SAUL
HOMES

FLOOD RISK ASSESSMENT

LAND OFF CHURCH STREET, BRIERLEY, BARNSLEY, S72 9HT

FOR SAUL CONSTRUCTION LTD

APRIL 2010

Introduction

This report is commissioned to investigate and report on the flood risk of this site in accordance with PPS 25. The report is based upon information supplied by the client and from relevant authorities in both written and verbal format. Due to the short timescales available some of this information is in verbal form only. No liability can be accepted for information supplied by third parties which is subsequently found to be inaccurate or incorrect.

The Site

Situated off Church Street, Brierley, on land that was previously part of the Brierley Estate, the site lies around OS grid reference 53° 35'41 N – 1° 22'56 W and is approximately 1.29 hectares in area.

The site is relatively flat from the northern to southern boundaries. At present the site frontage on the western boundary adjacent to Church Street is approximately 200-300 mm above the footway. The site rises to a crest of approximately 30 metres from, and parallel to, Church Street. It then falls to the north east; with a low point in the north eastern corner 3 metres lower than the levels to Church Street.

The site is approximately square in nature and formerly consisted of a Brierley Hall estate (a Grade 2 listed building – still retained) with extensions to the rear. In addition there were a number of other outbuildings within a former works depot compound; and a detached residential property, still retained at present. A large area of the site is currently tarmac hardstanding which will be removed during the course of redevelopment to provide 29 No new residential units with private gardens and the conversion of Brierley Hall to form 3 No separate dwellings, together with drained access roads, garaging and hard standings.

The site abuts open farmland and public open space on the north eastern boundary, which falls away from the site. A copy of the topographical plan is enclosed within Appendix A together with a site location plan. This document should be read in conjunction with the Ground Investigation report previously submitted. There are several trees on site, some of which are the subject of tree preservation order number TPO7/2008, which form the subject of the arboreal report, previously submitted under this application, together with the Ground Investigation report listed above, prepared by Haigh Huddleston & Associates which describes underlying ground conditions with recommendations for redevelopment and future ground drainage of the site.

Flood Risk

PPS25 – Development and Flood Risk 2007, requires that Flood Risk Assessments review should determine that the development site would not add to, and should, where practicable, reduce the flood risk for both on site and off site properties. The future users of the development must not be placed in danger from flooding and should remain so throughout the lifetime of the development. It also requires that the effects of climate change be taken into account together with the impacts of extreme events and flood defence failures. To this extent the sequential Test outlined in PPS 24, must be applied to each development site.

Based upon the published Environment Agency Flood Risk maps, enclosed (see Appendix A: EA Maps), the site falls outside of flood plain maps, is situated in the centre of a long established settlement on an elevated plateau which overlooks Barnsley and the surrounding areas within the Dearne Valley, facing as is it does the sub slopes of the Pennines to the west. The site falls within the low probability Zone 1, where, in accordance with Annex D to PPS25,

all uses of land are appropriate. The site has previously been used for office and commercial purposes and the conversion of Brierley Hall to 3 No dwellings instead of office use and the replacement of outbuildings forming the works depot by housing, with private gardens within an established settlement seems acceptable. The sequential test is therefore met and development is considered appropriate.

Flood Risks

There are four main flood risks to be evaluated:

1. Inundation from river or tidal waters.
2. Flood waters from rainfall on site and not being able to discharge at sufficient rate from the site.
3. The risk of overland flows from adjacent land.
4. The risk of flooding to properties downstream of the site connection due to the development of the site.

Flood risk will be discussed in turn;

1. Flood risk from river and tidal waters
   The site sits on a raised area of land as described earlier to adjacent land as described earlier, on a plateau above the Dearne Valley area. The site does not currently fall within the Environment Agency issued flood risk maps for this area and there are no known flood risk in the immediate vicinity, the nearest such area being about the settlement of Shafton, some 1½ miles away on a much lower level than the application site. The flood risk for the site is, therefore, considered to be less than 0.1% probability storm and the development is appropriate.

2. Flood risk from on site rainfall
   The existing site is currently covered to a large extent by tarmac surface forming access to the former rear works depot and parking areas/service roads serving the former offices previously located in Brierley Hall and its extension. About the Grade 2 listed building that is the remaining Hall, are a number of established trees, which are the subject of a Tree Preservation order, and which are to remain after the conversion of this building to form 3 separate. The area about the Hall is, and will remain, chiefly a lawned/garden area; to the rear of the hall tarmac/concrete path surfaces will be removed to provide front and rear garden area to one of the converted units (No 6). In addition, due to the design brief requirement that the new build element of the redevelopment does not detract from the setting of Brierley Hall, an area of tarmac roadway is to be removed and planted up adjacent to the existing garden area for Brierley adjacent to Church Street, which, in addition to the removal of extensive former car parking and access roads and the transfer of these surfaces to private gardens for the proposed dwellings, will reduce the risk of surface water flooding due to on site rainfall. As previously mentioned, a ground survey report, by Messrs Haigh Huddleston & Associates has been carried out, and submitted as part of this application to which reference should be made. Trial holes for soakaway have been dug and tested; the overall findings are a listed in this document paragraph 10.4 (sub paragraphs refer). Essentially a sustainable drainage solution in the form of soakaways, as recommended by PSS25, is possible. PSS25 mentions "all developers/Local Authorities should seek to reduce overall flood risk in the area and beyond through the layout and form of development and the appropriate application of sustainable drainage techniques." It is considered that these proposals, which include cross-connecting adjacent soakaways, will reduce to an acceptable level the risk of flooding on site and downstream.

3. The risk of overland flows causing flooding on site
   The risk of this type of flood is primarily dependent on the local topography. In this instance, the site is higher than land round about as described earlier; the risk of water entering the site is therefore, minimal, since to the north and south the site is bordered by continuous walls, alongside Hall farm and a public footpath respectively. Adequate soakaway drainage to the new single access way into the site by the proposed adopted will prevent water run-off from this road onto Church Street. Adoptable highway soakaways will be located in area outside of the main adoptable highways and will be hard paved. Full details will be submitted to Barnsley MBC Land Drainage and Highways section prior to commencement of the works, and Yorkshire Water.

   The only other source of storm water flows would be surcharging of the existing sewerage systems within the adjacent road. Since the site is relatively higher than this road, which has a noticeable longitudinal fall, any flows will tend to flow away from the site. The risk of flooding from this source is, therefore, considered acceptable.

4. Flood risk to properties downstream due to the development of the site
   By the reduction of the amount of impermeable surfaces on site, involving the removal of large area of tarmac on site, the provision of permeable garden areas to the existing Hall, and new dwellings, together with the provision of a sustainable surface water drainage system, with acceptable ground conditions prevailing, it is considered that the risk of flooding, both in the short term and for all storms up to and beyond the 100 year storm is acceptable.

Foul Drainage

An existing combined sewer is located within Church Street, 225mm diameter, levels on which indicate, that besides, having the capacity to accept foul water flows from the site; it is deep enough to serve the site by gravitational flows.

Conclusions

The primary flood risk for the site is, therefore, storm water not being able to leave the site at sufficient rate. The sustainable soakaway system will reduce pressure on the off-site existing combined sewer in Church Street, and risk to properties downstream. An increase in the size of the soakaways beyond the normal by 20% and the sufficient draining of equal areas, together with cross-connection of adjacent soakaways and the provision should give sufficient capacity to cater for anticipated climatic change in storm conditions up to 2080.

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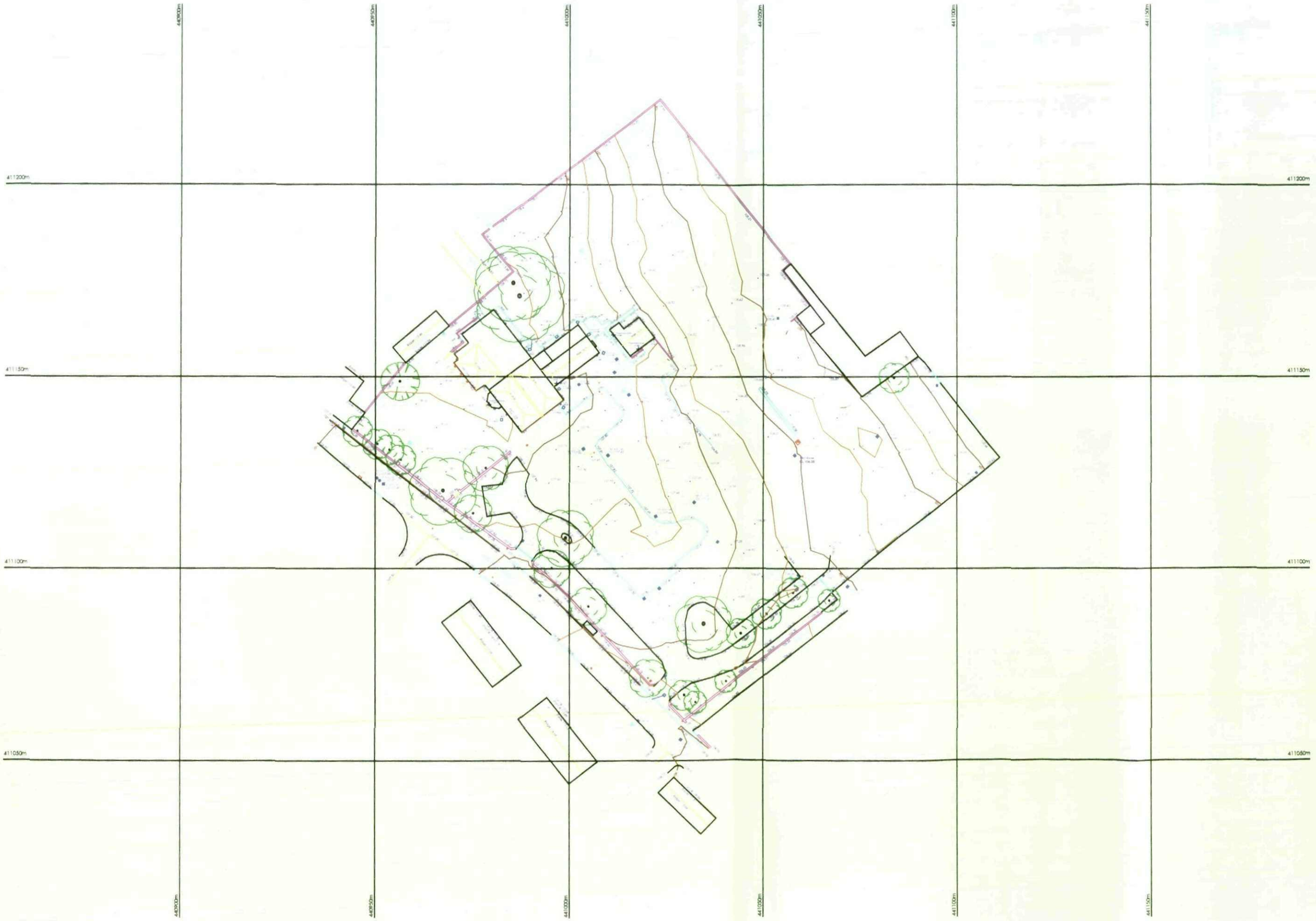
APPENDIX 'A'

SITE LOCATION PLAN
– TOPOGRAPHY

PROPOSED SITE LAYOUT
– DRG No E09/4942/00/REV A

ENVIRONMENT AGENCY
FLOOD MAPS ETC



CONTROL & DATUM INFO

Grid Orientation : T

Level Datum : OS On

CLIENT

-

JOB DESCRIPTION

Church Street
Brierley
Barnsley

TITLE

Site Plan - Topographical

CADITAL Ltd
FACILITY MANAGEMENT SERVICES

LANGTHWAITE HOUSE
LANGTHWAITE BUSINESS PARK
SOUTH KIRKBY PONTEFRACT
WEST YORKSHIRE
WF9 3AE

TELEPHONE (01977) 649888
MOBILE 0777 6122 079
EMAIL dave@caditat.co.uk / info@caditat.co.uk
WWW caditat.co.uk

AREA: –

SCALE: –
DATE: –

13-15	3
16-17	2
18-25	8
26-32	7

P:
VP
G (

Brierley hall to be sub-divided to form 32 houses. Rear section to be re-skimmed externals to match existing stonework

Railings infill to fencing / hedges

Infill fence

Screen wall fencing / hedges infill

Notional boundary to ex. public space

Railings along side footp around cemetary oppos

New 2m high screen wall on boundary

Screen wall as above

Railings over wall as above, between screen walls

Wall height raised to form screening between garage at No. 9 and tree 22

Low level stone wall

Bus shelter

Public Footpath

CHURCH STREET

Church St. Brierley.
HHA. Proposed private FS route.
16/02/10 1:500.
4942.

Enter postcode or place name:

S72 9HT

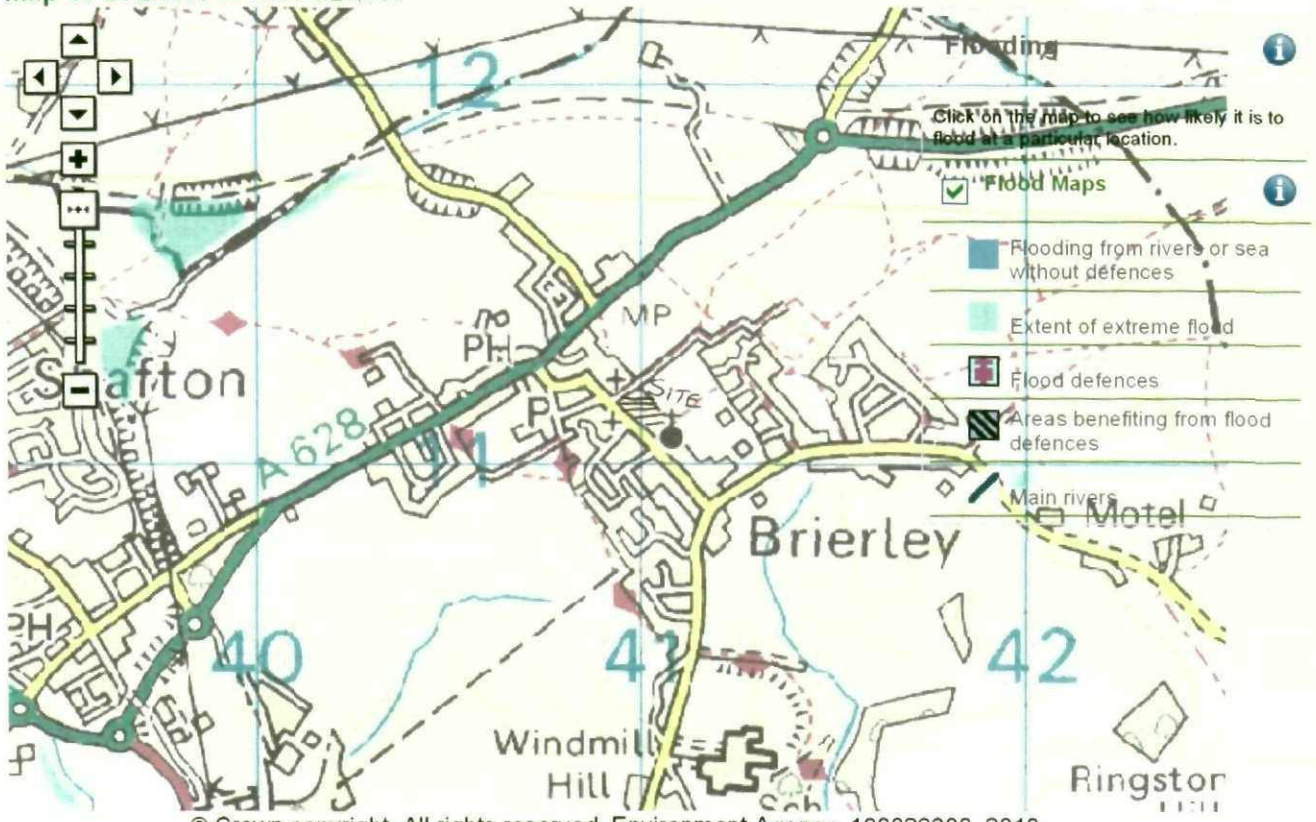
Search

Overview map:

Other topics for this area...

- Risk of Flooding - NEW Main River Line added
- Flood Warning
- Rivers
- Bathing Water Quality
- Groundwater - NEW Aquifer Maps
- Waste
- Pollution
- Air Pollution
- Environment Agency Offices
- River Basin Management Plans

Map of S72 9HT at scale 1:20,000



view text version of all results

An issue has been identified in Risingbrook, Stafford:

This will be resolved during the next update in July 2010.
For further information regarding this area please contact us directly.

More about flooding:

Understanding the flood map
A more detailed explanation to help you understand the flood map shown above.

Current flood warnings

FLOODING

Enter postcode or place name:

Search

Overview map:

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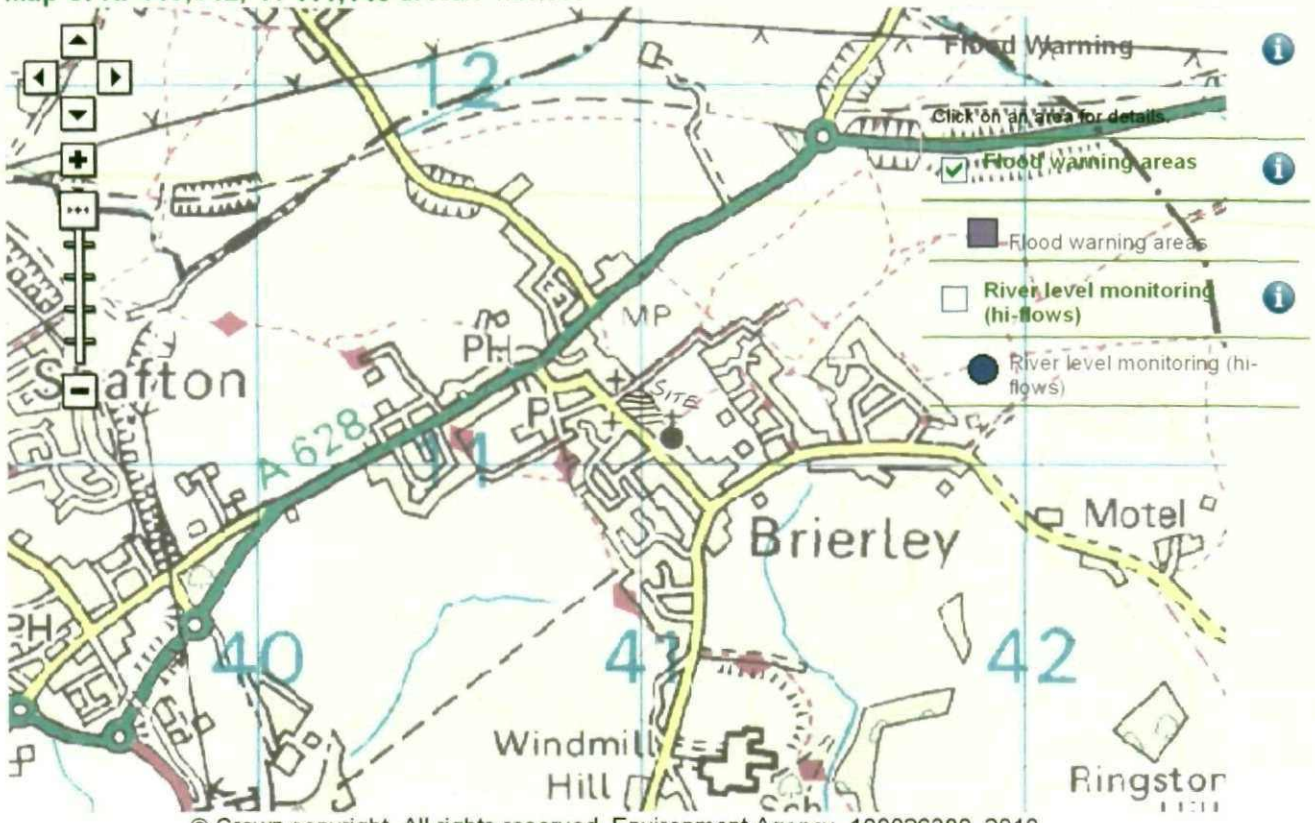
Map of X: 440,942; Y: 411,143 at scale 1:20,000



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The map shows the areas for which we issue flood warnings.

See also:

Flood warning areas
For many areas at risk of flood, the Environment Agency warns residents when floods are likely to occur. If you live within a shaded area on the map, then flood warnings are available to you.

FLOOD WARNING

Enter postcode or place name:

Search

Overview map:

Other topics for this area...

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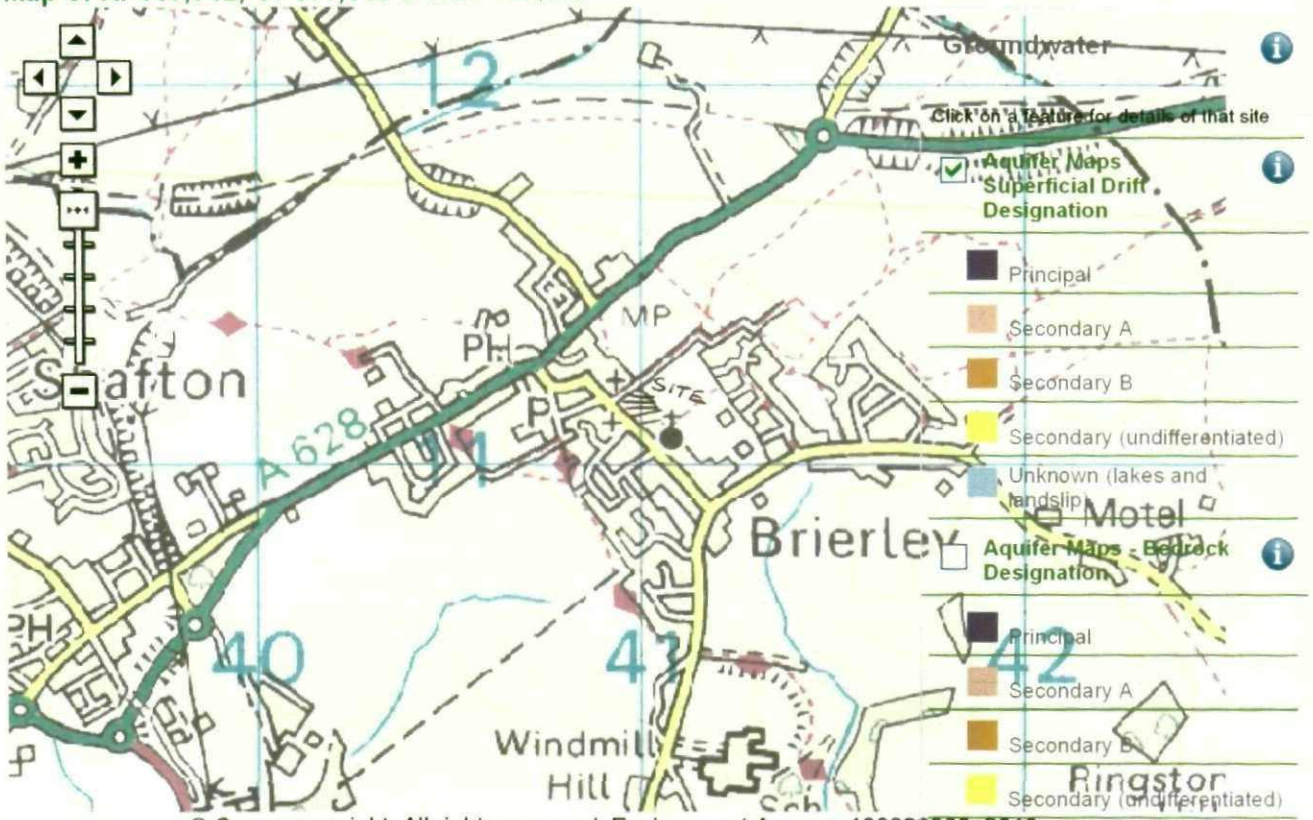

view text version of all results

An issue has been identified with the Source Protection Zones in the Hampshire Avon River Catchment:

This will be resolved during the next update in May 2010.
For further information regarding this area please contact the Groundwater and Contaminated Land Team directly 01392 442095 .

Tell me more about the Aquifer Designation data:

New Aquifer Designation Maps
From 1st April 2010 new aquifer designations replace the old system of

GROUNDWATER

Enter postcode or place name:

S72 9HT

Search

Overview map:

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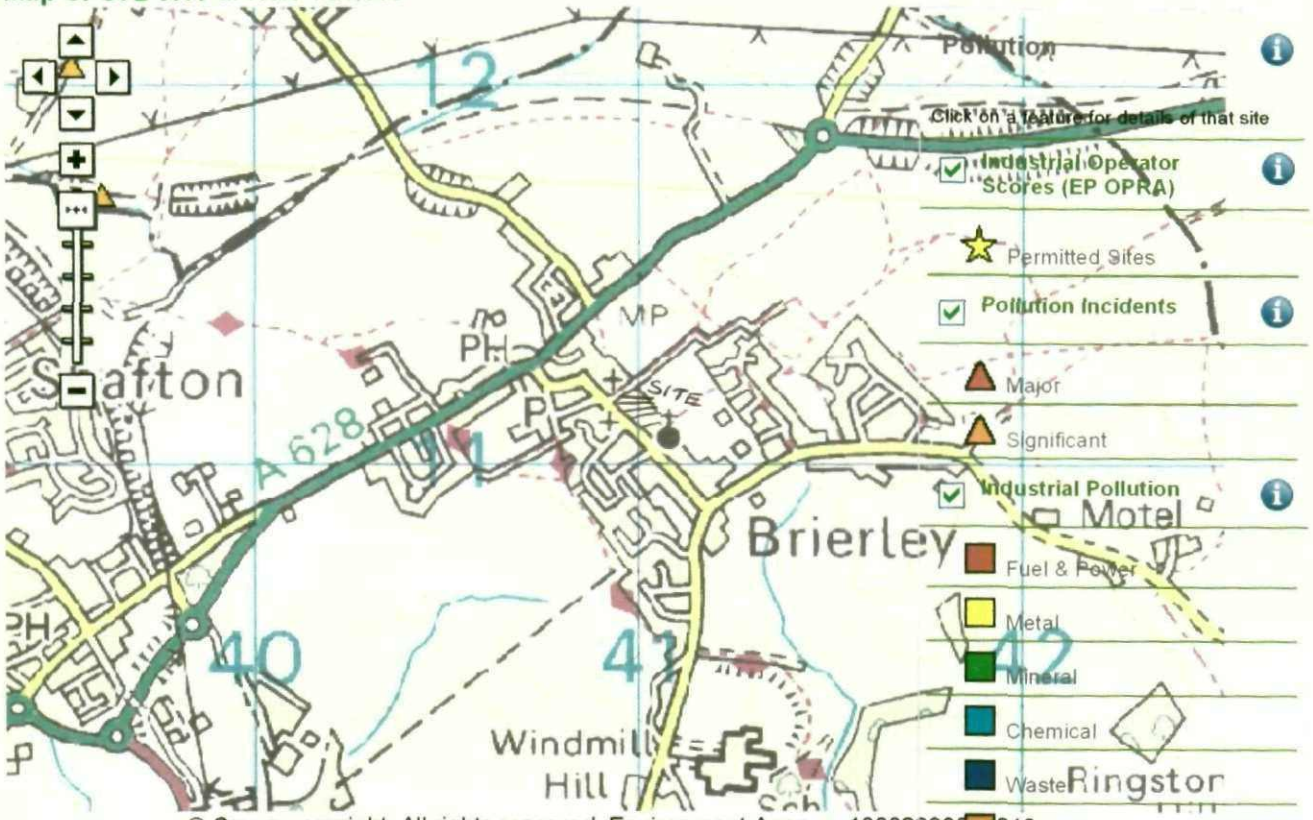
Map of S72 9HT at scale 1:20,000



view text version of all results

Tell me more about the map data:

Pollution Incidents
Find out how we categorise incidents and their possible effects on health and the environment

Industrial Pollution
Find out how we monitor and control the releases produced by industrial processes

Industrial Operator Scores (EP OPRA)

POLLUTION

Enter postcode or place name:

S72 9HT

Search

Overview map:

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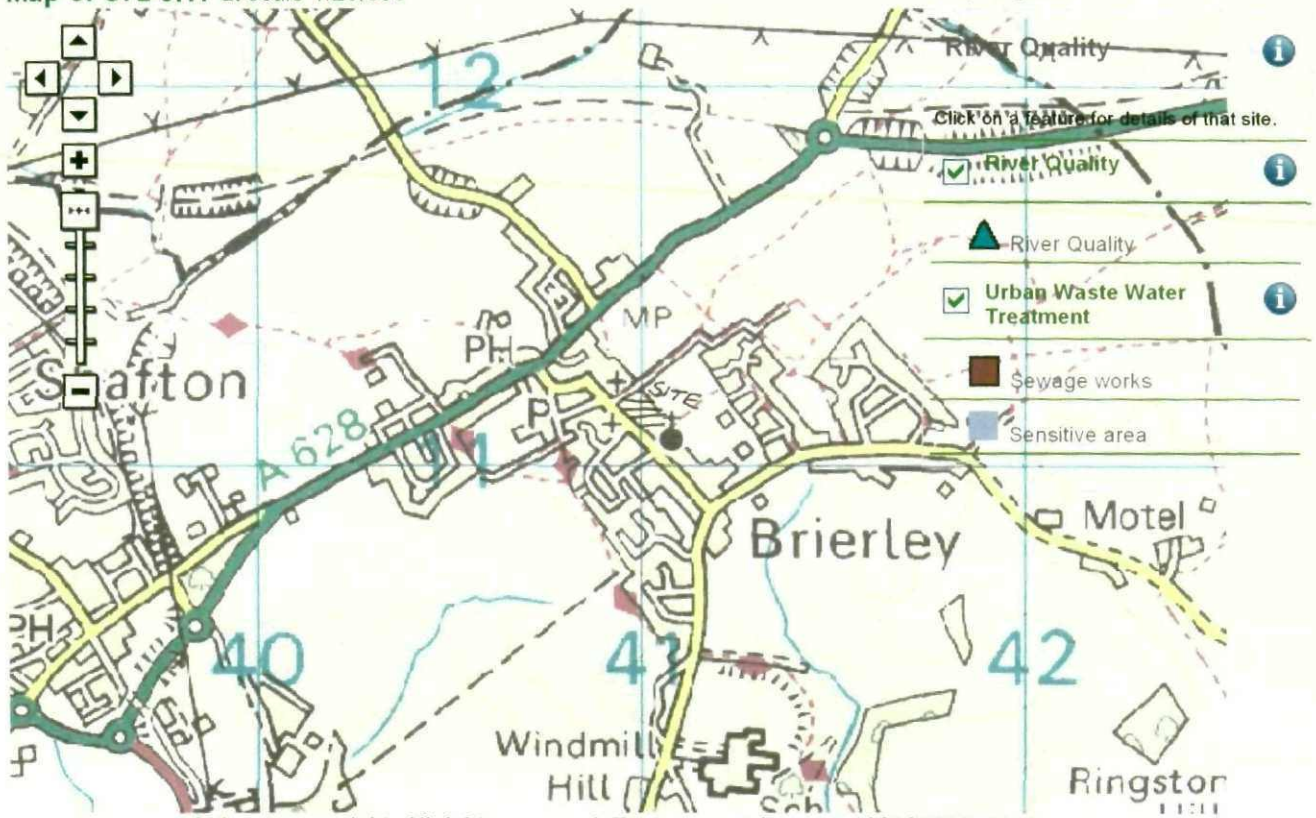

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Tell me more about the map data:

How do we assess the quality of a river?
We sample around 7000 river and canal sites 12 times a year and test the water chemistry, biology and nutrient levels. This tells us whether there are any pollutants and whether we need to target areas for improvement.

Why do we monitor urban waste water treatment?
Many rivers, lakes estuaries and coastal waters are environmentally sensitive areas, and if levels of nutrients released from sewage treatment works are too

RIVER QUALITY

Enter postcode or place name:

S72 9HT

Search

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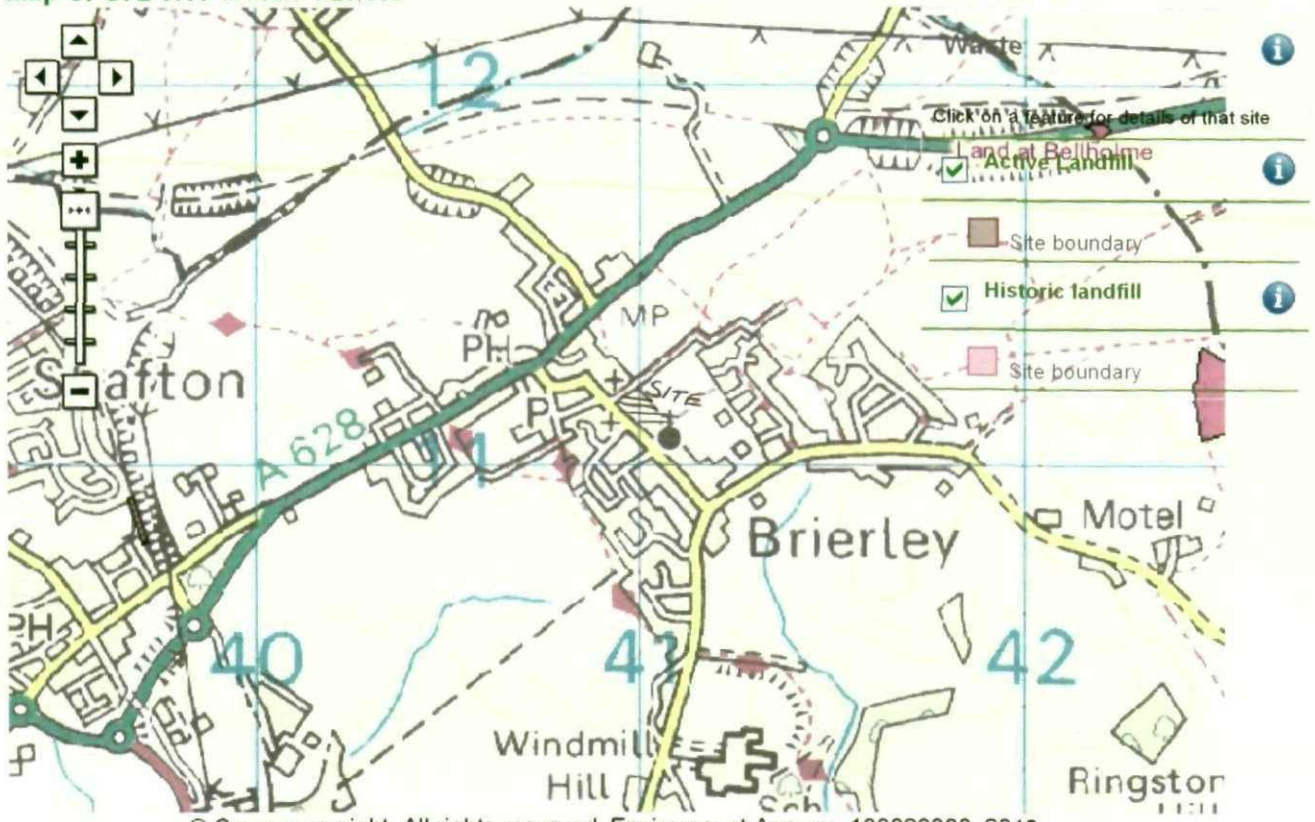

view text version of all results

Tell me more about waste and landfill:

Active landfills are sites with a current licence that are still accepting waste, or are no longer accepting waste but still being actively managed.
Historic landfills are sites that are now closed and may date back to early records.

Waste regulation
We regulate waste management through a system of licences. Find out how to get the correct licence here, get data on waste and find out if there are any rules

WASTE

Enter postcode or place name:

Search

Overview map:

Other topics for this area...

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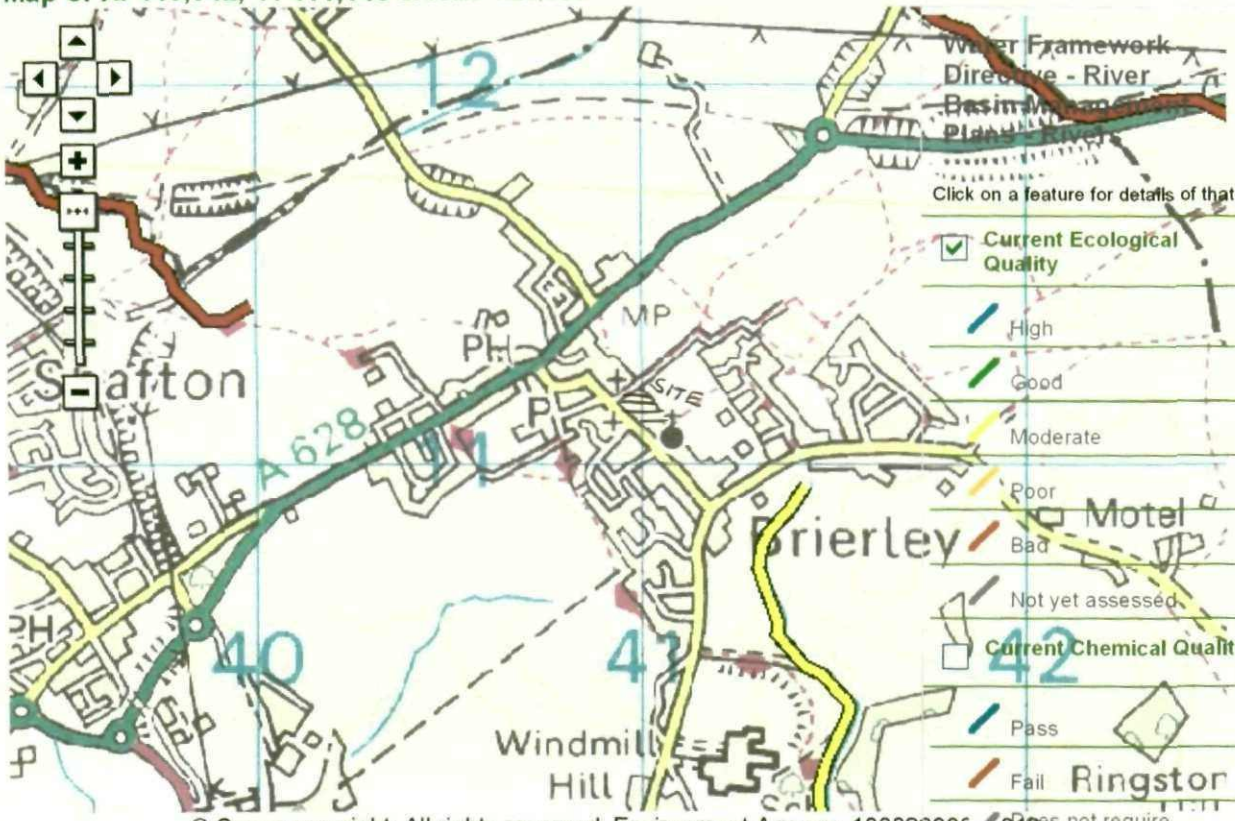

view text version of all results

River Basin Management Plans
View the plans for all river basin districts in England and Wales.

More information
About the Water Framework Directive and River Basin Management Planning.

WATER FRAMEWORK DIRECTIVE
RIVER BASIN MANAGEMENT PLANS
– RIVERS