

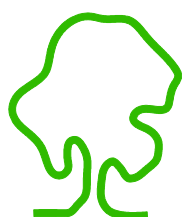
MR OLIVER KNIGHT



3 WEST COMMON, LINDFIELD, WEST SUSSEX, RH16 2AE

Flood Risk Assessment

August 2024



eas ltd

Environmental Assessment Services Ltd

REPORT DATA SHEET

Requirement	Data
Report Ref	720/GB/OliverKnight/3West Common/FRA
Date	August 2024
Client	Mr Oliver Knight
Report type	Flood Risk Assessment
Purpose	Planning
Revisions	
Prepared by	Eur Ing Malcolm McKemey BSc (Hons), CEng, CEnv, MICE, MCIWEM, MIEEnvSc  Signed
Approved by	Xanthe Lyford BSc (Hons)  Signed

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Flood Risk Assessment

August 2024

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Flood Risk Assessment

August 2024

1. THE SITE AND BACKGROUND

- 1.1 The Flood Risk Assessment has been prepared to assist the determination of a planning application for the construction of a residence on the site of an existing garage to the north of the existing house at No. 3 West Common on the outskirts of Lindfield in West Sussex. The Ordnance Survey reference for the site is TQ 3370 2485, the site plan area is approximately 250 m². The site elevation is approximately +39 m OD. See Figure 1 in Appendix A for site location.
- 1.2 The site (as existing) comprises a double garage and workshop/garden store plus land to the rear and south side thereof. See Figure 2 in Appendix A for existing site layout.
- 1.3 It is proposed to redevelop the site for residential use. See Figure 3 in Appendix A for the Proposed Layout.
- 1.4 The site was visited on 22 July 2024.

2. TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

- 2.1 The site lies on the north side of the West Common highway adjacent to the junction with Summerhill Lane. The area is predominantly residential, comprised of detached and semi-detached houses with gardens.
- 2.2 No. 1 West Common lies immediately to the south of No. 3, with the Scrace stream (Upper Ouse catchment) beyond. The Scrace stream passes under West Common highway in culvert.
- 2.3 The site lies on Upper Tunbridge Wells Sand (sandstone and siltstone, interbedded) with no overlying superficial deposits.
- 2.4 The Upper Tunbridge Wells Sand is classified as a Secondary A Aquifer with groundwater vulnerability rated as High. The site does not lie within a groundwater protection zone.

3. FLOOD RISK ASSESSMENT

- 3.1 The proposed development site lies within Flood Zone 1 (low risk of flooding from tidal and fluvial sources) See Appendix B. The adjacent No. 1 West Common and the boundary with No. 3 West Common are within Flood Zone 2 (medium risk of flooding from fluvial sources).
- 3.2 The EA's online 'Risk of Flooding from Surface Water' map (see Appendix B) shows that the proposed development site is at very low risk of surface water flooding. No. 1 West Common and the boundary with No. 3 is shown at low risk of surface water flooding. The surface water flood risk increases with proximity to the Scrace stream. Parts of West Common and Summerhill Lane are shown at low – medium risk of surface water flooding, although this appears to be largely confined to the centre and far side of the carriageway.
- 3.3 Flooding from reservoirs and groundwater flooding are considered unlikely.
- 3.4 The Mid Sussex District Council Strategic Flood Risk Assessment (SFRA) Level 1 was published in 2015. The SFRA considered flood risk within the district and appropriate policy responses. There are no records of historic flooding on site.
- 3.5 It is proposed to implement sustainable surface water drainage (SuDS).
- 3.6 For consideration of flood mitigation measures it is necessary to establish a design flood level for a designated Annual Exceedance Probability (AEP). For establishing a design flood level for the site, the probable life of the proposed development needs to be considered to adopt the appropriate climate change allowance, the design AEP and the appropriate flooding scenarios. The factors selected to establish the design flood level are summarised in Table 3.1 below:

TABLE 3.1

Factor	Value
Probable life of proposed development (residence)	100 years
Annual Exceedance Probability for fluvial flooding	1.0%
Climate change allowance for fluvial flows (2115)	+20% peak river flow

- 3.7 A design flood level is usually derived from the Environment Agency Product 4 for the site. The Product 4 has been requested. However, from comparison of the topographic survey with the Environment Agency flood mapping, the 0.1% AEP (1 in 1000-year return period event) design flood level (Flood Zone 2) would appear to be +38.65 m OD.
- 3.8 From the topographic survey, the area proposed for redevelopment for a new residence is 1.0 – 1.2 m above the 0.1% AEP design flood level.

- 3.9 According to the hydraulic model, the 0.1% AEP design flood level is higher than the 1.0% AEP + climate change allowance design flood level. It should be noted that an increase in flood level from increasing the peak river flow by 20 % cannot reasonably be estimated without the application of the catchment flood model.

4. PLANNING STATUS WITH RESPECT TO FLOODING

- 4.1 It is proposed to redevelop the site by constructing a two-storey property with garden to replace the existing double garage/workshop. The site has been identified to lie within Flood Zone 1.
- 4.2 Residential dwellings are classified as ‘More Vulnerable’ under Table 2 of the Flood Risk and Coastal Change Guidance. According to Table 3 of the Flood Risk and Coastal Change Guidance, ‘More Vulnerable’ development is appropriate within Flood Zones 1 and 2, and in Flood Zone 3a where the Sequential and Exception Tests are satisfied.
- 4.3 The purpose of the Sequential Test is to steer more vulnerable development towards Flood Zone 1. In this case, the proposed residence will lie within Flood Zone 1.
- 4.4 It is for the local planning authority to apply the Sequential Test. The Mid Sussex District Plan, produced in 2014, identified a requirement for 16,390 additional homes to be built between 2014 and 2031, proposing 1,090 dwellings per annum from 2024-2031. Some of the housing requirement will be provided by windfall and infill development, such as in this case. The site lies within a developed residential area, and the proposed residence will provide modern housing. It is assumed that the Sequential Test has been satisfied in this case.
- 4.5 According to Table 3 of the Flood Risk and Coastal Change Guidance, ‘More Vulnerable’ development is appropriate within Flood Zones 1 and 2, and there is no requirement to apply the Exception Test.
- 4.6 Subject to the adoption of sustainable drainage (SuDS), the proposed development is not considered likely to increase the flood risk elsewhere. The safety of the property and its proposed occupants is addressed below.

5. RISK TO PROPERTY

- 5.1 The site lies within Flood Zone 1 and is at very low risk of surface water flooding. No significant risk to property is anticipated.
- 5.2 The ground floor of the proposed residence should be 300 mm above adjacent ground level or 600 mm above design flood level, whichever is the higher. In this case 300 mm above adjacent ground level is the higher.

6. RISK TO OCCUPIERS

- 6.1 In the event of a surface water or river flood to an extent as indicated by the EA long term flood risk maps, the occupants of the site would remain safe in habitable rooms at and above ground floor level.
- 6.2 The site and access are both within Flood Zone 1 and at very low risk of surface water flooding. There is increased surface water flood risk shown in the centre of Summerhill Lane and West Common highway. However, it would be practicable for residents in the proposed dwelling to leave the site and walk up the pavement on the east side of Summerhill Lane to other areas within Flood Zone 1 without having to wade through any flood water.
- 6.3 Any surface water on the highways will be shallow and will not impede the movement of vehicles, emergency or otherwise.
- 6.4 There should be no significant flood related risk to occupiers of the proposed residence.

7. LIKELY IMPACT ON FLOOD RISK ELSEWHERE

- 7.1 The proposed development will result in a marginal increase in the area of impermeable surfacing compared with the existing, due to the introduction of a larger roof area.
- 7.2 To reduce the risk of increasing flood risk elsewhere, the overland flow towards the Scrace stream should be minimised or slowed down. This may be achieved by sustainable drainage (SuDS) where surface water leaving the site is restricted to greenfield flow.
- 7.3 The preferred method in the SuDS hierarchy is infiltration (drainage to soakaway) where no surface water leaves the site. This requires a suitably permeable underlying geology, which requires percolation testing to confirm. The alternative to infiltration is attenuation storage with the discharge limited to greenfield flow. The attenuation storage may be in the form of ponds, swales or underground chambers. Flow control may be by orifice plate or vortex valve.
- 7.4 SuDS methods, such as permeable paving, should be incorporated into the proposed development where appropriate, which can reduce the risk of surface water flooding at and in the vicinity of the site. It should be noted that most of the surfacing at the front of No. 3 West Common has been recently replaced with permeable gravel. Rainwater may be harvested for garden irrigation. A green roof and/or rain garden may be considered.
- 7.5 Subject to the adoption of appropriate SuDS measures, there should be no adverse impact on flood risk elsewhere.

8. CONCLUSIONS AND RECOMMENDATIONS

- 8.1 It is proposed to redevelop the site by removing the existing double garage/workshop/garden store and constructing a residence on a similar footprint.
- 8.2 The site lies within Flood Zone 1, at low risk of flooding from fluvial sources. The site is at very low risk of flooding from surface water. The site drains south-eastwards towards the Scrace Stream.
- 8.3 As the location lies within Flood Zone 1 in an area developed for housing, it is assumed that the Sequential Test has been satisfied. As the site lies within Flood Zone 1 there will be no requirement to apply the Exception Test.
- 8.4 The surface water flood maps show some flood risk in the middle of the adjacent highways. Residents at the new house would be able to leave site and walk northwest to other areas of Flood Zone 1 on the Summerhill Lane pavement. Surface water flood depths on the highway will be too shallow to inhibit the travel of motor vehicles.
- 8.5 The 0.1% AEP design flood level appears to be +38.65 m OD. The site lies between 1.0 and 1.2 m above this level. Finished ground floor level should be at least 300 mm above adjacent ground level.
- 9.6 There should be no significant flood related risk to the proposed building or its occupants.
- 8.7 Subject to the adoption of sustainable (SuDS) drainage, there should be no increase in flood risk elsewhere as a result of the proposed redevelopment. There are some opportunities to incorporate more SuDS measures into the design. Foul sewage may be drained to the existing public foul sewer in the adjacent highway.
- 8.8 It is recommended that:
- i. Percolation testing should be carried out to determine whether surface water drainage to soakaway would be practicable.
 - ii. Design flood level should be reviewed once the Product 4 is received.

☆☆☆☆☆☆

APPENDIX A

- Figure 1: Site Location**
Figure 2: Site as Existing
Figure 3: Proposed Development



Reproduced from the 1:1250 scale Ordnance Survey plan with permission. Licence No. 100005508

Scale as Shown

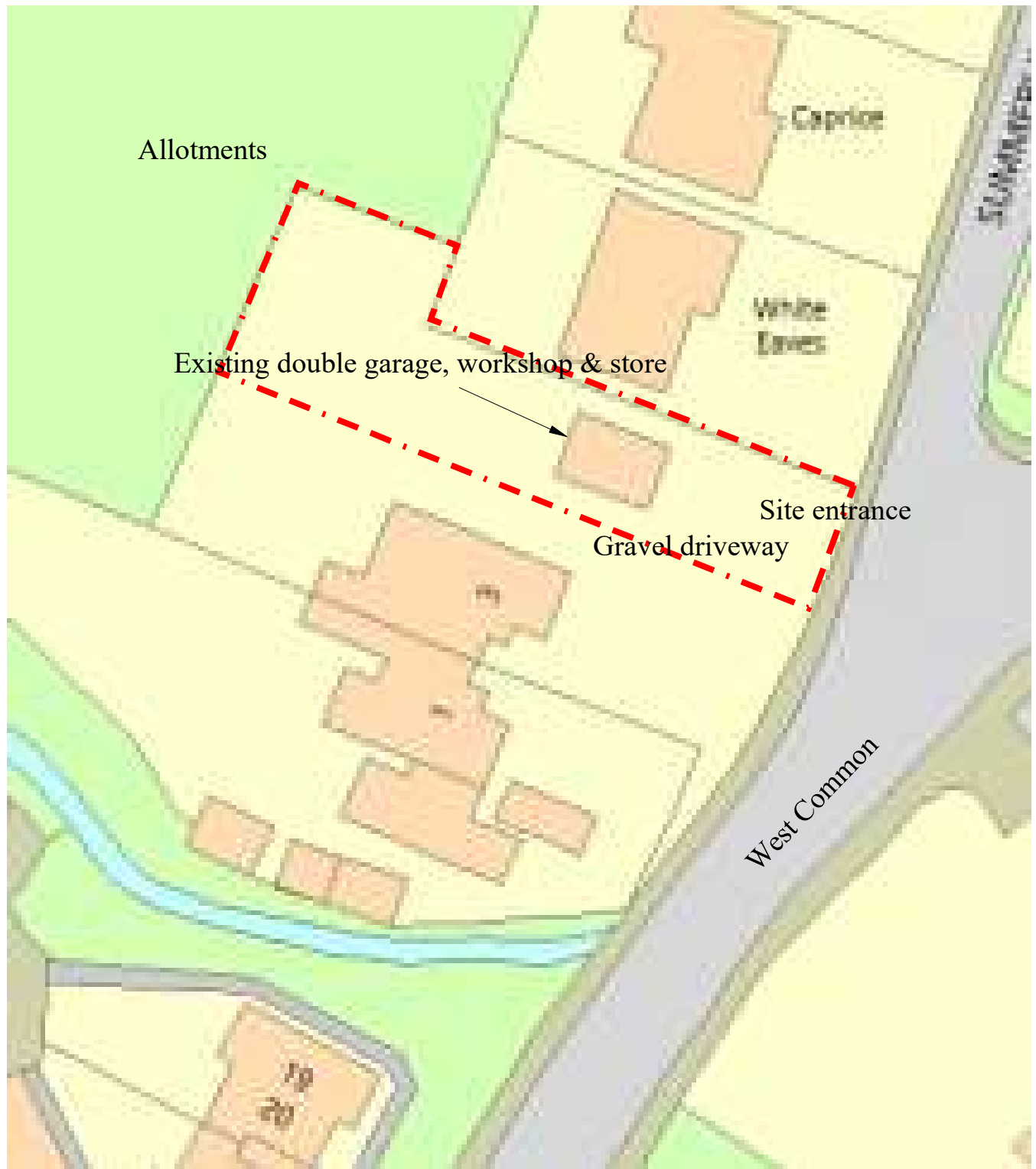


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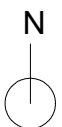
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Figure 1: Site Location Plan

August 2024



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Scale as Shown



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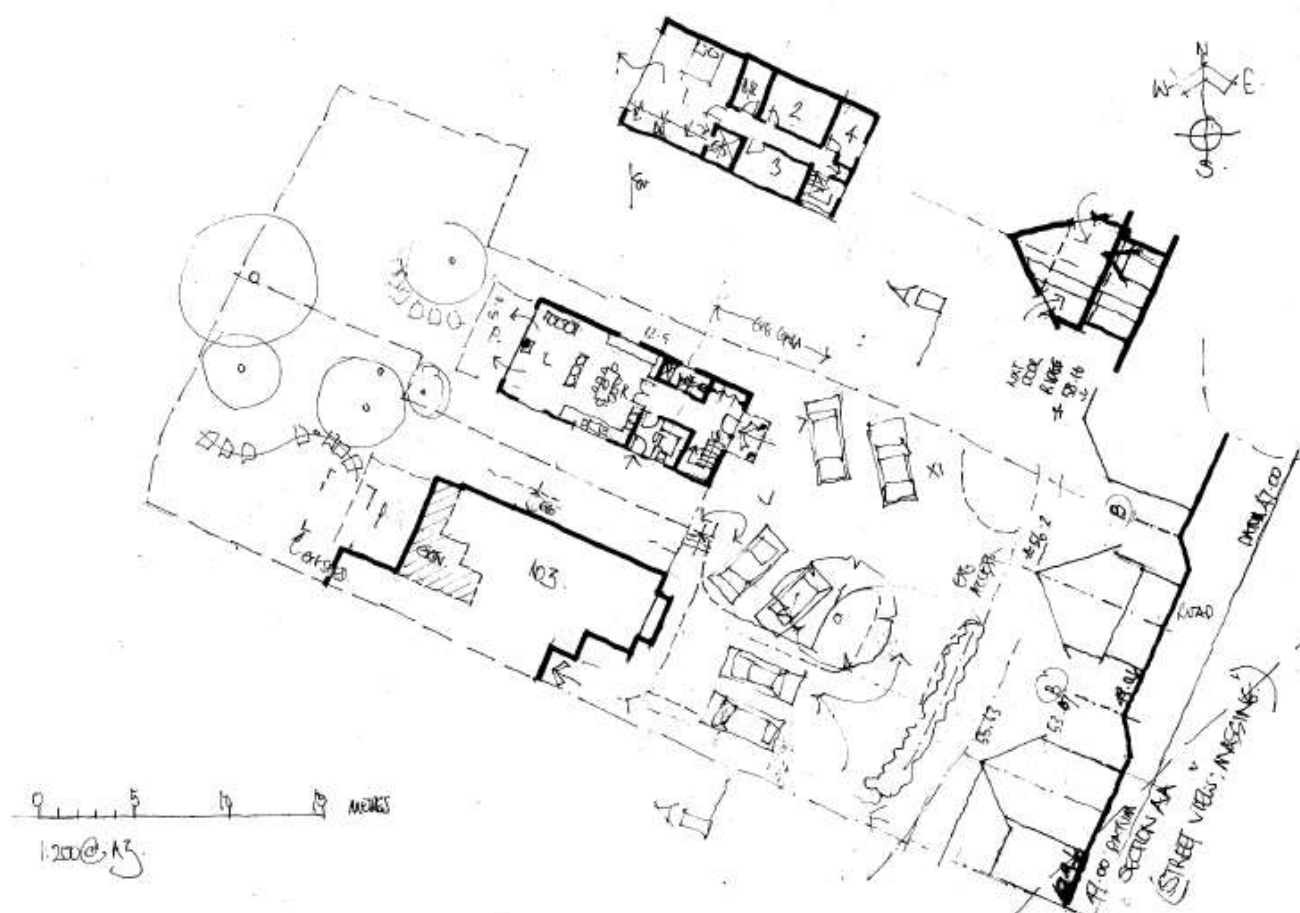
3 WEST COMMON, LINDFIELD, WEST SUSSEX, RH16 2AE

Figure 2: Existing Site Layout

August 2024

PROPOSED NEW DWELLINGS: NO 3 WEST COMMON LINDFIELD
 PRELIMINARY REDRAWN APRIL 1.2010 @ 1:250
 SK 1 REVISION JAN'24. PRELIM

0 5 10 15 METRES



Scale as Shown

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Figure 3: Proposed Redevelopment

August 2024

APPENDIX B

Environment Agency Flood Mapping

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
533713/124901

Created
7 Aug 2024 16:28

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
<Unspecified>

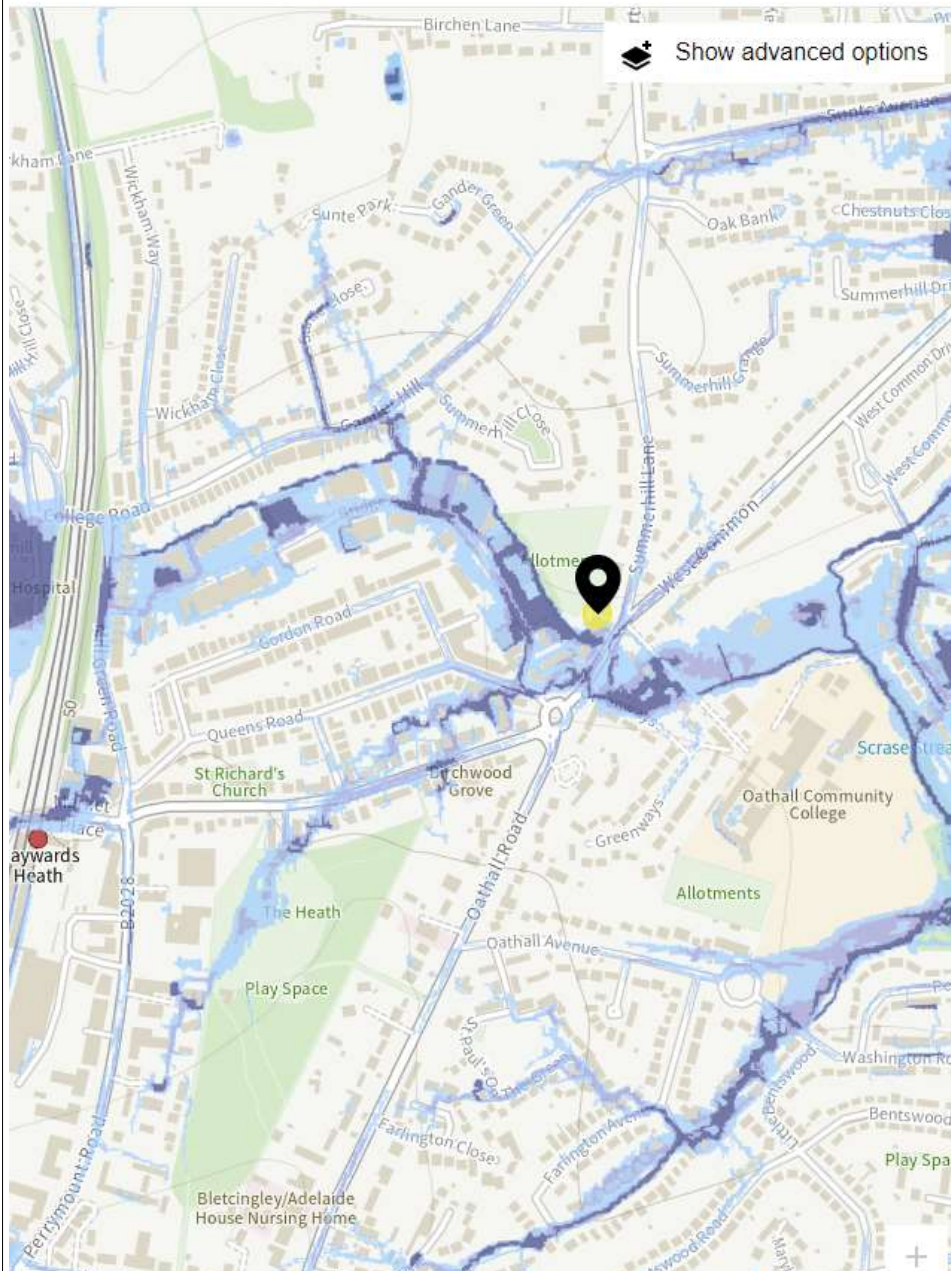
Location (easting/northing)
533713/124901

Scale
1:2500

Created
7 Aug 2024 16:28

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



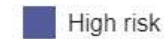


Key

Surface water



Extent



High risk

More than 3.3% chance each year



Medium risk

Between 1% and 3.3% chance each year



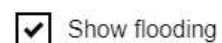
Low risk

Between 0.1% and 1% chance each year



Depth

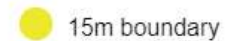
Map details



Show flooding



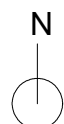
Selected address



15m boundary

Pause to updates of flood risk data

We have [paused updates to information about flood risk](#) from rivers and the sea and surface water while we get ready for new data.



Scale as Shown

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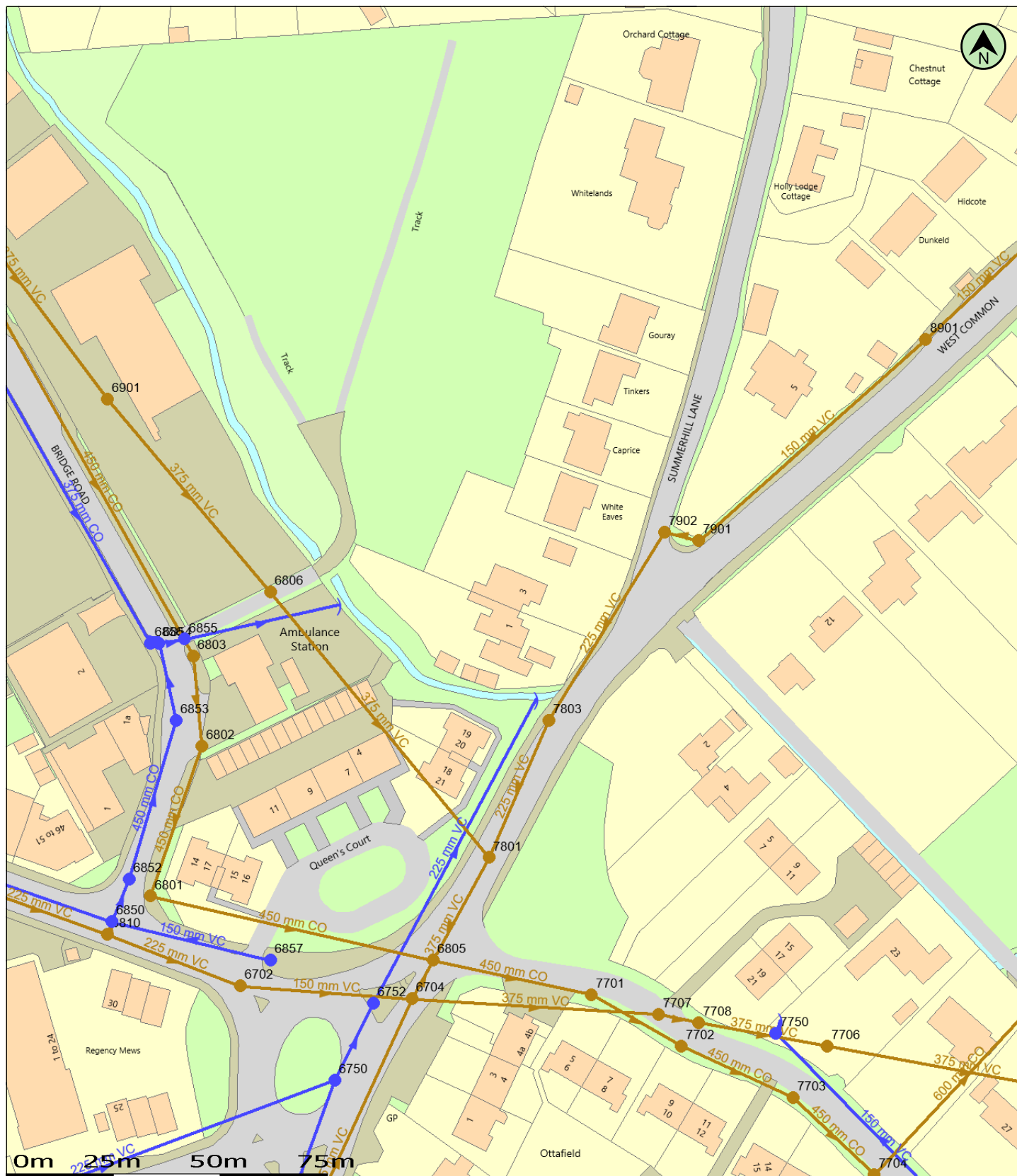


Environment Agency Surface Water Flood Risk Map

August 2024

APPENDIX C

Southern Water Sewer Map



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Data updated: 25/06/24

Scale: 1:1250

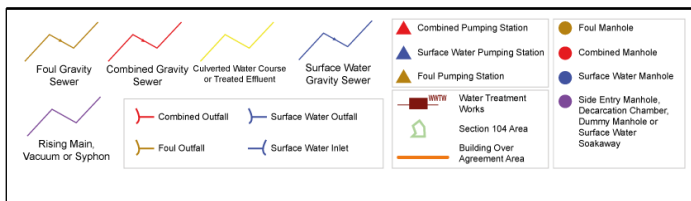
Map Centre: 533709,124888

Date: 22/07/24

Our Ref: 1525290 - 1

Wastewater Plan A4

Powered by digdat



malcolm@easltd.co.uk

3 West Common



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2024 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

[illegible]

APPENDIX D:

Product 4

APPENDIX E

Photographs



Photo 1: The site. Double garage/workshop/garden store in background.



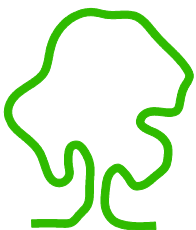
Photo 2: Permeable gravel access drive with double garage, workshop and store in the background.



Photo 3: Junction of Summerhill Lane and West Common.



Photo 4: The Scrace Stream.



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