

SITE: Land at Tree Cottages, Credenhill, Herefordshire, HR4 7ES
TYPE: Planning Permission
DESCRIPTION: Erection of two bungalows and garages. Construction of new vehicular access and associated works.
APPLICATION NO: 132278
GRID REFERENCE: OS 344716, 243057
APPLICANT: Ms J Richards
AGENT: Mr Linden Alcock, Alcock Surveyors
DATE OF THIS RESPONSE: 25/05/2016

Introduction

This response is in regard to flood risk and land drainage aspects, with information obtained from the following sources:

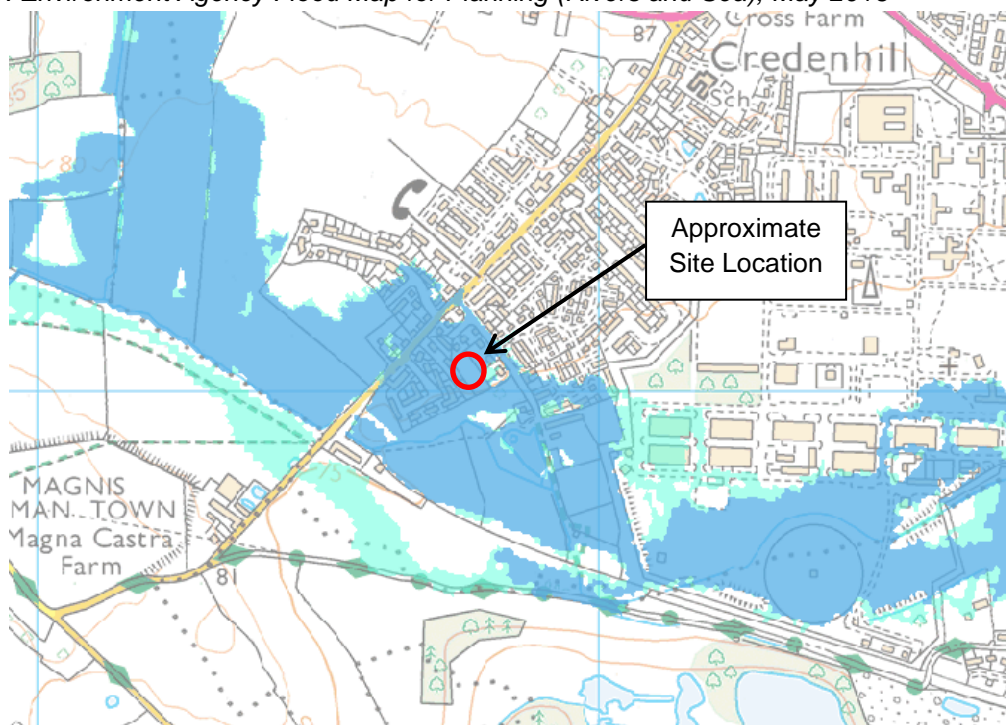
- Environment Agency (EA) indicative flood maps available through the EA website.
- EA groundwater maps available through the EA website.
- Ordnance Survey mapping.
- Cranfield University Soilscales mapping available online.
- Strategic Flood Risk Assessment for Herefordshire.
- Core Strategy 2011 - 2031.

Our knowledge of the development proposals has been obtained from the following sources:

- Application for planning permission;
- Location Plan drawing (undated);
- Existing Site Plan (Ref: 1926-5)
- Proposed Site Plan (Ref: 1926-4);
- Design and Access Statement (Ref:).
- Flood Risk Assessment (Ref:)
- Welsh Water Comments (dated 03/05/2016)

Site Location

Figure 1: Environment Agency Flood Map for Planning (Rivers and Sea), May 2016



Overview of the Proposal

The Applicant proposes the construction of 2 bungalows with garages, vehicular access and associated works. The site covers an area of 0.2ha and is currently used for agricultural purposes. The Yazor Brook is located approximately 100m to the south of the site.

Fluvial Flood Risk

Review of the Environment Agency's Flood Map for Planning (Figure 1) indicates that the site is located within the high risk Flood Zone 3. Flood Zone 3 comprises land where the annual probability of flooding from fluvial sources is greater than 1% (1 in 100). The source of this flood risk is fluvial (river) flooding.

In accordance with Environment Agency standing advice, the planning application should be supported by a Flood Risk Assessment (FRA) undertaken in accordance with National Planning Policy Framework (NPPF) and its supporting Planning Practice Guidance. This is summarised in Table 1.

Table 1: Scenarios requiring a FRA

	Within Flood Zone 3	Within Flood Zone 2	Within Flood Zone 1
Site area less than 1ha	FRA required	FRA required	FRA not required
Site area greater than 1ha	FRA required	FRA required	FRA required

The Applicant has submitted an FRA which acknowledges that the site is located in Flood Zone 3.

The FRA states that the site 'has never flooded in living memory, nor has any history of flooding been discovered by diligent local enquiry'. The FRA goes on to state that 'the site is surrounded by extensive modern development, none of which dwellings have flooded and most of which are at a lower level than the lowest point of the subject site'. Although relevant, these statements do not adequately clarify the current and future fluvial flood risk to the site.

The FRA also states that 'No mention of flood risk was made within the Council's Notice of Planning Permission for two dwellings on the same site reference CW2001/2737/F nor in the Council's Pre Application Advice'. The Pre Application Advice has not been available for this review, however it should be noted that the earlier planning application appears to be from 2001 and therefore predates the current guidelines regarding flood risk as outlined in NPPF.

Within their FRA the Applicant clarify the extent and depth of fluvial flood risk within the site boundary and consider the potential effects of climate change. For this location on the Yazor Brook, modelled flood data is held by Herefordshire County Council and can be provided to the Applicant on request. This data includes an allowance for climate change and incorporates the benefits provided by the Yazor Brook Flood Alleviation Scheme (which is discussed by the Applicant in their FRA). There is a charge for this data.

When interpreting the data held by the Council, the Applicant should note that there is an informal flood defence (earth bund) on the northern bank of the Yazor Brook which is represented in the flood model. The Applicant should give consideration to the potential flood risk to the proposed development should this earth bund fail or be removed in the future.

The FRA should identify how flood risk to the proposed development has been minimised, how the development has been made safe, and how the impacts of the development on people and property elsewhere have been avoided. In addition the FRA should consider flood risks from other sources (such as surface water) and the management of the additional surface water runoff generated by the proposed development. The Applicant should also give consideration to any minor watercourses that could pose flood risk to the development.

If, following further assessment, the site is still shown to be at risk of flooding, consideration may need to be given to the provision of safe access/egress; the Applicant should consult with the Emergency Planning Department and submit a flood response plan as necessary.

The Planning Practice Guidance to NPPF identifies five classifications of flood risk vulnerability and provides recommendations on the compatibility of each vulnerability classification within each of the Flood Zones, as shown in Table 2.

Table 2: Flood risk vulnerability and flood zone compatibility

EA Flood Zone	Essential Infrastructure	Water Compatible	Highly Vulnerable	More vulnerable	Less vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception test required	✓	✓
Zone 3a	Exception test required	✓	✗	Exception test required	✓
Zone 3b	Exception test required	✓	✗	✗	✗

✓ Development considered acceptable

✗ Development considered unacceptable

The Planning Practice Guidance to NPPF states that residential development is to be considered as 'more vulnerable' development. With reference to Table 2, 'more vulnerable' development would be considered appropriate in Flood Zones 1 and 2. However, for 'more vulnerable' development in Flood Zone 3a the Exception Test would need to be passed.

The NPPF states that development should not be permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. The Council should apply the Sequential Test and may require information to be submitted by the Applicant to support the test. If the development is considered appropriate at this location, NPPF also requires that a sequential approach is applied to guide new development to areas of lower flood risk, where possible.

If, following application of the Sequential Test, it is not possible for the development to be located in zones with a lower probability of flooding, the Exception Test can be applied. For the Exception Test to be passed, a site-specific FRA must be prepared that demonstrates:

- It is not possible for the development to be located on land with a lower probability of flooding;
- The development provides wider sustainability benefits to the community that outweigh flood risk, and;
- The development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Finished floor levels will need to be raised to protect the proposed development against flood risk. Typically, this would be 0.3m above the modelled 1 in 100 year flood level and allowing for the potential effects of climate change. For this location, modelled flood data is held by Herefordshire County Council.

We also encourage the use of flood resilience measures, similar to those proposed in the FRA. Further guidance can be obtained from the report 'Improving the Flood Performance of New Buildings: Flood Resilient Construction, Communities and Local Government, May 2007'.

If it is confirmed that the development is proposed in an area of existing flood storage during the 1 in 100 year event, compensatory flood storage may need to be provided (on a level for level basis) so as not to increase flood risk elsewhere.

This guidance is in accordance with requirements of the NPPF and Policy SD3 of the Core Strategy. Guidance on the required scope of the FRA is available on the GOV-UK website at <https://www.gov.uk/planning-applications-assessing-flood-risk>.

Other Considerations and Sources of Flood Risk

The FRA should give consideration to the risk of flooding on site from all sources, including surface water, groundwater, sewers, reservoirs and any other manmade sources.

Review of the EA's Risk of Flooding from Surface Water map indicates that the site is located within an area at low risk of surface water flooding.

Review of the EA's Groundwater map indicates that the site is located over a secondary aquifer (in both the drift geology and bedrock) and is within a designated Source Protection Zone (SPZ). As well as raising groundwater protection issues, the presence of an SPZ indicates that there may be an increased risk of groundwater flooding. The Applicant should refer to the EA's GP3 document for advice on groundwater protection.

Welsh Water have stated in their planning response that 'No surface water and/or land drainage [should] be allowed to connect directly or indirectly with the public sewerage network... to prevent hydraulic overloading of the public sewerage system'. The Applicant should contact the local sewerage undertaker (as well as any other party that is likely to control a drainage asset in the area) to help them assess the existing risk to the site from sewer flooding.

Review of the EA's Risk of Flooding from Reservoirs map indicates that the site is not located within an area at risk of flooding from reservoirs.

Note: Local residents may have identified other local sources of flood risk within the vicinity of the site, commonly associated with culvert blockages, sewer blockages or unmapped drainage ditches.

Surface Water Drainage

A surface water drainage strategy has not been provided as part of the planning application. The Applicant should provide a surface water drainage strategy showing how surface water from the proposed development will be managed.

The strategy must demonstrate that there is a viable outfall for the surface water drainage system. If the outfall is to a public sewer, the Applicant will need to agree a discharge rate with Welsh Water. If the outfall is to the Yazor Brook, the Applicant will require ordinary watercourse consent from the Council.

The strategy must demonstrate that there is no increased risk of flooding to the site or downstream of the site as a result of development between the 1 in 1 year event and up to the 1 in 100 year event and allowing for the potential effects of climate change. Where possible, betterment over existing conditions should be promoted. Note that in February 2016 the EA updated their advice on the potential effects of climate change: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

The drainage system must, as far as practicable, meet the Non-Statutory Technical Standards for Sustainable Drainage Systems and will require approval from the Lead Local Flood Authority (Herefordshire Council).

In accordance with the NPPF, Non-Statutory Technical Standards for Sustainable Drainage Systems and Policy SD3 of the Core Strategy, the drainage strategy should incorporate the use of Sustainable Drainage (SUDS) where possible. The approach promotes the use of infiltration features in the first instance. If drainage cannot be achieved solely through infiltration due to site conditions or contamination risks, the preferred options are (in order of preference): (i) a controlled discharge to a local watercourse, or (ii) a controlled discharge into the public sewer network (depending on availability and capacity). The rate and volume of discharge should be restricted to the pre-development Greenfield values (as far as practicable). Reference should be made to The SUDS Manual (CIRIA C753, 2015) for guidance on calculating Greenfield runoff rates and volumes.

The Applicant must consider the management of surface water during extreme events that overwhelm the surface water drainage system and/or occur as a result of blockage. Surface water should either be managed within the site boundary or directed to an area of low vulnerability. Guidance for managing extreme events can be found within CIRIA C635: Designing for exceedance in urban drainage: Good practice.

Consideration should also be given to the control of potential pollution of ground or surface waters from wash down, vehicles and other potentially contaminating sources. Evidence of adequate separation and/or treatment of polluted water should be provided to ensure no risk of pollution is introduced to groundwater or watercourses both locally and downstream of the site, especially from proposed parking and vehicular areas. SUDS treatment of surface water is considered preferential.

Foul Water Drainage

In accordance with Policy SD4 of the Core Strategy, the Applicant should provide a foul water drainage strategy showing how it will be managed. Foul water drainage must be separated from the surface water drainage. The Applicant should provide evidence that contaminated water will not get into the surface water drainage system or into nearby watercourses and ponds.

We recommend that the Applicant contacts the relevant public sewerage authority in regards to foul water discharge from the site to check whether it is feasible to connect to the public sewers.

If there are no sewers within the vicinity of the site, the Applicant should consult with the EA regarding the use of a package treatment plant or other on-site method of wastewater treatment and disposal. In accordance with Building Regulations Part H Drainage and Waste Disposal:

- Septic tanks and cesspools should be located a minimum of 7m from habitable buildings;
- If infiltration is proposed, the discharge from any septic tank should be located a minimum of 10m away from watercourses and 15m away from buildings.
- If infiltration is proposed, the discharge from any package treatment plant should be located a minimum of 10m away from watercourses and 10m away from buildings.

The EA will not usually accept the discharge from any septic tank within Zone 1 of a groundwater SPZ or within 50m of a groundwater abstraction point.

Overall Comment

We recommend that the planning application, in its current form, is rejected. We would reconsider this position if the Applicant were to demonstrate the following:

- Flood risk to the proposed development has been minimised,
- The development has been made safe,
- There is a viable drainage solution for the site,

- There is no increased risk of flooding to the site or downstream of the site as a result of development between the 1 in 1 year event and up to the 1 in 100 year event and allowing for the potential effects of climate change.

We also note that, unless the Applicant can demonstrate that the development is outside Flood Zone 3, the Sequential Test and Exception Test would need to be passed before the development was considered acceptable under the guidance and policies of the NPPF.

Should the Council be minded to grant planning permission, we recommend that the following information is requested as part of suitably worded planning conditions:

- Provision of a detailed drainage strategy that demonstrates that opportunities for the use of SUDS features have been maximised, where possible, including use of infiltration techniques and on-ground conveyance and storage features;
- A detailed surface water drainage strategy with supporting calculations that demonstrates there will be no surface water flooding up to the 1 in 30 year event, and no increased risk of flooding as a result of development between the 1 in 1 year event and up to the 1 in 100 year event and allowing for the potential effects of climate change;
- Results of infiltration testing undertaken in accordance with BRE365;
- Confirmation of groundwater levels to demonstrate that the invert level of any soakaways or unlined attenuation features can be located a minimum of 1m above groundwater levels in accordance with Standing Advice;
- A detailed foul water drainage strategy showing how foul water from the development will be disposed of.
- Evidence that the Applicant has sought and agreed permissions to discharge foul water and surface water runoff from the site with the relevant authorities;
- Evidence that the Applicant has sought and agreed allowable discharge rates for the disposal of foul water and surface water runoff from the site with the relevant authorities;
- Evidence that the Applicant is providing sufficient on-site attenuation storage to ensure that site-generated surface water runoff is controlled and limited to agreed discharge rates for all storm events up to and including the 1 in 100 year rainfall event, with a 30% increase in rainfall intensity to allow for the effects of future climate change;
- Demonstration of the management of surface water during extreme events that overwhelm the surface water drainage system and/or occur as a result of blockage;
- Demonstration that appropriate pollution control measures are in place prior to discharge.
- Confirmation of the proposed authority responsible for the adoption and maintenance of the proposed drainage systems.
- Details of any proposed storage structures, flow control structures and outfall structures.

If the results of infiltration testing indicate that infiltration will not provide a feasible means of managing surface water runoff, an alternative drainage strategy must be submitted to the Council for review and

approval. Best practice SUDS techniques should be considered and we promote the use of combined attenuation and infiltration features that maximise infiltration during smaller rainfall events.

Any discharge of surface water or foul water to an ordinary watercourse will require Ordinary Watercourse Consent from Herefordshire Council prior to construction.