

FLOOD RISK ASSESSMENT TO SUPPORT PLANNING APPLICATION

For

34 CRANESWATER, HARLINGTON, HAYES, UB3 5HP

Part two storey part single storey side/rear extension, first floor side extension and conversion of roof space to habitable use including the raising of ridge height.

INTRODUCTION

This statement has been prepared on behalf of our client *Mr. Gagan Deep Mengi* for whom we submit a Flood Risk Assessment in support of the planning application for the Extensions and alteration to Existing property at 34 Craneswater, UB3 5HP.

The following has been prepared in accordance with the Environment Agency Guidance documents noted below:

A) Flood risk assessment in flood zones 2 & 3 dated 1 April 2012 This document refers to document B).

B) Flood risk assessment standing advice 1 April 2012. This document states:

"You need to follow the Environment Agency's standing advice if you're carrying out a flood risk assessment for a development classed as:

-A minor extension (household extensions or non-domestic extensions less than 250 square metres) in **flood zone 2 or 3"**

The property is residential detached house outside the Borough's Conservation Areas.

The proposal is for a Part two storey part single storey side/rear extension, first floor side extension and conversion of roof space to habitable use including the raising of ridge height. The property is situated in an area designated flood risk zone by the environment agency, however when taking into consideration the flood barriers and defenses for this address the risk is assessed as low (0.5%, 1 in 200, or less).

To mitigate the impact of flooding the following methods will be employed:

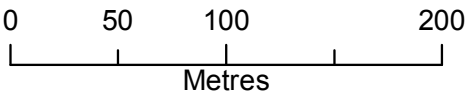
1. The floor level of the ground floor extension will be no lower than the existing ground floor level.
2. The occupants will be advised to subscribe to the Environment Agency flood warning service.

The E. A. guidance for development of this type recommends the following approach to flood risk assessments in the flood zone. Due to the proposal, the floor level to the new extension need to remain as the existing property and therefore will not be set any lower than the existing levels.

Make sure that floor levels are either no lower than existing floor levels or 300 millimetres (mm) above the estimated flood level.



Environment Agency
Alchemy,
Bessemer Road,
Welwyn Garden City,
Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location

Defended Flood Outlines

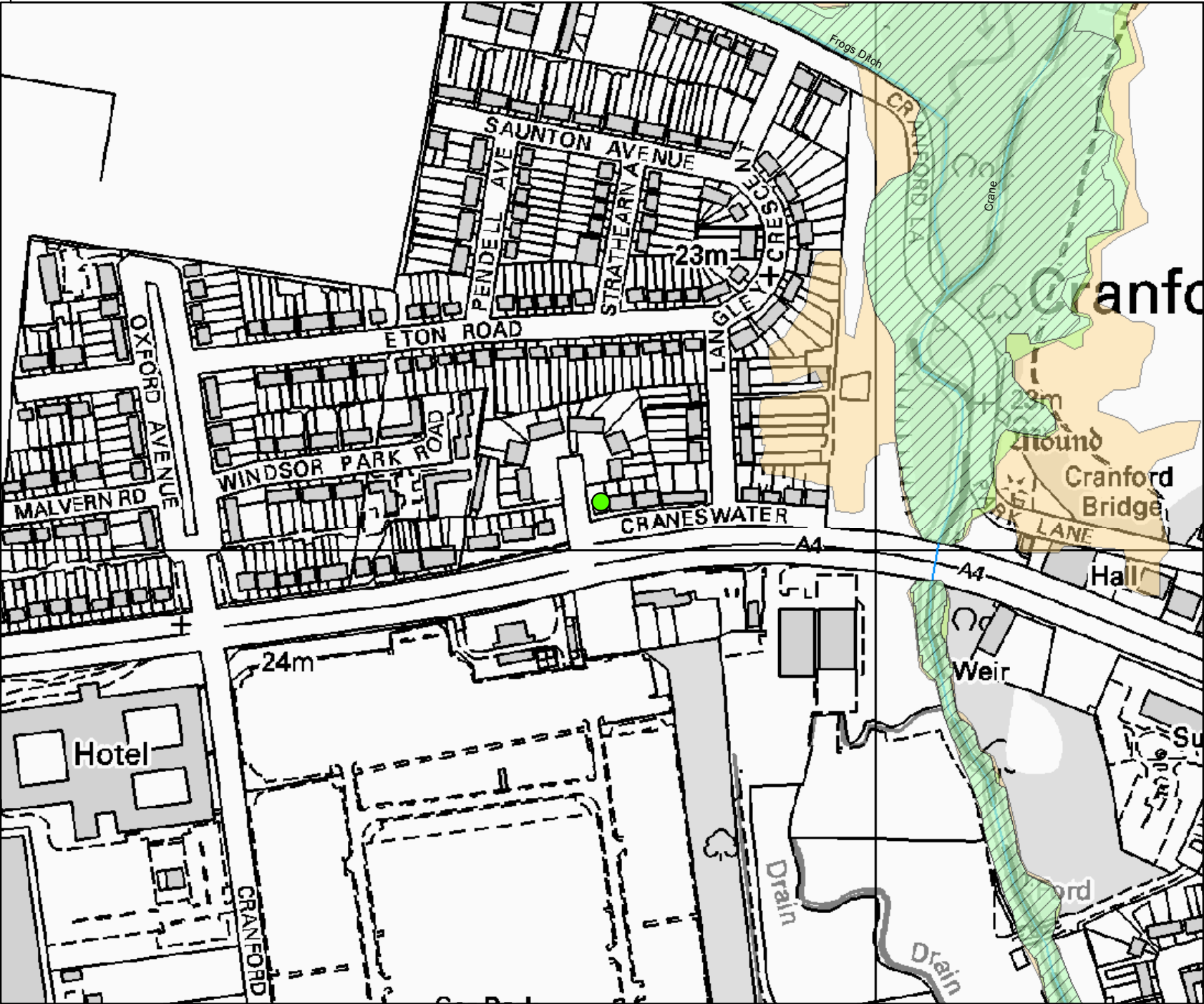
- 1 in 5 (20%) Defended
- 1 in 10 (10%) Defended
- 1 in 20 (5%) Defended
- 1 in 50 (2%) Defended

The data in this map has been extracted from the River Crane Mapping Study (Halcrow 2008). This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences.

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

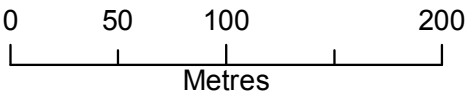
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

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Legend

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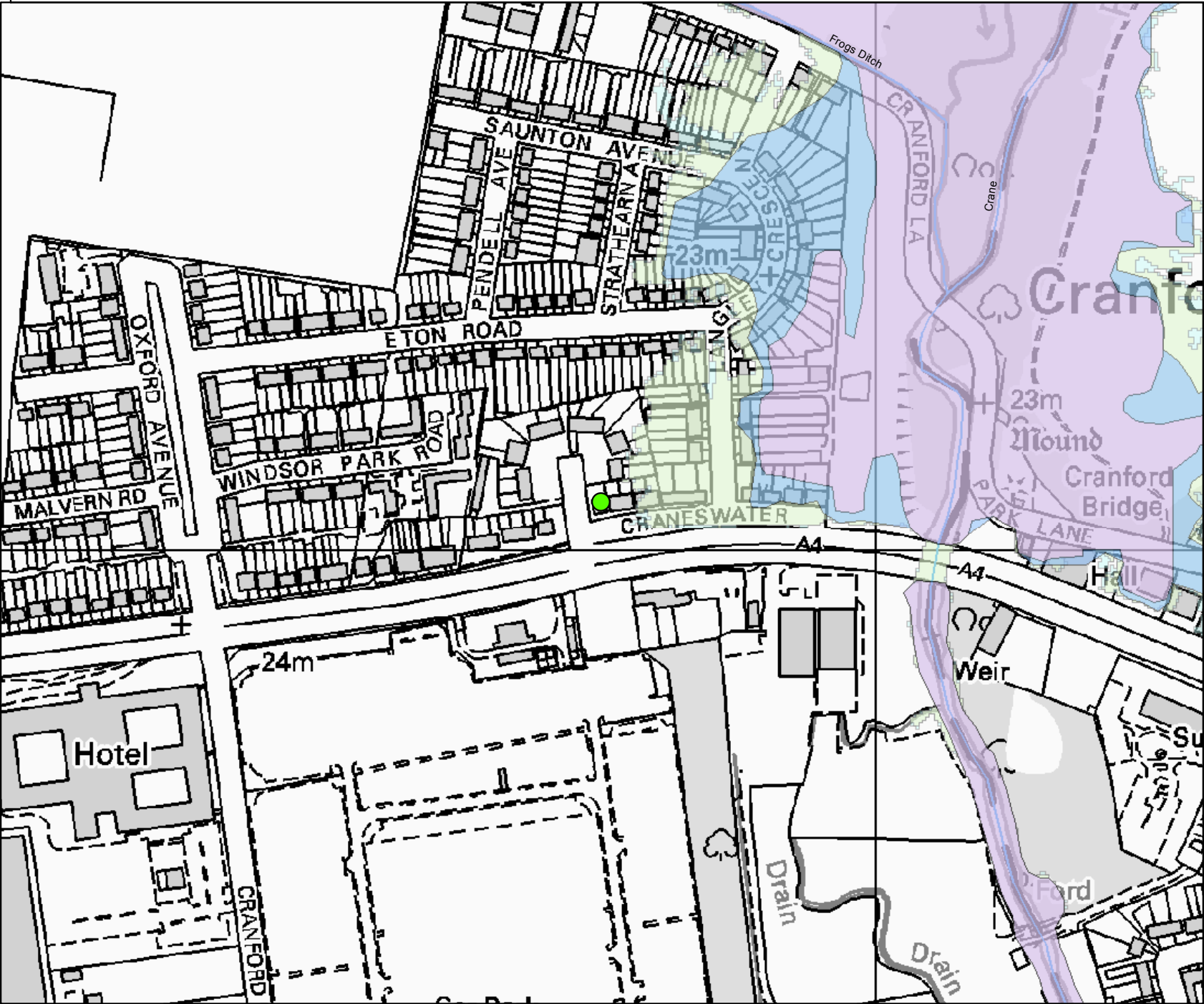
- 1 in 100 (1%) Defended
- 1 in 100+20% (*CC) Defended
- 1 in 100+25% (*CC) Defended
- 1 in 100+30% (*CC) Defended

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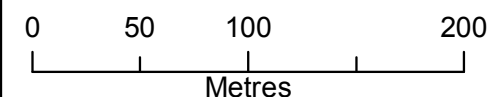
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Legend

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Defended Flood Outlines

- 1 in 100+70% (*CC) Defended
- 1 in 1000 (0.1%) Defended

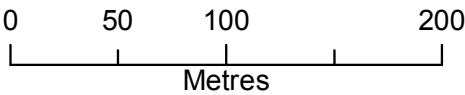
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Legend

- Main Rivers
- Site location

1D Node Results

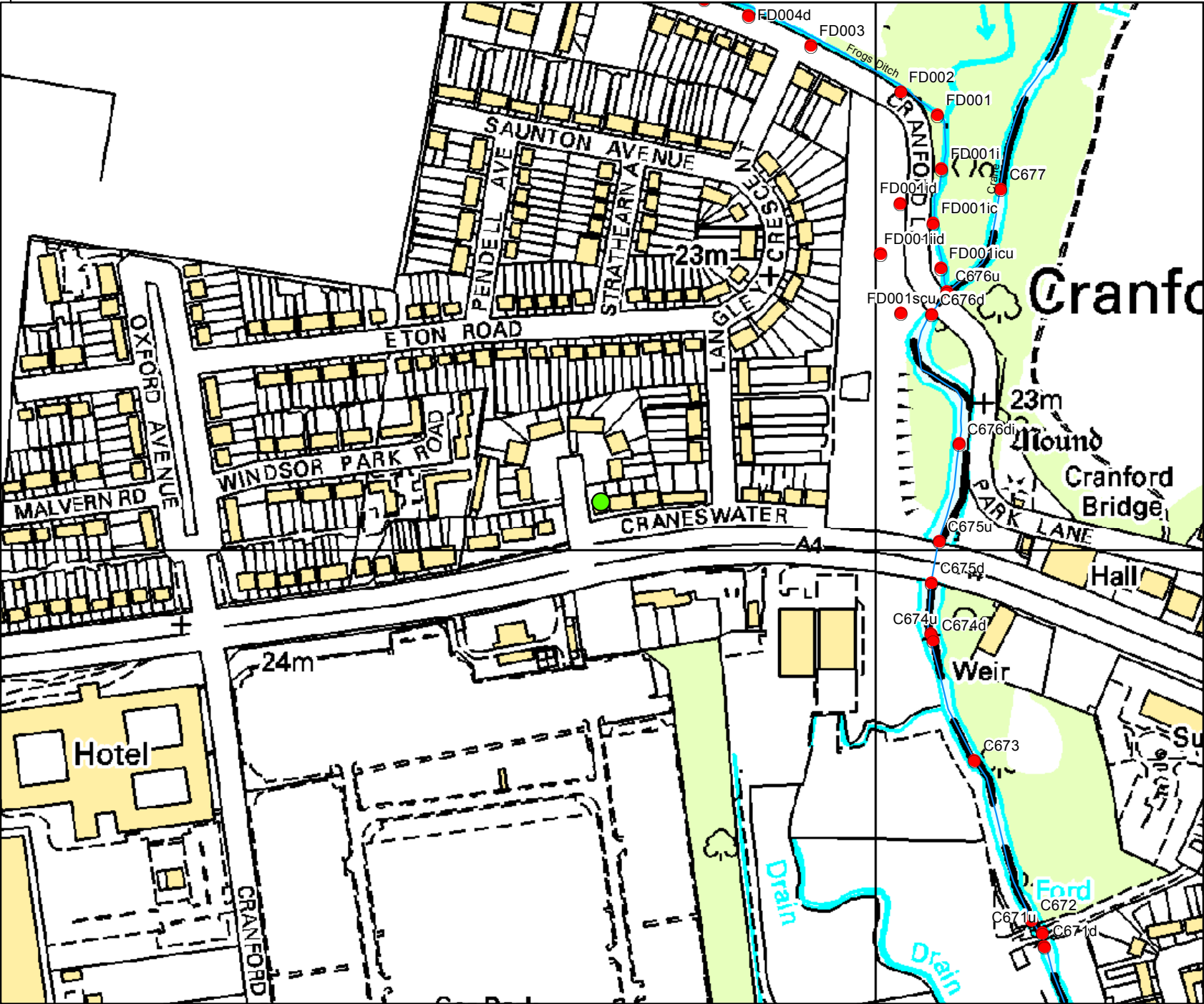
- Node Results

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Environment Agency ref: HNL223526AS

The following information has been extracted from the River Crane Mapping Study (Halcrow 2008)

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Caution:

The modelled flood levels and extents are appropriate for catchment wide strategic flood risk mapping. However, for more detailed flood risk assessment it is recommended that each of the underlying flood mapping, hydraulic modelling and hydrological assumptions are re-evaluated to determine the appropriateness in a more detailed analysis.

All flood levels are given in metres Above Ordnance Datum (mAOD)

All flows are given in cubic metres per second (cumecs)

MODELLED FLOOD LEVEL

| | | | Return Period | | | | | | | | | |
|------------|---------|----------|---------------|-------|-------|-------|--------|----------------|----------------|----------------|----------------|--------|
| Node Label | Easting | Northing | 5 yr | 10 yr | 20 yr | 50 yr | 100 yr | 100yr + 20% | 100yr + 25% | 100yr + 35% | 100yr + 70% | 1000yr |
| C674u | 510032 | 176943 | 22.54 | 22.60 | 22.66 | 22.76 | 22.83 | 22.94 | 22.96 | 23.01 | 23.15 | 23.48 |
| C674d | 510032 | 176943 | 22.24 | 22.29 | 22.34 | 22.43 | 22.48 | 22.56 | 22.58 | 22.62 | 22.74 | 22.99 |
| C673 | 510062 | 176863 | 22.12 | 22.16 | 22.21 | 22.29 | 22.33 | 22.40 | 22.42 | 22.45 | 22.54 | 22.82 |
| C672 | 510102 | 176758 | 22.03 | 22.07 | 22.11 | 22.19 | 22.23 | 22.31 | 22.32 | 22.36 | 22.47 | 22.68 |
| C671u | 510108 | 176752 | 21.98 | 22.02 | 22.05 | 22.10 | 22.12 | 22.16 | 22.17 | 22.17 | 22.18 | 22.64 |
| FD004d | 509918 | 177346 | 23.17 | 23.24 | 23.24 | 23.34 | 23.36 | 23.43 | 23.44 | 23.47 | 23.55 | 23.74 |
| FD003 | 509958 | 177326 | 23.01 | 23.07 | 23.15 | 23.27 | 23.30 | 23.40 | 23.42 | 23.46 | 23.54 | 23.74 |
| FD002 | 510016 | 177296 | 22.98 | 23.04 | 23.10 | 23.23 | 23.30 | 23.40 | 23.42 | 23.46 | 23.54 | 23.74 |
| FD001 | 510040 | 177282 | 22.98 | 23.04 | 23.10 | 23.23 | 23.30 | 23.40 | 23.42 | 23.46 | 23.54 | 23.74 |
| C677 | 510081 | 177233 | 23.10 | 23.15 | 23.20 | 23.31 | 23.37 | 23.47 | 23.48 | 23.52 | 23.60 | 23.79 |
| C676d | 510036 | 177152 | 22.88 | 22.96 | 23.04 | 23.19 | 23.27 | 23.38 | 23.40 | 23.44 | 23.53 | 23.72 |
| C676u | 510046 | 177167 | 23.02 | 23.08 | 23.14 | 23.27 | 23.34 | 23.44 | 23.46 | 23.50 | 23.58 | 23.78 |
| C675u | 510041 | 177005 | 22.83 | 22.92 | 23.00 | 23.15 | 23.23 | 23.34 | 23.36 | 23.40 | 23.49 | 23.68 |
| C675d | 510036 | 176978 | 22.64 | 22.70 | 22.75 | 22.85 | 22.91 | 23.00 | 23.02 | 23.05 | 23.14 | 23.40 |
| FD001id | 510016 | 177224 | 22.96 | 23.02 | 23.09 | 23.22 | 23.29 | 23.39 | 23.41 | 23.45 | 23.53 | 23.72 |
| C671d | 510109 | 176743 | 21.98 | 22.02 | 22.05 | 22.10 | 22.12 | 22.16 | 22.17 | 22.17 | 22.18 | 22.61 |
| FD001iid | 510003 | 177191 | 22.93 | 23.00 | 23.07 | 23.21 | 23.29 | 23.39 | 23.41 | 23.45 | 23.54 | 23.73 |
| FD001scu | 510016 | 177153 | 22.89 | 22.96 | 23.05 | 23.20 | 23.28 | 23.38 | 23.41 | 23.44 | 23.53 | 23.72 |
| FD001i | 510043 | 177246 | 22.98 | 23.04 | 23.10 | 23.23 | 23.30 | 23.40 | 23.42 | 23.45 | 23.54 | 23.73 |
| FD001ic | 510037 | 177211 | 22.98 | 23.04 | 23.10 | 23.23 | 23.30 | 23.40 | 23.42 | 23.45 | 23.54 | 23.73 |
| FD001icu | 510042 | 177182 | 23.02 | 23.08 | 23.14 | 23.27 | 23.34 | 23.44 | 23.46 | 23.50 | 23.58 | 23.78 |
| C676di | 510054 | 177068 | 22.86 | 22.94 | 23.03 | 23.18 | 23.26 | 23.37 | 23.40 | 23.43 | 23.52 | 23.71 |

MODELLED FLOWS

| | | | Return Period | | | | | | | | | |
|------------|---------|----------|---------------|-------|-------|-------|--------|----------------|----------------|----------------|----------------|--------|
| Node Label | Easting | Northing | 5 yr | 10 yr | 20 yr | 50 yr | 100 yr | 100yr + 20% | 100yr + 25% | 100yr + 35% | 100yr + 70% | 1000yr |
| C674u | 510032 | 176943 | 21.08 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.32 | 38.44 | 45.61 | 69.13 |
| C674d | 510032 | 176943 | 21.08 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.32 | 38.44 | 45.61 | 69.13 |
| C673 | 510062 | 176863 | 21.07 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.32 | 38.44 | 45.60 | 69.12 |
| C672 | 510102 | 176758 | 21.07 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.31 | 38.43 | 45.60 | 69.09 |
| C671u | 510108 | 176752 | 21.07 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.31 | 38.43 | 45.60 | 69.09 |
| FD004d | 509918 | 177346 | 1.36 | 1.52 | 1.69 | 2.04 | 2.27 | 2.69 | 2.80 | 3.02 | 3.97 | 7.26 |
| FD003 | 509958 | 177326 | 1.36 | 1.52 | 1.68 | 2.12 | 2.26 | 2.66 | 2.76 | 2.98 | 3.91 | 7.27 |
| FD002 | 510016 | 177296 | 1.36 | 1.52 | 1.68 | 2.12 | 2.26 | 2.66 | 2.76 | 2.98 | 3.91 | 7.27 |
| FD001 | 510040 | 177282 | 1.34 | 1.49 | 1.66 | 2.07 | 2.23 | 2.64 | 2.75 | 2.96 | 3.88 | 7.28 |
| C677 | 510081 | 177233 | 16.36 | 17.67 | 19.09 | 21.69 | 23.46 | 26.43 | 27.12 | 28.41 | 32.59 | 43.47 |
| C676d | 510036 | 177152 | 17.68 | 19.16 | 20.73 | 23.63 | 25.61 | 29.03 | 29.83 | 31.34 | 36.31 | 50.56 |
| C676u | 510046 | 177167 | 16.37 | 17.68 | 19.09 | 21.67 | 23.42 | 26.41 | 27.10 | 28.41 | 32.63 | 43.50 |
| C675u | 510041 | 177005 | 17.75 | 19.23 | 20.81 | 23.71 | 25.66 | 29.08 | 29.89 | 31.39 | 36.37 | 50.71 |
| C675d | 510036 | 176978 | 19.67 | 21.27 | 23.01 | 26.36 | 28.66 | 32.68 | 33.64 | 35.47 | 41.61 | 59.99 |
| FD001id | 510016 | 177224 | 7.94 | 9.17 | 10.18 | 12.23 | 13.49 | 15.53 | 16.05 | 16.97 | 19.31 | 26.93 |
| C671d | 510109 | 176743 | 21.07 | 22.80 | 24.67 | 28.30 | 30.81 | 35.26 | 36.31 | 38.43 | 45.60 | 69.09 |
| FD001iid | 510003 | 177191 | 7.94 | 9.18 | 10.18 | 12.23 | 13.48 | 15.53 | 16.05 | 16.97 | 19.30 | 26.95 |
| FD001scu | 510016 | 177153 | 7.95 | 9.18 | 10.19 | 12.23 | 13.48 | 15.53 | 16.04 | 16.97 | 19.30 | 26.97 |
| FD001i | 510043 | 177246 | 1.33 | 1.48 | 1.64 | 1.99 | 2.21 | 2.62 | 2.74 | 2.95 | 3.86 | 7.29 |
| FD001ic | 510037 | 177211 | 6.63 | 7.70 | 8.55 | 10.26 | 11.28 | 12.91 | 0.70 | 0.70 | 0.71 | 19.65 |
| FD001icu | 510042 | 177182 | 6.63 | 7.70 | 8.55 | 10.26 | 11.28 | 12.91 | 0.66 | 0.67 | 0.67 | 19.64 |
| C676di | 510054 | 177068 | 17.72 | 19.19 | 20.77 | 23.67 | 25.62 | 29.05 | 29.86 | 31.37 | 36.34 | 50.65 |