

Our ref Pre-Submission LDP Representation  
Your ref

17 March 2014

0153-5302-S2-LC  
**MALDON DISTRICT  
COUNCIL**

Princes Road  
Maldon  
Essex CM9 5DL



Enquiries to: Planning Policy  
Email: [policy@maldon.gov.uk](mailto:policy@maldon.gov.uk)

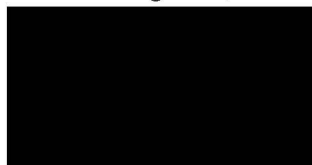
Dear Sir / Madam

**Plainview Planning on behalf of Petticrows Ltd and Rice & Cole Ltd representation to the Pre-Submission Local Development Plan public consultation**

The information contained within the representations listed below were made by Mr Ian Woodward-Court, Director at Plainview Planning representing Petticrows Ltd and Rice & Cole Ltd and should be read in conjunction with the supporting evidence contained within representation: **0153-5302-S2-LC**.

- 0153-5302-S2-1234
- 0153-5303-S4-1234
- 0153-5304-S7-1234

Kind regards,



Planning Technician



P	S	C					/		
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**Part 2 - Regulation 19 and 20 of the Town and Country Planning (Local Planning) (England) Regulations 2012 "Pre-Submission LDP" consultation**

Please note that all comments on the Pre-Submission LDP consultation should be provided by completing Part 2 of this form. A separate completed Part 2 should be provided for each comment made within a representation.

**2.1 To which part of the Maldon District Pre-Submission Local Development Plan (LDP) does this representation relate?**

a. Paragraph number

b. Policy reference

c. Proposals map

d. Other section (please specify)

**2.2 Do you consider the Maldon District Pre-Submission LDP to be ... (✓ as appropriate)**

**a. Legally compliant**

YES ☐ NO ☐

To be legally compliant the LDP has to be prepared in accordance with the Duty to Co-operate and legal and procedural requirements. This is required by Government guidance.

**b. Sound**

YES ☐ NO ☐

To be 'sound' a Local Plan should be positively prepared, justified, effective and consistent with national policy. This is required by Government guidance.

**If you do not consider the LDP to be sound, please complete section 2.3 below**

**2.3 Do you consider the Maldon District to be unsound because it is not ... (✓ as appropriate)**

**a. Positively prepared**

☐

To be positively prepared the Plan should be prepared on a strategy which seeks to meet objectively assessed development and infrastructure requirements

**b. Justified**

☐

To be justified the Plan must be:

- Founded on a robust and credible evidence base
- The most appropriate strategy when considered against the reasonable alternatives

**c. Effective**

☐

To be effective the Plan must be:

- Deliverable;
- Flexible;
- Able to be monitored

**d. Consistent with National Policy**

☐

The Plan must be consistent with Government guidance as set out within the National Planning Policy Framework

On the following pages, please explain why you think the Plan is unsound or not legally compliant, and set out any changes you feel should be made to the Plan to make the Plan sound or legally compliant.

**Please note: As there will not normally be a subsequent opportunity to make further representations, please include all the information, evidence and supporting information necessary to support/justify your representation and the suggested change(s) to the Plan. After this stage, further submissions will only be invited at the request of the Planning Inspector, based on the matters and issues the Inspector identifies for examination.**

P	S	C					/		
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**2.4 If you consider the Maldon District LDP to be unsound or not legally compliant please explain why in the box below. Please be as precise as possible. Please also use this space for any comments in support of the LDP.**

If the box is not big enough for your comments, please attach another page marked appropriately.

P	S	C					/		
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**2.5 Please explain in the box below what change(s) you consider necessary to make the Maldon District LDP legally compliant and sound.**  
**Please be as precise as possible. Please explain why this change will make the Maldon District LDP legally compliant and sound. It will be helpful if you are able to put forward any suggested revised wording of the policies or supporting text.**

If the box is not big enough for your comments, please attach another page marked appropriately.

P	S	C					/		
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2.6 Do you consider it necessary to attend and give evidence at the hearing part of the examination? (✓ as appropriate)

NO, I wish to communicate through written representations

YES, I wish to speak to the Inspector at the hearing sessions

Please note: The Inspector will determine the most appropriate procedure to hear those who have indicated that they wish to participate at the hearing part of the examination

2.7 If you wish to participate at the hearing part of the examination, please outline why you consider this to be necessary

If the box is not big enough for your comments, please attach another page marked appropriately.

This is the end of Part 2 (Regulation 19 and 20) of the response form. Please complete this form for each representation you wish to make. You only need to complete Part A once. Please submit all of your response forms together.

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*Maldon District Local  
Development Plan:  
Pre-Submission*

**Representation made on behalf  
of Petticrows Ltd and Rice &  
Cole Ltd**

March 2014

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# 1. Introduction

- 1.1 This representation is prepared on behalf of our clients, Petticrows Ltd and Rice & Cole, in response to the Maldon District Local Development Plan Pre-Submission Consultation (2014) document.
- 1.2 Our clients are promoting land at Belvedere Road, Burnham-on-Crouch for a mixed-use development comprising residential and a range of commercial uses (Appendix A). This site would represent a sustainable development that could be included as a strategic allocation. This site represents a 'reasonable alternative' site that has not been explored by the Council.
- 1.3 Not only will this land contribute to the District's housing supply over the plan period but it would also boost employment opportunities in Burnham-on-Crouch and assist in enhancing the vitality of the town centre.





## 2. Policy S2: Strategic Growth

2.1	To which part of the Maldon District Pre-Submission Local Development Plan (LDP) does this representation relate?	Policy S2
2.2 (a)	Do you consider the Maldon District Pre-Submission LDP to be Legally Compliant	No
2.2 (b)	Do you consider the Maldon District Pre-Submission LDP to be Sound	No
2.3 (a)	Do you consider the Maldon District LDP to be unsound because it is Positively Prepared	Not sound
2.3 (b)	Do you consider the Maldon District LDP to be unsound because it is Justified	Not sound
2.3 (c)	Do you consider the Maldon District LDP to be unsound because it is Effective	Not sound
2.3 (d)	Do you consider the Maldon District LDP to be unsound because it is Consistent with National Policy	Not sound

- 2.1 We consider that the LDP is not legally compliant or sound for the following reasons:

### *Not Legally Compliant*

- 2.2 The proposed housing target has failed to take account of the housing need in neighbouring areas and the LDP is therefore contrary to the requirements of the NPPF, which states that under the Duty to Cooperate, consideration should also have to be given the housing need of the neighbouring local authority areas and sub regional areas (Paragraphs 47, 159 and 178 of the NPPF). It is clear from the Greater Essex Demographic Forecasts Phase 4 document Support, that there is a significant housing supply shortfall in Braintree and Colchester compared with what has been planned. There is an estimated need for a 1,000 dwellings that is not currently being planned for in the wider area. It is clear that no consideration has been given to this shortfall when considering appropriate housing targets.



### *Unsound – Not Justified*

- 2.3 Paragraph 182 of the NPPF states that for a development plan to be justified the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence.
- 2.4 We do not consider that the LDP has been justified as:
- The Council has not considered all the reasonable alternative spatial options and has does not have a proportionate evidence base to justify its dismal of these other options.
  - The Council has failed to consider land at Belvedere Road as a strategic allocation that could accommodate residential and commercial employment uses.
  - The Council has included a windfall allowance within its 5-year supply but has not provided sufficient justification to demonstrate that double counting has not taken place.

#### Land at Belvedere Road – A ‘Reasonable Alternative’ for in excess of 200 dwellings and approximately 2,000 sq m of commercial floorspace

- 2.5 Our client has been promoting land at Belvedere Road, Burnham-on-Crouch since 2012. This site has potential to deliver a sizeable residential allocation and significant commercial floorspace. The Council has however failed to consider the potential for development at this location and the benefits that such as development could bring.
- 2.6 The land at Belvedere Road comprises two elements that do not have a long-term future at this location and are in need of development to secure the long-term future of this site:



- The existing Petticrows business no longer requires a riverside location for manufacture of its products. Indeed this business can be accommodated within existing space at the Springfield Business Park. The existing use represents an ineffective use of a sustainable site.
- Rice & Cole's boat yard is no longer financially viable and its redevelopment would represent a great opportunity to boost the employment and economic potential from this site. The Caravan Park also has long-term financial viability concerns and its redevelopment would provide an opportunity to adjust the tourism offer and potential of Burnham-on-Crouch to meet the needs of modern needs of this industry.

- 2.7 Land at Belvedere Road is located in close proximity to Burnham-on-Crouch Town Centre and a variety of public services and retail facilities, all of which would be within a walkable distance. This would represent a sustainable development that would significantly contribute to the vitality of the town centre.
- 2.8 The proposed development would also represent the effective use of a site that is no longer commercially viable and does not have a long-term economic future. The development of a mixed-use housing development would enable the delivery of modern commercial units that would contribute the vitality of the town centre and meet the needs of modern business in Burnham-on-Crouch. A mixed-use development at this location also has the potential to significantly boost the tourism offer and seize opportunities that will arise from the Wallasea Island project.
- 2.9 The Council has not produced any evidence to justify why this site has not been considered in more detail despite it being of potential strategic importance. A number of greenfield development options in and around Burnham-on-Crouch were considered for strategic housing but the site at Belvedere Road was excluded from these assessments.
- 2.10 One of the core principles in the NPPF (Paragraphs 17 and 111) states that planning should encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.



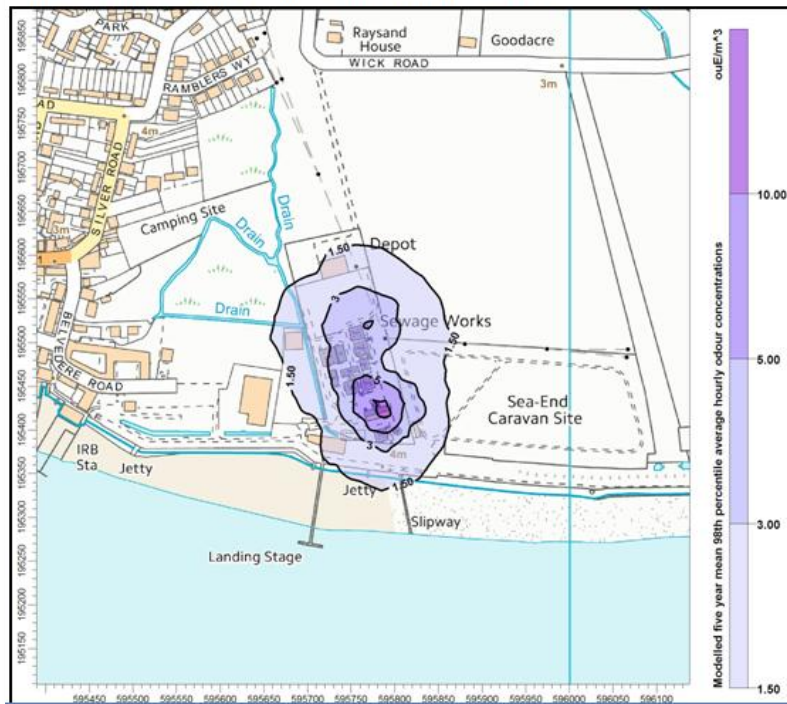
The Council has failed to meet this principle as it's strategy for Burnham-on-Crouch is to release greenfield land and ignore the potential of previously developed sites such as the land at Belvedere Road. This is a fundamental flaw in the plan preparation.

2.11 The only exceptions to releasing previously developed land are where there are significant environmental constraints that would outweigh the benefits. As will be summarised below, there are no constraints that prevent development at this location:

- Settlement Boundary – The site at Belvedere Road adjoins but is located beyond the existing settlement of Burnham-on-Crouch. It constitutes previously developed land and therefore would not result in an incursion into the countryside. The land currently contains a factory unit, boat yard and permanent caravan park. The development of this site would prevent the loss of greenfield sites and incursions into the countryside.
- Flood Risk – The site adjoins the River Crouch and falls within an area of flood risk potential. However, the site is protected by a 3 metre high river wall and it is the intention of the Shore Line Management Plan to maintain the current level of protection. The characteristics of the site make it possible to enable a design that ensures no habitable space is located at the ground level. A Flood Risk Assessment that accompanies this representation demonstrates that there is no significant flooding risk and development at this site could comply with the Environment Agency's standards.
- Odour – The Burnham-on-Crouch sewerage works is located in close proximity to the site. An odour assessment has been carried and it is clear from the results that residential development can be achieved on site without detrimentally impacting the amenity of future residents. The following plan highlights that odour is not an issue that affects this site as a significant amount of land lies outside of the widely excepted 3.0 ouE/m<sup>3</sup> threshold values.



*Modelled five year mean annual 98<sup>th</sup> percentile hourly mean odour concentration (2008 to 2012) – good practice scenario*



- 2.12 It is important to note that the Sustainability Appraisal has not assessed the merits of this proposed scheme. Therefore, contrary to SA requirements, the sustainability appraisal has not assessed all the potential ‘reasonable alternatives’ to the Local Development Plan proposals.
- 2.13 The sites that the Council has put forward as strategic allocations in Burnham-on-Crouch are all on greenfield land and are all located away from the town centre with few or no opportunities for a successful integration with the existing built form. The Council has clearly not prioritised previously developed land for development despite this being a key principle in the NPPF.
- 2.14 Development on the land at Belvedere Road also represents a ‘reasonable alternative’ option that has not been assessed by the Council.

#### Windfall Allocation

- 2.15 The Council has included a windfall allowance within the 0–5 year period. This allowance is contrary to national planning policy and no evidence has been



provided to justify its inclusion. A windfall allowance should only be made for years 6 to 15.

- 2.16 The NPPF states that local planning authorities may make an allowance for windfall sites in the five-year supply if they have compelling evidence that such sites have consistently become available in the local area and will continue to provide a reliable source of supply. This has not been demonstrated within pre-submission LDP.
- 2.17 The inclusion of windfall sites within the 0-5 year period will result in an approach that is not robust as it will result in double counting. The Council does not appear to have taken account of the windfall sites that now constitute existing commitments and no consideration appears to have been given to the identified SHLAA sites. Furthermore, many of the historic windfalls have occurred in rural areas, but the Council is now proposing a significant rural allocation. Undoubtedly, the number of future windfall dwellings would be significantly reduced given the identification of the SHLAA and rural housing sites within the housing supply.
- 2.18 The 0-5 year windfall sites should be removed from the identified housing supply.

### *Unsound – Not Effective*

- 2.19 Paragraph 182 of the NPPF states that for a development plan to be effective the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities.
- 2.20 We consider that Policy S2 is unsound as we do not consider that the spatial strategy is deliverable over the plan period for the following reasons:
- A significant amount of infrastructure mitigation is required to deliver the housing growth in Maldon and Heybridge, however the Council has failed to produce a delivery strategy that sets out: the timescales for delivery; development phasing to take account of infrastructure delivery; and



funding mechanisms e.g. whether the infrastructure will be delivered through planning contributions or will include funding external sources.

Given the vast expenditure required to deliver growth in Maldon and Heybridge, there is significant doubt whether the planned development will be delivered. There is a need for additional sites with fewer infrastructure constraints that will ensure a continuous supply of housing.

- Development at Maldon and Heybridge would result in development reaching the infrastructure capacity limits of this area, even with the mitigation. There would be no scope for further housing growth following completion of the planned developments. This creates a significant long-term planning issue that should be acknowledged and resolved through this development plan. It is unreasonable to leave this fundamental issue for future generations to solve.

The Council should consider development in more locations that have fewer infrastructure constraints, such as, Burnham-on-Crouch. The only constraint to development at this location is primary school provision<sup>1</sup>. This can easily be overcome with more strategic allocations within the town that could contribute to the delivery of a new primary school.

- The 0-5 year supply for the Maldon and Heybridge area does not take account of the required mitigation measures, for example the delivery of the new primary schools, sewerage upgrades or highways work. As a result it is likely the housing growth would severely overload the infrastructure capacities of the area. By contrast Burnham-on-Crouch has fewer constraints and can accommodate more development without the significant infrastructure mitigation.
- Given all the concerns over the delivery of housing at Maldon and Heybridge, there is a need for additional sites with fewer constraints that can deliver housing. Development at land at Belvedere Road provides an opportunity to deliver a sustainable development that incorporates a significant residential and commercial allocation.

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<sup>1</sup> Maldon District Infrastructure Delivery Plan Baseline Report 2012



### *Unsound – Consistent with National Planning Policy*

- 2.21 Paragraph 182 of the NPPF states that for a development plan to be consistent with national planning policy the plan should enable the delivery of sustainable development in accordance with the policies in the Framework.
- 2.22 We consider that Policy S2 does not comply with national planning policy for the reasons cited in the above paragraphs. The key paragraphs of the NPPF that the LDP does not comply with include:
- Paragraph 47 – the Council has failed to consider the objectively assessed housing need of the wider housing market area.
  - Paragraph 47 - the Council has failed to provide a robust assessment of the 0 to 5 year housing land supply.
  - Paragraph 48 - no evidence has been provided to demonstrate that windfall sites should be included in the five housing supply and that no double counting has taken place.
  - Paragraph 157 - the Council has failed to produce a robust deliverability strategy alongside its LDP.
  - Paragraphs 182 and 186 - there are concerns over the deliverability of the spatial strategy over the plan period and the Council has not considered the reasonable alternatives.





### 3. Policy S4: Maldon and Heybridge Strategic Growth

2.1	To which part of the Maldon District Pre-Submission Local Development Plan (LDP) does this representation relate?	Policy S4
2.2 (b)	Do you consider the Maldon District Pre-Submission LDP to be Sound	No
2.3 (a)	Do you consider the Maldon District LDP to be unsound because it is Positively Prepared	Not sound
2.3 (b)	Do you consider the Maldon District LDP to be unsound because it is Justified	Not sound
2.3 (c)	Do you consider the Maldon District LDP to be unsound because it is Effective	Not sound
2.3 (d)	Do you consider the Maldon District LDP to be unsound because it is Consistent with National Policy	Not sound

- 3.1 We consider that Policy S4 of the LDP is not sound. Our reasons for this conclusion overlap with the comments we have made under Policy S2 and rather than repeat these comments we have summarised them below.

#### Transport

- 3.2 As cited under Policy S2, there are significant transport constraints in Maldon and Heybridge that will prevent the delivery of housing within the plan period. The following table is taken from 'Further Assessment of Impact of Proposed Development Sites in Heybridge, and South Maldon on Highway Network November 2013' and sets out the costs for delivery each project.



Scheme	Cost
B1018 Langford Road / B1018 Heybridge Approach	£150,000 to £290,000 <sup>§</sup>
A414 / B1018 Heybridge Approach	£3.0 million
A414 / Spital Road	£2.0 million
A414 Maldon Road / A414 Wycke Hill / Wycke Hill Business Park Access / B1018 Limebrook Way	£900,000
A414 Chelmsford Road / A414 Maldon Road / B1010 Burnham Road / B1418 Southend Road (Oak Corner Roundabout)	£900,000
Heybridge Link Road	£10.35 million to £14.55 million <sup>†</sup>
A414 Bypass	£8.0 million
Southern Link Road	£9.65 million
B1010 Maldon Road / B1021 Church Road, Burnham-on-Crouch	£70,000
<b>TOTAL</b>	<b>£35.02 to £39.36 million</b>

**Table 7-1: Preliminary Costs for Junction Improvements and New Schemes in Heybridge / Maldon Area (excluding wider impacts)**

3.3 The scale of the works required to deliver this growth will undoubtedly impact upon the delivery of housing and places doubt on whether the planned development can be delivered during the plan period.

3.4 It would be more appropriate to direct development to locations, such as Burnham-on-Crouch, which have fewer highway constraints, and where the mitigation measures required to accommodate a development of this size are significantly reduced. It is also important that Burnham-on-Crouch is one of the few locations in the District that has a train station and public transport access to a variety of key centres.

#### Secondary Education

3.5 The Maldon District Infrastructure Delivery Plan: Schedule Update June 2013 stated:



*By 2016/17 pressure at the Plume is forecast to be increased to a point where children will not be able to be accommodated. When changes to the existing population are taken into account, there will be a requirement for an additional 60 places to each year group to accommodate the proposed growth.*

- 3.6 However, the Council is proposing 890 dwellings in Maldon and Heybridge within the first 5-years. Whilst the policy acknowledges the need to reconfigure the school, this would be tied to S106 contributions. The Council has not provided a delivery programme that sets out what, when and how the works to the school will be undertaken. This will result in a significant pupil increase that will exceed the schools current capacity and force pupils into locations beyond the District.
- 3.7 Furthermore the school operates on two sites and has limited scope for expansion. Even if reconfiguration was possible to increase capacity, this would only be a short-term fix. Capacity would again be reached by the end of the plan period with no scope for any further mitigation. Thus preventing any further expansion of Maldon in the post 15 year period.
- 3.8 There is a need for the Council to consider the long-term education needs of the District. Given the limitations to expand the Plume, there is a need to consider a much longer plan period otherwise education provision will become unplanned and ad hoc.
- 3.9 A more appropriate spatial approach would be to reduce the requirement in Maldon and increase development in the south of District at Burnham-on-Crouch where there is sufficient secondary school capacity at Ormiston Rivers Academy.

#### Poor Urban Design

- 3.10 This policy seeks 300 dwellings on land defined as Wycke Hill (North). Presumably development on this land has been devised to deliver the A414 bypass. However, this development would result in an awkward residential development that will be dominated by its proximity to high speed roads. The main concerns are:



- The creation of a residential island site that would be bounded by the new bypass, the A414 and Wycke Hill. This would create a poor residential environment with little relationship to the surrounding area.
- Development to the north of the proposed bypass would result in a detached residential area, with poor connectivity to the rest of Maldon and the rest of the allocated area.

3.11 Despite the need for a bypass, this site at Wycke Hill is not suitable for residential development.

3.12 Furthermore the land south of Maldon comprises a number of parcels of land with poor connectivity. Specifically:

- The former railway only has one crossing through it to the north of the site. This dissects the site and would prevent connectivity between the different areas. Consequently there would be no community focus and cohesion.
- The development at Wycke Hill would be very disjointed. Future residents would have to cross two very busy A-Roads and possibly a former railway line to reach the proposed neighbourhood centre. This does not represent good urban design.

3.13 The presence of the former railway line, A414 and new bypass would prevent the creation of a single neighbourhood. Consequently there would be no community focus or cohesion.

3.14 It would be more appropriate to plan a smaller development at this location with walkable routes to a community centre and the proposed primary school. It is important that there are no significant barriers that prevent connectivity.

3.15 Given the issues associated with development at this location, it would be more appropriate to direct housing growth to the locations in the District with fewer constraints and provide greater benefits, such as the land at Belvedere Road.



### Landscape Impact

- 3.16 The Landscape and Visual Impact Assessment for Maldon District Council states that the land at Wycke Hill has high landscape sensitivity and that it would not be possible to adequately mitigate for the visual and landscape impacts on this site.
- 3.17 Development at Wycke Hill would detrimentally impact on the surrounding landscape character. This is not an appropriate location for development and alternative sites are required in locations with fewer constraints, such as land at Belvedere Road, Burnham-on-Crouch.

### Deliverability

- 3.18 There is a need for significant mitigation measures to enable the delivery of development at Maldon and Heybridge however there is no evidence that consideration has been given to the deliverability and cost of these mitigation measures. Consequently, this area should have a reduced allocation and instead development should be located at sites with the greatest sustainability benefits such as land at Belvedere Road, Burnham-on-Crouch.



## 4. Conclusion

- 4.1 Our client has been promoting land at Belvedere Road for a mixed-use development comprising in excess of 200 dwellings and 2,000 sq m of commercial floorspace. This site constitutes previously developed land that adjoins the existing settlement boundary and is located in close proximity to the town centre. In accordance with the requirements of the NPPF this site should be prioritised for development, however the Council has failed to assess and consider the inclusion of this site for strategic development in the LDP. This would represent a more suitable and sustainable development compared with the proposed spatial strategy. We therefore consider that the LDP is not sound and has not appropriately considered the reasonable alternatives.
- 4.2 Our overall concerns on the soundness of the Pre-Submission LDP are summarised below:
- The Council has not considered meeting any of the unmet housing need with the housing market area, which amounts to up to 1,000 dwellings per annum.
  - There are significant deliverability concerns in respect to the planned growth at Maldon and Heybridge as a result of the significant infrastructure requirements. There is consequently a need to redirect some of this growth to locations such as Burnham-on-Crouch which have fewer constraints.
  - The Council has failed to consider land at Belvedere Road, Burnham-on-Crouch as a strategic allocation that could accommodate 200 dwellings and 2,000 sq m of commercial floorspace. This site is a previously developed site that has no significant constraints that would prevent development, yet the Council opted to promote greenfield developments instead. This approach is contrary to the requirements of the NPPF.
  - There is no justification for the inclusion of windfall sites in the 0-5 year housing supply.

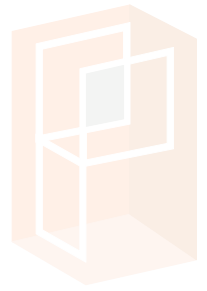


# Site Plan: Land at Belvedere Road



[www.plainview.co.uk](http://www.plainview.co.uk)

[contact@plainview.co.uk](mailto:contact@plainview.co.uk)



- **Horsham:** The Courtyard, 30 Worthing Road, Horsham, RH12 1SL

T: 01403 330737 / E: [horsham@plainview.co.uk](mailto:horsham@plainview.co.uk)

- **Cheltenham:** 5 Strand Court, Bath Road, Cheltenham, GL53 7LW

T: 01242 501003 / E: [cheltenham@plainview.co.uk](mailto:cheltenham@plainview.co.uk)

- **London:** 1 Warwick Row, London SW1E 5ER

T: 0203 3769547 / E: [london@plainview.co.uk](mailto:london@plainview.co.uk)

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## Feedback

At Plainview Planning we want to help LPA and Inspectorate staff to process our applications and appeals as easily as possible.

In an effort to improve our documentation and processes, we are inviting feedback from all LPA and Inspectorate case officers via a very short online feedback form. All submissions are anonymous.

Go to [www.plainview.co.uk/submissions](http://www.plainview.co.uk/submissions) to let us know what you think about our applications or appeals.

Thank you.

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No. 06563374



## **FLOOD RISK ASSESSMENT**

### **Outline Planning for**

**Commercial / Retail ground and upper residential  
scheme:**

- EA LOW risk / FZ2 Tidal defended
- Key: site not inundated in detailed breach modelling scenarios
  - No bedrooms on ground floor
  - No self-contained ground floor dwelling
  - Suitable Evacuation to Flood Zone 1
- Evacuation / Refuge addressed for a range of flood events
- All occupiers to have emergency access to upper floors above extreme event with suitable refuge for lifetime of development
- Water Entry for commercial ground floor rather than raising floor levels given flood setting
  - Flood Resilience to be incorporated
  - Permeable areas maximized (SUDS)
- Drainage scheme (and calculations) to be provided at detailed planning stage; strategy includes for accommodation of climate change and SUDS

**at**

**Belvedere Road, Boatyard Site, Burnham-on-  
Crouch, nearest postcode CM0 8AJ**

**28 February 2014**

GLNK Ltd

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## 1.0 Scope

This report contains the details of a Flood Risk Assessment carried out by GLNK Consulting Limited ("GLNK Ltd") for Boatyard Site, Belvedere Road, Burnham on Crouch, nearest postcode CM0 8AJ henceforth referred to as "the site" in this report.

This report has been prepared for Petticrows Ltd and must not be relied upon by any other party without the explicit written permission of GLNK Ltd.

All parties to this report do not intend any of the terms of the Contracts (Right of Third Parties Act 1999) to apply to this report.

Please note this report does not purport to provide definitive legal advice nor can it be used to demonstrate that the site will never flood in the future.

The Executive Summary contains an overview of key findings and conclusions. However, no reliance should be placed on the Executive Summary until the whole of the report has been read.

Other sections of the report may contain information which puts into context the findings noted within the Executive Summary.

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## 2.0 Executive Summary

This FRA has been carried out in accordance with the 27th March 2012 National Planning Policy Framework (NPPF). It is to be used to assist the Local Planning Authority (LPA) and Environment Agency (EA) when considering the flooding issues of the proposed development as part of a planning application.

The proposed development is to erect a mixed use scheme with commercial on the ground floor and residential on upper floors with associated permeable gardens and parking/access areas; no bedrooms on the ground floor. Appropriate Flood Resilient measures are to be incorporated into the scheme as recommended in this report.

This is categorized as a "More Vulnerable" landuse in accordance with the NPPF classifications; the site is located in FZ2 hence the NPPF Exception test is included as a precautionary measures.

Given the good Tidal advanced flood warning, evacuation to Flood Zone 1 is appropriate and feasible; a site and development specific Flood Response Management Plan is included in this report.

Dry emergency access to upper levels (above the extreme 1 in 1000 year accommodating for climate change) for all site users for the lifetime of the development is achievable. First floor levels will be a minimum of c. 2.7m above the existing ground level. Given residual flood setting and scale of development, flood compensation is not considered necessary. A preliminary drainage strategy and SUDS appraisal are included.

In the critical lower probability flood events (not likely to be preceded by a flood warning), if flood waters were to potentially reach the site, refuge is feasible for all tenants to upper levels.

There will not likely be an increase in impermeable areas; regardless this can be addressed through the proposed maximization of permeable SUDS and drainage strategy.

The scheme does establish more dwellings in FZ2 tidal, but, in support of the Sequential Test given the residual risk flood setting, the level, extent and depth of flooding on the site can be managed in terms of resilient measures, early flood warning given nature of a likely flood event, evacuation to areas in Flood Zone 1 (within 15m) and emergency refuge.

## 3.0 Introduction

The FRA combined a desktop study, review of available information, consultations and an assessment of all sources of flooding posed to and from the site and proposed development, in accordance with National Planning Policy Framework (NPPF). Appropriate flood mitigation measures were then considered, either as already incorporated within the scheme or recommended for inclusion at detailed design stage. The suitability of the proposed development was also reviewed in the context of the NPPF and the technical guidance accompanying the NPPF.

## 4.0 Purpose of the Report

This FRA has been carried out in accordance with National Planning Policy Framework (NPPF). It is to be used to assist the Local Planning Authority (LPA) and Environment Agency (EA) when considering the flooding issues of the proposed development as part of a planning application.

The report provides the following information:

- An assessment of the flood risk posed to the site based on flood information and mapping provide by the EA and Strategic Flood Risk Assessment (SFRA);
- An assessment of the proposed development in terms of surface water run-off; and
- Proposals for measures to mitigate the flood risks posed to and from the development where appropriate.

## 5.0 Report Information Sources

The information source used to undertake this FRA has been collected from the following sources:

- British Geological Survey Website and iGeology App
- EA Website
- Mid Essex Joint (including Maldon District Council) Strategic Flood Risk Assessment (2010);
- Internet mapping and searches.

## 6.0 Overview of British Legislation

### 6.1 National Planning Policy

The National Planning Policy Framework (NPPF) and accompanying Technical Guidance was published on the 27th March 2012. This supercedes all Planning Policy Statements (PPS's) and remaining Planning Policy Guidance (PPG's). Flood risk is retained as a key

development consideration and is incorporated within Section 10: “Meeting the challenge of climate change, flooding and coastal change”:

“Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.”

The Sequential and Exception Tests (as per PPS25) are retained as part of the NPPF. The accompanying NPPF Technical Guidance also includes Tables 2 and 3 (similar to Tables D2 & D3 of PPS25) to assist with flood risk vulnerability classifications and development suitability. This report provides the flood risk assessment element of both tests. It is the decision of the planning authority as to whether the tests can be fully passed.

## 6.2 Local Policy

Local Authorities consider flood risk through relevant environmental and climate change policies which enforce the requirements of the NPPF.

The Strategic Flood Risk Assessment (SFRA) is a key source of flood risk specific information for the area. The SFRA provides a more detailed review of flood risks and recommendations for ensuring developments can be constructed and operated safely in accordance with the NPPF. Greater detail of the SFRA is provided in the report.

## 7.0 Site Status and Environmental Setting

### 7.1 Site Location and Status

The site is a rectangular plot of land c. 0.5ha

It is 60% hardstanding associated with the boatyard warehouse and tarmac areas (parking and boat storage)

The remaining 40% to the north of the site is a grassed porous area. The site is bounded by Belvedere Road to the west, fields to the north, boat storage yard to the east and a wet dock storage channel to the south; 30m to the south of the site is the estuary of the River Crouch. The site location plan can be seen in Appendix A.

### 7.2 Existing Flood Risk

#### Fluvial / Tidal

There are no surface water features present on the site.

From an inspection of ordnance survey plans the nearest water features to the site are the.

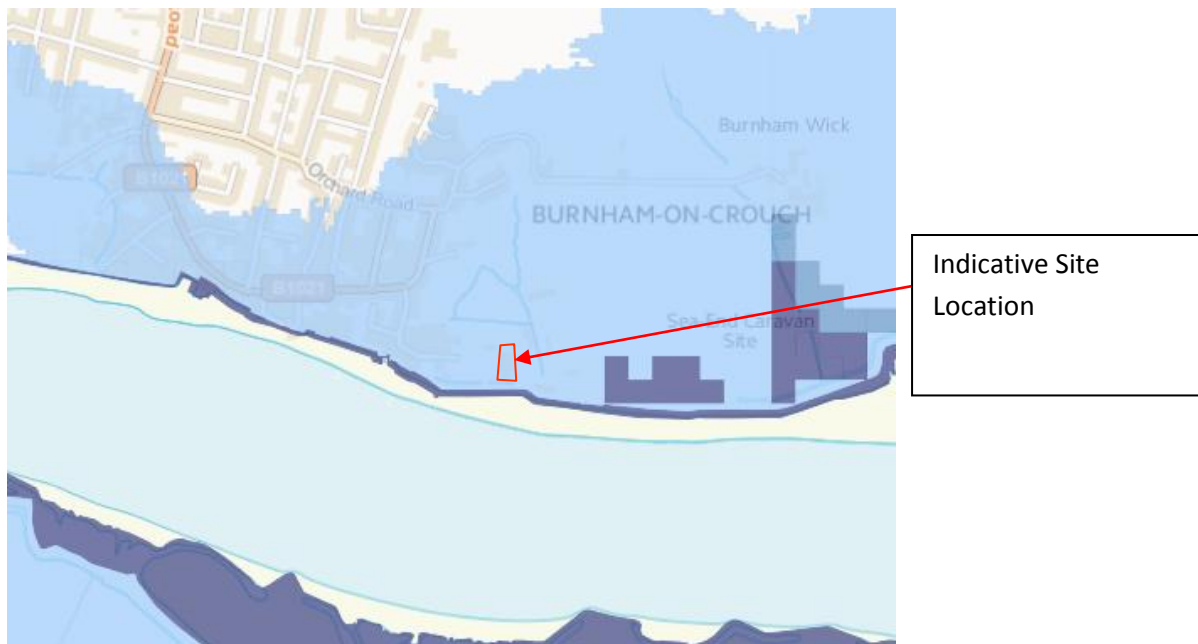
According to the EA flood map, the site is likely within LOW flood risk / Tidal Flood Zone 2 defended.

“Low means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%).” (EA website)

The site is within the EA Flood Warning Scheme area.

Coastal flood defences are currently in place as part of the NFCDD (National Flood and Coastal Defence Database).

The EA's mapping supercedes the SFRA mapping. Figure 1 is the EA mapping:



**Figure 1: EA modelled flood map**

### 7.3 SFRA

The SFRA corroborates the fact that the site is located in an area of Flood Zone 2 defended. The SFRA does not have site specific mapping, but is referred to where appropriate in the following sections.

The SFRA does not indicate any other sources of flooding posed to the site.

It is noted in the SFRA that this section of the River Crouch banks / defences may in the next 50 years require realignment.

### 7.4 Summary of Flood Sources & Scheme

Flood Sources	Site Status	Comment on flood risk posed to / from the development
Fluvial / Tidal	Site is in Flood Zone 2 (Tidal / Fluvial) defended River Crouch tidal Drainage ditch / watercourse 25m to the east Outside of SFRA Overtopping and Breach extents EA Flood Warning area	Subject to flood mitigation measures and safe flood response management with bedrooms on the ground floor No impact on drainage ditch to the east
Groundwater	SFRA indicates site is not in an area of groundwater flooding / incidents.	The proposed development will not increase the risk of groundwater flooding. Low Risk
Artificial Sources	Site is not within EA Reservoir Flood Warning area No other artificial sources with likely flood flowpaths that could reach the site	Low Risk

Surface Water / Sewer Flooding	Site is not located in a Critical Drainage Area Condition, depth and location of surrounding infrastructure uncertain	Development will not significantly increase the peak flow or volume of discharge from the site: Low Risk
Climate Change	Included in the flood modelling extents	Development will not significantly increase the peak flow and volume of discharge from the site Low risk posed to and from the development

## 8.0 Assessment of Proposed Development

### 8.1 Proposed Development

The proposed development can be seen in Appendix B.

The proposed development comprises a mixed use scheme:

- Ground floor commercial development
- Residential on upper levels
- No bedrooms on ground floor
- First floor levels to be safe refuge located a minimum of 2.7m above ground levels
- All tenants will have access to upper levels and refuge area above extreme flood depths for lifetime of development
- Evacuation to Flood Zone 1
- SUDS: Permeable non-building areas (permeable paving and soft landscaped gardens)

There will not likely be an increase in impermeable areas on the site and the site is already 60% impermeable; regardless surface water management can be addressed through the SUDS and drainage strategy i.e. the incorporation of permeable landscaping for non-building areas.

#### Preliminary Drainage Strategy

The development will utilize the existing connection / apply for new connection to adjacent sewers where appropriate.

The drainage strategy is based on the following:

- Separate foul and surface
- As required, capacity based on the 1 in 100 year storm including for climate change
- SUDS to be incorporated (see later section)

**Climate change will be accommodated appropriately.**

### 8.2 Water Entry & Flood Resilience

#### **Water Entry**

Given the site is unlikely to flood except in extreme events and is in an area benefitting from defences, likely flood depths would be potentially higher than 0.6m hence a water entry strategy for the commercial ground floor is appropriate, in accordance national guidance such as “Improving the flood performance of new buildings” (Defra, EA DCLG 2007).

The following key aims for the design will be incorporated into the detailed design.



- Materials with low permeability up to 0.3m (to allow time for removal of items)
- Accept water passage through building at higher water depths (some sacrificial materials can be used that do not reduce the performance of the house during non flood events)
- Design to drain water away after flooding
- Access to all spaces to permit drying and cleaning
- Flood resilient construction

## **Flood Resilience**

The proposed development will utilize the flood resilient techniques recommended in the NPPF Technical Guidance where appropriate and also the recommendations that have previously been issued by various councils:

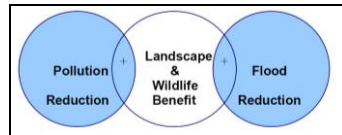
These include:

- Plasterboards will be installed in horizontal sheets rather than conventional vertical installation methods to minimise the amount of plasterboard that could be damaged in a flood event
- Wall sockets will be raised to as high as is feasible and practicable in order to minimise damage if flood waters inundate the property
- The ground floor will be concrete in order to minimise damage and reduce the turnaround time for returning the property to full operation after a flood event
- Any wood fixings on ground floor will be robust and/or protected by suitable coatings in order to minimise damage during a flood event
- Airbricks will be raised to as high as is feasible and practicable
- The Damp Proof Membrane will be installed above the main floor slab and tied in to the walls where appropriate, to reduce the turnaround time for returning the property to full operation after a flood event.
- The ground floor waterproofing will be extended to an appropriate level above existing ground levels.

### 8.3 Sustainable Drainage Systems (SUDS)

#### Concept SUDS Strategy

The following diagram indicates the philosophy behind the proposed SUDS strategy, and is taken from the EA's SUDS guidance:



(Source: Environment Agency, 2009)

Table 3 indicates the SUDS Hierarchy Appraisal for the site and proposed development:

**Table 3: Site Specific SUDS Appraisal**

SUDS Hierarchy	SUDS Technique	Potential Benefits			Site Specific	
		Flood Reduction	Pollution Reduction	Landscape & Wildlife Benefit	?	Scheme Specific SUDS Suitability Appraisal and Comment
<div style="display: flex; align-items: center;"> <div style="flex: 1; text-align: center;"> <div style="margin-bottom: 10px;">Most Sustainable</div> <div style="font-size: 2em; margin: 0;">↑</div> <div style="margin-top: 10px;">↓</div> <div style="margin-top: 10px;">Least Sustainable</div> </div> <div style="flex: 4;"></div> </div>	Living Roofs	•	•	•	*	Potentially feasible given nature of apartment block to be constructed. (eg: Blue, Green and Brown roofs)
	Ponds / Basins	•	•	•	*	Could be incorporated into site subject to confirmation of the physical and chemical properties of the ground.
	Swales	•	•	•	*	Could be incorporated into site subject to confirmation of the physical and chemical properties of the ground.
	Infiltration Techniques	•	•		•	Ground Investigation data is required to confirm the chemical suitability of the site and also porosity eg: strategically located soakaway tests to BRE 365 and detailed design.  Confirm as part of detailed design.
	Permeable Surfaces and Filter Drains	•	•		✓	Permeable finishes to parking areas. Additional permeable surface areas could be incorporated. Subject to confirmation of the physical and chemical properties of the ground; i.e. existing saturation of the ground.
	Tanked Systems	•			*	Used as back up to ensure 1 in 100 year +cc storage can be achieved on site.

Key:

Potentially suitable at the site: \*      Incorporated in the scheme: ✓      Not suitable / possible at the site: X

## 8.4 Refuge and Evacuation

A precautionary approach has been taken.

Given that the site is not likely to be inundated in the present day 1 in 200 year or extreme 1 in 1000 year flood events and together with the good tidal advanced flood warning, evacuation to Flood Zone 1 is appropriate and feasible.

In the critical lower probability flood events (not likely to be preceded by a flood warning), a) the site is not likely to be inundated and b) if flood waters were to potentially reach the site, refuge is feasible for all tenants to upper levels.

Based on the likely flood risk (EA data) and associated good warning time from the EA flood warning scheme, it is considered likely that there would be sufficient time to evacuate / seek refuge as appropriate.

Evacuation should be the preferred response for the full range of flood events.

### Range of Flood Events

The site is within a tidal flood extent. It is therefore considered that:

- a) Evacuation is always the preferred response and is feasible at this site with observations of flooding from the south
- b) Refuge for all future occupiers is the correct “emergency” strategy for all flood warning types
- c) Provision of the suitable refuge area means all future tenants will have acceptable facilities for the duration of the flood
- d) The scheme could also incorporate a safe refuge area for the commercial ground floor users

### Early Flood Warning - Evacuation

Upon an EA Flood Warning, the preferred evacuation route should be:

- Immediately west on Belvedere Road for 50m
- North on Silver Road for 100m
- West on Orchard Road for 100m - into unrestricted Flood Zone 1

Evacuation is always the preferred approach.

Community Safety Planning and Local Authority to advise and confirm.

There is no need for any occupants to have to walk through floodwaters if a flood event does inundate the site:

- a) Refuge is the correct strategy for all flood warning types in an emergency
- b) Provision of the upper levels for all tenants means all tenants will have acceptable facilities for the duration of the flood (detailed design and flood management plan to confirm).

## 8.5 Flood Response Management

The site is within an EA flood warning area due to the residual risk of flooding.

### Flood Safety Pack

Occupiers should ensure a flood safety evacuation pack is kept in a safe and easily accessible place. This should include as a minimum:

- First aid kit
- Torch
- Warm clothing or blanket
- List of appropriate contact numbers
- Bottled water
- Waterproofs / Wellington boots
- Non-perishable food

The following procedural levels apply to this site and should be read and understood by all tenants, particularly those on the ground floor:

### Flood Watch



The EA will issue a Flood Watch status when flooding is possible. This will be issued by the EA through their website and Flood Warning Direct based upon the weather and river conditions.

Flood watch means – 'Flooding of low lying land and roads is expected. Be aware, be prepared, watch out.

When a flood watch warning is issued residents should:

- Be aware of water levels and whether the river is rising or falling
- Reconsider travel plans
- Listen to and watch for weather and flood warnings on local radio and television stations
- Contact Floodline on 0848 988 1188
- Check that a flood kit has been prepared

At this stage residents should ensure that their neighbours are aware of the Flood Watch alert in case residents are not subscribed to Floodline Warning Direct and do not receive the alert.

## Flood Warning



Flood Warning means – ‘Flooding of homes and businesses is expected. Act now.

The flood warning alert will be issued when water levels are rising and further rain is expected – it is advised to safeguard the property and prepare to evacuate.

At this stage residents should:

- Contact the local emergency authorities to find out whether evacuation is considered necessary and where they are providing for evacuees
- Consider what is needed if evacuation to short term accommodation is necessary: children's essentials (for example, milk, baby food, sterilised bottles and spoons, nappies and wipes) medication and clothing (if there is heavy rainfall you may get wet whilst evacuating).
- Consider moving suitable and sentimental belongings upstairs or in a high place downstairs
- Consider what provision can be made for family pets
- Check with neighbours that they are aware of the situation and have prepared accordingly
- Locate keys for locking windows and tools for switching off gas and electricity supplies. It will be necessary to switch off utilities and secure unoccupied properties during evacuation.
- Put sandbags or flood boards in place

Residents must locate, water, electricity and gas supplies and switch off before evacuating. If residents are unsure of how to do this they must contact their supplier. Neighbours may be able to provide assistance as the houses within the development are generally similar and other residents may have similar problems or solutions.

Residents should call the EA Floodline on 0845 988 11 88 periodically and listen to and watch for weather and flood warnings on local radio and television stations.

If water levels begin to fall without reaching the properties, residents should continue to monitor the situation. Residents should stay alert and be ready to evacuate until the EA issues ‘All Clear’ status.

## Severe Flood Warning



Severe flood warning means that severe flooding is expected. There is extreme danger to life and property and people are advised to act immediately i.e. Evacuate.

The Environment Agency aim to provide at least 2 hours warning between the Flood Warning alert being issued and the commencement of flooding. The EA recommend that residents should evacuate when a Flood Warning or Severe Flood Warning status is issued.

If flood levels continue to rise, residents are advised to evacuate before safe access is lost. At this level driving through flood water may become hazardous and residents must evacuate beforehand.

Residents should monitor the flood progression and evacuate, on foot as soon as possible. The safe access route (see section 3.1 above) in times of flood will be clearly marked and signposted and residents should use this route for means of evacuation rather than attempting an alternative route. Residents should be aware that parts of the evacuation route may be up to 300mm depth of flooding.

Before evacuating, residents must ensure that all windows are securely closed and locked, this will provide protection against thefts and water pressure caused by flood waters. On leaving the property residents must ensure that doors, including internal doors, are securely locked and closed.

## 8.6 Annual Monitoring

Occupiers should contact the EA on an annual basis to confirm the flood status of the property.

If the flood status has changed, the evacuation and refuge plan should be reviewed and updated by suitable flood risk consultants as appropriate.

### **8.7 Surface Water Runoff – Flood Risk from the Development**

In accordance with the NPPF, this FRA also considers the risks posed from the development to surrounding areas.

There will not likely be an increase in impermeable areas and the site is already 60% impermeable; impermeable areas can be minimized with the incorporation of permeable surfaces for proposed non-building areas and, combined with the drainage strategy therefore there will not be an increase in peak discharge rates and volumes, including for future potential impacts from climate change.

The proposals will incorporate new low-water demand devices such that the increase in peak flow and volume of flow is likely to be negligible.

Given the ability to minimize impermeable areas and incorporate SUDS for managing the appropriate storm events, it is considered likely that the development will have a negligible effect on surrounding infrastructure. There will not be any significant increase in overland flow from the site.

### **8.8 Flood Storage**

Given:

- a) the tidal flood setting
- b) in extreme events the ability for floodwaters to enter the ground floor areas

it is considered that there would not be a significant reduction in flood storage and therefore no flood compensation is required.

### **8.9 Climate Change**

The impact of climate change in accordance with the NPPF is likely to be an increase in the rainfall intensity in the future, which will increase peak storm flows to sewer. The proposed development will incorporate low flush and reduced water demand showers and toilets, such that the combined flows to sewer are likely to have a negligible impact. It is considered therefore that flows in the future are not likely to have a significant impact, even with an allowance for climate change.

There is unlikely to be an unacceptable impact on the receiving sewers owing to the small scale of the development.

Confirmation from the water company should be sought as appropriate.

The EA data incorporate likely increases in flood levels including an accommodation for climate change.

### 8.10 Flood Risk Vulnerability

The site and surroundings already have residential uses established. The proposal is to erect new dwellings, but with designs that address the residual flood risk at the site to ensure dry access to upper levels (above the extreme flood event) for all site tenants for the lifetime of the development is achievable.

According to the NPPF retained Flood Risk Vulnerability Classification as per the former Table D2 in PPS25, the proposed residential land use would be classified as “More Vulnerable”; the commercial landuse would be “less vulnerable”.

The NPPF also retained Flood Risk Vulnerability and Flood Zone “Compatibility” Classification as per the former Table D3 of PPS25; this states that a “More Vulnerable” development in Flood Zone 2 does not require the Exception Test (retained by NPPF) to be passed. However, given it is defended a precautionary approach has been taken to include support to the Exception Test:

### 8.11 Exception Test

Table 3 provides the likely response to the 2 key criteria of the Exception Test, which should be confirmed by the planning department. This FRA provides the second element required of NPPF to satisfy the Exception Test.

**Table 3: Exception Test Summary**

Exception Test Criteria	Proposed Development
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared.	Planners to confirm. New dwelling proposed.
A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible will reduce flood risk overall.	Pass. Suitable evacuation timing (tidal warning) and route. Site in FZ2. In emergency, dry access to upper levels (above the extreme flood event) for all site users for the lifetime of the development is achievable. As long as the flood resilient measures are incorporated and the future occupiers sign up to the EA Flood Warning scheme and understand the flood response required, it is considered likely that the proposed development can be operated safely in flood risk terms and is therefore appropriate development in accordance with the NPPF.

Based on the data reviewed to date, the flood risk assessment recommends the property could be constructed and operated safely in flood risk terms.

## 9.0 Conclusion

The site is considered to be generally at a low risk from all sources of flooding except for potential tidal flood risks but is in an area that benefits from flood defences.

The residential element of the proposed development is categorised as “More Vulnerable” in accordance with the NPPF; it is therefore an appropriate type of development within Flood Zone 2 without the need to pass the Exception Test.

The proposed scheme can incorporate suitable flood resilient measures. Evacuation is feasible given location proximate to FZ1 and the low hazard given the nature of a likely flood event reaching the site.

Based on the likely flooding risk, it is considered that the proposed development can be constructed and operated safely in flood risk terms, without increasing flood risk elsewhere and is therefore appropriate development in accordance with the NPPF.

## **9.1 Recommendations for Further Work**

1. Produce a House Flood Evacuation Plan if deemed necessary
2. If more up to date flood levels are available, the residual risk should be re-evaluated
3. Community Safety Planning and Local Authority to advise and confirm evacuation centres as appropriate

## **10.0 Appendices**

- A. Site Location
- B. Proposed Development Plans



**Appendix A**

**Appendix B**