

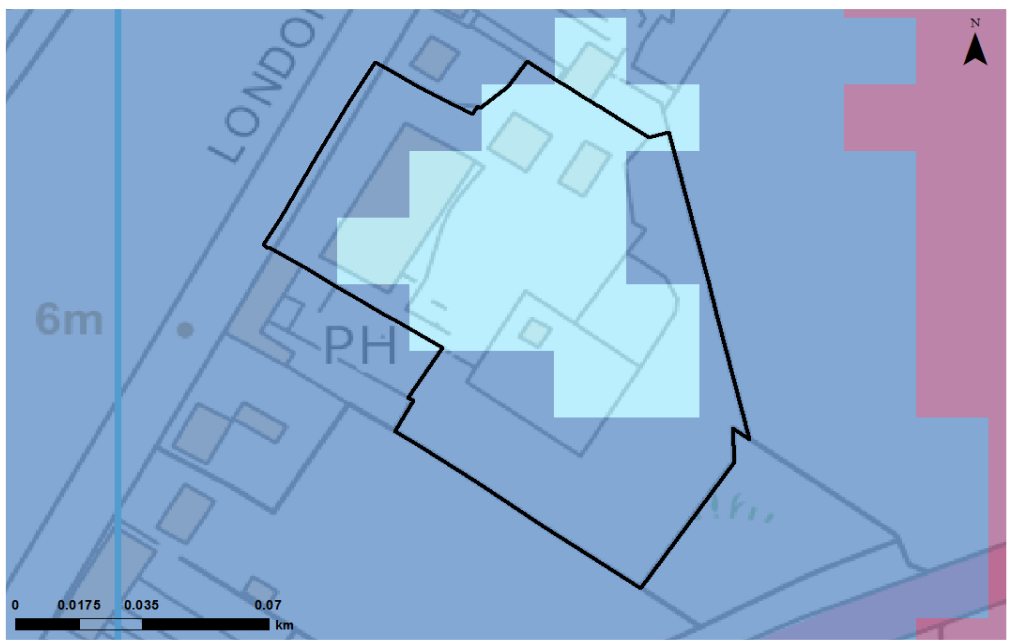
Former car showroom, London Road, St Ives (SI6)

| | | | | |
|-----------------------------|---------------------|--------------------|-------------------|------------------|
| OSNGR: 531115,270724 | Area: 1.22ha | | Brownfield | |
| Flood Zone Coverage: | FZ3b 0% | FZ3a 52% | FZ2 48% | FZ1 0% |

Sources of flood risk:
 The whole of the site is located with the Flood Zones. The higher risk (Flood Zone 3a) is located around the boundary of the site, with the lower risk (Flood Zone 2) towards the centre. The site is shown to not be affected by surface water flooding.

Exception Test Required?
 Yes, if More Vulnerable and Essential Infrastructure development is located in FZ3a and for Highly Vulnerable development located in FZ2.
 Highly Vulnerable infrastructure should not be permitted within FZ3a

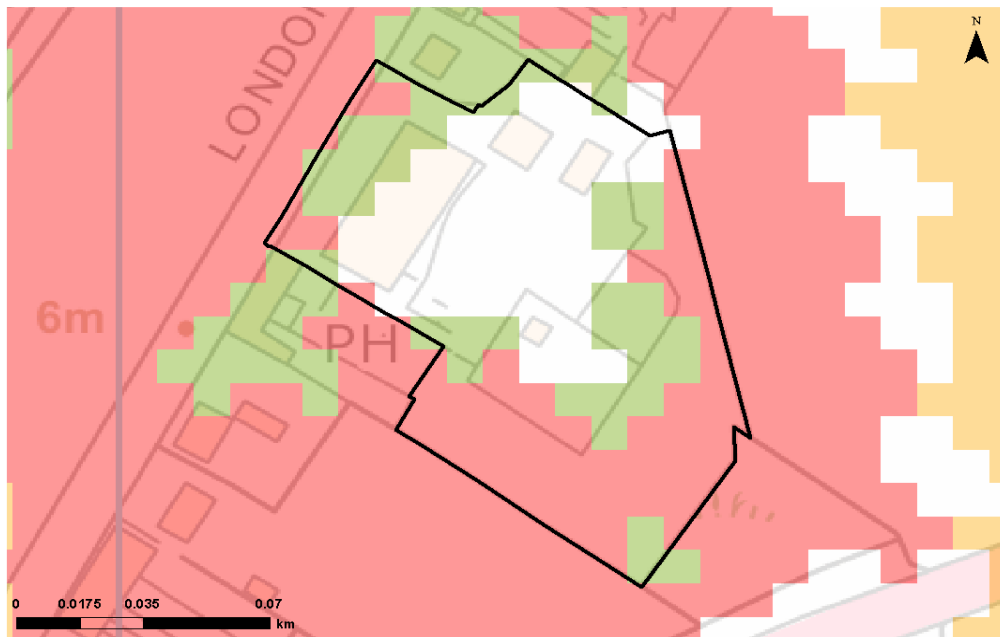
Flood Zone Map



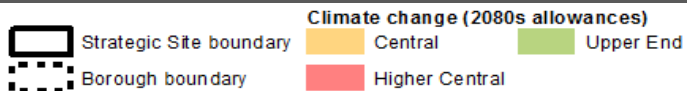
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| | | | | | |
|---|--------------------------------|---|------------------------------------|---|---------------|
|  | Potential development location |  | Flood Zone 3b |  | Flood Zone 3a |
|  | Council boundary |  | Indicative Extent of Flood Zone 3b |  | Flood Zone 2 |

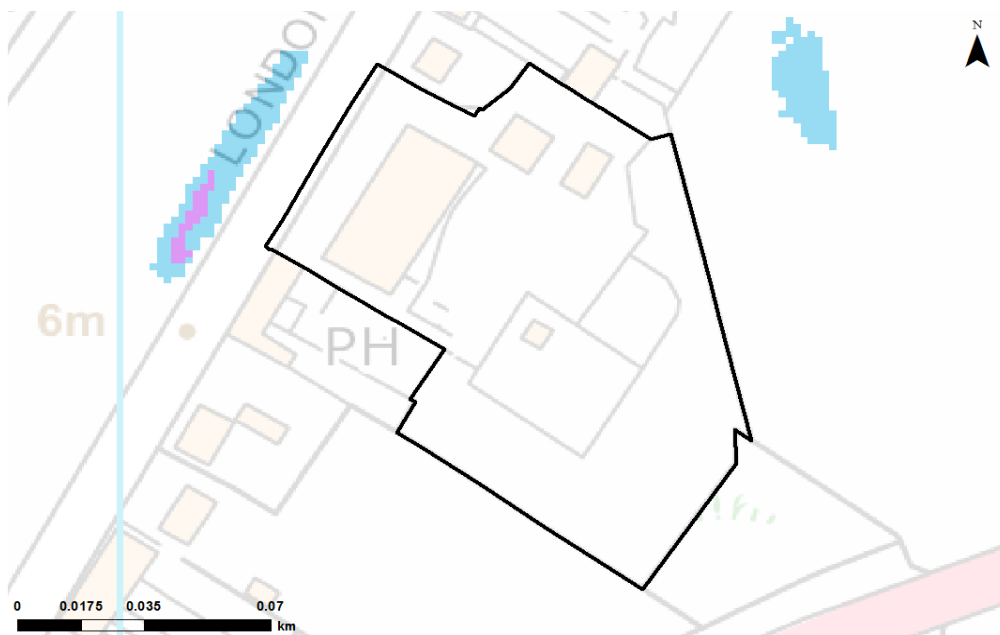
Climate Change Map



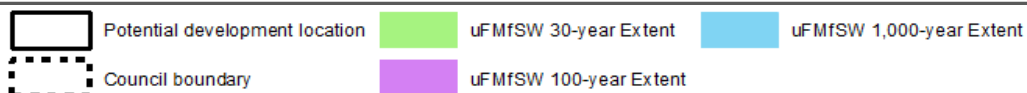
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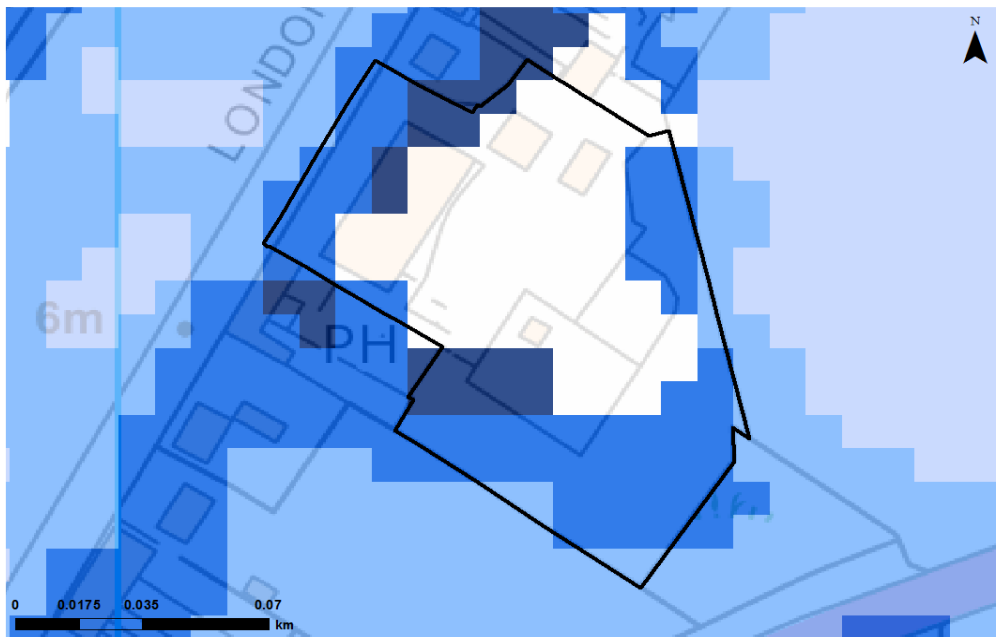
Surface Water Map



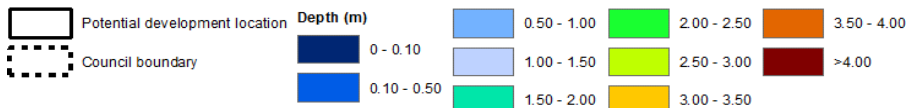
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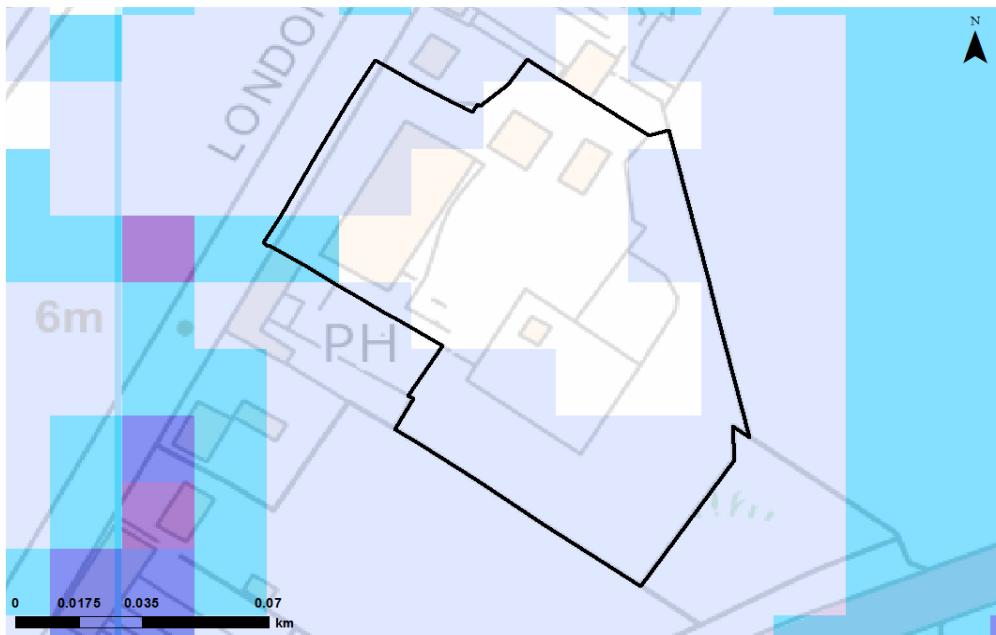
Depth Map - fluvial flooding (1% Annual exceedance probability)



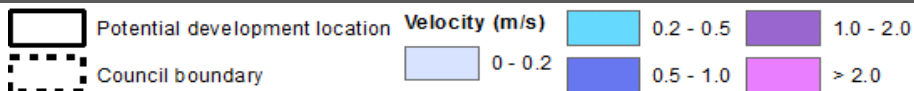
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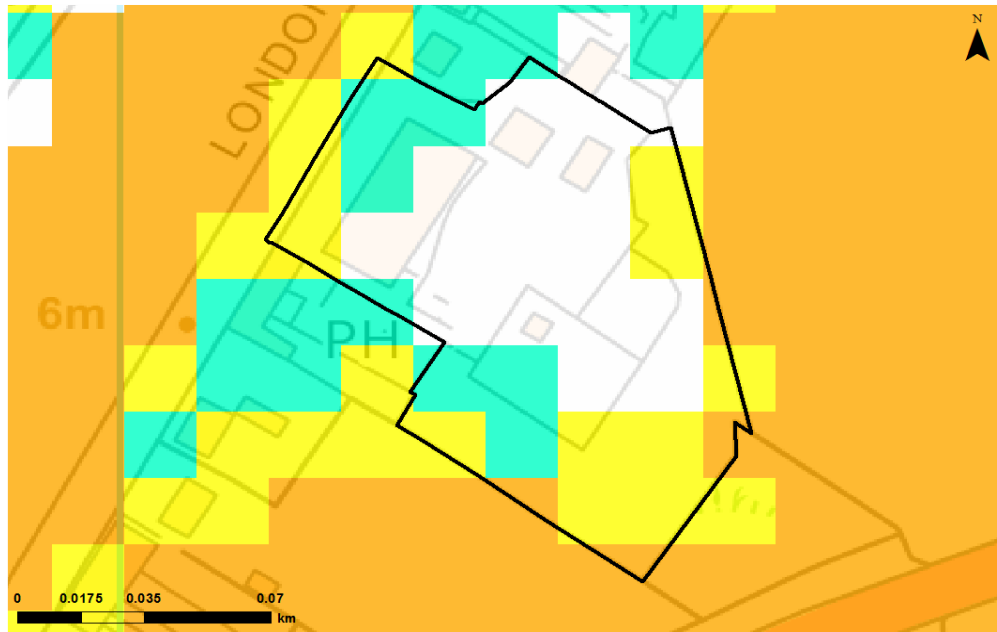
Velocity Map - fluvial flooding (1% Annual exceedance probability)



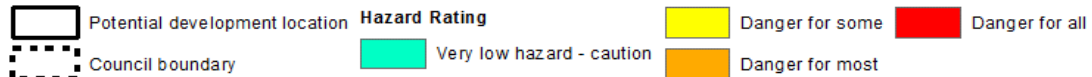
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Hazard Map - fluvial flooding (1% Annual exceedance probability)



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SuDS & the development site:

| SuDS Type | Suitability | Comments |
|----------------|-------------|--|
| Source Control | | Most source control techniques are likely to be suitable. Mapping suggests that permeable paving may have to use non-infiltrating systems given the possible risk both to and from groundwater. |
| Infiltration | | Mapping suggests that there is a high risk of groundwater flooding at this location, therefore it is possible infiltration techniques will not be suitable. This should be confirmed via site investigations to assess the potential for infiltration. If possible, proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints given that the site is located with a Source Protection Zone. |
| Detention | | This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner may be required to prevent the egress of groundwater and if there are any contamination issues. |
| Filtration | | This feature is probably suitable provided site slopes are <5% and the depth to the water table is >1m. A liner may be required to prevent the egress of groundwater and if there are any contamination issues. |
| Conveyance | | All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows. A liner may be required to prevent the egress of groundwater and if there are any contamination issues. |

Drainage strategies should demonstrate that an appropriate number of treatment stages have been delivered. This depends on the factors such as the type of development, primary source of runoff and likelihood of contamination. Guidance should be sought from the LLFA and other guidance documents such as the CIRIA SuDS Manual (C753).

The site is located within a Source Protection Zone. As such, infiltration techniques should only be used where there are suitable levels of treatment, although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints

Flood Defences:

The site is protected by a combination of Environment Agency and Local Authority owned embankments which have 1% AEP standard of protection. The condition of the defences ranges between fair and good.

Emergency Planning:

This site is covered by the St Ives Flood Warning Area.

Access & Egress:

Access to the site is via London Road. In the immediate proximity of the site, this road is affected by fluvial flooding, flooding at the 1% AEP event. North of the site the road is shown to be within the Functional Floodplain. Development will need to ensure plans are in place for the evacuation of occupiers of the site in the event of a flood; should evacuation not be possible, development may need to consider the provision of safe refuge.

Climate Change:

Modelling shows little difference in the extent of the 1% AEP event when the 2080s Central, Higher Central and Upper End climate change allowances are applied. However, the depths of flooding may increase.

Implications for Development:

Use of the Sequential Approach is limited due to the whole of the site being covered by Flood Zones 2 and 3; therefore the amount and type of development for the site may be restricted.

Given the whole of the site is within flood zone 3 and 2 flood compensation will be required on a level for level volume for volume basis for any proposed loss of floodplain. Therefore land within the vicinity and outside the proposed site may be required for flood compensation, see section 8.3.4 of SFRA main report. Prospects for effective mitigation would need to be established before taking the site forward.

The site is afforded some protection from flood embankments. These defences have a 1% AEP standard of protections; however, there is still a residual risk of flooding should the defence fail (breach). There is also the potential for the defence to overtop in the future due to climate change. Therefore, it is important that the defences in this area continue to be maintained in line with catchment policy and that any development accounts for the potential residual risk.

Safe access and egress is at risk from fluvial flooding; in order to pass the Exception Test, development will need to ensure that safe access and egress can be provided for the lifetime of the development. Development should also ensure that there is no increase in flood risk that may exacerbate safe access and egress.

Broadscale assessment of suitable SuDS has indicated a number of different types may be possible; however, given the size of the site and the proportion of the site at risk from flooding, the type of SuDS system used may be influenced by amount of land available; depending on the system used there may be an impact on the amount of land available for development and the cost of development.

The site is covered by the Environment Agency's Flood Warning Service. Given the potential access and egress issues, development may need to consider provision of safe refuge in the event of occupiers being unable to evacuate. Given the size and location of the site, it is unlikely the site could be used to implement strategic solutions to alleviate flood risk elsewhere in the catchment.

Guidance for Developers:

[Mapping in this table is based on results from the Environment Agency's Downstream Ouse 1D-2D model.](#)

At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Where a site specific FRA has produced modelling outlines which differ from the Flood Map for Planning then a full evidence based review would be required; where this is acceptable to the EA then amendments to the Flood Map for Planning may take place.

Resilience measures will be required if buildings are situated in the flood risk area.

The peak flows on the River Great Ouse should be considered when considering drainage.

Assessment for runoff should include allowance for climate change effects.

New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.

Onsite attenuation schemes would need to be tested against the hydrographs of the River Great Ouse to ensure flows are not exacerbated downstream within the catchment.

Safe access and egress will need to be demonstrated; currently access and egress is affected by surface water flooding from a 1% AEP event.

New development must seek opportunities to reduce overall level of flood risk at the site, for example by:

- o Reducing volume and rate of runoff
- o Relocating development to zones with lower flood risk
- o Creating space for flooding.
- o Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.

Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.