JPA

JOYNES PIKE
& ASSOCIATES LTD

Engineering a Sustainable Environment

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Revision	**Status**	**Prepared by**	**Reviewed by**	**Authorised by**	**Date**
-	For Approval				August 2007
		A Precious Principal Engineer	R Foord Associate	J Saunders Director	

Staffs Fitness Ltd
Proposed Development at
Springfield Road, Leek, ST13 6LH
Flood Risk and Runoff Assessment

Job Number: 15070338
August 2007

Contents

1 Executive Summary

1.1 Joynes Pike and Associates (JPA) were commissioned to carry out a flood risk and run off assessment for the proposed mixed use housing and commercial development at land at Springfield Road, Leek.

1.2 The site was identified from the Flood Zone information given on the Environment Agency website as within FZ1 and in an area of low potential flooding.

1.3 It is considered that the proposed development is suitable for this level of flood risk and will not increase the flood risk locally.

1.4 Site drainage proposals will incorporate sustainable drainage techniques, wherever possible, and surface water attenuation to control surface water run-off and limit flows from the proposed development.

1.5 In accordance with the requirements and principles of PPS25 to assess flood risk on new development sites, this report shows the site can provide a suitable standard of flood defence for the lifetime of the development.

2 Introduction

2.1 The Government has placed increasing priority on the need to take full account of the risks associated with flooding at all stages of the planning and development process, to reduce future damage to property and loss of life. PPS25 Development and Flood Risk identifies how the issue of flooding is dealt with in the drafting of planning policy and the consideration of planning applications.

2.2 The purpose of this report is to assist Staffs Fitness Ltd and the Local Planning Authority to make an informed decision on the flood risks associated with the site redevelopment.

2.3 Local Planning Authorities have the powers to control development in accordance with the guidelines contained in PPS 25, and are expected to apply a risk-based approach to development with the sequential test in PPS25 Annex D. This sets out a sequential characterisation of flood risk in terms of annual probability of river, tidal and coastal flooding.

2.4 In accordance with the sequential test in PPS 25 sites are to be classed as follows:

Flood Zone	Appropriate Uses
Flood Zone 1 **Low Probability** – This zone comprises land having less than 1 in 1000 annual probability of river or sea flooding (<0.1%)	All uses of land are appropriate in this zone
Flood Zone 2 **Medium Probability** – This zone comprises land assessed as having between 1in 100 and 1 in 1000 annual probability of river flooding (1%-0.1%) or between 1 in 200 and 1 in 10000 annual probability of sea flooding (0.5%-0.1%) in any year	The water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure in Table D.2 are appropriate in this Zone Subject to the Sequential Test being applied, the highly vulnerable uses in Table D.2 are only appropriate in this zone if the Exception Test is passed

Flood Zone 3a **High Probability** – This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year	The water-compatible and less vulnerable uses of land in Table D.2 area appropriate in this zone. The highly vulnerable uses in Table D.2 should not be permitted in this zone. The more vulnerable and essential infrastructure uses in Table D.2 should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this should be designed and constructed to remain operational and safe for users in time of flood.
Flood Zone 3b **Functional Floodplain** – This zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes)	Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted in this zone. It should be designed and constructed to: • Remain operational and safe for users in times of flood; • Result in no net loss of floodplain storage; • Not impede water flows; and • Not increase flood risk elsewhere. • Essential infrastructure in this zone should pass the Exception Test.

2.5 The following guidelines and references have been used in the preparation of this report:

a) Planning Policy Statement 25 – Development and Flood Risk (PPS25)

b) DCLG publication – 'Development and Flood Risk – A practice guide Companion to PPS25'

c) Environment Agency Guidance Relating to Planning Policy Guidance Note 25 for Development in Flood Zone 1.

2.6 The report is also based on additional information received from the Environment Agency and Severn Trent Water Ltd.

2.7 This report has been produced on behalf of the client, Staffs Fitness Ltd, and no responsibility is accepted to any third party for all or any part. This report should not be relied upon or transferred to any other parties without the express written authorisation of Joynes Pike & Associates Limited. If any unauthorised Third Party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

2.8 The findings and opinions conveyed within this report are based on information obtained from a variety of sources, as detailed, which Joynes Pike & Associates Limited believes are reliable. Nevertheless, Joynes Pike & Associates Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon from these sources.

3 Existing Site

3.1 Site Description

3.1.1 The site is located off Springfield Road, in an area of land between Springfield Road and Buxton Road in the town of Leek, Staffordshire.

3.1.2 The site is approximately 9440m^2 in area and is currently accessed directly from Springfield Road. The site excludes the property known as 'Brooklyn'.

3.1.3 The site is located approximately 1km east of Leek town centre.

3.1.4 A topographical survey of the site is included as Appendix C. The survey indicates that the site is split in to two 'plateaus' each approximately 60/40 of the total area defined by a footpath.

3.1.5 The higher area, with its boundary along Springfield Road, has levels of approximately 209.0mAOD to the south and 208.0mAOD to the north. From this boundary the site slopes westward to a footpath that crosses the site at the boundary of the plateau, along this footpath the site level is approximately 205.0mAOD.

3.1.6 The lower area extends from the footpath along its southern boundary northwards to the secondary access at Buxton Road.

3.1.7 The southern boundary slopes from the west at 204.5mAOD to the east at 203.0mAOD. The site is relatively flat from this point sloping slightly to 203.0mAOd at the northern boundary.

3.1.8 Approximately 1 mile north west of the site is the River Churnet, an Environment Agency controlled main river.

3.1.9 To the east and adjacent to the site along Springfield Road is a supermarket development, the rest of the site is surrounded by existing housing development with a small commercial garage at the junction of East Street and Springfield Road to the south west.

3.1.10 The higher part of the site is currently occupied by one large warehouse and a smaller commercial building surrounded by hardstanding.

3.1.11 The lower part, to the north of the footpath, is occupied by one existing building surrounded by Greenfield/gardens with a metalled access road.

3.1.12 Approximately 4665m^2 of the existing area can be classified as impermeable consisting of hardstanding and roof areas. This represents 49% of the total site area.

3.2 Existing Site Drainage

3.2.1 The topographical survey identifies several manholes to the Springfield Road side of the site. These would appear to be evidence of a formal site drainage system although there are no existing site records to confirm this.

3.2.2 The lower part of the site also indicates the existing of a formal drainage system.

3.2.3 It is therefore assumed that both areas of the site are drained to the existing adopted systems in Buxton Road and Springfield Road.

3.3 Adopted Drainage

3.3.1 Correspondence received from Severn Trent Water, included in Appendix D, indicates that there are adopted drainage assets recorded crossing the proposed development site.

3.3.2 These include 150mm and 300mm surface water sewers and 225mm foul sewer.

3.3.3 These 150mm and 225mm sewers follow the route of the existing footpath across the site. The 300mm crosses the northern part of the site.

3.4 Highway Drainage

3.4.1 Discussion with Staffordshire Moorlands Council did identify flooding issues with the highway drainage in this area, however this is much further downstream towards the surface water outfall to the River Churnet in Victoria Park some 600 meters to the north west. These flooding issues do not affect this development site.

3.5 Culverted Watercourse

3.5.1 A culverted watercourse is indicated crossing the site, the size and exact route of it is not confirmed.

3.5.2 The Environment Agency have expressed a wish for the watercourse to be opened up to add to the amenity of the area, however at this stage this is not proposed.

3.6 Redevelopment Proposals

3.6.1 The current proposed indicative development plan is shown in Appendix E.

3.6.2 The proposal relates to an outline planning application for 45 dwellings, 285m^2 of commercial development with associated access roads and hardstanding. The amount of development contained in the application and the indicative layout included in Appendix E has been used for the purposes of this assessment.

3.6.3 It has been estimated that the new development will yield 1540m^2 of driveway and parking, 1300m^2 of new roof area and 775m^2 of new access road, giving a total of 3615m^2 or 38% of the total site area.

4 Sources and Extent of Existing Flooding

The site is outside the zone of flooding indicated on the Environment Agency's indicative flood plain maps available on the internet. Therefore the risk of flooding from watercourses has been discounted for this site.

4.1 Overland Flow

4.1.1 Due to the general topography of the local area there is a small inherent risk of flooding from overland flows generated by other impermeable areas.

4.1.2 There is no anecdotal or recorded history of the site being affected by such flows and as the proposed development will effectively reduce the area of the development fronting Springfield Road it is conceivable that the overall flood risk from this element will be reduced.

4.2 Culverted Watercourse

4.2.1 There are no recorded flooding issues related to the culverted watercourse crossing the site and it lies out side the indicative flood plain indicated on the EA's website.

4.2.2 Correspondence from the Environment Agency has indicated that the watercourse may flood in the vicinity of Brooklyn Garden, however this is remote from the site and possible overland flows will be intercepted by the highway before reaching site.

4.3 Groundwater

4.3.1 Discussion with Staffordshire Moorlands Council drainage department indicated that some areas in the district have previously suffered from a high water table.

4.3.2 The current owners of the site have reported no such evidence of this during their tenure.

4.4 Surface Water Run-off

4.4.1 There is no evidence that the existing site suffers from any problems related to the control of surface water originating from the site.

4.4.2 Furthermore there are no indications that the existing adopted drainage in the immediate area suffers from capacity or blockage problems.

4.5 Adopted Drainage

4.5.1 Correspondence received from Severn Trent Water (Appendix D) does not indicate any issues with flooding or sewer capacity in this area.

5 Flood Risk Assessment

The individual flood risk for the sources of flooding identified in Section 4 is assessed based on the existing collated information.

5.1 Overland Flow

5.1.1 The risk of overland flow would mainly be associated with the failure/blockage of the adopted drainage systems or the culverted watercourse upstream. In these cases the existing adopted roads will act as conduits for the displaced flow and intercept it prior to reaching the site.

5.1.2 The layout of the proposed development will reduce the exposure of the site to Springfield Road and thus the flows that could potentially affect the site.

5.1.3 The single site entrance will reduce the possibility of the site being affected by overland flows and coupled with careful grading of the access road could effectively isolate the site from these types of events.

5.1.4 Given the above it is not considered that overland flows generated near to the site will be a significant flood risk for the life time of the development.

5.2 Groundwater

5.2.1 Although the reports of ground water are unverified this possibility should be borne in mind during any subsequent site investigation works.

5.2.2 While not a major risk to the development the effects of high ground water will influence the construction phase and also the design of surface water drainage.

5.2.3 Until this the level of the water table is confirmed no specific mitigation can be determined, however suitable design of the surface water drainage, use of trench boxes and dewatering during construction should suitably control any long term flood risk.

5.3 Control of Surface Water

5.3.1 Part H of the Building Regulations 2002 recommends that surface water run-off shall discharge to one of the following, listed in order of priority:

a) an adequate soakaway or some other adequate infiltration system, or where that is not reasonably practicable,

b) a watercourse, or, where that is not reasonably practicable,

c) a sewer.

5.3.2 With reference to the British Geological Survey Sheet SK06NE, the site is underlain by the Millstone Grit Series.

5.3.3 The site is classed as a minor aquifer with varying permeability and as it is within an urban area, the soil classification is HU (high unclassified). Taken from Groundwater Vulnerability of Derbyshire and North Staffordshire, Sheet 17.

5.3.4 Given the anticipated geology, there is likely to be variable permeability of the underlying bedrock. The viability of an infiltration based system can only be definitively confirmed with site testing.

5.3.5 It may be possible to connect the proposed surface water system to the culverted watercourse under the site. However there are significant flooding issues noted by Staffordshire and Moorlands drainage downstream of the site in the vicinity of Vicarage Road Carpark.

5.3.6 It is considered that the introduction of additional flow to this water course may increase the flood risk off site, as such the use of tis connection is not recommended.

5.3.7 Connection to the existing adopted drainage system is confirmed by Severn Trent Water provided that the connections are made on a like for like basis.

5.3.8 The use of sustainable drainage systems (SuDS) systems for collection and conveyance of surface water is encouraged and can have a positive impact on the local flood scenario. Collection systems such as swales and porous paving can be used to slow down flows and in some cases improve the quality of the run-off by retaining contaminants.

5.3.9 In addition to the above provision of waterbutts to properties will also have a beneficial effect on the surface water flow profile for the development.

5.4 Run-Off Assessment

5.4.1 To mitigate any potential flood risk caused by the development and any possible increase in impermeable area, it is necessary to demonstrate that the site can be suitably drained and have no impact on the existing flood scenario.

5.4.2 The surface water drainage system should also seek to reduce flood risk wherever possible.

5.4.3 In this case the development of the site will itself reduce the flood risk posed by the control of surface water on site by reducing the overall impermeable area to be drained.

5.4.4 Severn Trent Water have confirmed that a like for like connection to the existing drainage system will be allowed provide that the connections are proven via a drainage survey.

5.4.5 Using the current redevelopment proposals and the derived impermeable area from 3.6.3, it can be demonstrated that the development will in effect reduce the impermeable area and thus surface water run-off by approximately 22.5% (4665m^2 to 3615m^2).

5.4.6 Given the above it is proposed that the redevelopment will adequately reduce the surface water run-off in line with the requirements of PPS25 and also include for the 20% reduction in run-off generally required for climate change.

5.4.7 The suitability of the connections to the existing adopted drainage system should be established with Severn Trent Water prior to starting detailed design.

5.4.8 It should also be noted that flood routing within the site should be considered during the detailed design stage.

6 Conclusions

6.1 Following this assessment it is considered that the development site can be classified as within Flood Zone 1, an area of low flooding risk (>0.001% or greater than 1 in 1000 years).

6.2 The proposed residential development type can be classified as 'More Vulnerable' and the commercial part 'Less Vulnerable' as described in PPS25 Annex D Table D.2.

6.3 It is therefore determined that the residual flood risk for this development is appropriate for the type currently being proposed.

6.4 It is further demonstrated that the surface water run-off generated by the development is such that it can be adequately dealt with on site without increasing the flood risk elsewhere.

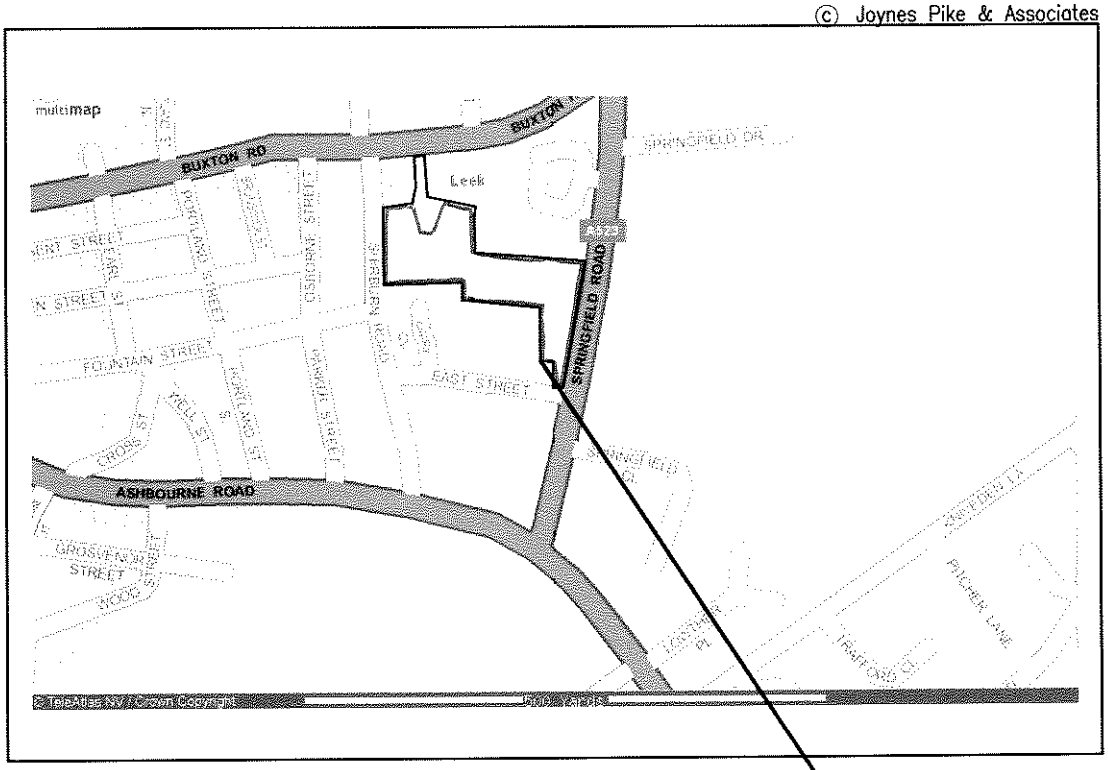
6.5 The redevelopment of the site will also significantly reduce the volume of run-off generated and thus reduce the flood risk in the local vicinity.

6.6 It should be noted that it is unlikely that infiltration based schemes will be unsuitable for this site due to the anticipated ground conditions and possible high water table. However specific site testing would be required to definitively determine the capacity of the ground for infiltration.

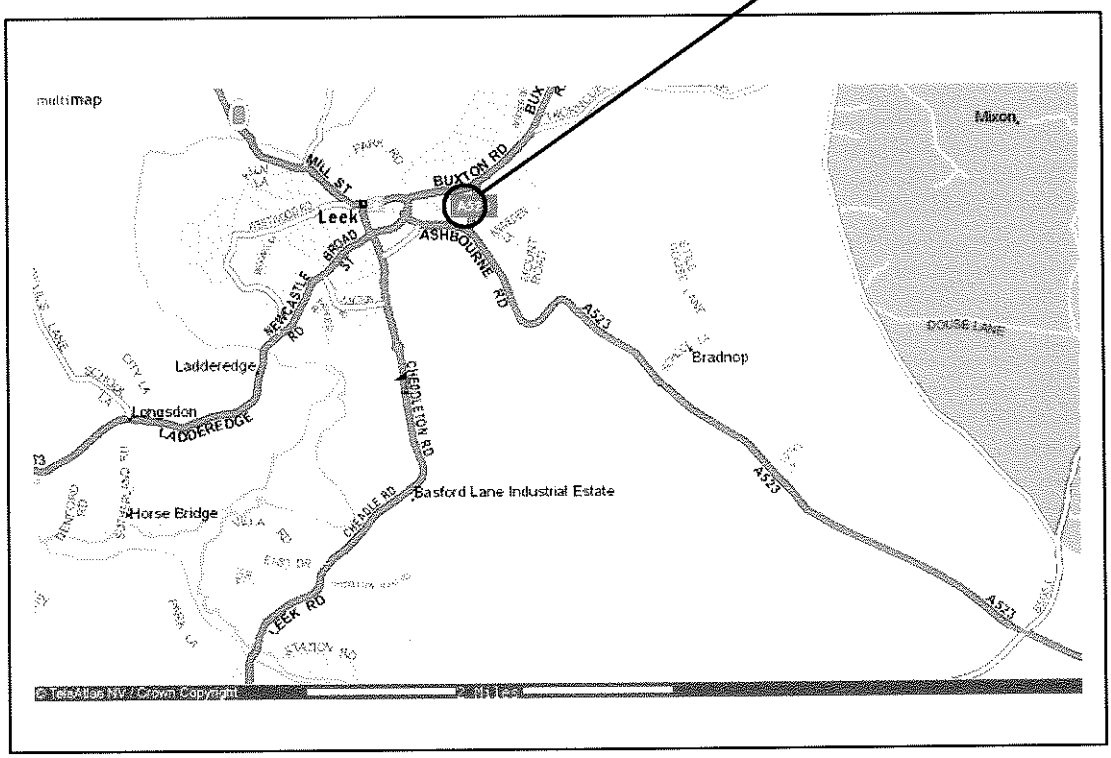
6.7 Notwithstanding the above, it may be possible to integrate SuDS within the collection system for the plots by using swales and waterbutts or using porous pavements to slow the flow to the adopted system.

Appendix A – Site Location plan – JPA Drawing ref 15070338-601

A4



SITE LOCATION
Grid Ref SJ 991 566
Post Code ST13 6LH



DRAWING STATUS

PRELIMINARY

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REV	DATE	CHKD	APPR

DESCRIPTION

PROJECT TITLE
Proposed Development at Springfield Road, Leek

CLIENT
Staffs Fitness Ltd

DRAWING DETAIL
Site Location Plan

DRAWN	AP
PROJECT ENGINEER	AP
CHECKED	
APPROVED	

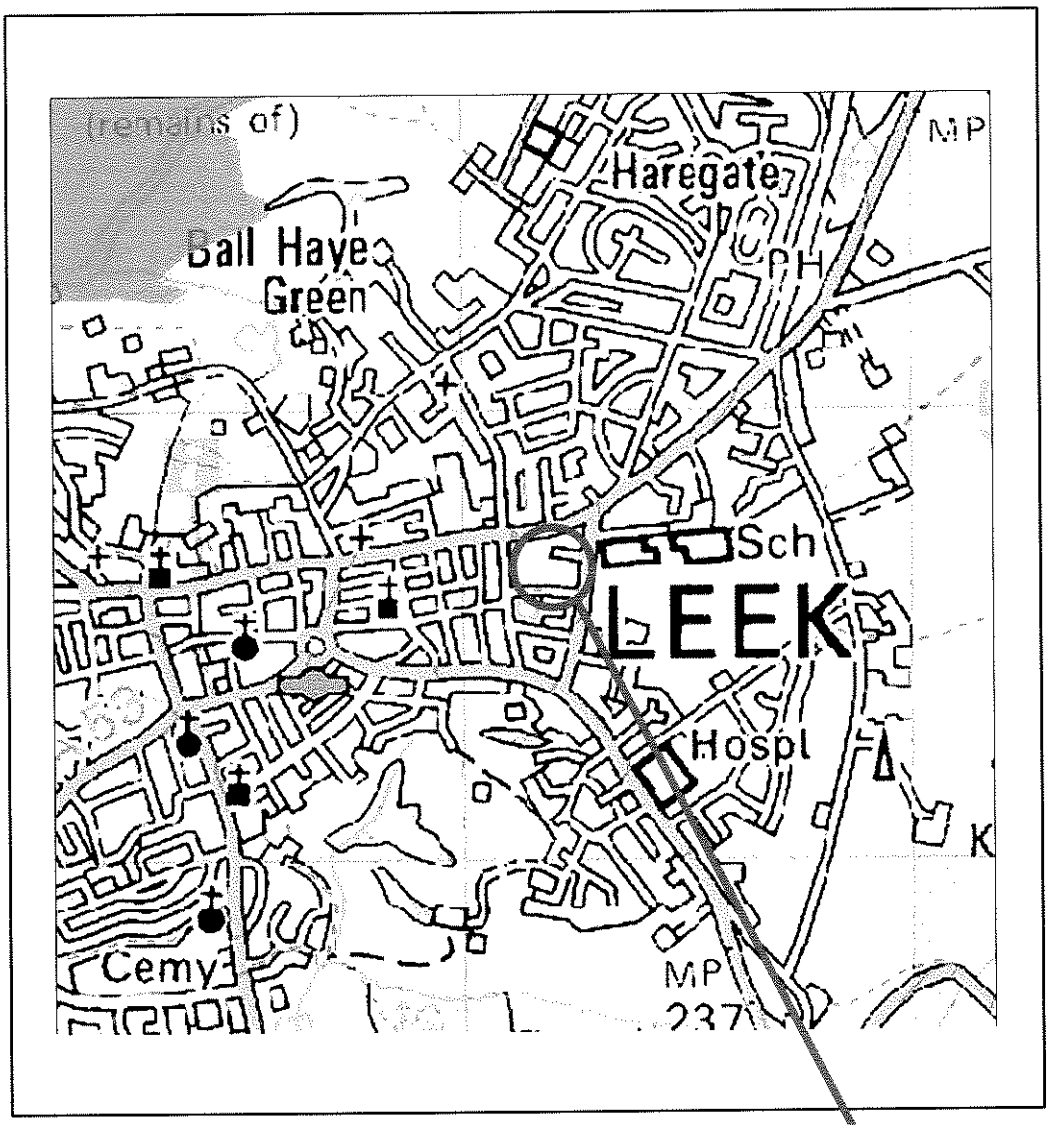
DATE: June 2007

SCALE: NTS

DRAWING NUMBER: 15070338-C-601

REVISION: -

Appendix B – Environment Agency Flood Zone Map – 15070338-602



KEY

- FLOOD ZONE 2
- FLOOD ZONE 3
- FLOOD DEFENCES
- AREAS BENEFITING FROM FLOOD DEFENCES

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CLIENT	Staffs Fitness Ltd
DRAWN	AP
PROJECT ENGINEER	AP
CHECKED	
APPROVED	
DATE	June 2007
SCALE	NTS
DRAWING DETAIL	Flood Zone Map
PROJECT TITLE	Proposed Development at Springfield Road, Leek
DRAWING NUMBER	15070338-C-602
REVISION	

Appendix C – Site Topographical Survey – Tower Survey Drawing ref BRP/15070397/201

Appendix D – Severn Trent Water Developers Enquiry

Severn Trent Water

8 August 2007

Severn Trent Water Ltd
Regis Road
Tettenhall
Wolverhampton
WV6 8RU
Tel 01902 793871
Fax 01902 793971
Contact C J Bullock
Our Ref CJB/WT18137
Chris.bullock@severntrent.co.uk

Joynes Pike & Associates Ltd
1-2 Aire House
Richmond Business Park
Sidings Court
Doncaster
DN4 5NL

Fao Mr A Precious

Dear Mr Precious

Proposed development at: Springfield Road, Leek, Staffordshire, ST13 6LH

I refer to your Development Enquiry Request in respect of the above. Please find enclosed the sewer records that are included in the fee.

Sewer Diversion/Provision of Protected Strip
The enclosed sewer records show public three separate public sewers passing through the site. There is a 150mm dia public surface water sewer passing through the south of the site. Our records also show foul (225mm dia) and surface water (300mm dia) sewers passing through the centre of the development. You have not submitted plans of the proposed development that demonstrate whether the sewers would be directly affected by proposed new buildings. However, we must advise you of certain criteria relating to development within close proximity of public sewers. Public sewers must NOT be built over. I enclose herewith a copy of the Company's guidance notes and application form for the diversion of a public sewer, should this be necessary. You are advised that sewers (225mm dia or smaller), and sewers (300mm dia or larger), on their existing or diverted alignments would have to be provided with protected strips of 5m wide (225mm or smaller) or 10m wide (300mm or larger), centred on the sewer.

Foul Water Drainage
The submitted development enquiry request proposes a foul connection to the public sewer system. Our records show that there is a 225mm dia public foul sewer passing through the centre of the site which would have sufficient capacity to take foul flows from your proposed development. Another point of connection could be made to a 225mm dia foul combined sewer to the south of the development on East Street. A connection to either or both of these sewers would be acceptable to the company. There is also a 300mm dia foul combined sewer immediately to the north of the site. However, a connection to this sewer would not be possible due to lack of capacity in the sewer.

Surface Water Drainage
The submitted development enquiry request proposes a storm connection to the public sewer system. However, before considering a connection to the public surface water sewer, you should investigate the possibility of discharging surface water via a culverted watercourse which passes through the northern section of the development. Consultation should be made with the Environment Agency and riparian land owners when investigating this possibility. If this is not possible, our records show two public surface water sewers in the vicinity where a connection(s) may be possible. Firstly, there is a 300mm dia public SWS passing through the centre of the site. Second, there is a 150mm dia public SWS passing through the south of the site. If a storm connection is required (see later), a connection to either or both of the aforementioned sewers, on their existing or diverted alignments would be acceptable to the Company **subject** to the following matters:

Severn Trent Water

As you may be aware the Government has issued national advice in the form of "Planning Policy Statement 25: Development and Flood Risk" that seeks to reduce the impact of development on surface water runoff. Annex F of PPS25 is particularly relevant. This advice is generally followed by Local Authorities through both the Building Regulations (Approved Document H) and the imposition of appropriate planning conditions. STWL seeks to implement this advice by requesting such planning conditions and imposing flow restrictions for sewer connections (Section 106).

I note that the use of SUDS principles is proposed. STWL encourages the use of SUDS as an environment-friendly approach to the disposal of surface water runoff from development sites. This is consistent with the weight now given to such principles in the Building Regulations (Approved Document H, April 2002). In accordance with current guidance, disposal of storm runoff from the development is to be dealt with as follows:

1. By soakage into the site's subsoil, subject to suitable ground soakage capacity and any contamination present. As you may know, in addition to traditional soakaways, a popular approach is the use of permeable pavements or storm cells located under parking areas. Soakage capability is to be determined in accordance with Section 2 of Approved Document H3 (2002 Edition) of the Building Regulations and so certified by a suitably qualified person. If ground soakage proves inadequate, evidence must be submitted to Severn Trent Water Limited. The evidence should be either percolation test results or a statement from the SI consultant (extract from report or a supplementary letter) stating that soakaways would be ineffective. **A connection to the public sewerage system will then be considered with flows as:**

2 Brown field development site: If storm runoff from the existing development is connected to the public sewerage system, then peak storm flows from the proposed development up to that deriving from the previous connected impermeable area may be connected to the public sewerage system subject to both the details of the existing storm connection arrangements and hydraulic calculations, including any attenuation (tank sewers, storage cells etc)/associated control devices (Hydrobrake, orifice plate etc for 30 year design) being submitted to Severn Trent Water Limited (see later). For existing storm connections to the public foul sewerage system, any new storm connection to the public storm sewerage system (if available) will be limited to 5 litres/sec/ha (option A) OR a peak flow to be determined by the Company from its developer-funded hydraulic modelling of the public storm sewerage system (option B). The developer may choose either option.

3 Green field development site: If the site is a green field development ie not involving any demolition of buildings or paved areas connected to the public sewerage system, then the storm runoff from the proposed development may be connected to the public sewerage system subject to peak storm flows (30 year design storm) being limited to a green field runoff of 5 litres/sec/ha (subject to a minimum of 5 litres/sec), applied to the gross area of the site. Hydraulic calculations including any attenuation (tank sewers, storage cells etc)/associated control devices (Hydrobrake, orifice plate etc) must be submitted to Severn Trent Water Limited (see later).

From the information provided, I consider the site to be a brown field development site as defined above, with paragraphs 1 & 2 applying. Thus, subject to paragraph 1 (evidence to be submitted), any storm flows to be connected to the public sewerage system must be restricted as paragraph 2. I note that you wish to have your proposed sewers adopted. Prior to adoption, an S104 (Sewers for Adoption) application must be completed.

For any new connections into the public sewer network or the re-use of existing sewer connections, you will need a Section 106 pack that includes guidance notes and an application form. Our Developer Services Team handles new connections. To contact them for an application pack please call 0116 234 3811 (or visit www.stwater.co.uk) and quote the reference number above. **The relevant details identified above must be submitted with the completed Section 106 pack.** For the avoidance of doubt, it is suggested that a copy of this letter, highlighting this paragraph is submitted with the future Section 106 submission.

Registered in England & Wales Registration No 2366686
Registered Office 2297 Coventry Road Birmingham B26 3PU

Severn Trent Water

Please quote WT 18137 in any future correspondence (including e-mails) with STWL.

Yours sincerely

C J Bullock
Asset Protection (Waste Water) West

Severn Trent Water

Sewer Diversions – Application Form SD1

Notice under Section 185 of the Water Industry Act 1991 and Application for an estimate and programme for the provision of sewer diversion

At ..... (please insert)

I/We ..... ("the Applicant") in our capacity as owners/occupiers give notice to Severn Trent Water Limited ("the Undertaker") in accordance with Section 185 of the Water Industry Act 1991 ("the Act") to alter/remove a relevant pipe (as defined in the Act) as shown on the attached plan to enable a proposed improvement of land in which we have an interest.

Enclosed is evidence of our interest in the land affected (Solicitors Certificate of Title, Office Copy Entries or Copy of Conveyance to the Applicant) and I/we understand my/our obligations under the Act regarding payment of all reasonable costs incurred by the Undertaker.

Note: Under no circumstances are alterations to the pipe/apparatus to be undertaken by any party other than the Undertaker.

Declaration

Please advise the Applicant of the estimated cost and programme for diverting public sewers for the development named overleaf. In this respect, I will provide any relevant information required by Severn Trent Water Ltd. and pay the required sum in respect of the estimate (see below). I confirm that estimates for the works by the undertaker will be subject to the following conditions:

- the diversion is acceptable in principle.
- the Applicant owns or occupies the land or existing premises for which the sewers are being diverted
- no access or working restrictions will be imposed.
- the abandonments and diversions are hydraulically viable
- the Applicant is required to meet the actual cost of the works and in the event of the actual costs exceeding the estimated costs additional payment will be made within 10 working days of notification
- Compensation payments under the Act shall be paid by the Applicant in accordance with the Undertakers financial procedures.

I understand that the submission of this form is to be treated as a preliminary enquiry and does not commit the Applicant or Severn Trent Water Ltd in any way. In particular, I understand that Severn Trent Water Ltd does not authorise or hold itself responsible for the reimbursement of any expenses incurred in any design work undertaken by the Applicant without the express approval of Severn Trent Water Ltd. I confirm that following the provision of the estimated cost and programme, prior to commencement of any further stage(s) of the works, which the Applicant requires for diverting the public sewers for the named premises, the Applicant will pay to Severn Trent Water Ltd, in advance, such estimated reasonable costs as they may require.

Signed: ..... (Position: .....) Date: .....

Severn Trent Water

Not withstanding the above, I/we enclose a cheque for £400 + £70.00 VAT (at 17.5%), made payable to Severn Trent Water Limited, to cover costs to be incurred in initial processing and assessing the validity of our application. I note that as an alternative to the works being constructed by Severn Trent Water, you may at your absolute discretion allow us to design and construct the works under a private agreement, in which we are appointed as your contractor.

Please complete as appropriate in BLOCK CAPITALS using ink

Name of Applicant:	
Address of Applicant: (To be used for correspondence)	Postcode
Applicant's Telephone Number:	
Name of agent: (If applicable)	
Address of agent: (To be used for correspondence)	Postcode
Agent's Telephone Number:	
Name of development site:	
Ordnance Survey eight figure grid ref.:	
Name of Local Council:	
Local Council planning consent ref.: (Complete as appropriate)	
Outline consent dated: (Complete as appropriate)	
Full consent dated: (Complete as appropriate)	
Do you wish to divert a foul sewer? (Delete as appropriate)	Y / N
Do you wish to divert a surface water sewer? (Delete as appropriate)	Y / N

Sewer Diversion Application Form Checklist

Please check that the following information is included in your application. Then complete this form by placing a tick in the appropriate boxes and return it with your application to the address at the top of the accompanying letter.

Please ensure that plans are no larger than ISO A1

- ❑ 3 copies of a site location plan (scale 1:2500) showing, edged in green, the development proposals together with any other adjacent land in the ownership of the Applicant edged in blue.

- ❑ 3 copies of a layout plan (scale 1:500) showing:

    - ❑ The proposed route of the diverted sewers (coloured pink)
    - ❑ The abandoned sewers (coloured red)
    - ❑ The site boundary (coloured green)
    - ❑ The points at which the Applicant wishes to connect his private drains or sewers to the diverted sewers

- ❑ A plan showing the location and value of the Ordnance Survey benchmark used to determine the invert levels.

- ❑ A copy of the valid planning permission for the development (if proposed).

- ❑ 3 copies of a declaration that the enquirer owns the land or that the enquirer has an interest in the land/adjacent land

If you have a proposed design and wish to construct the diversion yourself, under agreement please also include the following information

- ❑ 3 copies of a longitudinal section of the proposed sewers scale – horizontal – 1:500, vertical 1:100) showing:
    - ❑ Existing and proposed levels
    - ❑ Pipe materials and strengths
    - ❑ Pipe diameters
    - ❑ Pipe bedding classifications
    - ❑ Pipe gradients
    - ❑ Construction details of manholes & structures
- ❑ Phase 1 Habitat Survey Report

SEWER DIVERSIONS – GUIDANCE NOTE

Introduction

Under Section 185 of the Water Industry Act 1991 (S185) where any public sewer, lateral drain or disposal main is situated in private land, any person(s) with an interest in that land or in adjoining land can by giving notice, require Severn Trent Water (STW) to alter or remove that pipe. A valid request to alter or remove a pipe can only be made if that request is necessary to enable a person to carry out a proposed development or change of use of land in which he has an interest.

A notice to relocate a pipe is not valid if

- relocation is unnecessary to enable development or a change of use of land to be carried out
- the development is a small domestic extension to existing residential property such that STW is willing to consent to building over or close to the public sewer or lateral drain in the case. (Please refer to our Building over/Close to Sewer Guidance Notes)

STW will determine whether or not the relocation of pipes are required following the receipt of a notice.

Once STW has received a notice we are under a duty to comply with the requirement contained in the notice except to the extent that the requirement is unreasonable.

We may consider the requirements contained in a notice to be unreasonable where, for example:

- no technically acceptable diversion route exists
- diversion would prevent proposed improvements by other parties
- the request relates to sewers wholly located within a street

STW can recover all reasonable costs that it incurs when pipes are altered in response to a valid notice under S185. Before any works are carried out, STW will take security in the form of a cash deposit to cover the costs of pipe alterations. Interest is paid, as appropriate, on any sums that are deposited as security.

Submission of a notice under Section 185 of the Water Industry Act 1991

If you wish to serve notice on STW to relocate a sewer you can do so by sending us a completed copy of Form SD1 together with relevant supporting documentation and a cash security deposit.

How will we progress your application

Upon receipt of an SD1 form we will check your application documents and determine whether your notice is valid. If the notice is invalid or we consider the request unreasonable we will inform you by letter. The letter will confirm why we consider the notice to be invalid/ unreasonable. It may be possible to address our concerns by provision of additional information.

If your request is valid we will then evaluate the extent to which your development proposals require an alteration to our pipes. In some cases it will be necessary to undertake hydraulic modeling to determine the impact of the diversion on our sewerage system and determine the

specification of the diverted pipe work. We will inform you if modeling is required and supply you with our estimated cost for this work.

Once an indicative design has been established we will determine the process by which the sewer diversion can be constructed.

All sewer diversions must be carried out under the control and supervision of STW. There are currently 2 alternative methods to secure diversions and these are:

1. Design and construction by STW
2. Design and construction by applicant or applicants contractor subject to the completion of a self construct agreement prepared by STW

The effect of the self construct agreement is that Severn Trent Water employs the applicant as its contractor to construct the diverted sewers.

Although the applicant can indicate a wish to carry out the construction under a self construct agreement, STW will decide which method will be used.

As a guide Severn Trent Water will carry out design and construction if:

- there is a high impact on or risk to STW should any problems occur
- the sewers are off site, on land out of the control of the developer – please note a land ownership check will be carried out
- the sewers are located in a street
- the work is outside the capability of the applicants designer/contractor (as determined by STW)

Severn Trent Water may offer a self construct agreement, on request, if:

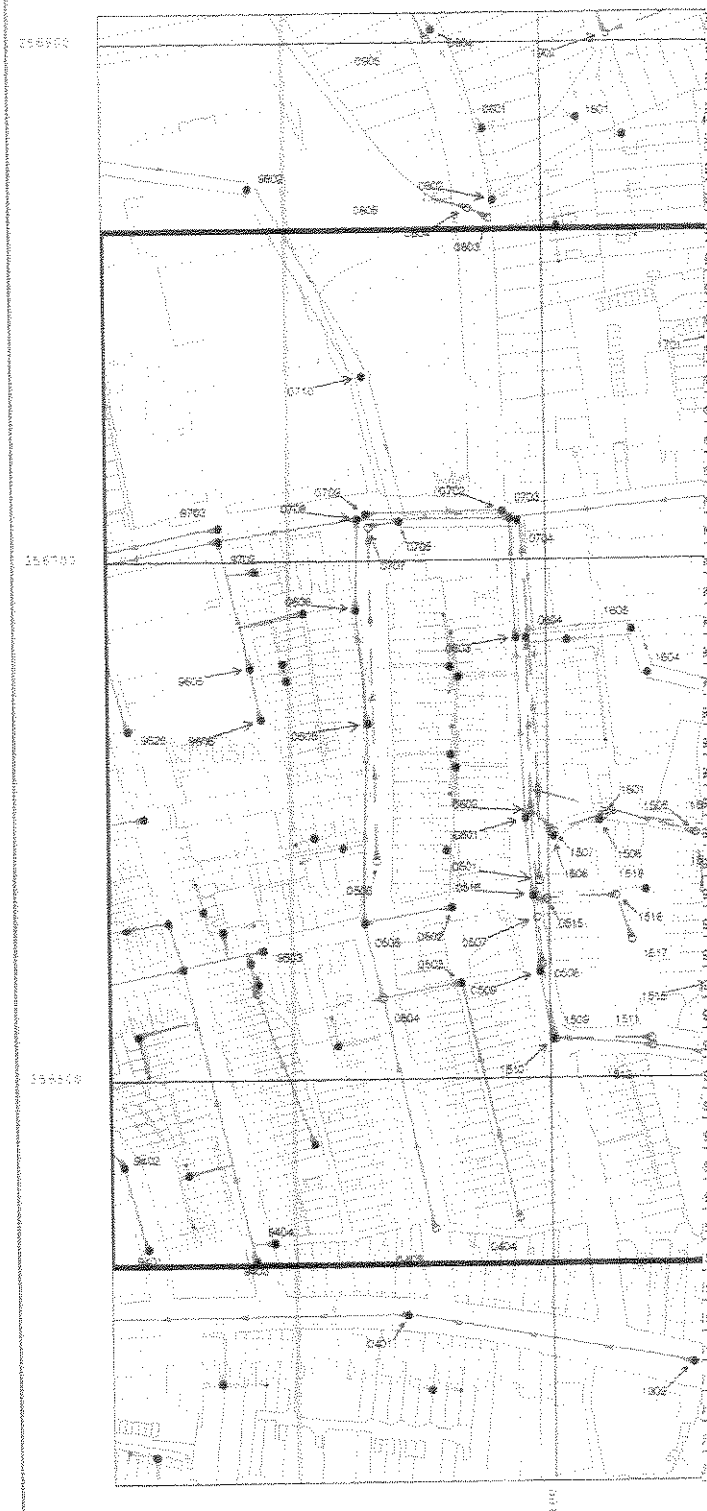
- there is a minimal impact on or risk to STW should construction problems occur
- the sewers are of small diameter
    - foul water or combined sewer not exceeding 300 mm
    - surface water sewer not exceeding 600 mm
- the sewers are entirely on land owned and occupied by the applicant
- the applicant agrees to comply with the requirements of STW through the completion of a self construct agreement
- the applicant pays all of the associated fees required.
- the designer and the developer or their contractor is approved by STW using our standard methodology, including financial vetting.
- the developer/the developer's contractor carries out the diversion under the supervision of STW acting as STW's contractor.

Fees

Irrespective of the method of construction, security will be taken to cover the cost of the diversion. Full details will be provided during the course of processing the application, once method of securing the diversion has been determined.

ewer Node Sewer Pipe Data

FERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MAT	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID
9561515	X 206.99	206	nil	S	PVC	C	225	nil	0	nil
9561516	X 203.607	201.56	200.724	S	VC	C	150	nil	32.29	nil
9561517	X 203.799	202.06	201.56	S	VC	C	150	nil	34.95	nil
9561518	X 203.725	201.5	196.75	F	VC	C	150	nil	16.04	nil
9561601	X 202.74	201.5	200.19	S	VC	C	300	nil	15.64	nil
9561602	nil									
9561701	X 203.81	200.66	199.57	F	VC	C	300	nil	56.56	nil
9561702	X 203.67	199.41	nil	C	VC	C	300	nil	0	nil
9562401	X 210.82	209.02	208.01	S	VC	C	225	nil	922	nil
9562402	X 210.65	209	208.75	S	VC	C	225	nil	14.32	nil
9562403	X 208.13	205.33	202.23	S	VC	C	225	nil	25.83	nil
9562501	X 208.08	206.78	206.75	S	VC	C	225	nil	100	nil
9562503	X 208.19	206.73	203.9	S	VC	C	225	nil	16.56	nil
9562504	X 208.56	208.01	207.09	S	VC	C	150	nil	39.86	nil
9562505	X 209.74	208.43	208.62	S	VC	C	225	nil	40.57	nil
9562507	X nil	nil	206.27	S	nil	nil	nil	nil	0	nil
9562601	X 207.86	206.55	206.57	S	VC	C	225	nil	28.66	nil
9562604	X 203.83	202.62	202.74	S	VC	C	300	nil	102	nil
9562605	X 203.67	202.95	202.77	F	VC	C	225	nil	114.39	nil
9562606	X 204.56	203.19	202.93	S	VC	C	300	nil	119.31	nil
9562609	X 204.57	203.17	202.96	F	VC	C	225	nil	138.81	nil
9562610	X 206.17	203.68	202.94	S	VC	C	300	nil	36.05	nil
9562611	X 206.42	206.175	206.95	F	VC	C	150	nil	56.39	nil
9562612	X 208.25	206.95	206.725	F	VC	C	150	nil	91	nil
9562613	X 206.45	204.08	203.815	F	VC	C	150	nil	85.41	nil
9562614	X 208.42	206.95	206.475	S	VC	C	150	nil	27.08	nil
9562615	X 206.25	206.475	206.25	S	VC	C	150	nil	91.35	nil
9562616	X 207.3	206.95	204.675	S	VC	C	150	nil	25.82	nil
9562617	X 206.225	204.675	204.53	S	VC	C	150	nil	85.46	nil
9562618	X 206.45	204.53	204.285	S	VC	C	150	nil	63.64	nil
9562701	X 206.82	206.96	204.26	F	VC	C	150	nil	15.73	nil
9562702	X 206.98	203.02	200.71	F	VC	C	225	nil	21.32	nil
9562703	X 206	204.26	nil	F	VC	C	225	nil	0	nil
9562704	X nil	nil	202.18	C	nil	na	nil	nil	0	nil
9562724	X N/A	nil	203.02	F	VC	C	225	nil	0	nil
9562725	X 208.3	205.725	205.39	F	VC	C	150	nil	62.56	nil
9562726	X 207.825	205.39	205.29	F	VC	C	150	nil	78.9	nil
9562727	X 207.075	203.8	203.56	F	VC	C	150	nil	99.48	nil
9562728	X 207	203.56	nil	C	VC	C	225	nil	0	nil
9562729	X 206.85	203.915	203.8	F	VC	C	150	nil	81.08	nil
9562730	X 206.15	204.165	203.915	F	VC	C	150	nil	48.04	nil
9562731	X 208.3	206.25	206.9	S	VC	C	150	nil	63.23	nil
9562732	X 207.825	205.9	205.785	S	VC	C	150	nil	88.92	nil
9562733	X 207.075	204.2	203.66	S	VC	C	225	nil	33.37	nil
9562734	X 207	203.66	203.58	S	VC	C	225	nil	34.38	nil
9562735	X 206.15	204.7	204.285	S	VC	C	150	nil	37.83	nil
9562736	X 206.9	204.265	204.2	S	VC	C	225	nil	53.22	nil
9562802	X 208.18	204.86	204.75	F	VC	C	225	nil	454.36	nil
9563501	X 209.99	205.54	nil	S	VC	C	150	nil	0	nil
9563601	X 208.74	207.55	206.55	S	VC	C	225	nil	67.27	nil



- Abandoned Gravity Sewer
- Private Combined Gravity Sewer
- Private Foul Gravity Sewer
- Private Surface Water Gravity Sewer
- Public Combined Gravity Sewer
- Public Foul Gravity Sewer
- Public Surface Water Gravity Sewer
- Trunk Combined Gravity Sewer
- Trunk Foul Use Gravity Sewer
- Trunk Surface water Gravity Sewer
- Abandoned Pressurised Sewer
- Combined Use Pressurised Sewer
- Foul Use Pressurised Sewer
- Surface Water Pressurised Sewer
- Highway Drain

All Private Sewers are shown in magenta as Septics. The sewers are shown in green

- Combined Lateral Drain
- Foul Lateral Drain (SS)
- Surface Water Lateral Dr

Severn Trent Water

Severn Trent Water Limited
Waterworks Road
Edgbaston
Birmingham
B16 9DB
Telephone: 0845 601 6616

SEWER RECORD

Job Ref.:

OS Map Scale: 1:2500

Date of Issue: 07.06.07

Sheet No. 1 of 3

This map is based upon O.S.B. Grid references

x - 399912

y - 286628

Do not scale off drawing.

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   The Positional Accuracy Improvement programme currently being implemented by Ordnance Survey may mean that the Severn Trent assets shown on this plan are not actually in the position indicated. It is strongly recommended that a survey is carried out to determine the precise location of Severn Trent's assets.
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Appendix E – Proposed Indicative Development Plan