Shropshire Council:
Shropshire Local Plan

Representation Form

*Please complete a separate **Part B Representation Form** (this part) for each representation that you would like to make. One **Part A Representation Form** must be enclosed with your **Part B Representation Form(s).***

*We have also published a separate **Guidance Note** to explain the terms used and to assist in making effective representations.*

Part B: Representation

Name and Organisation:	Nigel Thorns Planning Consultancy Ltd on behalf of Hawk Developments Ltd

Q1. To which document does this representation relate?

☑ Regulation 19: Pre-Submission Draft of the Shropshire Local Plan

☐ Sustainability Appraisal of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan

☐ Habitats Regulations Assessment of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan

(Please tick one box)

Q2. To which part of the document does this representation relate?

Paragraph:		Policy:		Site:	PPW025	Policies Map:	Prees

Q3. Do you consider the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan is:

	Yes:	No:
A. Legally compliant	☑	☐
B. Sound	☑	☐
C. Compliant with the Duty to Co-operate	☑	☐

(Please tick as appropriate).

Q4. Please give details of why you consider the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan is not legally compliant or is unsound or fails to comply with the duty to co-operate. Please be as precise as possible.

If you wish to support the legal compliance or soundness of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan or its compliance with the duty to co-operate, please also use this box to set out your comments.

See attached

supporting statement
existing site plan
indicative site plan
flood plan
tree report
ecological appraisal
flood risk assessment

(Please continue on a separate sheet if necessary)

Q5. Please set out the modification(s) you consider necessary to make the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan legally compliant and sound, in respect of any legal compliance or soundness matters you have identified at Q4 above.

Please note that non-compliance with the duty to co-operate is incapable of modification at examination. You will need to say why each modification will make the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan legally compliant or sound. It will be helpful if you are able to put forward your suggested revised wording of any policy or text. Please be as precise as possible.

None

(Please continue on a separate sheet if necessary)

Please note: *In your representation you should provide succinctly all the evidence and supporting information necessary to support your representation and your suggested modification(s). You should not assume that you will have a further opportunity to make submissions.*

After this stage, further submissions may only be made if invited by the Inspector, based on the matters and issues he or she identifies for examination.

Q6. If your representation is seeking a modification to the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan, do you consider it necessary to participate in examination hearing session(s)?

Please note that while this will provide an initial indication of your wish to participate in hearing session(s), you may be asked at a later point to confirm your request to participate.

☐ No, I do not wish to participate in hearing session(s)

☑ Yes, I wish to participate in hearing session(s)

(Please tick one box)

Q7. If you wish to participate in the hearing session(s), please outline why you consider this to be necessary:

We have no need to attend if there are no participants making representations against the allocation at the Examination.

However if there are participants at the Examination which seek to make representations against the site, we would wish to attend to respond and answer any questions raised

(Please continue on a separate sheet if necessary)

Please note: *The Inspector will determine the most appropriate procedure to adopt to hear those who have indicated that they wish to participate in hearing session(s). You may be asked to confirm your wish to participate when the Inspector has identified the matters and issues for examination.*

Signature: | Date: 22/02/2021

Office Use Only	Part A Reference:
	Part B Reference:

Regulation 19 Pre-Submission Draft of the Shropshire Local Plan Review

Nigel Thorns Planning Consultancy Ltd on behalf of Hawk Developments Ltd
Response Relates to Site PPW025

1.1 This response seeks to support the allocation of site PPW025

1.2 The Regulation 19 Consultation sets out the 'Development Guidelines' which would need to be accommodated within any proposed scheme which read:

> "Land North of Tudor House, Prees
>
> Provision 35 Dwellings
>
> The site will include a mix of dwelling types to reflect local housing needs, including bungalows.
>
> An appropriate highway access will be provided from Whitchurch Road. All other necessary highway improvements, including a review of the existing speed limit and traffic calming measures, will be undertaken.
>
> Mature trees, hedgerows and priority habitats will be retained and enhanced. Open space and play facilities will be provided on the site.
>
> A proportionate Heritage Impact Assessment should be carried out and its recommendations taken into account with respect to the impact of development on the significance of the Prees Conservation Area and its setting and the significance, including the setting, of any other heritage assets within proximity of the site. including Tudor House and associated barn.
>
> Acoustic design, layout, green infrastructure and appropriate building materials will be used to appropriately manage noise from the road to the east of the site.
>
> The site will incorporate appropriate sustainable drainage, informed by a sustainable drainage strategy. Any residual surface water flood risk will be managed by excluding development from the affected areas of the site, development will also be excluded from the elements of the site located in flood zones 2 and/or 3, these areas will form part of the Green Infrastructure network. Flood and water management measures must not displace water elsewhere"

1.3 I can confirm that the scheme does respond positively to all of the issues raised within the 'Development Guidelines' as follows:

1.3.1 Mix of Dwelling Types

The scheme will respond to the Prees 'Right Home Right Place' survey conducted in November 2018 and will include a mix of house types including bungalows.

1.3.2 Access

The access within planning application 14/03511/OUT was agreed by the Shropshire Council Highways Team. This same access point and design will be used in the new application (subject to allocation) along with any other highways works deemed necessary to accommodate the development.

1.3.3 Trees, Hedges and Open Space

The frontage trees and hedges would be retained and open space provided along the western side of the site.

1.3.4 Heritage Assets

The scheme will respond to the nearby listed buildings and heritage assets

1.3.5 Noise

Acoustic design will be used to appropriately manage noise from the road to the east of the site.

1.3.6 Flood Risk

The 2018 application included an appropriate Flood Risk Assessment relating to the nearby brook and also accommodated sustainable drainage, informed by a sustainable drainage strategy.

The houses would be wholly excluded from the elements of the site located in flood zones 2 and/or 3 which form part of the Green Infrastructure network.

1.4 In addition I attach a letter from Hawk which explains that:

- Hawk have an option with the owner of the site to develop the land for residential purposes

- The site lies within one ownership which simplifies delivery
- The land has been the subject of a previous planning application 14/03511/OUT which demonstrates the desire to develop the site
- The documents relating to the submission of a further planning application are ready to be submitted and if allocated a new planning application would be submitted within a month of adoption of the Local Plan
- Once the planning application was approved the land would be developed swiftly by Hawk Developments in consultation with Shropshire Council

1.5 Given the above the site is:

1.5.1 Available

A site can be considered available for development, when, on the best information available (confirmed by the call for sites and information from landowners and legal searches where appropriate), there is confidence that there are no legal or ownership impediments to development. For example, land controlled by a developer or landowner who has expressed an intention to develop may be considered available.

In this case the sites PPW025 is owned by one person who has via Local Plan consultation confirmed their intention to sell the land for development at the earliest opportunity.

The site is available for development.

1.5.3 Deliverable

Plan-makers will need to assess whether a site can be considered deliverable within the next five years, or developable over a longer period.

Once the land is formally allocated the land will be made available for development.

At this stage it is anticipated that the sites will come forward in the 'Short Term' (2020 to 2025) with completion in the 'Medium Term' (2025 to 2030) with the following time constraints:

Spring 2022	Local Plan adoption
Summer 2023	application submitted
Spring 2024	expected decision

Summer 2024	expected on site
Autumn 2026	expected completion

In accordance with the NPPF definition, the site is available now, offers a suitable location for development now, and its development is achievable with a realistic prospect that housing will be delivered on the site within five years.

1.6 The site lies in a highly sustainable location on the built up edge of Prees and sits comfortably within the existing pattern of development.

1.7 The land is available, viable and deliverable and will be brought forward at the earliest opportunity.

1.8 The Promoters and Landowner request that the site allocations PPW025 be supported and retained within the Local Plan

NOTES:
All drawings and specifications contained in this document are copyright to DAVID OWEN ASSOCIATES. All dimensions must be checked on site and not scaled from the drawings. All discrepancies must be notified to the Agent immediately.

WHITCHURCH ROAD

Medical Centre
by others

C:/CLIENTS LIST/ HAWK 2318 / 6.0 PLANNING/ APPLICATION 1 / 01 - EXISTING SITE PLAN PHASE 1

Rev	Date	Revisions
-		

Drawn by : A.R. HEWITT

Date : MAY 2014

DAVID OWEN ASSOCIATES

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Client :
HAWK DEVELOPMENTS LTD

Job Title :
PROPOSED DEVELOPMENT OF LAND ADJACENT TO WHITCHURCH ROAD,
PREES,
SHROPSHIRE,
SY13
FOR THE ERECTION OF 31 DWELLINGS (PLOTS 1-31)
TO INCLUDE ACCESS AND ASSOCIATED DRAINAGE

Drawing Title :
PHASE 1

EXISTING SITE PLAN

Drg No :	Scale :	Rev :
W14/2318/01	1 : 500 @ A1 1 : 1000 @ A3	-

NOTES:
All drawings and specifications contained in this document are copyright to DAVID OWEN ASSOCIATES. All dimensions must be checked on site and not scaled from the drawings. All discrepancies must be notified to the Agent immediately.

Visibility to the North
= 4.5m x 125m

Existing bus stop

Bollards / access for
emergency vehicles

Visibility to the South
= 4.5m x 125m

WHITCHURCH ROAD

Medical Centre
by others

Area of
Local Play

A

B

C

KEY:

Line identifies the environment agency mapping floodplain

Line Indicates Visibility Splay

Volume A = 52.5m cubed
Intrusion into the flood zone

Volume B = 10m cubed
Compensation to the flood zone

Volume C = 89m cubed
Compensation to the flood zone

Rev	Date	Revisions
A	18.09.15	Amended to suit ESI Ltd flood assesment comments

Drawn by : A.R. HEWITT

Date : MAY 2014

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Client :
HAWK DEVELOPMENTS LTD

Job Title :
OUTLINE APPLICATION FOR THE ERECTION OF 27 DWELLINGS INCLUDING PROVISION OF ACCESS AT
LAND ADJACENT TO
WHITCHURCH ROAD,
PREES,
SHROPSHIRE,
SY13
FOR THE ERECTION OF 27 DWELLINGS (PLOTS 1-27)
TO INCLUDE ACCESS AND ASSOCIATED DRAINAGE

Drawing Title :
FLOOD PLAN

Drg No :	Scale :	Rev :
W14/2318/SK10	1 : 500 @ A1 1 : 1000 @ A3	-

C:/CLIENTS LIST/ HAWK 2318/ 6.0 PLANNING / SK10A - FLOOD PLAN

Technical Note: Whitchurch Road Hydraulic Model

Prepared for

Alan Nixon
Hawk Development Ltd
Prees Green Whitchurch
Shropshire, SY13 2BS

Report reference: 63053 TN1, May 2015

	Name	Signature
Author	Bob Sargent	
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1 INTRODUCTION

1.1 Background

It is proposed to build a 70 bed care home, church and eight dwellings on land west of Whitchurch Road, Prees, Whitchurch, Shropshire ("the Site"). The Strine Brook flows through the Site and a Flood Risk Assessment (FRA), by Hawk Developments, has already been submitted with the proposal. Further details of the Site and the proposed development are provided in the FRA.

The proposed development has already been steered towards the eastern parts of the Site which are at the lowest risk of flooding and are designated as Flood Zone 1. Elsewhere onsite, including areas of the proposed development such as the proposed access road, and some of the south western dwellings, development is located on the border of the Flood Zone 2/3 extent.

Planning permission (ref: 14/03620/OUT) has been refused by the Shropshire Council due to the Environment Agency (EA) not being satisfied that sufficient information has been submitted to clarify the extent and depth of flooding onsite during a 1 in 100 year plus climate change flood event.

The EA suggests that their broad scale mapping of flood risk is not sufficiently accurate for planning purposes at this location and, in response, has recommended that a hydraulic model of the Strine Brook, in the vicinity of the Site, is produced to provide more accurate levels to inform a more suitable design for the proposed development (layout and floor levels etc.). They have also specified that the possibility of a culvert downstream of the Site becoming blocked needs considering in the hydraulic model.

ESI reviewed the comments received from the Environment Agency (ref SV/2014/107969/01-L01) for the outline planning of the above Site. The EA has objection on establishing a flood level using their predictive flood map due to uncertainties in the predicted flood extent. Since the proposed use of the Site is for a Care Home and residential purposes, this uncertainty poses a potential flood risk to the Site.

1.2 Objectives

The objective of this technical note is to build upon the previous FRA work undertaken by Hawk Developments Ltd. by performing a more detailed FRA that incorporates bespoke hydraulic modelling in response to the request from the Environment Agency. Additional survey work has also been undertaken to inform the model and to relate the modelled flood levels to the depths of flooding that may occur across different parts of the Site.

2 HYDROLOGICAL ESTIMATION

Flood flow estimates are required for the above site on the Strine Brook for 1D steady state modelling of the river channel. There are no flow gauging records for this site so flow estimates have been produced using the Flood estimation Handbook (FEH)[1] and recent updates.

Details of the catchment for the modelling site were acquired from the FEH dataset and are provided in Appendix 1. This information has been used to generate an estimate for the median flood (i.e. the peak flow that will be exceeded in half of all years) using the updated procedure provided by Kjeldson[2] in a recent Environment Agency research report. The calculated median flood is

$$QMED = 1.188\ m^3/s$$

[1] NERC (2009) WINFAP-FEH CD-ROM version 3.0

[2] Kjeldson et al (2008) Improving the FEH statistic procedures for Flood Frequency Estimation. Science Report SC050050. Environment Agency, Bristol, UK

Estimates of flood flows for different probabilities have been derived using this QMED estimate and published growth curves. The 100 year (1% probability) flow has also been increased by 20% to allow for the estimated effect of climate change for the period 2055 to 2115, as recommended by the National Planning Policy Framework[3].

The resultant flows are shown in Table 2.1below.

Table 2.1 Estimated Peak flows for selected return periods

Return Period (years)	Growth curve	Peak flow (m3/s)
1	0.83	0.99
10	1.49	1.77
20	1.8	2.14
100	2.57	3.05
1000	4.16	4.94
100+cc*		3.66

*Note 100+cc includes 20% increase for climate change

3 HYDRAULIC MODELLING

3.1 Modelling Approach

A topographic survey and cross section survey of the Strine Brook was supplied by the client to construct a 1-D hydraulic model of the Brook from upstream of the Site to the downstream culvert, using ISIS modelling software. The model extent and the site boundary is shown in Figure 3.1. Using the above hydrological estimates of peak flow, steady state modelling was used to assess flood levels through the Site for a range of return periods. Blockage scenarios for the culvert at 20%, 50% and 80% blockage were also run for each of the return periods.

[3] Technical Guidance to the National Planning Policy Framework, DCLG, March 2012

Figure 3.1Model Extent and Site Boundary

3.2 Model Construction

A survey was undertaken of the Strine Brook by Barry Lowe Survey Ltd in December 2014 following the instructions of the client. The topographic survey is shown in Appendix 2, with the nine channel cross sections indicated in green. These cross sections were used to construct a 1D model of the channel in ISIS modelling software. The culvert under Mill Street was surveyed, along with road levels in Mill Street, and recorded as circular in section, with a diameter of 0.94 m and invert level of 83.06 m AOD, and was modelled as a Bernoulli unit in ISIS.

In high flows the culvert becomes surcharged and the level exceeds the crown of the culvert. In extreme flows the water level rises above the level of Mill Street, and flow has been modelled over the road embankment as a spill unit within ISIS.

The model was run in steady state with the upstream boundary of the required peak discharge as a constant flow and the downstream boundary as a normal depth boundary.

3.3 Modelling Results

The flood levels provided by the hydraulic modelling at the survey cross sections are shown in Table 3.1, assuming the culvert is free-flowing. The culvert may become partially blocked during flood events, and a series of blockage scenarios have also been modelled. Blockages of 20% and 50% were modelled using the steady state model by reducing the

capacity of the culvert according to the blockage scenario. This results in increased levels upstream, as shown in Table 3.2 and Table 3.3. The 80% blockage scenario could not be modelled in steady state as the results were unstable.

Table 3.1 Modelled flood elevations

River Section	Maximum Stage (mAOD)			
	20yr	100yr	100yrCC	1000yr
SB.001	84.92	85.07	85.13	85.23
SB.002	84.84	85.01	85.06	85.16
SB.003	84.82	85.00	85.06	85.15
SB.004	84.81	84.99	85.05	85.14
SB.005	84.80	84.98	85.04	85.13
SB.006	84.80	84.98	85.04	85.12
SB.007	84.79	84.97	85.03	85.12
SB.008	83.57	83.67	83.74	83.85
SB.009	83.04	83.20	83.29	83.46

Table 3.2 Flood levels for partial blockage at 100+cc year flows

River Section	Maximum Stage (mAOD) for % Blockage Scenario 100 year +cc flow			
	0%	20%	50%	80%
SB.001	85.13	85.19	85.28	-
SB.002	85.06	85.15	85.26	-
SB.003	85.06	85.14	85.25	-
SB.004	85.05	85.14	85.25	-
SB.005	85.04	85.13	85.25	-
SB.006	85.04	85.13	85.24	-
SB.007	85.03	85.13	85.24	-
SB.008	83.74	83.74	83.74	-
SB.009	83.29	83.29	83.29	-

Table 3.3 Flood levels for partial blockage at 1000 year flows

River Section	Maximum Stage (mAOD) for Blockage Scenario 1000 year flow			
	0%	20%	50%	80%
SB.001	85.23	85.28	85.37	-
SB.002	85.16	85.23	85.34	-
SB.003	85.15	85.23	85.34	-
SB.004	85.14	85.22	85.33	-
SB.005	85.13	85.21	85.33	-
SB.006	85.12	85.21	85.32	-
SB.007	85.12	85.21	85.32	-
SB.008	83.85	83.85	83.85	-
SB.009	83.46	83.46	83.46	-

The predicted flood extents arising from these flood levels have been plotted using a GIS and the local topographic survey and are shown in Appendix C, which also shows the boundary of the proposed development. It can be seen that the flood extent encroaches on the development red line boundary, but that some of the proposed development site is outside of the predicted flood extent for all return periods and blockage scenarios modelled. It is noted that the flood extents plotted do not extend all the way to the culvert due to the lack of detailed topographic data in this area.

4 POTENTIAL MITIGATION

As the flood extent encroaches on the proposed development boundary, mitigation measures should be considered to protect the development from flood risk, without increasing flood risk elsewhere. These require proper investigation and in some cases further modelling, but options could include:

- Developing only those parts of the site shown to be above the 100 + climate change flood level.
- Raising the development above the flood levels indicated, and providing a compensatory volume of flood storage by reducing levels on the opposite bank.
- Increasing the capacity of the culvert (though this may have a result of increasing peak flows downstream).

It is clear that there is a risk of raised flood levels resulting from partial blockage of the culvert. An assessment should be made regarding whether a trash screen is required at this location and, if so, it should be designed to minimise the risk of blockage and facilitate cleaning. Further details on risk assessment and screen design can be found in guidance documents produced by CIRIA[4] and the EA[5]. Consideration should also be given to providing regular maintenance and an alarm system to warn of excessive water levels upstream of the culvert.

[4] Culvert Design and Operation Guide C689. CIRIA, London, 2010

[5] Trash and Security Screen Guide, report SCHO1109BRHF-E-P. Environment Agency, 2009

5 CONCLUSIONS

The Strine Brook at the proposed Site has been modelled using a 1D steady state model. The modelling has used predicted peak flows for 20, 100, 100 +climate change and 1000 year return periods and included the Mill Street culvert downstream of the Site.

Partial blockage of the culvert was also modelled for 20% and 50% blockage but could not be modelled for 80% blockage due to model instability.

The flood levels produced by the modelling have been used to map the extent of flooding in the Site

The modelling shows that predicted flood extents encroach upon the proposed development boundary, but that most of the development site remains above the modelled flood extent, for all scenarios modelled.

Potential mitigation options are proposed that may allow the development to be outside of the predicted flood extent. These require further examination and modelling to assess their feasibility.

APPENDICES

APPENDIX A

Flow Calculation

FEH CD-ROM data for Strine Brook, Prees:

	GB 55100 SJ 33500
CATCHMENT	
AREA	19.27
ALTBAR	100
ASPBAR	151
ASPVAR	0.28
BFIHOST	0.755
DPLBAR	5.63
DPSBAR	18.1
FARL	0.977
LDP	9.66
PROPWET	0.34
RMED-1H	9.4
RMED-1D	28.6
RMED-2D	36.3
SAAR	713
SAAR4170	748
SPRHOST	24.55
URBCONC1990	0.459
URBEXT1990	0.0191
URBLOC1990	0.677
C	-0.02408
D1	0.33018
D2	0.37485
D3	0.30666
E	0.28686
F	2.34024
C(1 km)	-0.024
D1(1 km)	0.342
D2(1 km)	0.359
D3(1 km)	0.333
E(1 km)	0.287
F(1 km)	2.33

The equation used to generate the median flood (QMED) is:

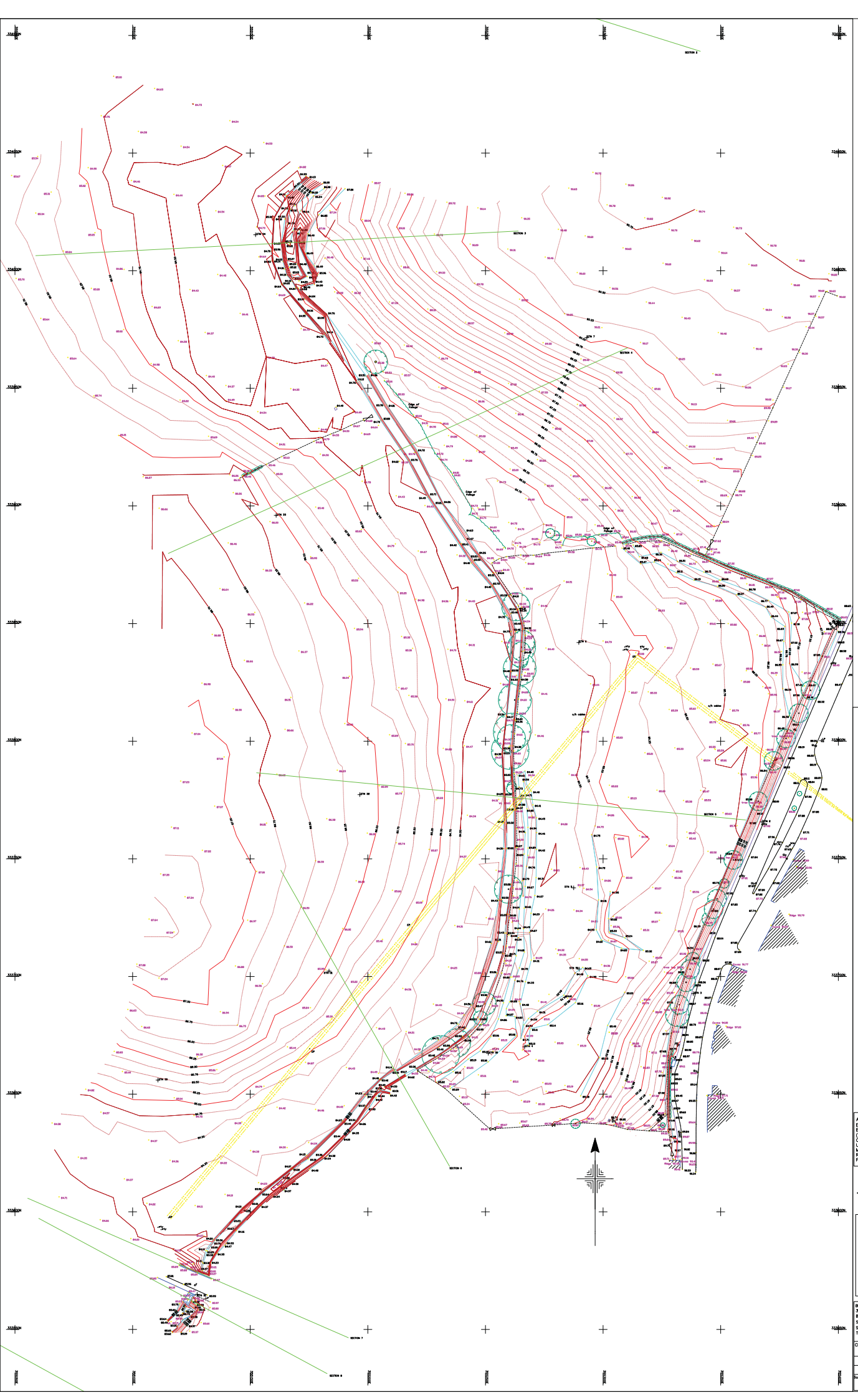
$$QMED = 8.3062\, AREA^{0.8510}\, 0.1536^{\left(\frac{1000}{SAAR}\right)}\, FARL^{3.4451}\, 0.0460^{BFIHOST^2}$$

Using the above catchment parameters, QMED is calculated as:

QMED = 1.188 m^3/s

APPENDIX B

Topographical Survey



Legend

BL	BOLLARD
BS	BUS STOP
CATV	CABLE TV COVER
CL	COVER LEVEL
CPS	CONCRETE PAVING SLAB
DP	DRAIN PIPE
DS	DOOR STOP
EL	ELECTRICITY COVER
EP	ELECTRICITY POLE
ER	EARTH ROD
FH	FIRE HYDRANT
FL	FLOOR LEVEL
FS	FLAG STAFF
G	GAS COVER
GLY	GULLY
GSV	GAS STOP VALVE
IC	INSPECTION COVER
IL	INVERT LEVEL
LB	LITTER BIN
LP	LAMP POST
MKR	MARKER
NB	NOTICE BOARD
P	POST
PH	POST HOLE
PLP	PEDESTRIAN LAMP POST
RE	RODDING EYE
RS	ROAD SIGN
STN	SURVEY STATION
STY	STAY WIRE
T	TELECOMMUNICATIONS COVER
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
U/L	UNABLE TO LIFT
U/M	UNABLE TO MEASURE
VP	VENT PIPE
WL	WATER LEVEL
WP	WASTE PIPE
WSV	WATER STOP VALVE

FENCE TYPES

B/W	BARBED WIRE
C/B	CLOSE BOARD
P/W	POST AND WIRE
P/R	POST AND RAIL
C/L	CHAIN LINK
C/P	CHESTNUT PALE
C/W	CHICKEN WIRE
M/R	METAL RAIL (SECURITY TYPE)
P/F	PANEL FENCE
C/I	CORRUGATED IRON
I/R	IRON RAILING
RWL	RETAINING WALL

Notes

ANY SERVICES SHOWN ARE AS LOCATED BY EITHER GROUND PENETRATING RADAR (GPR) OR BY RADIODETECTION SCANNER IN EITHER ACTIVE (A) OR PASSIVE MODE (P), DUE TO SUBSOIL CONDITIONS AND OTHER FACTORS THE UNDERGROUND SERVICE INFORMATION SHOWN MAY NOT REPRESENT A COMPREHENSIVE RECORD AND ALL CONTRACTORS SHOULD PROCEED WITH CAUTION BEFORE EXCAVATION

-- — -- — -- DENOTES OVERHEAD CABLES

• — • — • DENOTES UNDERGROUND SERVICES

LEVELS AT ROAD KERBS ARE TAKEN AT CHANNEL LEVELS UNLESS OTHERWISE REQUESTED

STATION CO-ORDINATES

STN	29	E 355367.627	N 333765.688	H 88.070
STN	31	E 355338.379	N 333690.721	H 86.584
STN	30	E 355251.185	N 333667.355	H 85.466
STN	31	E 355183.480	N 333702.289	H 86.134
STN	32	E 355196.578	N 333777.309	H 86.336
STN	33	E 355161.006	N 333895.989	H 84.241
STN	34	E 355158.277	N 334015.265	H 84.874
STN	35	E 355188.297	N 334141.761	H 85.598
STN	36	E 355260.098	N 334248.135	H 85.365
STN	37	E 355395.690	N 334284.562	H 90.687
STN	38	E 355467.052	N 334177.841	H 90.931
STN	39	E 355455.849	N 333971.235	H 89.736
STN	50	E 355110.757	N 333655.948	H 85.599
STN	51	E 355127.451	N 333564.981	H 86.049
STN	52	E 355104.195	N 333504.817	H 84.238

BARRY LOWE SURVEYS LTD
3 YEOMANRY ROAD
BATTLEFIELD ENTERPRISE PARK
SHREWSBURY
SHROPSHIRE SY1 3EH
TEL/FAX 01743 443388

Client	NIGEL THORNS PLANNING CONSULTANCY			Title	WHITCHURCH ROAD, PREES
Scale	Date		Job No	Dwg No	Rev.
1 : 500	16/12/14		9694	01	-
Surveyed by	Checked	Scanned	Levels are related to . . .		
CS/JS	CS	NO	EXISTING SITE DATUM		

APPENDIX C

Flood Maps

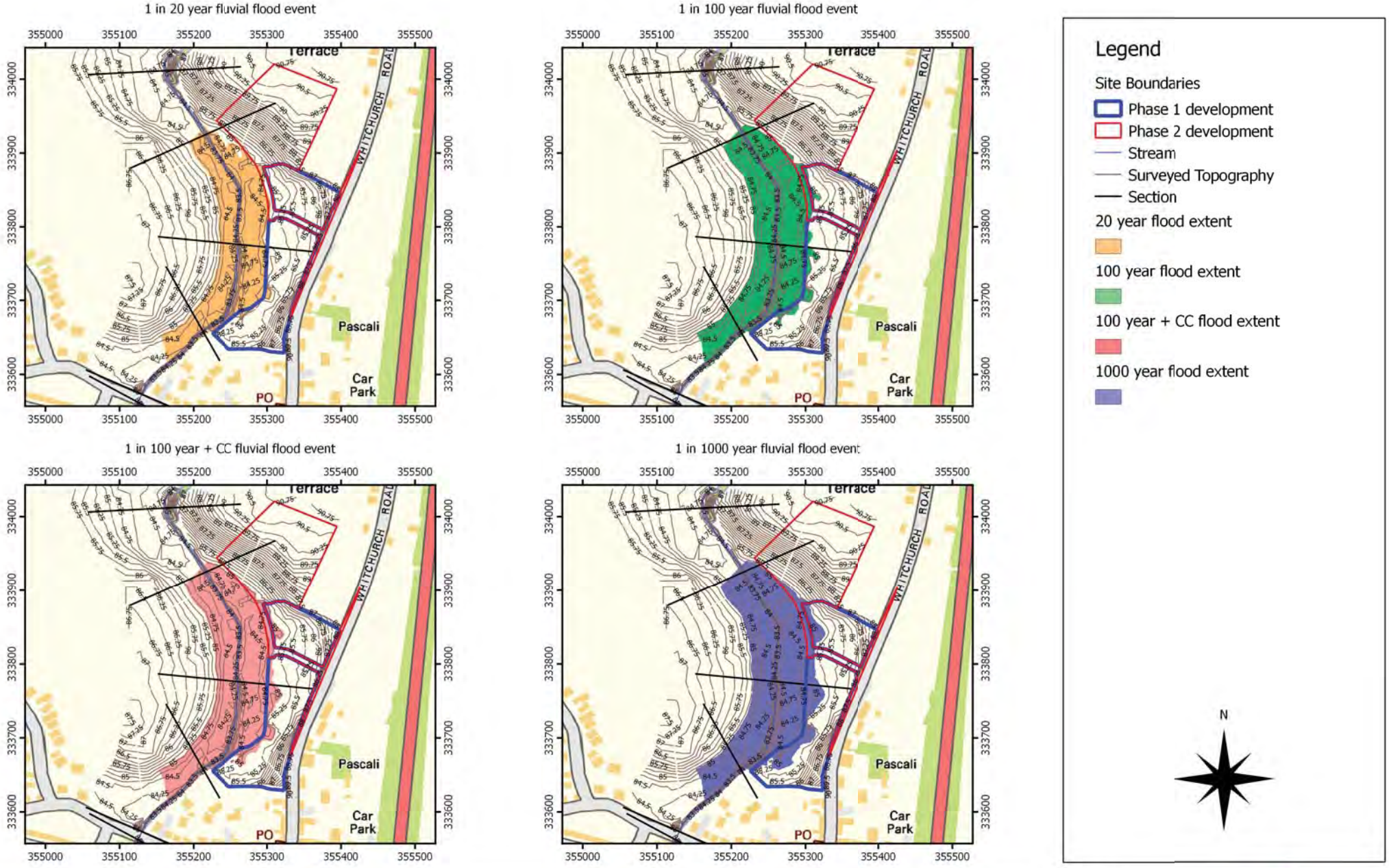


Figure 1.1 Whitchurch Road Care Home Development:
Model flood extent for different return periods when the culvert under the Mill Street is at full capacity.

Date	Apr 2015	Drawn	IJG
Scale	1:5000 at A3	Checked	PXG
Original		Revision	2
File reference	O:\63053 Whitchurch Road Hydraulic Model\GIS\Model results\QGIS-FigureResultsv2.qgs		

esi Environment Specialists

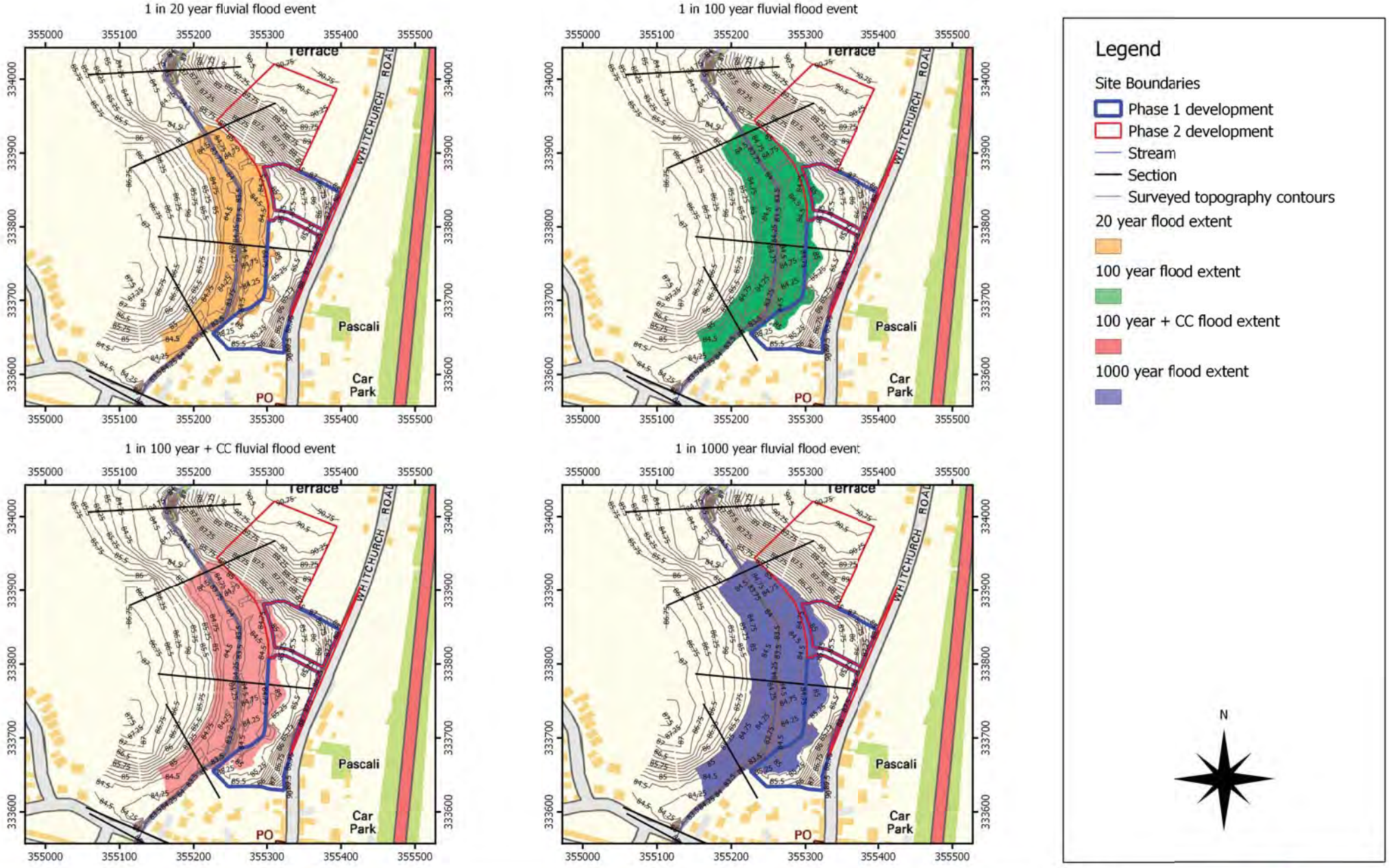


Figure 1.2 Whitchurch Road Care Home Development:
Model flood extent for different return periods when the culvert under the Mill Street is blocked 20%.

Date	Apr 2015	Drawn	IJG
Scale	1:5000 at A3	Checked	PXG
Original		Revision	2
File reference	O:\63053 Whitchurch Road Hydraulic Model\GIS\Model results\QGIS-FigureResults\v2.qgs		

esi Environment Specialists

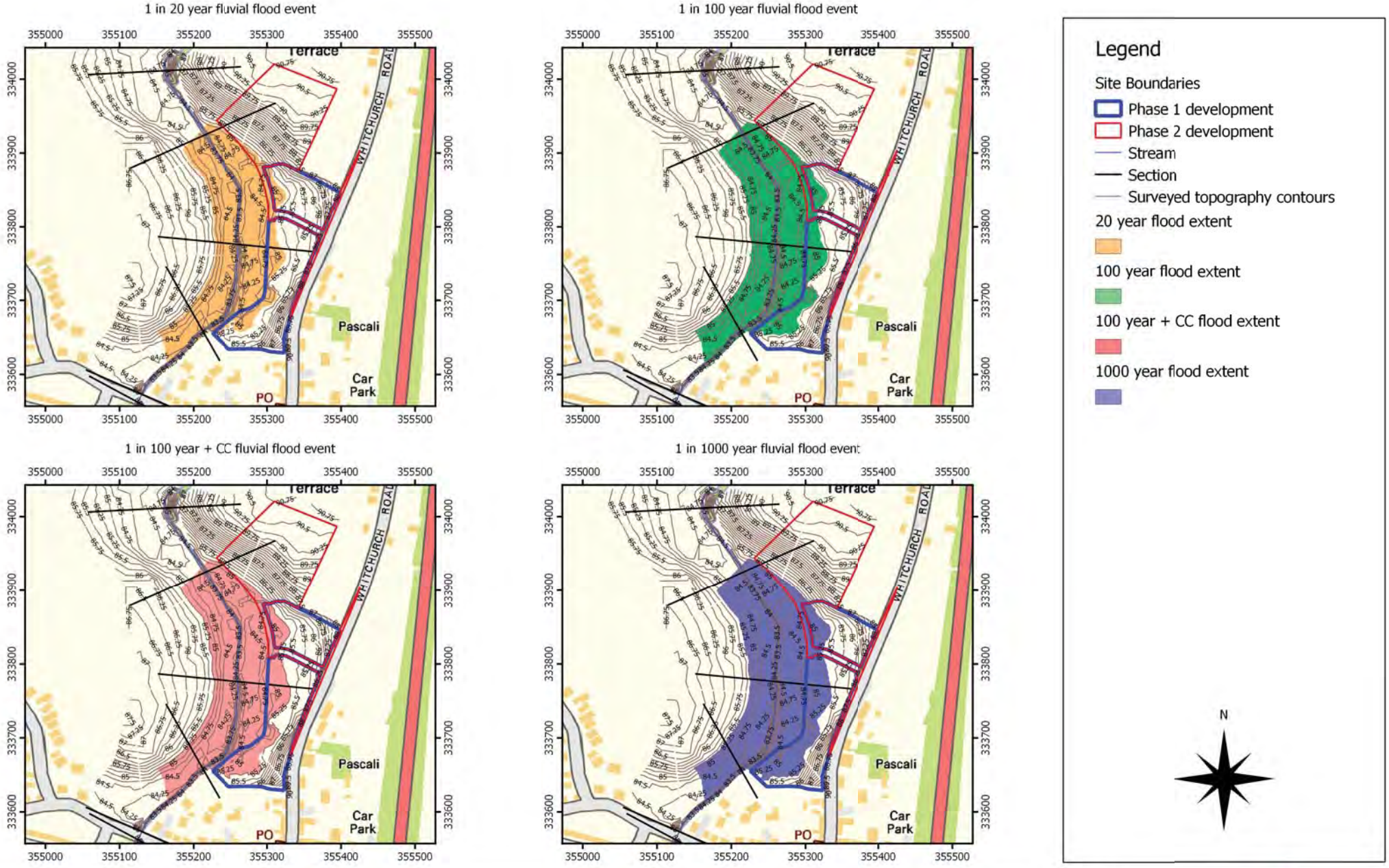


Figure 1.3 Whitchurch Road Care Home Development:
Model flood extent for different return period when the culvert under the Mill Street is blocked 50%.

Date	Apr 2015	Drawn	IJG
Scale	1:5000 at A3	Checked	PXG
Original		Revision	2
File reference	O:\63053 Whitchurch Road Hydraulic Model\GIS\Model results\QGIS-FigureResults\v2.qgs		

esi Environment Specialists

NOTES:
All drawings and specifications contained in this document are copyright to DAVID OWEN ASSOCIATES. All dimensions must be checked on site and not scaled from the drawings. All discrepancies must be notified to the Agent immediately.

Visibility to the North
= 4.5m x 125m

Existing bus stop

Bollards / access for
emergency vehicles

Visibility to the South
= 4.5m x 125m

WHITCHURCH ROAD

Medical Centre
by others

Area of
Local Play

A

B

C

KEY:

Line identifies the environment agency mapping floodplain
Refer to SK10 for Flood Plan

Line Indicates Visibility Splay

Volume A = 52.5m cubed
Intrusion into the flood zone

Volume B = 10m cubed
Compensation to the flood zone

Volume C = 89m cubed
Compensation to the flood zone

Rev	Date	Revisions
A	18.05.15	Amended to suit ESI Ltd flood assesment comments

Drawn by : A.R. HEWITT

Date : MAY 2014

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Client :
HAWK DEVELOPMENTS LTD

Job Title :
OUTLINE APPLICATION FOR THE ERECTION OF 27 DWELLINGS INCLUDING PROVISION OF ACCESS AT
LAND ADJACENT TO
WHITCHURCH ROAD,
PREES,
SHROPSHIRE,
SY13
FOR THE ERECTION OF 27 DWELLINGS (PLOTS 1-27)
TO INCLUDE ACCESS AND ASSOCIATED DRAINAGE

Drawing Title :
PROPOSED SITE PLAN

Drg No : W14/2318/02

Scale : 1 : 500 @ A1
1 : 1000 @ A3

Rev : A

C:/CLIENTS LIST/ HAWK 2318/ 6.0 PLANNING / 02A - PROPOSED SITE PLAN

TREE REPORT (BS 5837:2012)

at

Land North of Tudor House
Whitchurch Road
Prees
Shropshire
SY13 2DG

Report prepared for:

Nigel Thorns
Planning Consultancy
Walton
22 Kingsland Road
Shrewsbury
SY13 7LD

Report prepared by:

Canopy (Tree Care Division of Flintshire Woodlands)
Unit 4 Vauxhall Business Centre
Vauxhall Industrial Estate
Ruabon
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PM/C/WRP **17th July 2014**

TABLE OF CONTENTS

TREE REPORT

1.0 Introduction

1.1 We have been instructed by Nigel Thorns Planning Consultancy to carry out an arboricultural survey and report on all significant trees, which are within influencing distance of a proposed development.

1.2 The survey was carried out on Tuesday 15th July 2014 and the trees were inspected from ground level only and comments are based upon relevant training, 20+ years experience and updated information (CPD), in particular BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.

2.0 The Site

2.1 The site is currently in use for agriculture and has several early-mature trees adjacent to Whitchurch Road and scrub trees to the rear of the site.

3.0 Development Proposal

3.1 We have not been supplied with a development design or brief as yet but the purpose of this report is to inform a proposal that should consider significant trees where appropriate.

4.0 The Trees

4.1 The trees concerned are clearly detailed within the below data table in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* and are illustrated on the attached constraints plan.

4.2 In general the trees were found to be in reasonable condition for their age and species. The quality rating for the trees on or affecting this site can be summarised as follows:

U – 1 trees/groups
C – 7 trees/groups
B – 11 trees/groups
A – 0 trees/groups

4.3 All tree work undertaken/recommended should be done in accordance with British Standard 3998:2010 and by competent contractors insured with public liability cover of at least two million pounds.

4.4 If the trees on site are subject to any Tree Preservation Orders (TPO's) or are encompassed within a Conservation Area then statutory permission from the Local Planning Authority (LPA) will be required before any tree works take place.

4.5 All operations should take account of wildlife needs and be planned to take advantage of weather conditions and time of year for minimum damage and disturbance. If any protected species or nesting birds are present or discovered while the works are taking place all work should cease until contact has been made with Natural England for further advice. Natural England can be contacted on 0845 600 3078 or by e-mail to: enquiries@naturalengland.org.uk. Specific consideration should be given to the possible presence of roosting bats, which are protected by the Wildlife and Countryside Act 1981 (schedule 5) and included in schedule 2 of the Conservation Regulations 1994. Ideally, a survey should be carried out to identify any potential roost sites and if bats are found to be present advice should be sought form a person qualified and experienced in handling such matters and fully conversant with the implications of the Act.

5.0 Arboricultural Data

Arboricultural Survey Sheet: Whitchurch Road, Prees, Shropshire, SY13 2DG								**Date of Survey:** 15/07/14	**Surveyor:** PM
Tree No.	**Species**	**Dbh (mm)**	**Height (m)**	**Age**	**Average Crown Spread (m)**	**Crown clearance (m)**	**Condition rating**	**Comments and preliminary management recommendations**	**Estimated remaining contribution**	**Tree quality category rating**
T1	Ash	690 comb	12.0	EM	7.0	2.0	B	A co-dominant specimen located on bank area adjacent the highway. Reasonable overall form, forked near base. – **Crown lift to clear pavement 3m and road 5m.**	20+	B2
T2	Sycamore	470	11.0	EM	5.0	2.0	B	A co-dominant specimen located on bank area adjacent the highway. Reasonable form, forked at 1.8m with three main scaffold limbs. – **Remover stem growth.**	20+	B2
T3	Norway Maple	430	11.0	EM	5.0	2.0	B	A co-dominant specimen located on bank area adjacent the highway. Reasonable overall form but has some tight unions present within crown structure. – **Crown lift to clear road 5m.**	20+	B2
T4	Hawthorn	200 av	4.0	EM	3.0	0.0	C	A minor specimen, which has previously been topped. Low potential.	10+	C1
T5	Norway Maple	400	11.0	EM	6.0	1.0	B	An individual specimen located on bank area adjacent the highway. Reasonable overall form but has some tight unions present within crown structure. – **Crown lift to clear pavement 3m and remove stem shoots.**	20+	B2
T6	Norway Maple	410	11.0	EM	6.0	1.0	C	An individual specimen located on bank area adjacent the highway. Poor structural form with significant included unions present and previous failure on field side. – **Fell and replace.**	10+	C1
T7	Norway Maple	330	9.0	SM	4.0	2.0	C	A minor poor tree with a very poor main fork and poor overall form. – **Fell and replace.**	10+	C2

Arboricultural Survey Sheet: Whitchurch Road, Prees, Shropshire, SY13 2DG								**Date of Survey:** 15/07/14	**Surveyor:** PM
Tree No.	**Species**	**Dbh (mm)**	**Height (m)**	**Age**	**Average Crown Spread (m)**	**Crown clearance (m)**	**Condition rating**	**Comments and preliminary management recommendations**	**Estimated remaining contribution**	**Tree quality category rating**
T8	Ash	410	12.0	EM	5.0	1.8	B/C	A co-dominant specimen located on bank area adjacent the highway. Major asymmetry due to group and some signs of decline within crown.	10+	C2
T9	Norway Maple	420	12.0	EM	5.0	2.0	B/C	A co-dominant specimen located on bank area adjacent the highway. Reasonable overall form but has some tight unions present within crown structure. – **Crown lift to clear pavement by 3m and road by 5m. Crown thin by approx 15% to lighten load on unions.**	10+	C2
T10	Ash	340	12.0	EM	6.0	1.5	B	A co-dominant specimen located on bank area adjacent the highway. Major asymmetry due to group. – **Crown lift to clear footpath by 3m.**	20+	B2
T11	Ash	280	12.0	EM	5.0	2.0	B	A co-dominant specimen located on bank area adjacent the highway. Major asymmetry due to group. – **Crown lift to clear footpath by 3m.**	20+	B2
T12	Norway Maple	410	13.0	EM	6.0	1.8	B/C	A co-dominant specimen located on bank area adjacent the highway. Reasonable overall form but has some tight unions present within crown structure. – **Crown lift to clear pavement by 3m and road by 5m. Crown thin by approx 15% to lighten load on unions.**	10+	C2
T13	Ash	460	12.0	EM	6.0	1.8	B	A co-dominant specimen located on bank area adjacent the highway. Minor asymmetry due to group. – **Crown lift to clear footpath by 3m.**	20+	B2

Arboricultural Survey Sheet: Whitchurch Road, Prees, Shropshire, SY13 2DG								**Date of Survey:** 15/07/14	**Surveyor:** PM
Tree No.	**Species**	**Dbh (mm)**	**Height (m)**	**Age**	**Average Crown Spread (m)**	**Crown clearance (m)**	**Condition rating**	**Comments and preliminary management recommendations**	**Estimated remaining contribution**	**Tree quality category rating**
T14	Sycamore	350	12.0	EM	5.0	1.5	D	A co-dominant specimen located on bank area adjacent the highway. Minor asymmetry due to group. – **Crown lift to clear footpath by 3m and road by 5m.**	20+	B2
T15	Norway Maple	470	12.0	EM	7.0	1.8	B	A co-dominant specimen located on bank area adjacent the highway. Minor asymmetry due to group. Previous limb failure on field side.– **Crown lift to clear footpath by 3m and road by 5m.**	20+	B2
T16	Hawthorn	270	8.0	M	3.0	2.0	C/D	Located just over boundary fence with poor form and a split in the main stem.	5-10	U
H1	Hawthorn Hedge	-	3.0	M	-	0.0	B	A regularly maintained hedge with several larger specimens present.	20+	B2
G1	Group – Hawthorn, Willow, Hazel & Cherry	<300	<6.0	Y-SM	-	0.0	B	A scrub scattered group located on field boundary. Informal hedgerow.	10+	C2
G2	Group – Goat Willow, Ash & Thorn	<600	<11.0	Y-EM	4.0	0.0	B	A linear scattered group of pre-dominantly Goat Willow located on the other side of field boundary fence. Good habitat.	20+	B2

Recommended works should be carried out to the British Standard Recommendations for Tree Work, BS 3998: 2010

Disclaimer

The tree(s) referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes to their environment caused by human's activities and to exceptional weather conditions. The inspection undertaken by our qualified staff relies on visual attributes of tree health and structure which can be assessed from a ground based inspection. Hidden defects which are not readily visible may not be detected. We therefore cannot wholly guarantee the condition and safety of the trees inspected beyond what can be reasonably assessed from the procedure used. We would recommend that the trees are regularly inspected and our staff will advise on the suitable frequency of these inspections.

6.0 Implications for Development

6.1 The above data table clearly details the condition of the trees and identifies their worthiness for retention.

6.2 In addition the Tree Constraints Plan of Appendix Two illustrates their Root Protection Area's (RPA's) in accordance with the British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.

6.3 This is an area that should be left undisturbed in order to provide adequate rooting area for retained trees (see table below). This can be then used within the design process for development and an Arboricultural Implications Assessment and Method Statement can then be produced to fully assess development impact on each tree, proposed tree works and tree protective measures.

6.4 Implications Table

Tree No.	Root Protection Area (m^2)	Circle Radius (m)
T1	215.38	8.28
T2	99.93	5.64
T3	83.65	5.16
T4	18.10	2.40
T5	72.38	4.80
T6	76.05	4.92
T7	49.27	3.96
T8	76.05	4.92
T9	79.80	5.04
T10	52.30	4.08
T11	35.47	3.36
T12	76.05	4.92
T13	95.73	5.52
T14	55.42	4.20
T15	99.93	5.64
T16	32.98	3.24
H1	n/a	n/a
G1	<40.72	<3.60
G2	<162.86	<7.20

APPENDIX ONE

Glossary of Terms and Explanatory Notes

The following terms are concurrent with best Arboricultural practice and within the guidelines set by the International Society of Arboriculture (ISA), the Arboricultural Association (AA) and the British Standards Institute (BSI).

Dbh: Diameter at Breast Height is measured at 1.5m and recorded in millimetres. Where a tree becomes multi-stemmed below 1.5m the diameter of each stem is measured at 1.5m and added together. Where a tree has low branching or has swelling the stem is measured at the narrowest point below.

Height: Height was estimated and recorded in metres.

Age Range: Age is site specific and categorised:

Young (Y)	Out-planted trees that have not yet established.
Semi-Mature (SM)	Established trees up to 1/3 of expected height and crown.
Early Mature (EM)	Between 1/3 and 2/3 of expected height and crown.
Mature (M)	Between 2/3 and full expected height and crown.
Fully Mature (FM)	Full expected height and crown.
Over Mature (OM)	Crown beginning to break-up and decrease in size.
Senescent (S)	Crown in advanced stage of break-up.

Crown Spread: Measured in metres as an average radius.

Crown Clearance: Measured in metres from the ground to the first branch tip on development side only.

Condition - Assessment of current physiological condition and structural morphology incorporating vigour and vitality and categorised:

A - Tree needing little, if any attention
B - Tree with minor, but rectifiable defects, or in the early stages of physiological stress
C - Tree with significant structural and physiological flaws and/or extremely stressed
D - Tree that is dead, biologically/physically moribund or dangerous

Desirability To Retain – As Outlined in Table 1 of BS 5837:2012 Trees in Relation to Construction – Recommendations (see below).

<u>Definition of Physiological & Morphological Terms</u>

Adaptive Growth - The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone.

Bifurcation – Forked or divided union.

Brown Rot - Form of decay where cellulose is degraded, while lignin is only modified.

Cankers (target or tumerous) - A localised area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterised by woundwood development on the periphery. This may be annual or perennial.

Cavity - An open wound, characterised by the presence of extensive decay and resulting in a hollow.

Chlorotic Leaf - Lacking in chlorophyll, typically yellow in colour.

Compartmentalisation - The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.

Coppicing - Is an ancient form of woodland management that involves repetitive felling on the same stump, near to ground level, and allowing the shoots to re-grow from that main stump. (Also known as the coppice stool).

Crack - Longitudinal spilt in stem or branch, involving bark and/or underlying wood. These may be vertically and horizontally orientated.

Decay - Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.

Deadwood - Deadwood is often present within the crown or on the stems of trees. In some instances is may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).

End Weight - The concentration of foliage at the distal ends of stems and deficient in secondary branches.

Girdling Root - Root which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.

Hazard Beam - An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).

Included Bark Union - Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.

Ivy Growth - Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.

Live Crown Ratio - The relative proportion of photosynthetic mass (leaf area) to overall tree height.

Reaction Wood - Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.

Root Plate Lift - The physical movement of the rooting plate causing soils to shift and crack. May occur during adverse weather conditions. Trees may become unstable.

Structural Defect - Internal or external points of weakness, which reduce the stability of the tree.

Suppressed - Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.

Topping - A highly disfiguring practise, likely to cause severe xylem dysfunction and decay in major structural parts of the wood.

White Rot - Form of decay where both cellulose and lignin are degraded.

Wound - Any injury, which induces a compartmentalisation response.

Woundwood - Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term "callus."

Woodland Structure - The vertical and horizontal arrangement of trees within a group or woodland i.e. Dominant - trees with a crown above the upper layer of the canopy, Co-dominant trees that define the general upper edge of the canopy, Intermediate trees that have been largely overgrown by others, Suppressed trees that have been overgrown and occupy an under storey position and grow slowly, often severely asymmetrical.

Note: The definitions described above, may not necessarily be included within the Arboricultural Survey Data.

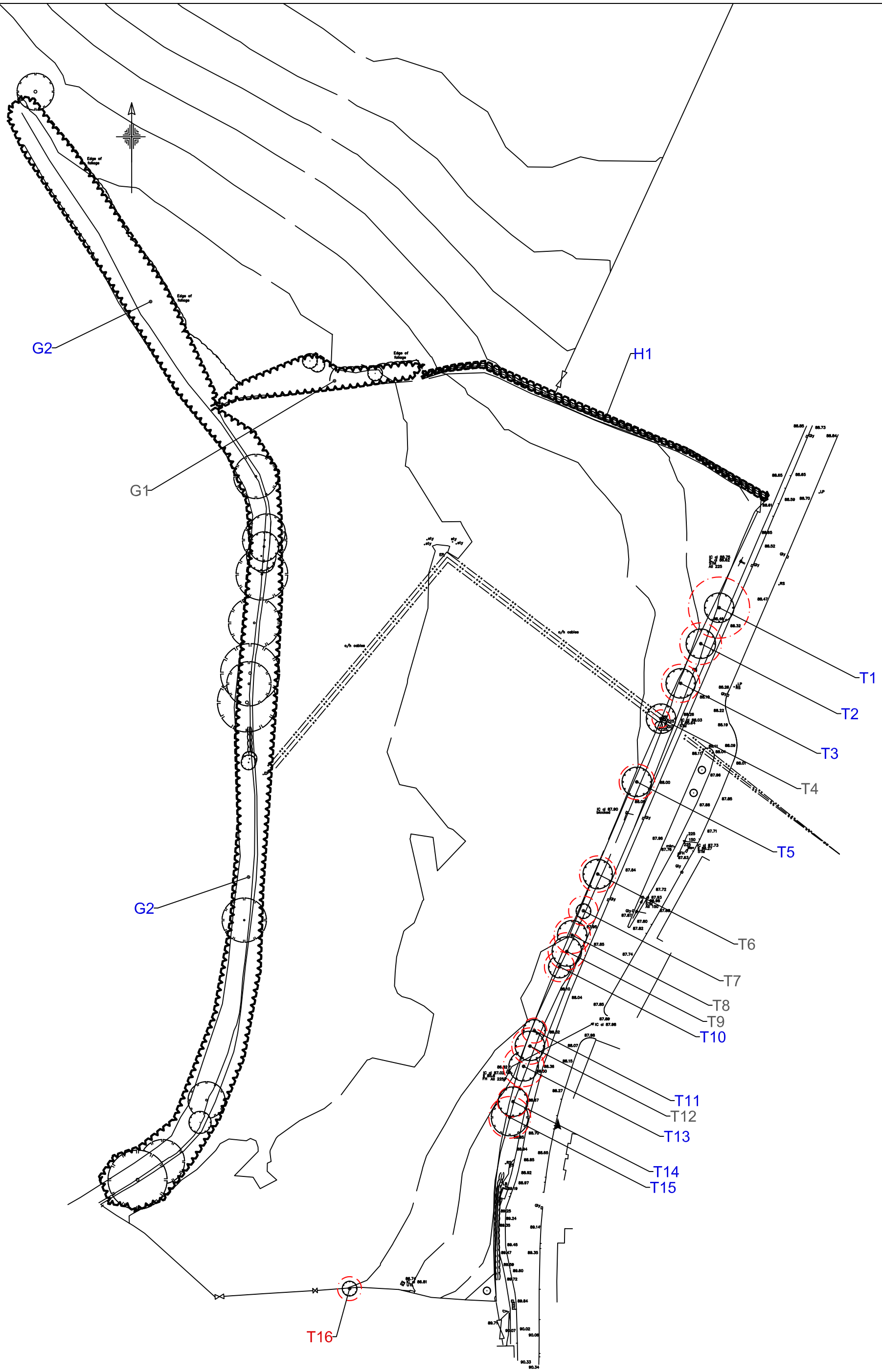
Table 1 – Cascade chart for tree quality assessment

Category and definition	**Criteria (including subcategories where appropriate)**		
Trees unsuitable for retention (see note)			
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality **Note** – *Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*		
	1 Mainly arboriculture qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**
Trees to be considered for retention			
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or those that are essential components of groups or formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and minor storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Tree with no material conservation or other cultural value

APPENDIX

TWO

Tree Constraints Plan



KEY

- TREE LOCATION AND CONDITION
- RPA
- GROUP LOCATION AND CONDITION
- CROWN SPREADS

Red – Trees of poor quality
Green – Trees of high quality
Blue – Trees of moderate quality
Grey – Trees of low quality

LAND NORTH OF TUDOR HOUSE, PREES

TREE LOCATION PLAN

SCALE: 1/1000 @A3 | **DATE:** JUL 14

DRAWING: C425/THP/TREE/01