- ⊕ Location you selected

**FIGURE 9. ENVIRONMENT AGENCY FLOOD RISK FROM RESERVOIRS MAP (GOV.UK, 2020)**

Figure 9 shows that there is no flood risk associated with Reservoir Failure for the proposed site.

## Flood Risk from Infrastructure Failure

Although the development benefits from flood defences in the area, the flood defences reduce but do not eliminate the flood risk, as the risk of a breach or overtopping remains. With any man-made structure there is a possibility of failure, and that flood water will inundate the site. Therefore, a residual risk will remain. The site is currently defended and the Essex and South Suffolk Shoreline Management Plan (SMP) policy for this area has an aspiration for “hold the line.”

Flume had requested the latest Product 4 and 8 Information from the EA, and received the following response: “*On this occasion we are not providing the information in the Product 4 format for the following reasons:*

*Complying with the preference would incur a significant cost, which the public authority [The Environment Agency] cannot pass on to the requester; providing shapefiles used to create a Product 4 allows us to make the information available at a lower cost; and the impact on the available resources of the public authority [The Environment Agency], of supplying shapefiles used to create a Product 4, is therefore much less.”*

The EA have instead provided Flume with the Product 6 Information (Model Output Data, including product 5) for the area, which was interrogated using QGIS. The relevant outputs and figures herein are extracts of that same model.

### Overtopping

Overtopping of the defence walls is unlikely given the current level of the sea defences. However, the EA shows that Point Clear is protected by well-maintained defences that will not overtop up to the 0.5% annual probability event. The site is currently protected by flood defences (Western Promenade Wall - 5590) with a minimum effective crest level of 4.65m AOD, which is above the present-day 0.5% (1 in 200) annual probability flood level of **4.30m AOD**. Therefore the site is not at risk of flooding in the present-day 0.5% (1 in 200) annual probability flood event. The defences will continue to offer protection over the lifetime of the development, provided that the hold the line SMP policy is followed and the defences are raised in line with climate change, which is dependent on future funding.

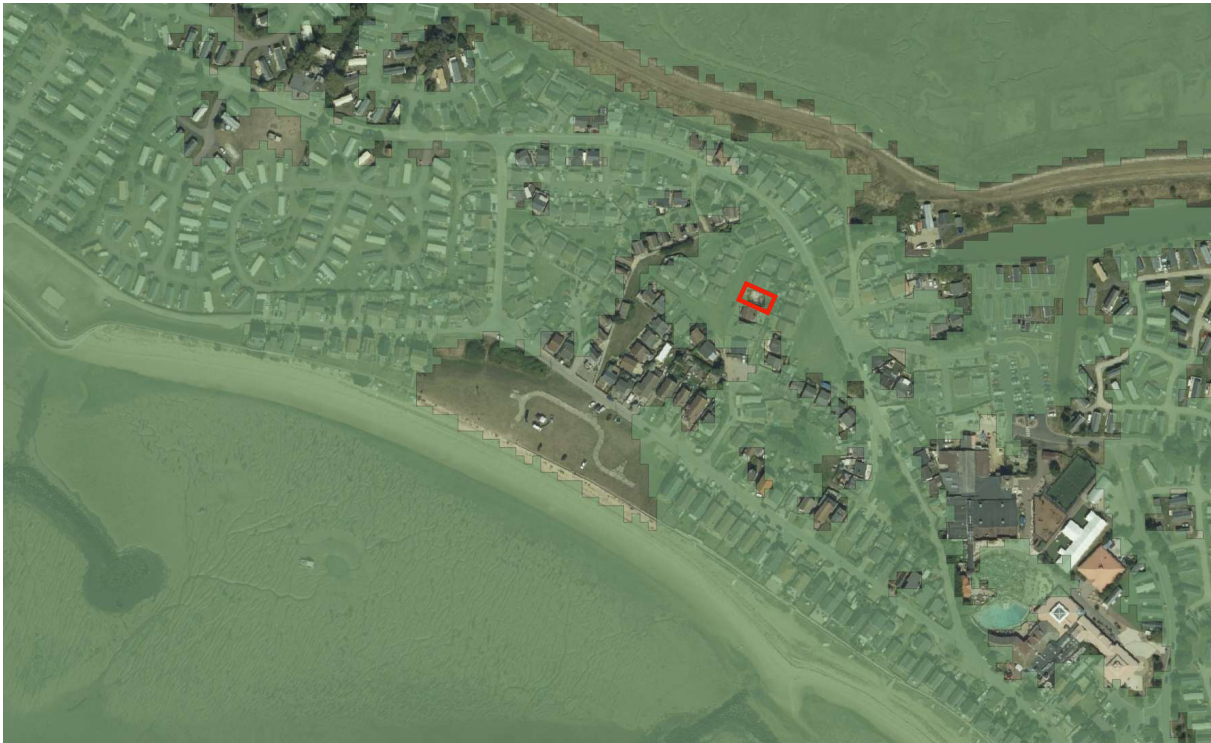


FIGURE 10. FLOOD OUTLINE - DEFENDED 1 IN 200 YEAR AEP (EA/JBA, 2018)

At the end of the development's lifetime with climate change applied to the design 0.5% annual probability flood event, if the SMP policy is not followed then through overtopping of the current defences the resulting on-site flood level would be **5.38m AOD**.

#### Breach

The results of the EA's breach maps show that the proposed development lays within an area subject to flood inundation.

Breach analysis was undertaken by JBA in their *Colne and Blackwater* model carried out in 2018.

Figure 9 indicates that the proposed development is outside the maximum flood extents in the event of a breach in defences. This demonstrates that the residual risk of a breach in defences is low.

The resulting actual risk depth of flooding on the site using the minimum site level of 1.412m AOD (shown in Figure 11) would be 3.968m deep, and in the building using the proposed finished floor levels of 2.10m AOD would be 3.28m deep. Finished first floor levels have not been provided but there will be refuge above the 0.1% (1 in 1000) annual probability breach flood level of **5.77m AOD**.

As such, the risk from tidal flooding to the proposed re-development is considered to be of low due to the comprehensive nature of flood defences in this area. Further, due to the distance of the site from the sea, the risk of flooding from overtopping via wave-action is also considered to be of low.

In the event of a nearby defence breach, the site would be at high risk of inundation. However, the present condition of proximal flood defences is good, and according to the EA, will continue to be maintained to this standard in the future. As such, the risk to the proposed development from tidal defence breach



flooding is considered to be low. Nevertheless, the development will introduce flood mitigation measures which considers the outstanding *residual* risk from breach in flood defences.

**FIGURE 9. BREACH ANALYSIS (EA/JBA, 2018)**

Given the risk of flooding from the sea, the authorities would have time to predict the risk and issue the appropriate warnings to enable the site users to take the necessary precautions to protect the property and evacuate, if necessary. Furthermore, with the proposed dwelling being a two-storey building there would be refuge for occupants on the upper floor in the circumstances in the unlikely event a breach in defences should occur.



**FIGURE 11. LIDAR ANALYSIS (EA, 2019)**

## Flood Mitigation Measures

It is proposed to raise the Finished Floor Level (FFL) of the ground floor above the flood levels for the 1 in 100 year river flood level and 1 in 200 year tidal flood level, which is also in accordance with EA guidance. FFLs for all living accommodation will be set no lower than 5.77m above Ordnance Datum (AOD). This floor level is higher than the 1 in 200 year return period (0.5% AEP - undefended), and at the same level as the 1 in 1000 year return period (0.1% AEP - undefended).

Although it is proposed to raise the living accommodation FFLs above the 1 in 200 year tidal flood level, it is proposed to provide additional flood resilient<sup>4</sup> materials for flooring and on the walls to minimise the potential for damage, in the event flood water inundates the proposed ground floor in the future climate change scenario. Therefore, to further reinforce the flood resilience of the building, any construction works at ground level should include an appropriate damp proof membrane. Furthermore, it is proposed flood resilient materials will be used for flooring and on the walls at ground floor level to minimise the potential for damage, in the unlikely event of flood water inundating the building footprint.

Finally, all drainage systems should be routinely maintained to reduce the risk of blockage and surface water flood risk. It is also recommended that channel drainage is introduced immediately outside of the proposed building threshold as this would assist in alleviating ponding issues.

If not already listed, it is recommended that the property is registered with the EA's Flood Warning Service. If you are unsure and/or you wish to register for this free service please contact Floodline Warning Service. Floodline is a free service operated by the EA that provides flood warnings direct to occupants by telephone, mobile phone etc. The EA is responsible for monitoring flood events and for issuing warnings to people in properties and businesses at risk of flooding.

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<sup>4</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/7730/flood\\_performance.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7730/flood_performance.pdf)

## Conclusions

The FRA has demonstrated that the proposed building has an acceptable flood risk within the terms and requirements of NPPF and accompanying technical guidance.

The site lies within an existing developed area which is currently defended to the 1:200 year standard, with all existing defences in maintained annually as part of the EA's Maintenance Programme.

The development is a replacement of an existing property, and will not introduce any additional people into the floodplain. Development proposals follow the Sequential Approach and has restricted More Vulnerable Development to the First Floor, including bedroom accommodation.

A significant betterment can be provided over the existing development by the use of flood mitigating design measures, an improved structural design, and the implementation of a formalised warning and evacuation / 'safe haven' procedure. The proposed rebuild is considered to be suitable, assuming appropriate mitigation and adequate warning and evacuation procedures can be maintained for the lifetime of the development.

The proposed building will not increase the impermeable areas on the site, as the existing external areas are 100% impermeable, served by a number of buildings/structures and hard paved areas. It will therefore not increase the flood risk from surface water, as there will be no increase in the surface water run-off rate or volumes.

If not already listed, it is recommended that the property is registered with the EA's Flood Warning Service.

**Appendix A - Architectural Plans**

Tom Quigg  
Flume Consulting Engineers  
[tom@flumeconsultants.com](mailto:tom@flumeconsultants.com)

**Our ref** EAn/2020/199514  
**Date** 15 January 2021

Dear Tom

**Enquiry regarding Product 4 for 80 Norman Way St. Osyth, Point Clear Clacton-on-Sea CO16 8LX.**

Thank you for your enquiry which was received on 28<sup>th</sup> December 2020.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please note that we have recently changed our process for responding to modelled data requests, please read the information within this letter for further details.

Your request for a Product 4 falls under the exemption in provision 6(1)(a) and (b) of the Environmental Information Regulations 2004 (EIR) which states that

*‘.....6.—(1) Where an applicant requests that the information be made available in a particular form or format, a public authority shall make it so available, unless—*

- (a) it is reasonable for it to make the information available in another form or format; or*
- (b) the information is already publicly available and easily accessible to the applicant in another form or format.....’*

On this occasion we are not providing the information in the Product 4 format for the following reasons:

- Complying with the preference would incur a significant cost, which the public authority [The Environment Agency] cannot pass on to the requester;
- Providing shapefiles used to create a Product 4 allows us to make the information available at a lower cost; and
- The impact on the available resources of the public authority [The Environment Agency], of supplying shapefiles used to create a Product 4, is therefore much less.

**About the Model used**

Model: Colne and Blackwater  
Date: 2018  
Consultant: JBA

Please find below the link containing the associated shapefiles.

<https://ea.sharefile.com/d-s862a20b3e76242de9fba94f684a3e6b0>

**East Anglia Area**

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD  
General Enquiries: 03708 506506  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
Website: <https://www.gov.uk/government/organisations/environment-agency>

We are licensing the supplied data to you under the [Environment Agency Conditional Licence](#). You must first check this supporting information, to determine if the conditions of use are suitable for your purposes. If the conditions for use are not suitable for your purposes, this information is not provided with a licence for use, and the data is provided for the right to read only.

Product 4 data is derived from the shapefiles supplied above and the following open data sources;

Flood Zone 3 <https://data.gov.uk/dataset/flood-map-for-planning-rivers-and-sea-flood-zone-3>  
Flood Zone 2 <https://data.gov.uk/dataset/flood-map-for-planning-rivers-and-sea-flood-zone-2>  
Historic Flood Map <https://data.gov.uk/dataset/historic-flood-map1>

Please note, that the Flood Map for Planning is available to view and export maps for your site at: <https://flood-map-for-planning.service.gov.uk/>

Please note that our historic flood event maps may not be comprehensive. We would therefore advise that you make further enquiries locally with specific reference to flooding at your location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

Please be aware that flooding can come from different sources. Examples of these are:

- from rivers or the sea
- surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system)
- overflowing or backing up of sewer or drainage systems which have been overwhelmed
- groundwater rising up from underground aquifers

Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea.

#### Areas Benefiting from Flood Defences

Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences specifically in the event of flooding from rivers with a 1% (1 in 100) chance in any given year, or flooding from the sea with a 0.5% (1 in 200) chance in any given year.

If the defences were not there, these areas would be flooded. An area of land may benefit from the presence of a flood defence even if the defence has overtopped, if the presence of the defence means that the flood water does not extend as far as it would if the defence were not there.

#### Flood Risk Assessment Checklist

If you are planning on using this data within a Flood Risk Assessment, we recommend that you take the time to fill in the attached FRA checklist, and to read the attachments which contain information relevant to the area that interests you.

#### **East Anglia Area**

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD

General Enquiries: 03708 506506

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

Website: <https://www.gov.uk/government/organisations/environment-agency>

We would like to stress the importance of filling in the Flood Risk Assessment check list, and providing up-to-date and correct data. The data will be checked against our records when we review the Flood Risk Assessment in our role as statutory consultee.

It is important that you provide a map in section 2 of the FRA checklist (See Appendix A), including the highest and most representative flood levels for your site. We recommend using a number of nodes that provide a fair representation of the modelled data across your site. For example, if it is a small extension (< 250 square metres) then approximately 5-10 nodes would be sufficient. For larger sites, approximately 10 to 20 nodes would be appropriate.

Please contact our Sustainable Places team at [planning.ipswich@environment-agency.gov.uk](mailto:planning.ipswich@environment-agency.gov.uk) if you have any further enquiries regarding the planning process and Flood Risk Assessments.

**If you have any further queries regarding how to use the above data please contact the Partnership and Strategic Overview (PSO) team directly at: [PSOENS@environment-agency.gov.uk](mailto:PSOENS@environment-agency.gov.uk).**

If you have a new enquiry or would like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months by email at [Enquiries\\_EastAnglia@environment-agency.gov.uk](mailto:Enquiries_EastAnglia@environment-agency.gov.uk)

Kind Regards

*Grace Cooke*

**Flood & Coastal Risk Management Officer**

PSO Essex, Norfolk and Suffolk  
East Anglia Area

**East Anglia Area**

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