

McCARTHY & STONE RETIREMENT LIFESTYLES LIMITED

76 – 78 HIGH STREET, TONBRIDGE, KENT, TN9 1EE

SITE INVESTIGATION REPORT

The Granary
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1. INTRODUCTION

It is proposed to develop a site at 76 - 78 High Street, Tonbridge, Kent for residential purposes. The site is currently occupied by a commercial property and a car park. It is understood that the proposed development will comprise a four-storey block of apartments together with undercroft car parking and very limited managed soft landscaping. Occupants of the apartments will be of retirement age.

Crossfield Consulting Limited has been commissioned to undertake an investigation of the site to identify potential constraints to redevelopment relating to the ground conditions and including a risk-based environmental assessment and recommendations for remediation works, foundations, road pavement design and general construction advice in the context of the above development proposals.

This report presents the information obtained from a desk study and ground investigation. Sections 2 to 5 of the report, together with the associated Figures and Appendices, provides a Ground Investigation Report (GIR), as defined in BS EN 1997-1:2004 and BS EN 1997-2:2007.

A risk-based assessment of potential contamination is included in Section 7 of the report. This assessment makes reference to the desk study, ground investigation information and a Conceptual Site Model. It is considered that the report complies with National Planning Policy Framework and is in general accordance with guidance published by the Environment Agency and NHBC.

The report also includes information required to form a Geotechnical Design Report as defined in BS EN 1997-1:2004, and the salient information, assessments and recommendations are presented in Sections 9 to 15 of the report, together with the associated Figures and Appendices.

It is considered that the report is suitable for submission in support of a planning application and the report is appropriate to assist in an appraisal of development solutions and costs, together with the preparation of engineering designs for the development. The report also complies with the published guidance relating to the requirements of a Building Control authority.

2. THE SITE

2.1 Location

The site is located to the northwest of High Street and 90 m east of the River Medway, as shown on Figure 1. The National Grid Reference for the site is TQ 5894 4640. The site is bounded by River Walk to the west, New Wharf Road to the north and High Street to the east. Commercial properties are present to the northeast and south of the site.

2.2 Site Description

This site description is based on observations made during the ground investigation in February 2021. A topographical survey of the site is provided as Figure 3.

The site is irregular in shape, with an area of approximately 0.24 ha. The site is relatively flat. In the southeastern area of the site, there is a large commercial property currently operating as Poundland. Within the northeastern part of the site, there is an electric substation and to the west of the substation is an asphalt-surfaced delivery area associated with the Poundland store. Also, in this part of the site, is a bin storage area and a clothes and shoes charity collection point bin. The remainder of the site area comprises an asphalt-surfaced public car park. A large sycamore tree is present within the southern part of the site along with a strip of dense vegetation.

2.3 Site History

The site history has been researched with reference to old editions of the County Series and National Grid Ordnance Survey Plans obtained from Emapsite. Extracts from a selection of these plans are presented in Appendix I. The plans indicate that the following development has taken place on and around the site.

The earliest available County Series Plan, dated 1867, shows a small stream along the southern site boundary and branching out further south and north within the central part of the site. The western part of the site was undeveloped. There were rows of terraced houses within the northern and eastern parts of the site. Within the gardens associated with these houses two pumps are recorded. Some larger buildings were present within the south of the site and may have been commercial properties. High Street borders the eastern part of the site and New Wharf Road borders the northern part of the site. The general surrounding area appears to have been a combination of residential, commercial and industrial land use. A timber yard was present approximately 20 m west of the site and 50 m southeast was a tannery. Ealverley Waterworks was 100 m northeast and Bridge Brewery was 100 m northeast of the site.

By 1897, parts of the stream that formerly branched off to the north and further south appear to have been backfilled or culverted as several building footprints now covered these areas. Some additional houses had been constructed within the northeastern part of the site and the former terraced properties in the east of the site houses had been cleared and a Baptist Chapel now occupied the majority of this part of the site. Some small structures are shown immediately north of the Baptist Chapel. The western part of the site remained undeveloped. The timber yard, located 20 m west of the site, was no longer present at this time.

No major changes are shown on site or nearby on the 1908 map edition, although the pumps on site and the brewery 100 m northeast of the site are no longer recorded.

By 1936, the western part of the site had been developed and was occupied by a hall and the stream that was present along the southern site boundary is no longer recorded by this time. River Walk borders the western part of the site. A picture theatre had been constructed to the south of the site.

The 1959 National Grid map shows the remaining terraced houses in the northeastern part of the site had been demolished. The picture theatre to the south of the site had been demolished and a large building named 'Crown Building' had been constructed in its place. A works was present approximately 30 m north of the site.

By 1972-1974, all former buildings had been demolished on site and a large building occupies the eastern part of the site. An electric substation had been constructed within the northeastern part of the site and the remainder western part of the site included a car park.

The 1989-1990 National Grid map shows no changes on site. The former tannery had been replaced by a large building referred to as 'Benn House'.

There are no further significant changes shown on site or within the surrounding areas on the remaining maps and the site remains unchanged since 1990.

3. PUBLISHED GEOLOGY

Geological map data published by the British Geological Survey (BGS) online and in print, on 1:50,000 scale Sheet No. 287 (Sevenoaks) indicates the site to be underlain by superficial deposits of Alluvium.

The underlying solid strata comprise the Tunbridge Wells Sand of the Cretaceous System which generally comprise sands and sandstones. Approximately 40 m south of the site a fault is recorded, beyond which the Wadhurst Clay Formation is present at outcrop. The Wadhurst Clay strata (clays, mudstones and some sandstones) also underlie the Tunbridge Wells Sand strata.

4. DESK STUDY ENQUIRIES

Enquiries were made to the GroundSure Environmental and Geological Databases and the British Geological Survey regarding the site and surrounding area. Information obtained from these enquiries is presented in Appendix II and summarised below.

There are no current or historical landfills listed within 250 m of the site boundaries.

The database on current industrial land use lists the electric substation on site. There are no other commercial/industrial land uses recorded in close proximity of the site likely to influence ground conditions below the property.

The nearest active petrol station is recorded 250 m south of the site at a Sainsburys.

There are no sites determined as Contaminated Land under Part 2A of the Environmental Protection Act (1990) within 500 m of the site.

There are no facilities holding environmental permits listed within 150 m of the site. The nearest licensed discharge relates to trade discharges into the River Medway at Tonbridge Pumping Station located 97 m west from the site.

The nearest pollution incident recorded is located 20 m northeast of the site and the incident was associated with an unidentified pollutant in 2001. It is noted as having only a minor impact on land.

Hydrogeological information indicates that the superficial deposits, beneath the site, are classified as a 'Secondary A' aquifer. The underlying bedrock strata are also classified as a 'Secondary A' aquifer.

There are several active groundwater abstraction licences recorded within 1 km of the site. The nearest, 90 m west of the site, relates to a potable water supply at Southern Region Groundwater. The remaining groundwater abstraction licences also relate to a potable water supply at Southern Region Groundwater at recorded distances of 102 m west, 578 m northwest, 595 m west, 652 m west and 732 m west. There are no active surface water abstraction licences within 1 km of the site. The nearest historical abstraction relates to spray irrigation from Southern Region Surface Waters located 44 m northwest of the site.

The site lies within a Zone 1 Inner catchment groundwater Source Protection Zone and also lies within a Zone 1c Inner catchment and 2c Out catchment within a confined aquifer.

Hydrological information indicates the River Medway is recorded 42 m northwest of the site. The River Medway is noted as having a good chemical quality and a moderate ecological rating and with a moderate overall rating. With reference to the Water Framework Directive and associated defined groundwater bodies, it is noted that the Environment Agency classify the groundwater body (Kent Weald Western - Medway) as "poor" quality. The

relevant online map published by DEFRA/Magic indicates the site lies within a designated Drinking water Safeguard Zone (for both Groundwater and Surface water).

The site is located within a flood Zone 3, as designated by the Environment Agency. Part of the site may benefit from flood defences.

The site does not lie within an area associated with environmental designations.

The potential for running sands below the site has been given a hazard rating of 'Low' and natural ground subsidence associated with compressible deposits has been given a hazard rating of 'moderate'. All other natural ground related hazards have been given a hazard ratings of 'Negligible' or 'Very Low'.

There are no current or historical mine workings recorded on, or within close proximity to, the site. A recorded area that is located 27 m south of the site lies within an area of the lowest BGS mining risk category, namely, an area where sporadic (iron ore) mining is possible. The BGS database states the potential for difficult ground conditions are unlikely and at a level where they do not need to be considered. No natural cavities or mining-related voids are recorded within 1 km of the site.

The BRE Document BR211 – *Radon: Guidance on Protective Measures for New Buildings* (2015) and GroundSure geological database information indicates that the site is not within an area where radon precautions are required in new buildings.

With reference to the BGS database of estimated background soil chemistry, it is noted that a relatively high lead concentration of 100 mg/kg is indicated for the Tonbridge area.

Records have been obtained from the BGS of boreholes located within the general area. The borehole records typically indicate a 1.0 m thickness of Made Ground materials. Below this, 'firm and soft' grey and brown clay is recorded to depths of around 4.0 m. Below the soft clays, sands and gravels are present to approximately 5.5 m depth. Hard, grey, fissured clay is recorded down to a maximum depth of 11.0 m.

5. GROUND CONDITIONS AND GEOLOGICAL MODEL

5.1 Ground Investigation

Details of the rationale and scope of the ground investigation and laboratory testing, together with exploratory hole logs, monitoring, in situ and laboratory test results, are given in Appendix III. The investigation has identified the presence of the following, below the site.

5.2 Buried Foundations and Services

Buried foundations or other such obstructions were not encountered during the ground investigation. Underground services are indicated to be present within site, including land drains and utility connections to structures in the vicinity of the site.

5.3 Strata Encountered

Made Ground

Made Ground has been recorded across the site, typically to depths of between 1.0 m and 1.6 m, but locally up to 2.4 m depth. The Made Ground comprises a layer of tarmac surfacing over clayey sands and gravels, as well as some clays, with variable amounts of man-made inclusions.

Alluvium

Alluvium has been recorded below the Made Ground to the maximum depth of investigation (5.0 m). The Alluvium typically comprises an upper horizon of soft consistency (low strength) sandy gravelly clays to a depth of 4.0 m. Below this clay horizon, medium dense sands and gravels are present to depths of 5.0 m, the maximum depth investigated.

Standard Penetration Tests (SPTs) undertaken within the Alluvium strata recorded some self-weight settlement (i.e. zero 'N' values), between 1 m and 3 m depth 'N' values of between self-weight and 5 were recorded. SPTs undertaken at depths of 4 m and 5m recorded 'N' values of between 8 and 29.

5.4 Groundwater

Groundwater has been recorded at 1.5 m depth within a previously installed standpipe on site. On the completion of window sample holes standing water within the hole has been observed at between 1.5 m and 1.8 m depth.

The groundwater conditions are based on observations made at the time of the fieldwork. It should be noted that groundwater levels may vary due to seasonal and other effects.

6. PROPOSED DEVELOPMENT

The proposed development, which is shown on Figure 4, comprises the following:

- A four-storey block of sheltered apartments
- Ground floor undercroft car parking area and associated areas of hardstanding
- Limited managed soft landscaping areas
- Occupants of the apartments will be of retirement age

7. ASSESSMENT OF POTENTIAL CONTAMINATION AND GROUND GASES

7.1 Assessment Criteria

Assessment of potential contamination and ground gases has been undertaken using a risk assessment based approach, as recommended within the Environmental Protection Act (1990), Environment Agency Land Contamination Risk Management (LCRM) (2020), CLEA Model (2004-2009), BS 10175: 2011+A2:2017, CIRIA C552 (2001) and NHBC R&D Report 66 (2008). This approach considers the likely source of contamination, given the history and location of the site, and the possible migration pathways by which these potentially hazardous substances may reach likely receptors, such as end users of the site, controlled waters or the wider environment, in the context of the proposed development.

Part IIA of the Environmental Protection Act (1990) states that

"Contaminated Land is any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) significant pollution of controlled waters is being caused or there is significant possibility of such pollution being caused;"

All risk assessments carried out as part of this investigation have been carried out with respect to the definition of “contaminated land” within Part IIA of the Environmental Protection Act (1990) and have considered the site both before and on completion of the development. The basis of the risk assessment is the Conceptual Site Model, which is derived from the desk study and initial information and identifies potential pollutant linkages that could affect receptors relevant to the site and the wider environment. The Conceptual Site Model is presented in Table 1.

Based on the model, a ground investigation was designed to obtain relevant information to assess further the identified pollutant linkages. Where relevant this included the recovery of representative samples and subsequent analytical laboratory testing. The rationale for the sampling and testing is set out in Appendix III. The results of the analytical testing are presented in Appendix III and summarised in Table 2. On the basis of the conceptual site model and the results of the analytical laboratory testing (together with any quantitative risk assessment, if applicable, as presented in Appendix IV), an assessment of the identified pollutant linkages is presented in Table 3.

7.2 Potential Sources of Contamination

The site has been formerly occupied by several residential properties since the earliest available plan, dated 1867. It is considered that the only potential source of contaminants associated with the site’s former residential usage would be limited volumes of ashy materials produced by old coal fires/bonfires. Ashy material, if present, may contain heavy metals and polyaromatic hydrocarbons (PAHs).

The site has most recently been used as a commercial development and includes a car park and an electricity substation. The electricity substation has been present on site since the early 1970s within the northeastern part of the site. Given the age of this substation, it is considered that polychlorinated biphenyls (PCBs) may have been present (but should have been replaced by the current day). If PCBs were present, it is noted that the unit is typically sealed and includes a limited volume of coolant. It should also be noted that PCBs are typically of extremely low solubility and, hence, mobility. Therefore, in the unlikely event of spillages, these are likely to impact strata immediately beneath the electricity substation and are unlikely to have migrated across the site. On this basis, it is considered that this feature may be regarded as a minor potential source of contamination.

The site currently includes areas of hardstanding. Coarse-grained materials (possibly including demolition rubble) may have been used as fill. Demolition-derived materials may include toxic and phytotoxic metals, polyaromatic hydrocarbons (PAHs) and asbestos containing materials such that there is a potential for these contaminants to be present beneath the site.

With respect to potential sources of off-site contamination, no current industrial features or businesses associated with potentially mobile contaminants have been identified within the vicinity of the site.

Based on the available information, representative soil samples were recovered from the Made Ground materials encountered on site and tested for the potential contaminants identified above. The test results are summarised in Table 2 and are presented against generic assessment criteria (GAC) and Category 4 Screening Levels (C4SL), relevant to the protection of human health in a residential development with managed landscaping. As can be seen from Table 2, the majority of the potential contaminant concentrations are recorded below the GAC and C4SL (minimal risk to human health) and therefore, do not represent an unacceptable risk to end users. However, arsenic, lead and certain PAHs concentrations have been recorded above the GAC. No asbestos has been detected. Additional comments associated with the recorded exceedances are provided in Section 7.3.1.

The site is not considered to be “brownfield” as it has not been associated with past fuel storage. Therefore, a risk to construction materials is unlikely to be present. Further comments are provided in Section 7.3.2.

Regarding potentially phytotoxic substances, significant concentrations of zinc have been recorded. However, as the site is predominantly devoid of topsoil, a suitable thickness of topsoil is likely to be required to provide a growing medium in proposed soft landscaping areas. Further assessment is provided in Section 7.3.3.

As indicated in the Conceptual Site Model, no valid pollutant linkage has been identified in respect of controlled waters. On the basis of the ground conditions encountered and the analytical laboratory test data, which indicates no significant concentrations of potentially mobile contaminants, it is considered that the Conceptual Site Model is valid and that there are no unacceptable risks to controlled waters indicated at the site. On this basis, it is considered that no further risk assessment is required in respect of controlled waters receptors.

There are no recorded active or historical landfills within influencing distance of the site. The site is not in an area requiring radon protection measures. No putrescible materials have been recorded within the Made Ground materials below the site. Therefore, the available information has identified no potential source of ground gases.

7.3 Pollutant Linkages – Solids and Liquids

Based on the Conceptual Site Model, consideration is given below to identified pollutant linkages and a risk evaluation is undertaken of each possible source-pathway-receptor linkage that may occur at the site. The risk evaluation considers the potential consequences and probability of occurrence in accordance with CIRIA C552 (2001). Where risks are identified as “negligible”, then by implication such risks are within normally accepted levels for the proposed development, and the further reduction of such risks by remediation works is considered unnecessary. Where risks are identified that are “low” as defined in CIRIA C552 (2001), or worse, then consideration is given to the management of the identified risks, with appropriate recommended actions that may include engineering solutions / remediation works as described in the following sections.

7.3.1 Human Health

Potential contaminants associated with the site history are generally below relevant GAC and C4SL values. However, a possible pollutant linkage to site end users has been identified and relates to the ingestion and inhalation of materials impacted by arsenic, lead and certain PAHs, which have been detected on site at concentrations elevated above the GAC and/or C4SL values.

With respect to end users, the significant area of the site that will be covered by buildings and road pavements will ensure that there are effective barriers between end users and the existing ground across much of the site following development. Therefore, potential risks to end users are mitigated in these areas following completion of the development. Additional consideration is given below in relation to areas of the development that will comprise managed soft landscaping, where dust exposure pathways may remain after development if minimum topsoil thicknesses are placed in such areas.

It is noted that the GAC used for the preliminary assessment of human health risk are based on end users up to the age of 6 years old. The proposed development is for residents of retirement age and the GAC are considered to be conservative for the proposed development. Therefore, site specific assessment criteria (SSAC) have been generated for lead and the PAHs in relation to the nature of the proposed development. The CLEA Model v1.07 software has been used to generate the SSAC. The outputs from the model are presented in Appendix IV.

On the basis of the details provided in Appendix IV, it is noted that the maximum recorded concentration of benzo(b)fluoranthene and dibenzo(ah)anthracene recorded at the site remain above the SSAC.

In order to mitigate the above pollutant linkage with benzo(b)fluoranthene and dibenzo(ah)anthracene within the shallow soils, it is recommended that an allowance be made to provide a topsoil/subsoil barrier/capping layer in the proposed limited managed soft landscaping areas. Furthermore, the site is predominantly devoid of topsoil materials, such that import of soils will be necessary to provide a growing medium for the proposed planting scheme. With reference to the guidance provided within BRE BR465 (2004), it is considered that allowance should be made for topsoil/soil-forming materials of a minimum thickness of 450 mm in proposed planted landscaping areas and a minimum thickness of 300 mm in proposed lawn landscaping areas.

Landscaping contractors employed to manage the landscaping areas should only be involved in occasional and controlled works to maintain the decorative landscaping, that may include some replanting works involving limited digging into topsoil materials. Therefore, it is considered that there should be no unacceptable risks to this site user group following completion of this development.

Regarding groundworkers involved in the construction of the new development, it is recommended that appropriate personal protective equipment (PPE) be worn and high levels of personal hygiene be maintained by ground workers. No significant potential source of asbestos fibres has been identified at the site (although this should be reviewed following supplementary investigation and appropriate risk assessments and mitigation measures may need to be incorporated into construction works if significant asbestos materials are later identified). Notwithstanding this, to minimise the soils becoming airborne it is recommended that appropriate soil dampening equipment be maintained on site during dry periods to minimise dust generation. This will also negate risks to off-site receptors such as neighbours and the general public.

7.3.2 Durability of Buried Structures and Services

In view of the low soluble sulphate content and near-neutral soil conditions, there are no special precautions required for the protection of good quality buried foundation concrete. Based on guidance within *BRE Special Digest 1* (2005), the specified DC Class of concrete for buried structures and foundations should be suitable for an ACEC site classification of AC-1.

The site has not been associated with past fuel and/or chemical storage and there are no such storage facilities in close proximity. Therefore, the site would not be considered to be 'brownfield' under the definition provided by UKWIR (2010) with respect to the assessment of ground for water supply pipes. Based on the guidance provided by UKWIR, conventional plastic materials can be used for potable water supply pipes without any requirements for specific testing.

It should be noted that individual water companies may have in-house requirements for the assessment of ground conditions for potable water supply pipes and these requirements may be in addition to, or may contradict, the guidance provided by UKWIR. Therefore, it is recommended that the relevant water supply company be consulted prior to finalising the potable water supply design.

7.3.3 Landscape and Garden Areas

Based on the laboratory test results, concentrations of phytotoxic metals (zinc) are elevated above levels that may be a risk to plants (for example see BS 3882:2015 for requirements for topsoil) within the Made Ground beneath the site and therefore, it is considered that there is unlikely to be sufficient nutrients to support healthy plant growth. In addition, it is noted that the site is effectively devoid of topsoil and, hence, it will be necessary to import suitable soils to provide a growing medium compatible with the proposed limited landscaping/planting.

It is anticipated that the topsoil/subsoil barrier/capping layer recommended in Section 7.3.1, should be appropriate as a growing medium in most areas. However, specific reference should also be made to the

planting schedule and requirements of the landscape designer. Imported topsoil/subsoil materials should be accompanied by documentation to confirm that the materials do not contain substances that would be an unacceptable risk to human health or the wider environment and to confirm that the materials would not be classified as a waste product.

7.4 Recommended Remedial Works

On the basis of the foregoing risk assessment, and during construction of the development, the following remediation works are recommended, which mitigate the pollutant linkages as set out in Table 3. It is noted that there is no requirement for remediation works to be undertaken prior to the commencement of the proposed development.

- Soils should be kept damp during groundworks undertaken in dry weather to minimise the potential of aerial migration of dust to neighbouring properties and public.
- Within areas of proposed limited soft landscaping, a barrier/capping layer of imported topsoil/subsoil of at least 450 mm thickness should be placed in proposed planted landscaping areas and a thickness of at least 300 mm should be placed in proposed lawn landscaping areas.
- Import and placement of the barrier/capping layer of imported topsoil/subsoil should be controlled and documented, as outlined below (and in compliance with the published requirements of NHBC and the local planning authority).

In compliance with the published requirements of NHBC and the local planning authority, it will be necessary to provide a Remediation Strategy document, which details the specific controls and inspections etc. associated with the above works. Included in this document are details of suitable soils for use in the capping layer/barrier together with associated controls.

7.5 Potential Liabilities

Based on the available data, it is considered there should be no significant environmental liabilities associated with the ground conditions and site ownership. Provided the work outlined in Section 7.4 is undertaken, there should be no such liabilities following completion of the development.

8. ASSESSMENT OF MINING, QUARRYING AND OVERALL GROUND STABILITY

The site is not within an area of recorded underground mining or other such mineral extraction. There are also no quarries recorded at or in the vicinity of the site. Therefore, it is considered that the proposed development should not be constrained by issues of ground stability associated with mining or quarrying.

With reference to published information provided by the British Geological Survey, and in the context of the low sensitivity of the proposed structure to very minor background seismic events recorded in the UK, it is considered that the foundation solution should not be constrained by potential ground vibrations from natural sources and that more detailed assessment is not necessary.

9. FOUNDATION RECOMMENDATIONS

9.1 Design Approach

In compliance with the requirements of the National Annex of BS EN 1997-1:2004 the geotechnical design assessment is based on Design Approach 1 (as defined in BS EN 1997-1:2004). As the structural loads for the proposed building are well defined, uncertainty and risks of potential unfavourable conditions (or deviations from characteristic values) are primarily associated with the ground conditions.

Consideration is given to the assessment of ultimate limit state (ULS) conditions, where full collapse or failure conditions are considered, and preliminary relevant design information is presented in Appendix IV in this regard. In addition, the assessment considers serviceability limit states (SLS), to ensure that the recommended design parameters are compatible with an acceptably low risk of serviceability criteria being exceeded during the standard design life of the structure. It is noted that the SLS has a greater influence on the design parameters in comparison to ULS conditions and this is considered in the following assessment.

9.2 Proposed Structural Loadings and Serviceability Criteria

Details of imposed foundation loads (i.e. actions imposed by the building structure) and serviceability limit values are not currently available for the proposed structures. The geotechnical assessment presented in the report has considered generic values for the proposed development type, which is considered appropriate for the appraisal of engineering solutions and preliminary design, and these are listed below:

Preliminary Values, for appraisal purposes:

Maximum Imposed Load on Foundations: Up to 250 kN/m run for four-storey apartment block

Serviceability Limit Values (associated with above action)

Maximum Total Settlement: 10 mm (piles)

Maximum Differential Settlement: 5 mm (piles)

If the proposed loads differ significantly to those stated above, further assessment may be required.

9.3 Geotechnical Category of Proposed Structures

In view of the nature of the proposed structure(s), comprising a three- to four-storey apartment block, and with reference to the indicated ground conditions, as outlined in Section 5, it is considered that the development is compatible with Geotechnical Category 2, as defined in BS EN 1997-1:2004, and the necessary information relating to the Ground Investigation and Geotechnical Design Reports has been obtained and assessed on this basis.

9.4 Assessment of Foundation Solutions

With reference to the recorded ground conditions and corresponding Geological Model presented in Section 5, characteristic values relating to the geotechnical properties of the upper strata within influencing distance of the proposed structures are presented in Appendix V. Salient elements of the geotechnical model are outlined below.

The shallow clay horizons of the superficial Alluvium deposits are considered to be too weak and compressible to be suitable as founding strata for the structural loads anticipated for the proposed building. Excavations through these horizons, and into the lower gravel horizons, are likely to encounter significant groundwater ingresses. On this basis, it is considered that a conventional strip or trench fill foundation solution is unlikely to be suitable for the proposed development. It is also considered that the shallow clay horizons of the superficial Alluvium deposits are too weak to treat using vibro-replacement techniques. Therefore, it is recommended that an allowance be made for a piled foundation solution and CFA piles are likely to be appropriate.

Laboratory testing indicates that clay horizons beneath the site are variable and include medium volume change potential materials, as defined in NHBC Standards (2021). Appropriate foundation precautions will be required within influencing distance of trees. It is recommended that medium volume change potential soils be assumed for design purposes. It should be noted that the depth to groundwater should be taken into account as strata below groundwater would be moisture stable.

Reference should be made to Section 7.3 in respect of the requirements for buried concrete design.

9.5 Floor Slab Recommendations

It is recommended that an allowance be made for suspended ground floor slabs due to the thickness of Made Ground. Underfloor voids may be required within influencing distance of trees. Given the volume change potential soils indicated to be present, at shallow depth, it would be prudent to make allowance for an underfloor void of at least 250 mm within influencing distance of trees.

9.6 General Construction Advice

All formations should be cleaned, and subsequently inspected by a suitably qualified engineer prior to placing concrete. Should any soft, compressible or otherwise unsuitable materials be encountered they should be removed and replaced by blinding concrete.

Foundation concrete, or alternatively, a blinding layer of concrete, should be placed immediately after excavation and inspection in order to protect the formation against softening and disturbance.

Generally, all formations should be placed wholly within the same material type, unless specific geotechnical inspection and assessment have been undertaken.

Care should be taken to ensure that any field drains encountered are carefully and satisfactorily blocked to prevent water seeping through the drains and into any excavations.

10. TEMPORARY WORKS

Conventional plant should be appropriate for excavation works at the site. However, an allowance should be made for hydraulic breakers in case buried obstructions or substructures are encountered in the ground.

Shallow excavations may remain stable in the short term. However, instability may occur in excavations left open for extended periods of time, particularly during inclement weather or following groundwater entry. Support should be provided, or the sides battered back, in any excavations requiring man entry.

Groundwater is present at a shallow depth and groundwater seepages have been recorded at depths of between 1.5 m and 1.8 m. It is recommended that excavations for substructures and services be kept as shallow as possible. If deeper excavations are required, it may be necessary to undertake dewatering. Conventional

sump pumping techniques may not be appropriate, and it is recommended that trial excavations be undertaken to confirm rate of water entry and to assess the suitability of conventional pumping. If sump pumping is not appropriate then it may be necessary to use sheet piles in conjunction with pumping or, alternatively, dewater from a suitable number of boreholes to reduce water levels. Consideration would need to be given to the disposal of water if using dewatering techniques. It should be noted that, due to the presence of some coarse-grained soils at shallow depth, conventional trench boxes may not be suitable for maintaining excavation stability if groundwater ingresses are encountered and trial excavations or trial pits should be excavated to obtain relevant data.

It will be necessary to install a working platform for the tracked plant to be used in the proposed piled foundation works. The platform should be designed by a geotechnical specialist in accordance with the requirements of the Federation of Piling Specialists (FPS). Either the platform can be designed to be installed on to the existing ground and then removed after the foundation works or ground levels can be reduced, and the platform can be incorporated into the final development.

11. ASSESSMENT OF SOAKAWAY DRAINAGE

Based on the recorded ground conditions, comprising low permeability clays and shallow groundwater, soakaway drainage is effectively precluded for the proposed development. It would be prudent to identify an alternative drainage solution at this stage.

12. ROAD PAVEMENTS

Based on an examination of soils present at the site and guidance of TRRL Report LR1132, it is considered that an equilibrium design CBR value of 3% may be used for pavement design. It would be prudent to consider the materials at shallow depth as frost susceptible.

13. ASSESSMENT OF MATERIALS FOR WASTE DISPOSAL

There is no requirement to remove soils from site and, therefore, development levels should set such that soils can be retained and reused on site where possible. Providing development levels are set to accommodate soil arisings (for example, from foundation excavations), such materials would not be classified as waste if retained and re-used on site. However, if materials are excess to requirements, they should be taken to an appropriately permitted waste facility.

If material is identified for removal to a waste facility, it will be necessary to provide a description of the material and laboratory test data to the receiving facility. This information is included in Appendix III. It should be noted that additional testing, either for classification purposes or for waste acceptance criteria (WAC) testing to confirm acceptability of the waste may be required (as noted below).

The available analytical laboratory test data have been used to provide preliminary waste disposal advice. It should be noted that these test results may not specifically relate to materials that are, or will be, scheduled for removal from site. However, the results are appropriate for preliminary guidance and costing purposes.

HazWasteOnline™ has been used to assess materials on site in accordance with the Environment Agency's document *Guidance on the Classification and Assessment of Waste WM3* (2015). Additional assessment is made by direct reference to WM3. The assessment indicates that the following preliminary waste classification advice would be appropriate.

- Tarmac surfacing should be taken to a recycling facility. Such materials are unlikely to meet WAC for disposal at landfill.
- The majority of the Made Ground encountered at the site is likely to be classified as ‘non-hazardous’ waste for disposal due to the typical total organic carbon content and locally the recorded PAHs concentrations. One sample of shallow Made Ground has recorded TPH and benzo(a)anthracene concentrations which would classify these materials as ‘hazardous’ waste. Whilst some Made Ground may be classified as ‘inert’ waste (subject to additional WAC testing), it would be prudent to undertake additional testing as part of a supplementary ground investigation to provide further waste classification advice and to identify appropriate disposal options.
- Natural strata, providing they have not been impacted by potential contaminants associated with the site usages, would be classified as “inert” waste without any requirement for laboratory testing.

Waste requires pre-treatment prior to disposal at landfill and this may take the form of physical or chemical treatment to reduce hazards and/or waste volumes. The segregation and screening of waste soils into separate, and appropriately classified, waste streams would satisfy the pre-treatment criteria by ensuring that volumes of each waste category are minimised. Segregation of waste streams is also important to prevent materials being classified within a worse-case category and, therefore, incurring higher disposal costs. Mixing of different waste streams to dilute hazardous properties is not permitted.

It should be noted that the above assessment is provided in accordance with current waste disposal and environmental permitting legislation and guidance documents. However, individual landfills and other waste disposal facilities may have variances in their permit that differs from standard guidance. Waste facilities may also make decisions with respect to accepting waste on a commercial basis. Therefore, landfills or other waste facilities should be approached to confirm that they will accept waste materials prior to finalising waste disposal proposals.

14. RECOMMENDATIONS FOR SUPPLEMENTARY GROUND INVESTIGATIONS

Supplementary ground investigation is recommended when suitable access is available. The scope of works should include boreholes taken to sufficient depth into competent strata to inform pile design and it would be prudent for such holes to be progressed once the development layout and height is finalised so that appropriate borehole locations and depths can be scheduled. It is also recommended that trial pits be undertaken at this time to further investigate the shallow ground conditions.

15. RECOMMENDED SUPERVISION AND MONITORING

In compliance with the requirements in BS EN 1997-1:2004 and BE EN 1997-2:2007, construction and workmanship of the engineering solutions recommended in this report shall be supervised. In particular, issues listed in Section 9.6 General Construction Advice shall be considered in the implementation of the works and design of any necessary temporary works set out in Section 10.

In relation to the foundation solution(s) and ground floor slab recommendations in Section 9, the following supervision and monitoring is recommended.

- Verification testing required for piled foundations (in compliance with the Specification for the piling works), if applicable.

16. SUMMARY

It is proposed to develop a site at 76 - 78 High Street, Tonbridge, Kent for residential purposes. The site is currently occupied by a commercial property and a car park. It is understood that the proposed development will comprise a four-storey block of apartments together with car parking and managed soft landscaping. Occupants of the apartments will be of retirement age.

Ground conditions at the site comprise a thickness of Made Ground materials, typically to around 1.0 m depth but a deeper area to 2.4 m depth was recorded, underlain by soft consistency, low strength, sandy, gravelly clay Alluvium deposits. Medium dense sand and gravel Alluvium deposits were typically encountered below 4 m depth. Groundwater was recorded at 1.5 m depth.

The ground investigation has identified concentrations of substances that exceed the human health assessment criteria for the proposed development type. It is recommended, therefore, that allowance be made to import and place a clean cover capping layer within proposed managed landscaping areas. No adverse risks to controlled waters have been identified and the proposed development should not be constrained by issues relating to ground gas.

Based on the recorded ground conditions, it is considered that the superficial Alluvium deposits are too weak and compressible to be suitable as founding strata for the structural loads anticipated for the proposed building. Excavations through these horizons, and into the lower gravel horizons, are likely to encounter significant groundwater ingresses. On this basis, it is considered that a conventional strip or trench fill foundation solution is unlikely to be suitable for the proposed development. Therefore, it is recommended that an allowance be made for a piled foundation solution and CFA piles are likely to be appropriate. It is recommended that an allowance be made for suspended ground floor slabs.

Based on the recorded ground conditions, comprising low permeability clays and shallow groundwater, soakaway drainage is effectively precluded for the proposed development. It would be prudent to identify an alternative drainage solution at this stage.

It is recommended that a supplementary ground investigation be undertaken at the site when suitable access is available. The scope of works should include deep boreholes to inform a detailed pile design.

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GENERAL NOTES

1. This report is provided in the context of the stated development proposals and should not be used in a different context.
2. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
3. Any borehole data from the British Geological Survey sources are included on the following basis: "The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation.
4. Where any data supplied by the Client or by other external sources, including previous site investigation data, have been used it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Crossfield Consulting Limited for inaccuracies within the data supplied by others.
5. Exploratory hole locations provided in the report are generally established by tape measurement from existing features or boundaries. Hole locations are not accurately surveyed and ground levels at these locations are not obtained unless specifically requested.
6. Any assessments made in this report are based on the ground conditions indicated by the trial pits and/or boreholes, together with the results of any field or laboratory testing undertaken and, where appropriate, other relevant site data which may have been obtained for the site. Variations in ground conditions may occur between exploratory hole locations and there may be special conditions appertaining to the site which have not been revealed by the investigation and which have not been taken into account in the report. The assessment may be subject to amendment in the light of additional information becoming available.
7. The report is provided for the sole use by the Client or its assignees and is confidential to the Client's professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client or its assignees.
8. New information, improved practices and legislation may necessitate an alteration to the report in whole, or in part, after its submission. Therefore with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to Crossfield Consulting Limited for re-assessment and, if necessary, re-appraisal.

TABLES

TABLE 1

CONCEPTUAL SITE MODEL

Potential Contaminant Source	Potential Pathway	Receptors and Assessed Contaminant Linkage
<p>Solids <i>On-Site:</i> <i>Toxic heavy metals:</i> Potential minor source if ashy Made Ground is present beneath the site. <i>Phytotoxic metals:</i> Potential minor source if ashy Made Ground is present beneath the site. <i>Polyaromatic hydrocarbons:</i> Potential minor source if ashy Made Ground is present beneath the site. <i>Polychlorinated Biphenyls:</i> Potential minor source associated with the electricity substation situated within the northeastern corner of the site. <i>Asbestos:</i> Potential source associated with fill materials.</p> <p><i>Off-Site:</i> No source identified.</p> <p>Liquids No realistic source identified by Desk Study information.</p> <p>Ground Gases <i>Landfill gas:</i> No source identified. <i>Made Ground:</i> No evidence to suggest the presence of putrescible materials. <i>Radon gas:</i> No significant source identified.</p>	<p>Movement of Solids Dermal and oral exposure pathways (including air-borne migration) are present during construction phase but will not be present following development due to building and hardstanding effective barriers. Limited landscaping areas after development represent possible dust exposure pathways.</p> <p>Release into Liquid Phase Metal solubility generally low at typical soil temperature and pH. Low potential for mobile and soluble hydrocarbons to remain at the site.</p> <p>Movement of Liquids Not applicable – no valid source.</p> <p>Movement of Gases Not applicable – no significant source identified.</p>	<p>Human Health <i>End Users:</i> Contaminant Linkage Possible <i>Groundworkers:</i> Contaminant Linkage Possible <i>Neighbouring Properties:</i> Contaminant Linkage Possible</p> <p>Buried Structures & Services <i>Buried concrete:</i> No Contaminant Linkage <i>Potable water pipes:</i> No Contaminant Linkage</p> <p>Landscaped Areas Contaminant Linkage Possible</p> <p>Controlled Waters <i>Groundwater:</i> Secondary A Aquifer, groundwater source protection zone 1 Inner catchment – No Contaminant Linkage <i>Surface Water:</i> River Medway 42 m northwest of the site (rated moderate condition) – No Contaminant Linkage</p> <p>Human Health (Ground Gases) No Contaminant Linkage</p>

NOTES

- The above conceptual model is based on CIRIA C552 (2001), Environment Agency LCRM (2020) and BS 10175:2011+A2:2017.

TABLE 2
(Page 1 of 2)

SUMMARY OF ANALYTICAL TEST DATA: SOILS
RISKS TO HUMAN HEALTH

Determinand	Units	No of Tests	Concentration (mg/kg)		Generic Assessment Criteria (mg/kg) Residential Without Plant Uptake		Category 4 Screening Level (mg/kg) Residential Without Plant Uptake	
			Min	Max	Value	No>GAC	Value	No>C4SL
Arsenic	mg/kg	5	16	71	40 ¹	2	40 ⁴	2
Cadmium	mg/kg	5	<0.2	<0.2	85 ¹	0	149 ⁴	0
Chromium (Total) ⁵	mg/kg	5	18	25	910 ¹	0	-	-
Chromium (VI)	mg/kg	5	<4.0	<4.0	6 ¹	0	21 ⁴	0
Lead	mg/kg	5	41	1100	140 ²	4	310 ⁴	4
Inorganic Mercury	mg/kg	5	<0.3	3.5	56 ¹	0	-	-
Nickel	mg/kg	5	24	44	180 ¹	0	-	-
Selenium	mg/kg	5	<1.0	<1.0	430 ¹	0	-	-
Copper	mg/kg	5	29	75	7100 ¹	0	-	-
Zinc	mg/kg	5	58	500	40,000 ¹	0	-	-
Boron	mg/kg	5	1.1	7.4	11,000 ¹	0	-	-
Phenols	mg/kg	5	<1.0	<1.0	440 ¹	0	-	-
pH	-	12	6.3	9.4	-	-	-	-
Total Organic Carbon	%	5	1.3	3.5	-	-	-	-
Petroleum Hydrocarbons								
Aliphatics C ₅ – C ₆	mg/kg	5	<0.001	<0.001	78 ¹	0	-	-
Aliphatics C ₆ – C ₈	mg/kg	5	<0.001	<0.001	230 ¹	0	-	-
Aliphatics C ₈ – C ₁₀	mg/kg	5	<0.001	<0.001	65 ¹	0	-	-
Aliphatics C ₁₀ – C ₁₂	mg/kg	5	<1.0	3.2	330 ¹	0	-	-
Aliphatics C ₁₂ – C ₁₆	mg/kg	5	<2.0	21	2400 ¹	0	-	-
Aliphatics C ₁₆ – C ₃₅	mg/kg	5	35	296	92,000 ¹	0	-	-
Aromatics C ₆ – C ₇	mg/kg	5	<0.001	<0.001	690 ¹	0	-	-
Aromatics C ₇ – C ₈	mg/kg	5	<0.001	<0.001	1800 ¹	0	-	-
Aromatics C ₈ – C ₁₀	mg/kg	5	<0.001	<0.001	110 ¹	0	-	-
Aromatics C ₁₀ – C ₁₂	mg/kg	5	<1.0	2.6	590 ¹	0	-	-
Aromatics C ₁₂ – C ₁₆	mg/kg	5	<2.0	24	2300 ¹	0	-	-
Aromatics C ₁₆ – C ₂₁	mg/kg	5	<10	200	1900 ¹	0	-	-
Aromatics C ₂₁ – C ₃₅	mg/kg	5	47	700	1900 ¹	0	-	-
VOCs								
Benzene	mg/kg	5	<1.0	<1.0	0.70 ¹	0	1.6 ⁴	0
Toluene	mg/kg	5	<1.0	<1.0	1900 ¹	0	-	-
Ethylbenzene	mg/kg	5	<1.0	<1.0	190 ¹	0	-	-
Xylene	mg/kg	5	<1.0	<1.0	180 ¹	0	-	-
MTBE	mg/kg	5	<1.0	<1.0	120 ³	0	-	-

TABLE 2
(Page 2 of 2)

Determinand	Units	No of Tests	Concentration (mg/kg)		Generic Assessment Criteria (mg/kg) Residential Without Plant Uptake		Category 4 Screening Level (mg/kg) Residential Without Plant Uptake	
			Min	Max	Value	No>GAC	Value	No>C4SL
PAHs								
Naphthalene	mg/kg	5	<0.05	1.4	5.6 ¹	0	-	-
Acenaphthylene	mg/kg	5	<0.05	8.8	4600 ¹	0	-	-
Acenaphthene	mg/kg	5	<0.05	2.2	4700 ¹	0	-	-
Fluorene	mg/kg	5	<0.05	3.4	1600 ¹	0	-	-
Phenanthrene	mg/kg	5	0.28	40	1500 ¹	0	-	-
Anthracene	mg/kg	5	<0.05	11	35,000 ¹	0	-	-
Fluoranthene	mg/kg	5	0.58	0.58	1600 ¹	0	-	-
Pyrene	mg/kg	5	0.62	70	3800 ¹	0	-	-
Benzo(a)anthracene	mg/kg	5	0.27	40	14 ¹	1	-	-
Chrysene	mg/kg	5	0.29	31	31 ¹	0	-	-
Benzo(b)fluoranthene	mg/kg	5	0.61	48	4.0 ¹	4	-	-
Benzo(k)fluoranthene	mg/kg	5	0.21	18	110 ¹	0	-	-
Benzo(a)pyrene	mg/kg	5	0.60	45	3.2 ¹	4	5.3 ⁴	3
Indeno(123cd)pyrene	mg/kg	5	0.31	19	46 ¹	0	-	-
Dibenzo(ah)anthracene	mg/kg	5	<0.05	5.5	0.32 ¹	4	-	-
Benzo(ghi)perylene	mg/kg	5	0.44	21	360 ¹	0	-	-

NOTES

1. Suitable for Use Level (S4UL) published by LQM/CIEH, 2015 – Residential Without Plant Uptake landuse. S4UL assumptions comprise 2.5% soil organic matter, soil pH of 7 and sandy loam soil type. S4ULs are copyright © Land Quality Management Limited reproduced with permission; Publication Number S4UL3133.
2. Generic assessment criteria (GAC) for lead calculated using CLEA Software version 1.06 (Environment Agency, 2009) with a lead intake based on a target blood level of 3.5 µg/dL. Other model assumptions comprise 2.5% soil organic matter, soil pH of 7 and sandy loam soil type.
3. Soil GAC for Human Health Risk Assessment produced by CL:AIRE (2010) – Residential Without Plant Uptake. Assumption of 2.5% soil organic matter.
4. Category 4 Screening Level (C4SL), Department for Environment Food and Rural Affairs (March 2014) – calculated for 2.5% SOM using the CLEA Model v1.071
5. In the absence of desk study or historical map evidence indicating a potential source of chromium (VI) usage at or in the near vicinity of the site (and confirmed by laboratory testing), total chromium concentrations have been compared to the GAC for chromium (III).
6. For determinands that exceed the GAC and C4SL, site specific assessment criteria are derived in Appendix IV

TABLE 3

ASSESSMENT OF POLLUTANT LINKAGES

NOTES:

1. Pollutant linkage validity assessed following qualitative or semi-quantitative risk assessment.
2. Pollutant linkage assessed following detailed quantitative risk assessment or assuming the recommended remediation or mitigation measures are in place

		Consequence (C)			
		Severe	Medium	Mild	Minor
Probability (P)	High likelihood (HL)	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely (L)	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low likelihood (LL)	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely (UL)	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

All terminology in accordance with the definitions provided in CIRIA C552 (2001)

Pollutant Linkage			Assessment of Pollutant Linkage following Ground Investigation	Pollutant Linkage Valid? ¹	Risk Rating			Quantitative Risk Assessment	Recommended Remediation/Mitigation (See Section 7 for further details)	Recommended Work Verified?	Pollutant Linkage Valid? ²
Source	Pathway	Receptor			C	P	Risk				
Toxic metals, PAHs, relic TPHs Asbestos	Inhalation (Dust) Ingestion (Dust) Dermal contact (Dust)	End users	Arsenic, lead and concentrations of certain PAHs locally recorded above GAC criteria No asbestos detected.	Yes n/a	Med n/a	LL n/a	Mod/Low n/a	Yes, site specific assessment criteria prepared using CLEA Model v1.07 which confirms benzo(b)fluoranthene and dibenzo(ah)anthracene concentrations remain above the SSAC values for the proposed development.	It is recommended that allowance to be made for a clean cover capping layer in proposed limited landscaping areas to break the potential pollutant linkage. Site is currently devoid of topsoil.	To be confirmed during construction phase	No
Toxic metals, PAHs, relic TPHs Asbestos	Dermal contact, Ingestion, Inhalation	Construction workers	All tests below concentrations considered to be a short-term (acute) risk. No further assessment required No asbestos detected.	No n/a	n/a n/a	n/a n/a	n/a n/a	Not applicable	Not required but standard personal protective equipment is recommended as good practice. Conventional dust control and soil dampening to be used during construction.	Not applicable	No
Toxic metals, PAHs, relic TPHs Asbestos	Inhalation (Dust) Ingestion (Dust) Dermal contact (Dust)	Neighbours/general public	Arsenic, lead and concentrations of certain PAHs locally recorded above GAC criteria No asbestos detected.	Yes n/a	Med n/a	UL n/a	Low n/a	Not applicable	Conventional dust control and soil dampening to be used during construction.	To be confirmed during construction phase	No
Phytotoxic metals	Plant uptake	Landscape plantings	Phytotoxic metals (zinc) is present at concentrations considered a risk to healthy plant growth based on BS 3882:2015.	Yes	Mild	LL	Low	Not applicable	The site is predominantly devoid of topsoil, such that, a thickness of imported topsoil will be required to act as a growing medium for the proposed plants within limited landscaping areas (the capping soils required for human health protection should be sufficient).	To be confirmed during construction phase	No

FIGURES

FIGURE 1

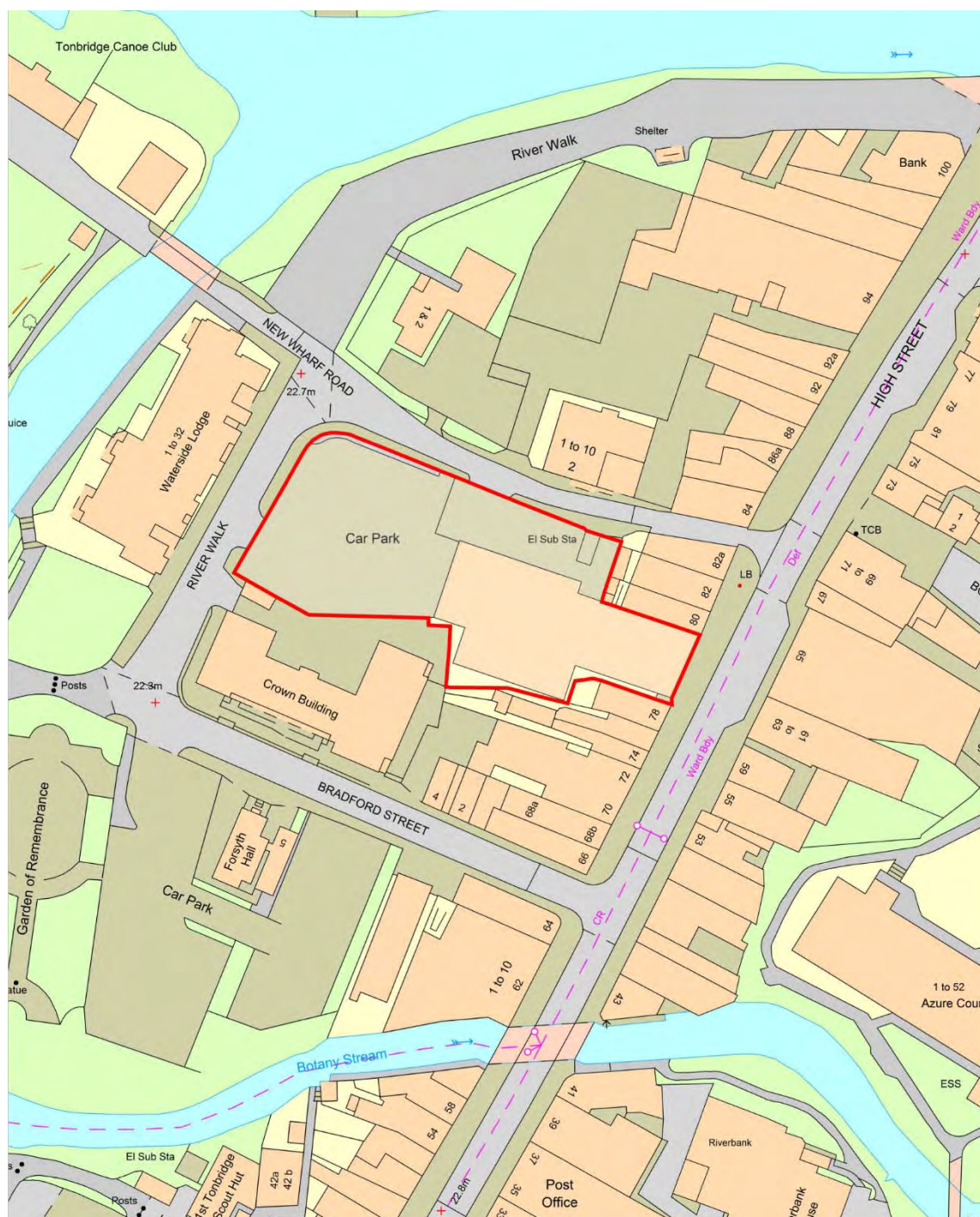


SITE LOCATION PLAN

Scale 1: 50,000

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FIGURE 2

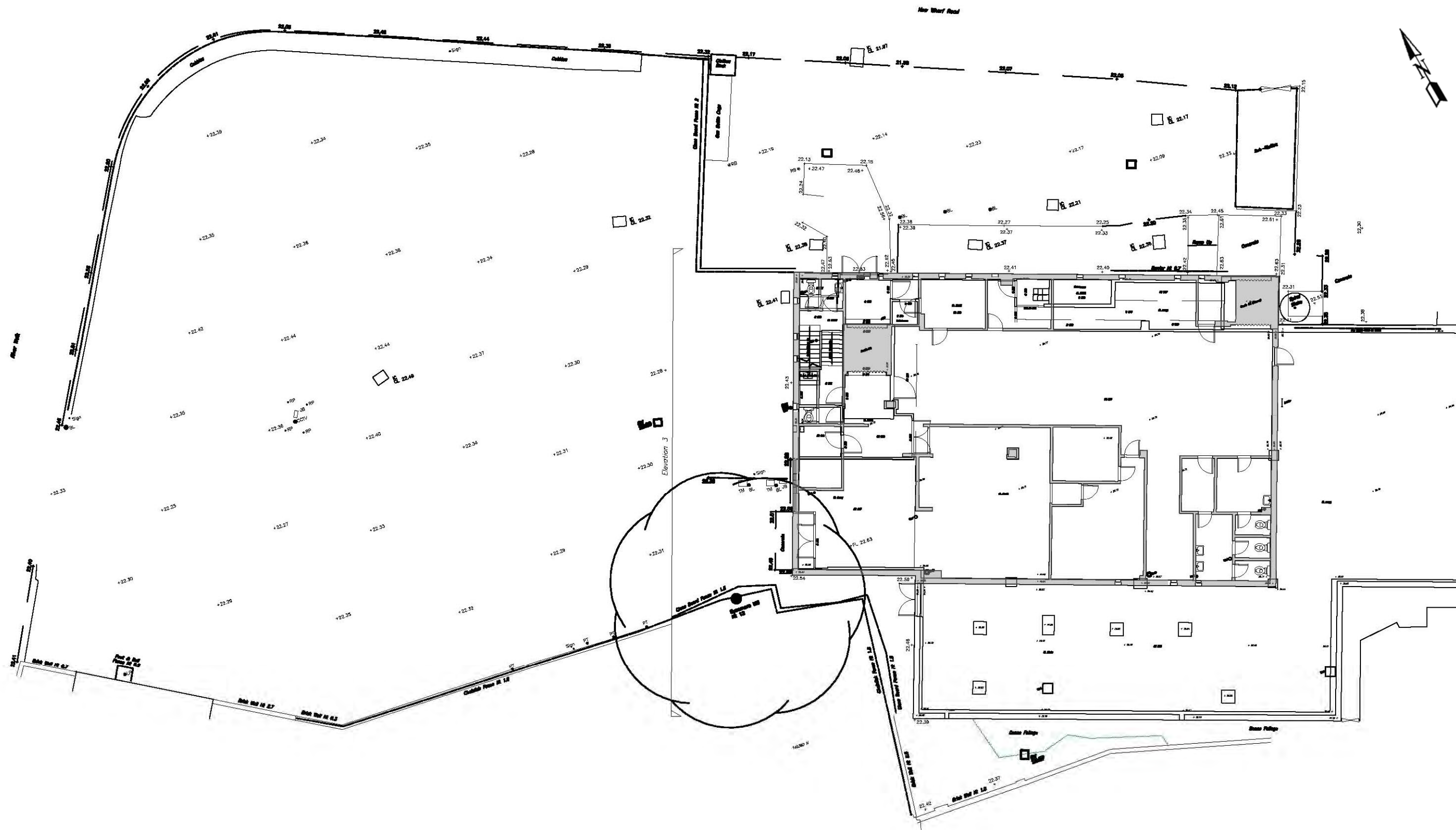


SITE PLAN

Scale 1:1250

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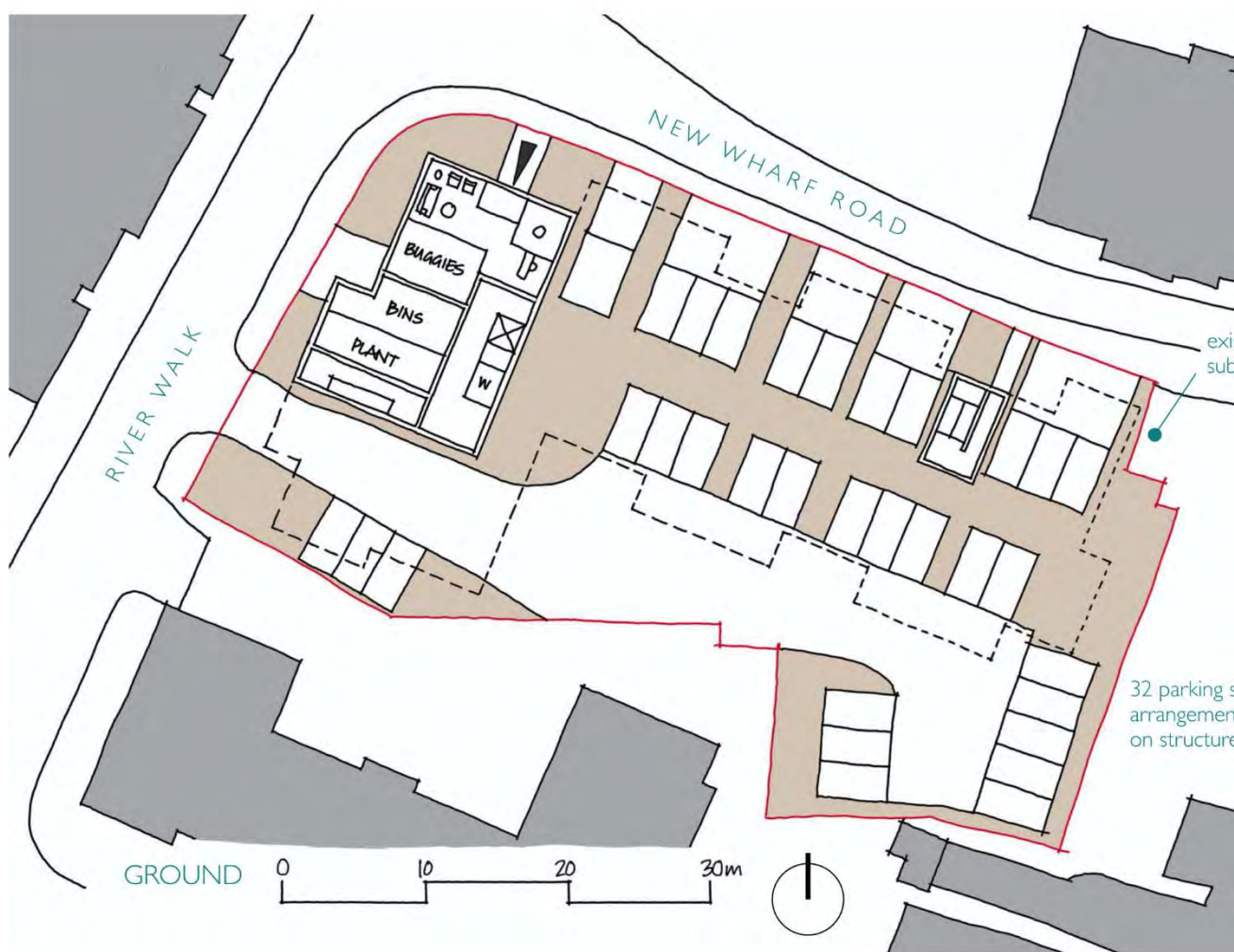
FIGURE 3



TOPOGRAPHICAL SURVEY
Scale 1:200

Based on Jaspar Group Drawing No. JM065_PL_0100, dated 23.03.2020

FIGURE 4



PROPOSED DEVELOPMENT PLAN

Scale 1:500

Reproduced from Drawing No. LSE0025-9147-02 B by Rosemary White Design

APPENDIX I

Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: County Series

Map date: 1867

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1867
Revised 1867
Edition N/A
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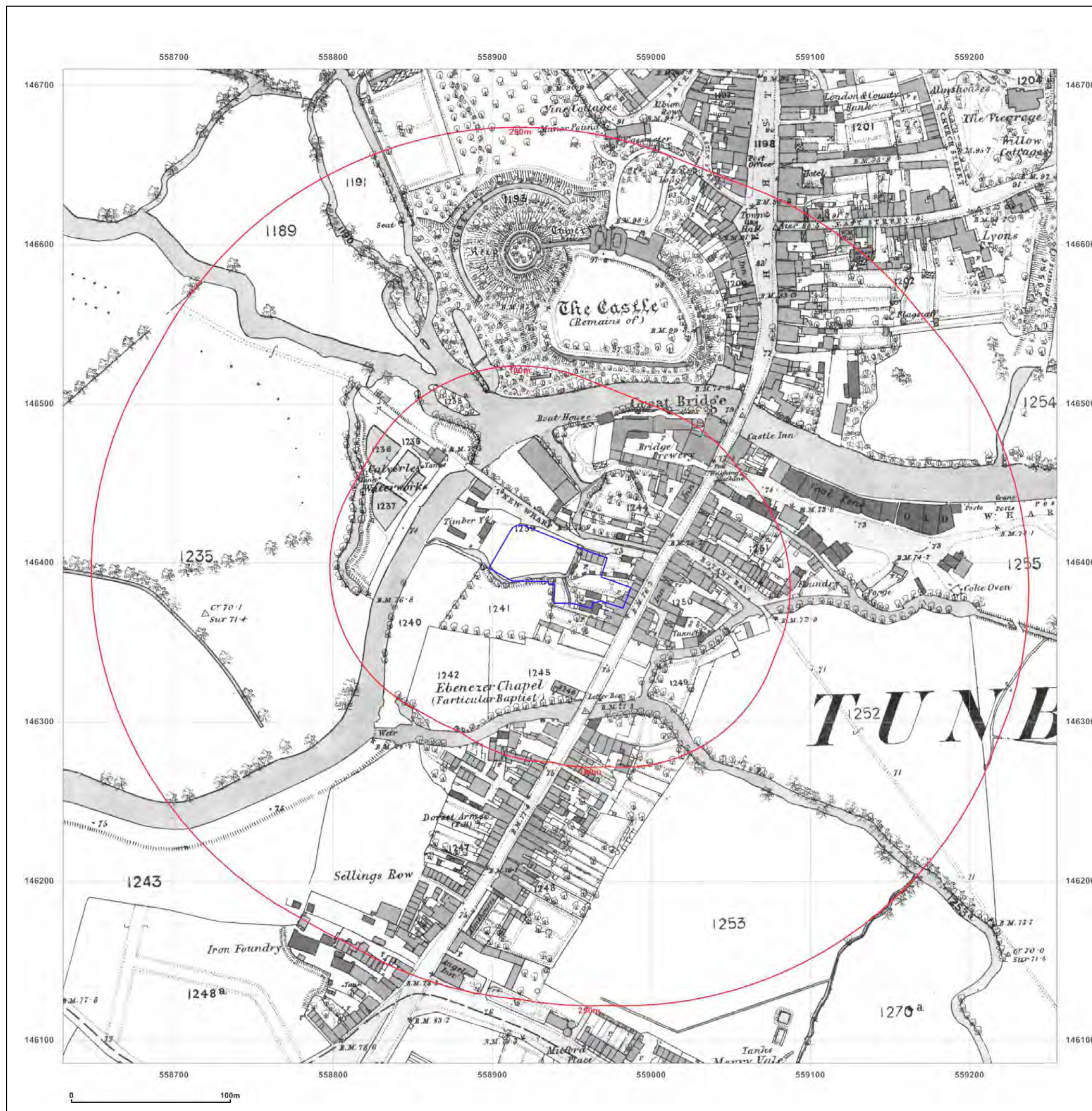


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Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: County Series

Map date: 1897

Scale: 1:2,500

Printed at: 1:2,500



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Site Details:

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High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



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Site Details:

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Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: County Series

Map date: 1936

Scale: 1:2,500

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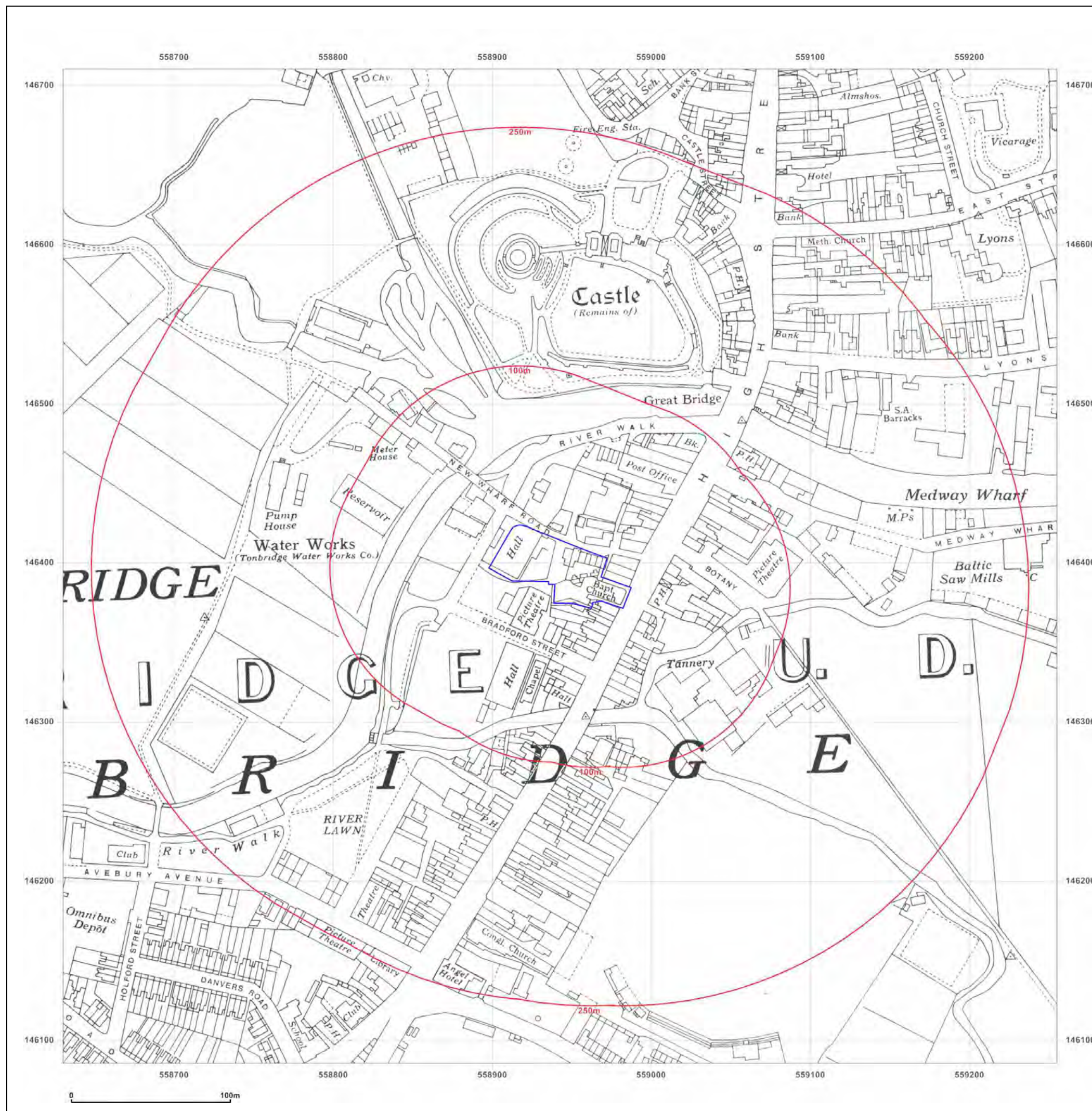


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Site Details:

CCL03372 - Tonbridge,76 - 78
High Street,Tonbridge,
Kent,TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: National Grid

Map date: 1959

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1951

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1959
Levelled 1951

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1951

Surveyed 1959
Revised 1959
Edition N/A
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Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: National Grid

Map date: 1967

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1968
Revised 1968
Edition N/A
Copyright 1969
Levelled 1951



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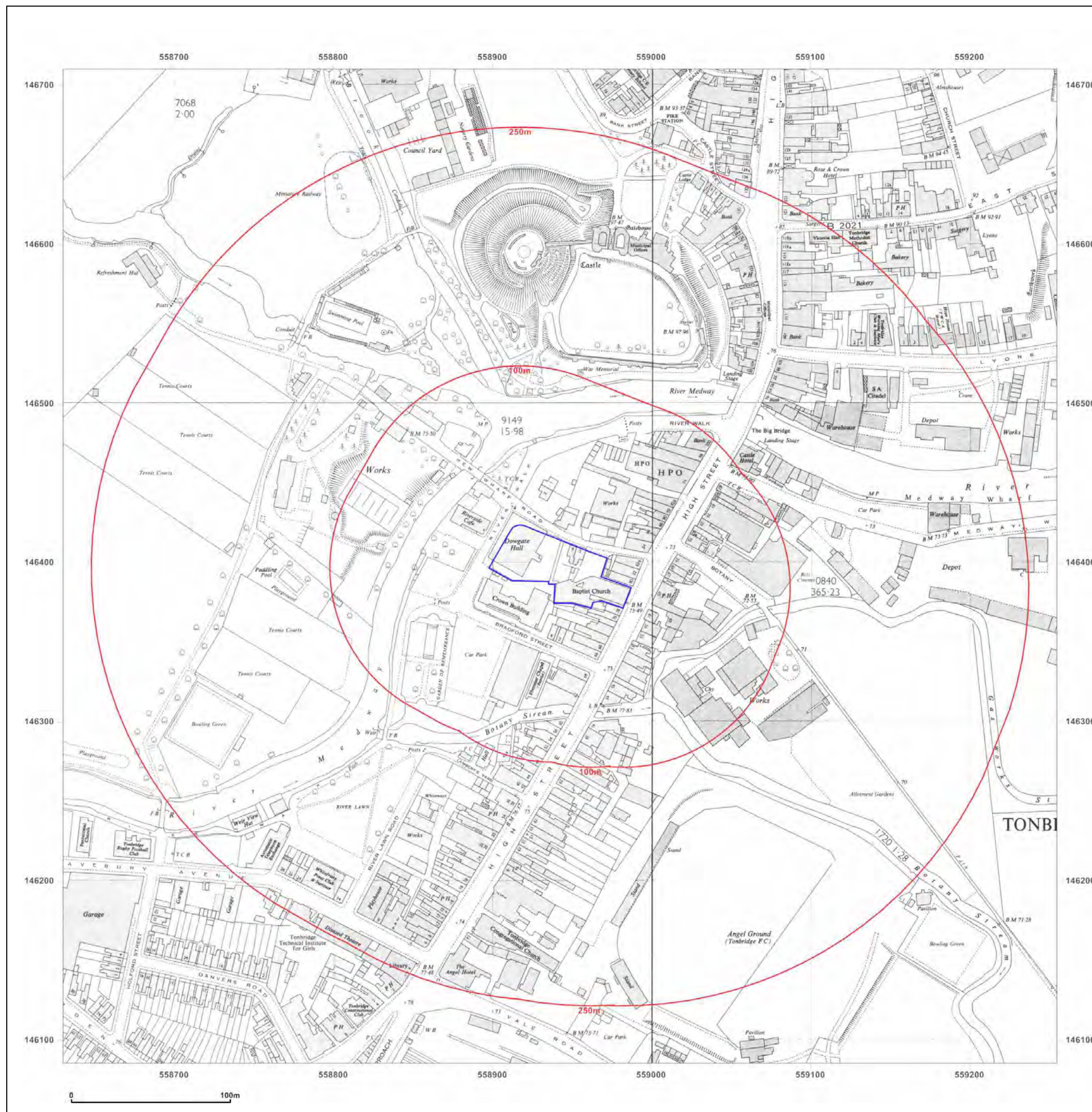


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Production date: 26 October 2020

Map legend available at:
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Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: National Grid

Map date: 1972-1974

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1958
Revised 1972
Edition N/A
Copyright 1973
Levelled 1951

Surveyed 1959
Revised 1972
Edition N/A
Copyright 1973
Levelled 1951

Surveyed 1958
Revised 1971
Edition N/A
Copyright 1972
Levelled 1951

Surveyed 1959
Revised 1973
Edition N/A
Copyright 1974
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Site Details:

CCL03372 - Tonbridge,76 - 78
High Street,Tonbridge,
Kent,TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: National Grid

Map date: 1989-1990

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973
Revised 1989
Edition N/A
Copyright 1989
Levelled 1973

Surveyed 1973
Revised 1989
Edition N/A
Copyright 1989
Levelled 1973

Surveyed 1973
Revised 1990
Edition N/A
Copyright 1990
Levelled 1973

Surveyed 1959
Revised 1988
Edition N/A
Copyright 1989
Levelled N/A



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Production date: 26 October 2020

Map legend available at:
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Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

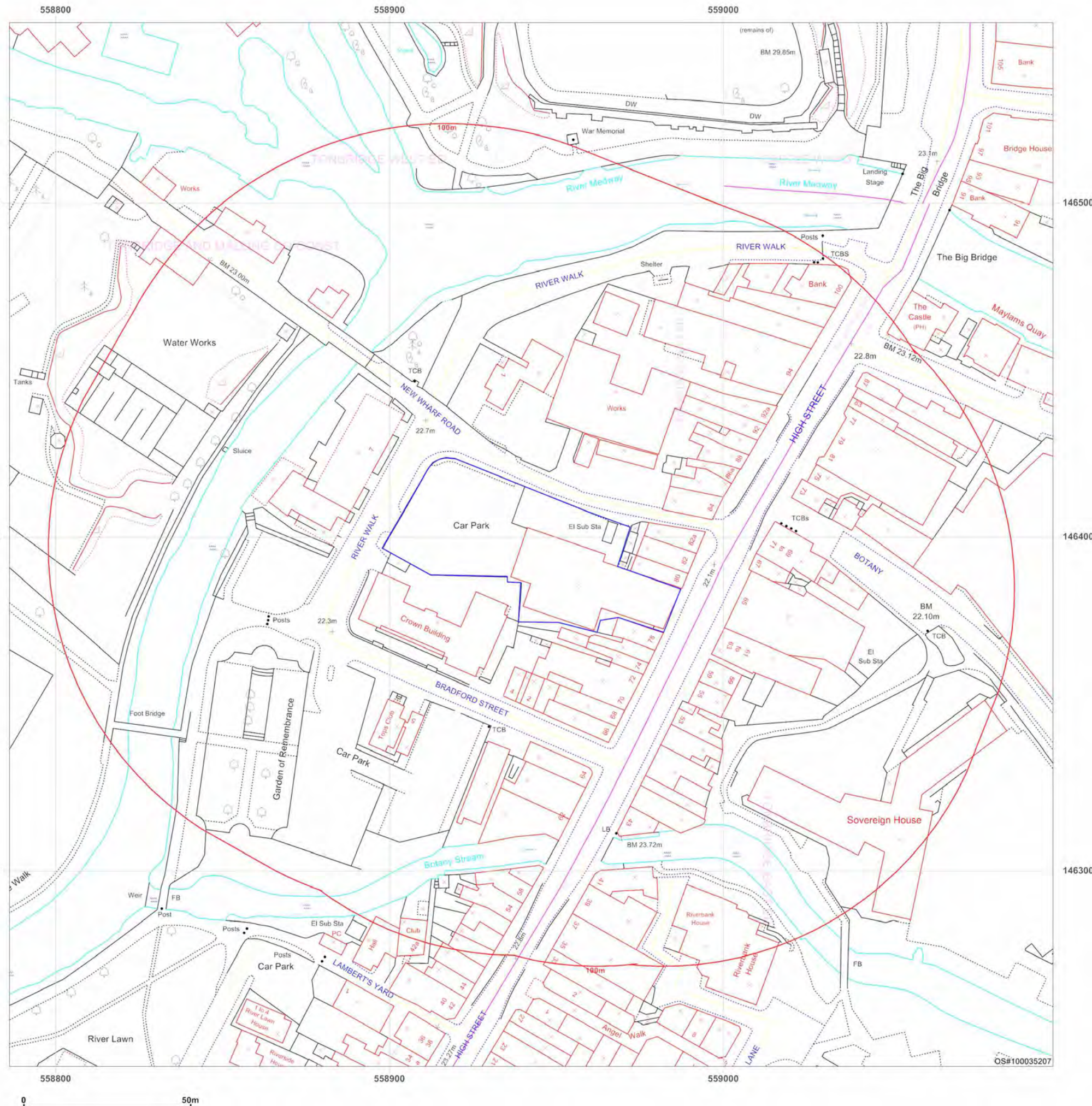
Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Production date: 26 October 2020

Map legend available at:
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Site Details:

CCL03372 - Tonbridge, 76 - 78
High Street, Tonbridge,
Kent, TN9 1EE

Client Ref: EMS_642874_853691
Report Ref: EMS-642874_853691
Grid Ref: 558942, 146398

Map Name: National Grid

Map date: 2020

Scale: 1:10,000

Printed at: 1:10,000



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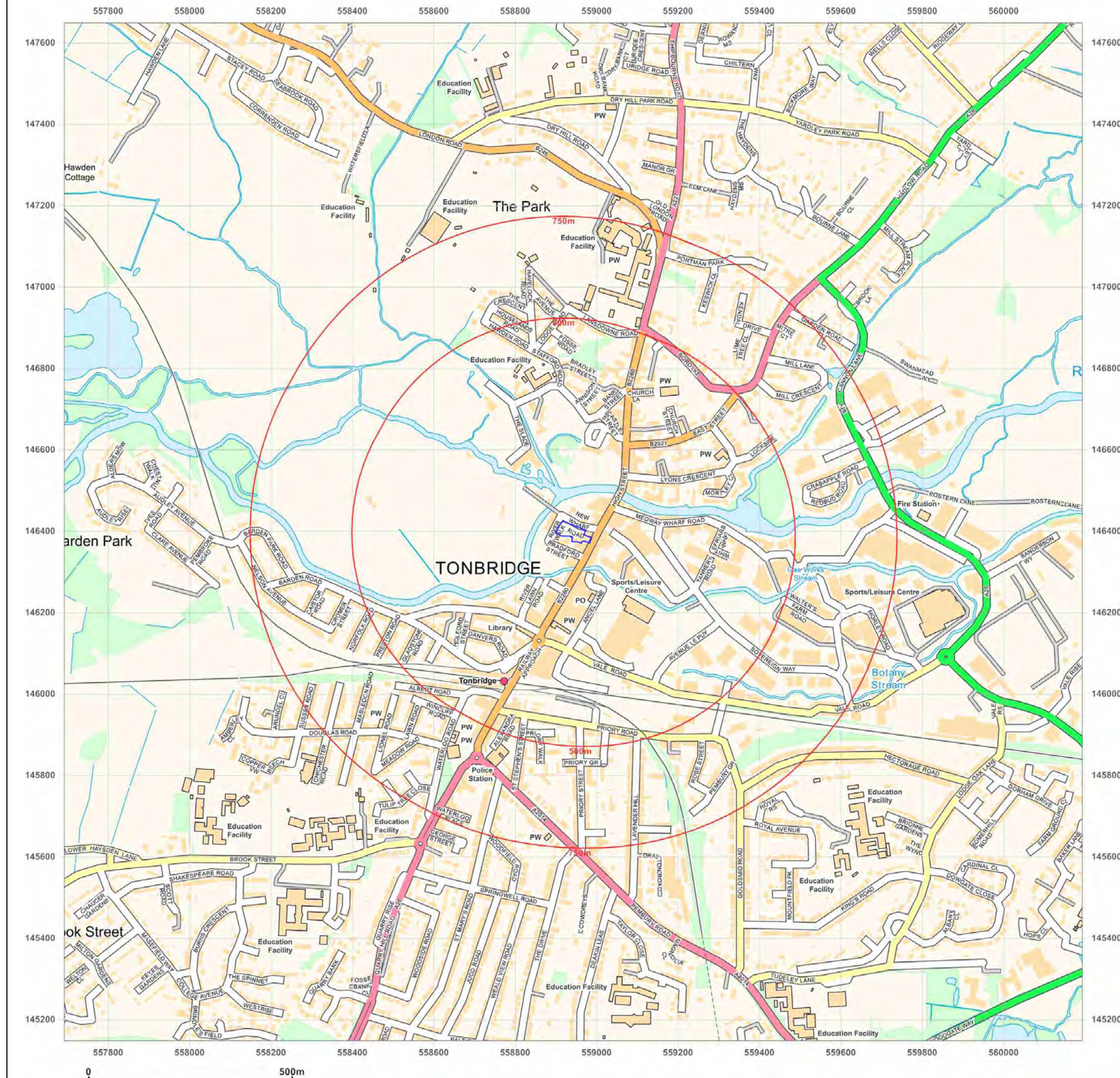


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Production date: 26 October 2020

Map legend available at:
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APPENDIX II

APPENDIX II – DESK STUDY INFORMATION

Groundsure Enviro+Geo Insight Databases

An Enviro+Geo Insight Report has been obtained from Groundsure regarding the site and surrounding area. This includes reference to databases from a variety of sources and include sentries that cover Environment Agency permits, waste sites, hazardous substances, geological data, industrial landuse, groundwater vulnerability, source protection zones and floodplains.

Also included is reference to databases that cover geological data, including information regarding mining/mineral extraction, natural cavities and landslips.

A report is included in this Appendix for a search radius of up to 1 km around the site and this report includes a summary table of the search results.

British Geological Survey

Records of Wells and Exploratory Holes close to the site, held by the British Geological Survey National Geological Records Centre, are presented in this Appendix. The locations of these holes are identified within the GroundSure GeoInsight Report. The records are reproduced under the Open Government Licence, available for viewing at <http://www.nationalarchives.gov.uk/doc/open-government-licence>.

CCL03372 - Tonbridge, 76 - 78 High Street, Tonbridge, Kent, TN9 1EE,

Order Details

Date: 26/10/2020
Your ref: EMS_642874_853692
Our Ref: EMS-642874_853692
Client: emapsite

Site Details

Location: 558940 146396
Area: 0.24 ha
Authority: [Tonbridge and Malling Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	4	4	19	85	-
19	1.2	Historical tanks	0	0	15	36	-
21	1.3	Historical energy features	1	0	7	23	-
22	1.4	Historical petrol stations	0	0	1	0	-
23	1.5	Historical garages	0	0	3	24	-
24	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
25	2.1	Historical industrial land uses	4	9	33	126	-
32	2.2	Historical tanks	0	0	22	53	-
35	2.3	Historical energy features	4	0	15	43	-
37	2.4	Historical petrol stations	0	0	2	0	-
37	2.5	Historical garages	0	0	4	39	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
40	3.1	Active or recent landfill	0	0	0	0	-
40	3.2	Historical landfill (BGS records)	0	0	0	0	-
41	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
41	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
41	3.5	Historical waste sites	0	0	0	0	-
41	3.6	Licensed waste sites	0	0	0	2	-
42	3.7	Waste exemptions	0	0	6	10	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
45	4.1	Recent industrial land uses	1	0	31	-	-
48	4.2	Current or recent petrol stations	0	0	0	1	-
48	4.3	Electricity cables	0	0	0	0	-
48	4.4	Gas pipelines	0	0	0	0	-
48	4.5	Sites determined as Contaminated Land	0	0	0	0	-



48	4.6	<u>Control of Major Accident Hazards (COMAH)</u>	0	0	0	1	-
49	4.7	Regulated explosive sites	0	0	0	0	-
49	4.8	Hazardous substance storage/usage	0	0	0	0	-
49	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
49	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
50	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	0	4	-
50	4.12	Radioactive Substance Authorisations	0	0	0	0	-
50	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	5	12	-
53	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
54	4.15	Pollutant release to public sewer	0	0	0	0	-
54	4.16	List 1 Dangerous Substances	0	0	0	0	-
54	4.17	List 2 Dangerous Substances	0	0	0	0	-
54	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	1	7	12	-
56	4.19	Pollution inventory substances	0	0	0	0	-
57	4.20	Pollution inventory waste transfers	0	0	0	0	-
57	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
58	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
60	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
61	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
62	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
62	5.5	Groundwater vulnerability- local information	None (within 0m)				
63	5.6	<u>Groundwater abstractions</u>	0	0	19	0	9
70	5.7	<u>Surface water abstractions</u>	0	1	1	0	9
73	5.8	<u>Potable abstractions</u>	0	0	15	0	7
79	5.9	<u>Source Protection Zones</u>	1	1	0	0	-
79	5.10	<u>Source Protection Zones (confined aquifer)</u>	2	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
80	6.1	<u>Water Network (OS MasterMap)</u>	0	3	11	-	-

82	<u>6.2</u>	<u>Surface water features</u>	0	1	4	-	-
82	<u>6.3</u>	<u>WFD Surface water body catchments</u>	1	-	-	-	-
82	<u>6.4</u>	<u>WFD Surface water bodies</u>	0	1	0	-	-
83	<u>6.5</u>	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
84	<u>7.1</u>	<u>Risk of Flooding from Rivers and Sea (RoFRaS)</u>	High (within 50m)				
85	<u>7.2</u>	<u>Historical Flood Events</u>	3	3	1	-	-
85	<u>7.3</u>	<u>Flood Defences</u>	0	2	1	-	-
86	<u>7.4</u>	<u>Areas Benefiting from Flood Defences</u>	1	3	5	-	-
86	7.5	Flood Storage Areas	0	0	0	-	-
87	<u>7.6</u>	<u>Flood Zone 2</u>	Identified (within 50m)				
88	<u>7.7</u>	<u>Flood Zone 3</u>	Identified (within 50m)				
Page	Section	Surface water flooding					
89	<u>8.1</u>	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
91	<u>9.1</u>	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
92	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
93	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
93	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
93	10.4	Special Protection Areas (SPA)	0	0	0	0	0
93	10.5	National Nature Reserves (NNR)	0	0	0	0	0
94	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
94	<u>10.7</u>	<u>Designated Ancient Woodland</u>	0	0	0	0	14
95	10.8	Biosphere Reserves	0	0	0	0	0
95	10.9	Forest Parks	0	0	0	0	0
95	10.10	Marine Conservation Zones	0	0	0	0	0
95	<u>10.11</u>	<u>Green Belt</u>	0	0	1	0	2
96	10.12	Proposed Ramsar sites	0	0	0	0	0



96	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
96	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
96	10.15	Nitrate Sensitive Areas	0	0	0	0	0
97	10.16	<u>Nitrate Vulnerable Zones</u>	0	0	0	0	2
98	10.17	SSSI Impact Risk Zones	0	-	-	-	-
98	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
99	11.1	World Heritage Sites	0	0	0	-	-
100	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
100	11.3	National Parks	0	0	0	-	-
100	11.4	<u>Listed Buildings</u>	0	1	4	-	-
101	11.5	<u>Conservation Areas</u>	1	0	0	-	-
101	11.6	<u>Scheduled Ancient Monuments</u>	0	0	1	-	-
101	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
103	12.1	<u>Agricultural Land Classification</u>	Grade 4 (within 250m)				
104	12.2	Open Access Land	0	0	0	-	-
104	12.3	Tree Felling Licences	0	0	0	-	-
104	12.4	Environmental Stewardship Schemes	0	0	0	-	-
104	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
105	13.1	Priority Habitat Inventory	0	0	0	-	-
105	13.2	Habitat Networks	0	0	0	-	-
105	13.3	Open Mosaic Habitat	0	0	0	-	-
105	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
106	14.1	<u>10k Availability</u>	Identified (within 500m)				
107	14.2	Artificial and made ground (10k)	0	0	0	0	-
108	14.3	<u>Superficial geology (10k)</u>	1	0	0	1	-

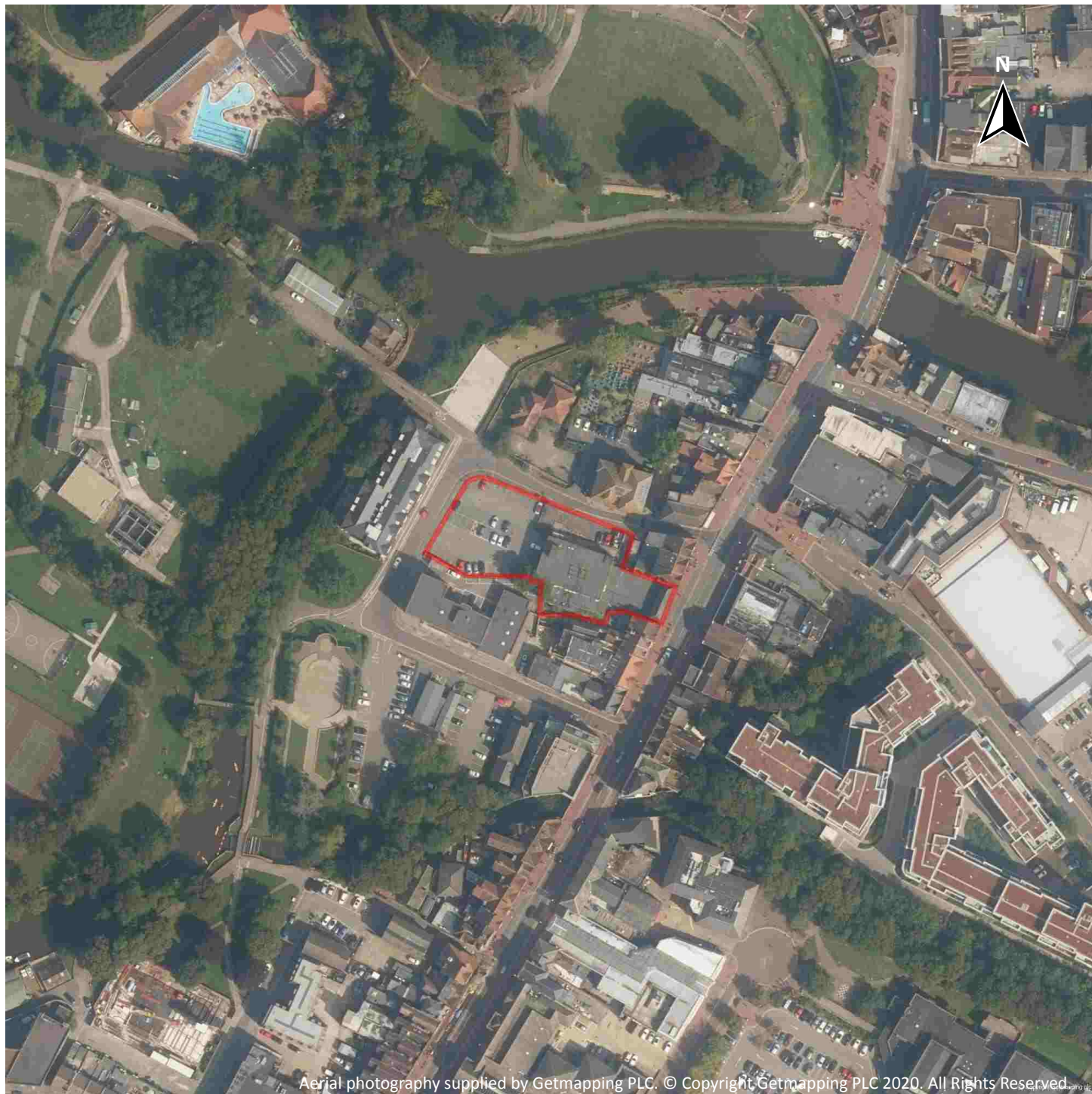


109	14.4	Landslip (10k)	0	0	0	0	-
110	14.5	<u>Bedrock geology (10k)</u>	1	2	0	1	-
111	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	1	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
112	15.1	<u>50k Availability</u>	Identified (within 500m)				
113	15.2	Artificial and made ground (50k)	0	0	0	0	-
113	15.3	Artificial ground permeability (50k)	0	0	-	-	-
114	15.4	<u>Superficial geology (50k)</u>	1	0	1	0	-
115	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
115	15.6	Landslip (50k)	0	0	0	0	-
115	15.7	Landslip permeability (50k)	None (within 50m)				
116	15.8	<u>Bedrock geology (50k)</u>	1	1	0	0	-
117	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
117	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	1	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
118	16.1	<u>BGS Boreholes</u>	0	0	20	-	-
Page	Section	Natural ground subsidence					
120	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
121	17.2	<u>Running sands</u>	Low (within 50m)				
122	17.3	<u>Compressible deposits</u>	Moderate (within 50m)				
123	17.4	<u>Collapsible deposits</u>	Negligible (within 50m)				
124	17.5	<u>Landslides</u>	Very low (within 50m)				
125	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
127	18.1	Natural cavities	0	0	0	0	-
128	18.2	BritPits	0	0	0	0	-
128	18.3	<u>Surface ground workings</u>	0	1	13	-	-
129	18.4	Underground workings	0	0	0	0	0
129	18.5	Historical Mineral Planning Areas	0	0	0	0	-



129	18.6	<u>Non-coal mining</u>	0	1	0	0	1
130	18.7	Mining cavities	0	0	0	0	0
130	18.8	JPB mining areas	None (within 0m)				
130	18.9	Coal mining	None (within 0m)				
130	18.10	Brine areas	None (within 0m)				
130	18.11	Gypsum areas	None (within 0m)				
131	18.12	Tin mining	None (within 0m)				
131	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
132	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
133	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	2	-	-	-
133	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
133	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
134	21.1	Underground railways (London)	0	0	0	-	-
134	21.2	Underground railways (Non-London)	0	0	0	-	-
135	21.3	Railway tunnels	0	0	0	-	-
135	21.4	<u>Historical railway and tunnel features</u>	0	0	4	-	-
135	21.5	Royal Mail tunnels	0	0	0	-	-
136	21.6	Historical railways	0	0	0	-	-
136	21.7	Railways	0	0	0	-	-
136	21.8	Crossrail 1	0	0	0	0	-
136	21.9	Crossrail 2	0	0	0	0	-
136	21.10	HS2	0	0	0	0	-

Recent aerial photograph

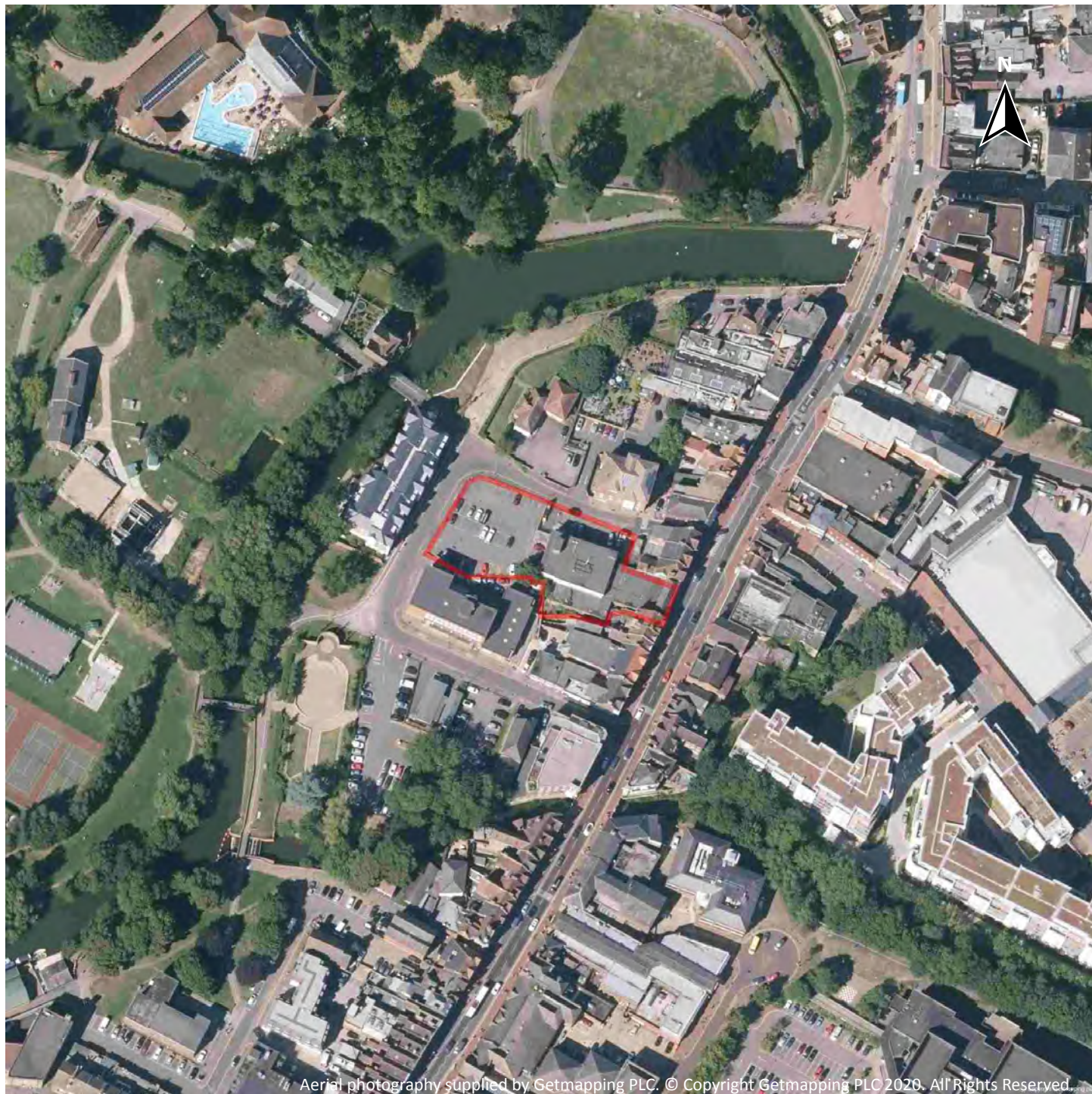


Capture Date: 24/08/2019

Site Area: 0.24ha



Recent site history - 2016 aerial photograph

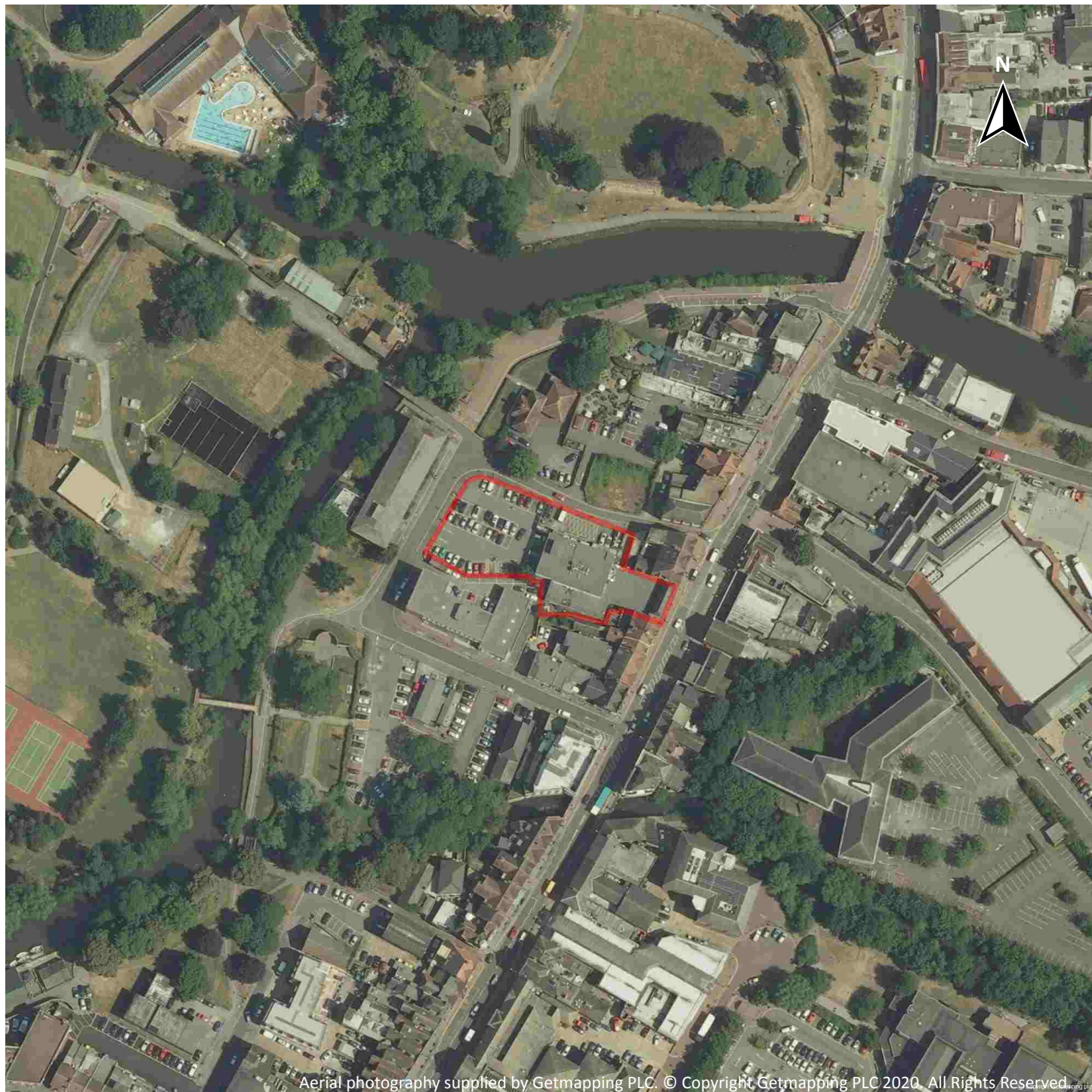


Capture Date: 23/08/2016

Site Area: 0.24ha



Recent site history - 2009 aerial photograph

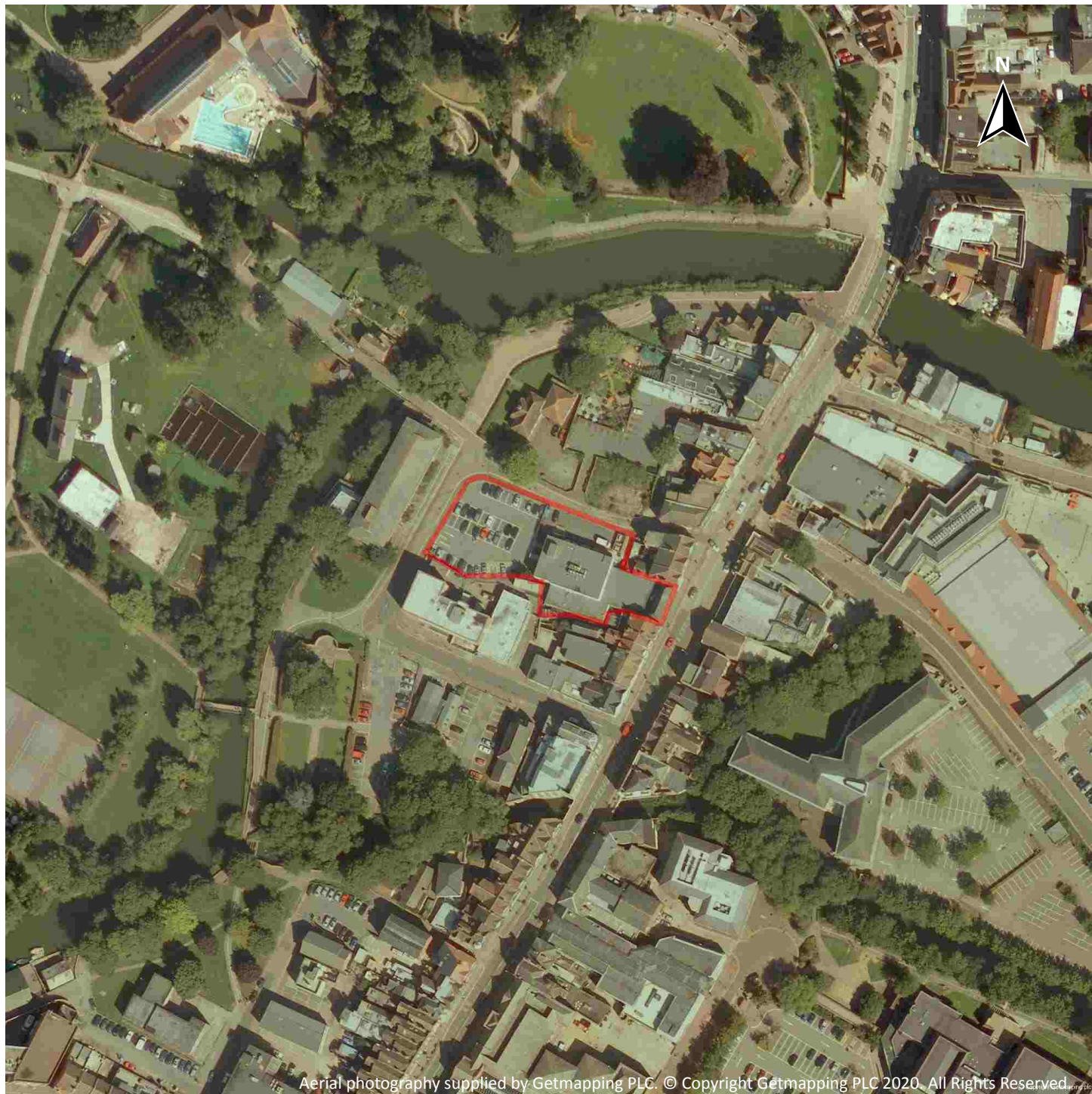


Capture Date: 30/06/2009

Site Area: 0.24ha



Recent site history - 2005 aerial photograph

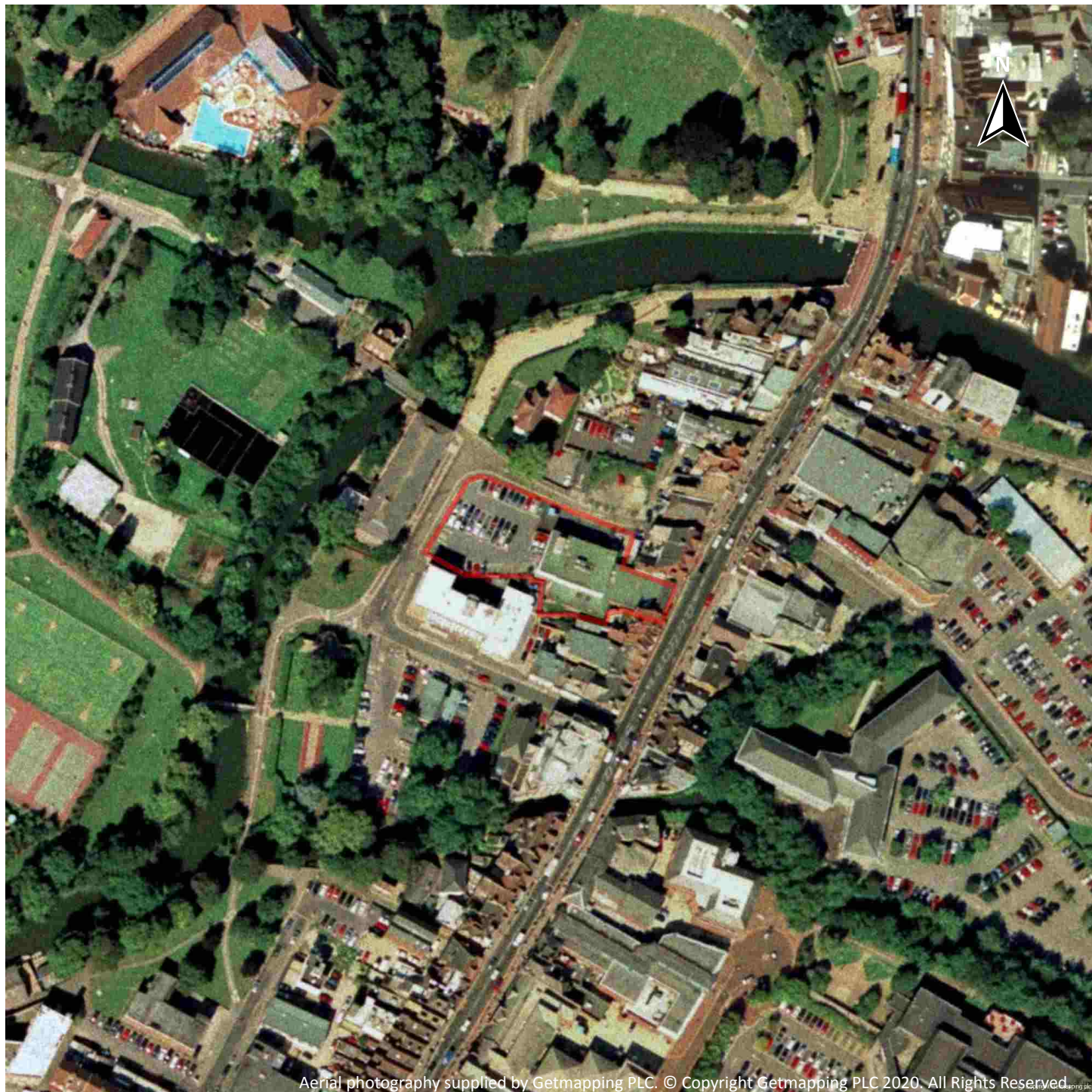


Capture Date: 28/08/2005

Site Area: 0.24ha



Recent site history - 1999 aerial photograph

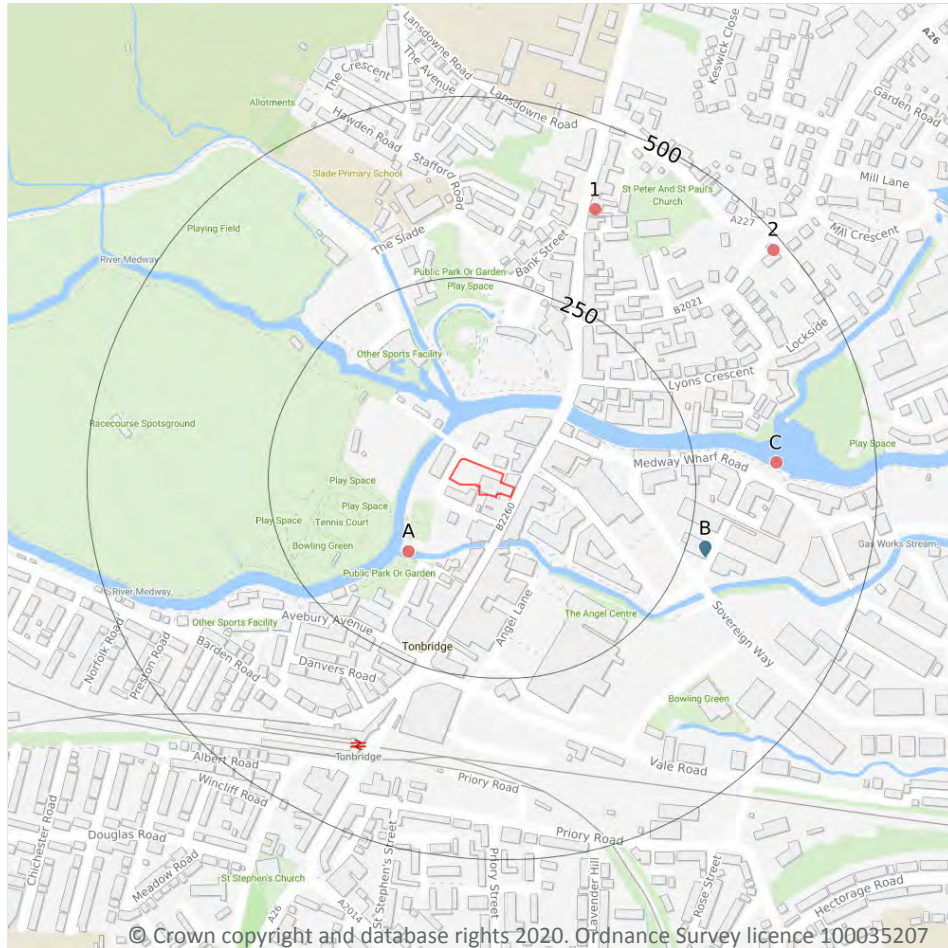


Capture Date: 03/09/1999

Site Area: 0.24ha



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m

2

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 40**

ID	Location	Details		
B	276m E	Site Name: Rentokil Ltd Site Address: Units 14/15 Cala Industrial Estate, Tannery Road, Tonbridge, Kent, TN9 1RF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REN001 EPR reference: EA/EPR/RP3998HP/S002 Operator: Rentokil Limited Waste Management licence No: 19492 Annual Tonnage: 0	Issue Date: 13/06/1994 Effective Date: - Modified:: - Surrendered Date: 01/09/2007 Expiry Date: - Cancelled Date: - Status: Surrendered

ID	Location	Details		
B	276m E	Site Name: Rentokil Ltd Site Address: Units 14/15 Cala Industrial Estate, Tannery Road, Tonbridge, Kent, TN9 1RF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REN001 EPR reference: EA/EPR/RP3998HP/S002 Operator: Rentokil Ltd Waste Management licence No: 19492 Annual Tonnage: 0	Issue Date: 13/06/1994 Effective Date: - Modified:: - Surrendered Date: Sep 1 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	16
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 40**

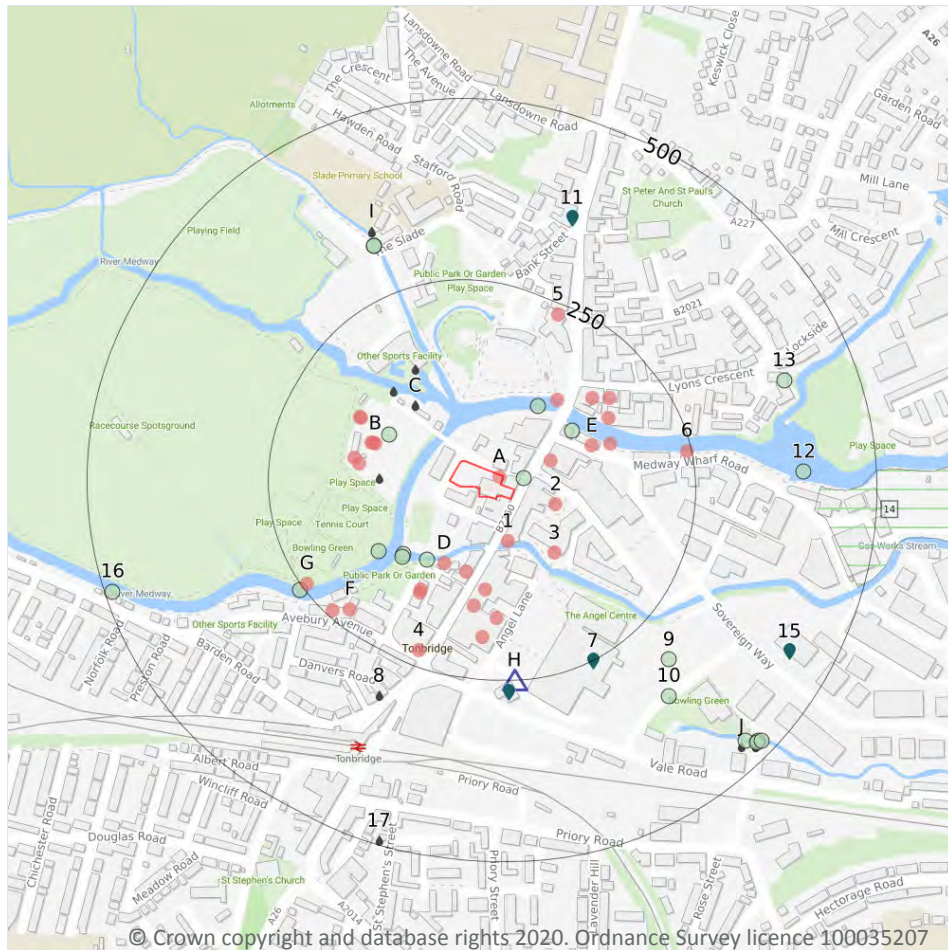
ID	Location	Site	Reference	Category	Sub-Category	Description
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV/A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of waste aerosol cans
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV/A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV/A001	Using waste exemption	Non-Agricultural Waste Only	Use of mulch



ID	Location	Site	Reference	Category	Sub-Category	Description
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV /A001	Using waste exemption	Non- Agricultura l Waste Only	Spreading of plant matter to confer benefit
A	116m SW	Jackson Frameworks Buleys Weir Kent TN9 1TF	EPR/XF0133AV /A001	Using waste exemption	Non- Agricultura l Waste Only	Use of waste for a specified purpose
C	361m E	Town Lock Medway Wharf Road TONBRIDGE Kent TN9 1RE	EPR/LF0108LJ/ A001	Disposing of waste exemption	Non- Agricultura l Waste Only	Deposit of waste from dredging of inland waters
C	361m E	Town Lock Medway Wharf Road TONBRIDGE Kent TN9 1RE	EPR/LF0108LJ/ A001	Disposing of waste exemption	Non- Agricultura l Waste Only	Burning waste in the open
C	361m E	Town Lock Medway Wharf Road TONBRIDGE Kent TN9 1RE	EPR/LF0108LJ/ A001	Treating waste exemption	Non- Agricultura l Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	361m E	Town Lock Medway Wharf Road TONBRIDGE Kent TN9 1RE	EPR/LF0108LJ/ A001	Using waste exemption	Non- Agricultura l Waste Only	Use of mulch
C	361m E	Town Lock Medway Wharf Road TONBRIDGE Kent TN9 1RE	EPR/LF0108LJ/ A001	Using waste exemption	Non- Agricultura l Waste Only	Spreading of plant matter to confer benefit
C	361m E	Town Lock TONBRIDGE Kent	EPR/HE5147H R/A001	Disposing of waste exemption	Non- Agricultura l Waste Only	Burning waste in the open
C	361m E	Town Lock TONBRIDGE Kent	EPR/HE5147H R/A001	Treating waste exemption	Non- Agricultura l Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	361m E	Town Lock TONBRIDGE Kent	EPR/HE5147H R/A001	Using waste exemption	Non- Agricultura l Waste Only	Spreading of plant matter to confer benefit
1	385m N	161, HIGH STREET, TONBRIDGE, TN9 1BX	WEX141551	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Control of Major Accident Hazards
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

32

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 45**

ID	Location	Company	Address	Activity	Category
A	On site	Electricity Sub Station	Kent, TN9	Electrical Features	Infrastructure and Facilities
1	59m S	Wisley Mobile Phones	43, High Street, Tonbridge, Kent, TN9 1SD	Radar and Telecommunications Equipment	Industrial Products



ID	Location	Company	Address	Activity	Category
2	61m E	Electricity Sub Station	Kent, TN9	Electrical Features	Infrastructure and Facilities
A	64m NE	Mid Kent Bed Centre	77-81, High Street, Tonbridge, Kent, TN9 1RX	Beds and Bedding	Consumer Products
3	96m SE	Electricity Sub Station	Kent, TN9	Electrical Features	Infrastructure and Facilities
D	104m SW	Electricity Sub Station	Kent, TN9	Electrical Features	Infrastructure and Facilities
D	104m S	Seventh Generation	46, High Street, Tonbridge, Kent, TN9 1EH	Electrical Equipment Repair and Servicing	Repair and Servicing
B	115m NW	Tank	Kent, TN9	Tanks (Generic)	Industrial Features
B	117m NW	Tank	Kent, TN9	Tanks (Generic)	Industrial Features
B	120m NW	Tank	Kent, TN9	Tanks (Generic)	Industrial Features
E	122m NE	Maylams Quay	Kent, TN9	Moorings and Unloading Facilities	Water
D	126m S	S C Engraving	25a, High Street, Tonbridge, Kent, TN9 1SQ	Published Goods	Industrial Products
B	127m W	Tank	Kent, TN9	Tanks (Generic)	Industrial Features
E	128m NE	Landing Stage	Kent, TN9	Moorings and Unloading Facilities	Water
B	134m W	Tank	Kent, TN9	Tanks (Generic)	Industrial Features
E	147m NE	Maylams Quay	Kent, TN9	Moorings and Unloading Facilities	Water
B	149m NW	Pumping Station	Kent, TN9	Water Pumping Stations	Industrial Features
D	151m S	Specsavers Hearcare	15, High Street, Tonbridge, Kent, TN9 1SQ	Disability and Mobility Equipment	Consumer Products
B	151m NW	Sewage Pumping Station	Kent, TN9	Waste Storage, Processing and Disposal	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
D	152m SW	Riverside Business Centre	Riverside House, River Lawn Road, Tonbridge, Kent, TN9 1EP	Business Parks and Industrial Estates	Industrial Features
D	155m SW	Godfrey Martin	Riverside House, River Lawn Road, Tonbridge, Kent, TN9 1EP	Office and Shop Equipment	Industrial Products
E	163m NE	Maylams Quay	Kent, TN9	Moorings and Unloading Facilities	Water
E	163m NE	Norman Bromley Partnership LLP	Bridge House 97-101, High Street, Tonbridge, Kent, TN9 1DR	Civil Engineers	Engineering Services
D	164m S	Sussex Bed Centre	9, The Pavillion, Tonbridge, Kent, TN9 1TE	Beds and Bedding	Consumer Products
E	181m NE	Maylams Quay	Kent, TN9	Moorings and Unloading Facilities	Water
D	192m S	Sussex Bed Centre	9-10, The Pavilion, High Street, Town Centre, Tonbridge, Kent, TN9 1TE	Beds and Bedding	Consumer Products
F	224m SW	Telephone Exchange	Kent, TN9	Telecommunications Features	Infrastructure and Facilities
4	228m S	Malpass Meat	Unit 13, 6 Hight Street, Tonbridge, Kent, TN9 1SQ	Fish, Meat and Poultry Products	Foodstuffs
5	235m N	Deck the Halls Christmas & Halloween Shop	1, Castle Street, Tonbridge, Kent, TN9 1BH	Medals, Trophies, Ceremonial and Religious Goods	Consumer Products
F	241m SW	Pole Star Publications	32, Avebury Avenue, Tonbridge, Kent, TN9 1TL	Published Goods	Industrial Products
G	243m SW	Electricity Sub Station	Kent, TN9	Electrical Features	Infrastructure and Facilities
6	244m E	Medway Wharf	Kent, TN9	Moorings and Unloading Facilities	Water

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 45**

ID	Location	Company	Address	LPG	Status
H	250m S	SAINSBURYS	Angel Lane, Angel Centre, Tonbridge, Kent, TN9 1SF	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**1**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on **page 45**

ID	Location	Company	Address	Operational status	Tier
14	415m E	British Gas	British Gas, Medway Wharf Road, Tonbridge	Historical NIHHS Site	-

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0
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Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0
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Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0
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Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0
----------------------------	----------

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

4

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 45**

ID	Location	Address	Details	
7	250m SE	Sainsbury Supermarkets Ltd, Angel Centre, Angel Lane, Tonbridge, Kent, TN9 1SF	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements notified Date of enforcement: No Enforcements notified Comment: No Enforcements notified
H	266m S	Sainsbury Petrol Station, Angel Centre, Angel Lane, Tonbridge, TN9 1SF	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements notified Date of enforcement: No Enforcements notified Comment: No Enforcements notified
11	365m N	Tonbridge Dry Cleaners, 178 High Street, Tonbridge, Kent, TN19 1AJ	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements notified Date of enforcement: No Enforcements notified Comment: No Enforcements notified
15	438m SE	Spit & Polish Wheel Refurbishment, Unit 12b Sovereign Way, Tonbridge, TN9 1RS	Process: Surface Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements notified Date of enforcement: No Enforcements notified Comment: No Enforcements notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

17

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 45**



ID	Location	Address	Details	
B	97m W	TONBRIDGE PUMPING STATION, NEW WHARF ROAD, TONBRIDGE, KENT, TN9 1DS	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: W02078 Permit Version: 1 Receiving Water: THE RIVER MEDWAY	Status: REVOKED (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 29/10/1979 Effective Date: 29/10/1979 Revocation Date: 30/03/2010
C	99m NW	TONBRIDGE SWIMMING POOL, TONBRIDGE, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SWIMMING POOL WATER Permit Number: P05479 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 20/09/1994 Effective Date: 20/09/1994 Revocation Date: 30/01/1995
C	99m NW	TONBRIDGE SWIMMING POOL, TONBRIDGE, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SWIMMING POOL WATER Permit Number: P05479 Permit Version: 2 Receiving Water: FRESHWATER RIVER	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 30/01/1995 Effective Date: 30/01/1995 Revocation Date: 01/10/1996
C	134m NW	WATERWORKS, NEW WHARF RD, TONBRIDGE, WATERWORKS, NEW WHARF ROAD, TONBRIDGE, KENT, TN9 1DF	Effluent Type: MISCELLANEOUS DISCHARGES - MINE/GROUNDWATER AS RAISED Permit Number: D01059 Permit Version: 1 Receiving Water: THE RIVER MEDWAY	Status: REVOKED (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/05/1963 Effective Date: 24/05/1963 Revocation Date: 31/03/2010
C	142m NW	TONBRIDGE PS COMPENSATION WATER, RIVER MEDWAY	Effluent Type: MISCELLANEOUS DISCHARGES - MINE/GROUNDWATER AS RAISED Permit Number: P04850 Permit Version: 1 Receiving Water: THE RIVER MEDWAY	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 14/09/1993 Effective Date: 14/09/1993 Revocation Date: -
8	307m SW	AVEBURY AVENUE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00450 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 01/04/1991 Effective Date: 01/04/1991 Revocation Date: 20/11/1993



ID	Location	Address	Details	
J	480m SE	PRIORY ROAD TONBRIDGE O/S 86 CSO, OUTSIDE NO 86, PRIORY ROAD, TONBRIDGE, KENT, TN9 2BP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00453 Permit Version: 2 Receiving Water: BOTANY STREAM	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 08/07/1993 Effective Date: 08/07/1993 Revocation Date: 27/02/1996
J	480m SE	PRIORY ROAD TONBRIDGE O/S 86 CSO, OUTSIDE NO 86, PRIORY ROAD, TONBRIDGE, KENT, TN9 2BP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00453 Permit Version: 3 Receiving Water: BOTANY STREAM	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/02/1996 Effective Date: 28/02/1996 Revocation Date: 15/03/2017
J	480m SE	PRIORY ROAD TONBRIDGE O/S 86 CSO, OUTSIDE NO 86, PRIORY ROAD, TONBRIDGE, KENT, TN9 2BP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00453 Permit Version: 4 Receiving Water: BOTANY STREAM	Status: VARIED UNDER EPR 2010 Issue date: 16/03/2017 Effective Date: 16/03/2017 Revocation Date: 30/03/2017
J	480m SE	PRIORY ROAD TONBRIDGE O/S 86 CSO, OUTSIDE NO 86, PRIORY ROAD, TONBRIDGE, KENT, TN9 2BP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00453 Permit Version: 5 Receiving Water: BOTANY STREAM	Status: VARIED UNDER EPR 2010 Issue date: 16/03/2017 Effective Date: 31/03/2017 Revocation Date: -
17	494m S	PRIORY ROAD	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00452 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 01/04/1991 Effective Date: 01/04/1991 Revocation Date: 18/08/1994

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

20

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 45**

ID	Location	Details	
A	20m NE	Incident Date: 04/04/2001 Incident Identification: 16253 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
B	104m NW	Incident Date: 21/12/2005 Incident Identification: 367227 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 1 (Major) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
E	108m NE	Incident Date: 01/06/2003 Incident Identification: 162256 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
D	110m SW	Incident Date: 11/03/2002 Incident Identification: 63243 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
E	113m NE	Incident Date: 14/11/2001 Incident Identification: 42720 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	119m SW	Incident Date: 02/12/2001 Incident Identification: 46138 Pollutant: Agricultural Materials and Wastes Pollutant Description: Carcasses	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	123m SW	Incident Date: 27/12/2001 Incident Identification: 49658 Pollutant: Agricultural Materials and Wastes Pollutant Description: Carcasses	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	137m SW	Incident Date: 23/04/2001 Incident Identification: 15980 Pollutant: Agricultural Materials and Wastes Pollutant Description: Carcasses	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	255m SW	Incident Date: 21/07/2003 Incident Identification: 175364 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
9	310m SE	Incident Date: 24/05/2001 Incident Identification: 11044 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
I	320m N	Incident Date: 07/09/2009 Incident Identification: 713744 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
I	320m N	Incident Date: 07/09/2009 Incident Identification: 713744 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
10	348m SE	Incident Date: 24/04/2001 Incident Identification: 16167 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
12	399m E	Incident Date: 23/07/2003 Incident Identification: 175984 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
13	401m E	Incident Date: 17/04/2003 Incident Identification: 152057 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
J	465m SE	Incident Date: 09/05/2002 Incident Identification: 77494 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
J	477m SE	Incident Date: 28/02/2003 Incident Identification: 140074 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
J	478m SE	Incident Date: 25/03/2003 Incident Identification: 145799 Pollutant: Oils and Fuel Pollutant Description: Insulating and Cable Oils	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
J	480m SE	Incident Date: 26/03/2019 Incident Identification: 1689718 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
16	489m W	Incident Date: 07/10/2003 Incident Identification: 194893 Pollutant: Oils and Fuel:Oils and Fuel Pollutant Description: Diesel:Lubricating Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

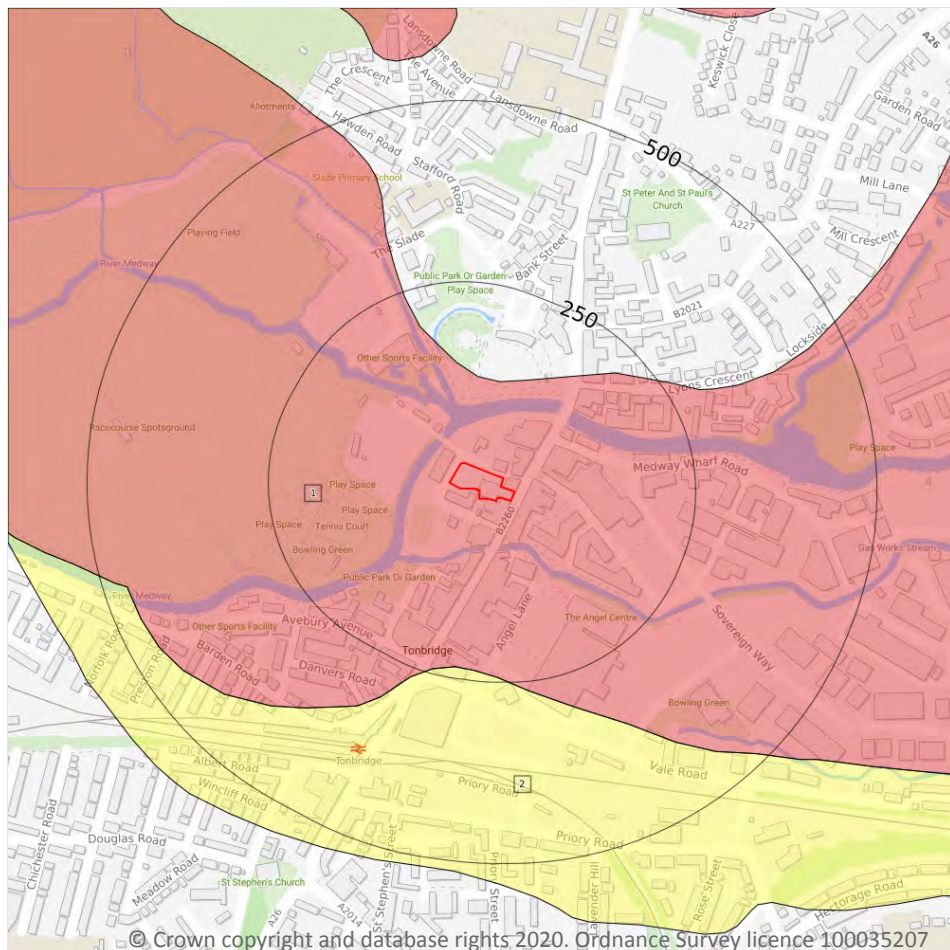
Records within 500m

0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 58**

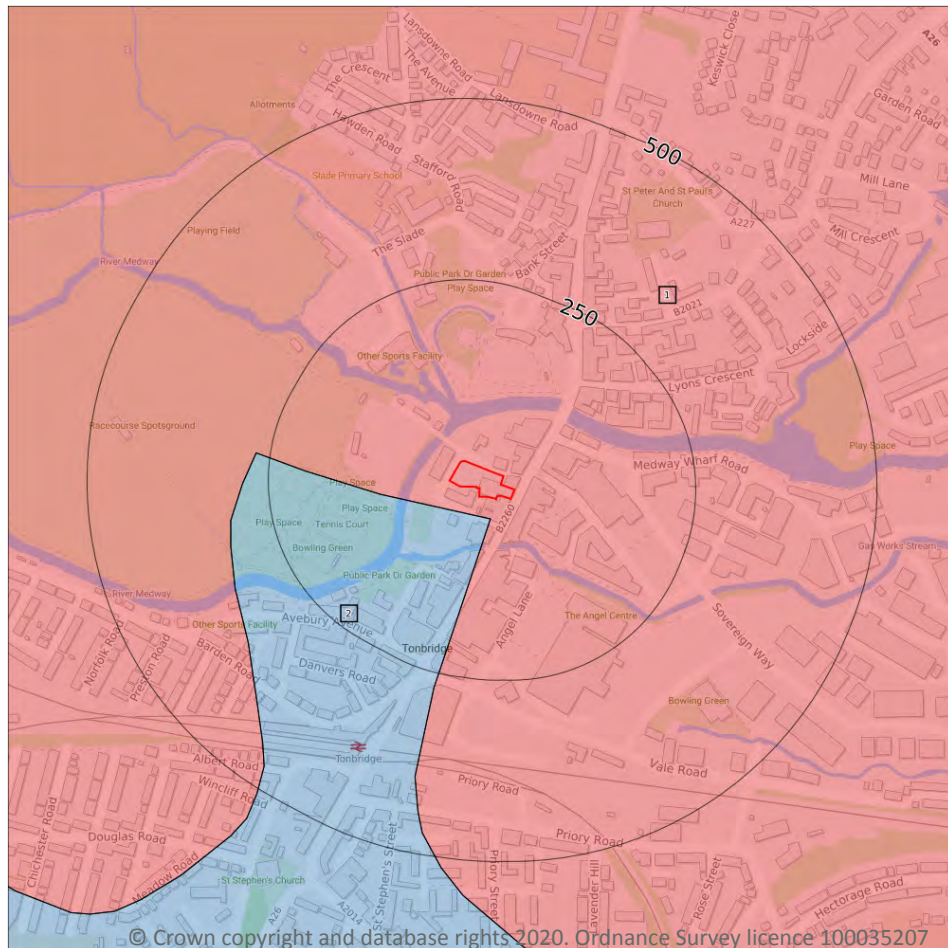
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	234m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

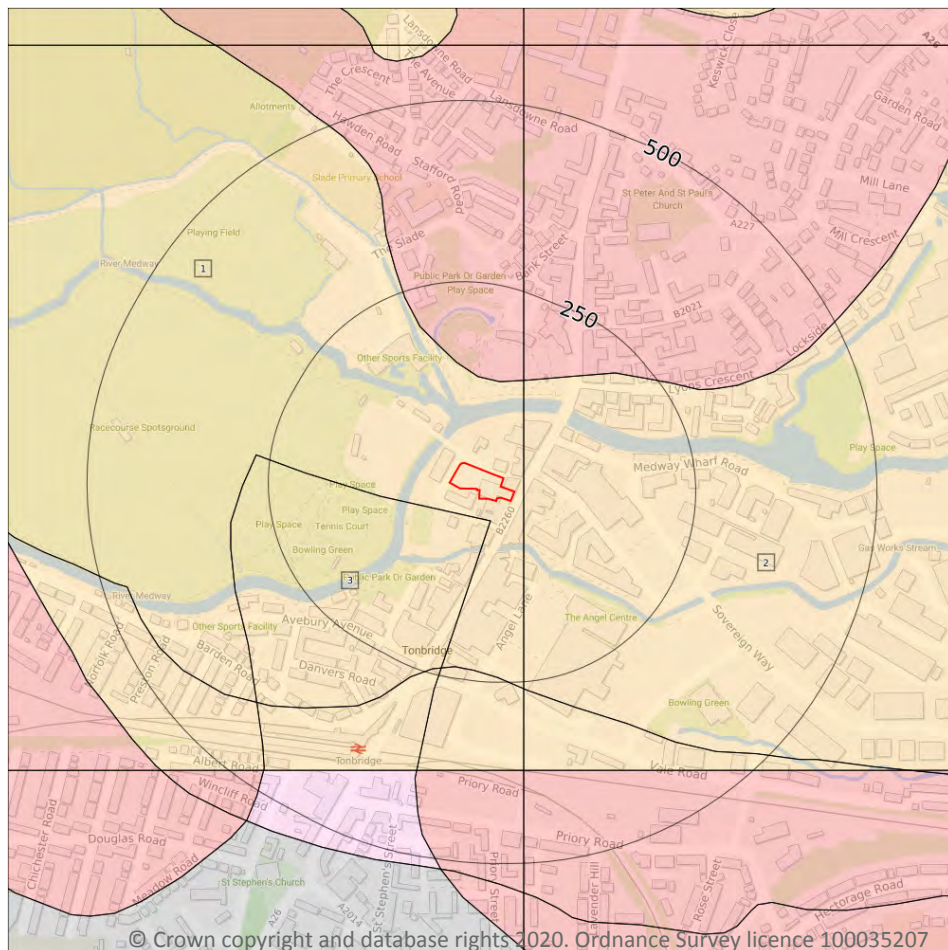
Features are displayed on the Bedrock aquifer map on **page 60**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	27m S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



— Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

3

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 61**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
2	12m E	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
3	26m S	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site

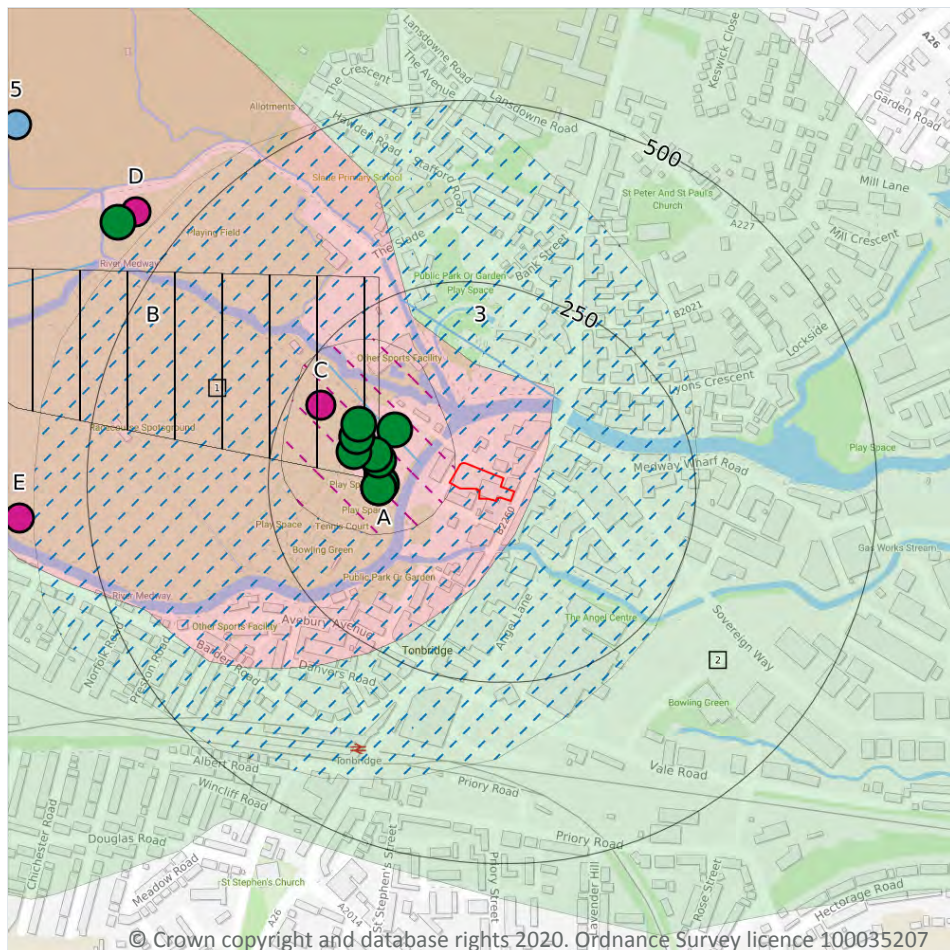
0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Point features
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

28

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 63**

ID	Location	Details	
A	90m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 5B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558807 Northing: 146399	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
A	93m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 5A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558804 Northing: 146395	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
B	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: River Recirculation Direct Source: Southern Region Groundwater Point: ASHDOWN SANDS BOREHOLES AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Poly4 Name: South East Water Plc Easting: 557980 Northing: 146700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
B	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Poly4 Name: South East Water Plc Easting: 557980 Northing: 146700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -



ID	Location	Details	
B	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ASHDOWN SANDS BOREHOLES AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Poly4 Name: South East Water Plc Easting: 557980 Northing: 146700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 2 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 4 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 3 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	102m NW	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 1, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558822 Northing: 146470	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -



ID	Location	Details	
A	102m W	Status: Active Licence No: 9/40/03/0470/G Details: River Recirculation Direct Source: Southern Region Groundwater Point: BOREHOLE 4B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558800 Northing: 146428	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
A	102m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 4B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558800 Northing: 146428	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
A	109m W	Status: Historical Licence No: 9/40/03/0470/G Details: River Recirculation Direct Source: Southern Region Groundwater Point: BOREHOLE B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558795 Northing: 146436	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
A	109m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558795 Northing: 146436	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -



ID	Location	Details	
A	138m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558766 Northing: 146439	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
A	142m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 1 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558770 Northing: 146460	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	142m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558770 Northing: 146461	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
A	149m NW	Status: Active Licence No: 9/40/03/0470/G Details: River Recirculation Direct Source: Southern Region Groundwater Point: BOREHOLE 6 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558772 Northing: 146478	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -



ID	Location	Details	
A	149m NW	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 6 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558772 Northing: 146478	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
C	207m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: LAND DRAIN SUMP AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558720 Northing: 146503	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
D	566m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 3, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558465 Northing: 146770	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
D	578m NW	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 3, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558440 Northing: 146756	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -

ID	Location	Details	
E	595m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 5, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558304 Northing: 146348	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	652m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 4, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558247 Northing: 146450	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	732m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 2, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558190 Northing: 146586	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	736m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 2, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558190 Northing: 146601	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -

ID	Location	Details	
-	1917m NE	Status: Historical Licence No: 9/40/03/0565/G Details: Mineral Washing Direct Source: Southern Region Groundwater Point: POINT A, EXCAVATION AT POSTERN PARK, HADLOW Data Type: Point Name: Cemex UK Materials Ltd Easting: 560750 Northing: 147140	Annual Volume (m ³): 1054672 Max Daily Volume (m ³): 4364 Original Application No: - Original Start Date: - Expiry Date: 27/04/2007 Issue No: 103 Version Start Date: 24/10/2006 Version End Date: -
-	1949m E	Status: Historical Licence No: 9/40/03/0565/G Details: Mineral Washing Direct Source: Southern Region Groundwater Point: POINT A, EXCAVATION AT POSTERN PARK, HADLOW Data Type: Point Name: Cemex UK Materials Ltd Easting: 560850 Northing: 146960	Annual Volume (m ³): 1054672 Max Daily Volume (m ³): 4364 Original Application No: - Original Start Date: - Expiry Date: 31/03/2018 Issue No: 104 Version Start Date: 27/06/2007 Version End Date: -
-	1950m W	Status: Historical Licence No: 02/146 Details: Evaporative Cooling Direct Source: Southern Region Groundwater Point: BOREHOLE AT OLD POWDERMILLS SITE, LEIGH, NR. TONBRIDGE Data Type: Point Name: GlaxoSmithKline Plc Easting: 556969 Northing: 146684	Annual Volume (m ³): 31822 Max Daily Volume (m ³): 208 Original Application No: - Original Start Date: 12/09/2007 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 12/09/2007 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

11

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 63**

ID	Location	Details	
A	44m NW	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 3, RIVER MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 558730 Northing: 146560	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
3	132m NE	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 4 ,TRIB OF MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 558830 Northing: 146650	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
4	574m NW	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 2, RIVER MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 558030 Northing: 146600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
5	770m NW	Status: Historical Licence No: 02/137 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: POINT A, HAWDENS STREAM AT TONBRIDGE SCHOOL Data Type: Point Name: Organ Easting: 558300 Northing: 146890	Annual Volume (m ³): 4000 Max Daily Volume (m ³): 42 Original Application No: - Original Start Date: - Expiry Date: 16/01/2008 Issue No: 101 Version Start Date: 19/10/2006 Version End Date: -

ID	Location	Details	
-	773m NW	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 1, TRIB OF MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 555798 Northing: 146770	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
-	773m NW	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 1, TRIB OF MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 557973 Northing: 146775	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
-	896m E	Status: Historical Licence No: 02/139 Details: Potable Water Supply - Direct Direct Source: Southern Region Surface Waters Point: POSTERN LANE INTAKE ON THE RIVER MEDWAY AT TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 559870 Northing: 146540	Annual Volume (m ³): 732000 Max Daily Volume (m ³): 5000 Original Application No: - Original Start Date: - Expiry Date: 11/01/2009 Issue No: 100 Version Start Date: 11/01/1999 Version End Date: -
-	1000m E	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 5, RIVER MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 559940 Northing: 146690	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -

ID	Location	Details	
-	1070m E	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 6, TRIB MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 560060 Northing: 146810	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
-	1200m NE	Status: Historical Licence No: 9/40/03/0390/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: REACH 7, TRIB MEDWAY, SPORTS GROUND, TONBRIDGE Data Type: Line Name: The Borough Leisure Services Officer Easting: 560010 Northing: 147020	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/04/1993 Version End Date: -
-	1983m N	Status: Active Licence No: 9/40/03/0577/S Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: POINTS A-B, HILDEN BROOK AT TONBRIDGE Data Type: Line Name: Hewitt Easting: 558460 Northing: 148420	Annual Volume (m ³): 21,781 Max Daily Volume (m ³): 2,450 Original Application No: - Original Start Date: 07/10/1987 Expiry Date: - Issue No: 101 Version Start Date: 26/06/2019 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

22

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 63**



ID	Location	Details	
A	90m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 5B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558807 Northing: 146399	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
A	93m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 5A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558804 Northing: 146395	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
B	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Poly4 Name: South East Water Plc Easting: 557980 Northing: 146700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
B	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ASHDOWN SANDS BOREHOLES AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Poly4 Name: South East Water Plc Easting: 557980 Northing: 146700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -



ID	Location	Details	
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 2 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 4 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	97m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 3 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558800 Northing: 146390	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	102m NW	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 1, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558822 Northing: 146470	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
A	102m W	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 4B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558800 Northing: 146428	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -



ID	Location	Details	
A	109m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE B AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558795 Northing: 146436	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
A	138m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558766 Northing: 146439	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
A	142m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: ADIT 1 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 558770 Northing: 146460	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1999 Version End Date: -
A	142m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE A AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558770 Northing: 146461	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -

ID	Location	Details	
A	149m NW	Status: Active Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 6 AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558772 Northing: 146478	Annual Volume (m ³): 365,000 Max Daily Volume (m ³): 2,000 Original Application No: - Original Start Date: 12/04/1976 Expiry Date: - Issue No: 102 Version Start Date: 05/08/2015 Version End Date: -
C	207m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: LAND DRAIN SUMP AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558720 Northing: 146503	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
D	566m NW	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 3, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558465 Northing: 146770	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -
D	578m NW	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 3, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558440 Northing: 146756	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -



ID	Location	Details	
E	595m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 5, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558304 Northing: 146348	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	652m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 4, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558247 Northing: 146450	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	732m W	Status: Active Licence No: SO/040/0002/017 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 2, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Ltd Easting: 558190 Northing: 146586	Annual Volume (m ³): 1,460,000 Max Daily Volume (m ³): 4,000 Original Application No: - Original Start Date: 05/08/2015 Expiry Date: - Issue No: 1 Version Start Date: 05/08/2015 Version End Date: -
-	736m W	Status: Historical Licence No: 9/40/03/0470/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL 2, RIVER GRAVELS AT NEW WHARF ROAD PS, TONBRIDGE Data Type: Point Name: South East Water Limited Easting: 558190 Northing: 146601	Annual Volume (m ³): - Max Daily Volume (m ³): 7000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/10/2010 Version End Date: -

ID	Location	Details	
-	896m E	Status: Historical Licence No: 02/139 Details: Potable Water Supply - Direct Direct Source: Southern Region Surface Waters Point: POSTERN LANE INTAKE ON THE RIVER MEDWAY AT TONBRIDGE Data Type: Point Name: South East Water Plc Easting: 559870 Northing: 146540	Annual Volume (m ³): 732000 Max Daily Volume (m ³): 5000 Original Application No: - Original Start Date: - Expiry Date: 11/01/2009 Issue No: 100 Version Start Date: 11/01/1999 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	2
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Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on **page 63**

ID	Location	Type	Description
1	On site	1	Inner catchment
2	24m SE	3	Total catchment

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	2
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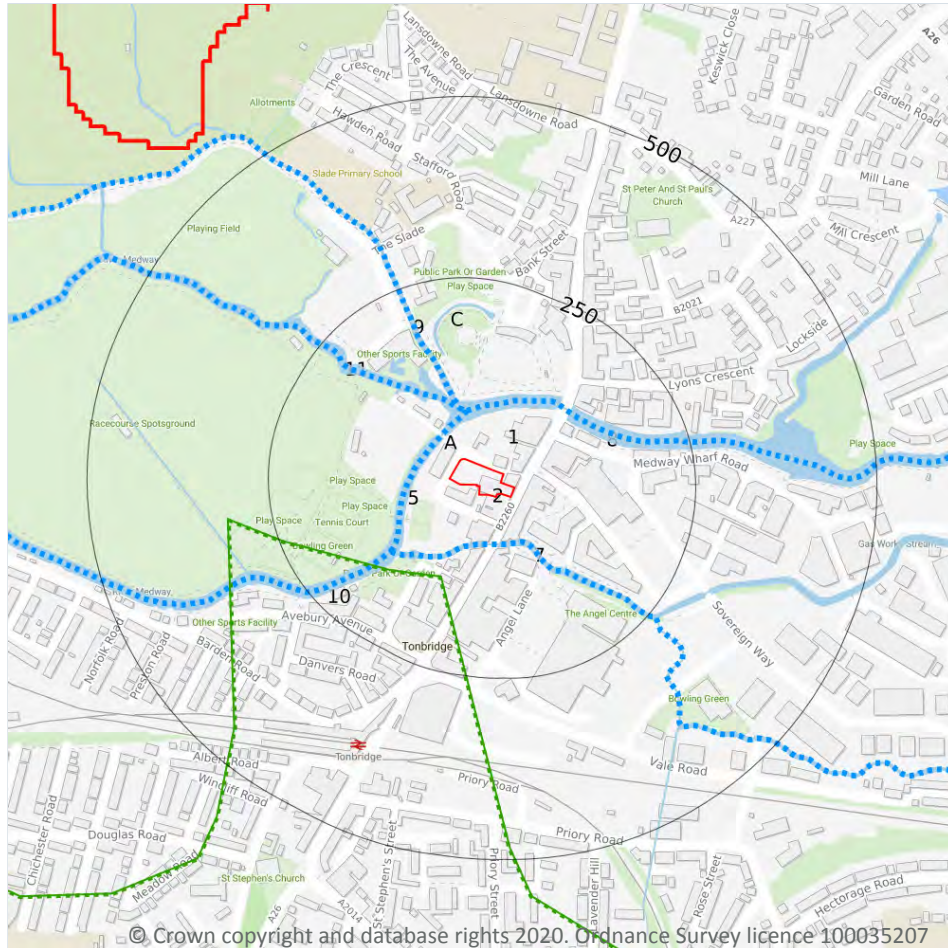
Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

Features are displayed on the Abstractions and Source Protection Zones map on **page 63**

ID	Location	Type	Description
A	On site	1c	Inner catchment within confined aquifer
A	On site	2c	Outer catchment within confined aquifer

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

14

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 80**

ID	Location	Type of water feature	Ground level	Permanence	Name
5	42m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway



ID	Location	Type of water feature	Ground level	Permanence	Name
A	42m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
A	43m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
7	63m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Botany Stream
8	65m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
A	65m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
9	77m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hilden Brook
A	77m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
A	99m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
A	101m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	126m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
10	128m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
11	132m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medway
C	145m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



6.2 Surface water features

Records within 250m

5

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 80**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 80**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River WB catchment	Mid Medway from Eden Confluence to Yalding	GB106040018182	Middle Medway	Medway

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 80**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	42m NW	River	Mid Medway from Eden Confluence to Yalding	GB106040018182	Moderate	Good	Moderate	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1
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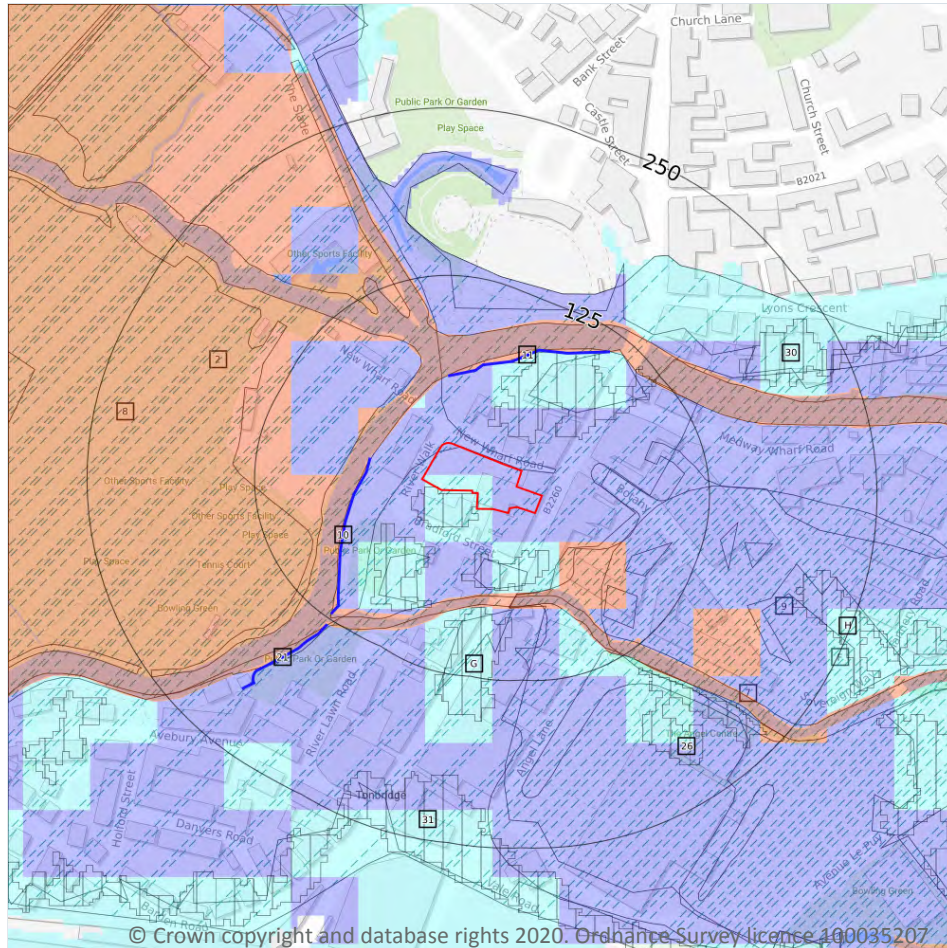
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 80**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Kent Weald Western - Medway	GB40602G502300	Poor	Poor	Poor	2015

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- Environment Agency river and coastal flooding:
 - High
 - Medium
 - Low
 - Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

10

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 84**

Distance	RoFRaS flood risk
On site	Medium
0 - 50m	High



This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

7

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 84**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
2	On site	07302c200_Nov1960_0010_Medway_Tonbridge	1960-11-02 1960-11-04	Main river	Channel capacity exceeded (no raised defences)	Fluvial
A	On site	07302c200_Dec2013_Medway_Eden_Teise_Beult	2013-12-23 2013-12-27	Main river	Channel capacity exceeded (no raised defences)	Fluvial
A	On site	07302c200_Sept1968_Medway_Edenbridge_Yalding	1968-09-14 1968-09-14	Main river	Channel capacity exceeded (no raised defences)	Fluvial
7	36m SE	07302c200_Nov1960_Medway_Edenbridge_Yalding	1960-11-02 1960-11-04	Main river	Channel capacity exceeded (no raised defences)	Fluvial
8	37m NW	07302c200_Oct2000_Medway	2000-10-11 2000-10-14	Main river	Channel capacity exceeded (no raised defences)	Fluvial
9	40m E	07302c200_Nov1967_Medway_Tonbridge	1967-01-01 1967-01-01	Main river	Channel capacity exceeded (no raised defences)	Fluvial
F	65m SE	07302c200_Nov1963_Medway_Tonbridge	1963-11-18 1963-11-19	Main river	Channel capacity exceeded (no raised defences)	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

3

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

Features are displayed on the River and coastal flooding map on **page 84**



ID	Location	Update
10	42m W	21/10/2020
11	50m N	21/10/2020
21	129m SW	21/10/2020

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m

9

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 84**

ID	Location	
A	On site	Area benefiting from flood defences
B	21m N	Area benefiting from flood defences
C	28m S	Area benefiting from flood defences
D	39m SW	Area benefiting from flood defences
G	73m S	Area benefiting from flood defences
26	139m SE	Area benefiting from flood defences
30	173m NE	Area benefiting from flood defences
31	199m S	Area benefiting from flood defences
H	202m E	Area benefiting from flood defences

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

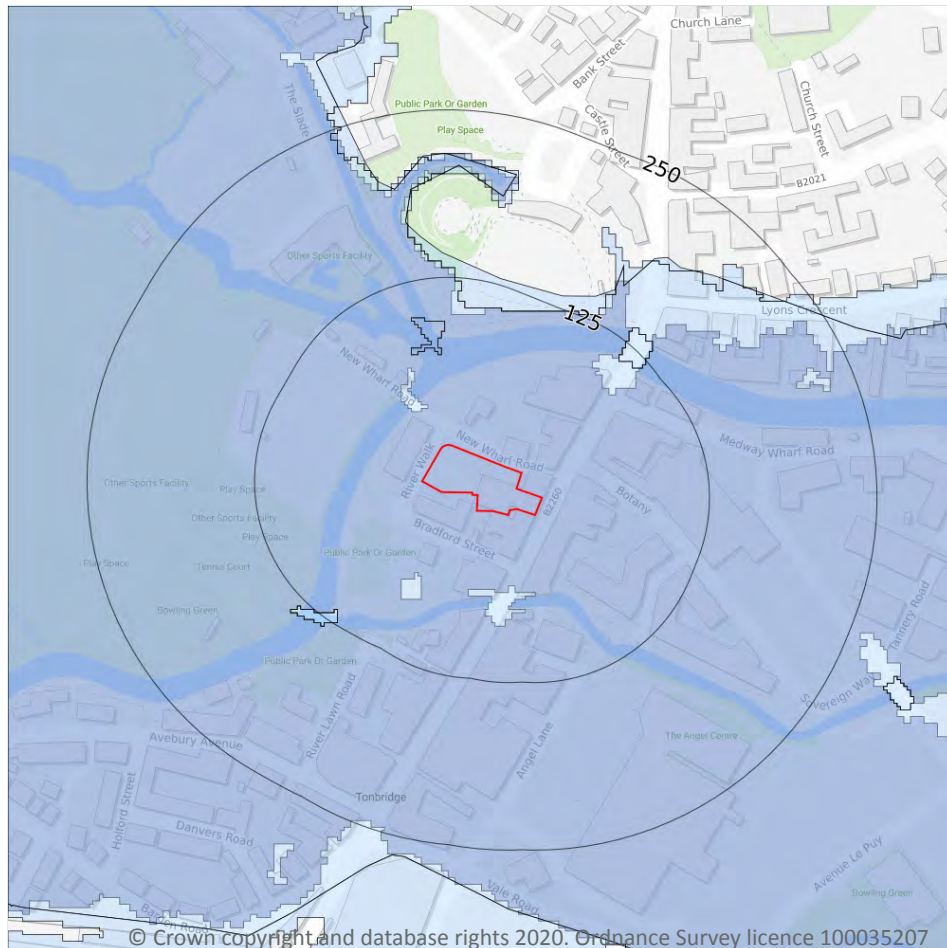
Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 84**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

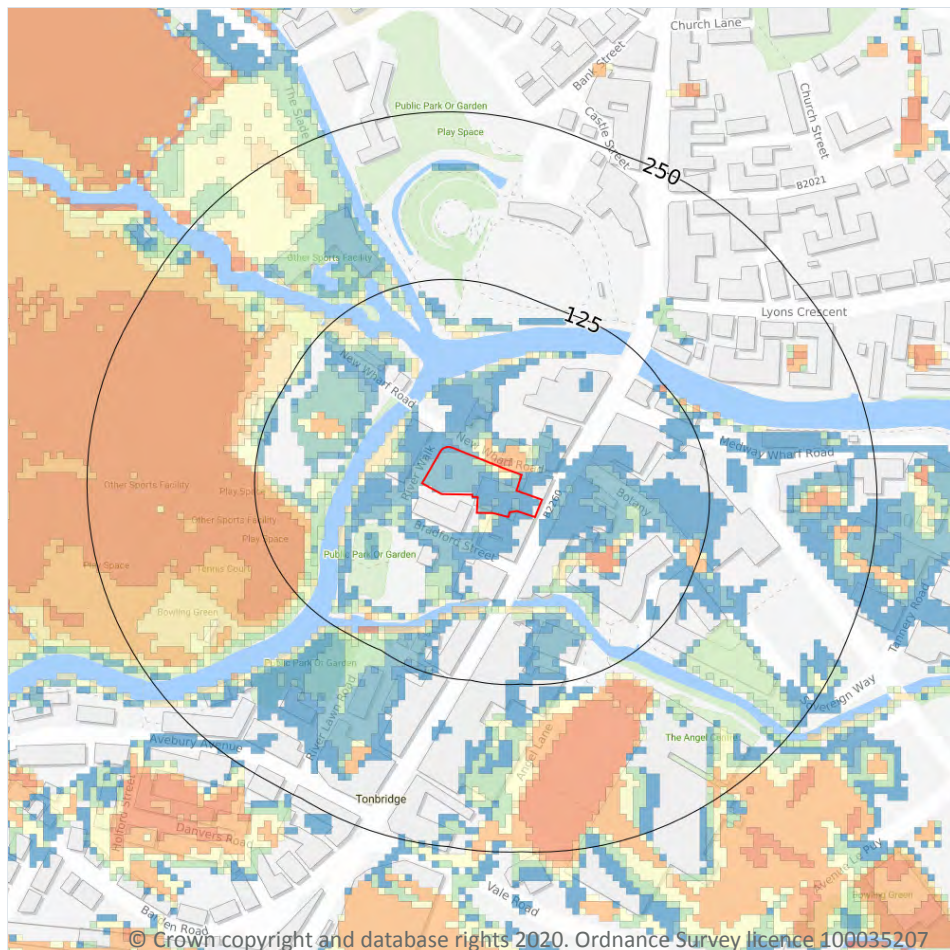
Features are displayed on the River and coastal flooding map on **page 84**

Location	Type
On site	Zone 3 - (Fluvial Models)

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 89**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

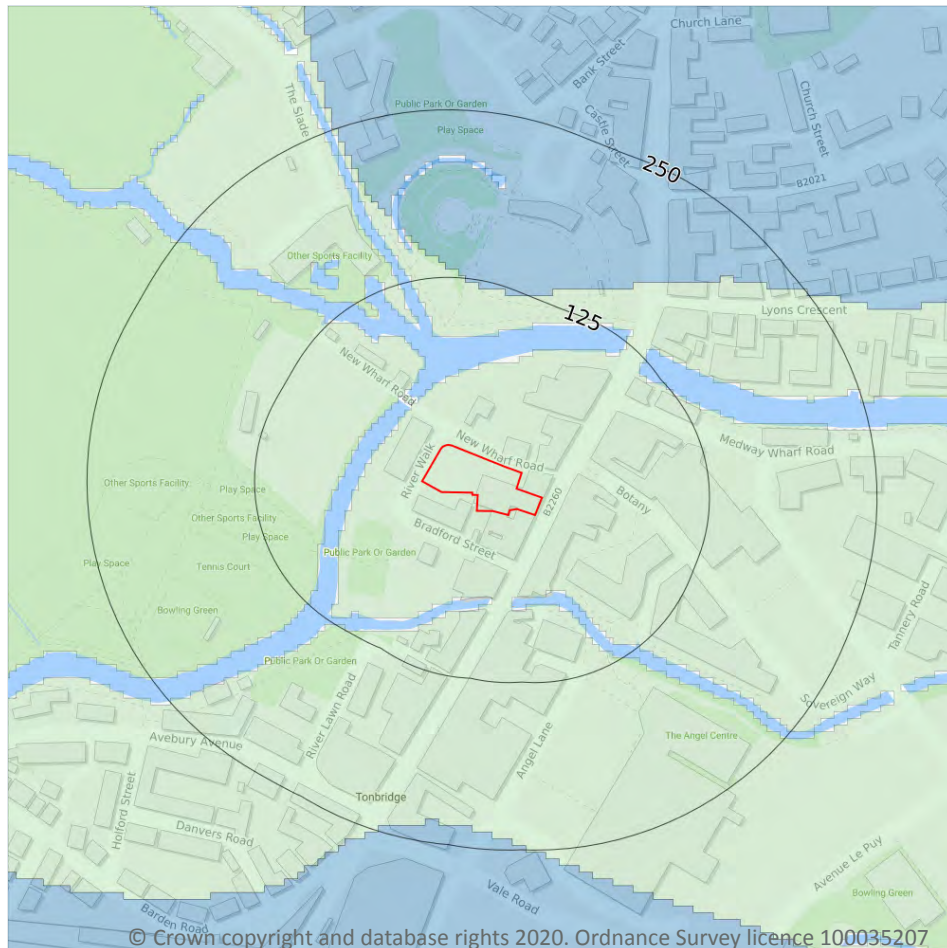
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 91**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

14

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 92**

ID	Location	Name	Woodland Type
2	1206m SW	Unknown	Ancient & Semi-Natural Woodland
-	1303m S	Unknown	Ancient & Semi-Natural Woodland
-	1360m S	Unknown	Ancient & Semi-Natural Woodland
-	1422m E	Unknown	Ancient & Semi-Natural Woodland
-	1591m S	Unknown	Ancient & Semi-Natural Woodland
-	1685m S	Unknown	Ancient & Semi-Natural Woodland
-	1705m S	Unknown	Ancient & Semi-Natural Woodland
-	1751m E	Alders Wood	Ancient & Semi-Natural Woodland
-	1825m SE	Unknown	Ancient & Semi-Natural Woodland
-	1856m S	Mapledon Wood	Ancient & Semi-Natural Woodland
-	1860m S	Unknown	Ancient & Semi-Natural Woodland
-	1873m S	Unknown	Ancient & Semi-Natural Woodland
-	1986m SE	Unknown	Ancient & Semi-Natural Woodland
-	1994m SE	Kings Standing	Ancient & Semi-Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.8 Biosphere Reserves

Records within 2000m**0**

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m**0**

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m**3**

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 92**

ID	Location	Name	Local Authority name
1	64m NW	London area	Tonbridge & Malling
6	1488m SE	London area	Tunbridge Wells
-	1577m W	London area	Sevenoaks

This data is sourced from the Ministry of Housing, Communities and Local Government.



10.12 Proposed Ramsar sites

Records within 2000m**0**

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.



10.16 Nitrate Vulnerable Zones

Records within 2000m**2**

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1057m S	Somerhill Stream NVZ	Surface Water	S806	New
1277m E	Somerhill Stream NVZ	Surface Water	S806	New

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 106**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TQ54NE

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

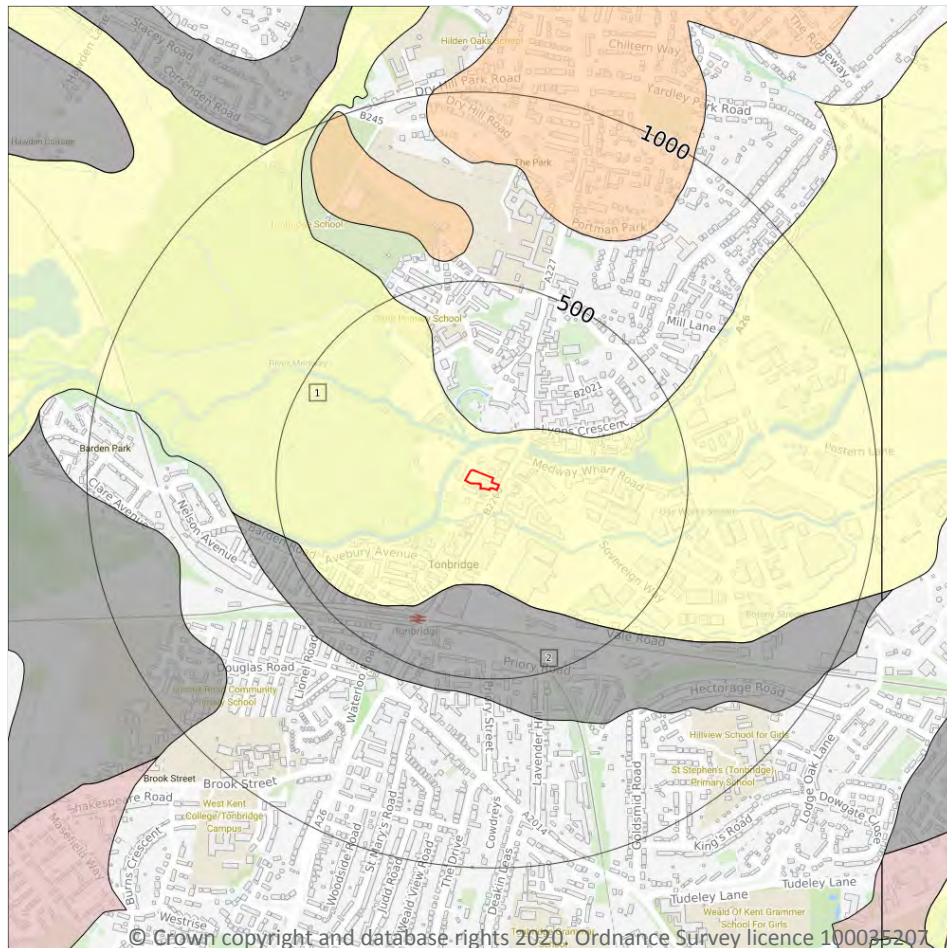
0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

2

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 108**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
2	252m S	BRK-CZ	Brickearth - Silty Clay	Clay, Silty

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

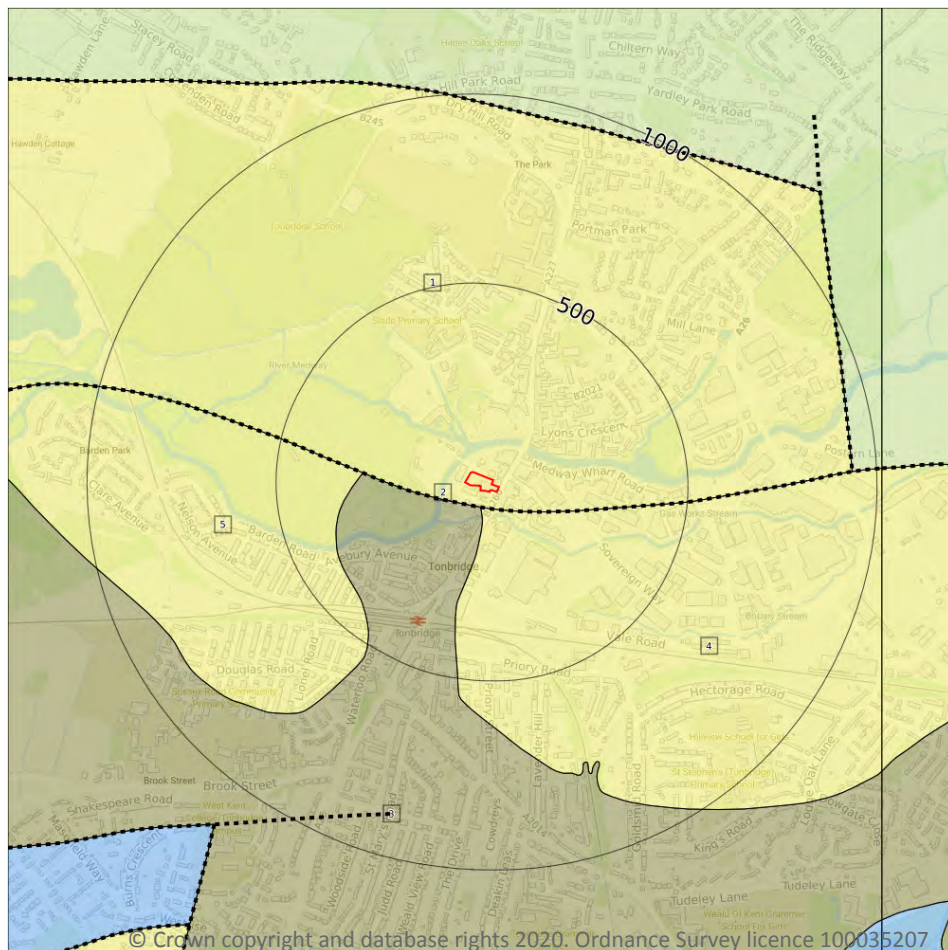
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

4

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 110**

ID	Location	LEX Code	Description	Rock age
1	On site	TWS-SDSL	Tunbridge Wells Sand Formation - Sandstone And Siltstone, Interbedded	Valanginian Age
3	43m S	WDC-MDST	Wadhurst Clay Formation - Mudstone	Valanginian Age
4	44m S	TWS-SDSL	Tunbridge Wells Sand Formation - Sandstone And Siltstone, Interbedded	Valanginian Age



ID	Location	LEX Code	Description	Rock age
5	272m W	TWS-SDSL	Tunbridge Wells Sand Formation - Sandstone And Siltstone, Interbedded	Valanginian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

1

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

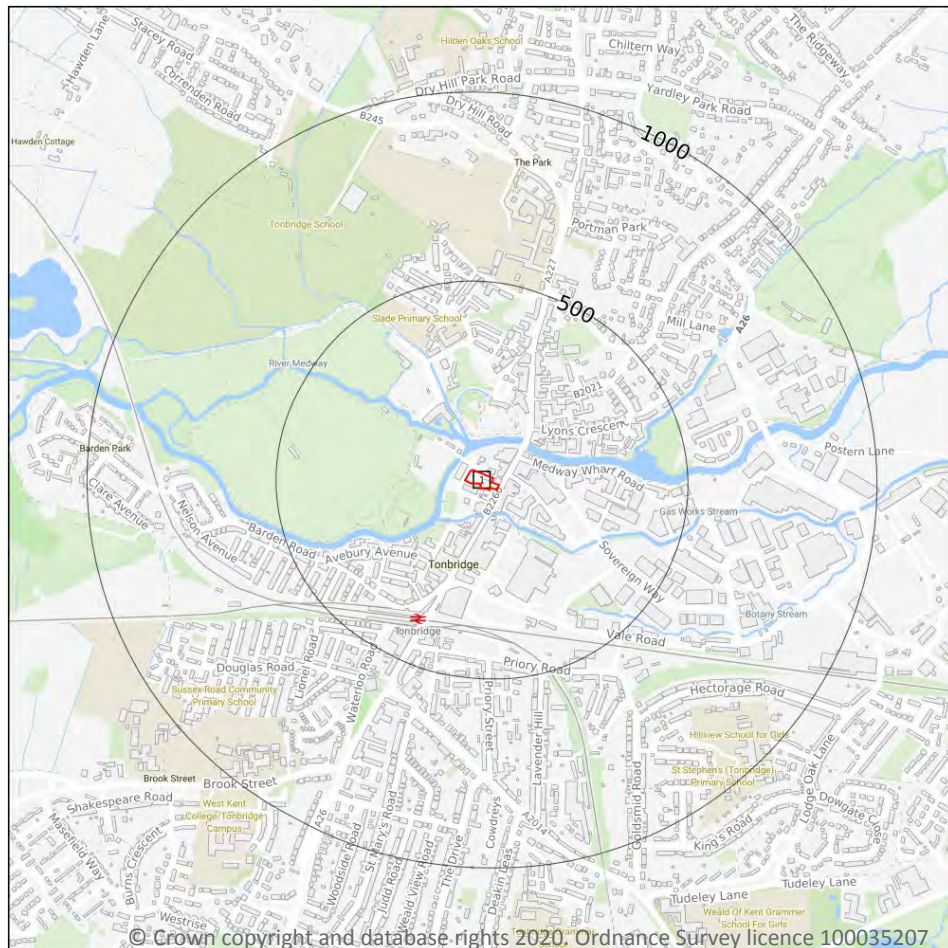
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 110**

ID	Location	Category	Description
2	43m S	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 112**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW287_sevenoaks_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

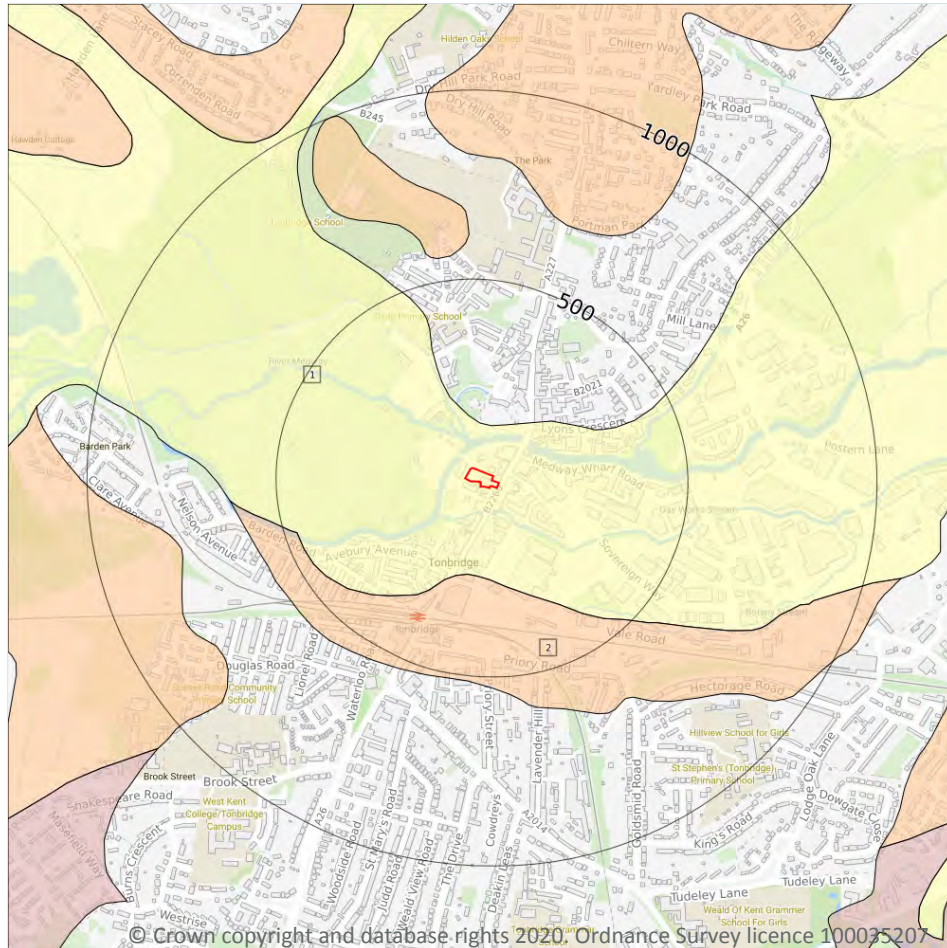
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

2

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 114**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	234m S	RTDU-XCZ	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	CLAY AND SILT

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

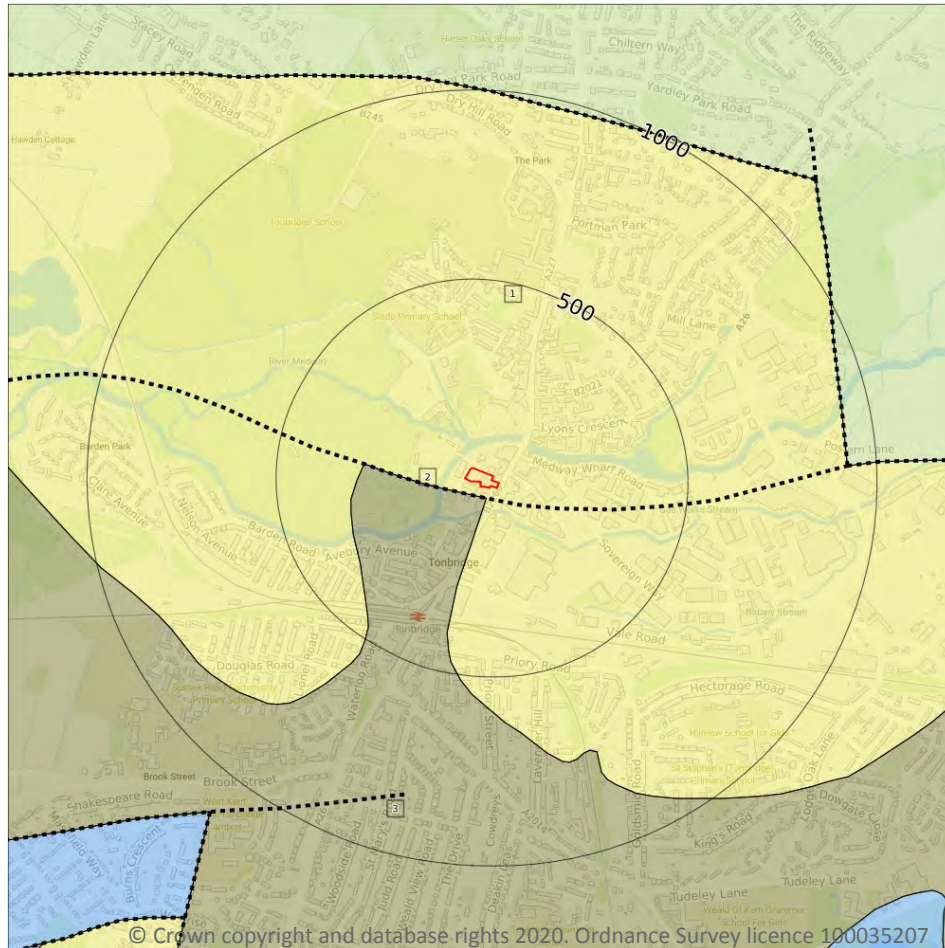
Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 116**

ID	Location	LEX Code	Description	Rock age
1	On site	TWS-SDSL	TUNBRIDGE WELLS SAND FORMATION - SANDSTONE AND SILTSTONE, INTERBEDDED	VALANGINIAN
3	27m S	WDC-MDST	WADHURST CLAY FORMATION - MUDSTONE	VALANGINIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Moderate
27m SW	Fracture	Low	Very Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

1

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

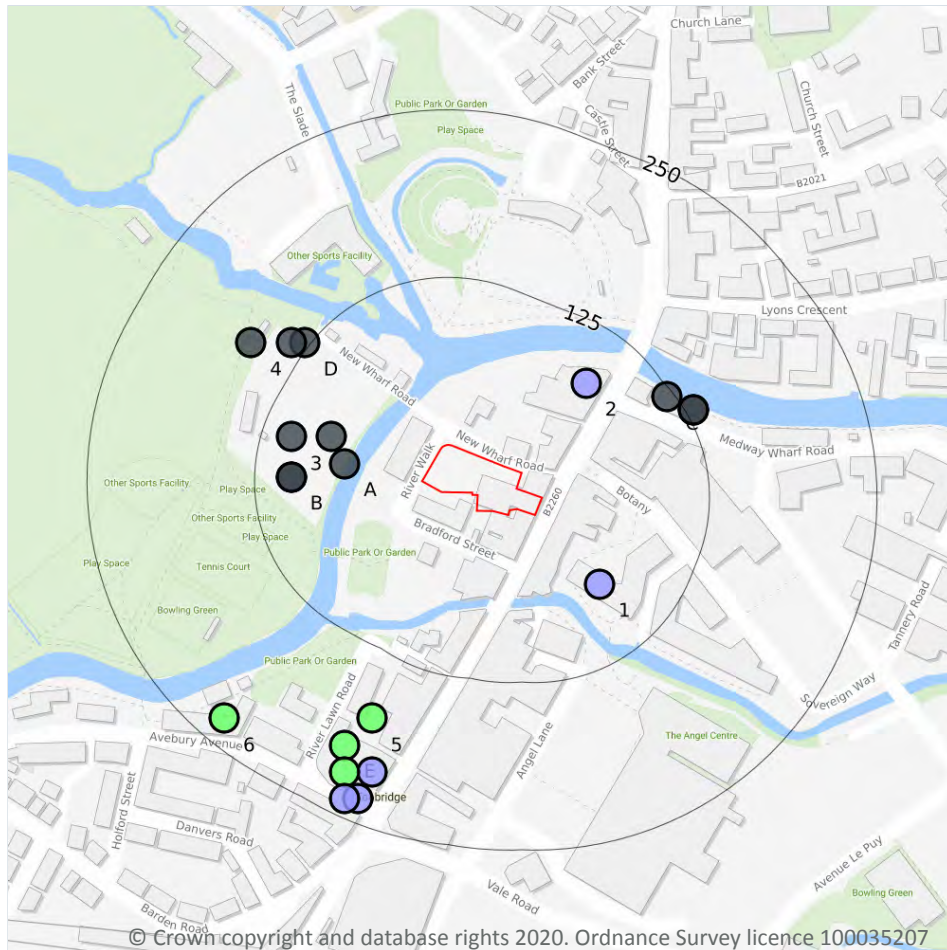
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 116**

ID	Location	Category	Description
2	27m S	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

20

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 118**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	59m W	558840 146410	NEW WHARF ROAD WORKS, TONBRIDGE	-	Y	N/A
1	71m SE	559030 146320	AT ROLAND STAGG LTD	9.14	N	758590
A	75m NW	558830 146430	WHARF ROAD WORKS TONBRIDGE	-	Y	N/A

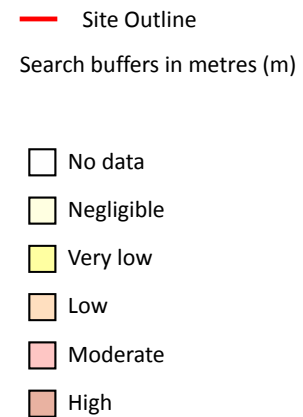
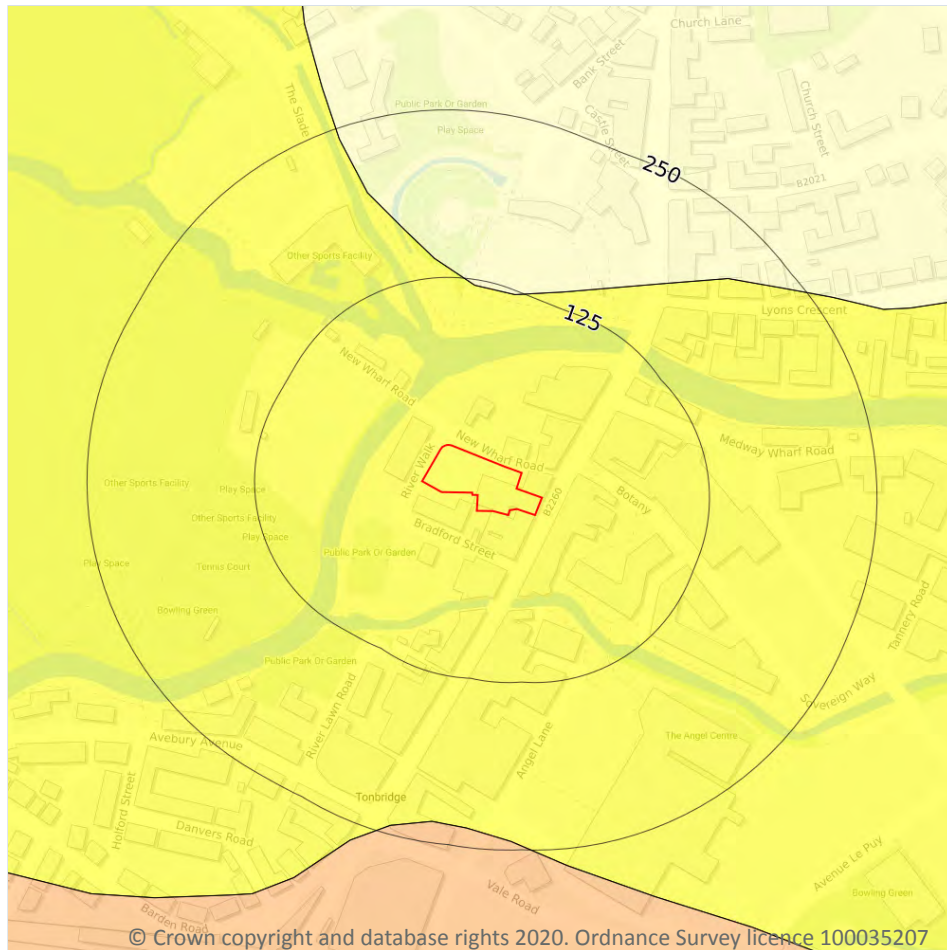


ID	Location	Grid reference	Name	Length	Confidential	Web link
2	82m NE	559020 146470	RIVER WALK TONBRIDGE	7.31	N	758584
B	98m W	558800 146400	TONBRIDGE WATER TREATMENT WORKS (TRIAL ASHDOWN)	-	Y	N/A
B	98m W	558800 146400	TONBRIDGE WATER TREATMENT WORKS (TRIAL TWS)	-	Y	N/A
3	103m W	558800 146430	SEVENOAKS & TONBRIDGE WATER CO	-	Y	N/A
C	120m NE	559080 146460	MAYLAMs WHARF TONBRIDGE 3	-	Y	N/A
D	129m NW	558810 146500	NEW WHARF ROAD WORKS, TONBRIDGE	-	Y	N/A
C	131m NE	559100 146450	MAYLAMs WHARF TONBRIDGE 1	-	Y	N/A
C	131m NE	559100 146450	MAYLAMs WHARF TONBRIDGE 2	-	Y	N/A
D	137m NW	558800 146500	TONBRIDGE CASTLE	-	Y	N/A
4	162m NW	558770 146500	WHARF ROAD TUNBRIDGE	-	Y	N/A
5	174m SW	558860 146220	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE 1	10.97	N	16094288
E	201m SW	558840 146200	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE 2	11.15	N	16094289
E	210m S	558860 146180	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE TP 1	1.7	N	16094291
E	218m SW	558840 146180	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE 3	15.24	N	16094290
6	230m SW	558750 146220	TONBRIDGE TELEPHONE EXCHANGE BH1-5	14.94	N	758501
E	232m S	558850 146160	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE TP 3	1.21	N	16094293
E	236m SW	558840 146160	J SAINSBURY LTD, PROPOSED NEW STORE, TONBRIDGE TP 2	1.7	N	16094292

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

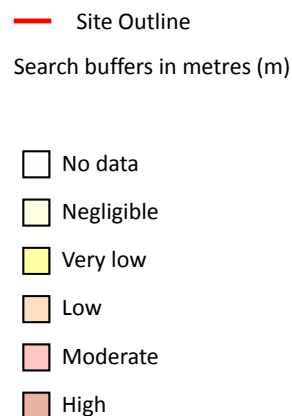
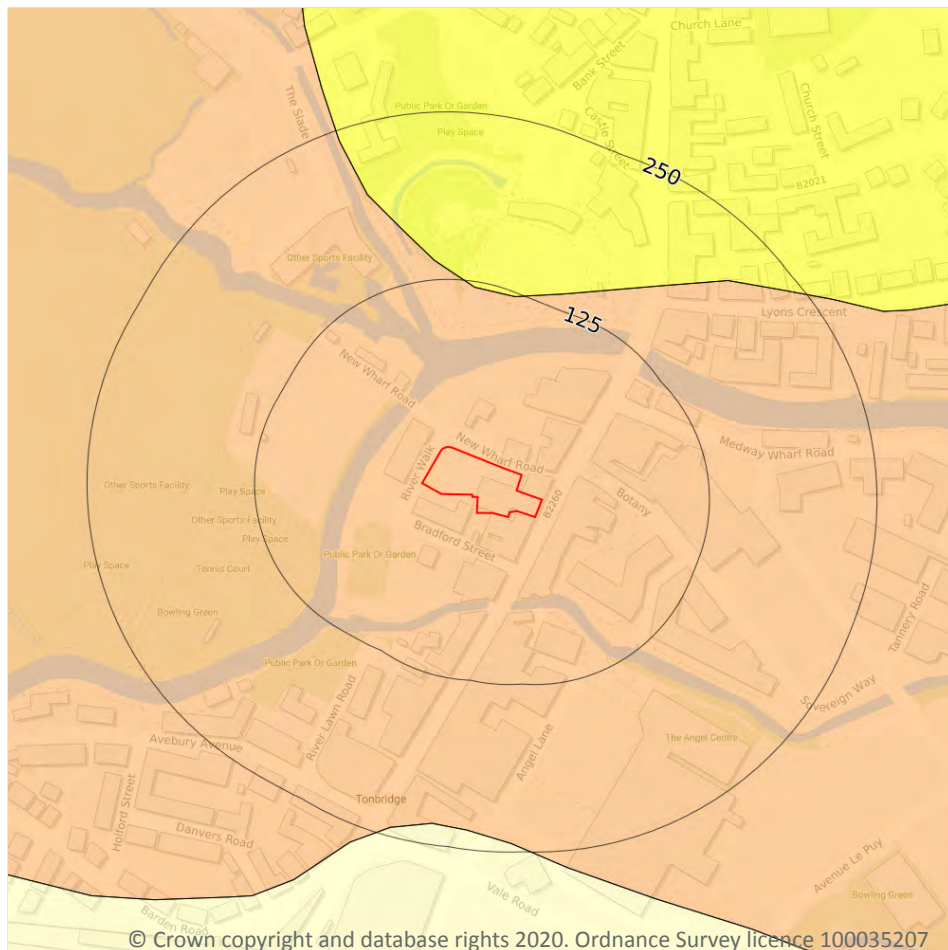
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 120**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

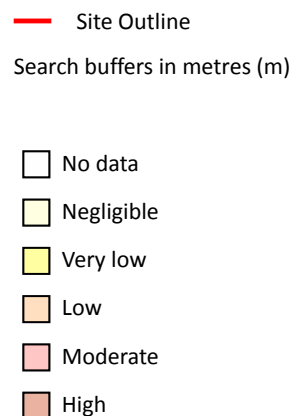
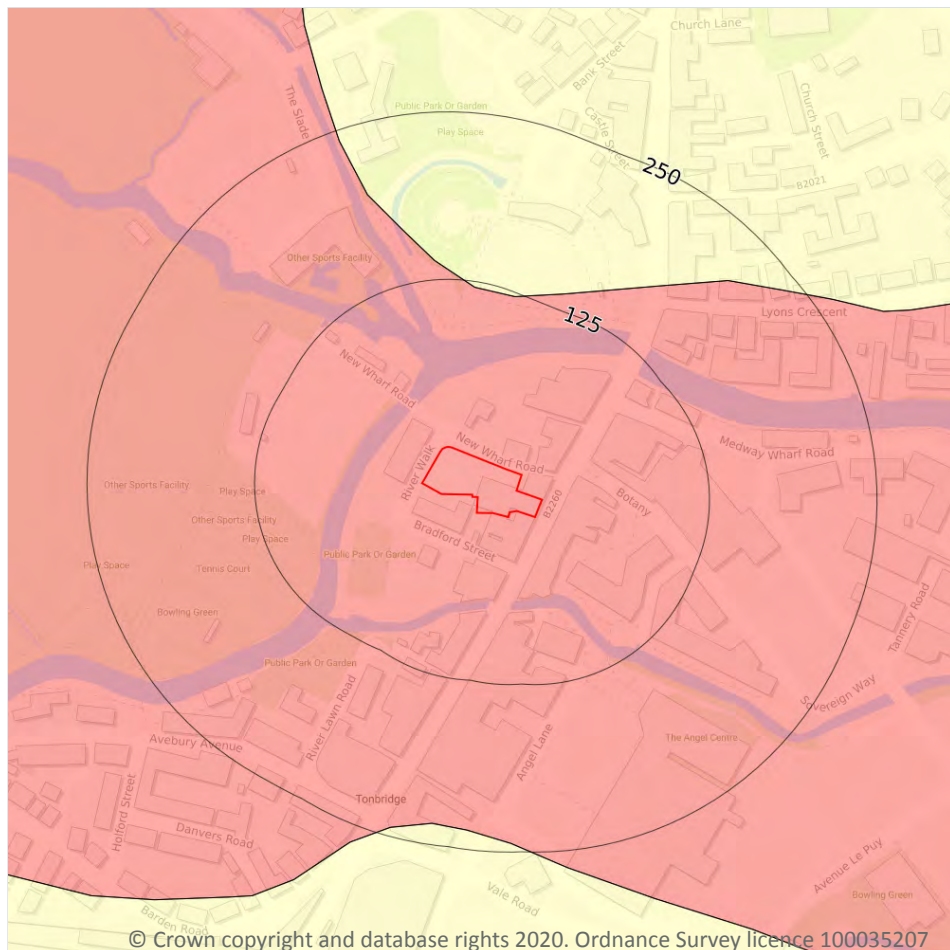
Features are displayed on the Natural ground subsidence - Running sands map on **page 121**

Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

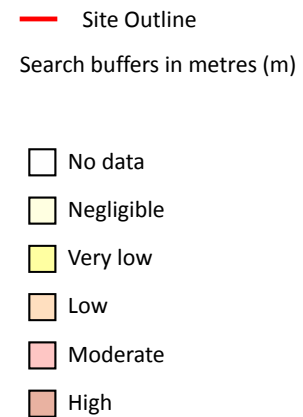
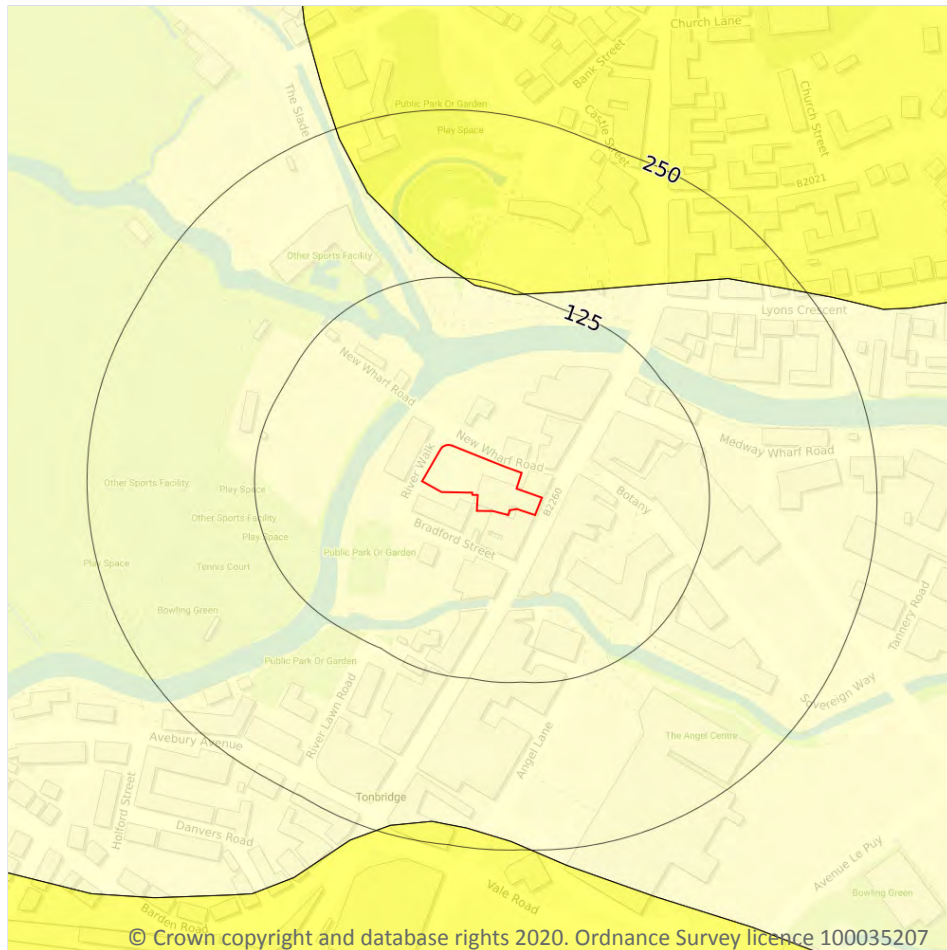
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 122**

Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

1

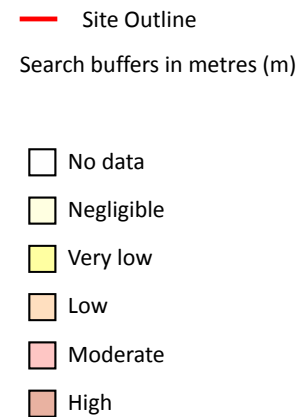
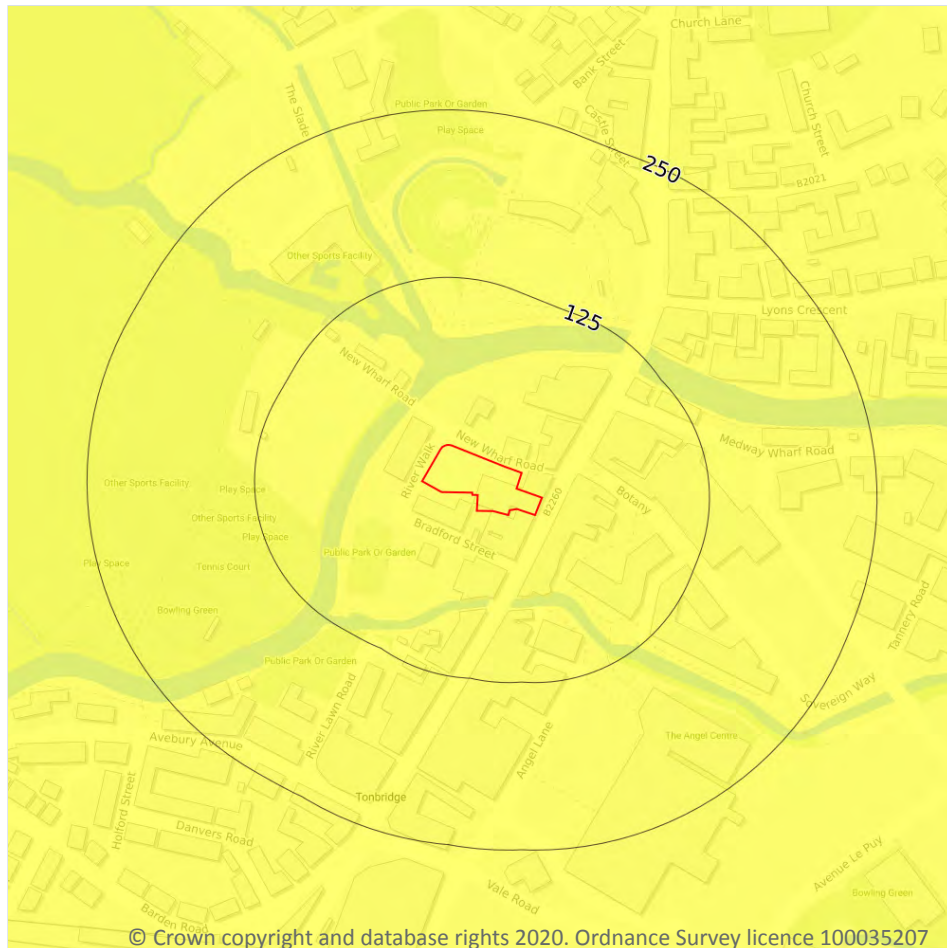
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 123**

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

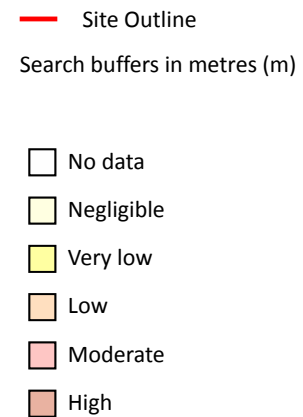
Features are displayed on the Natural ground subsidence - Landslides map on **page 124**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

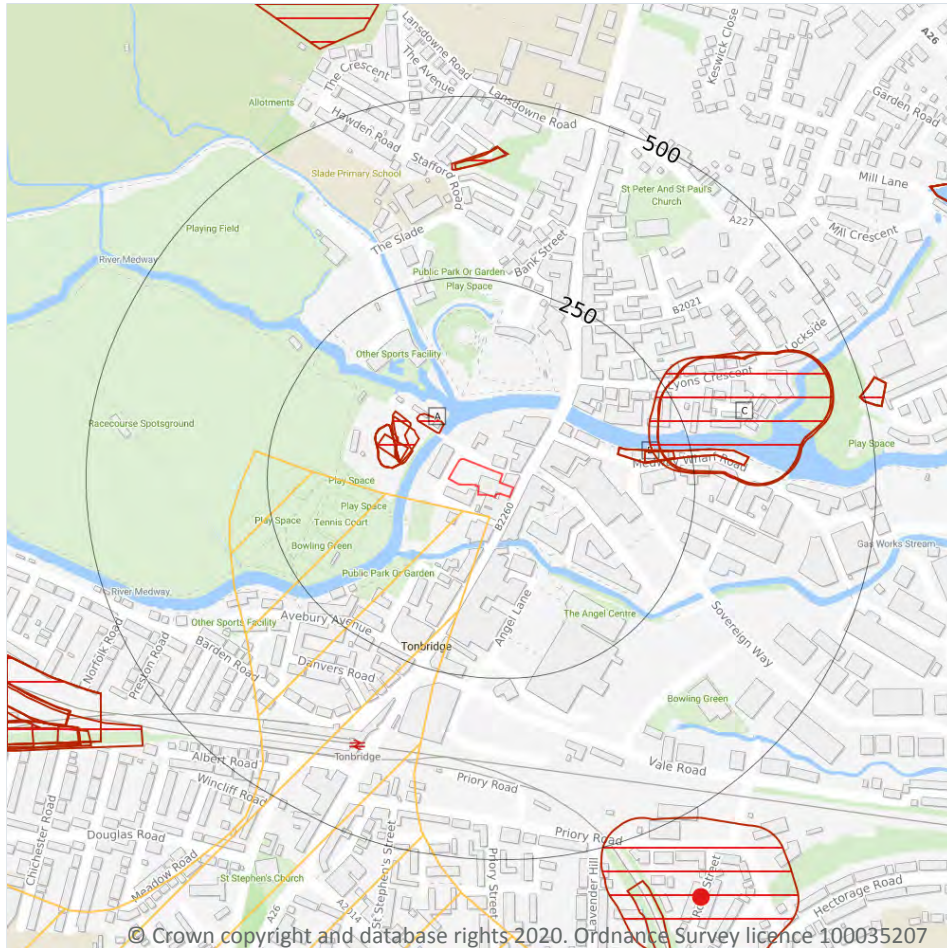
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 125**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

14

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 127**

ID	Location	Land Use	Year of mapping	Mapping scale
A	47m NW	Unspecified Heap	1869	1:10560
A	62m NW	Ponds	1895	1:10560
A	63m NW	Ponds	1869	1:10560
A	70m NW	Reservoir	1938	1:10560
A	70m W	Unspecified Pit	1993	1:10000
A	70m W	Unspecified Pit	1988	1:10000
A	70m W	Unspecified Pit	1978	1:10000
A	70m W	Unspecified Pit	1974	1:10000
B	151m E	Unspecified Wharf	1938	1:10560
B	151m E	Unspecified Wharf	1938	1:10560
B	185m E	Unspecified Wharf	1954	1:10560
C	198m E	Unspecified Wharf	1895	1:10560
C	209m E	Unspecified Wharf	1938	1:10560
C	209m E	Unspecified Wharf	1907	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m**0**

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m**0**

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m**2**

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining, ground workings and natural cavities map on **page 127**

ID	Location	Name	Commodity	Class	Likelihood
1	27m S	Not available	Iron Ore	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	922m E	Not available	Iron Ore	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.



18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site

0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site

0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

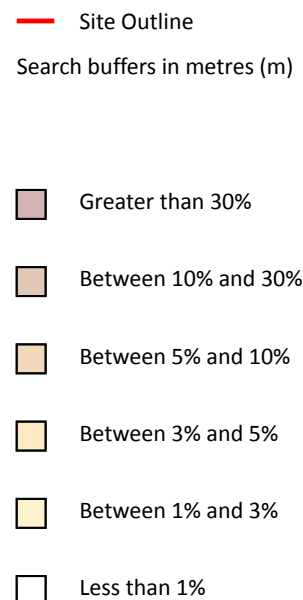
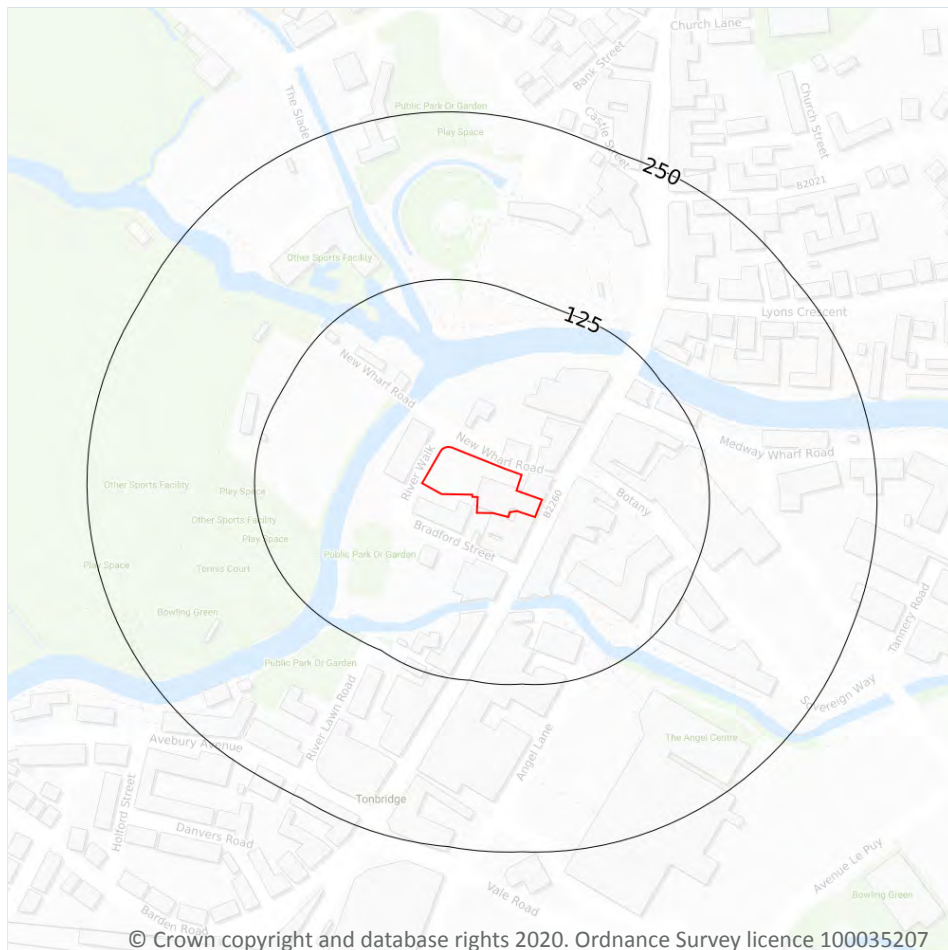
18.13 Clay mining

Records on site	0
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Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 132**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
13m E	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
27m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.







British National Grid (27700) : 559030,146320

RECORD of WELL or BORING **287**

Survey No. **77**

1" N.S. **287**

1" O.S. **77**

at (house or farm) **Reed Stagg, Ltd., Batem**

Town, Village, &c. **Tonbridge** County **Kent**

Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps).

TQ 5903 4638

Popular edition (Sheet

one-inch map) Square

Surface level of ground **2.72** ft. above Ordnance Datum. Well or Bore commenced at **2.72** ft. below surface level of ground.

Sunk **2.72** ft., diameter **2.72** ft. Bored **2.72** ft.; diameter of boring: **2.72** in., at bottom **2.72** in.

Details of lining tubes (internal diameters preferred)

TQ 54/25

Water struck at depths of (feet)

Rest-level of water below top of well or bore **2.72** ft. Pumping level **2.72** ft. Time of recovery **2.72** hours.

Suction at **2.72** ft. depth. Yield: (i) on test **2.72** galls. per **2.72** (ii) normal **2.72** galls. per **2.72**

Quality (attach copy of analysis if available)

Made by **for Mr.** Date of boring **1909**

Information from **D. S. Bacon (Mans, 1938)**

(For Survey use only).
GEOLOGICAL
CLASSIFICATION.

NATURE OF STRATA.
(and any additional remarks)

THICKNESS.

Feet. Inches.

DEPTH.

Feet. Inches.

Alluvium & River Gravel assumed to have been
drilled through **17/10/68**

30

Well has been disused for the last 20 years
and the Foundry is now supplied by
water from mains. Well always gave an
adequate supply of water. Well top now
covered over. No other details available.
Visited **3.12.1952**. H.M.P.
O.D. **73** feet.

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W. 7.

For Survey use only.

Date received.	G.S.M.	M. of H. notified.	Site marked on 1" map.
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(24788C) Wt 28930/205

Crossfield
CONSULTING
GEOTECHNICAL ENVIRONMENTAL