PROPOSED RESIDENTIAL DEVELOPMENT OFF HILL STREET, ELSECAR, YORKSHIRE

FLOOD RISK ASSESSMENT

AUGUST 2008

REPORT REF: 9974/MRHB/08-08/2369

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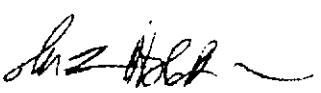
REPORT REF: 9974/MRHB/08-08/2369

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ENGINEER: Millard Consulting
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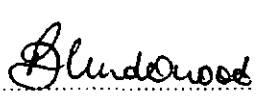
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REGISTRATION OF AMENDMENTS

Revision and Date	Amendment Details	Revision Prepared By	Revision Approved By

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EXECUTIVE SUMMARY

1. The Flood Risk Assessment has been carried out in accordance with the requirements of Planning Policy Statement 25 (PPS25) "Development and Flood Risk" (Ref 5).

2. The site has been checked against the flood maps, which are available from the Environment Agency website.

3. The flood map shows that the site does not fall within an area at risk from flooding and is located wholly in Flood Zone 1. Therefore, in accordance with PPS25 all land uses are appropriate.

4. The geological desk study for the site indicates that the site is underlain by coal measures of the Westphalian Group and sub soils may consist of a mixture of soils with a predominance of mudstones and siltstones.

5. It is recommended that suitable infiltration tests are carried out as part of a complete geotechnical site investigation, however it is considered that the results may be variable.

6. Greenfield run-off has been estimated using the IOH124 method included the EA/DEFRA Summary Report W5-074/A and contained within the MicroDrainage software package. Runoff rates for the 100 year return period have been calculated at 6 litres/second.

7. The proposed development will increase total runoff rates in proportion to the density of development. Surface water runoff will be attenuated to greenfield runoff rates and the balance stored on site in suitable locations. Recommendations have been made to provide storage locations, and typical volumes, however retentions will be required to include 30% spare capacity to account for the affects of climate change. The final developed site runoff will not increase above existing rates and will not negatively affect the local drainage infrastructure.

8. The recommended point of outfall for storm water is to a small watercourse located along the southern boundary of the site. This lies at the bottom of a steep embankment and is regarded as the current recipient of surface water runoff from the site.

9. An existing combined sewer is shown to cross the northern corner of the site and a total easement width of 6m minimum will be required to protect this from the proposed development. The combined sewer has sufficient capacity to accept foul water discharges only from the developed site.

1.0 INTRODUCTION

1.1 Millard Consulting (MC) has been commissioned by John Church Planning Consultancy Ltd to undertake a Flood Risk Assessment (FRA) for a proposed residential development off Hill Street. A site location plan is enclosed in Appendix A.

1.2 The Flood Risk Assessment has been carried out in accordance with the requirements of Planning Policy Statement 25 (PPS25) 'Development and Flood Risk' (Dec 2006) (Ref 5).

1.3 The assessment has been prepared using our best engineering judgement but there are levels of uncertainty implicit in the historical data and methods of analysis.

1.4 All comments and opinions contained in this report, including any conclusions are based on the information available to MC during our investigations. The conclusions drawn by MC could therefore differ if the information is found to be inaccurate, incomplete or misleading. MC accepts no liability should this prove to be the case, or, if additional information exists or becomes available with respect to this site.

1.5 Reference has been made to the flood maps contained within the Environment Agency websites and the Environment Agency Standing Advice for Local planning Authorities (Development and Flood Risk – England).

1.6 MC has completed this report for the benefit of the organisations/individuals referred to in paragraph 1.1; and any relevant Statutory Authority which may require reference in relation to approvals for the proposed redevelopment of the site. Other third parties should not use or rely upon the contents of the report unless written approval has been gained from MC.

1.7 MC accepts no responsibility or liability for:

a) the consequences of this documentation being used for any purpose or project other than that for which it was commissioned, and

b) this document to any third party with whom approval for use has not been agreed.

2.0 SITE DESCRIPTION

Location

2.1 The site is located within the village of Elsecar which is situated approximately 7km south-east of Barnsley town centre. It is accessed from Hill Street and has an approximate Ordnance Survey Grid Reference of SE 380 003. Drawing 9974/01/001 included as Appendix A shows the general and specific location plans.

Boundaries and Orientation

2.2 The site is roughly rectangular in shape and is orientated generally northeast to southwest. It is bounded by Hill Street to the northeast, the main Barnsley to Sheffield railway line to the north west and undeveloped land to the southwest and southeast respectively. Access is gained from Hill Street. The Ordnance Survey Masterplan included as Appendix B shows the site boundaries.

General Description

2.3 The site has a total area of approximately 1.01 hectares and was a former rail depot connected to the Hoyland and Elsecar Railway Station which is located at the junction between Hill Street and the railway. The area has been checked and confirmed using the boundary plan in Appendix B and the Greenhatch site survey plan included as Appendix C. site levels range from around 83.3m AOD adjacent to Hill Street and the former railway station office to around 81.54m AOD at the extreme southern corner. The general appearance is for the surface to be flat as the changes take place over some distance. Along the rail track boundary are a number of earth bunds extending to a height of approximately 2m. Along the southern boundary is a steep, wooded embankment with levels dropping from around 83.0m AOD, at the main site level, to approximately 75m AOD at the extreme southern site boundary. Running parallel with the site boundary is a small ditch or watercourse. The site survey plan shows the existing site levels. From the lie of levels along the foot of the embankment, it would appear that the stream flows towards the south. Some distance south of the southern site extremity and at an approximate level of 65m AOD lies the Elsecar Reservoir. As a result of its former use the site has large area of hard standing although this is mostly evident as a hardcore or "cold rolled" finish, there is no obvious paving or positive drainage to the site.

Existing Sources of Flooding

2.4 Although much of the site currently has a hard running surface it is unlikely that the site itself exists as a flood risk. The lack of a defined drainage system will result in the site being treated as a greenfield site and as such future runoff will be assessed on this basis.

2.5 Hill Street falls past the site in a southerly direction and may contribute a proportion of runoff into the site entrance. The nearest road gulley is located approximately 20m up the hill from the existing entrance resulting in approximately 100m^2 of contributing highway. During extremes of weather this may result in minor flood issues. It may be necessary to introduce local storm drainage around the site entrance in order to reduce this possibility.

3.0 PROPOSED DEVELOPMENT

General

3.1 It is proposed to develop the site into a high density residential development located immediately adjacent to the local station. The existing access is to be retained and off-road parking will be supplied for residents. A new pedestrian access is to be created for both the station and adjacent Public Open Space. The existing bank and mature vegetation is to be retained. Appendix D contains the proposed development plans. The proposed development has been estimated to contribute approximately 0.59ha of new impermeable paving. This equates to development density of approximately 60%.

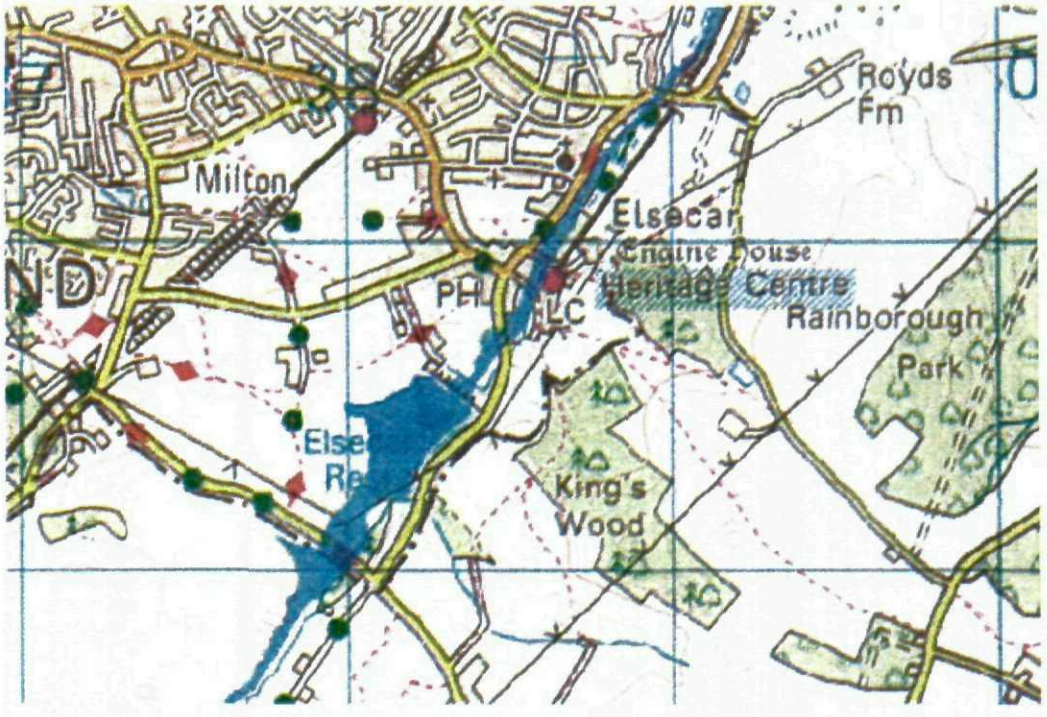
Future Sources of Flooding

3.2 The projected increase in impermeable areas will be significant considering the current land use and the projected increase in runoff will be likely to have a significant impact on the local environment. It will be necessary to accommodate positive measures to mitigate this within the design.

4.0 FLOOD RISK TO THE SITE

Flood Risk Matrix

4.1 The site has been checked against the Environment Agency Flood Maps which are available from the Environment Agency Website. The results are shown below:



Flood Map: Key

There are two kinds of vulnerable area which may be shown on the Flood Map, these can best be described as follows:

- Dark blue ■ this is the area which may be designated as Flood Zone 3. Areas falling into this classification may fall into one of two categories.

- Flood Zone 3a – This area may be flooded from the sea, having a 0.5% (1 in 200) or greater chance of occurrence each year. It may also flood from a river having a 1% (1 in 100) or greater chance of occurrence each year.

- Flood Zone 3b – This may be defined as functional floodplain or where water may be stored in times of flood. Typically this is defined as being liable to flood with a frequency of 5% (1 in 20) or greater.

- Light blue □ shows the additional extent of an extreme flood from rivers or the sea, defined as flood zone 2 these areas are likely to be affected by events with a 0.1% (1 in 1000) or greater chance of occurrence each year.

Flood Risk Vulnerability

4.2 The above map shows that whilst there is an extent of Zone 3 and Zone 2 flooding to the east of the site, this is centred around the Elsecar Reservoir and as previously identified is approximately 10m below the site level. Therefore, in accordance with the Environment Agency Standing Advice on flooding, the site lies within Flood Zone 1, having an indicative annual probability of flooding of 1 in 1000 year or greater (i.e. less than 0.1% chance in any given year) from either fluvial or physical sources. All land uses are appropriate in this zone.

Table 1 shows a reproduction of Table D.3 of PPS25 and indicates the types of development appropriate by flood zone.

Table 1 Flood Risk Vulnerability and Flood Zone 'Compatibility'

	Flood Risk Vulnerability classification (see Table D2)	**Essential Infrastructure**	**Water compatible**	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**
Flood Zone (see Table D.1)	Zone 1	√	√	√	√	√
	Zone 2	√	√	Exception Test Required	√	√
	Zone 3a	Exception Test required	√	x	Exception Test required	√
	Zone 3b 'Functional Floodplain'	Exception Test Required	√	x	x	x

Key:

√ Development is appropriate

X Development should not be permitted

Categories of Flood Risk – Sources of Flooding

4.3 *Pluvial Sources* The site is not coastal and is not affected by coastal or tidal flooding.

Fluvial Sources The site is not in the vicinity of known rivers liable to flood, the nearest watercourse is a small ditch or brook and is approximately 8m below the lowest level of the site. The site is not deemed vulnerable from their source.

Ground Water A recent geotechnical desk study identifies local coal measures and gravel extraction within the immediate vicinity and recommends further invasive study. It is estimated that a

variety of subsoil and rock types may underlay the site, however it is not envisaged that groundwater will be significant due to the general slope of the anticipated geological strata. This will be confirmed following further invasive ground works. At this time an assessment will also be carried out to ascertain the suitability of sub-soils for infiltration.

Development Sources — There are not existing developments which are liable to affect or result in flooding to the site. The site is therefore not likely to be affected by existing development.

Determination of Flood Risk

4.4 From the above, we define the site as being not at risk of flooding from outside sources.

Run-off Assessment

4.5 For developments on sites comprising one hectare or above the potential to increase flooding elsewhere as a result of development should be considered within a FRA. In Flood Zone 1 developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout on form of the development, and the appropriate application of sustainable drainage techniques.

5.0 FLOOD RISK FROM THE DEVELOPMENT

General

5.1 The Environment Agency Standing Guidance states that in order to demonstrate that the development is of low risk the FRA should show:

a) that it will be feasible to balance surface water run-off to the greenfield run-off rate for all events up to the 1 in 100 year storm (including a 30% allowance for climate change) and set out how this will achieved.

b) how sustainable drainage techniques (SUDs) will be used with any obstacles to their use clearly justified.

Primary Risk

5.2 Within Flood Zone 1, the primary flood risk issue generated by most new development is the risk posed to others by surface water runoff. Development within this category can generate significant volumes of water. The impact and risks posed by this vary according to the characteristics of the development itself i.e. the scale of impermeable surfacing and of the catchments concerned (i.e. catchments size, distance from local watercourses, capacity of local watercourses, gradient, soil type etc).

Piped Storage

5.3 Any piped storage system will need to be adopted by Yorkshire Water under a Section 104 agreement. They will not adopt piped storage above a 30 year return period. It will therefore be necessary to store the additional run off over a 30 year return storm in an above or below ground attenuation facility. Information supplied by Yorkshire Water, and included in Appendix F, indicates that discharges to the adoptable system will be restricted to a maximum flow rate of 8 l/s.

Greenfield Runoff Rate

5.4 This has been calculated in accordance with the IOH124 method as described in the EA/DEFRA report W5-074/A (Rev D) "Preliminary rainfall runoff management for developments" using the MicroDrainage computer package, and is included in Appendix E. In this case, since the site is currently and predominantly greenfield it will be necessary to assess the starting runoff from the site in order to quantify the effects of the development.

6.0 DRAINAGE STRATEGY - STORM WATER

General

6.1 In accordance with Standing Environment Agency and Planning guidance the disposal of storm water should be considered in the following order of priority:-

a) An adequate soakaway system or similar infiltration method appropriate to local ground conditions and/or site constraints, or

b) A suitable watercourse, or

c) A sewer.

6.2 Having due consideration for the above it is also a requirement of the Environment Agency that no new development should increase the level of run-off from a site, and where possible should actively seek a betterment to the existing situation. The drainage system so designed should also be sized to accommodate the run-off resulting from a 1 in 100 year event and should include a further 30% allowance for the effects of climate change.

6.3 Infiltration

The geotechnical desk study carried out for the site suggests that there has been some filling or raising of the site to form a level plateau for the former depot. It further suggests that underlying soils form part of the westphalian 3 coal measures, comprising mudstones, siltstones, sandstones, seat earth and coal seams. This is borne out by the BGS geological map for the area (Barnsley, Sheet 87 – bedrock and superficial geology) which details layers of Kents Thick Coal between layers of Kents Rock. In addition there are two detailed faults, one at either end of the site, the Elsecar fault to the north east and the Hoyland Fault to the south east. There is also a noted ground water issue from the base of the embankment into the known watercourse, this is shown on historical maps dated 1956-57. Whilst it may be possible to affect a suitable infiltration solution for the drainage strategy it will be necessary to carry out suitable infiltration testing. Any testing should be carried out in accordance with BRE digest 365 – Soakaway Design. Should these prove successful the drainage strategy should be modified to incorporate infiltration techniques.

6.4 Suggested Discharge

It is suggested that a suitable point of discharge may be to the known ditch at the base of the embankment.

6.5 Greenfield Estimation

The IOH 124 method of greenfield run-off estimation should be used to assess the existing situation. This is based on the following formula:-

$$Q_{bar} = 1.08(AREA/100)^{0.89} \times (SAAR)^{1.19} \times (SPR)^{2.17}$$

Where: AREA = 50ha

SAAR (Standard Average Annual Rainfall) = 600mm

SPR (Soil Percentage Rate) = 0.37 (is based on soil class of 3)

Appendix E shows an analysis of the above figures, as generated by the MicroDrainage package for a site located in growth region 4. These are summarised in table 2, below:-

Table 2: Greenfield run-off for a range of return periods

Return Period Year	MicroDrainage Runoff Rate (l/s)
1	2.0
Q_{bar}	2.4
30	4.7
100	6.2

From the above table it may be assumed that the maximum allowable discharge from the site will correspond to the greenfield run-off resulting from a 1 in 100 year storm event. This maximum discharge of approximately 6 litres/sec will need to be further controlled for lesser storm events. Since this will constitute a significant restriction on the total storm run-off from the developed site, it will be necessary to incorporate a storage regime in proportion to the actual development runoff. This will be confirmed once a development plan is confirmed. Yorkshire Water have stated that if the storm water is to be discharged to a sewer the allowable discharge rate will be 8 litres/second.

6.6 Strategy Recommendation

A review of the proposed site layout indicates that there are several areas which may be utilised for storm water storage despite the apparent high density of the development. The suggested drainage layout and strategy is shown on drawing number 9974/02/001 and is enclosed as Appendix E.

- There is a public parking area at the southwest end of the site which has an approximate surface area of 300m^2, it is recommended that this area is paved using a porous paving system to provide a stage 1 treatment and that a cellular storage

system is used beneath to provide storage. It is estimated that a 1m depth will be required but that this will provide in access of 300 m^3 of storage.

- The courtyard area in the northwest corner, by the railway, should have a porous paving system to provide a stage 1 treatment to storm water and that a cellular storage system should be provided beneath this. It is estimated that a suitable tank area of up to 400m^2 may be provided, giving a storage volume up to 400m^3 for a 1m depth. Note that volumes may be slightly reduced according to the exact system used.

- There is a small area to the east of the site entrance which may be used to provide surface storage, however since this is located at the top of the embankment on open storage area on infiltration zone may result in a structural failure of the slope. This area may be used to create a further buried storage zone with a plan area of 40m^2 and a depth as required.

6.7 Surface Water Outfalls

If the system is allowed to discharge into the existing watercourse in simulation of the existing run-off situation, this will maintain a nominal flow. The point of discharge should be as close to the northern boundary as possible to generate a suitable flow path for run-off water. Prior to connection, however, it will be necessary to investigate the ditch and remove any detritus in order to ensure a free flow of water. Yorkshire Water have been contacted and have provided a suitable response. They state that the existing sewer network does not have sufficient capacity for the proposed development, and that their preferred outfall from the site would be the watercourse identified above.

6.8 Outfall Alternatives

In the event that the ditch proves to be unacceptable for accommodating run-off from the site it will be necessary to connect to the local sewer network. The presence of gullies and manholes in Hill Street indicate the presence of a suitable storm or combined sewers, details of these have been obtained and are included as Appendix F. There is a combined sewer which runs down Hill Street from the nearside of the railway bridge, it has a depth of 2.96m opposite to the site entrance and flows in a south-easterly direction. There is a 375mm diameter sewer which commences immediately south of the site entrance, it has a depth of 2.13m and also flows in a south-easterly direction. We are advised by Yorkshire Water that neither sewer has sufficient capacity for the site to drain unattenuated and that a flow restriction of 8 litres/second will be placed on the proposed development. If a connection to the sewer is selected despite the preferences of Yorkshire Water and the Environment Agency, it will be necessary to use a pumped system due to the difference in level across the site and the depth of sewers in Hill Street.

6.9 Maintenance

The pond and discharge devices must be included in ongoing maintenance or adoption agreement involving the development.

7.0 DRAINAGE STRATEGY - FOUL WATER

7.1 General

Sewer enquiries have been made of Yorkshire Water Ltd for this information and their reply is included in Appendix F.

7.2 Existing Sewer

There is a 225mm diameter combined sewer crossing the site in an easterly and slightly south direction. This crosses into the site from just north of the current station building and exits the site onto Hill Street just south of the entrance, joining the main 225mm diameter sewer in Hill Street. Details of this are shown on the plan in Appendix F. The sewer is shown to vary between 2.2m and 3.14m deep, however the precise cover and invert levels are not given and this should be confirmed on site prior to any construction works commencing. Yorkshire Water state that the sewer is subject to an easement requiring a minimum of 3m to the nearest building, and 5m to any tree. This should be taken into account when considering the development layout. It may also have an impact on the use of the proposed northern parking area for storm water attenuation.

7.3 Connection

Under section 106 of the Water Industry Act 1991, developers have the right to connect a development to the existing public sewer network or they can requisition such a sewer if a suitable connection does not currently exist under section 98 of the same Act, or as amended by the Water Act 2003. Correspondence from Yorkshire Water attached in Appendix F indicates that the combined sewer should be suitable to accommodate the needs of the development, however the issue of level should be considered.

7.4 Diversion

Whilst a sewer diversion may be considered in order to maximise the development area, it should be noted that any works encroaching on, or immediately adjacent to, Railtrack land will require approval from Railtrack. In addition it would be necessary to confirm the fall within the relevant manholes across the site prior to any works in order to ensure suitability.

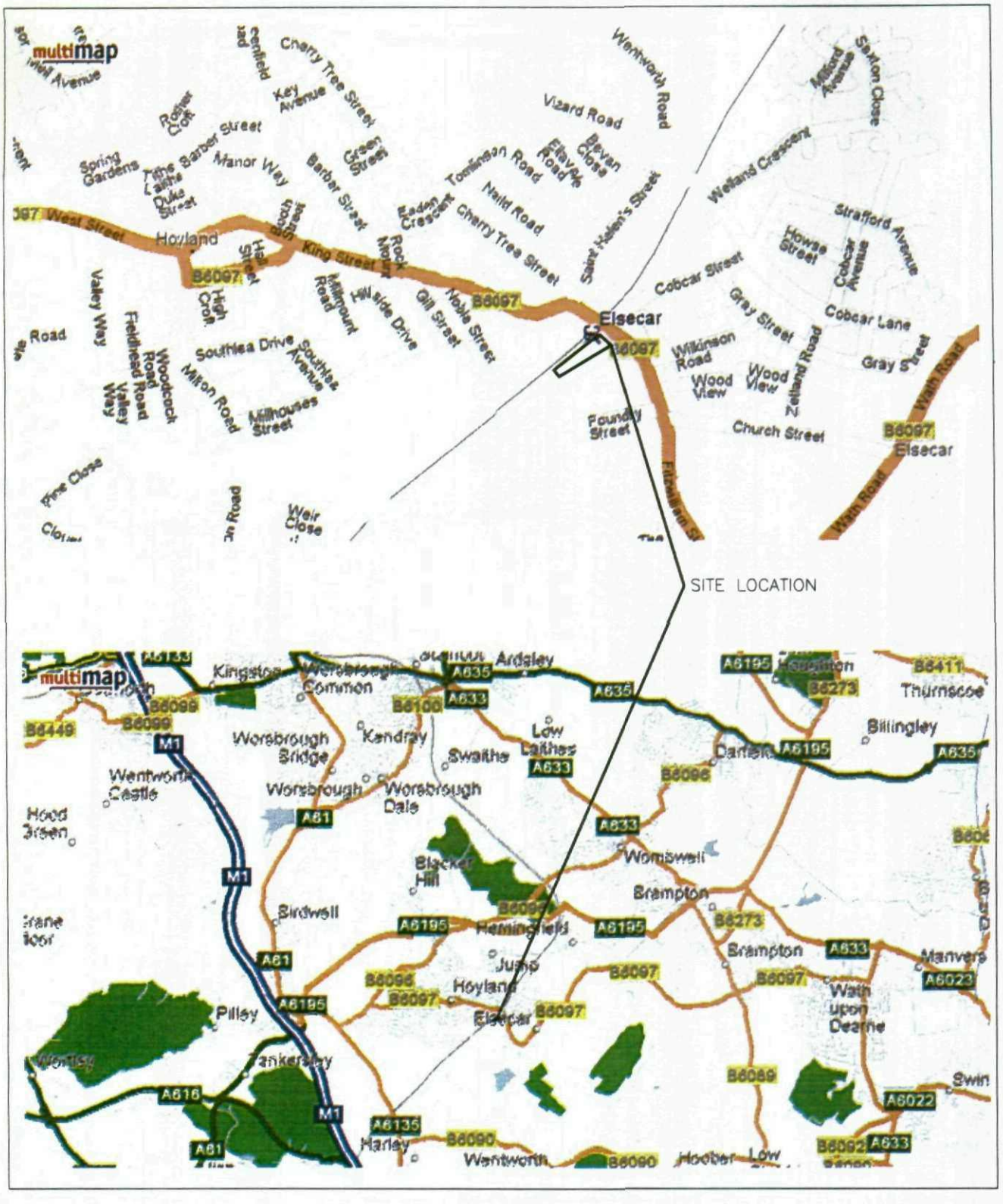
8.0 REFERENCES

8.1 The following documents have been referred to in this report:

1. The Building Regulation 2000, Approved Document H
2. Sewers for Adoption 6th Edition
3. Civil Engineering Specification for the Water Industry, 6th Edition
4. Micro Drainage software
5. Planning Policy Statement 25: Development and Flood Risk
6. Environment Agency Flood Risk Standing Advice version 1.0 (Piper Networking Website)
7. Environment Agency R&D Technical Report W5-074/A Preliminary rainfall run-off management for developments.

APPENDICES

APPENDIX A



REV	AMENDMENT DETAILS	DRAWN	APPROVED	DATE

PROJECT HILL STREET ELSECAR	DESIGNED AND DRAWN BY MRHB	SCALE NTS
	APPROVED BY / CHECKED BY MRHB	
DRAWING TITLE FLOOD RISK ASSESSMENT REPORT LOCATION PLANS	DRAWING STATUS PRELIMINARY	DATE 01.08.08
	CAD REFERENCE FILE NUMBER 9974_01_001.dwg	
CLIENT J. CHURCH	DRAWING NUMBER 9974/01/001	REVISION –

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Millard
Consulting Engineers

offices at
Perth, Ipswich, Norwich
and Sevenoaks

APPENDIX B

Ordnance Survey®

OS Sitemap



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Metres
0 20 40

Scale 1:1250

Supplied by: **Meridian Maps at JEW**
Serial number: 00368800
Centre coordinates: 438058 400319

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www.ordnancesurvey.co.uk

Millard Consulting NUNEATON	
Received:	18/7/08
Project No:	1811 - Hill Street
Circulate To:	CM - BU
Copied To:	
Action:	ASSESSED CLR

APPENDIX C



John Church
Planning Consultancy Ltd

Land at
Hill Street
Elsecar

Topographical
Survey

1:500 7.10.04 SS/BG NJ

OS Bench Mark (see note)
OS Graphical File
8301
\8301\8301.dwg

8301.dwg

This plan should only be used for its original purpose. GreenHatch Ltd accepts no responsibility for this plan if supplied to any party other than the original client

All dimensions should be checked on site prior to design and construction

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only

OS Bench mark located on No 31 Hill Street
TBM 81.24m

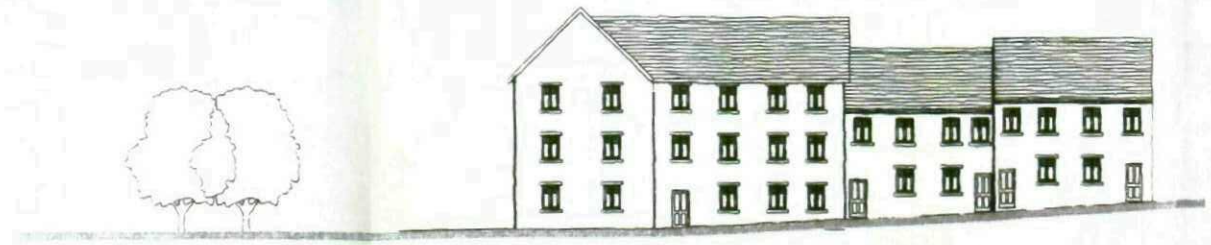
APPENDIX D

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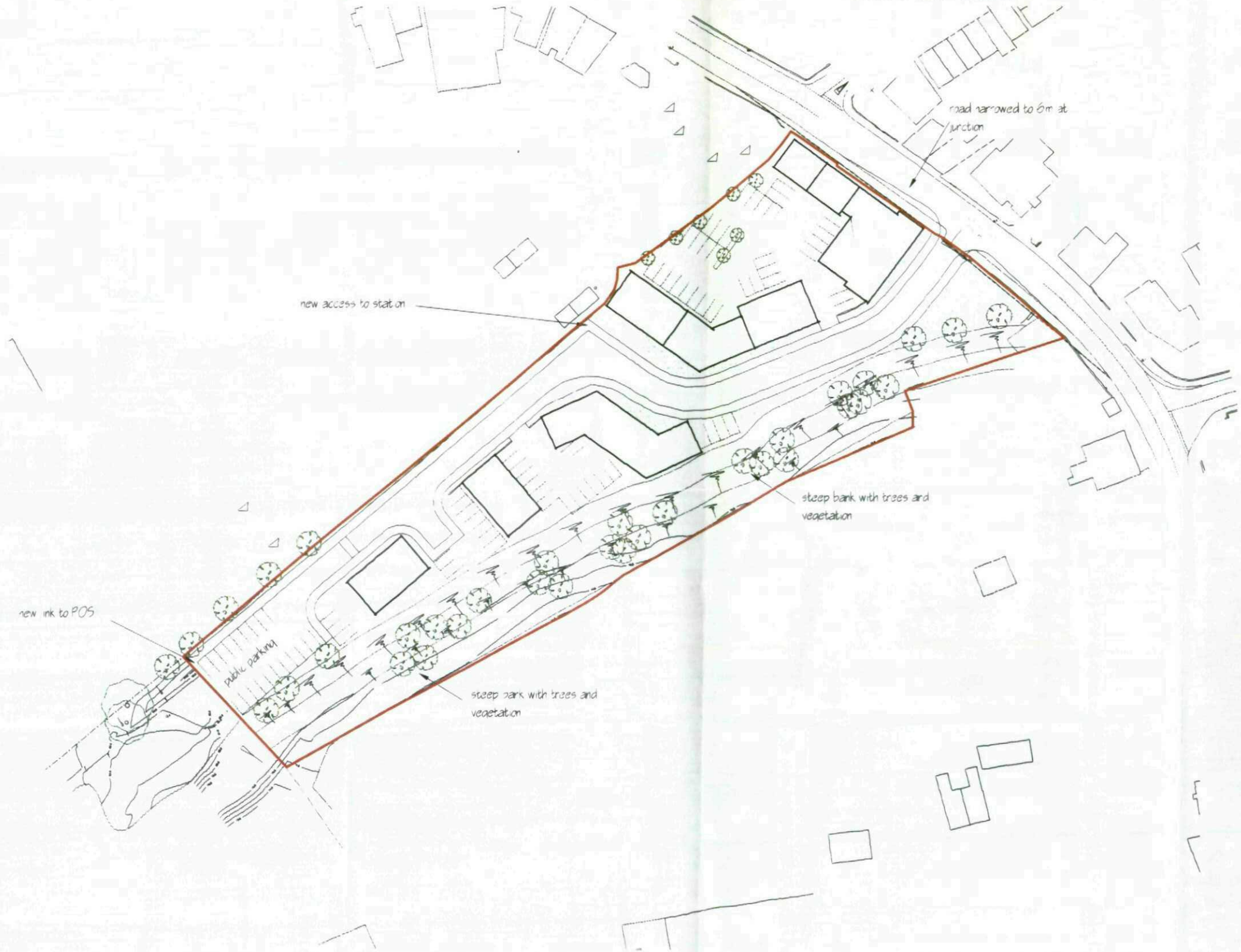
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USE ONLY WRITTEN DIMENSIONS - DO NOT SCALE DRAWING.



ELEVATION TO MAIN ROAD WHICH IS TYPICAL OF DESIGNS PROPOSED THROUGHOUT THE DEVELOPMENT



SCHEDULE

DESIGN SUMMERY

REV A ADDRESS AMENDED 22.07.08

CLIENT
JOHN CHURCH
(ELSECAR)

OASIS
urban design & architecture

PROJECT
ELSECAR

SCALES	Drawn
1:200 @ A1	
SKETCH LAYOUT	Date
DRAWING No	Revision
01	A

APPENDIX E

Millard Consulting	
Heron House	Hill Street
Newdegate Street	Elsecar
Nuneaton CV11 4EL	Yorkshire
Date 08 August 2008	Designed By MRHB
File	Checked By
Elstree Computing Ltd	Source Control W.11.3

Micro Drainage

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.370
Area (Ha)	1.000	Urban	0.000
SAAR (mm)	600.000	Region Number	4

Results l/s

QBAR Rural		2.4
QBAR Urban		2.4
Q	1 year	2.0
Q	1 year	2.0
Q	30 years	4.7
Q	100 years	6.2

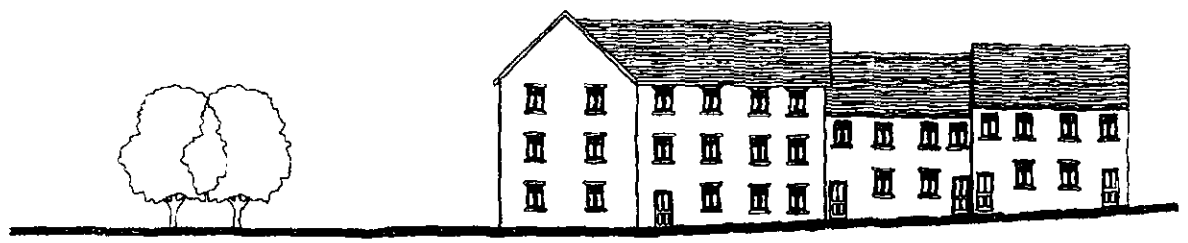
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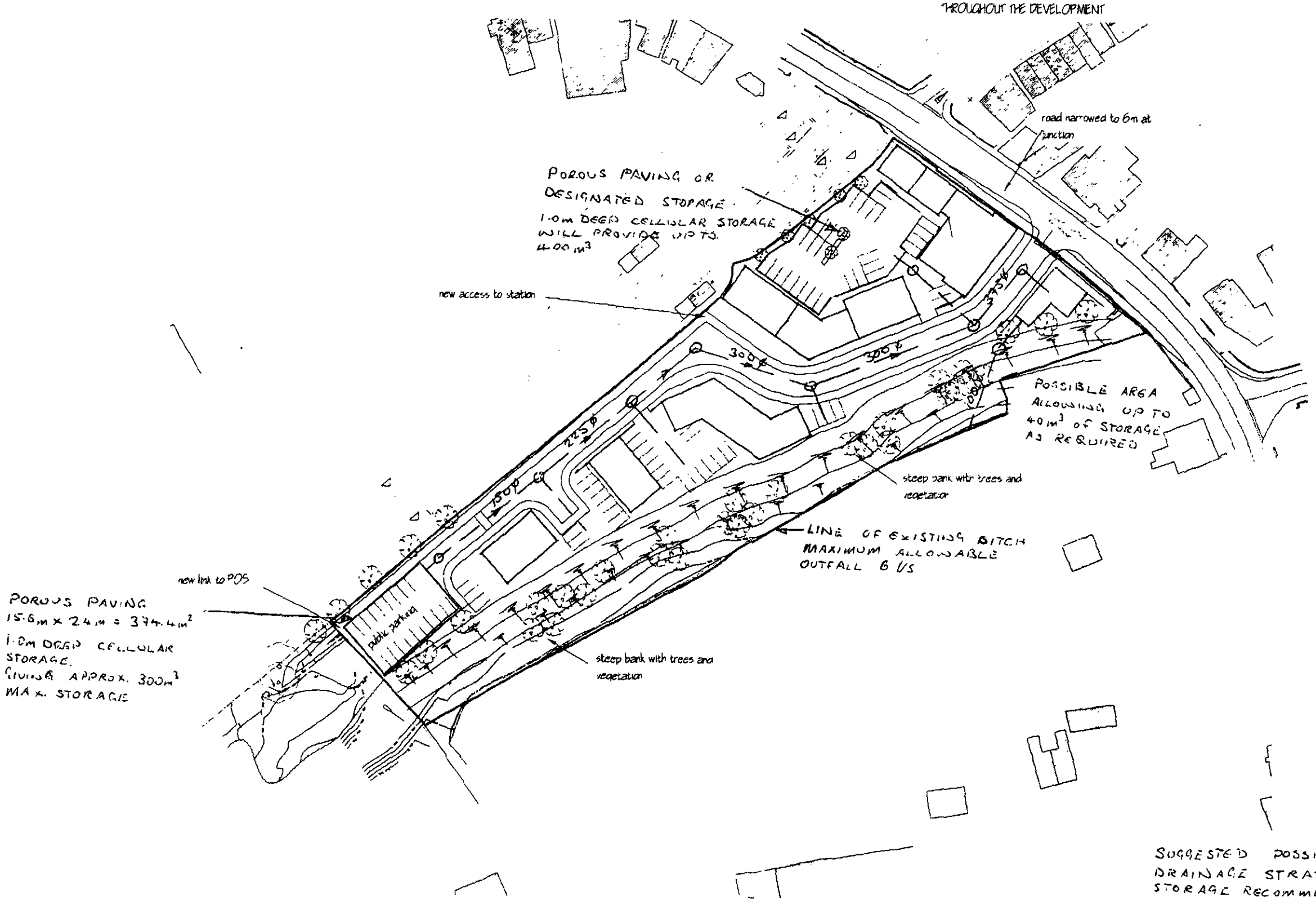
THE CONTRACTOR IS TO CHECK AND VERIFY ALL BUILDING AND SITE DIMENSIONS, LEVELS AND SEWER INVERT LEVELS AT CONNECTION POINTS AND ALL DISCREPANCIES REPORTED TO THE ARCHITECT BEFORE WORK COMMENCES

THE DRAWING MUST BE READ IN CONJUNCTION WITH AND CHECKED AGAINST ANY RELEVANT STRUCTURAL OR OTHER SPECIALIST DRAWINGS PROVIDED.

USE ONLY WRITTEN DIMENSIONS DO NOT SCALE DRAWING



ELEVATION TO MAIN ROAD WHICH IS TYPICAL OF DESIGNS PROPOSED THROUGHOUT THE DEVELOPMENT



SUGGESTED POSSIBLE OUTLINE DRAINAGE STRATEGY AND STORAGE RECOMMENDATIONS.

SCHEDULE

10 "DEEP CELL" SOAKAWAYS

DESIGN SUMMARY

THE SCHEME HAS BEEN DESIGNED TO A HIGH DENSITY IN LINE WITH THE AIMS OF RESIDENTIAL DEVELOPMENT IN SOUTH YORKSHIRE

THE BUILDINGS ARE DESIGNED TO BE SYMPATHETIC TO THE LOCAL ARCHITECTURAL VERNACULAR WITH SLATE EFFECT ROOFS AND NATURAL STONE WALLS

THE MAIN ACCESS POINT HAS BEEN RELOCATED TO 6m TO IMPROVE ACCESS TO THE SITE

THE SCHEME ALLOWS FOR AN AREA OF PUBLIC PARKING FOR THE USE OF THE TRAIN STATION ALONG WITH A NEW ACCESS POINT TO THE PLAYGROUND A NEW LINK IS PROPOSED TO THE EXISTING POS TO THE NORTH OF THE SITE

THE ORIENTATION OF THE BUILDINGS TO MAXIMISE THE VIEWS TO THE SOUTH CREATED BY THE ELEVATED POSITION OF THE SITE

PARKING PROVISION IS AT 1.2X WHICH IS DUE TO THE PROXIMITY OF LOCAL TRANSPORT LINKS AND THE RAILWAY STATION IN THE VILLAGE WE KEEP ACCESS TO MAIN SOUTH YORKSHIRE ROUTES

REV A ADDRESS AMENDED 22.07.08

CLIENT
JOHN CHURCH
(ELSECAR)

OASIS
urban design & architecture

PROJECT
ELSECAR

SCALES 1:500 / NTS
DRAWN
SKETCH LAYOUT
DATE
DRAWING No. SK2
REVISION A

APPENDIX F

YorkshireWater

Millard Consulting NUNEATON
Received 22-08-08
Project No 9974
Circulate To EM / MHB
Copied To:
Action:

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Tel: (0845)1242424
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For telephone enquiries ring:

Philip Hoffmann on (0845)1242424

Millard Consulting
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NUNEATON
Warwickshire
CV11 4EL

For attention of Mr M Holden-Brown

Your Ref: MHB/RJ/9974
Our Ref: J007327 /ndt-sew/peh

20th August 2008

Dear Sir,

Land at Hill Street, Elsecar, Barnsley - Pre-Planning Sewerage Enquiry - Residential Development

Thank you for your letter of 8th August 2008 and remittance. Our official VAT receipt will follow under separate cover. Please find enclosed a complimentary extract from the Statutory Sewer Map. This indicates the recorded position of the public sewers. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site:

There is a 225mm diameter public combined sewer recorded crossing the site. No buildings are to be erected within 3 (three) metres, nor trees planted within 5 (five) metres of this public sewer. It may not be acceptable to raise or lower ground levels over the sewer, nor to restrict access to the manholes on the sewer. If you wish to have this sewer diverted under Section 185 of the Water Industry Act 1991 an application should be made in writing. To discuss this matter, please telephone 0845 124 24 24.

Development of the site should take place with separate systems for foul and surface water drainage. The separate system should extend to the public sewer.

Foul water should discharge to the 225mm diameter public combined sewer recorded within the site.

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Sustainable Drainage Systems (SUDS), for example the use of soakaways and/or permeable hardstanding etc., may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SUDS in this instance from the appropriate authorities.

Where appropriate, soakaways, swales and infiltration trenches (SUDS) may be adopted as part of the public sewer network. For general conditions for the adoption of SUDS please see the attached sheet. Further information may be seen in the DEFRA publication 'Interim Code of Practice for Sustainable Drainage Systems' (ISBN 0-86017-904-4). If the developer is considering adoption of SUDS he should contact our New Development Team at Sheffield on 0845 124 24 24.

The local public sewer network does not have capacity to accept an unrestricted discharge of surface water from the proposal site. The developer is advised to contact the Environment Agency/local Land Drainage Authority with a view to establishing a suitable watercourse for discharge. It is understood

INVESTING IN VOLUNTEERS FOR EMPLOYERS
CHARTER MARK

that a watercourse is located through land to the south of the site. This appears to be the obvious place for surface water disposal.

Surface water should discharge to the 375mm diameter public surface water sewer recorded in Hill Street, at a point adjacent to the site. However, the existing public sewers to which surface water from the site may discharge will have a problem accommodating the anticipated run-off. To prevent overloading of the existing public sewers, a storage tank - or some other means of flow attenuation - will be required to control the rate of discharge of surface water. The surface water discharge from the site to be restricted to not greater than 8 (eight) litres/second.

Please note further restrictions on surface water disposal from the site may be imposed. You are strongly advised to seek advice/comments form the local Planning Authority/Land Drainage Authority/Environment Agency, in regard to surface water disposal from the site.

Surface water run-off from communal parking (greater than 800 sq metres or more than 50 car parking spaces) and hardstanding must pass through an oil, petrol and grit interceptor/separator of adequate design before any discharge to the public sewer network. Roof water should not pass through the traditional 'stage' or full retention type of interceptor/separator. It is good drainage practice for any interceptor/separator to be located upstream of any on-site balancing, storage or other means of flow attenuation that may be required.

Prospectively adoptable sewers must be designed and constructed in accordance with the WRc publication "Sewers for Adoption - a design and construction guide for developers" 6th Edition as supplemented by Yorkshire Water's requirements, pursuant to an agreement under Section 104 of the Water Industry Act 1991. An application to enter into a Section 104 agreement must be made in writing prior to any works commencing on site. Please contact our New Development Team at Sheffield (telephone 0845 124 24 24) for further information.

The public sewer network is for domestic sewage purposes. This generally means foul water for domestic purposes and, where a suitable surface water or combined sewer is available, surface water from the roofs of buildings together with surface water from paved areas of land appurtenant to those buildings. Land and highway drainage have no right of connection to the public sewer network. Land drainage will not be allowed into a public sewer. Highway drainage, however, may be accepted under certain circumstances: for instance, if SUDS are not a viable option and there is no highway drain available and if capacity is available within the public sewer network. In this event, the developer will be required to enter into a formal agreement with Yorkshire Water Services under Section 115 Water Industry Act 1991 to discharge non-domestic flows into the public sewer network.

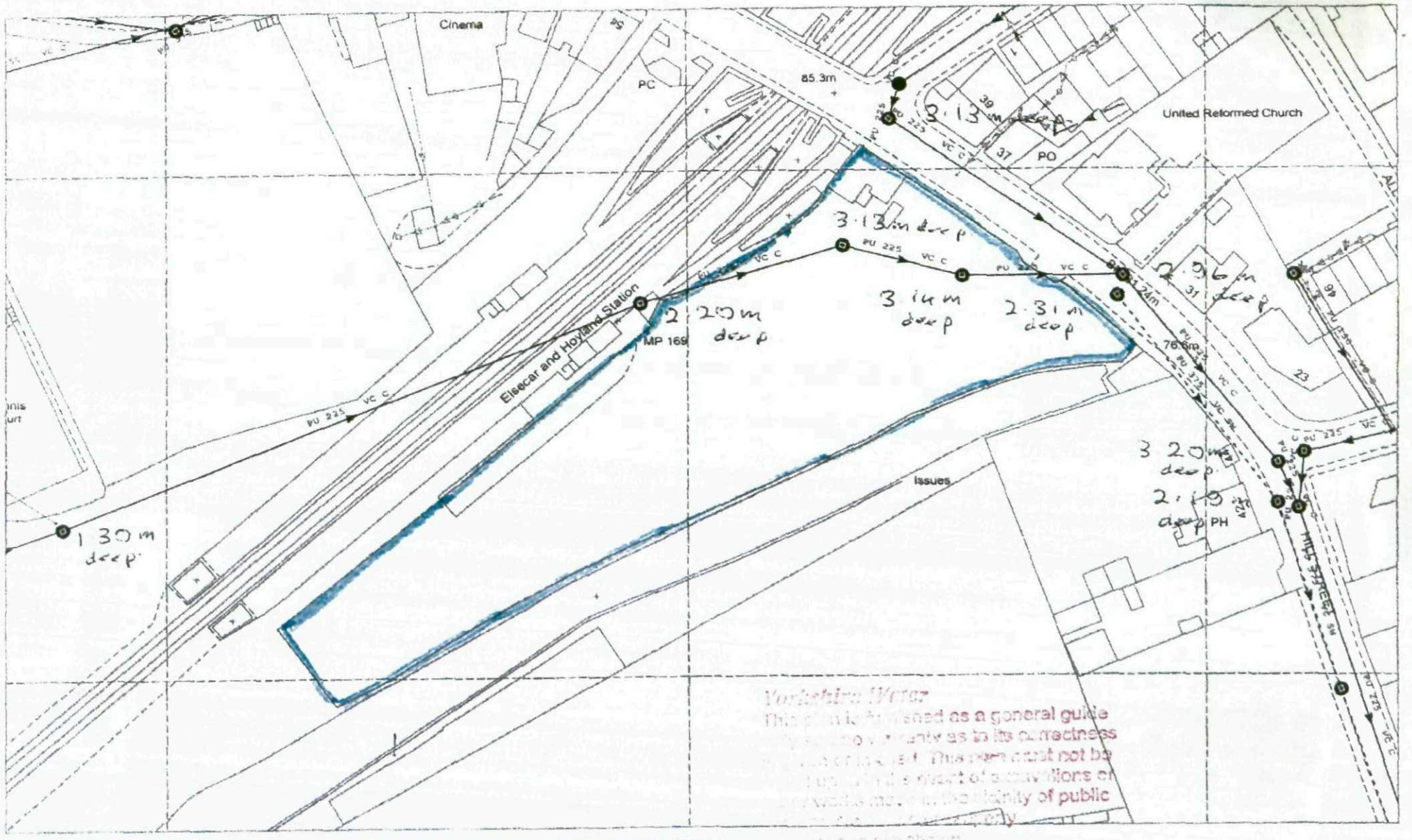
There are a number of properties on St Helen's Street, to the north of the site, on the DG 5 (sewer flooding) Regiister. However, they are located on a different branch of the sewer network to your site and a capital scheme carried out in 2006 has relieved the problem. Reported incidents of sewer flooding in the area of the site on the YW operations database are associated with blockages/collapses of small diameter sewers in gardens/yards.

Any new connection to an existing public sewer will require the approval of Yorkshire Water. You may obtain an application form by telephoning 0845 124 24 24.

All the above comments are based upon the information and records available at the present time. The information contained in this letter together with that shown on any extract from the Statutory Sewer Map that may be enclosed is believed to be correct and is supplied in good faith. Please note that capacity in the public sewer network is not reserved for specific future development. It is used up on a 'first come, first served' basis. You should visit the site and establish the line and level of any public sewers affecting your proposals before the commencement of any design work.

Yours faithfully,

New Development Team



Yorkshire Water
This plan is furnished as a general guide
only as to its correctness
This plan must not be
the event of excavations or
works in the vicinity of public
sewers

Date Requested: 20/08/2008, 08:12:16
Date Generated: 20/08/2008, 08:12:52
Source:

UPN: Undefined
Originator: P Hoffman, New Development

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Statutory Sewer Map
Location: Elsecar, Barnsley
Scale: ~~1/500~~ 1/1000 ~~1/1250~~ ~~1/2500~~
YWS Ref: 7007327 / PEH
Sheet: 1 of 1

YorkshireWater

General Conditions in relation to the adoption of Sustainable Drainage Systems (SUDS)

1. There should be no potential to cause pollution and a discharge consent from the EA should not be required – see Sections 4.1.2 and 4.1.3 of the SUDS Interim Code of Practice for further detail. (Yorkshire Water cannot readily control what is discharged into sewers and the risk of pollution to watercourses and groundwater must be avoided.)
2. Health and safety file must be provided to quantify and mitigate any associated risks
3. Yorkshire Water will not adopt SUDS features that are situated in private land. They should be sited in public open space; common shared areas held for general communal purposes or public highway and have unrestricted access. Access to these features is required on a 24 hour basis to ensure entry for routine maintenance and in the event of emergencies.
4. Drainage must be from roofs & yards with a proper outfall and should not have land drainage or groundwater inflow. This will enable adoption as part of the public sewerage system.
5. Any discharges into watercourses or other SUDS features must have the benefit of a right to discharge in perpetuity as Yorkshire Water have no statutory powers in respect of such discharges.
6. Ground conditions must be suitable to allow free drainage from the particular SUDS feature all year round (by having regard to groundwater levels).
7. Required technical considerations:

   (i) Clearly defined channel, conduit or structure for flows
   (ii) Extent of controlled storage of the particular SUDS feature to be defined
   (iii) Must meet relevant design guidance found in current versions of 'Sewers for Adoption or CIRIA documentation
   (iv) Sphere of influence not within 5m of the building
   (v) No tree planting within 5m of feature as this would prevent access for maintenance (approved shallow rooted shrubs may be permitted).
   (vi) Designed flood route as per 'Sewers for Adoption'
   (vii) No outlet to combined sewers or foul sewers
   (viii) Design for 1:30 year flooding if Yorkshire Water is to adopts
   (ix) The SUDS feature must incorporate an adoptable bypass pipe that can be used in the event that the SUDS feature fails and is designed to comply with the requirements of items (vi) and (viii) above.

   Experience with 'Sewers for Adoption' has shown that compliance with the criteria detailed above provides a robust and cost effective solution to draining new developments whilst offering a high level of protection to occupiers of premises that are served by these SUDS features.



YorkshireWater

Supplementary Information: Adoption of Lateral Drains

With the implementation of the Water Act 2003 the Government's strategy on the ownership of new sewers is moving forward.

The intention is that all new sewers are to be built to adoptable standards. Further more, drains from the curtilage to the point of connection to the public sewer (to be known as Lateral Drains) can also be in public ownership.

Yorkshire Water's policy on these issues is in line with the Governments thinking and to facilitate this, the following protocol is required to be implemented.

All drains and sewers to be adopted are to be laid at the front of the curtilage, the termination of the lateral drain to be defined by a demarcation access point and to be constructed in accordance with documentation to be introduced in the autumn of 2004. As an interim solution demarcation chambers are to be constructed as per Yorkshire Water's guidelines for demarcation chambers.

All sewers to be adopted (and Yorkshire Water would look to have all sewers adopted) should be designed to either the WRc publication "Sewers for Adoption - a design and construction guide for developers" 6th Edition or if serving less than 9 properties on foul only systems to the protocol on design, construction and adoption of sewers in England and Wales produced by DEFRA. Please contact our Development Team - Technical (telephone 0114 251 8321, Fax 0114 251 8384) for further information.