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:	Steven Hearn – Concept Town Planning 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:	S18	Site:		Policies Map:	

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.

The housing allocations advanced for the settlement of Whitchurch are inappropriate for the reasons defined in our previous representations (for ease these accompany this submission). Our objections set out previously remain entirely applicable as part of this revision of the Local Plan. Overall, we consider that there is a lack of consistency in the Council's approach in assessing the suitability of the sites promoted and ultimately the ones which are favoured.

Consequently, it is our view that the Local Plan does not meet the fundamental guiding principles and Strategic Policy Requirements of Policies SP1, 'The Shropshire Test', as it does not support cohesive communities or the principles of sustainable development prescribed by the NPPF. Accordingly, we consider that the housing allocations do not represent the most suitable or sustainable options for Whitchurch and the Local Plan cannot be declared 'sound' on such basis.

(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.

As per our previous representations on behalf of T&T Lloyd, more sustainable and suitable housing allocation options exist within Whitchurch, namely WHT017VAR. We consider that a more thorough and fairly weighted examination of all promoted sites, in the manner prescribed in our previous report, would identify that the subject site performs better than those presently favoured by the Council.

Accordingly, the housing allocations for Whitchurch should be re-assessed, the sustainability criteria revisited, and ultimately the Local Plan amended to include WHT017VAR as a future housing site.

(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:

To date, the Council have relentlessly supported future housing sites which we consider do not represent the most appropriate or sustainable options for meeting the future housing needs of Whitchurch. The hearing sessions will enable us to further explain this postion and allow for a more balanced examination of the housing allocations and the supporting justification to be undertaken. It will also allow us the opportunity to address any queries raised by the Inspector.

(Please continue on a separate sheet if necessary)

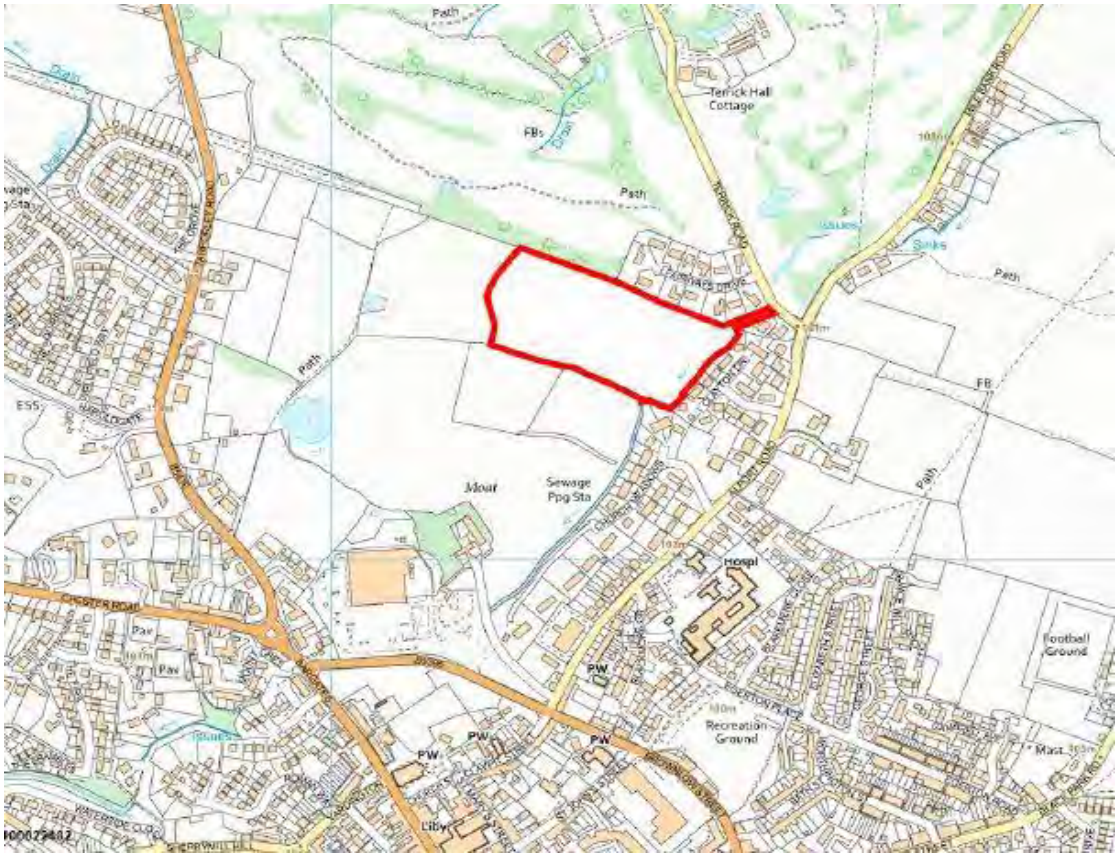
Please note: The Inspector will determine the most appropriate procedure to adopt to hear those who have indicated that they wish to participate in hearing session(s). You may be asked to confirm your wish to participate when the Inspector has identified the matters and issues for examination.

Signature:	Concept Town Planning Ltd.	Date:	25/02/2021

Office Use Only	Part A Reference:
	Part B Reference:

Site Allocation – Representation

PROMOTION OF LAND AT:
Terrick Road, Whitchurch



On behalf of: T & T Lloyd

PREPARED BY;
CONCEPT TOWN PLANNING LTD.

Concept Town Planning Ltd. Registered in England and Wales. Company Number 6457770

RTPI Royal Town Planning Institute

Chartered Town Planners

1.0 EXECUTIVE SUMMARY

1.1 Concept Town Planning Ltd. are instructed by T&T Lloyd in respect of the promotion of a parcel of land off Terrick Road, Whitchurch, for inclusion as a housing allocation, as part of the Council's ongoing commitment to deliver new homes through the development plan. This submission is made in response to Shropshire Council's Site Allocations and Management of Development – Preferred Option document 2018 released for consultation in November 2018, which proposes to take forward residential land allocations for the period up to 2036.

1.2 The site was promoted under the previous round of consultation and assessed with the Council reference WHIT017. At the time of the previous consultation it was noted that, the Council considered the site to have future potential for accommodating their ongoing housing commitments. However, under the latest stage of review and following further consideration of the subject site, the Council has determined that the land is no longer considered appropriate for accommodating new housing on the grounds that the site is noted as being partially within Flood Zone 2 on the Environment agency's flood map. Consequently, the Council are now favouring the allocation of four alternative housing sites, referenced as WHIT014, WHIT037, WHIT042 and WHIT044. It is noted that WHIT037 and WHIT044 are promoted as conjoined sites with both reliant upon each other to overcome the identified deficiencies.

1.3 Accordingly, evidence will be presented in the following sections of this report and in accompanying documentation to firstly address the Council's concern over flood risk and ultimately confirm that no such risk exists. Further, the Council's Sustainability Assessment and the various criteria by which the subject site and the Council's

preferred sites have been assessed will be scrutinised alongside the validity of the Council's comments therein.

1.4 In summary, it is our conclusion that the subject land off Terrick Road represents a realistic, sustainable and entirely appropriate development option for Whitchurch, particularly when compared to the preferred housing site presently supported by the Council. Furthermore, it is identified that the evidence base supporting the Council's position is found to be lacking a fair and consistent approach to assessing each site objectively and, when the exercise is carried out correctly, the Council's favoured sites do not present the most sustainable options. Thus, it is concluded that the Preferred Options document cannot be considered 'sound' in terms of the preferred options advanced and the land off Terrick Road should be considered ahead of those presently favoured.

2.0 SITE AND LOCATION

2.1 The subject site measures 3.6 Ha in size and is rectangular in shape with a direct and dedicated access onto Terrick Road. The accompanying Transport Assessment confirms the access point and site as a whole as being entirely acceptable to meet standard and provide a safe and convenient access onto the adjoin highway network. The landowners also own an additional parcel of land measuring some 2.3 Ha in size to the west of the subject plot although this land does not form part of the proposed allocation site, but was considered previously and we would contend has future potential as an additional option, at a later stage.

2.2 In the context of identifiable site boundaries, the land has clearly definable boundaries on all sides and can be readily developed in a manner which is consistent with the surrounding residential development, whilst also enjoying an open aspect beyond. To the north the land is bounded by the residential properties of Fairways Drive and the former railway line, beyond which is the established Hill Valley Golf Course. The southern boundary adjoins, in part, the residential properties of Church Meadows, with the remainder, including the western boundary, adjoining agricultural land. However, the site's perimeter, adjoining open fields, is formed by established hedge and tree planting with a group Tree Preservation Order being in place, ensuring the boundaries of the site are defensible.

2.3 The land is generally level in nature although there is a gentle and gradual downward slope from north to south / south west. The land is presently in agricultural use although it's agricultural importance and function, in this prime urban location, is considered to be somewhat minimal, with no special or agricultural designation. The

land is also entirely open, with no encumbrance from features, trees or landscaping, other than around the perimeter, and so the full plot is available for development.

2.4 As will be examined in detail below, and within the accompanying Transport Assessment the site also enjoys direct vehicular and pedestrian access to the adjoining town centre and the full range of associated facilities and amenities located therefrom. Thus, it is determined that the site represents a sustainable location for accommodating new development. Indeed, the surrounding residential development of Fairways Drive and Church Meadows is testament to this.

3.0 SUSTAINABILITY ASSESSMENT

3.1 Whitchurch provides a full range of services, amenities and employment opportunities, representative of its status as a Principle Centre. The subject land lies immediately adjacent to the existing built up area of the town and enjoys direct pedestrian and vehicular access to the nearby town centre, with the High Street being circa 0.7 miles to the south of the site. Multiple other services and amenities lie within this distance or nearer including the nearby Smithfield Shopping centre, with its range of local shops and big brand retail outlets being less than 0.6 miles to the south, whilst Sainsbury's supermarket is also within the same distance.

3.2 The site also enjoys convenient access to nearby leisure facilities and outdoor open space with the Hill Valley Golf Course, Spa and Leisure Club located immediately to the north whilst the Egerton Place recreational ground and children's play facilities are less than 0.5 miles to the south. Multiple footpaths and access to open space also exist within the immediate locale.

3.3 In terms of access to public transport, regular bus services operate along London Road, with stops located within 0.6 Miles of the site, and these services provide access within and around Whitchurch and Chester beyond. The train station also lies within 1.0 mile of the site and can be accessed via the aforementioned bus services. Consequently, and as confirmed in the Transport Assessment, the site and location is considered to represent an entirely sustainable option for delivering the future housing needs of the town, in line with the sustainability objectives of the National Planning Policy Framework.

3.4 In considering the sustainability credentials of the site further, appropriate regard has been had to Shropshire Council's Sustainability Appraisal Report (November 2018)

which forms part of the evidence base for the preferred sites consultation. This essentially provides an assessment of all sites promoted, against a set list of 14 criteria, split into 6 categories and based on a point scoring system. A thorough assessment of the Council's findings within the Sustainability Appraisal Report and associated documents in respect of the subject site is set out below alongside an assessment of the preferred options presently being promoted by the Council.

4.1.0 Sustainability Appraisal – Land at Terrick Road

4.1.1 The Strategic Land Availability Assessment in November 2018 (SLAA) forms part of the background evidence to the partial review of the Local Plan and the Sustainability Appraisal undertaken by the Council. This document summarises the Council's considerations in respect of all of the proposed housing sites advanced in Whitchurch. In respect of site WHT017 the Council concludes that the site is not considered suitable on the basis that it lies outside of the development boundary and is partially located within Flood Zone 2, including the access point. It is also noted that the site is covered by a Group Tree Preservation Order although the Council recognise that "***the site is considered suitable for development in relation to this matter, subject to acceptable safeguarding***" since the trees are all located around the perimeter of the site and so can be readily protected and retained, whilst still allowing built form on the site. Additional potential impacts upon a nearby listed building and wildlife site is also noted although again, is correctly determined that this would not impact upon the development potential of the site, subject to appropriate safeguards, which can readily be achieved.

4.1.2 Looking more specifically at the first 2 points above, the stated comment that the site is outside of the current development boundary, and so it is contrary to policy is irrelevant since the whole review being undertaken by the Council forms a reassessment of policy

and development boundaries. Indeed, at present, all the Council's favoured housing sites are located outside of the development boundary and so this point should be disregarded.

4.1.3 With regards to the identification that the site is partially located within Flood Zone 2, it is accepted that this is a representation of what is shown on the Environment Agency's Flood Map and so is not an unreasonable position for the Council to arrive at. However, a detailed Flood Risk Assessment has now been undertaken by Evans Rivers and Coastal which is based on a full topographical survey of the site and assessed alongside the Environment Agency's Flood levels, a copy of which accompanies this report. Ultimately the Flood Risk Assessment concludes that only a narrow strip of land alongside the identified water course is within an area of flood risk and more crucially, the remainder and majority of the site, including the access road, are all in Flood Zone 1. Consequently, the site is not at risk of flooding and thus the Council's concerns in this regard and reason for discounting the suitability of the site for housing are now duly overcome.

4.1.4 In light of the forgoing and turning back to the Council's Sustainability Appraisal and its 14 criteria, it is evident that a number of the negative points against the site are not applicable. Firstly, the negative point raised against the site due to the identified flood risk no longer exists (criteria 8) whilst the presence of a Tree Preservation Order (criteria 3) should not apply since the trees are all located around the boundary of the site which would clearly remain and would not impact upon or be affected by any future developments of the site. As above, this is recognised by the Council in their consideration under the accompanying Strategic Land Availability Assessment, and therefore, this finding is irrelevant. Likewise, the identification of a wildlife site within 250 meters of the site (criteria 2) should not form a negative point against the site since the Council again accept in the SLAA documents that the appropriate safeguards exist to

ensure that this is not an issue. It should also be noted that only the eastern most section of the site is now promoted as a potential housing option, thus moving the site further from this designation.

4.1.5 In addition to the above, criteria 6 is also incorrect since the site is not classified as grade 1, 2 or 3 agricultural land (source Magic Mapping) whilst criteria 13, sub criteria 6 is also incorrect since the site is more than 250 metres from any identified listed building, well beyond the 100 metres specified in the criteria. Finally with regards to criteria 5, a number of the sub criteria can also be questioned. Namely we would argue that the adjoining golf complex, spa, fitness gymnasium and pool could readily be regarded as a leisure centre whilst the site also has direct and convenient access to amenity green space and accessible natural green space within the area, given the footpath network available within close proximity to the site. Therefore, 3 of the sub criteria marked as negative should instead be considered as positive.

4.1.6 Accordingly, when properly assessed and for the reasons set out above, the minus points attributed to the site due to the identified flood risk, the presence of a wildlife site, TPO and listed buildings should be removed. The negative point due to the incorrect assessment that the land comprises grade 1, 2 or 3 agricultural land should also be removed, whilst 3 positives should be added to criteria 5 due to the sites' close proximity to the adjoining leisure centre complex, amenities space and natural green space. As such, the sites' true sustainability score is 0 and, since there are no sustainable or justifiable reasons to now oppose the deliverability of the site, including the fact that the site is now proven to be outwith of any potential flood risk, the overall sustainability conclusion should be favourable and the site considered as a "good" housing option. As stated above, the Council's previous consideration was that the land had development

potential and, since the Council's limited concerns have now been readily addressed, this should once again be the Council's position.

4.2.0 Sustainability assessment of Shropshire Councils preferred housing sites

4.2.1 Very simply, having considered the true sustainability of the subject site against those preferred by the Council, the land at Terrick Road clearly performs better under the Council's Sustainability Appraisal and should be favoured as a housing option, ahead of the proposed preferred sites. However, in considering matters in more detail, the Council's SLAA (November 2018) and the various other documents forming the evidence base to the Partial Review consultation now provide an examination and summary of the preferred sites and this detail is considered below.

4.2.2 The first obvious observation is the fact that, under the November 2018 SLAA review, the preferred site of WHIT044 was identified as a 'rejected site', yet inexplicably it is then carried forward as a preferred housing option. This is particularly difficult to understand since the SLAA forms part of the evidence base to the Partial Review, and was prepared at the same time. Furthermore, it is identified that it is outside of and separated from the development boundary with a poor relationship to surrounding built form, hence it being considered not suitable. Whilst it is noted that the site has been conjoined with WHIT037 it is difficult to see how this makes the suitability of WHIT044 any better or better related to surrounding built form since this site is also an extension to the development boundary. In addition, WHIT037 is dependent upon WHIT044 for appropriate access arrangements given that any additional housing traffic through the minor estate roads and onto Haroldgate would not be considered appropriate in light of the volume of homes now served.

4.2.3 Therefore, because both sites are co-depending on one another to overcome significant individual failings it is not considered a reasonable proposition for both sites to be advanced. Certainly, as stated above, this should not be the case when other, more appropriate options exist, such as the Terrick Road site.

4.2.4 With regards WHIT042, this site is landlocked as recognised in the SLAA and requires the full realisation of a previously allocated housing site to be developed first, before this site can be considered "available". Furthermore, there are clear question marks over the deliverability of this allocation, in the defined plan period, and we would argue that it cannot be considered a reasonable or deliverable option at this stage.

4.2.5 In addition to the above, it is also evident that this site is located in close proximity to Staggs Brock Wildlife site and within Flood Zone 2 and 3 yet such designations are not seen as major issues and instead it is determined that these can be mitigated against. It is difficult to see how the Council have made such a positive and considered view of the potential of the site, without the need for any further examination, yet no such considered thinking or flexibility has been given to any other site, such as the land at Terrick Road.

5.0 CONCLUSIONS

5.1 The subject site occupies a prime sustainable location on the edge of and adjoining the existing built area of Whitchurch, with excellent access to the expansive services and amenities provided by the town. The site enjoys a safe and convenient access onto the adjoining highway network and there are no sustainable reasons why the site cannot be considered a viable and deliverable housing allocation.

5.2 The Council's identified issues in relation to flooding have been appropriately considered and addressed by the submitted Flood Risk Assessment and it is identified that no such risks exist and that the site is a viable location for housing in this regard. Likewise, the Council's issues raised in relation to the presence of a Tree Preservation Order, listed building and nearby wildlife site are either unfounded or can readily be overcome through mitigation safeguards, something accepted by the Council in any event. When considered in the round and against the Council's Sustainability Appraisal scoring system, the site performs better than the favoured allocations and thus should be considered a more viable and sustainable option.

5.3 The development strategy for Whitchurch, as defined at paragraph 21.6 of the Local Plan Review – Consultation on Preferred Sites, states that the focus is on a range of medium sized sites whilst ensuring the benefits and impacts of development are spread out. The subject land at Terrick Road meets these criteria with no other allocation options existing in this part of the town. It is our further conclusion that the concentration of sites along Chester Road and to the north west of Haroldgate in the form of the preferred allocations proposed does not meet this objective.

5.4 Overall, the land at Terrick Road presents a more sustainable and viable option for delivering the future housing needs of Whitchurch, in the period up to 2036, and is in line with the Council's Development Strategy and the National Planning Policy Framework. Consequently, the site should be developed ahead of the current preferred options. Accordingly, the current plan and allocations, in its present form, are considered unsound and are not in accordance with the National Planning Policy Framework. Therefore, we would contend that a further review of the housing allocations and Sustainability Appraisal needs to be undertaken, with a more considered review of the available housing options, to ensure the plan is correct and sound.

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Shropshire Council Local Plan Review
Reg 18 Pre-Submission Draft Local Plan Consultation
Land Off Terrick Road, Whitchurch

RTPI
Chartered Town Planners

1.0. EXECUTIVE SUMMARY

1.1. Concept Town Planning Limited have previously made representation to Shropshire Council is support of the residential allocation of the land identified on the site plan below and which is recognised in the Local Plan review as site reference WHIT017VAR.

1.2. The land is promoted on behalf of T&T Lloyd and remains a viable and available option for helping to deliver the future housing needs of Whitchurch. Under the Preferred Sites Consultation carried out in 2018 / 2019, detailed evidence was presented to the Council in support of the land, demonstrating how the site performs better in terms of its sustainability credentials, compared to the preferred allocation sites. The response also confirmed the appropriateness of the access arrangement whilst also addressing previous concerns raised as part of earlier consultation exercise with regards to flooding, unequivocally confirming that the site presents no valid concerns in terms of highway matters and flooding potential.

1.3. Despite the foregoing, the Council continue to favour the allocation of four alternative sites, namely WHT014, WHT037, WHT042 and WHI044 and have rejected the allocation of WT017VAR on the grounds that the site is considered to represent an extension into a green wedge in the town, with medium / high landscape sensitivity. Despite recognition of appropriate access, it is the Council's ultimate view that there are more appropriate options for the town to grow in a sustainable manner.

1.4. Given the foregoing, the subsequent sections of this report demonstrate the failings of the conclusion reached by the Council, the inconsistent approach adopted when examining the suitability of the proposed sites and, ultimately, how WHT017VAR offers a more viable and better alternative to the present policy direction.

2.0 SUSTAINABILITY ASSESSMENT & PLAN INCONCSISTENCIES

2.1 Our previous representations identified a number of errors in the Council's sustainability appraisal of the subject site, some of which remain in the current version of the plan review. Furthermore, through examining the Council's detailed Sustainability Appraisal and individual Stage 3 Site Assessments, we have identified areas where the approach adopted is either inconsistent or unjustified. Accordingly, we set out each separately below.

2.1.0 Incorrect Assessment of WHT017VAR –

2.1.1 With regards the Sustainability Appraisal, there are a number of sub criteria under which the site has been incorrectly assessed and thus an error to the points-based system is evident. In the first instance, under Criteria 3, the site is given a minus score due to the presence of a TPO serving the site. However, the designation is recognised in the detailed Stage 3 Assessment as being outdated and only relating to a scattered field trees and hedges around the perimeter. Crucially, alongside the outdated status of the designation, we would also stress that any such designation would not automatically translate as a negative factor, since good planning and design could ultimately provide amenity and biodiversity enhancements, which will enrich the site and the TPO designation. Indeed, the tree officer identifies opportunities for potential net get for biodiversity along with the ability to retain existing features whilst connecting with green corridors. Consequently, the negative assessment of the site due to the TPO presence is flawed and should be removed.

2.1.2 In addition to the above, the site is also assessed under Criteria 5 with regards to its access to a number of facilities but is marked negatively with regards its access to a leisure centre and natural green open space, despite the presence of the golf course and associated leisure facilities immediately to the north of the site and the natural open space beyond and around the site. These points were raised under the previous round of consultation but remain negative points against the site which should be reversed into positive factors.

2.1.3 The site is also negatively assessed as being grade 1, 2 or 3 agricultural land which it is not, again confirmed under the previous round of consultation, but ignored. Furthermore, the site is negatively assessed with regards to it being considered within flood zones 2 and 3 but as the previously submitted FRA identifies, the site can be fully developed, barring a buffer from the adjacent watercourse, and is in now way negatively affected by flooding. The site remains developable with appropriate, safe access and thus should not be negatively marked under this criterion.

2.1.4 In light of the above, when the identified errors are corrected, the site instead enjoys an overall sustainability score of +1. Setting this in context of the proposed allocation sites, namely WHT014 (-7), WHT037 (-7), WHT042 (-2) and WHT044 (-7), the land at Terrick Road is clearly a more sustainable option and this provides significant weight in favour of its allocation, over and above the preferred sites.

2.1.5 Finally, with regards the sustainability criteria, it should also be noted that there is no recognition in terms of proximity to essential goods and local shops (albeit this is recognised in the Highway Accessibility Criteria Score, examined below), something which is considered vital to the sustainability of any location. To confirm, the subject site is within walking distance of a number of convenience stores and performs markedly better than the proposed sites favoured along Chester Road in this regard.

2.2.0 Inconsistent Approach

2.2.1 Fundamentally, we consider that the preferred sites of WHT037 and WHT044 have unreconcilable failing as housing allocations, when set against alternative options such as that presently advanced under this representation. First and foremost, we would re-iterate the failings identified in our previous representations to the preferred Options document, specifically in relation to paragraphs 4.2.2-4.2.3 of our report.

2.2.2 Alongside the above, there are also a number of details contained within the Stage 3 Sustainability Assessment which are considered inconsistent. Firstly, with regards the assessment of WHT017VAR, it is stated that a Landscape Visual Assessment has been undertaken, but very the limited detail is provided to offer clarity or consistency with the approach adopted. Instead we are simply informed that the conclusion reached is that the subject site is a green corridor and will have a medium to high landscape impact if developed, this despite the site being on the edge of, and immediately adjacent to, the existing development boundary of Whitchurch, with existing housing to the immediate east and beyond to the south and west. The situation is no more different with the proposed allocations of WHT037 and WHT044 which propose new development adjacent to the existing development boundary, but instead into open countryside with open fields and significant views from out-with the site and beyond. There is no recognition that the subject site (WHT017VAR) is enclosed by existing mature and protected field boundaries and trees, the golf course development and existing residential properties to the north, whilst views into the site are somewhat limited by virtue of the topography.

2.2.3 Therefore, it is difficult to see how the conclusion in this regard has been reached and further clarity is essential in order to ensure a consistent approach has been adopted. Given the very basic points raised above to the contrary, we would argue that the examination is flawed.

2.2.4 The Stage 3 assessment also includes 'Highway accessibility Criteria' and, whilst we are given very limited insight into the full factors considered, we are told that each site is attributed a score out of 24, which we assume represents a sustainable site. The preferred sites all score the same and WHT017VAR, barring the land at WHT014 which scores one point more. Taking into account the fact that WHT017VAR has the same Highway Accessibility Rating as sites WHT037 and WHT044, and a better sustainability score when appropriately examined, as above, the land off Terrick Road is clearly a better and more sustainable housing option.

2.2.5 As part of the Stage 3 assessment, the Council's Ecologists recognise the potential to expand and restore the Environmental Network resulting in habitat improvement. This is also recognised by the Tree Officer, as set out above. Accordingly, these represent significant positive factors in favour of the development of the site, yet they are subsequently ignored in the conclusion. Instead a simple reference to a green wedge and unquantifiable landscape appraisal is enough to disregard this sustainable option.

2.2.6 When considering site specific issues in relation to the preferred sites along Chester Road, the highways team recognise that highway improvements would be necessary but that this is based on a capacity review of existing junctions and that further studies to assess the infrastructure requirements are needed to make the development suitable. Despite such detail not having been prepared, inexplicably, a conclusion is then reached that the sites should be allocated as they will, in part, provide an opportunity to deliver a link road between Chester Road and Tarporley Road. This is contrary to the potential improvements suggested by the Highways Team and we would argue is completely unnecessary and pointless. This is on the basis that each existing route provides its own direct access to and from Whitchurch and any such link would do nothing other than to serve the development proposed. It would offer no tangible highway improvement or benefit to the location and should not be a concluding factor in favour of the proposed allocation. Instead this brings into question the entire validity of the Council's reasoning on such matters.

2.2.7 Overall, we would consider that the various conclusions reached within the Stage 3 assessment are poor and vague, sufficiently so to suit the Council's favoured direction of continuing to support the site allocations favoured identified under earlier consultation, despite representations and evidential factors which clearly demonstrate that other sites, namely the promoted land at Terrick Road, are more favourable.

3.0 OTHER MATTERS

3.1 A windfall allowance of 82 homes, as proposed, is nearly 20% of the new allocations promoted, which we consider too high as there is no guarantee of these being realised in the plan period. A windfall allocation of circa 10% would be more appropriate and consistent with a typical local plan allocation. Thus, there is a shortfall in the proposed housing allocation in any event, which could be accounted for through the allocation of WHT017VAR.

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3.2 It is noted that a prominent local Councillor has written to local residents raising significant infrastructure concerns in relation to the proposed allocations of WHT037 and WHT044. Given the gravity of the concerns raised and the matters at hand, which are based on previous issues experienced resulting from the implementation of other large housing sites in the immediate location, it is evident that there are underlying concerns which have not been properly considered in relation to these preferred sites. Until a thorough examination of the matters raised by the local Councillor is undertaken, it would be improper to continue with the support for these sites.

4.0 CONCLUSIONS

6.1 Overall, we consider that there is a lack of consistency in the Council's approach and, consequently the Plan does not meet the fundamental guiding principles and Strategic Policy Requirements of Policies SP1 'The Shropshire Test', as it does not support cohesive communities or the principles of sustainable development prescribed by the NPPF. Accordingly, we would consider that the housing allocations do not represent the most suitable and sustainable options for Whitchurch and the plan cannot be declared 'sound' on such basis.

Access Appraisal and Sustainability

For a potential residential development on land off Terrick Road, Whitchurch

on behalf of Concept Town Planning, *21 Jan 2019*

BANNERS GATE
HIGHWAYS AND TRANSPORTATION

Land at Terrick Road, Whitchurch, an introduction

Banners Gate Transportation Limited has been instructed to prepare an *Access Appraisal* in support of potential development on land off Terrick Road, Whitchurch. The site has potential to serve the ongoing demand for residential land in the jurisdiction of Shropshire Council. This appraisal demonstrates that access onto Terrick Road is readily achieved and the site has good sustainability credentials. **This appraisal refers to a potential development of up to 40 houses.**

Location

The potential allocation site (area of 3.5 hectares) is located on the western side of residential properties at Clayton Drive and to the south of housing on Fairways Drive. The access to the site can be obtained from an agricultural track that connects onto the route of Terrick Road. A track with a width of 9 metres is available to the north of the property known as Pheasant Walk.

Terrick Road is a lightly trafficked rural road on the north side of Whitchurch. The route follows a north-south alignment from the urban areas of Whitchurch at the junction of Alport Road to rural settlements such as Wirswall and Quoisley. The route of Terrick Road provides access to the cul-de-sac of Fairways Drive as well as the MacDonalds Hill Valley Hotel and spa with two golf courses.

The width of Terrick Road is approximately 6 metres between the proposed site access and the junction of Alport Road. To the north of the proposed access the route reduces in width to approximately 5 metres. This section of Terrick Road has a footway on the west side of the carriageway with the benefit of a speed limit of 30mph. Street lighting is provided. North of Fairways Drive the route becomes more rural in nature with no footways or streetlighting and a national speed limit applies. The route is narrower north of the MacDonalds Hotel thereby permitting single lane traffic only. The route provides access to small settlements and agricultural land and does not provide a convenient route for through traffic.

Terrick Road connects onto the route of Alport Road by means of a priority junction. The route to the north is known as Mile Bank Road and provides access to rural settlements and agricultural land. Similarly, the route reduces in width to a single lane and does not provide a convenient route for traffic. Local traffic focusses on the junction of Claypit Lane and the B5395 London Road.

Traffic generation

Traffic flows to the residential development can be predicted using the TRICS database. This database offers a choice of trip rates for residential development depending on a possible mix of apartments or perhaps non-private housing with a higher density. Trip rates can, of course, vary depending on the provision of local shops, schools and public transport. Typical trip rates for residential development are summarised below.

TRICS data	**0800 to 0900**		**1700 to 1800**		**7am - 7pm**
Mixed housing	Arr	Dep	Arr	Dep	12 hrs
Trips per property	0.15	0.42	0.37	0.23	5.0
Trips 40 dwellings	6	17	15	9	200

Traffic is expected to travel south towards the junction of Claypit Lane and London Road. Thereafter, drivers are likely to travel towards the strategic road network for journeys towards perhaps Shrewsbury or Stoke on Trent.

Design of the site access

A new access road onto the route of Terrick Road is highly plausible when considering the geometric parameters for highway design. For example, the width of the track between property boundaries is 9 metres and typically a new residential road should have a width of 5 or 5.5 metres. The design of a new access road and junction within a residential area is determined by a number of factors using guidance in Manual for Streets and publications by the Highway Authority. Visibility at the junction to and from traffic on the major road is dependent on the speed limit or measured speeds if this information is available. Visibility parameters are quoted in Table 7.1 of Manual for Streets (see above). Speeds can be variable as traffic either approaches or departs from the nearby priority junction of Terrick Road and Alport Road. Observations suggest that speeds are of the order of 25-30mph in the vicinity of the site access.

Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length. See 7.6.4		11	14	17	18	23	25	33	39	43	45	59

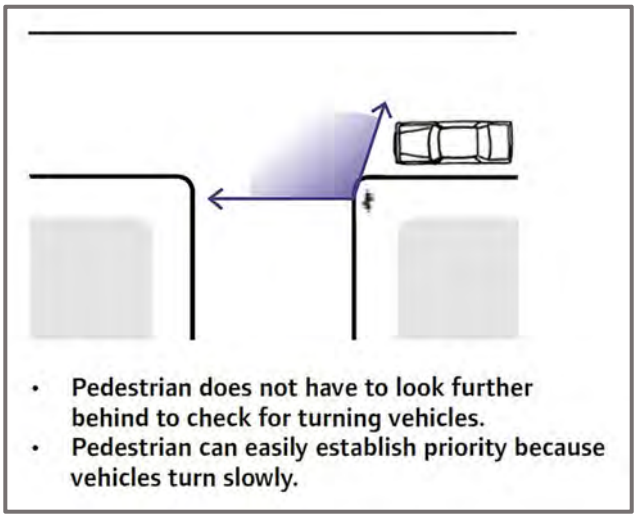
In this instance, the access is located on the outside of a slight bend in the alignment of Terrick Road. This means that generous visibility is available with a conventional setback of 2.4 metres using either highway land or land in the control of the developer. A visibility distance to the south of 43 metres (85th percentile speeds of 30mph) provides visibility to the nearby junction of Alport Road. Visibility to the north, in excess of 43 metres, includes the junction of Fairway Drive. Therefore, sufficient visibility is available to both directions of traffic from a new access at this location.

Drawing P1355/101 attached to this statement provides an illustration of the access to the site demonstrating acceptable geometry and generous visibility. A road width of 5.0 metres is suitable for accommodating up to 50 dwellings.

Manual for Streets2 (paragraph 9.2.2) states that the *"provision of . . . additional junctions on existing routes should be assessed in the round considering a wide range of factors*". Topics for consideration at this location include junction spacing, private driveways, topography, traffic speeds and visibility. A new access is readily achieved in a similar way to other cul-de-sacs on the route of Terrick Road or Alport Road. The access can be constructed within the constraints of adjacent driveways and property boundaries. The residential development may generate 20-25 trips (two-way) at peak times and there is no doubt that the route of Terrick Road can accommodate this increase in traffic which amounts to perhaps one vehicle every two minutes. A new access for the potential residential site can be designed to current standards and would not have an adverse effect on the function or safety of the route of Terrick Road.

Geometry

The access is located in a lightly trafficked residential area. Therefore, the geometry of the junction is designed with emphasis on the needs of pedestrians using the route of Terrick Road. An extract from Manual for Streets (Figure 6.3) is provided opposite. Tighter junction radii reduce turning speeds and provide a convenient route along the pedestrian desire line. The junction design does not affect the access to the property of Pheasant Walk. A continuous footway, with a width of 1.9 metres can be provided as part of the proposals for the development which connects with the footway (also width of 1.9m) on Terrick Road.



There would be a need to access the development with refuse vehicles that can be 11 metres long. The layout should not be dominated by a design that accommodates service vehicles. In addition, paragraph 6.8.1 of Manual for Streets, when referring to service vehicles states that "*On streets with low traffic flows and speeds, it may be assumed that they will be able to use the full width of the carriageway to manoeuvre*". Therefore, the proposed design adheres to the principles of Manual for Streets and is considered appropriate for this location.

Highway safety

In terms of the operation and safety of the road network records are kept of personal injury accidents. A *guide* to the local accident pattern can be viewed at www.crashmap.co.uk. Crashmap uses data approved by the National Statistics Authority and reported on by the Department for Transport each year. Information is updated intermittently. Currently, data up to the end of 2017 is available. *Guidance for Transport Assessment* refers to the need to study accidents over the most recent three-year period and if there are concerns then the research should be extended to 5 years. In this case, there here have been no injury accidents along the route and junction on Terrick Road and Alport Road in the last 5 years. No accidents have occurred at priority junctions along the route such as Fairways Drive, Clayton Drive and Church Meadows. Therefore, there are no safety concerns for the Highway Authority in considering an additional junction at this location.

Traffic impact

It may be construed that traffic from approximately 40 dwellings would have an adverse impact by creating delays and congestion on local roads. It is expected that the overwhelming majority of traffic would focus on the priority junction of Claypit Lane and London Road. The traffic from the development would have a more notable impact on this junction in the morning peak as residents leave for places of employment. Traffic would focus on one arm of the junction and therefore, in order to measure the possible impact, a traffic count has been completed between 7.30am and 9.30am to learn about traffic flows and congestion. The traffic count data is attached to this statement. The highest flows were recorded from 8.30am to 9.30am. Development traffic can be added to the existing traffic patterns and the operation of the junction can be tested using JUNCTIONS9 (PICADY) software released by the Transport Research Laboratory. Also, common practice within transport planning requires consideration of traffic growth. TEMPRO (version 7.2) is the Trip End Model Presentation Program which can be used to estimate regional traffic growth. In this case, traffic growth can be calculated for Shropshire for the design year of 2026 which is the lifetime of the current publication of the Shropshire Local Transport Plan. The model predicts growth on an average weekday of 8.5%. For simplicity, traffic growth of 10% has been included in the forecast traffic matrices for the junction as attached to this statement.

Analysis reveals that the junction has a great deal of spare capacity to accommodate traffic growth and development traffic. An extract of the results is provided opposite. Of course, from time there can be queuing at the junction. However, queues quickly dissipate and spare capacity is available. Therefore, it is concluded that traffic from a residential development of 40 dwellings at Terrick Road would not have an adverse impact on the local road network.

Summary Results

Show ▾ Columns ▾

	AM peak				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
Claypit cross-roads - 2026 with development					
Stream B-ACD	0.3	10.24	0.25	B	107 % [Stream B-ACD]
Stream A-BCD	0.0	5.29	0.01	A	
Stream D-ABC	0.0	0.00	0.00	A	
Stream C-ABD	0.3	6.29	0.15	A	

Sustainability credentials of the site

Modes of travel apart from the use of the private car are becoming increasingly important. Development projects must make provision to avoid actively promoting the use of the private car and in many ways, this is dependent on the location of the development site. Local Plan Policies seek to reduce the reliance on the private car and alternatives within development projects include encouraging walking and cycling as well as the use of public transport.

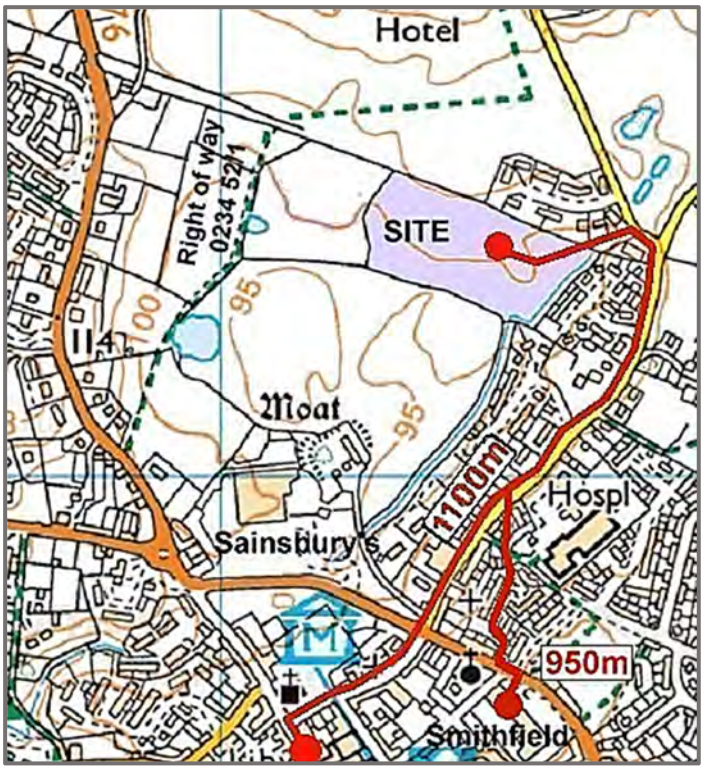
Recommendations on walking distances are provided in The Institution of Highways and Transportation publication entitled *Guidelines for Providing for Journeys on Foot* as repeated opposite.

Table 3.2: Suggested Acceptable Walking Distance.

	Town centres (m)	Commuting/School Sight-seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred maximum	800	2000	1200

The document states that a desirable walking distance to school is 500 metres and the preferred maximum walking distance for commuting or other tasks may be 1000 to 1200 metres.

It is noted that the site is located less than 1100 metres from the High Street in the town centre. There is a similar walking distance to Sainsbury supermarket. In addition, the Smithfield shopping centre on Brownlow Street is slightly less than 1000 metres from the site. A convenient and direct route from Alport Road is provided by Blackthorn Grove. A controlled crossing is provided on the pedestrian desire line and this route, combined with St John's Street, provides connectivity to the town centre. Therefore, a convivial pedestrian route through residential areas and lightly trafficked streets connects Terrick Road with the town centre.



A survey revealed only 4 pedestrians crossed the route of London Road in 2 hours in the morning period. This demonstrates that pedestrian activity focusses on the shorter route to the town centre via the controlled (pelican) crossing on Brownlow Street adjacent to Smithfield shipping centre.

The Little Bears Day Care Centre is 700 metres and the Church of England Junior School is within walking distance. The entire market town, including Waymills Industrial Estate is located within 3km.

The site of the potential residential development would have convenient access to public transport. Buses do not use the route of Claypit Lane but services are available on London Road. For example, route 41 connects the area with Chester with buses every two hours. Perhaps residents may focus on the bus station at Tesco which is 1.3km from the site. This location provides bus services throughout the County.

Rail travel is highly plausible. The walking distance to Whitchurch station is 1.7km where trains to Nantwich, Crewe and Shrewsbury are available.

It is concluded that the site has good sustainability credentials and is suitable for development.

Conclusion

The findings of this appraisal demonstrate that residential development of land off Terrick Road is highly plausible. Access is possible using the land at Terrick Road. The site is located within walking distance of local services in the town centre, primary school and public transport. Analysis demonstrates that there is capacity on the local road network to accommodate a modest increase in traffic. The land off Terrick Road is a good example of a sustainable location for a residential development.

Nigel Vening BSc (Hons) CEng MICE MCIHT, Banners Gate Transportation Ltd / 21 January 2019

Attached to this statement **drawing of access P1355/101, traffic count data**

Traffic matrices for design year / PICADY analysis (AM peak only)

Outline of design
5.0m roadway
1.9m footway
1.0m verge

visibility 2.4 x 43m to kerbline at junction

R=4.5m

5.82m

new 1.9m footway

5.0m roadway

existing 1.9m footway

visibility 2.4 x 43m to junction

TERRICK ROAD

ALPORT ROAD

Terrick Drive
30mph Speed Limit

STNBBS2

STNBBS3

5.00m

Asphalt
Brick Wall
Grass
Bushes
Track
Concrete Ring
Fence C/B
Stay
LPZ1
LPZ2
MH
G
SP
LP
EP
EBT
W
MP

Rev.	Description	Date	By
	First issue	21/01/19	NRV

Client
CONCEPT TOWN PLANNING

Project
LAND OFF TERRICK ROAD
WHITCHURCH

Title
PROPOSED ACCESS
AND VISIBILITY

Banners Gate
Civil, Structural & Transportation Engineers
Cavendish House, 10–11 Birmingham Street, Halesowen B63 3HN
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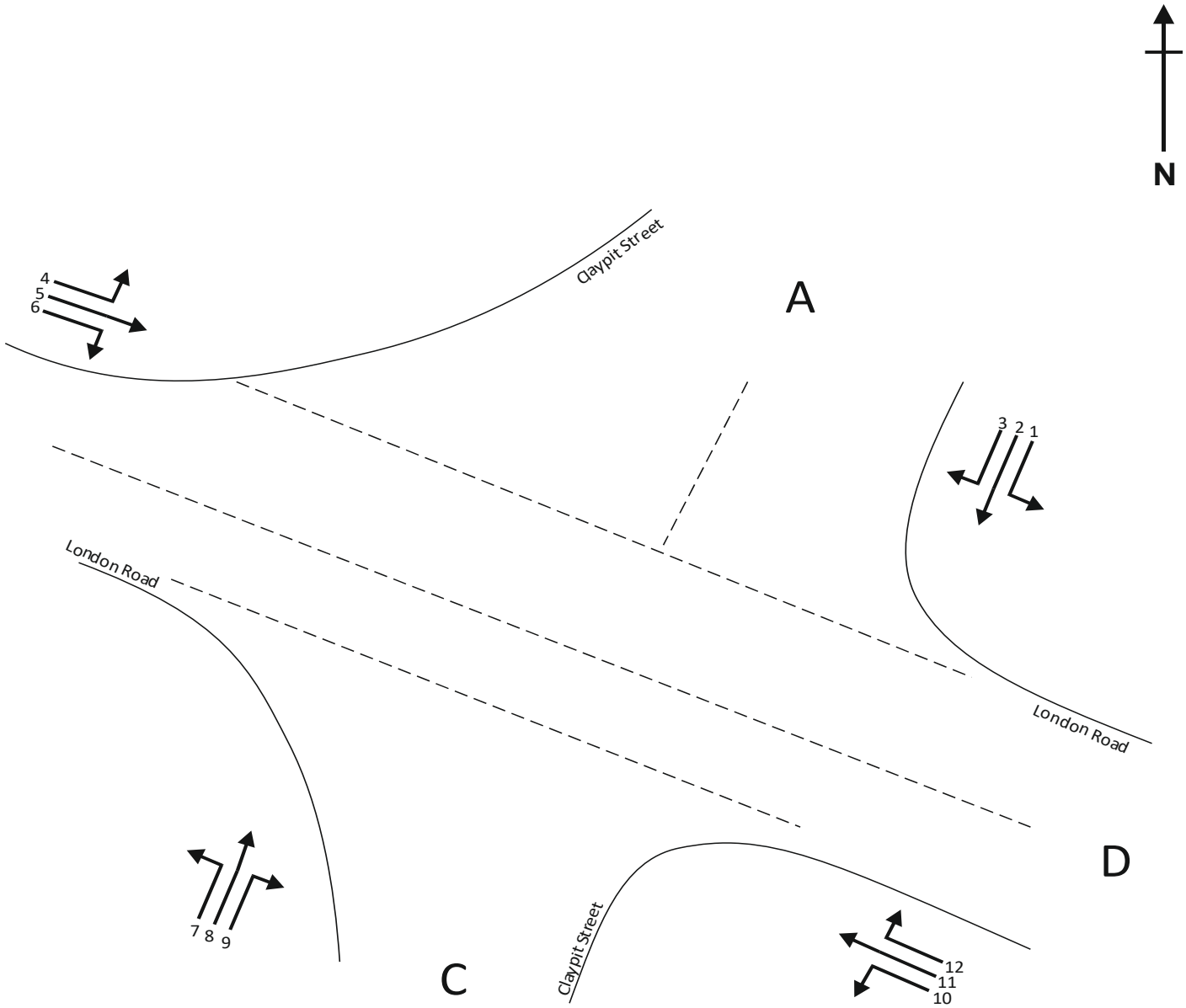
Scale	1:250 @A3	Drawn	NRV
Date	Jan 2019	Checked	NRV
File	P1355	Drawing	P1355/101



AXIOM Traffic Limited

For and on behalf of:

BANNERS GATE
HIGHWAYS AND TRANSPORTATION

WHITCHURCH

Tuesday 15 January 2019

0730-0930

Drawing N°:	**23845 - 01**
Site:	**1**
Location:	**Claypit Street / London Road**

MANUAL CLASSIFIED COUNTS

SITE: **23845**

LOCATION: **WHITCHURCH**

SITE: **1** **DATE:** **15/01/2019**

LOCATION: **CLAYPIT STREET / LONDON ROAD** **DAY:** **TUESDAY**

TIME	MOVEMENT 4 FROM LONDON ROAD (W) TO CLAYPIT STREET (N)			MOVEMENT 5 FROM LONDON ROAD (W) TO LONDON ROAD (E)			MOVEMENT 6 FROM LONDON ROAD (W) TO CLAYPIT STREET (S)		
	LV	HV	TOT	LV	HV	TOT	LV	HV	TOT
07:30	7	0	7	14	1	15	0	0	0
07:45	0	0	0	27	1	28	0	0	0
HH/TOT	7	0	7	41	2	43	0	0	0
08:00	8	0	8	21	1	22	1	0	1
08:15	8	0	8	23	4	27	0	0	0
08:30	8	1	9	43	0	43	1	0	1
08:45	6	0	6	58	1	59	1	0	1
H/TOT	30	1	31	145	6	151	3	0	3
09:00	10	0	10	56	3	59	1	1	2
09:15	11	0	11	56	4	60	0	0	0
HH/TOT	21	0	21	112	7	119	1	1	2
P/TOT	58	1	59	298	15	313	4	1	5

MANUAL CLASSIFIED COUNTS

SITE: 23845

LOCATION: WHITCHURCH

SITE: 1 **DATE:** 15/01/2019

LOCATION: CLAYPIT STREET / LONDON ROAD **DAY:** TUESDAY

TIME	MOVEMENT 7 FROM CLAYPIT STREET (S) TO LONDON ROAD (W)			MOVEMENT 8 FROM CLAYPIT STREET (S) TO CLAYPIT STREET (N)			MOVEMENT 9 FROM CLAYPIT STREET (S) TO LONDON ROAD (E)		
	LV	HV	TOT	LV	HV	TOT	LV	HV	TOT
07:30	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0
HH/TOT	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0
HH/TOT	0	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0	0

MANUAL CLASSIFIED COUNTS

SITE: 23845

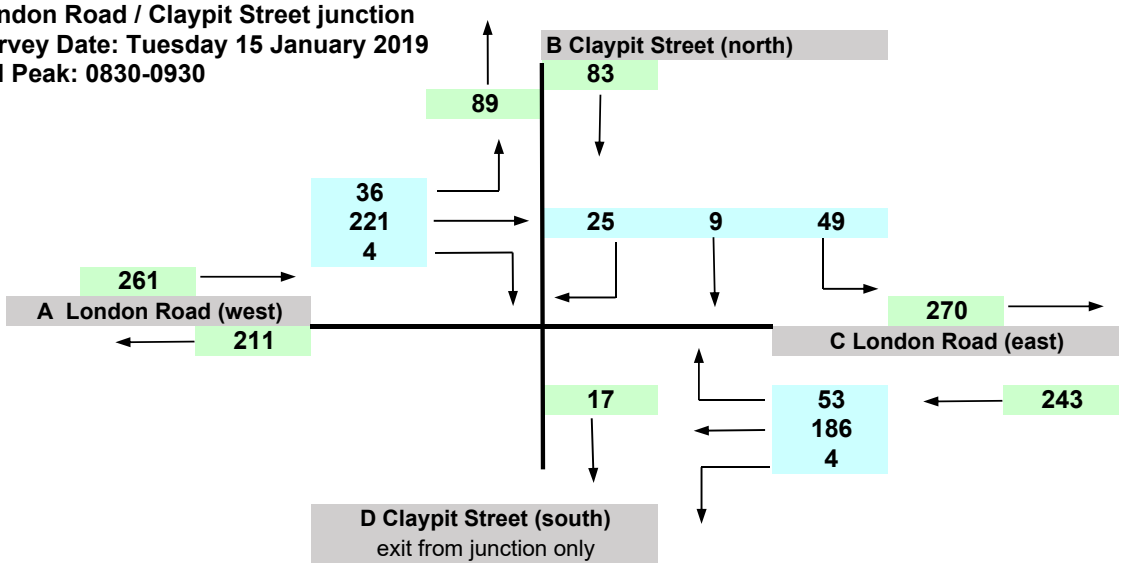
LOCATION: WHITCHURCH

SITE: 1 **DATE:** 15/01/2019

LOCATION: CLAYPIT STREET / LONDON ROAD **DAY:** TUESDAY

TIME	MOVEMENT 10 FROM LONDON ROAD (E) TO CLAYPIT STREET (S)			MOVEMENT 11 FROM LONDON ROAD (E) TO LONDON ROAD (W)			MOVEMENT 12 FROM LONDON ROAD (E) TO CLAYPIT STREET (N)		
	LV	HV	TOT	LV	HV	TOT	LV	HV	TOT
07:30	0	0	0	8	1	9	5	1	6
07:45	0	0	0	25	0	25	5	1	6
HH/TOT	0	0	0	33	1	34	10	2	12
08:00	1	0	1	30	3	33	4	0	4
08:15	0	1	1	32	0	32	5	0	5
08:30	0	0	0	42	1	43	7	1	8
08:45	3	0	3	42	2	44	9	0	9
H/TOT	4	1	5	146	6	152	25	1	26
09:00	1	0	1	44	4	48	18	0	18
09:15	0	0	0	45	6	51	17	1	18
HH/TOT	1	0	1	89	10	99	35	1	36
P/TOT	5	1	6	268	17	285	70	4	74

London Road / Claypit Street junction
Survey Date: Tuesday 15 January 2019
AM Peak: 0830-0930



AM Peak: 0830-0930
Existing Traffic

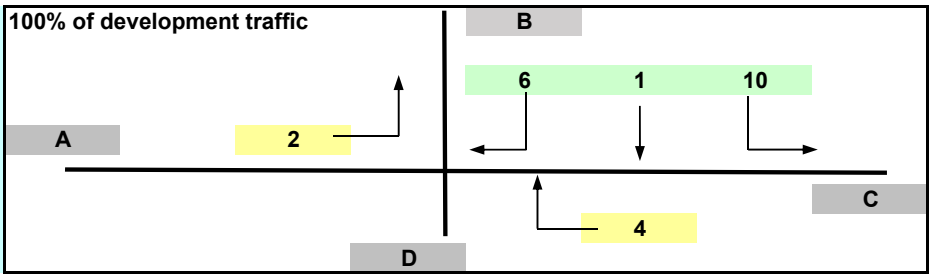
Existing flow

	A	B	C	D	Total
A	0	36	221	4	261
B	25	0	49	9	83
C	186	53	0	4	243
D	0	0	0	0	0
Total	211	89	270	17	587

Traffic Generation		
40 dwellings		
AM peak		
Arr	Dep	
6	17	23

Traffic Distribution	
100% of traffic uses the junction	
Traffic distribution of development traffic matches existing turning patterns	
Traffic growth, 2019 to 2026	10%

Development traffic



Development

	A	B	C	D	Total
A	0	2	0		2
B	6	0	10	1	17
C	0	4	0		4
D	0	0	0	0	0
Total	6	6	10	1	23

Design year, 2026

AM Peak: 0830-0930 **2026 Forecast Traffic Flows**

	A	B	C		Total
A	0	42	243	4	289
B	34	0	64	11	108
C	205	62	0	4	271
D	0	0	0	0	0
Total	238	104	307	20	669

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: claypit.j9
Path: D:\transport\1355\picady
Report generation date: 18/01/2019 16:21:16

Summary of junction performance

	AM peak				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Claypit cross-roads - 2026 with development				
Stream B-ACD	0.3	10.24	0.25	B	107 % [Stream B-ACD]
Stream A-BCD	0.0	5.29	0.01	A	
Stream D-ABC	0.0	0.00	0.00	A	
Stream C-ABD	0.3	6.29	0.15	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

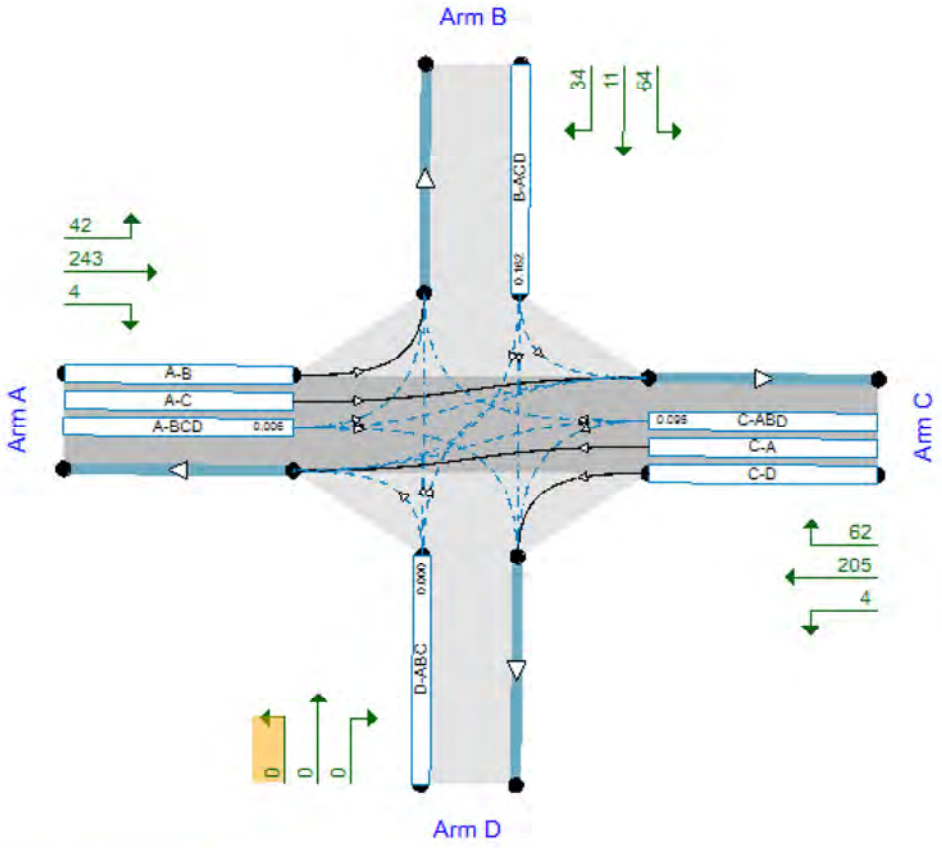
File summary

File Description

Title	Claypit crossroads
Location	Whitchurch
Site number	
Date	18/01/2019
Version	
Status	(new file)
Identifier	
Client	Concept
Jobnumber	P1355
Enumerator	bannersgate\Nigel Vening
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



Flows show original traffic demand (Veh/hr).
Streams (downstream end) show RFC ().

The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Claypit cross-roads	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 with development	AM peak	ONE HOUR	08:15	09:45	15

Claypit cross-roads - 2026 with development, AM peak

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Claypit crossroads	Crossroads	Two-way	2.51	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	107	Stream B-ACD

Arms

Arms

Arm	Name	Description	Arm type
A	London Road west		Major
B	Claypit St north		Minor
C	London Road east		Major
D	Claypit Street (exit only)		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			60.0	✓	0.00
C	7.00			60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	30	60
D	One lane	3.50	30	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	609	-	-	-	-	-	-	0.226	0.322	0.226	-	-	-
1	B-A	517	0.090	0.228	0.228	-	-	-	0.143	0.325	-	0.228	0.228	0.114
1	B-C	662	0.097	0.245	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	517	0.090	0.228	0.228	-	-	-	0.143	0.325	0.143	-	-	-
1	B-D, offside lane	517	0.090	0.228	0.228	-	-	-	0.143	0.325	0.143	-	-	-
1	C-B	609	0.226	0.226	0.322	-	-	-	-	-	-	-	-	-
1	D-A	675	-	-	-	-	-	-	0.250	-	0.099	-	-	-
1	D-B, nearside lane	527	0.146	0.146	0.332	-	-	-	0.232	0.232	0.092	-	-	-
1	D-B, offside lane	527	0.146	0.146	0.332	-	-	-	0.232	0.232	0.092	-	-	-
1	D-C	527	-	0.146	0.332	0.116	0.232	0.232	0.232	0.232	0.092	-	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	289	100.000
B		✓	109	100.000
C		✓	271	100.000
D		✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	42	243	4
	B	34	0	64	11
	C	205	62	0	4
	D	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	6	3
	B	3	0	3	3
	C	6	3	0	3
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.25	10.24	0.3	B
A-BCD	0.01	5.29	0.0	A
A-B				
A-C				
D-ABC	0.00	0.00	0.0	A
C-ABD	0.15	6.29	0.3	A
C-D				
C-A				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	82	505	0.162	81	0.2	8.475	A
A-BCD	4	686	0.006	4	0.0	5.280	A
A-B	31			31			
A-C	182			182			
D-ABC	0	476	0.000	0	0.0	0.000	A
C-ABD	62	648	0.095	61	0.1	6.134	A
C-D	3			3			
C-A	140			140			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	98	491	0.200	98	0.2	9.147	A
A-BCD	6	706	0.008	6	0.0	5.137	A
A-B	37			37			
A-C	217			217			
D-ABC	0	460	0.000	0	0.0	0.000	A
C-ABD	78	660	0.118	78	0.2	6.184	A
C-D	3			3			

C-A	162			162			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	120	471	0.255	120	0.3	10.223	B
A-BCD	8	734	0.010	8	0.0	4.950	A
A-B	46			46			
A-C	265			265			
D-ABC	0	437	0.000	0	0.0	0.000	A
C-ABD	104	677	0.153	103	0.3	6.272	A
C-D	4			4			
C-A	191			191			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	120	471	0.255	120	0.3	10.245	B
A-BCD	8	734	0.011	8	0.0	4.954	A
A-B	46			46			
A-C	265			265			
D-ABC	0	437	0.000	0	0.0	0.000	A
C-ABD	104	677	0.153	104	0.3	6.285	A
C-D	4			4			
C-A	191			191			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	98	491	0.200	98	0.3	9.176	A
A-BCD	6	706	0.008	6	0.0	5.146	A
A-B	37			37			
A-C	217			217			
D-ABC	0	460	0.000	0	0.0	0.000	A
C-ABD	78	660	0.119	79	0.2	6.204	A
C-D	3			3			
C-A	162			162			

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	LOS
B-ACD	82	505	0.162	82	0.2	8.517	A
A-BCD	4	686	0.006	4	0.0	5.285	A
A-B	31			31			
A-C	182			182			
D-ABC	0	476	0.000	0	0.0	0.000	A
C-ABD	62	648	0.095	62	0.1	6.157	A
C-D	3			3			
C-A	139			139			

PROPOSED DEVELOPMENT ACROSS LAND OFF TERRICK ROAD, WHITCHURCH, SHROPSHIRE

FLOOD RISK ASSESSMENT

JANUARY 2019

REF: 2223/RE/01-19/01 REVISION A

Evans Rivers and Coastal Ltd
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E: Enquiries@evansriversandcoastal.co.uk
W: www.evansriversandcoastal.co.uk

CONTRACT

Evans Rivers and Coastal Ltd has been commissioned by Mr Terence Lloyd to carry out a Flood Risk Assessment for a proposed development across land off Terrick Road, Whitchurch, Shropshire.

QUALITY ASSURANCE, ENVIRONMENT AND HEALTH AND SAFETY

Evans Rivers and Coastal Ltd operates a Quality Assurance, Environmental, and Health and Safety Policy.

This project comprises various stages including data collection; hydrological and hydrogeological assessments; surface water drainage designs; and reporting. Quality will be maintained throughout the project by producing specific methodologies for each work stage. Quality will also be maintained by initiating internal quality procedures including the validation of third party deliverables; creation of an audit trail to record any changes made; and document control using a database and correspondence log file system.

To adhere to the Environmental Policy, data will be obtained and issued in electronic format and alternatively by post. Paper use will also be minimised by communicating via email or telephone where possible. Documents and drawings will be transferred in electronic format where possible and all waste paper will be recycled. Meetings away from the office of Evans Rivers and Coastal Ltd will be minimised to prevent unnecessary travel, however for those meetings deemed essential, public transport will be used in preference to car journeys.

The project will follow the commitment and objectives outlined in the Health and Safety Policy operated by Evans Rivers and Coastal Ltd. All employees will be equipped with suitable personal protective equipment prior to any site visits and a risk assessment will be completed and checked before any site visit. Other factors which have been taken into consideration are the wider safety of the public whilst operating on site, and the importance of safety when working close to a water source and highway. Any designs resulting from this project and directly created by Evans Rivers and Coastal Ltd will also take into account safety measures within a “designers risk assessment”.

Report carried out by:

Rupert Evans, BSc (Hons), MSc, CEnv, C.WEM, MCIWEM, PIEMA

DISCLAIMER

This report has been written and produced for Mr Terence Lloyd. No responsibility is accepted to other parties for all or any part of this report. Any other parties relying upon this report without the written authorisation of Evans Rivers and Coastal Ltd do so at their own risk.

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CONTENTS

1. INTRODUCTION

1.1 Project Scope

1.1.1 Evans Rivers and Coastal Ltd has been commissioned by Mr Terence Lloyd to carry out a Flood Risk Assessment for a proposed development across land off Terrick Road, Whitchurch, Shropshire.

1.1.2 Specifically, this assessment intends to:

1) Consider the impacts of the 1 in 20 year, 1 in 100 year and 1 in 1000 year flood events in accordance with NPPF;

2) Review any literature and guidance specific to this area such as the SFRA;

3) Determine the extents of the aforementioned NPPF Flood Zones across the site, together with depths of floodwater and hazard;

4) Assess the risks to people and property and propose mitigation measures accordingly;

5) Review existing evacuation and warning procedures for the area;

6) Carry out an appraisal of flood risk from any other sources such as groundwater as required by NPPF;

7) Report findings and recommendations.

1.1.3 This assessment is carried out in accordance with the requirements of the National Planning Policy Framework (NPPF) dated 2018. Other documents which have been consulted include:

- DEFRA/EA document entitled *Framework and guidance for assessing and managing flood risk for new development Phase 2 (FD2320/TR2)*, 2005;
- Communities and Local Government 2007. *Improving the Flood Performance of New Buildings*. HMSO.
- DEFRA/EA document entitled *The flood risks to people methodology (FD2321/TR1),* 2006;
- EA *Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purpose*, 2008;
- National Planning Practice Guidance – Flood Risk and Coastal Change.
- UK Government's climate change allowances guidance dated February 2016.
- Environment Agency guidance entitled *Flood risk assessments: Climate change allowances (Greater Manchester, Merseyside and Cheshire) dated March 2016.*
- Shropshire Strategic Flood Risk Assessment Level 1 update dated 2012.
- Shropshire and Staffordshire Local Flood Risk Management Strategy dated 2015.
- Shropshire Council Preliminary Flood Risk Assessment dated 2011.

2. DATA COLLECTION

2.1 To assist with this report, the data collected included:

- Ordnance Survey 1:10,000 street view map obtained via Promap (Evans Rivers and Coastal Ltd OS licence number 100049458).
- British Geological Survey, *Online Geology of Britain Viewer*.
- 1:250,000 *Soil Map of Midland and Western England* (Sheet 3) published by Cranfield University and Soil Survey of England and Wales 1983.
- 1:625,000 *Hydrogeological Map of England and Wales*, published in 1977 by the Institute of Geological Sciences (now the British Geological Survey).
- Topographical survey carried out by BB Surveys (Drawing Numbers 2219-1530-SU00, 2219-1530-SU01, 2219-1530-SU02, 2219-1530-SU03, 2219-1530-SU04, 2219-1530-SU05 and 2219-1530-SU06).
- Filtered LIDAR data at 1m resolution.
- Data provided by the Agency in their response received 21st December 2018 (Appendix A).

3. SITE CHARACTERISTICS

3.1 Existing Site Characteristics and Location

3.1.1 The site is located across land off Terrick Road, Whitchurch, Shropshire. The approximate Ordnance Survey (OS) grid reference for the site is 354265 342337 and the location of the site is shown on Figure 1.

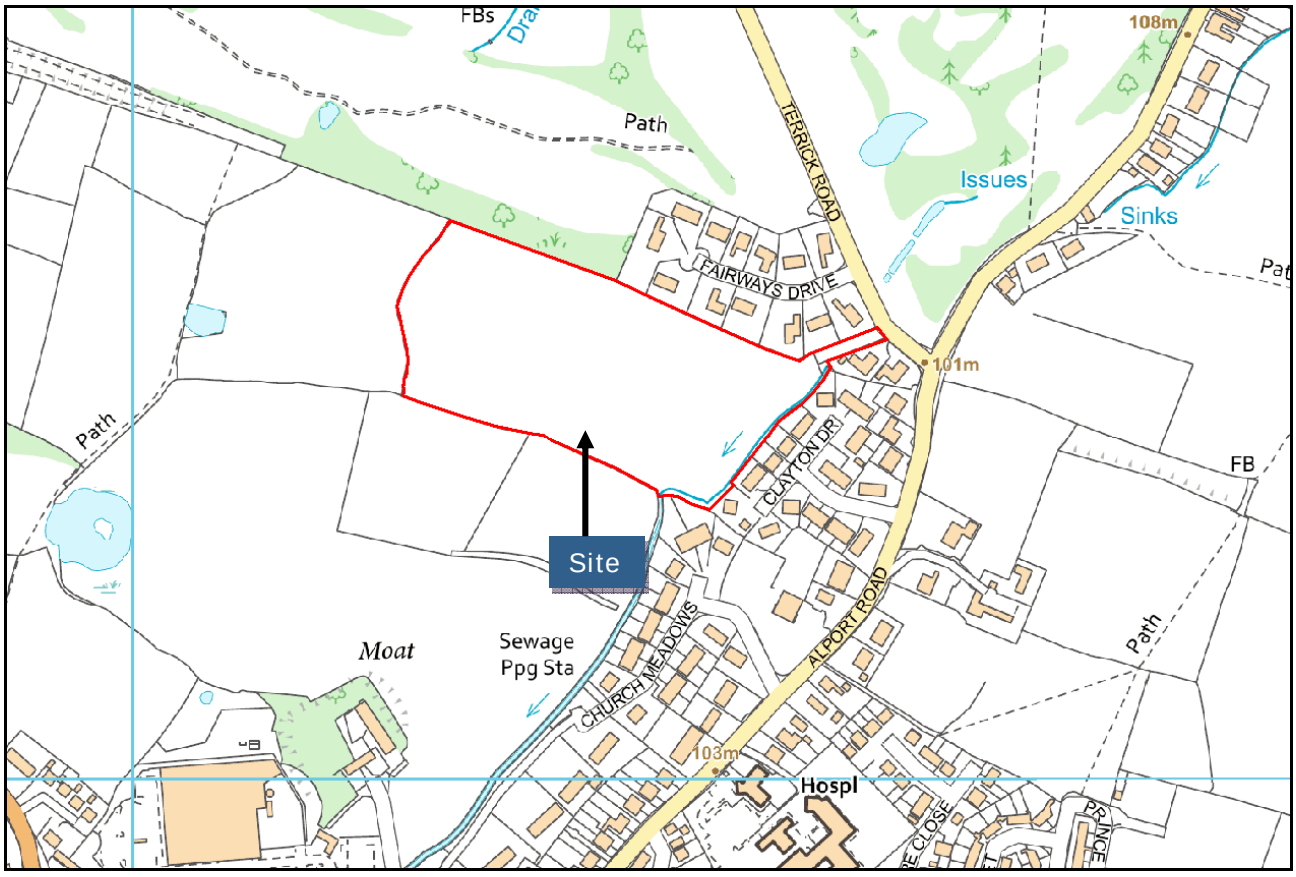

Figure 1: Site location plan (Source: Ordnance Survey)

3.1.2 The site is rectangular in shape and currently comprises an area of farmland. The site is accessed from Terrick Road to the north east of the site via a track. A tributary of Stags Brook flows in a south westerly direction adjacent to the eastern frontage of the site. There are drainage ditches along the southern and western boundaries of the site.

3.1.3 A topographical survey has been carried out by BB Surveys (Drawing Numbers 2219-1530-SU00, 2219-1530-SU01, 2219-1530-SU02, 2219-1530-SU03, 2219-1530-SU04, 2219-1530-SU05 and 2219-1530-SU06). By reviewing the topographical survey, it can be seen that ground levels typically fall in a south to south easterly direction.

3.1.4 Filtered LIDAR data at 1m resolution has also been obtained to determine and illustrate the topography of the site and surrounding area (Figure 2).

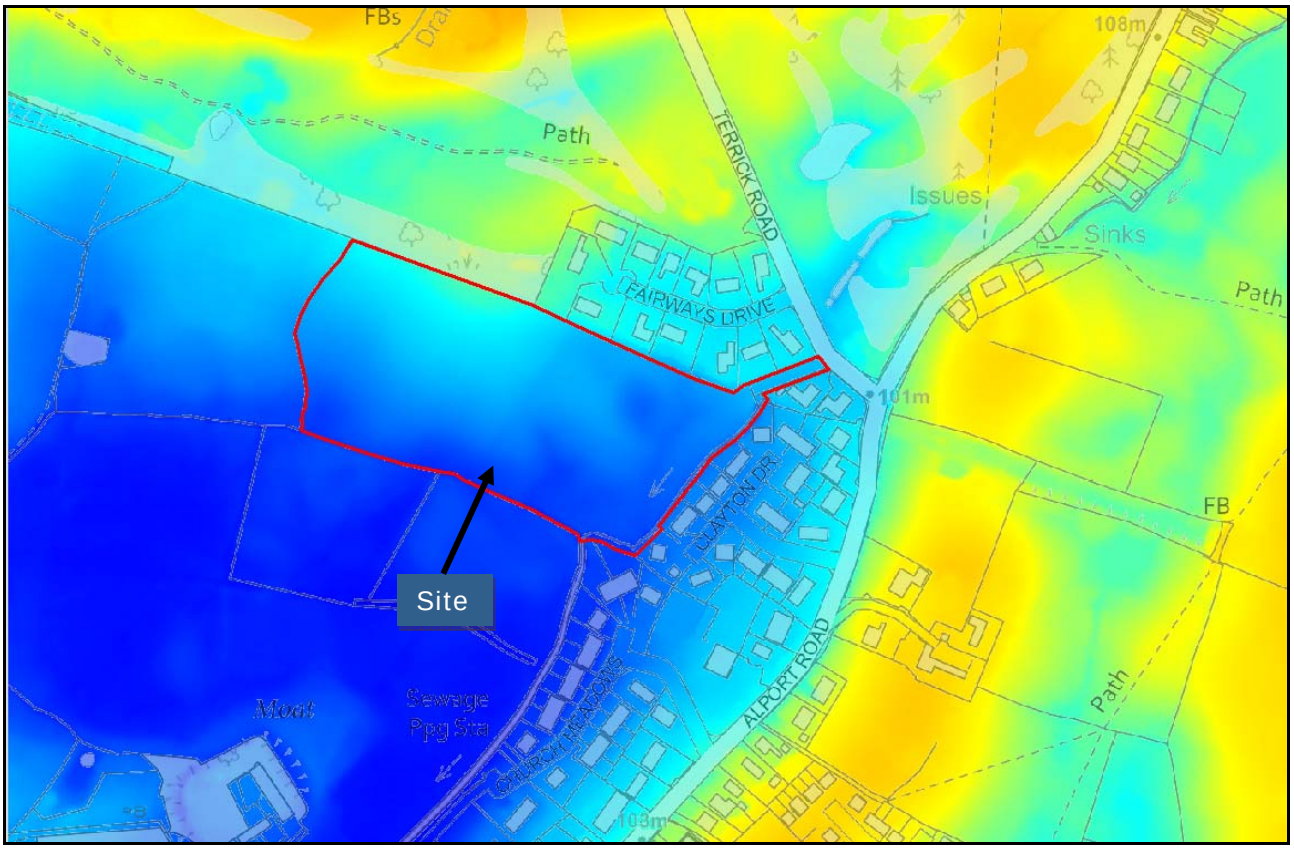

Figure 2: Filtered LIDAR survey of the site and surrounding area combined with OS (where low ground is denoted by blue and green colours and higher ground is denoted by red and yellow colours)

3.2 Site Proposals

3.2.1 It is the Client's intention to develop the site with an unspecified number of dwellings. A proposed layout was not available at the time of writing. Access is presumed to be from Terrick Road via an improved access.

4. BASELINE INFORMATION

4.1 Environment Agency Flood Zone Map

4.1.1 The Environment Agency's Flood Zone Map (Figure 3 and Appendix A) shows that the site is located within the NPPF defined Flood Zone 1. However, the Agency's online Flood Map for Planning shows that the site is located within Flood Zone 2 and 1.

4.1.2 Flood Zone 1 'Low Probability' comprises land as having less than a 1 in 1000 year annual probability of fluvial or tidal flooding (i.e. an event more severe than the extreme 1 in 1000 year event). NPPF states that all uses of land are appropriate in this zone.

4.1.3 The Flood Zone 2 'Medium Probability' floodplain is defined as having between a 1 in 100 year annual probability and 1 in 1000 year annual probability of flooding. The threshold of the Flood Zone 2 floodplain is the 1 in 1000 year extreme event.

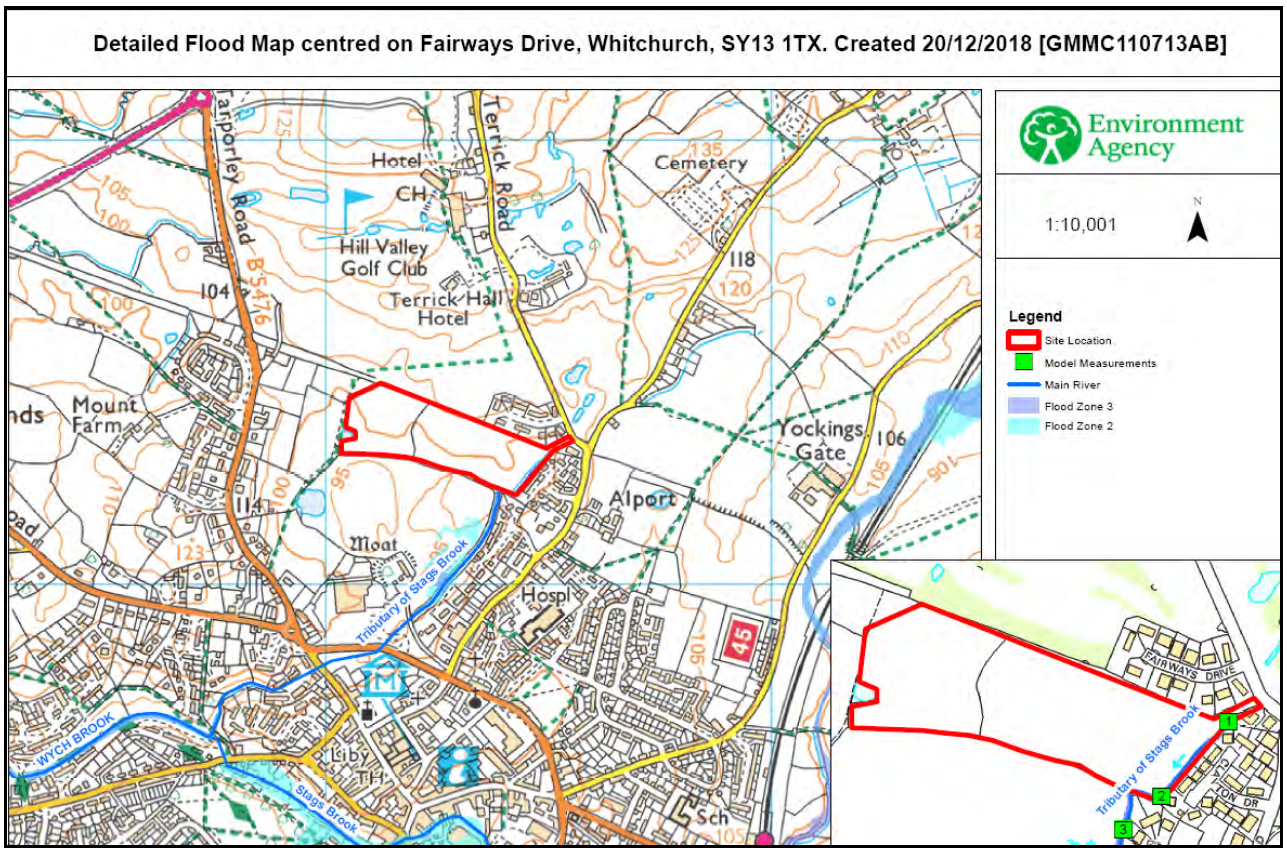

Figure 3: Environment Agency Flood Zone Map (Source: Environment Agency)

4.2 Flood Defences and Environment Agency Flood Levels

4.2.1 The Agency has stated in their response (Appendix A) that there are no formal flood defences protecting the site.

4.2.2 In-channel flood levels have been provided by the Agency in their response (Appendix A). The in-channel nodes 1 and 2 are considered relevant to the site's location and the results are summarised in Table 1.

Table 1: Fluvial flood level data

Location	1 in 20 year (mAOD)	1 in 100 year (mAOD)	1 in 100 year plus 20% climate change (mAOD)	1 in 1000 year (mAOD)
1	97.16	97.21	97.24	97.31
2	94.94	95.00	95.03	95.12

4.2.3 It is understood that the climate change 100 year flood level should reflect the UK Government's climate change allowances guidance dated February 2016 and Agency's guidance note entitled *Flood risk assessments: Climate change allowances (Greater Manchester, Merseyside and Cheshire) dated March 2016.*

4.2.4 Until the Agency provides updated climate change levels, it is considered appropriate to update the climate change flood level in this instance by carrying out a stage-discharge analysis.

4.2.5 It is understood that for design purposes the "Central" climate change allowance for the Dee region of 20% as outlined in Table 1 of the guidance should be applied to the peak flow rate for "more-vulnerable" development in Flood Zone 2 (i.e. same as the 20% currently used in the Agency's model).

4.2.6 It is understood from the Environment Agency that the current advice when considering the new UK Government climate change allowances, is that whilst the "Central" allowances can be used for design purposes (as set out above), the "Higher Central" increase of 25% in peak flow rate should be considered when determining the potential increase in flood risk to people during the 1 in 100 year event, as this will also consider the scientific uncertainty in the climate change estimates.

4.2.7 Therefore, to determine the Higher Central allowance, a stage-discharge curve has been developed (Figure 4 and 5) for nodes 1 and 2 based on the level and flow data provided by the Agency for all available return period events (i.e. 10, 15, 20, 25, 50, 75, 100, 200, 500 and 1000). It should be noted that the anomalous results for the 1 in 40 year event were excluded from the analysis (i.e. there is a disproportionately high flow rate in relation to other return periods).

4.2.8 Once the Agency's data has been plotted, in order to derive the flow rate for the 100 year 25% event the baseline 100 year flow rate of 0.41 cu m/sec should be multiplied by 25%. Therefore, the Higher Central (25%) 1 in 100 year flow rate equates to 0.51 cu m/sec.

4.2.9 To determine the corresponding stage/flood level from the curve, the "trendline" linear equation produced by the excel software was used as shown on Figure 4 and 5 to provide a best fit, and the 'x' value in the equation manually set as the predetermined flow rate of 0.51 cu m/sec.

4.2.10 Therefore, the corresponding flood level for the Higher Central (25%) 1 in 100 year event equates to 97.25m AOD for node 1 and 95.04m AOD for node 2.

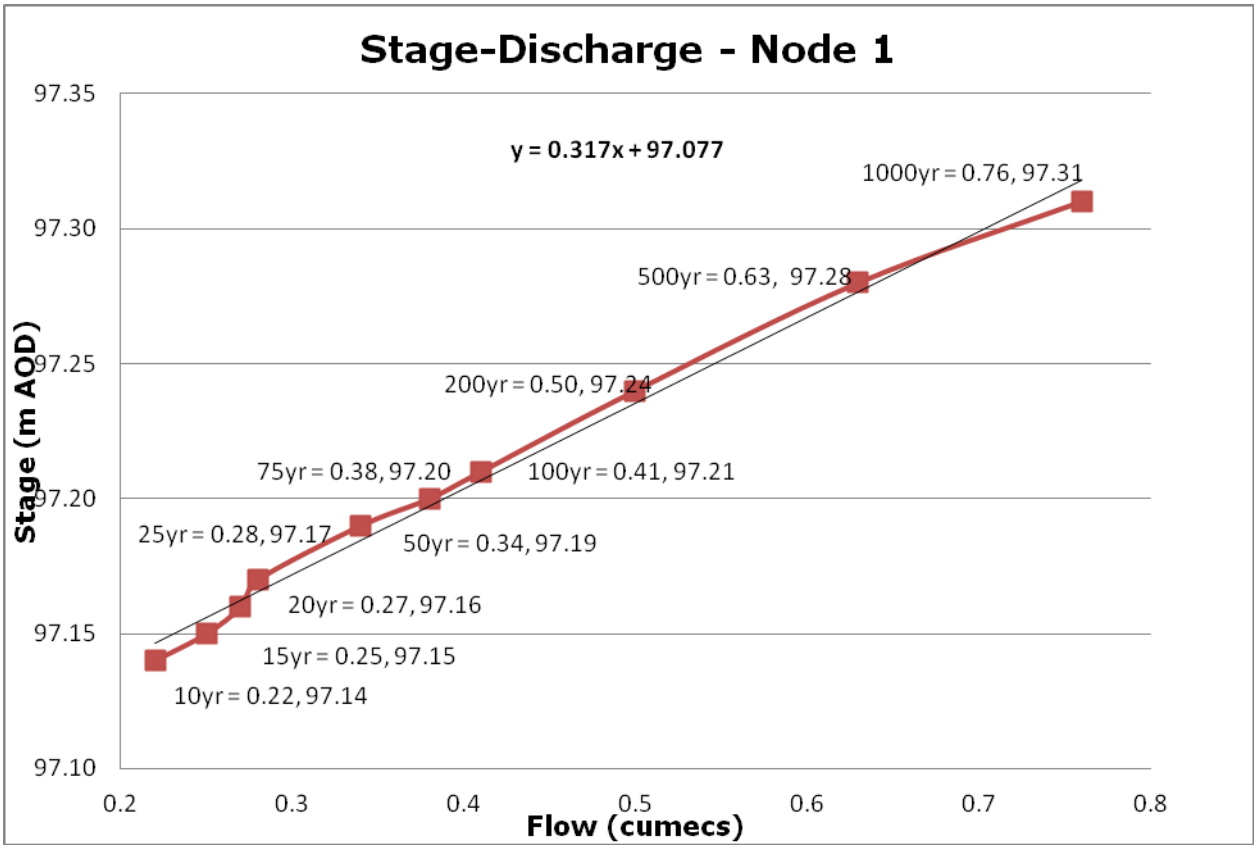

Figure 4: Stage-discharge curve for Node 1

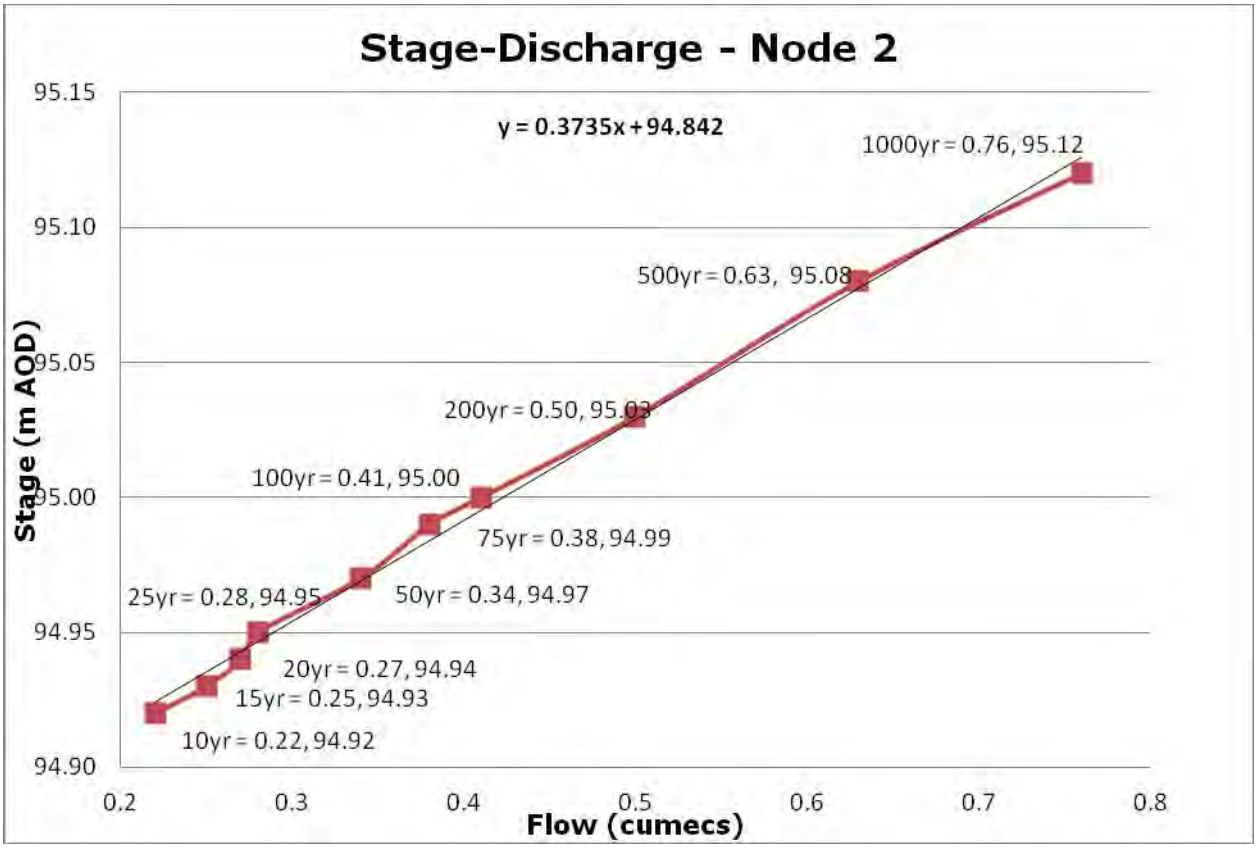

Figure 5: Stage-discharge curve for Node 2

Table 2: Updated Fluvial flood level data

Location	1 in 20 year (mAOD)	1 in 100 year (mAOD)	1 in 100 year plus climate change (mAOD)	1 in 1000 year (mAOD)
1	97.16	97.21	97.24 (20%) 97.25 (25%)	97.31
2	94.94	95.00	95.03 (20%) 95.04 (25%)	95.12

4.3 Flood Warning and Emergency Planning

4.3.1 The site is partially located within an Environment Agency Flood Alert Area 013WAFDEE (The River Dee in England covers areas around Shocklach, Farndon, Handley, Lower Kinnerton, Chester and Puddington).

4.3.2 Sites at risk of fluvial flooding could have a minimum of 2 hours warning before any of the levels of flood warning is issued (the Agency's warning scheme only applies to areas at risk of flooding from Main Rivers and not IDB controlled drains).

4.3.3 Flood Alerts, Flood Warnings and Severe Flood Warnings are issued to residents and businesses within flood risk areas by the Agency's *Floodline Warnings Direct* (FWD) service. This system is managed by the Environment Agency and dials out a message to the recipient when a particular category of flood warning is being advised. The message is conveyed by a constant ringing of the telephone or can alternatively be communicated to mobile phones and computers. The system functions at all times, issuing flood warnings and alerts in conjunction with announcements on radio and other media. Owners and occupiers of dwellings or businesses thought to be at risk can sign up to the scheme. The owners are encouraged to confirm details with the Agency and to sign up for these warnings.

4.3.4 The various flood warning codes can be seen on Figure 6.

Figure 6: Flood warning codes (Source: Environment Agency)

4.3.5 It is understood that in the event of flooding, evacuation is managed by a multi-agency team in conjunction with the Police. The multi-agency team provides suitable premises for shelter, first aid, refreshments and possible transportation with consideration given to the elderly and vulnerable groups. It is essential that occupants produce robust Emergency Flood Plans to avoid putting themselves or emergency services at risk and that they do not rely solely on emergency services during the event.

5. FLUVIAL FLOOD RISK AND FLOOD ZONES

5.1 Flood Zones

5.1.1 Due to the proximity of the site to the watercourse, which is undefended at this location, floodwater has the potential to be able to propagate towards the site without major obstruction.

5.1.2 The topographical survey (in 3D xyz form) was imported into the MapInfo GIS software and a ground model was generated which allowed the interpolation of ground levels between available elevation points.

5.1.3 Due to the large reduction in flood levels between nodes 1 and 2 adjacent to the site, in order to provide a more accurate representation of the flood extents across the site, the flood levels in Table 2 at nodes 1 and 2 have been mapped onto the ground model using Mapinfo/Vertical Mapper. The resultant flood extents can be seen on Figure 7.

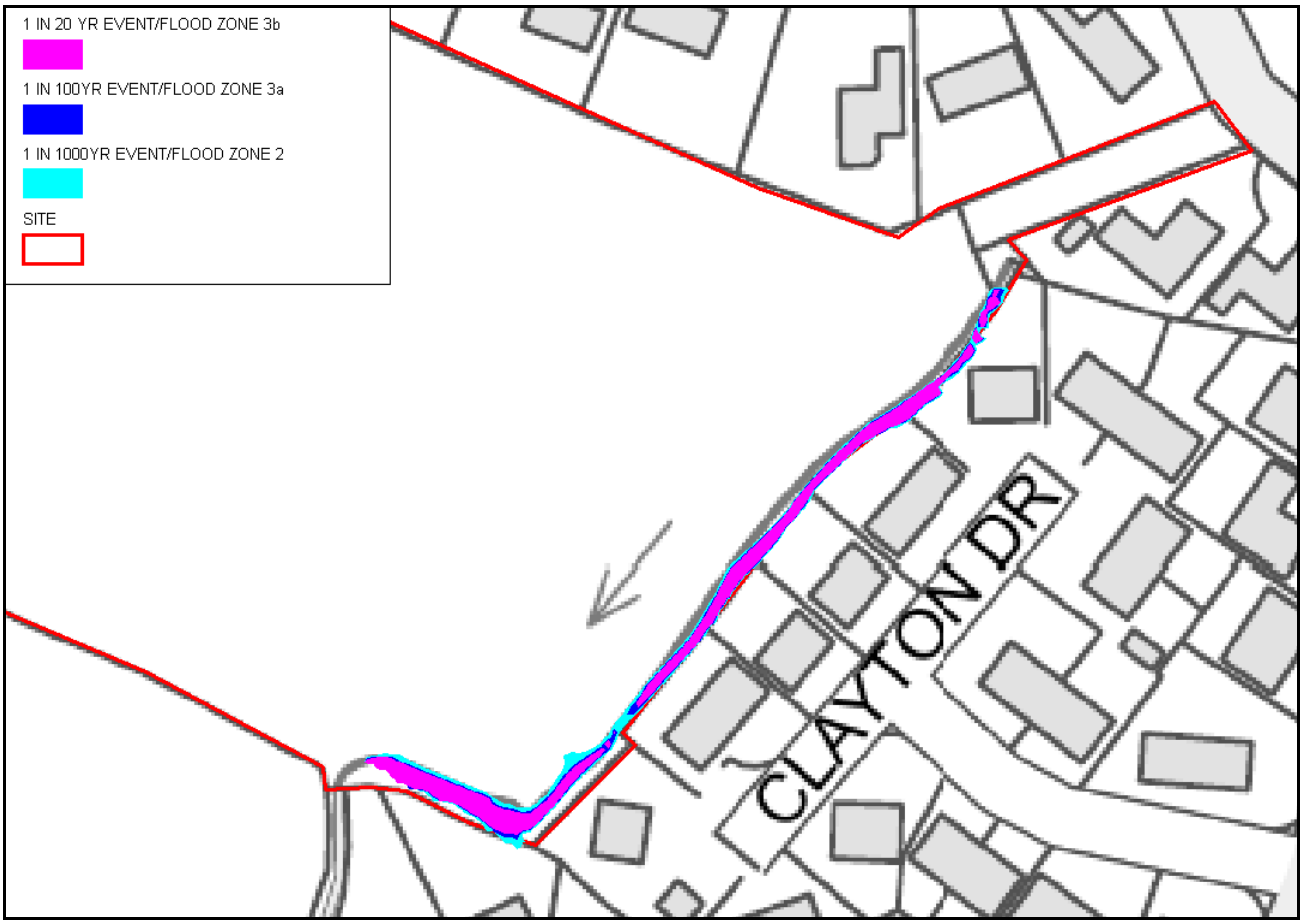

Figure 7: Fluvial flood extents and flood zones in relation to OS

5.1.4 Figure 7 shows that the site and access is located within Flood Zone 1 and compares well with the Agency's flood map in Appendix A and Figure 3. Only a very small part of the site adjacent to the watercourse is located within Flood Zone 2.

5.2 Flood Risk

5.2.1 The levels provided in Table 2 and mapping exercise outlined in Section 5.1 can be used to assess the climate change fluvial flood risk directly at the site.

5.2.2 Figure 8 shows that the site and access are located outside of all climate change flood extents. Therefore, safe refuge will be available at all times. Furthermore, safe access/egress is available to the north at all times.

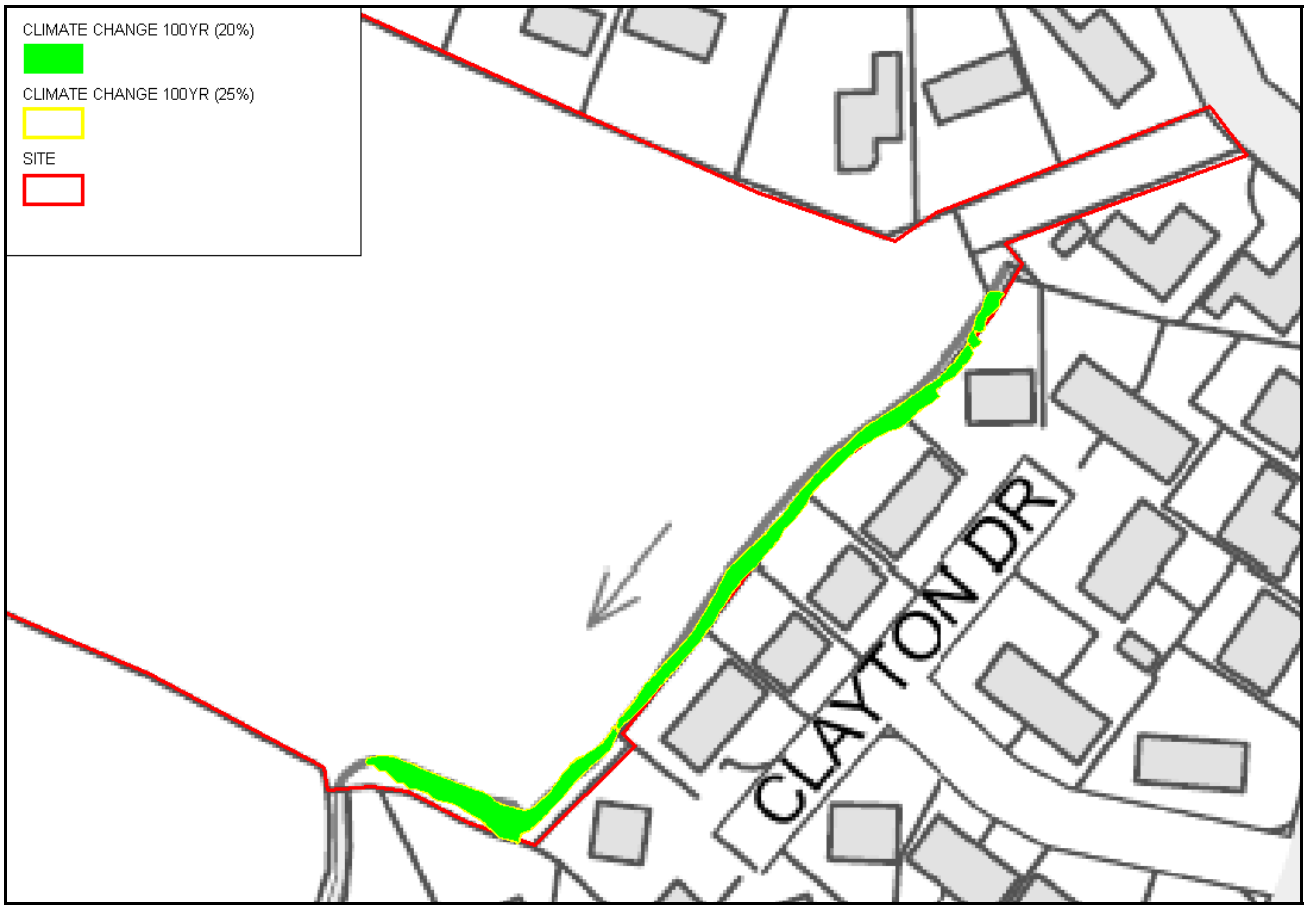

Figure 8: Extent of climate change (20%) 1 in 100 year flood event and climate change (25%) 1 in 100 year flood event

6. FLOOD RISK MITIGATION AND EVACUATION

6.1 Reducing Exposure to the Hazard

6.1.1 In order to assess and reduce the exposure to the hazard and the vulnerability to the hazard after the site has been developed, the guidance outlined in the DCLG/DEFRA/EA document entitled *Flood Risk Assessment Guidance for New Development Phase 2*; *Flood Risks to People, Phase 2*; *Improving the Flood Performance of New Buildings* has been consulted.

6.1.2 Paragraph 060 (ID 7-060-20140306) of the NPPF Planning Practice Guidance states that the first preference is to avoid flood risk by raising floor levels above the design climate change 1 in 100 year flood level.

6.1.3 As discussed in Chapter 5, the site and access is outside of the design flood extent and it is possible for all built development to be located within Flood Zone 1 thus complying with the NPPG.

6.2 Reducing Vulnerability to the Hazard

6.2.1 The Agency aims to provide up to 2 hours notice before the issue of a *Flood Alert* for fluvial events. It is likely that the flood levels will be monitored by the Agency and the corresponding level of flood warning issued depending on the rising flood level.

6.2.2 It is recommended that the occupants liaise with the Agency in order to register with the Agency's Flood Warnings Direct service and ensure that they are aware of the flood risk so that they have the option to escape/evacuate upon receipt of a *Flood Alert* or upon the instruction of the emergency services.

6.2.3 The occupants should develop a *Family Flood Plan*. Further guidance is offered in the Environment Agency's guidance document entitled *What to do before, during and after a flood*. The *Family Flood Plan* should consider, for example, information about vital medication needed and a *Flood Kit*.

6.2.4 A *Flood Kit* is a useful precautionary measure especially if evacuation from the site is prolonged. The kit should be stored in an accessible location to ensure that it is not affected by floodwater. The contents should also be checked every 6 months and items replaced if necessary.

6.2.5 It may be sensible to compile two *Flood Kit's* to suit each eventuality. For example, a smaller kit could be compiled which would allow the occupants to carry it during evacuation. A larger kit could also be compiled which included additional food and beverage items in case of ongoing refuge within the property. Both kits should contain the necessary items as suggested below.

1. Important documents
2. Torch and batteries
3. Mobile phone (fully charged)
4. First-aid kit
5. Wind-up radio
6. Important telephone numbers
7. Bottled water
8. Non-perishable food provisions
9. Rubber Gloves and wellington boots
10. Medication or information relating to medication and its location

11. Blankets, warm clothes
12. Essential toiletries
13. Camera to record any damage
14. Emergency cash

Table 3: Flood Event Action Plan

Environment Agency Flood Warning Code	What to do!	Evacuate?
Flood Alert (Flooding Possible. Be aware/prepared! Watch Out).  	• Monitor flood risk through media and Floodline Warnings Direct. • Locate other family members and inform them of risk. If away from the site make assessment on risk if considering returning to site (i.e. how long it will take to return etc). • Begin to implement Flood Plan. • Gather Flood Kit and provisions in the event that evacuation is not possible. • Consider advice given from emergency services/Environment Agency.	Preferable, although up to occupants discretion. Drive carefully if evacuating as roads may be flooded or closed. If evacuation is not possible people should reside across the buildings with their flood kit.
Warnings no longer in force (No further flooding is expected in the area. Be careful).	• Return to site upon instruction from emergency services and assess any damage. • Contact insurance company depending on damage caused. • Beware of flood debris. • Do not touch sources of electricity.	Not applicable.

6.3 Vulnerable Groups

6.3.1 The occupants at the site may include vulnerable groups such as elderly people, those with sensory or physical disabilities, minority ethnic groups, or the infirm. Priority will need to be given to these people during the flood event.

6.3.2 Vulnerable groups should be identified and priority should be given to these groups.

6.4 Safe Access/Egress

6.4.1 The results in Chapter 5 indicate that safe access/egress by foot and vehicle can be achieved during all modelled events via the access route onto Terrick Road.

6.5 Insurance

6.5.1 The Association of British Insurers (ABI) published a guidance document in 2012 entitled *Guidance on Insurance and Planning in Flood Risk Areas for Local Planning Authorities in England*.

6.5.2 The ABI guidance sets out the requirements of the insurance industry when considering flood risk and insurability of the property. The guidance suggests that properties should be protected for flood events up to the climate change 1 in 100 year event in order to access insurance at a competitive price.

6.5.3 The guidance also states that insurers would of course prefer to cover properties which are not at risk of flooding, however, for those properties which are at risk of flooding insurers would prefer that the properties are raised above the flood level, over resistance measures which prevent floodwater from entering the building, or resilience measures which allows floodwater to enter the building.

6.5.4 All built development will be set above the climate change 1 in 100 year flood level and 1 in 1000 year level. Therefore, the ABI's requirement of protection during the climate change 1 in 100 year event will be exceeded and there will be a good chance of the properties being insured at a competitive rate.

7. OTHER SOURCES OF FLOODING

7.1 Groundwater Flooding

7.1.1 In order to assess the potential for groundwater flooding during higher return period rainfall events, the Jacobs/DEFRA report entitled *Strategy for Flood and Coastal Erosion Risk Management: Groundwater Flooding Scoping Study*, published in May 2004, was consulted, together with the guidance offered within the document entitled *Groundwater flooding records collation, monitoring and risk assessment (ref HA5)*, commissioned by DEFRA and carried out by Jacobs in 2006.

Soil and Geology at the Site

7.1.2 It can be seen from the various soil and hydrogeological data, listed in Section 2, that the soils beneath the site comprise variable soils such as clay and sand and gravel.

Groundwater Flooding Potential at the Site

7.1.3 The SFRA and PFRA states that in general there should be little concern over groundwater flooding in Shropshire and that there are no past incidents of groundwater flooding. There have been no recorded groundwater flood events across the area between 2000 and 2003, as indicated by the Jacobs study.

7.2 Surface Water Flooding and Sewer Flooding

7.2.1 Surface water and sewer flooding across urban areas is often a result of high intensity storm events which exceed the capacity of the sewer thus causing it to surcharge and flood. Poorly maintained sewer networks and blockages can also exacerbate the potential for sewer flooding. Surface water flooding can also occur as a result of overland flow across poorly drained rural areas.

7.2.2 The Environment Agency's Surface Water Flooding Map (Figure 9) indicates that across the site there is mainly a very low surface water flooding risk (less than 1 in 1000 year chance). However, there are small parts of the site which have a low to high risk (i.e. between 1 in 1000 years and events greater than 1 in 30 years).

7.2.3 It is generally accepted that the low risk flood event (i.e. between 1 in 1000 years and 1 in 100 years) on the Agency's map is used as a substitute for the climate change 1 in 100 year event to provide a worst-case scenario.

7.2.4 The Agency's map generally shows lower areas of ground where water may pond during storm events and identify areas which receive subsequent runoff from surrounding land during heavy rainfall events.

7.2.5 The Agency's map correlates well with the survey data, as the flood risk areas are limited to existing depressions across the site and do not form part of a wider flow path.

7.2.6 It is likely that these isolated depressions will be infilled/regraded, hence such 'at risk' areas will cease to exist post-development and a formal surface water drainage system will be implemented which will include the management of overland flows in a controlled manner. New drainage features will be included post-development and designed to capture surface water from proposed hardstanding areas.

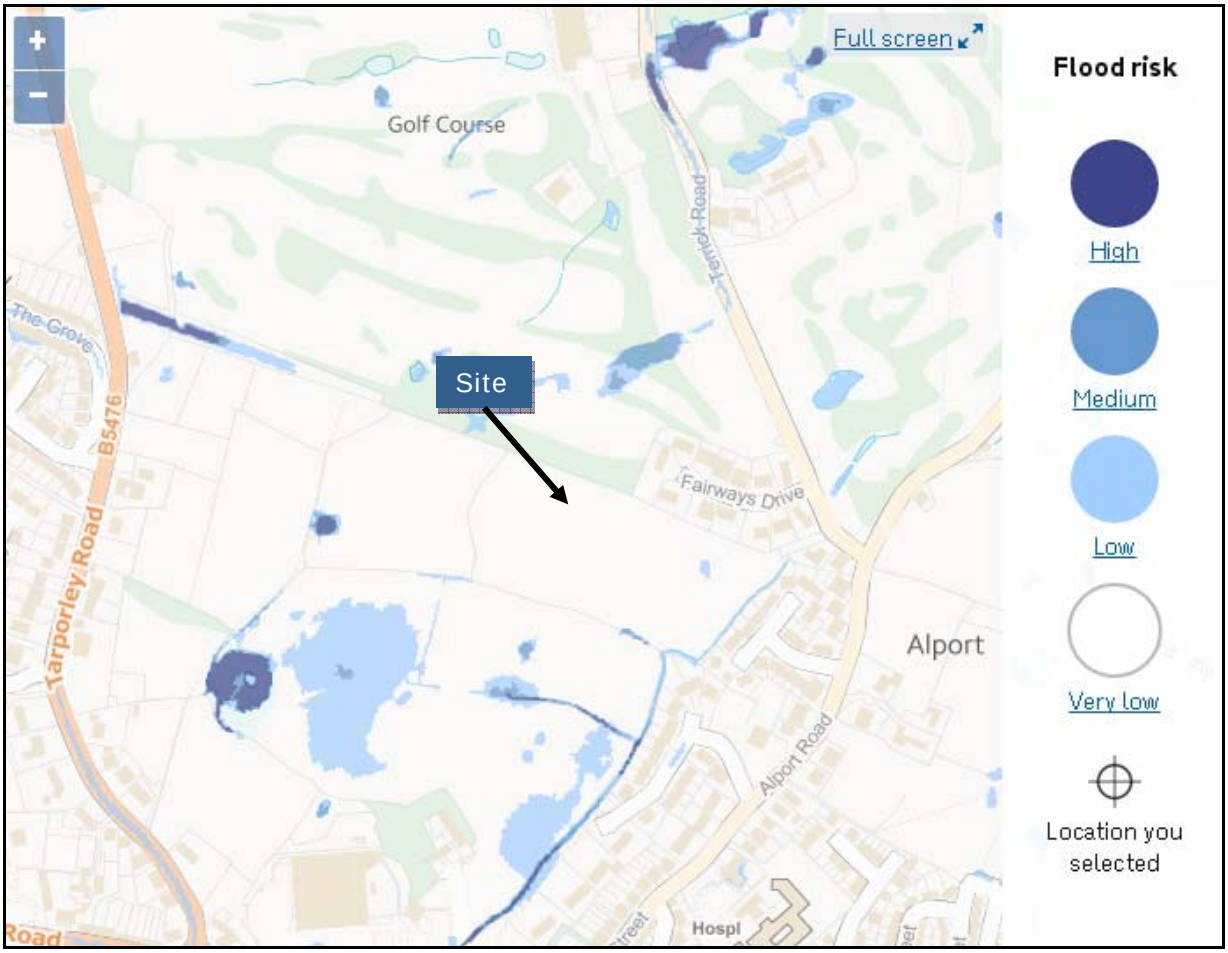

Figure 9: Environment Agency Surface Water Flooding Map (Source: Environment Agency, 2019)

7.3 Reservoirs, Canals And Other Artificial Sources

7.3.1 The failure of man-made infrastructure such as flood defences and other structures can result in unexpected flooding. Flooding from artificial sources such as reservoirs, canals and lakes can also occur suddenly and without warning, leading to high depths and velocities of flood water which pose a safety risk to people and property.

7.3.2 The Environment Agency's "Risk of flooding from reservoirs" map indicates that the site is not at risk from such features.

8. SURFACE WATER DRAINAGE AND SUDS

8.1 Planning policy recommends the maximum practical use of Sustainable Drainage Systems (SUDS) within proposals for new sites. There is a requirement that sustainable drainage systems (SUDS) be installed where appropriate, in order to limit the amount of surface water runoff entering drainage systems and to return surface water into the ground to follow its natural drainage path.

8.2 The soil types across the site are likely to be suitable for the effective use of infiltration devices such as pervious paving and soakaways. The infiltration potential at the site should be investigated further.

8.3 If infiltration SUDS cannot be fully utilised at the site, surface water should be attenuated and discharged into the existing ditches/watercourse at an attenuated rate.

9. CONCLUSIONS

- The flood levels provided by the Agency have been mapped onto the topographical survey using GIS software.

- The site and access are located within Flood Zone 1.

- The climate change 1 in 100 year event has been updated and it can be concluded that the site and access are not affected during climate change events.

- All built development will be limited to Flood Zone 1 and above all modelled flood levels thus providing safe refuge during all events. Safe access/egress can be achieved by foot and vehicle for all people.

- A warning and evacuation strategy has been developed within this assessment. It is proposed that the occupants register with the Agency's *Flood Warnings Direct* and prepare a *Family Flood Plan*.

- It is considered that there is an overall low risk of groundwater flooding at the site from underlying deposits. There is a very low risk of surface water flooding.

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APPENDIX A – CORRESPONDENCE

Rupert Evans

From: GMMC Info Requests [Inforequests.gmmc@environment-agency.gov.uk]
Sent: 21 December 2018 09:25
To: rupert.evans@evansriversandcoastal.co.uk
Subject: GMMC110713AB Response attached from the Environment Agency
Attachments: 20170317174514618.pdf; GMMC110713AB - RFO.PDF; GMMC110713AB - Table.pdf; GMMC110713AB - DFM.PDF; Flood Risk Assessments - Climate Change Allowances.pdf

Dear Rupert,

Thank you for your enquiry which was received on 18/12/18.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

I enclose the data requested.

Defences - There are no flood defences in the vicinity of the site.

Historic – Attached

Reservoir - The Environment Agency Flood map shows that the site is not located in an area at risk of reservoir flooding.

Here are some useful links below:

https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities

https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

The site is not in a flood warning area, therefore a flood warning threshold is not available.

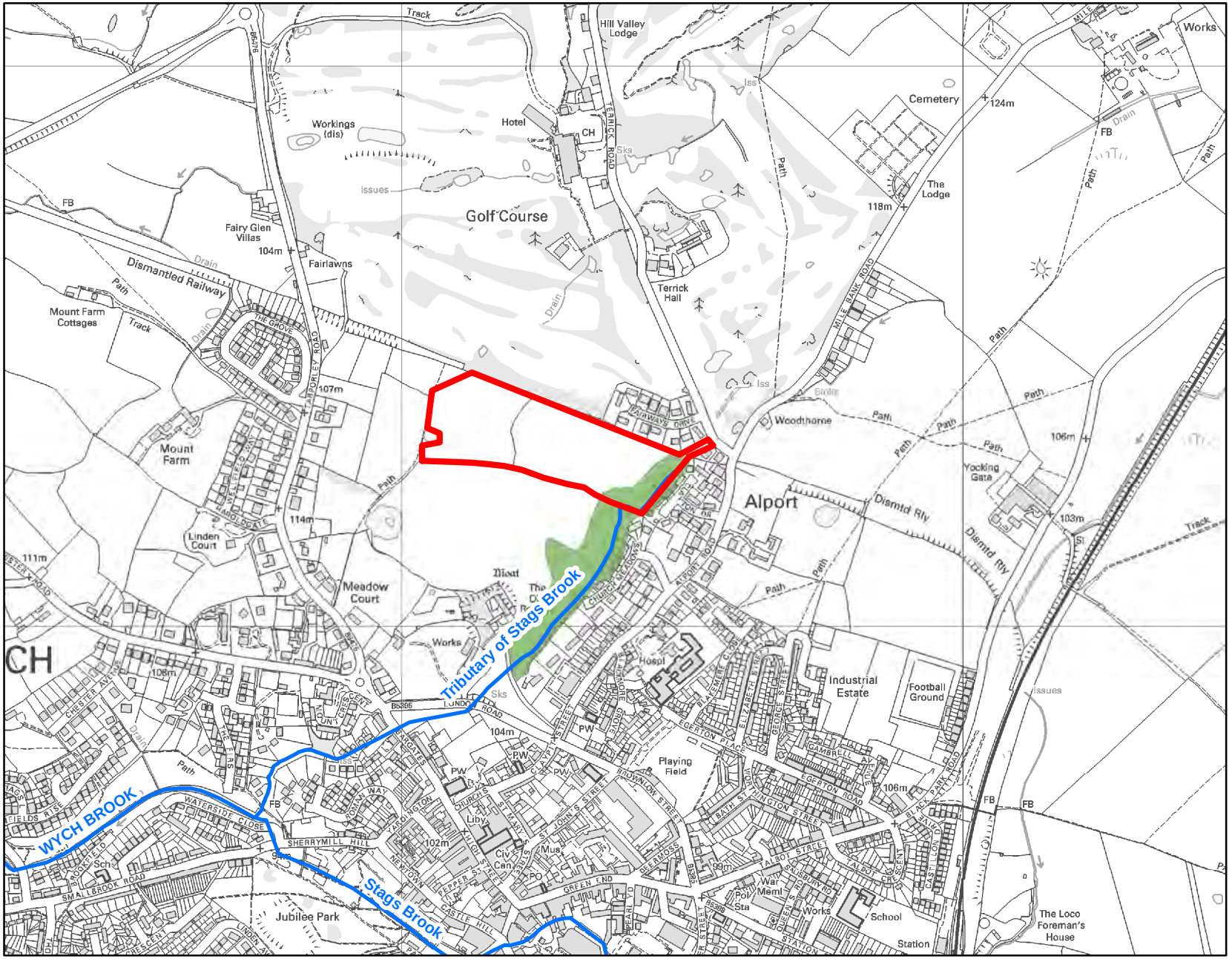
Please refer to the Open Government Licence which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Kind regards,

Anne Ball
Customer and Engagement Officer
Greater Manchester, Merseyside and Cheshire
External: 020 302 51232
Mobile: 07769285094
Email: Inforequests.gmmc@environment-agency.gov.uk

Recorded Flood Outline Map centred on Fairways Drive, Whitchurch, SY13 1TX. Created 20/12/2018 [GMMC110713AB]



Environment Agency

1:10,001

N

Legend

- Site Location
- Main River

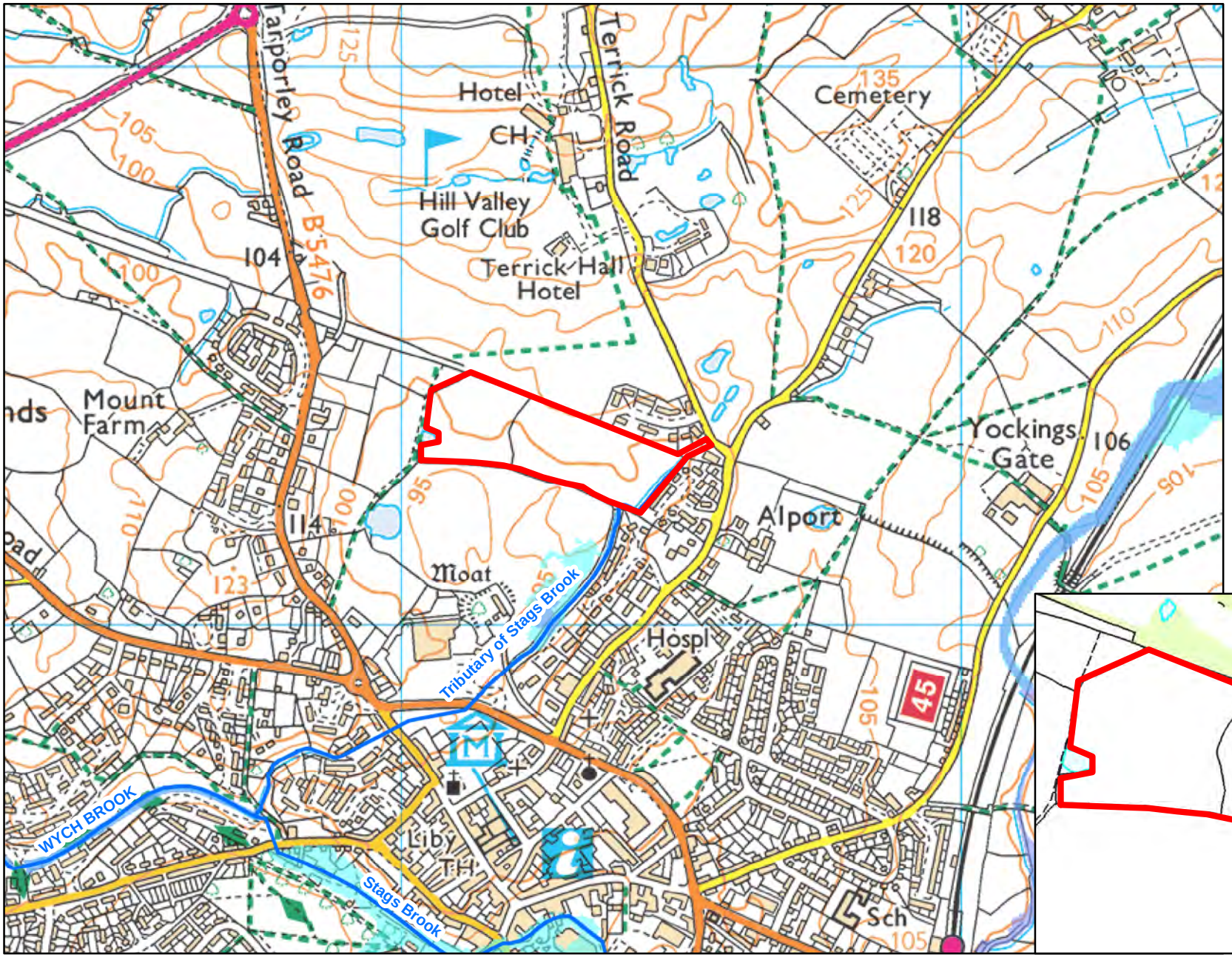
Recorded Flood Outlines

Start Date

- 26/10/2000

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Detailed Flood Map centred on Fairways Drive, Whitchurch, SY13 1TX. Created 20/12/2018 [GMMC110713AB]



Environment Agency

1:10,001

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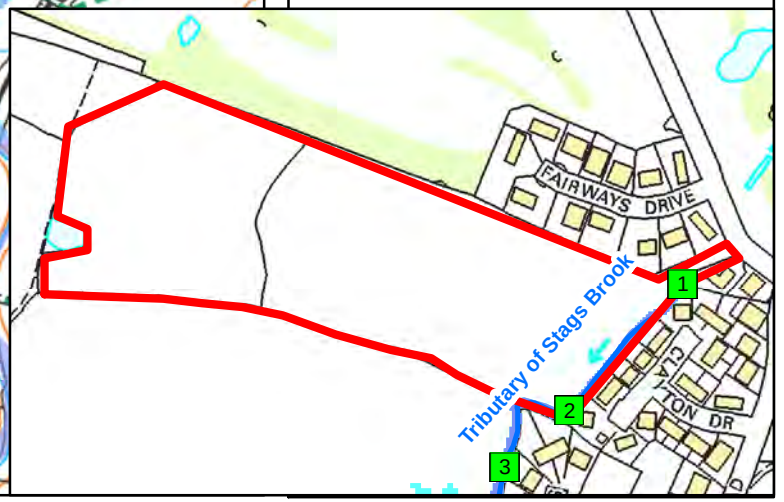
Legend

- Site Location
- Model Measurements
- Main River
- Flood Zone 3
- Flood Zone 2



Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

					Undefended												
Map Reference	Model Node Reference	Easting	Northing	Data	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	6.67 % AEP (1 in 15 year)	5 % AEP (1 in 20 year)	4 % AEP (1 in 25 year)	2.5% AEP (1 in 40 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + Climate Change*	0.5 % AEP (1 in 200 year)	0.2 % AEP (1 in 500 year)	0.1 % AEP (1 in 1000 year)
1	ea013_Model_860101_00001	354514	342303	Modelled Water Level (m aodN)		97.14	97.15	97.16	97.17	97.43	97.19	97.20	97.21	97.24	97.24	97.28	97.31
				Modelled Flow (cumecs)		0.22	0.25	0.27	0.28	1.24	0.34	0.38	0.41	0.49	0.50	0.63	0.76
2	ea013_Model_860101_00003	354429	342208	Modelled Water Level (m aodN)	94.91	94.92	94.93	94.94	94.95	95.25	94.97	94.99	95.00	95.03	95.03	95.08	95.12
				Modelled Flow (cumecs)	0.20	0.22	0.25	0.27	0.28	1.24	0.34	0.38	0.41	0.49	0.50	0.63	0.76
3	ea013_Model_860101_00004	354381	342166	Modelled Water Level (m aodN)	93.43	93.45	93.46	93.47	93.48	93.89	93.52	93.55	93.56	93.59	93.59	93.66	93.72
				Modelled Flow (cumecs)	0.20	0.22	0.25	0.27	0.28	1.24	0.34	0.38	0.41	0.49	0.50	0.63	0.76

Model data taken from Stags and Wych Brook 2015 Study

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes:

*Climate Change Scenario - We only hold climate change measurements based on the previous climate change guidance (20% increase in flow). The new climate change guidance is available at https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

Recorded Flood Outlines

Flood Event Code	Name	Start Date	End Date	Source of Flooding	Cause of Flooding
7425	Clayton Drive	26/10/2000	12/11/2000	Ordinary Watercourse	Channel Capacity Exceeded (No Raised Defences)

DRAWINGS

Originator	Initials	Detail	Type	Number	Revision
BBS-	BB-	EGL-	SU-	00	-

STATION TABLE				
Station Name	Easting	Northing	Height (m)	Station Identifier
STNBBS1	354526.069	342394.204	102.055	Mag Nail & Washer
STNBBS2	354555.561	342329.989	100.113	Mag Nail & Washer
STNBBS3	354589.248	342306.569	100.590	Mag Nail & Washer

Control Stations have been forced to a Scale Factor of 1.

Scale 1:1000 — 0, 20, 40, 60, 80, 100

Notes:

AV	Air Valve	FH	Fire Hydrant	SP	Sign Post
BB	Bottom Bank	FP	Footpath	STAY	Stay
BH	Bore Hole	G	Gully Grate	SV	Sluice Valve
BL	Lit Bollard	GV	Gas Valve	TAC	Tactile Paving
BOL	Bollard	Hedge	Hedge	TB	Top Bank
BIN	Bin	IC	Inspection Cover	TBOX	Telephone Box
BS	Bus Stop	IL	Invert Level	TL	Traffic Light
Bushes	Bush	KO	Kerb Outlet	TOK	Top Of Kerb
BT	BT Box	LP	Lamp Post	TP	Telegraph Pole
CAB	Cabinet	MH	Manhole	TRK	Track
CHNL	Channel	MP	Marker Post	TS	Traffic Sign MH
CL	Centreline	NB	Name Board	VENT	Vent
CONC	Concrete	P/W	Partition Wall	W	Water Cover
COL	Column	PB	Post Box	WL	White Line
DB	Ditch Bottom	PM	Parking Meter	WO	Wash Out
DCHNL	Drainage Channel	PO	Post	YL	Yellow Line
Door	Door	RE	Rodding Eye		
EEB	Electric MH Cover	Ridge	Ridge Level		
EP	Electric Pole	RP	Reflector Post		
ER	Earth Rod	RS	Road Sign		
ET	EP+Transformer	SETTS	Granite Setts		
Feeder	Feeder Pillar	SF	Safety Fence		

FCB	Close Boarded		Control Station
FCL	Chain Link		Column
FHD	Hoarding	XXX	Floor to Ceiling Height
FHR	Heras Fence	XXX F/C	Floor to False Ceiling Height
FPL	Pallisade		
FPR	Post & Rail		
FPW	Post & Wire		
RAIL	Railings		

Features

Fences — FCB 1.6h

Walls — Wall 1.2h

Hedges — Hedge 1.3h — Average root line shown.

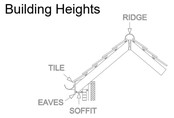
Overhead Line — OHL — Indicative position of cables.

Services

Foul Sewers — 0.225Ø — FW MH

Storm Sewers — 0.375Ø — SW MH — Pipe position and alignment is indicative only.

Building Heights



SURVEY CARRIED OUT USING TRIMBLE S6 TOTAL STATION & TRIMBLE R10 GPS.

THE SURVEY HAS BEEN ACCURATELY POSITIONED ON THE ORDNANCE SURVEY NATIONAL GRID SYSTEM USING GPS OBSERVATIONS TO THE OS ACTIVE NETWORK AND AND THE LATEST ORDNANCE SURVEY TRANSFORMATION (OSTN15/OSGM15)

LOCAL SCALE FACTOR HAS BEEN REMOVED TO TRANSFORM THE SURVEY TO A FLAT EARTH GRID (SCALE FACTOR 1.00000)

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM (NEWLYN). VERTICAL CONTROL HAS BEEN ESTABLISHED USING GPS OBSERVATIONS TO THE OS ACTIVE NETWORK AND AND THE LATEST ORDNANCE SURVEY TRANSFORMATION (OSTN15/OSGM15)

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REV	Date	Created By	Comments
-	12.01.19	BB	First Issue

Scale at A1	Project Number
1:1000	2219-1530

Drawing Status

- [x] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

BB SURVEYS LTD
1 Chestnut Place, Cringleford
Norwich, Norfolk NR4 7BD
t: 01603 507917
m: 07786 388175
e: barry@bbsurveys.co.uk

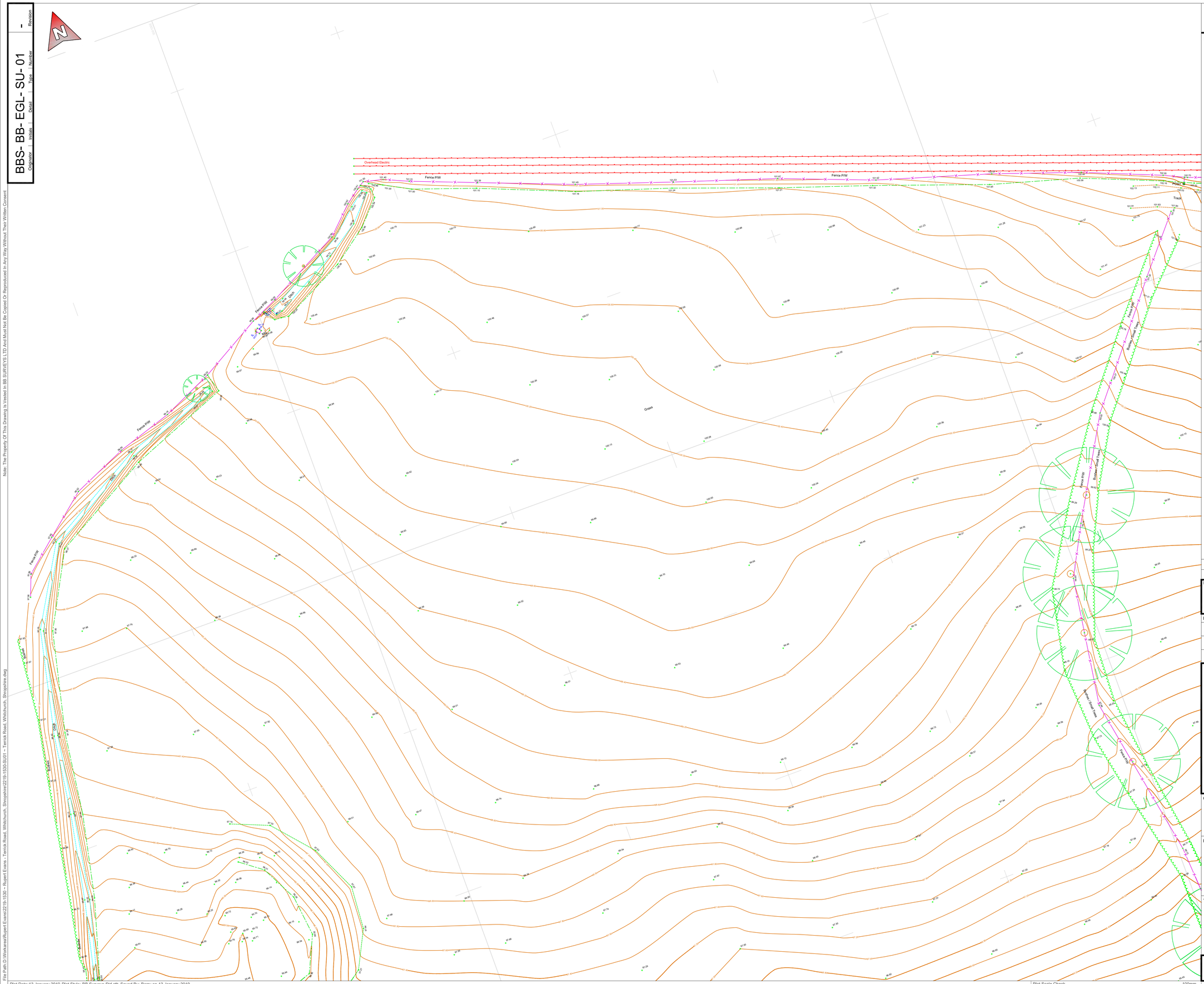
Client: Terence Lloyd
C/O Concept Town Planning

Project: Terrick Road
Whitchurch, Shropshire

Title: Existing Ground Level Survey
Overview

BBS- BB- EGL- SU- 00 -
Originator | Initials | Detail | Type | Number | Revision

BBS- BB- EGL- SU- 01 | - (Revision)
Originator | Initials | Detail | Type | Number | Revision



Scale 1:250 (0, 5, 10, 15, 20, 25)

Notes:

AV	Air Valve	FH	Fire Hydrant	SP	Sign Post
BB	Bottom Bank	FP	Footpath	STAY	Stay
BH	Bore Hole	G	Gully Grate	SV	Sluice Valve
BL	Lit Bollard	GV	Gas Valve	TAC	Tactile Paving
BOL	Bollard	Hedge	Hedge	TB	Top Bank
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CL	Centreline	NB	Name Board	VENT	Vent
CONC	Concrete	P/W	Partition Wall	W	Water Cover
COL	Column	PB	Post Box	WL	White Line
DB	Ditch Bottom	PM	Parking Meter	WO	Wash Out
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Door	Door	RE	Rodding Eye		
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Feeder	Feeder Pillar	SF	Safety Fence		

FCB	Close Boarded
FCL	Chain Link
FHD	Hoarding
FHR	Heras Fence
FPL	Pallisade
FPR	Post & Rail
FPW	Post & Wire
RAIL	Railings

Control Station
Column
X.XX — Floor to Ceiling Height
X.XX F/C — Floor to False Ceiling Height

Features

Fences — FCB 1.6h
Walls — Wall 1.2h
Hedges — Hedge 1.3h — Average root line shown.
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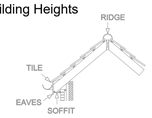

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Scale at A1: 1:250
Project Number: 2219-1530

Drawing Status
- [X] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

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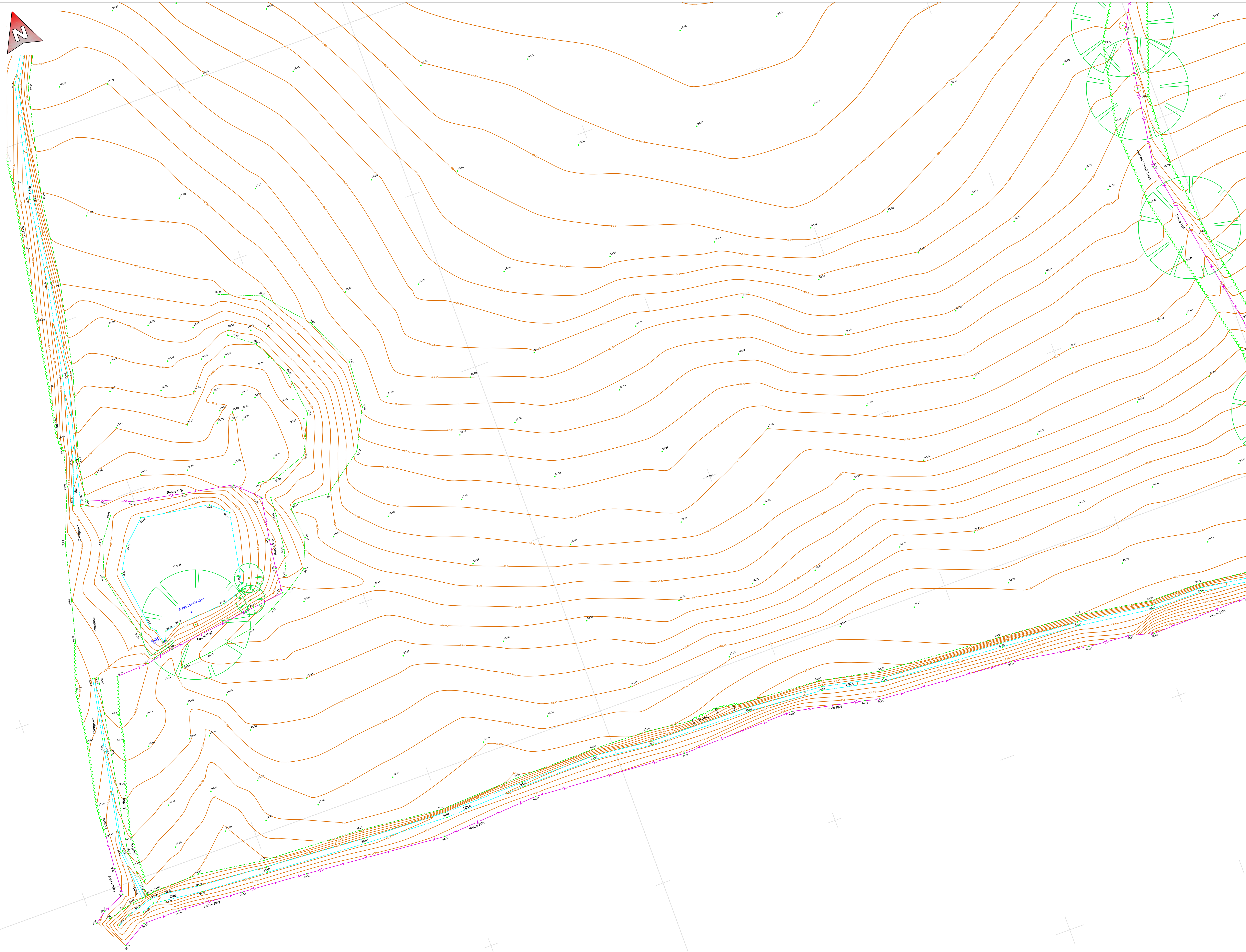
Client
Terence Lloyd
C/O Concept Town Planning

Project
Terrick Road
Whitchurch, Shropshire

Title
Existing Ground Level Survey
Sheet 1

BBS- BB- EGL- SU- 01 | - (Revision)
Originator | Initials | Detail | Type | Number | Revision

BBS- BB- EGL- SU- 02 -
Originator | Initials | Detail | Type | Number | Revision



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Building Heights

RIDGE
TILE
EAVES
SOFFIT

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REV	Date	Created By	Comments
-	12.01.19	BB	First Issue

Scale at A1	Project Number
1:250	2219-1530

Drawing Status
- [X] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

BBS
BB SURVEYS LTD
1 Chestnut Place, Cringleford
Norwich, Norfolk NR4 7BD
t: 01603 507917
m: 07786 388175
e: barry@bbsurveys.co.uk

Client
Terence Lloyd
C/O Concept Town Planning

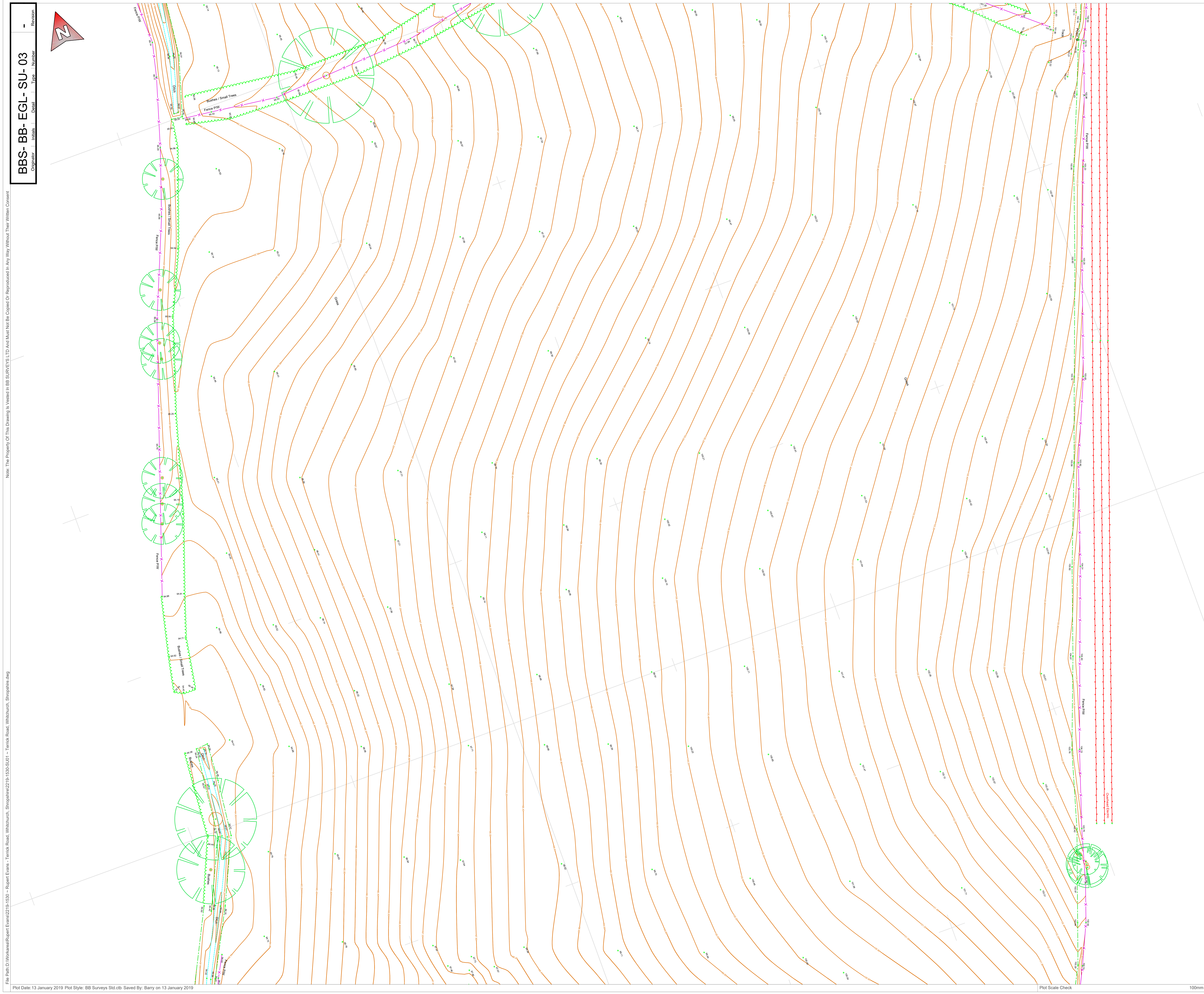
Project
Terrick Road
Whitchurch, Shropshire

Title
Existing Ground Level Survey Sheet 2

BBS- BB- EGL- SU- 02 | -
Originator | Initials | Detail | Type | Number | Revision

Sheet Size A1 841 x 594

BBS- BB- EGL- SU- 03 | -
Originator | Initials | Detail | Type | Number | Revision



Scale 1:250 — 0 5 10 15 20 25

Notes:

AV	Air Valve	FH	Fire Hydrant	SP	Sign Post
BB	Bottom Bank	FP	Footpath	STAY	Stay
BH	Bore Hole	G	Gully Grate	SV	Sluice Valve
BL	Lit Bollard	GV	Gas Valve	TAC	Tactile Paving
BOL	Bollard	Hedge	Hedge	TB	Top Bank
BIN	Bin	IC	Inspection Cover	TBOX	Telephone Box
BS	Bus Stop	IL	Invert Level	TL	Traffic Light
Bushes	Bush	KO	Kerb Outlet	TOK	Top Of Kerb
BT	BT Box	LP	Lamp Post	TP	Telegraph Pole
CAB	Cabinet	MH	Manhole	TRK	Track
CHNL	Channel	MP	Marker Post	TS	Traffic Sign MH
CL	Centreline	NB	Name Board	VENT	Vent
CONC	Concrete	P/W	Partition Wall	W	Water Cover
COL	Column	PB	Post Box	WL	White Line
DB	Ditch Bottom	PM	Parking Meter	WO	Wash Out
DCHNL	Drainage Channel	PO	Post	YL	Yellow Line
Door	Door	RE	Rodding Eye		
EEB	Electric MH Cover	Ridge	Ridge Level		
EP	Electric Pole	RP	Reflector Post		
ER	Earth Rod	RS	Road Sign		
ET	EP+Transformer	SETTS	Granite Setts		
Feeder	Feeder Pillar	SF	Safety Fence		

FCB	Close Boarded
FCL	Chain Link
FHD	Hoarding
FHR	Heras Fence
FPL	Pallisade
FPR	Post & Rail
FPW	Post & Wire
RAIL	Railings

Control Station
Column
X.XX Floor to Ceiling Height
X.XX F/C Floor to False Ceiling Height

Features

Fences — FCB 1.6h
Walls — Wall 1.2h
Hedges — Hedge 1.3h — Average root line shown.
Overhead Line — OHL — Indicative position of cables.

Services

Foul Sewers — 0.225Ø FW MH
Storm Sewers — 0.375Ø SW MH
Pipe position and alignment is indicative only.

Building Heights

RIDGE
TILE
EAVES
SOFFIT

SURVEY CARRIED OUT USING TRIMBLE S6 TOTAL STATION & TRIMBLE R10 GPS.

THE SURVEY HAS BEEN ACCURATELY POSITIONED ON THE ORDNANCE SURVEY NATIONAL GRID SYSTEM USING GPS OBSERVATIONS TO THE OS ACTIVE NETWORK AND AND THE LATEST ORDNANCE SURVEY TRANSFORMATION (OSTN15/OSGM15)

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Scale at A1	Project Number
1:250	2219-1530

Drawing Status
- [X] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

BBS BB SURVEYS LTD
1 Chestnut Place, Cringleford
Norwich, Norfolk NR4 7BD
t: 01603 507917
m: 07786 388175
e: barry@bbsurveys.co.uk

Client
Terence Lloyd
C/O Concept Town Planning

Project
Terrick Road
Whitchurch, Shropshire

Title
Existing Ground Level Survey
Sheet 3

BBS- BB- EGL- SU- 03 | -
Originator | Initials | Detail | Type | Number | Revision

File Path:D:\Workarea\Rupert Evans\Rupert Evans - Terrick Road, Whitchurch, Shropshire\2219-1530 ~ Rupert Evans ~ Terrick Road, Whitchurch, Shropshire\2219-1530-SU01 ~ Terrick Road, Whitchurch, Shropshire.dwg
Plot Date:13 January 2019 Plot Style: BB Surveys Std.ctb Saved By: Barry on 13 January 2019
Plot Scale Check 100mm
Sheet Size A1 841 x 594

Notes:

AV	Air Valve	FH	Fire Hydrant	SP	Sign Post
BB	Bottom Bank	FP	Footpath	STAY	Stay
BH	Bore Hole	G	Gully Grate	SV	Sluice Valve
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CAB	Cabinet	MH	Manhole	TRK	Track
CHNL	Channel	MP	Marker Post	TS	Traffic Sign MH
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FCB	Close Boarded
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FPL	Pallisade
FPR	Post & Rail
FPW	Post & Wire
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Control Station
Column
XXX Floor to Ceiling Height
XXX F/C Floor to False Ceiling Height

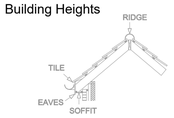
Features

Fences — FCB 1.6h
Walls — Wall 1.2h
Hedges — Hedge 1.3h — Average root line shown.
Overhead Line — OHL — Indicative position of cables.

Services

Foul Sewers — 0.225Ø — FW MH
Storm Sewers — 0.375Ø — SW MH — Pipe position and alignment is indicative only.

Building Heights



SURVEY CARRIED OUT USING TRIMBLE S6 TOTAL STATION & TRIMBLE R10 GPS.

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REV	Date	Created By	Comments
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Scale at A1: 1:250
Project Number: 2219-1530

Drawing Status
- [x] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

BB SURVEYS LTD
1 Chestnut Place, Cringleford
Norwich, Norfolk NR4 7BD
t: 01603 507917
m: 07786 388175
e: barry@bbsurveys.co.uk

Client: Terence Lloyd
C/O Concept Town Planning

Project: Terrick Road
Whitchurch, Shropshire

Title: Existing Ground Level Survey
Sheet 4

BBS- BB- EGL- SU- 04 | -
Originator | Initials | Detail | Type | Number | Revision

File Path:O:\Workarea\Rupert Evans\2219-1530 - Rupert Evans - Terrick Road, Whitchurch, Shropshire\2219-1530-SU01 - Terrick Road, Whitchurch, Shropshire.dwg
Plot Date:13 January 2019 Plot Style: BB Surveys Std.ctb Saved By: Barry on 13 January 2019
Plot Scale Check 100mm
Sheet Size A1 841 x 594

Scale 1:250 — 0 5 10 15 20 25

Notes:

AV	Air Valve	FH	Fire Hydrant	SP	Sign Post
BB	Bottom Bank	FP	Footpath	STAY	Stay
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Fences	FCB 1.6h	
Walls	Wall 1.2h	
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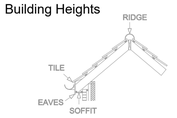

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Scale at A1: 1:250

Project Number: 2219-1530

Drawing Status

- [x] Existing Topographic Survey
- [ ] As Built Survey
- [ ] For Information

BB SURVEYS LTD
1 Chestnut Place, Cringleford
Norwich, Norfolk NR4 7BD
t: 01603 507917
m: 07786 388175
e: barry@bbsurveys.co.uk

Client: Terence Lloyd
C/O Concept Town Planning

Project: Terrick Road
Whitchurch, Shropshire

Title: Existing Ground Level Survey
Sheet 5

BBS- BB- EGL- SU- 05 (Originator | Initials | Detail | Type | Number) — - (Revision)

File Path:D:\Workarea\Rupert Evans\2219-1530 - Rupert Evans - Terrick Road, Whitchurch, Shropshire\2219-1530-SU01 - Terrick Road, Whitchurch, Shropshire.dwg
Plot Date:13 January 2019 Plot Style: BB Surveys Std.ctb Saved By: Barry on 13 January 2019
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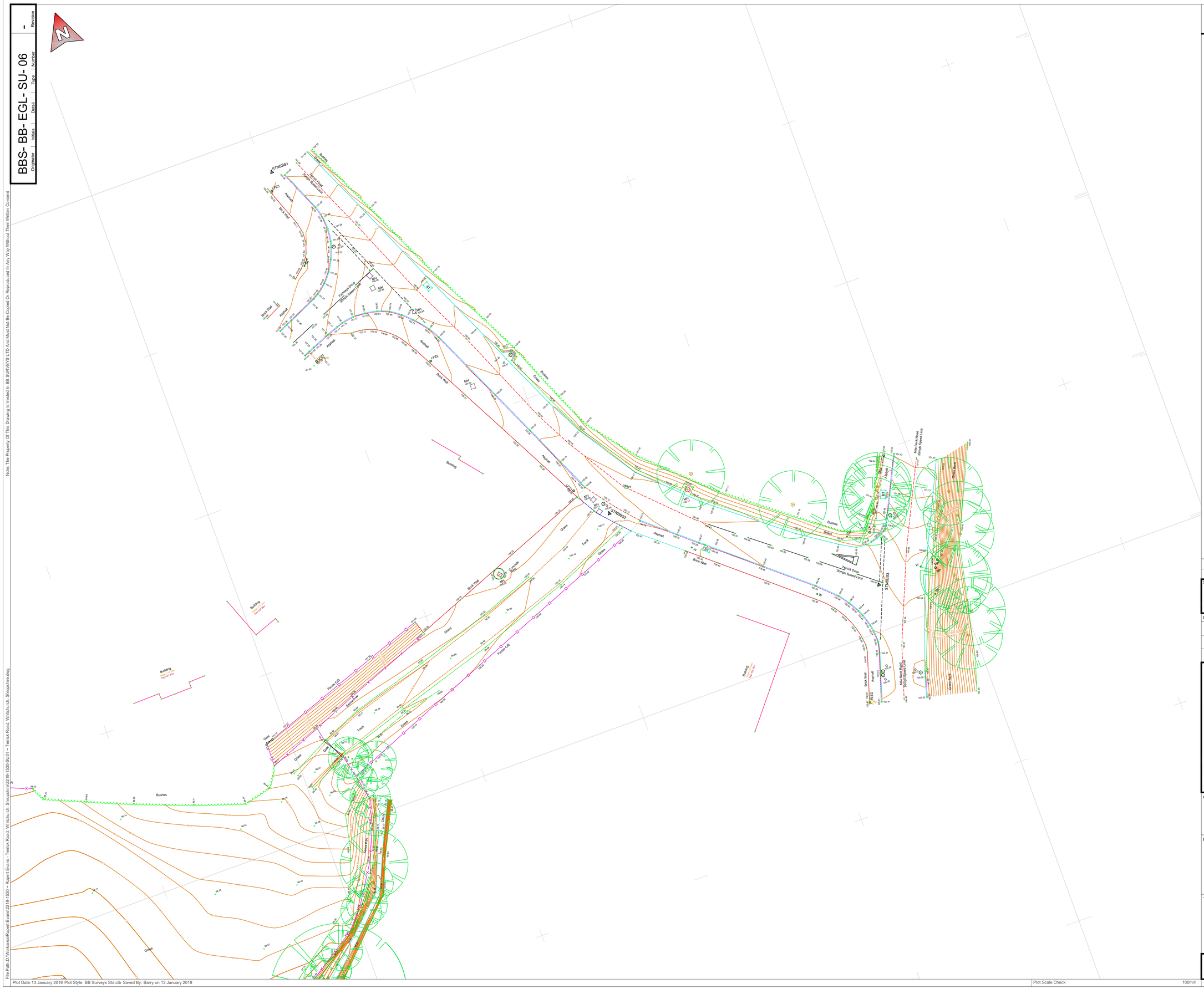

Scale 1:250 (0, 5, 10, 15, 20, 25)

Notes:

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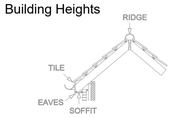

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Scale at A1: 1:250

Project Number: 2219-1530

Drawing Status

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BB SURVEYS LTD

1 Chestnut Place, Cringleford
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Client: Terence Lloyd
C/O Concept Town Planning

Project: Terrick Road
Whitchurch, Shropshire

Title: Existing Ground Level Survey
Sheet 6

BBS- BB- EGL- SU- 06 | Originator | Initials | Detail | Type | Number | Revision: -

Sheet Size A1 841 x 594

File Path D:\Workarea\Rupert Evans\2219-1530 - Rupert Evans - Terrick Road, Whitchurch, Shropshire\2219-1530-SU01 - Terrick Road, Whitchurch, Shropshire.dwg

Plot Date:13 January 2019 Plot Style: BB Surveys Std.ctb Saved By: Barry on 13 January 2019

Plot Scale Check 100mm


EVANS
Rivers and Coastal