Volume 3

ON BEHALF OF
Satnam Millennium Ltd

IN RESPECT OF

Outline application for a new residential neighbourhood including C2 and C3 uses; local employment (B1 use); local centre including food store up to 2000m², A1-A5 (inclusive) and D1 use class units of up to 600m² total (with no single unit of more than 200m2) and family restaurant/ pub of up to 800m2 (A3/A4 use); site for primary school; open space including sports pitches with ancillary facilities; means of access and supporting infrastructure at Peel Hall, Warrington

AT PEEL HALL, WARRINGTON

ENVIRONMENTAL STATEMENT
DOCUMENTS AND FIGURES

July 2016

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# DOCUMENT CONTROL

TITLE: VOLUME 3 – Environmental Statement Documents and Figures

PROJECT: Peel Hall, Warrington

JOB NO: 1820

CLIENT: Satnam Millennium Ltd

| | |
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| Prepared by: David Appleton / Dave Starkie | |
| Checked by: David Appleton | Date: 05.07.16 |
| Approved for distribution by: David Appleton | Date: 06.07.16 |

## Document

| Status | Description | Rev / date | By | Approved by | Issued to | Issue date | Comments |
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| FINAL | ENVIRONMENTAL STATEMENT DOCUMENTS AND FIGURES | - | DA | DA/DJS | CG | 07.07.16 | |
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## Revisions to Final Document

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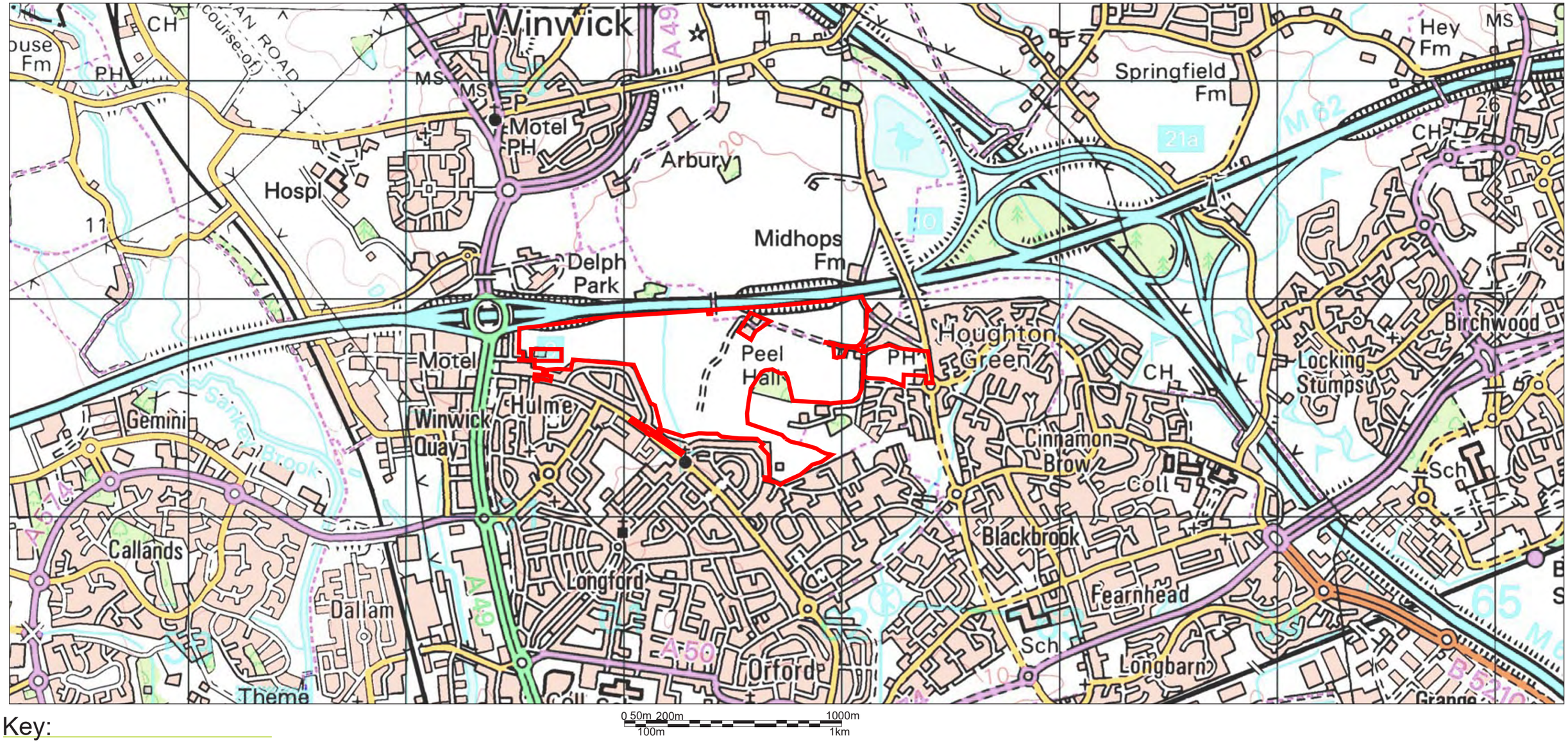
## BASELINE DOCUMENT AND FIGURES




Key:

- Site Boundary
- Motorways
- Settlement



# PEEL HALL, WARRINGTON

APP 1
Location and Context Plan
Scale: See scale bar

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Landscape Architecture • Ecology • Enviromental Planning & Assessment • Aboriculture


Key:

Site Boundary

# PEEL HALL, WARRINGTON

APP 2
Aerial Photograph
Scale: NTS

appletons

Landscape Architecture • Ecology • Enviromental Planning & Assessment • Aboriculture

formerly known as The Appleton Group
appletons
landscape architects and environmental consultants

Our Ref: 1820

Date: 23/10/2014

For the attention of: Daniel Hartley
Development Management
Warrington Borough Council
New Town House
Buttermarket Street
Warrington
WA1 2NH

By post and email

Dear Sir/ Madam

**Re: Proposed Development at Peel Hall, Warrington- Formal Scoping Report in accordance with the Town and Country Planning (EIA) Regulations 2011**

We are acting for Satnam Millennium Ltd, in respect of a proposed development situated on land adjacent to Peel Hall Farm, Warrington. Please accept this letter as a formal scoping report in the context of the EIA Regulations set out above as the proposal will fall into Schedule 2 of the Regulations as an urban development project where the development area exceeds 0.5 hectares.

**Details and scale of the proposed Development**

The location and context of the proposed development is shown on the attached plan. The development involves the construction of up to 1400 residential properties on land extending in area up to 64.5 hectares; together with a neighbourhood centre, ecological enhancement works and public open space; including new vehicular access from the local highway network from Mill Lane/ Blackbrook Ave and Poplars Ave.

The design parameters of the scheme to be submitted with this outline planning application are for residential properties that will be generally two storeys in height with some three storey properties. The density of the residential property will be compatible

with that of adjacent housing areas. The development will include extensive areas of structure landscaping and individual development parcels will also be landscaped as they come forward at the detailed planning application stage. In addition significant areas of habitat enhancement will be undertaken.

This scoping report has been prepared to, firstly assist WBC in identifying the issues that should be addressed and secondly, to put forward a framework for the preparation of the EIA by considering the potential significant effects that the proposals could have on the environment. The EIA will establish the existing situation and then assess the impact of the proposals individually and cumulatively on the baseline situation, both during construction and once the development is complete.

**Screening Opinion**

Schedule 2 of the Regulations states that EIA is only required if the development is within a sensitive area and it is likely to have significant effects on the environment by virtue of its size, nature and location. It is accepted, however, that an EIA will be required to accompany the proposed outline planning application since the scale of development exceeds the indicative screening threshold for Schedule 2 development requiring EIA contained within the Annex to National Planning Practice Guidance published in March 2014 (ref: 10(b), of 1000 dwellings, at which point an EIA is likely to be required.

**Proposed Format of the EIA**

Schedule 3 of the Regulations requires the consideration of the following:

The characteristics of the development

The location of the development

The characteristics of the potential impact

The EIA will be prepared in accordance with schedule 4 of the 2011 EIA Regulations and will include the following:

A) A description of the development

B) An outline of the main alternatives considered by the Applicant

C) A description of the aspects of the environment likely to be significantly affected by the development

D) A description of mitigation measures to be employed to reduce or offset any significant adverse effects on the environment

E) A non-technical summary of all the information provided

**Consultations**

When prepared the Environmental Statement will be advertised and made available for public viewing. Apart from any internal consultations that the Local Authority will wish to undertake it is anticipated that the statement will be subject to consultation with the parties listed below. A site notice and press notice will inform local residents of the submission of the EIA and where copie(s) can be viewed.

- The Environment Agency
- North West Water
- The Highways Agency
- Natural England
- English Heritage
- The Ramblers Association
- Cheshire Archaeology Planning Advisory Service
- The Police
- Winwick Parish Council

**Proposed topics of the Environmental Assessment**

The following topics are considered to be the relevant components of the Environmental Assessment as set out under item C) of paragraph above. In addition the planning context will be discussed, particularly in respect of alternative sites.

- Highways and transportation
- Hydrology, drainage and flood risk
- Ecology and nature conservation
- Landscape and visual amenity
- Archaeology/historic environment
- Noise pollution
- Air Quality
- Social infrastructure

- Soils
- Waste generation
- Cumulative Impact

We trust that this is an acceptable approach to the preparation of the Environmental Assessment and look forward to receiving the Local Authority's comments and /or alternative proposals within the formal timescale for a response within the statutory period.

Should you require any clarification or further information do please let us know.

Yours sincerely,

Director
Appletons

**Cc:**
Colin Griffiths
**Encs:**
Location and context plan no 1820/20

WARRINGTON
Borough Council

Professor Steven Broomhead
Chief Executive

Andy Farrall
Executive Director
Economic Regeneration, Growth & Environment
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WA1 2NJ

David Appleton
Appletons
17 Chorley Old Road
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BL1 3AD

**WARRINGTON BOROUGH COUNCIL - DEVELOPMENT SERVICES**

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS 2011 REGULATION 13 SCOPING OPINION**

**LOCATION: LAND AT PEEL HALL, WARRINGTON.**

**PROPOSAL: DEVELOPMENT OF UP TO 1400 RESIDENTIAL PROPERTIES, NEIGBOURHOOD CENTRE, ECOLOICAL ENHANCEMENT WORKS AND PUBLIC OPEN SPACE INCLUDING NEW VEHICULAR ACCESS.**

This scoping opinion is prepared in accordance with Regulation 13 of the EIA Regulations 2011 and relates to the development proposal set out in your scoping report letter dated 24th October 2014. This letter comprises the adopted scoping opinion of the Council.

The site is an area of land extending up to 64.5 hectares to the south of the M62 motorway. Your email of 4th November 2014 sets out the likely effects of the proposed development in relation to the topic areas set out in the scoping report letter.

The scoping report letter of 24th October 2014 advises that the EIA will establish the existing situation and then assess the impact of the proposals individually and cumulatively on the baseline situation, both during construction and once the development is complete. Your scoping report letter goes on to advise that the EIA will be prepared in accordance with schedule 4 of the regulations and that the proposed topics of the EIA considered relevant include;

- Highways and Transportation
- Hydrology, drainage, flood risk
- Ecology and nature conservation
- Landscape and visual amenity
- Archaeology/ historic environment
- Noise pollution
- Air Quality

- Social Infrastructure
- Soils
- Waste generation
- Cumulative impact
- Planning context and alternative sites.

I confirm that the above topics are considered to deal with the areas of potential significant environmental effects to be assessed within the Environmental Statement, based on the level of information provided in the scoping report letter.

A full set of consultee comments regarding the scoping request are attached at Appendix 1 and summarized as follows;

Environment Agency
The development is located within Flood Zone 1 and the site exceeds 1 hectare therefore a Flood Risk Assessment (FRA) will be required in support of any planning application for the site. Please see consultation response letter for comments relating to the detail of the FRA as well as advice re discharge of surface water.

The watercourse running through the site is classified as an ordinary watercourse.

In relation to biodiversity the EA seek the protection and enhancement of Spa Brook and the ditches onsite. Consideration should be given to enhancing the habitat of Spa Brook for wildlife. There should also be an adequate, undeveloped buffer zone between the development (e.g. garden fences, footpaths, access roads) and all watercourses, ditches and ponds onsite. This includes the protection and enhancement of Radley Plantation & Pond Local Wildlife Site.

Appropriate ecological surveys of the site should also be carried out at the appropriate time of year with recognised techniques. We are aware of legally-protected species records in this part of Warrington, such as water vole (*Arvicola amphibius*) and great crested newt (*Triturus cristatus*).

In developing plans the EA advise that you should be aware of the Water Framework Directive (WFD). In particular the requirement that nothing be done to a water body which would cause its condition (in WFD terminology – chemical status or ecological status) to deteriorate. Measures should be in place to ensure that no part of this development should affect the waterbodies ability to reach good ecological status/potential by 2027 and ideally should help move it towards good.

In exercising their functions, all public bodies and statutory undertakers (that is most reporting authorities) have a duty to have regard to the objectives of the River Basin Management Plans or their supplementary plans.

This site falls within waterbody GB112069061010 (MSC, Irlam to Howley Weir). It is within the Weaver Gowy Management Catchment.

The overall status of the waterbody is Moderate. The waterbody fails for the following elements:
Fail (Mercury)
Bad (Inverts)
Poor (Phosphate, Ammonia)
Moderate (Macrophytes, Dissolved Oxygen, Phytobenthos)

The waterbody is a Heavily Modified water body (HMWB) and the following mitigation measures have been identified as needed for this waterbody to reach good ecological potential.

- Alteration of channel bed (within culvert)
- Appropriate channel maintenance strategies and techniques - minimise disturbance to channel bed and margins
- Appropriate channel maintenance strategies and techniques - woody debris
- Appropriate techniques to align and attenuate flow to limit detrimental effects of these features (drainage)
- Appropriate water level management strategies, including timing and volume of water moved
- Educate landowners on sensitive management practices (urbanisation)
- Ensure that good status of dissolved oxygen levels is being achieved downstream of the impounding works
- Ensure that the thermal regime in waters downstream of the impounding works is consistent with good status conditions.
- Ensure there is an appropriate baseline flow regime downstream of the impoundment.
- Flood bunds (earth banks, in place of floodwalls)
- Improve floodplain connectivity
- Maintain sediment management regime to avoid degradation of the natural habitat characteristics of the downstream river.
- Operational and structural changes to locks, sluices, weirs, beach control, etc
- Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone
- Preserve and, where possible, restore historic aquatic habitats
- Provide flows to move sediment downstream.
- Re-engineering of the river where the flow regime cannot be modified.
- Re-opening existing culverts
- Retain marginal aquatic and riparian habitats (channel alteration)
- Sediment management strategies (develop and revise)
- Set-back embankments
- Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works.

A WFD assessment maybe required as part of the EIA. The work done for other parts of the EIA will contribute to the WFD section. WFD assessment should where possible indicate how the proposed scheme contributes to the delivery of WFD objectives and must demonstrate that the proposed scheme does not:

- Cause deterioration in the status of any waterbody through deterioration in the status of the Biological Quality Elements (BQEs) or
- Compromise the ability of the water body to achieve its WFD status objectives

Highways Agency – DCLG and DfT joint publication "Guidance on Transport Assessment" is a useful guide in terms of assessing transport implications of land use and development application proposals and this is a useful guide when producing a Transport Assessment. The Agency is happy to work with the developer regarding these proposals and will look to ensure the delivery of proposals in such a way that they minimize additional burden at the Strategic Road Network.

Public Health – As well as the impact of development on schools and health/ social care facilities there should be an assessment of the sports and leisure facilities. Sustainable modes of travel should be considered and that the application enhances access to other modes of transport. The EIA should also consider proximity to the motorway and AQMA. Sustainable design and energy efficiency of new houses and affordability should be addressed within the EIA.

HSE – The HSE's principal concerns are the health and safety of people at work and those affected by work activities. Therefore HSE cannot usefully comment on what information should be included in the environmental statement of the proposed development. However Environmental Statements should not include measures which would conflict with requirements of the Health and Safety at Work Act 1974 and its relevant statutory provisions. As the proposed development site lies within the consultation distance of a major accident hazard pipeline HSE should be consulted, through PADHI+, should a planning application subsequently be submitted for the proposed development.

Natural England – Detailed advice related to EIA scoping requirements included at Annex A of the letter.

Coal Authority – Whilst the proposed development falls within the defined coalfield, it would be located outside of the Development High Risk Area. It is also not within an area of surface coal resource. Accordingly the Coal Authority has no comments to make on the content of the Environmental Statement and the Coal Authority would not expect to be consulted on any future planning application and the LPA should refer to the standing advice informative note.

Greater Manchester Ecology Unit – recommendations regarding the scope of ecological surveys required to inform the EIA (see consultation response).

WBC Highways -
Given the scale of the proposed development, an outline application should not be accepted by the Local Planning Authority unless access is included as a detailed matter.

To provide certainty in respect of the proposed access arrangements, the applicant will be required to demonstrate that the proposed access arrangements serving the development are deliverable by the applicant.

An access strategy for the site (which details sustainable transport provision across the site, and highway provision in accordance with the Councils design standards) should be agreed with the Local Highway Authority prior to submission of the outline application.

Notwithstanding the above, a detailed Transport Assessment (TA) will need to be submitted in support of the proposals. The scope of the TA should be agreed with the Local Highway Authority and the Highways Agency prior to commencement of its preparation.

Environmental Protection – The site covers a few smaller plots of potentially contaminated land. Within this includes a number of mast sites, infilled ponds and a former sewage disposal plot. Preliminary desk study should be carried out to determine the potential issues that the ground may pose and to further establish whether mitigation measures would be necessary to protect future residential amenity from any found issues on site. Please refer to the Environmental Protection Supplementary Planning Document for further advice.

The northern end of the site will be impacted upon by the AQMA declared for nearby to the M62 motorway. A fully detailed Air Quality Assessment will be required – again for detailed advice please refer to the Environmental Protection SPD. In relation to noise, the site will be significantly and adversely impacted by the close proximity to the M62 motorway. Noise must be assessed in detail and it is expected that a number of properties would require fairly extreme acoustic mitigation measures. A fully detailed acoustic assessment, including modelling of noise contours, the effect of the proposed built form and then further detail on mitigation measures on a plot by plot basis for some areas will be necessary. Further advice relating to noise monitoring and residential noise requirements therein is set out in the Environmental Protection SPD.

Cheshire Archaeology Planning Advisory Service (CAPAS) - It is noted that archaeology and the historic environment will be considered further in the proposed Environmental Impact Assessment and that English Heritage and CAPAS will be consulted. It is advised that this represents an appropriate approach but it may be helpful to know that the whole site was subject to a programme of desk-based assessment and field evaluation c 14 years ago in connection with an earlier scheme for the development of the area. This process identified the remains of the medieval Peel Hall moat to the south of the present building of that name and also defined an area of early ditches in the north-east corner of the application area. These two areas continue to comprise the main areas of archaeological interest within the site and the proposed study should contain recommendations for further mitigation in these two areas (preservation in situ, further excavation, etc).
There is unlikely to be a need for further field evaluation in view of the amount of trenching carried out with regard to the earlier scheme but the proposed

desk-based study should incorporate information that has been added to the Cheshire Historic Environment Record since the preparation of the last study and the results of projects such as the Cheshire Historic Landscape Characterisation Project.

Flood Risk Officer – The land adjacent to Peel Hall Farm has non main watercourses in a few locations on the site. The Flood Risk Assessment and Drainage Strategy must outline proposals to manage these watercourses and the subsequent surface water run of from the development.

Please note that this scoping opinion does not preclude the local planning authority from subsequently requiring the developer to submit further information in connection with any submitted planning application to the Council.

DATE OF REQUEST FOR SCOPING OPINION RECEIVED: 24th October 2014

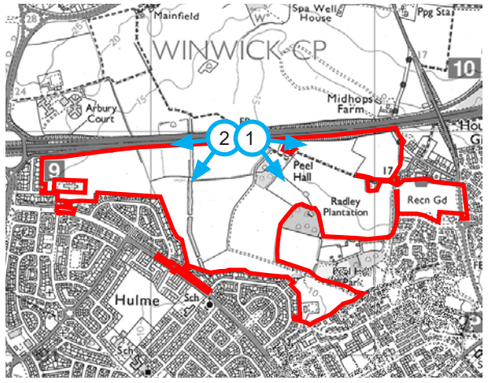
DATE SCREENING OPINION ISSUED: 28th November 2014

**Andy Farrall**
**Executive Director of Economic Regeneration, Growth and Environment**

**Appendix 1 – Copies of consultation responses in full**


Photograph 1 -


Photograph 2 -




# PEEL HALL, WARRINGTON

APP 5
Site Photograph Sheet 1
Scale: NTS

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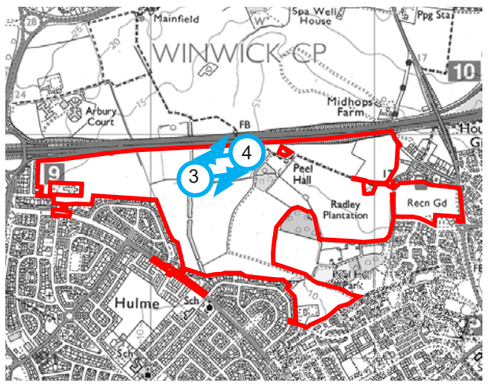
Landscape Architecture • Ecology • Environmental Planning & Assessment • Aboriculture


Photograph 3 -


Photograph 4 -




# PEEL HALL, WARRINGTON

APP 5
Site Photograph Sheet 2
Scale: NTS

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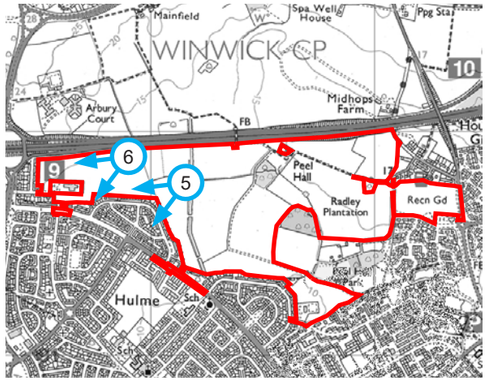
Landscape Architecture • Ecology • Environmental Planning & Assessment • Aboriculture


Photograph 5 -


Photograph 6 -




# PEEL HALL, WARRINGTON

APP 5
Site Photograph Sheet 3
Scale: NTS

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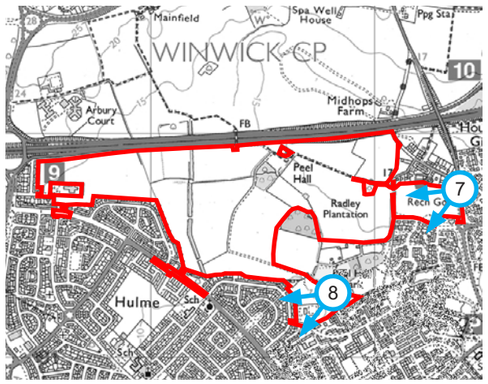
Landscape Architecture • Ecology • Environmental Planning & Assessment • Aboriculture


Photograph 7 -


Photograph 8 -




# PEEL HALL, WARRINGTON

APP 5
Site Photograph Sheet 4
Scale: NTS

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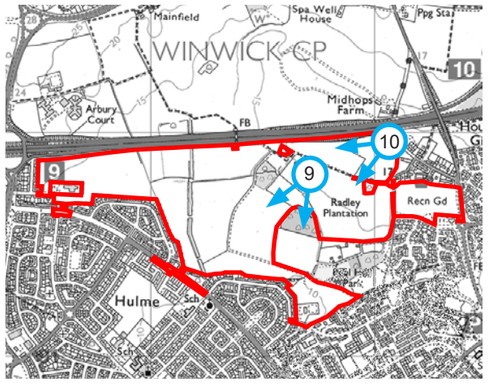
Landscape Architecture • Ecology • Environmental Planning & Assessment • Aboriculture


Photograph 9 -


Photograph 10 -

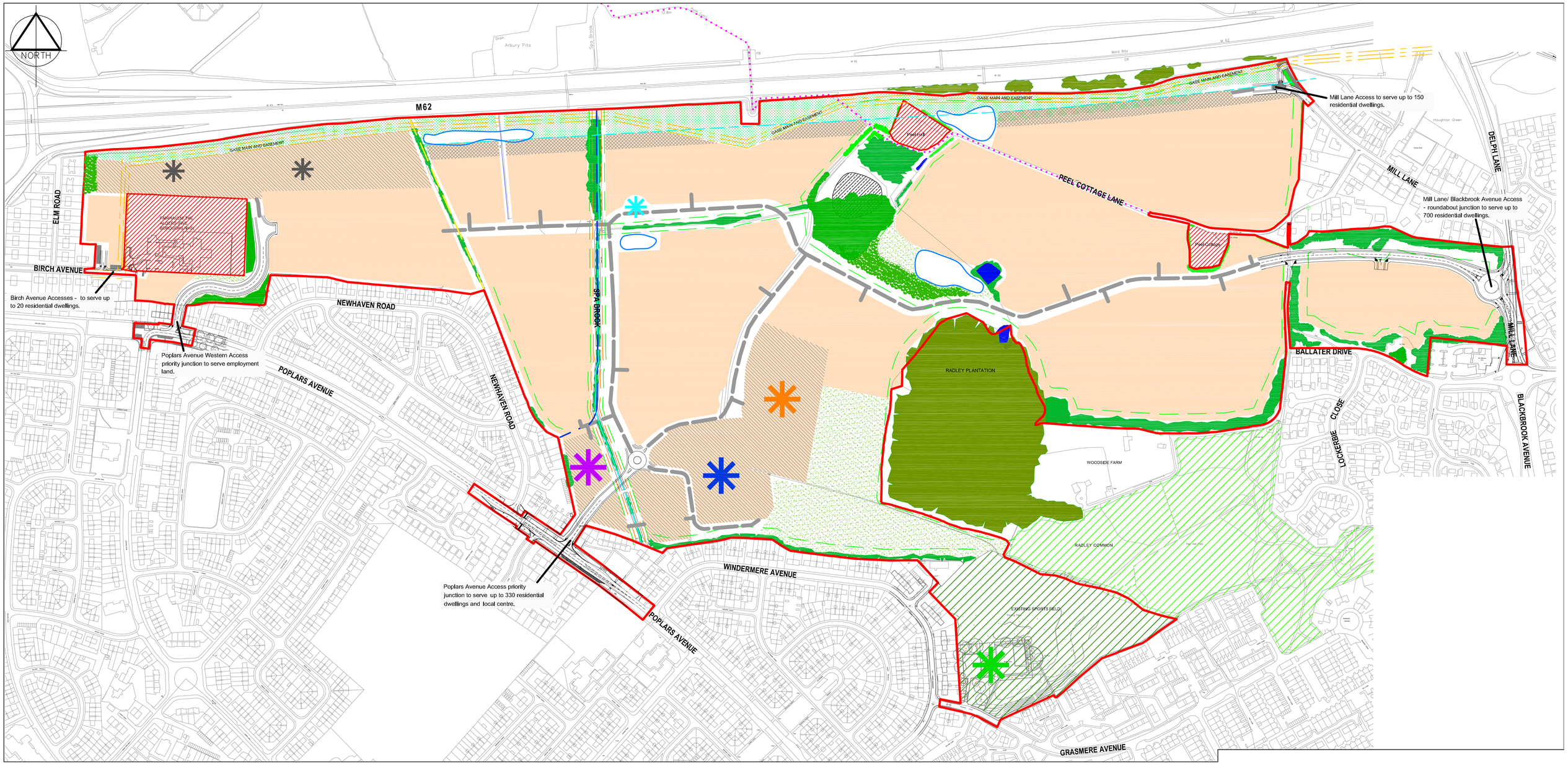



# PEEL HALL, WARRINGTON

APP 5
Site Photograph Sheet 5
Scale: NTS

appletons

Landscape Architecture • Ecology • Environmental Planning & Assessment • Aboriculture




## KEYS

- Site Boundary
- Boundary between the historic townships of Arbury and Winwick (Important Hedgerow)
- Existing Culvert
- 10m Foraging bat corridor
- Location for Care Home
- Location for Community Facility
- Area suitable for apartments with mechanical ventilation
- Areas within Site boundary and excluded from the development
- Peel Hall Manor Farm Moat Area (Archeological Feature)
- Existing hedgerows to be retained
- 40m Bufferzone to M62 (Air Quality & Noise)
- Location for Local Centre
- Proposed Tree/ Shrub Planting
- Existing sports field/ facilities
- Public right of way
- Gas Main and Easement
- Existing Pond to be retained
- Developable Land to include for pedestrian and cycle links between plots.
- Location for Employment Area
- Proposed Sports Pitches/ Public Open Space
- Radley Common
- Boundary between the historic townships of Arbury and Houghton (Important Hedgerow)
- 8m Water Vole buffer zone to Spa Brook.
- Existing areas of woodland trees and vegetation to be retained.
- Indicative Road Line
- Location for Primary School
- Proposed wildlife corridor
- Location for Bus Gate
- Existing areas of off site vegetation

# PEEL HALL, WARRINGTON

## Parameters Plan

| | |
|---|---|
| Project: PEEL HALL, WARRINGTON | |
| Title: Parameters Plan | |
| Client: Satnam Millennium Ltd | |
| Date: 21.10.15 | Scale: 1:2,500@A1 |
| Drawn: SW/ DS | Drawing No.: 1820_24 |
| Checked: DA/ DS | Revision: W |

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Landscape Institute Registered practice

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Web: www.appletons.uk.com Email: info@appletons.uk.com


## Key:

Site Boundary

*Post 1988*

Grade 2

Grade 3A

Grade 3B

Grade 4

Other

# PEEL HALL, WARRINGTON

APP 7

Scale: NTS

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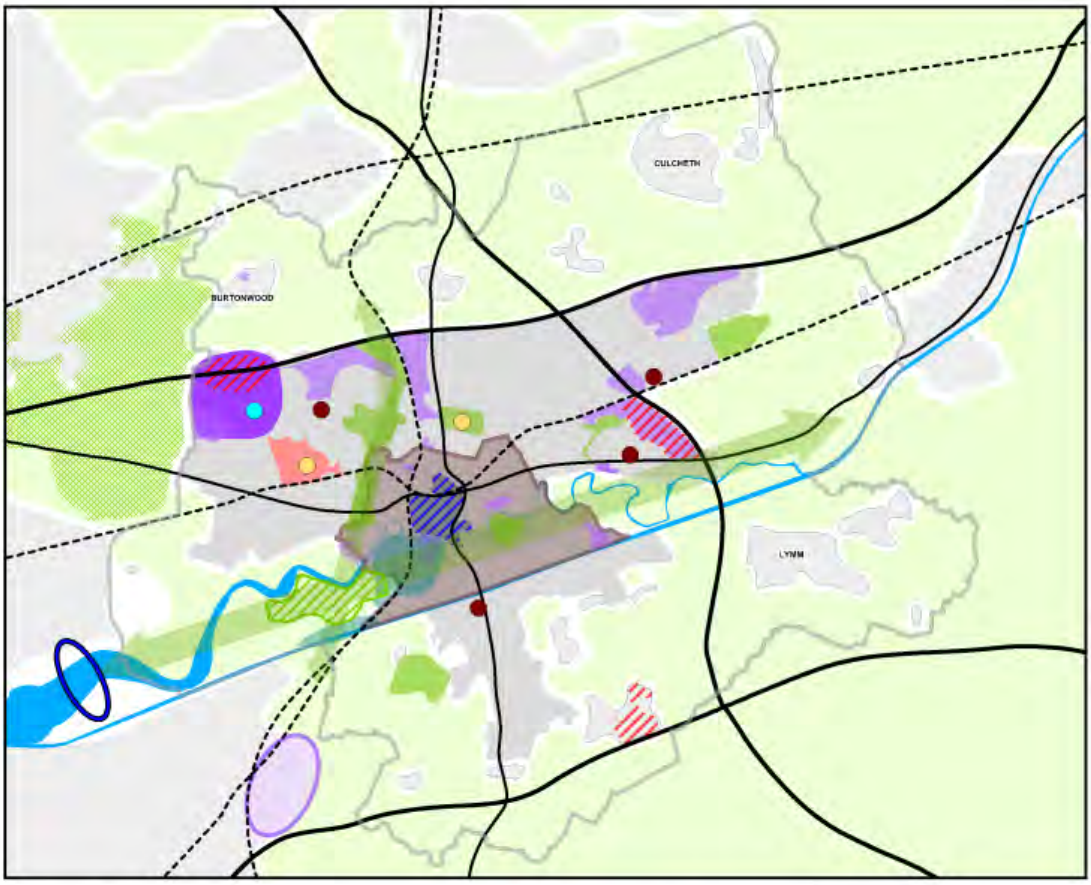
Landscape Architecture • Ecology • Enviromental Planning & Assessment • Aboriculture

# 5 Key Diagram




- Suburban Areas
- Countryside Settlements
- Inner Warrington
- Town Centre
- Strategic Proposal: Omega & Lingley Mere
- Existing Employment Locations
- Preferred Office Location
- Preferred Distribution Locations
- Daresbury Employment Area (Outside Borough)
- Bold Forest Park (Outside Borough)
- Chapelford Urban Village
- Strategic Proposal: Waterfront & Strategic Opportunity: Port Warrington
- Mersey Gateway (Outside Borough)
- Potential Future Country Park
- Green Belt
- Major Parks / Green Infrastructure
- Strategic Green Links
- Existing Hubs and District Centres
- Proposed Hubs and Centres
- Potential Omega Hub

**Figure 5.1 Warrington Local Plan Core Strategy Key Diagram**

# Strategic Housing Land Availability Assessment (SHLAA)

## Appendix 1 Site Proformas
## Poplars & Hulme Ward

Growing a Strong Warrington

WARRINGTON
Borough Council

# SHLAA Reference - 1506

**Site Name: Peel Hall**

**Site Address: South of the M62 East of the A49**

**Ward: Poplars & Hulme**

**Existing Use: Vacant Land**

| | | |
|---|---|---|
| **Gross Site Area (Ha):** 59.45 | **Net Developable Site Area (Ha):** 44.5875 | **SHLAA Year:** 2009 |

**Planning Permission History:** N/A

**Green Belt:** No

**GF / PDL:** GF

**Flood Zone:** 1

**Contaminated Land Issues**: Yes

**Ground Conditions Issues:** Yes - Capable of being resolved

**Site Access Issues:** Yes - Capable of being resolved

**Surrounding Land Issues:** Yes - Capable of being resolved

**Infrastructure Issues:** Yes - Further evidence required

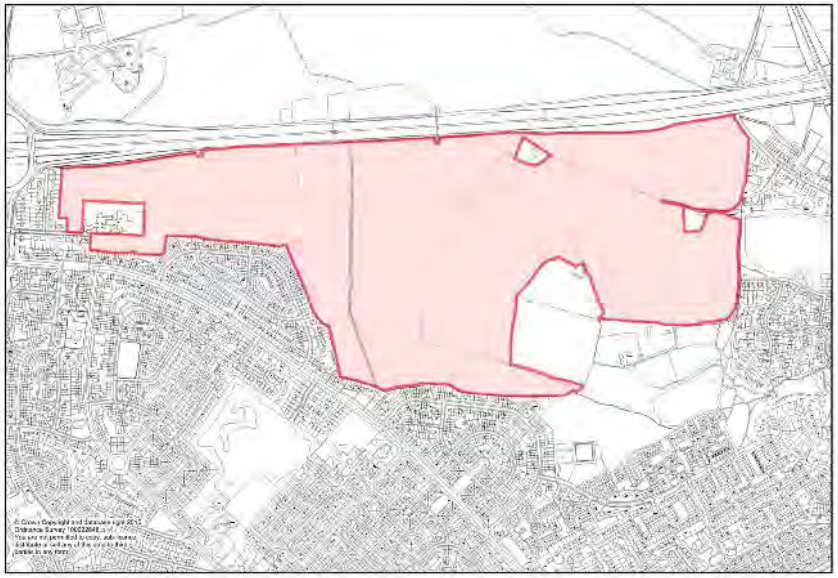
**Hazardous Installations Issues:** Yes - Further evidence required

**Amenity Issues:** No

**Ownership / Tenancy Issues:** No

## Concluding Comments:

**Based on information provided by the landowner / developer, the site is considered constrained to be suitable, available and achievable and is of a sufficient scale to overcome existing constraints and infrastructure requirements, particularly if apppropriately phased.**



**Active Use:** No

**Site Developable Now:** No

**Promotion by Owner:** Yes

**Developer Interest:** Yes

**Known Demand for Housing:** Yes

**Similar Sites Developed Nearby in last 5 years:** Yes

**Suitable: Yes**

**Available: Yes**

**Available in the future: N/A**

**Achievable: Yes**

**Recommended Gross Capacity: 1480**

**Residual Net Capacity: 1480**

**Previous Completions on site: 0**

**Deliverable 2015-2020: 150**

2015/16:

2016/17:

2017/18: 30

2018/19: 60

2019/20: 60

**Developable 2020-2025: 635**

2020/21: 120

2021/22: 235

2022/23: 180

2023/24: 75

2024/25: 25

**Developable 2025-2030: 550**

2025/26: 90

2026/27: 180

2027/28: 155

2028/29: 110

2029/30: 15

2030+: 145

## Concluding Recommendation: Suitable, available and achievable

# SHLAA Reference - 1649

**Site Name: Peel Hall Playing Fields**

**Site Address: Off Ballater Drive**

**Ward: Poplars & Hulme**

**Existing Use: Open space**

| | | |
|---|---|---|
| **Gross Site Area (Ha):** 4.3 | **Net Developable Site Area (Ha):** 3.225 | **SHLAA Year:** 2009 |

**Planning Permission History:** N/A

**Green Belt:** No

**GF / PDL:** GF

**Flood Zone:** 1

**Contaminated Land Issues**: No

**Ground Conditions Issues:** Yes - Capable of being resolved

**Site Access Issues:** No

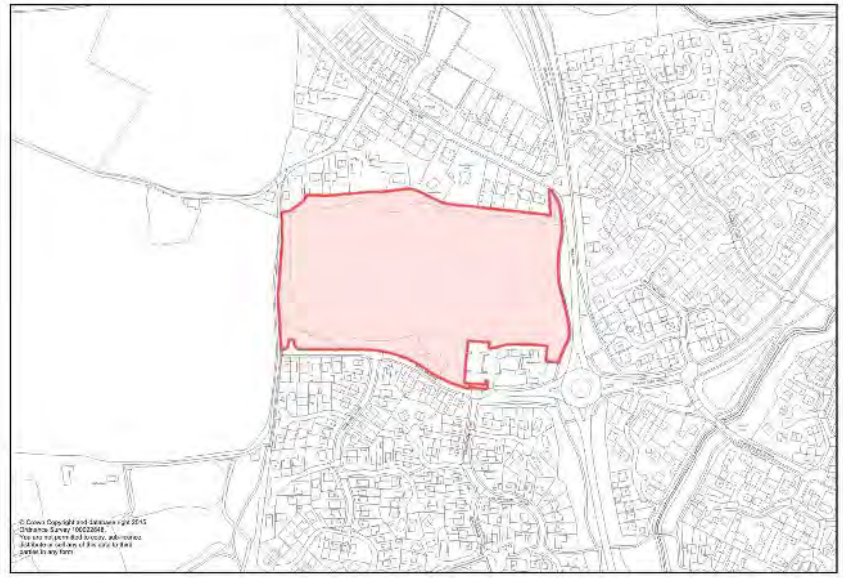
**Surrounding Land Issues:** No

**Infrastructure Issues:** No

**Hazardous Installations Issues:** No

**Amenity Issues:** No

**Ownership / Tenancy Issues:** No



**Active Use:** Yes

**Site Developable Now:** No

**Promotion by Owner:** Yes

**Developer Interest:** Yes

**Known Demand for Housing:** Yes

**Similar Sites Developed Nearby in last 5 years:** Yes

**Suitable: Yes**

**Available: Yes**

**Available in the future: N/A**

**Achievable: Yes**

**Recommended Gross Capacity: Constrained**

**Residual Net Capacity: Constrained**

**Previous Completions on site: 0**

**Deliverable 2015-2020: 0**

2015/16: 2016/17:

2017/18: 2018/19:

2019/20:

**Developable 2020-2025: 0**

2020/21: 2021/22:

2022/23: 2023/24:

2024/25:

**Developable 2025-2030: 0**

2025/26: 2026/27:

2027/28: 2028/29:

2029/30:

2030+:

## Concluding Comments:

**Site is considered suitable but development is currently constrained. Site to be reviewed on an annual basis.**

## Concluding Recommendation: Constrained

## Appendix 7 – Peel Hall History note

### The Lancashire County Development Plan

1. Peel Hall was originally located within the administrative County of Lancashire and was shown in the 1956 Lancashire County Development Plan as White Land, partly included within the area of the Padgate and Penketh Town Map.

2. In September 1960, Lancashire County Council submitted an alteration to the Lancashire County Development Plan which was never approved. This proposed an extension to the South Lancashire Green Belt to include Peel Hall. Following the submission of the alteration to the Lancashire County Development Plan in September 1960, a review to the Padgate and Penketh Town Map was submitted in 1963 again showing Green Belt across the eastern portion of Peel Hall. Houghton Green was shown as a settlement washed over by the Green Belt. As with the submitted alteration to the Lancashire County Development Plan however, this Town Map review was never approved. It should be noted that the now completed Cinnamon Brow and Ballater Drive housing areas to the east of Peel Hall and the various new proposals at Mill Lane / Radley Lane were also shown in the submitted plans as Green Belt.

### The New Town Outline Plan

3. Following the designation of Warrington as a New Town in 1968 the Warrington New Town Outline Plan was approved in 1973 and most of the Peel Hall area was located within the New Town area, divided almost equally between residential and open space notations. The remainder was shown as White Land in the Lancashire County Development Plan.

4. The Warrington New Town Development Corporation prepared a series of District Area Plans for each of the main districts of the New Town in order to show Outline Plan proposals in greater detail. These were not subject to statutory consultation or formal approval. The Padgate District Area Local Plan was produced in 1975 and relates to the Peel Hall and Cinnamon Brow areas. This plan generally confirms the pattern of development proposed in the outline plan and shows housing on part of Peel Hall. Its detailed programmes, however, apply more particularly to the Cinnamon Brow area to the east, which was to be developed within the earlier phases of the overall New Town programme.

5. In 1977, the Secretary of State reviewed the future of all New Towns in England and Wales. At that stage, he removed Warrington's specific target population growth figure in recognition of a reduced need to accommodate urban over spill within the region, replacing this with a guideline population growth figure which pointed to an expected population of about 160,000 by the mid-1980s with continuing momentum probably taking this to 170,000 by 1990.

6. As a result of this, it was clear that not all the allocated land would have to be developed by 1990 and the Development Corporation removed certain areas from the development programme. Principally, these were Bridgewater East in the south and most of Peel Hall in the north, except for about 25% of the allocated area to the east of Radley Lane (which is now developed as Ballater Drive). The removal of the majority of Peel Hall was consistent with doubts held by the CNT at that stage regarding the viability of developing the area, at

least in the short to medium term, due to the prospect of mining subsidence and problems of foul and surface water drainage (since overcome).

7. The Outline Plan was not formally reviewed to reflect these changes so in respect of Peel Hall, the 1973 allocations remained intact. It would thus have been open to the Development Corporation (or its successors) to reopen the question of releasing the area for development at a later date (as has occurred in the case of Bridgewater East).

8. In accordance with the Outline Plan, that part of Peel Hall lying to the east of Radley Lane was committed to housing development in 1980 and approximately 200 houses have now been completed there (Ballater Drive). The Development Corporation's application to the Secretary of State for permission for that development suggested the remaining open land would stay undeveloped with the easterly part having potential for, but no commitment as, public open space and the westerly part remaining in agricultural use. It was in any event the Development Corporation's view at that time that development of the wider Peel Hall area was uneconomical due to drainage problems and mining subsidence. The development of Ballater Drive, approved in 1980, was thus seen as rounding off the Cinnamon Brow area. Its access system was designed to serve only the reduced amount of development being proposed and it was promoted as a self-contained development.

9. The answers to some of these questions were put forward in a report to an ad hoc Sub-Committee of the Development Services Committee in December 1986 where the acting Planning and Estates Officer evaluated the comparative developability of all possible future development sites taking into account advice on both highway and drainage matters. Each site was considered in turn and a preliminary conclusion reached as to the prospects of development. The sites were then ranked and recommendations made as to which should be established as Areas of Search for the post 1991 period.

10. In respect of the Peel Hall area, the report indicated that potential difficulties in developing the site were envisaged but that it should not be discounted as an Area of Search until compared with other sites. The report concluded that there appeared to be no alternative provision for substantial amounts of new housing in the northern part of the New Town, once the existing commitments and programme developments at Westbrook had been completed. Although it emerged that there were no other easy developable sites in North Warrington, it was recommended that Peel Hall be dropped from the list of proposed Areas of Search as the likelihood of the development being possible there was seen as remote.

11. The ad hoc Sub-Committee, whilst appreciating these difficulties, took the view that they did not justify an absolute presumption against development of at least part of the site prior to 2001 (the proposed end date of the Structure Plan). It concluded that in the long term, as land for development became scarcer, the benefits of developing this area, which could not be seen as playing a vital Green Belt role, may outweigh the high infrastructure costs. It was also seen as a means of providing continuing development opportunities in the northern part of the Borough through the 1990s.

12. A Development Services Committee in January 1987 endorsed the ad hoc Sub-Committee's view in recommending an overall package of further action on the Local Plan. The acting Planning and Estates officer pointed out that it would be necessary to formally deposit for public comment a number of amended or newly proposed modifications on the basis that the public had been unable to comment on these at the earlier proposed modification stage with a view to deciding in the light of any objections which may be made if a second public

inquiry was needed. He stressed, however, that further public observations were not to be invited at that stage on the originally proposed modifications which Committee did not wish to alter. These included the proposed Area of Search at Peel Hall.

13. In late 1986, the Health Authority was refused planning consent for housing on the western part of Peel Hall in its ownership, i.e. off Birch Avenue. This refusal cited reasons of prematurity, the land in question being part of the larger Area of Search, and highways. Since the Borough still had a 7 - 8 year supply of housing land, they saw no pressing need to release unallocated land at that stage. The Borough Council held the view that it was vital that the land be held back from development so that proposed Green Belt boundaries elsewhere could be maintained in the longer term. The Health Authority appealed against this decision and in dismissing the appeal, the Inspector relied entirely on the prematurity reason. He made it clear that the Health Authority land formed part of the wider Peel Hall area to the north of which the M62 formed the inner Green Belt boundary, and that as an Area of Search, it might eventually be released as part of an orderly programme of phased development.

14. In January 1988, the Development Services Committee reviewed the OWLP. This was triggered mainly by the fact that the Council had not, by then, published its response to objections to the Proposed Modifications since it had been felt prudent to wait until the County Council had produced a draft of Cheshire 2001 before proceeding. It was thus decided that a revised draft be prepared, looking to an end date of 2001 rather than 1991. Committee accepted that this would mean that at least a large proportion of the previously proposed Areas of Search would have to be firmly allocated for development by 2001.

15. In January 1988, it was agreed that the draft Local Plan should be put to Committee as soon as possible after the draft Cheshire 2001 had been published. It was also agreed that in the meantime, the proposals of the OWLP should be adopted for Development Control purposes, which followed the established Structure Plan boundary, once again, of the M62 as the inner boundary of the Green Belt in this location.

**The Warrington Borough Local Plan**

16. In spite of this, however the Council's Development Services Committee decided in December 1988 that progress on the OWLP be suspended in favour of the preparation of a single Local Plan for the whole of the Borough, the Warrington Local Plan. This would run to 2001 and would be consistent with Cheshire 2001.

17. An application for Bridgewater East was made by the CNT in 1989 and sought release of the area for approximately 1,650 houses, business park and a local centre. The Secretary of State approved only a proportion of the development - approximately 810 houses and a local centre.

18. In October 1989, the preliminary draft of the Warrington Borough Local Plan was reported to Committee. This plan proposed to define the environmentally acceptable limits of growth by setting out realistic and defensible Green Belt boundaries, and the areas of white land excluded from the Green Belt were seen as a means to meet future development needs arising in the Borough after 2001. Peel Hall was notated as such an area and the M62 used yet again as the inner boundary of the Green Belt at this location. The Plan was not however progressed and was superseded by the Consultation Draft Plan of 1990. (See later).

19. In November 1989 an inquiry was held into the non-determination of an application for residential development on 22 acres of land off Mill Lane, part of the Peel Hall area. This application was submitted by Vale Royal Investments Limited (a subsidiary at the time of Satnam Investments Limited) and the ensuing appeal was dismissed by an Inspector's Report and Decision letter in February 1990.

20. The Inspector concluded the central issues in the determination of the appeal were firstly, whether the release of this site was unduly premature and in advance of the Local Plan process and secondly, whether the proposed development would seriously affect the character and amenity of Houghton Green village. In the context of his report to the Secretary of State, the Inspector confirmed that there were no overriding physical constraints preventing the development of the site, that the provision of the necessary infrastructure was viable, that subsidence as a result of mining activities was not a serious problem, and that the proximity of the motorway did not preclude development of the site as noise levels are well below those set in National and Local Guidance.

21. Setting aside issues of land availability, the Inspector concluded that whilst the appeal proposals would pre-empt decisions on the wider Peel Hall area, which should properly be taken on the context of the Development Plan process, the Peel Hall area should be regarded as an "important reservoir of land to be considered for development if and when required". In respect of the impact of the development on Houghton Green, the Inspector concluded that whilst the character and outlook of this close knit settlement would change, the consequences of the development would not, in themselves, be sufficient to justify refusing planning permission for the appeal scheme. The Secretary of State agreed with the Inspector's conclusions and accepted his recommendation. The issue of Green Belt was not raised at the Public Inquiry as the site was outside the extent of the Green Belt as set out in the Structure and local plans relevant at that time.

22. In April 1990, a Second Consultation Draft of the Warrington Borough Local Plan was prepared, following the publication of the Deposit Draft of Cheshire 2001. The Plan proposed two additional Areas of Search, in addition to the five identified in their preliminary draft plan, which as noted at paragraph 4.3 above, included the Peel Hall area. The Plan noted that the Areas of Search were to provide for possible development after the year 2001 but that their allocation did not imply that the land would necessarily be developed and that no distinction was made between possible future housing or employment allocations. The Green Belt boundary followed that set out in the Structure Plan, the route of the M62 to the north of the area.

23. The revised Consultation Draft of the Warrington Borough Local Plan (the third Consultation Draft) was reported to Committee in October 1992, although the plan was not published in its Consultation Draft form until May 1993. The Plan was prepared following the approval of Cheshire 2001 and related to the same time period. Within the Plan, long term Green Belt boundaries were set (the relevant policy stating they would remain in force until at least 2016) that to the north assuming yet again the line of M62 as established in the Structure Plan. Peel Hall was allocated as an Area of Search; the policy identifying such areas as land excluded from the Green Belt to meet possible future development needs which may arise after the year 2001.

24. The Plan designated the land approved by the Secretary of State for 810 houses at Bridgewater East as an existing commitment with the remainder of the CNT land holding

(which was also the subject of the 1989 submission for 1650 dwellings) as a housing land allocation for development after 2001 (i.e. not an Area of Search but as a firm commitment).

25. In December 1992 an outline planning application for the residential development of the whole Peel Hall area was refused planning consent. The refusal related to prematurity and Area of Search issues, together with highway matters. A duplicate of this application was submitted following this refusal in an attempt to stress the availability and suitability of Peel Hall to the Officers and Members of Warrington Borough Council. This application was again refused, this time in February 1994. The reasons were similar and again related to prematurity, Area of Search and highway matters. No appeals were lodged following these refusals.

26. The September 1994 Deposit Draft Local Plan confirmed the strategy of the May 1993 Consultation Draft Plan and again notated Peel Hall as an Area of Search, with the M62 forming the inner boundary of the Green Belt.

27. In October 1995, a series of Proposed Changes to the Warrington Borough Local Plan Deposit Draft were published and these had the effect of confirming the status of Peel Hall as Area of Search with the M62 forming the inner boundary of the Green Belt.

28. The Proposed Changes also de-allocated the long term housing allocation at Bridgewater East, notating it instead as an Area of Search, thereby isolating the permitted area of Grappenhall Hayes away from the built up area.

**The Warrington Borough Local Plan; Public Inquiry Report**

29. The Inquiry into the Warrington Borough Local Plan was held in 1996 and the Inspector's Report published in September 1998. The Inspector recommended that five of the Areas of Search should be allocated in the Plan for development within the Plan period. One of the sites he proposed for allocation was Peel Hall.

30. In the section of the Inspectors Report which deals specifically with Peel Hall, the Inspector was asked by the federation of Cheshire Green Parties, Winwick Parish Council and Local Residents that the area should be included within the Green Belt. The Inspector dismissed this suggestion on the following basis:

*"The allocation land, due to its sheer scale and nature, clearly possess the characteristic of openness. However to my mind that alone is not enough to justify its inclusion in the Green Belt. Despite the extent of this site, the environment of this immediate area is strongly influenced by the neighbouring housing development; from most vantage points the presence of the surrounding properties within this landscape is inescapable and this has a noticeable urbanising effect. The same consideration applies to the motorway. The features combine to create an obvious sense of enclosure around this site which accordingly, in terms of character and appearance, is distinctly different from the area of countryside (designated by the Local Plan as Green Belt) to the north. Indeed the motorway represents a very clear division between these two contrasting areas and it provides the most logical and defensible boundary for the Green Belt hereabouts…….*

*For all these reasons I am convinced that the allocation site would be incapable of serving usefully any of the acknowledged purposes of including land within a Green Belt and there is accordingly no basis for modifying the plan in the manner these objectors propose".*

31. With regard to the suitability of the objection site for residential and other development, the Inspector noted the land was well contained physically and its character and appearance are strongly influenced by the extent of housing development around its periphery. He concluded the size of the objection site was not disproportionate in scale when compared to the very substantial urban area which it adjoins and development on this site would be well related to the existing area and no harm would arise in landscape terms. In his view "it would represent an entirely logical form of rounding off to a clearly defined very firm boundary, the motorway".

32. The Inspector noted that in evidence,

*"the Council itself expressly supports these arguments so far as the merits of Peel Hall Farm for housing are concerned. Its' case for not positively allocating this land for development rests solely on the question of need, or rather the absence of it, at the present time".*

33. The Inspector, when recommending the release of Peel Hall, took into account the respective merits of the other Areas of Search set out in the then Draft Warrington Plan. The Inspector was content however, that *"apart from numbers 1, 16 and 21 which I am similarly recommending for immediate allocation, none measures up to the present site".* (Since that date, site 1 has been affected by flood issues, and sites 16 and 21 have been released, at appeal, for housing development).

34. The Inspector recommended therefore, that the Area of Search notation be removed from the site and Peel Hall be specifically allocated for housing development with a specified capacity of 1,100 housing units.

35. Prior to making any resolution in response to the Inspectors recommendations the Council accepted legal advice that it would be unlikely to be capable of taking the Local Plan to adoption as a Unitary Planning Authority and Local Plan procedures were discontinued with effect from 1 June 1999. On that date the Council's Environment Committee resolved that pending preparation of its first Unitary Development Plan, all greenfield sites outside the built up areas of the Borough should be treated as Green Belt for development control purposes. That was to be applied irrespective of whether such sites had been proposed as an Area of Search, for inclusion in the Green Belt or had been proposed for an allocation.

36. In January 2000 that position was reviewed by Environment Committee in the light of a Section 78 appeal Inspectors decision to allow an appeal against refusal for permission for housing on a site (at Lymm) which the Local Plan Inspector had recommended should be confirmed as an Area of Search. Committee resolved in the light of that appeal decision that in dealing with applications and appeals relating to greenfield sites each situation should be addressed on its merits, having regard to a range of criteria including notably housing land availability and the contribution that each site might make to the Green Belt, thereby resulting from the earlier resolution of mid 1999 that all such sites should be treated as Green Belt.

**The Warrington UDP; Consultation**

37. In Spring 2000 a Strategic Issues and Strategies Options Consultation Document for the first Unitary Development Plan was published by Warrington Borough Council. This raised various alternative strategies and sought views from various organisations and the public. Whilst the

document was not site specific and has no direct relevance to Peel Hall, it is relevant in respect of Green Belt matters and the document states on page 7 that:

*"Unless there is a situation where all conceivable needs for future development can be met from sources of land supply within existing built up areas, the Green Belt boundary has to be drawn to allow for the possibility of greenfield sites being allocated for development in a future review of the plan without the need for altering the Green Belt".*

38. The Strategy document raised four issues in respect of the Green Belt for consideration in the UDP Process but highlighted that *"the starting point for this will be the conclusions reached by the Local Plan Inspector and a review of his recommendations in the light of current circumstances".*

39. In October 2000 a report was presented to Development Control Committee at Warrington Borough Council regarding an outstanding appeal against the refusal of an application for a Learning Disabilities Unit and associated Resource Centre on land at Birch Avenue (which formed part of the western section of the Area of Safeguarded Land at Peel Hall). The Report sets out that, following consultation with the Council's legal advisors, a refusal reason citing that the site should be regarded as Green Belt, should be withdrawn. The Report set out that since the appeal site had been adjudged by the Local Plan Inspector as being incapable of serving a useful Green Belt purpose and that the site lay outside the general extent of the Green Belt as shown on the approved (Cheshire 2001) Structure Plan Key Diagram, the refusal reason was unsupportable. This advice was accepted by the Committee and the associated Proof of Evidence to that Public Inquiry confirmed that the key diagram "can be readily interpreted as excluding the appeal site from the general extent of the Green Belt, which includes the area to the north of the M62 in this part of the Borough".

40. In late October 2000 the Consultation responses on the Strategic Issues and Strategy Document were reported to Environment Committee at Warrington Borough Council. With regard to Green Belt and Areas of Search the report stated:

*"The issue for the UDP is to choose at the extremes between provision for maximum flexibility given uncertainties about future strategic requirements and actual expected requirements arising from the presently proposed RPG figures and consistent with the views expressed by some neighbouring Authorities that minimising the range of long term development opportunities in Warrington will help sustain confidence in their own regeneration strategies".*

**The Warrington UDP; First Deposit**

41. In June 2001 the First Deposit Draft Warrington UDP was published. This Plan looked ahead to 2016 and followed a "low growth" approach as set out in the Draft Review of RPG and the Plan noted that:

*"On the basis of an assessment of current commitments and forecast opportunities on presently unidentified 'windfall' sites, the Council is confident that no greenfield sites need be allocated or released for development in order to meet the requirements to either 2011 or 2016".*

42. With regard to the approach of the UDP to Green Belt boundary matters the UDP stated:

*"The UDP safeguards the full range of sites which the Borough Local Plan Inspector had recommended be designated as 'Areas of Search' (equivalent to Safeguarded Land). This reflects the view that whilst the Council has not at any previous stage resolved to endorse the*

*Inspector's recommendations, they are a product of the only exhaustive professional assessment that has been carried out to identify land which should not be included in the long term Green Belt".*

43. Thus the Plan proposed policy GRN2 - Safeguarded Land - which included Peel Hall as site number 6. Reference to the Proposals Map shows that the whole of Peel Hall was included within the built up area of Warrington (see red line notation) and as an Area of Safeguarded Land. The M62 motorway was once again shown as the inner boundary of the Green Belt in this location.

44. Representations to the First Deposit UDP were reported to Advisory Group at Warrington Borough Council in October 2002. The report set out in respect of the Green Belt and Safeguarded Land that opinions were divided as to whether the inner boundaries of the Green Belt should be drawn into the built up area or whether safeguarded land should be retained to ensure Warrington's growth momentum. The report picked up on the guidance within RPG that once set, generally the Green Belt boundary should not be reviewed prior to 2021, the Local Authority interpreting this to conclude that the Green Belt boundaries set within this UDP should be capable of accommodating development needs until about 2026, i.e. ten years beyond the end of the UDP period.

45. The report stated that in the light of RPG strategy to concentrate development within the regeneration cores of the conurbations, future rates of growth within Warrington would remain low. After highlighting a number of sources of potential post 2016 housing supply, the report concluded there was no need for Areas of Safeguarded Land and proposed their inclusion within the Green Belt. The report states:

*"All of the sites hitherto proposed as Safeguarded Land are judged to perform at least one of the functions of Green Belt as defined in National Guidance, taking account, not least, of the raised significance of its function of supporting urban regeneration".*

46. The report notes however that the land benefiting from the 7.1 approvals at Bridgewater East should remain as housing land allocations subject to phasing policies which prevent their release "as long as there is an adequate supply of previously developed land".

**The Warrington UDP; Revised Deposit**

47. On the basis of the above recommendations, the October 2002 Revised Deposit Warrington UDP sought to include all of the Areas of Safeguarded Land within the Green Belt. This included Peel Hall.

**The Warrington UDP – Inspector's Report**

48. The Warrington UDP Inspector's Report was published in March 2005. The Inspector recommended that the greenbelt boundary as proposed by the Borough Council should be adopted and specifically in respect of Peel Hall, that the new boundary then proposed by the Local Authority was a reinterpretation rather than an alteration to the existing greenbelt boundary.

49. The Borough Council proceeded to approve the plan in January 2006 with Peel Hall shown within the greenbelt.

**The UDP: High Court Ruling**

50. Following application to the High Court, a ruling on the proper inclusion of Peel Hall within the greenbelt was given in October 2007. This ruling confirmed that the Peel Hall site had always been located outside the greenbelt and that the proposals by the Local Authority amounted to an alteration to the general extent of the greenbelt which was not supported by exceptional circumstances. Consequently the notation on the proposals map showing Peel Hall as lying within the greenbelt was quashed and the status of the land as not being located within the greenbelt was confirmed.

**The Draft Core Strategy**

51. In July 2010 a Core Strategy Objectives and Options was published by Warrington Borough Council. This split the Borough into a number of "building blocks" with central and northern Warrington being included within "The Regeneration Area". The built up area / regeneration area was shown as extending up to the M62 and included Peel Hall.

52. Due to the low level of expressed housing requirements within the plan, no new housing allocations over and above commitments at that time were contained in the plan.

**The Pre-Publication Draft Core Strategy**

53. The Pre-Publication Draft Core Strategy was published in December 2011 and notated Peel Hall as a Strategic Location *"one or a combination of which could be needed to accommodate growth in the longer term to avoid the need to release greenbelt land for development"* (CS9).

**The Submission Local Plan Core Strategy**

54. As with the Pre-Publication Draft Core Strategy, the submission Local Plan Core Strategy notated Peel Hall (along with other sites) as a Strategic Location for future housing development under Policy CS9 *"to avoid the need to release greenbelt land for development".*

**The Mill Lane Appeal Decision**

55. In July 2013 an appeal into the development of 120 homes in the north eastern section of Peel Hall, off Mill Lane (the same site as in 19-21 referred to above) was rejected by an Inspector following an Inquiry in May 2013. The Inspector found the site to be located too far from local amenities and facilities and since there was no need for additional housing to be released at that time, and despite a lack of physical harm to the area by the housing development in landscape or highways terms, dismissed the appeal.

**The Core Strategy: Examination**

56. The CS9 notation was rejected as a concept by the Inspector and Modifications to remove this notation from the plan were published in 2013.

57. In addition the part of the Omega site was proposed as an allocation for 1,100 homes.

58. As a consequence the Examination was reopened and these Modifications, along with other aspects of the Modifications and the plan, were debated.

**The Core Strategy: Inspectors Report**

59. The Modifications to remove the CS9 safeguarding notation from the Peel Hall site, along with the allocation of the Omega site for 1,100 homes, were supported by the Inspector in his report published in May 2014.

60. Consequently the plan was adopted by the Council on 23 January 2014. This plan contains no notation for the Peel Hall site, and the site is effectively shown as white land within the built up area of Warrington.

**The Core Strategy: High Court Ruling**

61. Following an application to the High Court a ruling on the legality of the calculation of the Housing Needs assessment that led to the housing requirements of the plan handed down in February 2015. This ruling held that the housing requirements of the plan were not properly calculated and as such the housing requirements policies of the Plan and the allocation of the Omega site for housing be quashed.

62. As such the site is shown as white land within suburban Warrington, not allocated for any specific purpose.


# PEEL HALL, WARRINGTON

## Indicative Sports and Recreation Provision

| REVISIONS | |
|---|---|
| Project | PEEL HALL, WARRINGTON |
| Title | Indicative Sports and Recreation Provision |
| Client | Satnam Millennium Ltd |
| Date | 28.06.16 |
| Scale | 1:1,250@A1 |
| Drawn | SW/ DS |
| Drawing No. | 1820_28 |
| Checked | DA/ DS |
| Revision | - |

appletons

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Web: www.appletons.uk.com Email: info@appletons.uk.com

**From:** Fiona Pudge [mailto:Fiona.Pudge@sportengland.org]
**Sent:** 15 January 2016 12:11
**To:** Davies, Michael (Planning); devcontrol
**Subject:** App Ref: PR/2015/03409 - Peel Hall Park - Sport England Ref: 41635

Dear Mr Davies

Thank you for consulting Sport England on the above proposal.

**Summary**: The red line boundary includes the playing field known as Peel Hall Park (off Mill Lane and Ballater Drive). For that reason Sport England would be a statutory consultee on any subsequent planning application if the playing field is affected or prejudiced in any way.

The advice presented in this email sets out issues that the applicant and Local Planning Authority will need to consider when developing the proposal further.

**Sport England –Statutory Role and Policy**

The site is considered to constitute playing field, or land last used as playing field, therefore Sport England advises that this proposal would require statutory consultation, under the terms of the Town and Country Planning (Development Management Procedure) (England) Order 2015, at the formal planning application stage.

Sport England considers proposals affecting playing fields in the light of the National Planning Policy Framework (NPPF) (in particular Para. 74), and its Playing Fields Policy: 'A Sporting Future for the Playing Fields of England', which can be accessed via the following link: www.sportengland.org/playingfieldspolicy

Sport England's policy is to oppose the granting of planning permission for any development which would lead to the loss of, or prejudice the use of, all or any part of a playing field, unless one or more of the five exceptions stated in its policy apply:

| | Sport England Policy |
|---|---|
| | Summary of Exceptions |
| E1 | An assessment has demonstrated that there is an excess of playing fields in the catchment and the site has no special significance for sport |
| E2 | The development is ancillary to the principal use of the playing field and does not affect the quantity/quality of pitches |
| E3 | The development only affects land incapable of forming part of a playing pitch and would lead to no loss of ability to use/size of playing pitch |
| E4 | Playing field lost would be replaced, equivalent or better in terms of quantity, quality and accessibility |
| E5 | The proposed development is for an indoor/outdoor sports facility of sufficient benefit to sport to outweigh the detriment caused by the loss of playing field |

**Assessment against Sport England Policy**

There is insufficient information to form an opinion as to whether the proposal is likely to meet paragraph 74 of NPPF and the exceptions to Sport England's Playing Field policy or not. Although the playing field is included within the red line boundary no information has been submitted to show to what extent the playing field will be affected if any.

Looking at information taken from the Sport England's Active Places Power website and Warrington BC's Playing Pitch Audit 2012 the site is in active use. Cheshire Football Association record local teams and clubs affiliated to them using the site. However, I strongly suggest liaising with both Tom Haworth (WBC Sports Development) and Cheshire FA to assess to what extent the usage is and which teams use the site.

Looking at the available data the site is approximately 3.2ha and accommodates 4 football pitches (2 senior and 2 mini) with a small car park. There is no record of any changing facilities. Again the current pitch layout and ancillary facilities needs to be clarified as the data I have access to is from 2012 and the situation may have changed since then.

**General Points to Consider**

Given the playing field appears to be in active use any proposal that results in the loss of the playing field must either:

1. An assessment of need identifies the site as disused and surplus to requirements to meet existing and future predicted needs form all pitch sports. It should be noted that Sport England's ststautory remit is to protect playing fields for the use of all pitch sports and not just the current or last known sports use. The Council and LiveWire is currently preparing a Playing Pitch Strategy (PPS) and the project leads should be contacted to discuss the status of the PPS and the site itself; or

2. The playing field lost will be replaced by an equivalent or better **quantity and quality** playing field within the locality. Please note that unless the PPS shows all existing and future demand can be satisfied across all pitch types on existing playing fields and that there is sufficient spare capacity to cater for unforeseen circumstances then qualitative improvements alone to existing sites will not meet this policy. The full quantity (area) of playing field lost will need to be reprovided on land that is not currently designated as playing field. This could for example be agricultural land or brownfield land.

It should also be noted that this proposal includes large scale residential which would have impact on existing sports facilities and potential requirement for new to meet the additional demand. The existing provision within an area may not be able to accommodate this increased demand without exacerbating existing and/or predicted future deficiencies. Therefore, Sport England considers that new developments should contribute towards meeting the demand that they generate either by provision of new facilities or improvement of existing where capacity can be increased. The level and nature of any provision should be informed by a robust evidence base such as an up to date Sports Facilities Strategy, Playing Pitch Strategy or other relevant needs assessment.

Information Requirements for the impact on the Playing Field

1. Existing plan of the playing field with area in sqm or hectares. This should include pitch layouts including dimensions and details of any ancillary facilities.
2. Proposed plan of any replacement playing field with area in sqm or hectares. This should include pitch layouts including dimensions and details of any ancillary facilities.
3. Details of current usage of the existing playing field.
4. Details of any consultation held with the relevant sports stakeholders (Council, LiveWire, local pitch users, Cheshire Sport and regional representatives of the pitch sport national governing bodies)
5. Although this application is in outline the applicant should give consideration early on in the process to the design and layout of any replacement playing field and ancillary facilities. The applicant is advised to liaise with the regional FA Facilities and Investment Manager and Cheshire FA.

6. Any proposal that results in the relocation of the playing field will need to provide details of phasing. As the site is in active use the replacement of the playing field will need to be implemented before any development can start on the existing site to ensure continuity of use. If the replacement site is outside of the applications red line boundary than planning permission will need to be obtained and the proposal implemented before development on the existing playing filed site can commence.

Information Requirements for the impact of housing on existing sports facilities.

1. Once it has been determined what the likely level of housing will be calculations can be carried out to assess what additional demand will be generated from the housing development. This may already have been carried out within a Sports Facility Strategy but if not Sport England's Sports Facility Calculator can be used which can be found in the Reports section of Active Places Power :
   https://www.activeplacespower.com

2. Any new provision or improvements to existing sports facilities should be informed by a Sports Facility Strategy or similar Needs Assesment. The applicant is advised to liaise with the Council and LiveWire to establish what is required to meet identified needs in the area.

3. Any new facilities or improvements should be built in accordance with Sport England's technical guidance notes, or relevant national governing body of sport, copies of which can be found at:
   http://www.sportengland.org/facilities-planning/tools-guidance/design-and-cost-guidance/

Sport England reserves the right to object to any subsequent planning application if we do not consider that it accords with our playing fields policy or para 74 of NPPF.

If you require any further information please do not hesitate to contact the undersigned.

Yours sincerely,

**Fiona Pudge BA (Hons) BTP MRTPI**
Planning Manager

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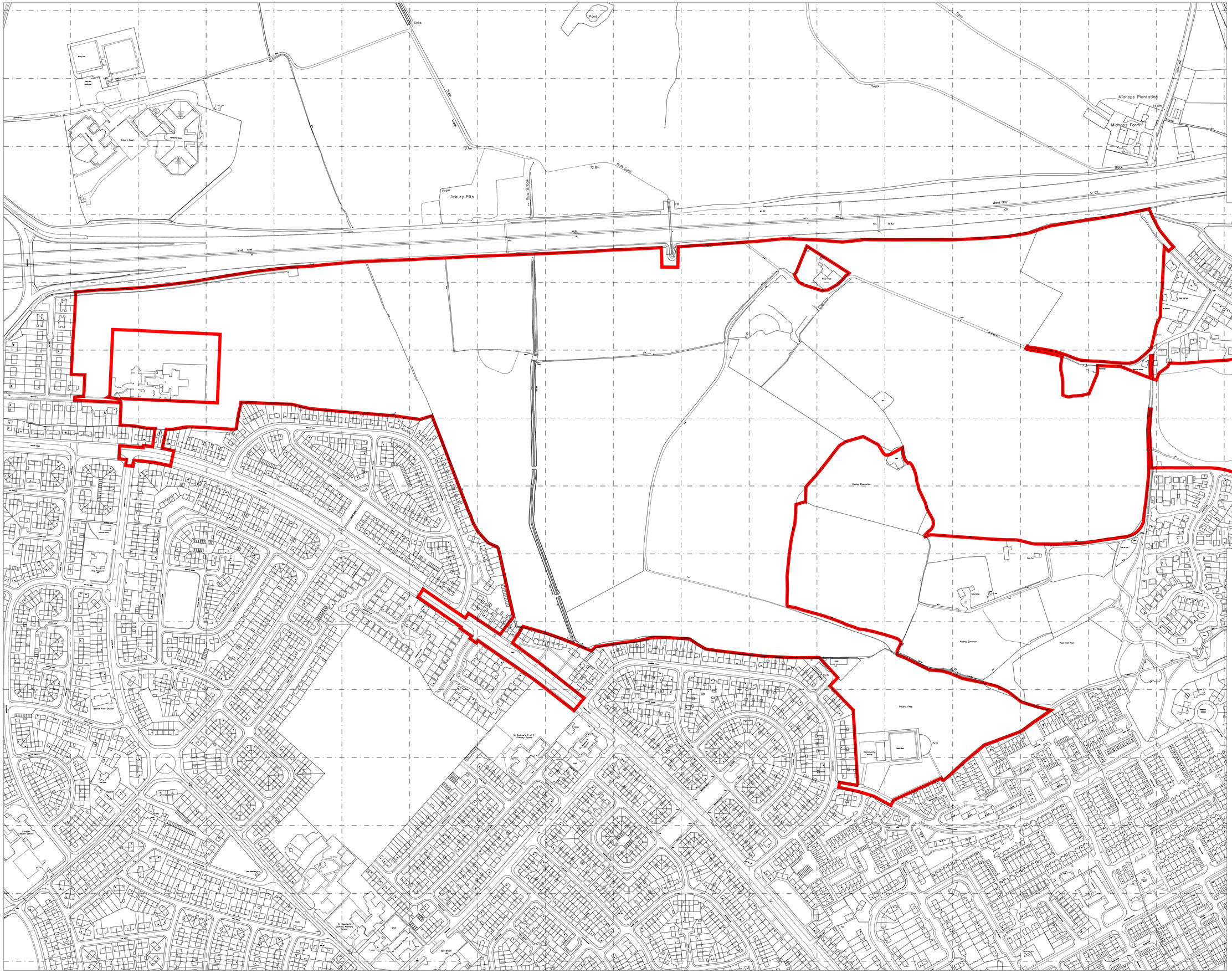


## Notes

Do not scale from this drawing.

All dimensions are to be checked prior to construction and any discrepancies are to be identified to the Architect.



N

**AREAS**

| | |
|---|---|
| TOTAL AREA | 639,255 m2<br>156.97 acres |

Note, all areas based on OS data, not measured surveys.

| | | | |
|---|---|---|---|
| A | 27.06.16 | Issued for Planning | JHD |

ISSUED FOR PLANNING

Revisions

Client

Satnam

Project

Peel Hall Masterplan

Title

Site Location Plan

| Scale | Size | Date | Drawn | Checked |
|---|---|---|---|---|
| 1:2500 | A1 | June'16 | JHD | DB |

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|---|---|
| 140367 - D - 002 | A |

# ECO 1-15

## ECOLOGY

Ecological Survey

Site Photographs

## Site Photographs 2013:

**Photograph 1: Habitat mosaic as described in Target Notes 1 and 2.**

**Photograph 2: Abandoned farmland with coarse grassland disturbed by ploughing (See Target Note 3)**

**Photograph 3: Disturbed arable land with encroaching dry stands of common reed. (See Target Note 14)**

**Photograph 4: Dense impenetrable scrub mosaic as described in Target Note 9.**

**Photograph 5: Dense impenetrable scrub mosaic as described in Target Note 18.**

**Photograph 6: Planted woodland on the southern boundary. Structure typical of woodlands described in Target Notes 17 and 35.**

**Photograph 7: The northernmost (open) section of Spa Brook. (See Target Note 11)**

**Photograph 8: Central section of Spa Brook choked by vegetation. (See Target Note 12)**

**Photograph 9: Southern section of Spa Brook choked by vegetation. (See Target Note 13)**

**Photograph 10: Potential pond feature described in Target Note 7.**

**Photograph 11: Coarse *Arrhenatherum* grassland with bramble described in Target Note 23.**

**Photograph 12: Mature planted woodland described in Target Note 20.**

**Photograph 13: Small planted sycamore woodland described in Target Note 22.**

**Photograph 14: Glade area with demolished building described in Target Note 21.**

**Photograph 15: Typical view of the expansive disturbed grasslands described in Target Note 16. Brash piles with regenerating scrub and ruderal herbs are visible in the distance.**

**Photograph 16: Typical view of the glade undergoing seral succession described in Target Note 19.**

**Photograph 17: Pond 3 as described in Target Note 34.**

**Photograph 18: Pond 2 as described in Target Note 31.**

**Photograph 19: Grassland scrub mosaic as described in Target Note 28.**

**Photograph 20: Pond 1 as described in Target Note 27.**

**Photograph 21: Typical view of the grassland described in Target Note 33.**

**Photograph 22: Typical view of the planted woodland as described in Target Note 35.**

**Photograph 23: Roadside verge habitats along Radley Lane. (See Target Note 36)**

**Photograph 24: Marginal woodlands on the northern side of the playing field as described in Target Note 37.**

**Photograph 25: Marginal woodlands on the southern side of the playing field as described in Target Note 38.**

## Site Photographs 2015:

**Photograph 26: The northernmost (open) wet section of Spa Brook.**
**(See Photo. 7 from 2013)**

**Photograph 27: Central dry section of Spa Brook choked by vegetation.**
**(See Photo. 8 from 2013)**

**Photograph 29: Southern dry section of Spa Brook choked by vegetation. (See Photo. 9 from 2013)**

**Photograph 30: Current view of Pond 1. (See Photo. 20 from 2013)**

**Photograph 31: Current view of Pond 2. (See Photo. 18 from 2013)**

**Photograph 32: Current view of Pond 3. (See Photo. 17 from 2013)**

**Photograph 33: Current view of Pond 5.**

**Photograph 34: Current view of Pond 6.**

**Photograph 35: Current view of grassland described in Target Note 16. Uncut areas are partly indicative of current sward conditions.**

**Photograph 36: Current view of grassland described in Target Note 33.**

**Photograph 37: Current view of grassland described in Target Note 14. Uncut areas are partly indicative of current sward conditions.**

## Hedgerow Photographs

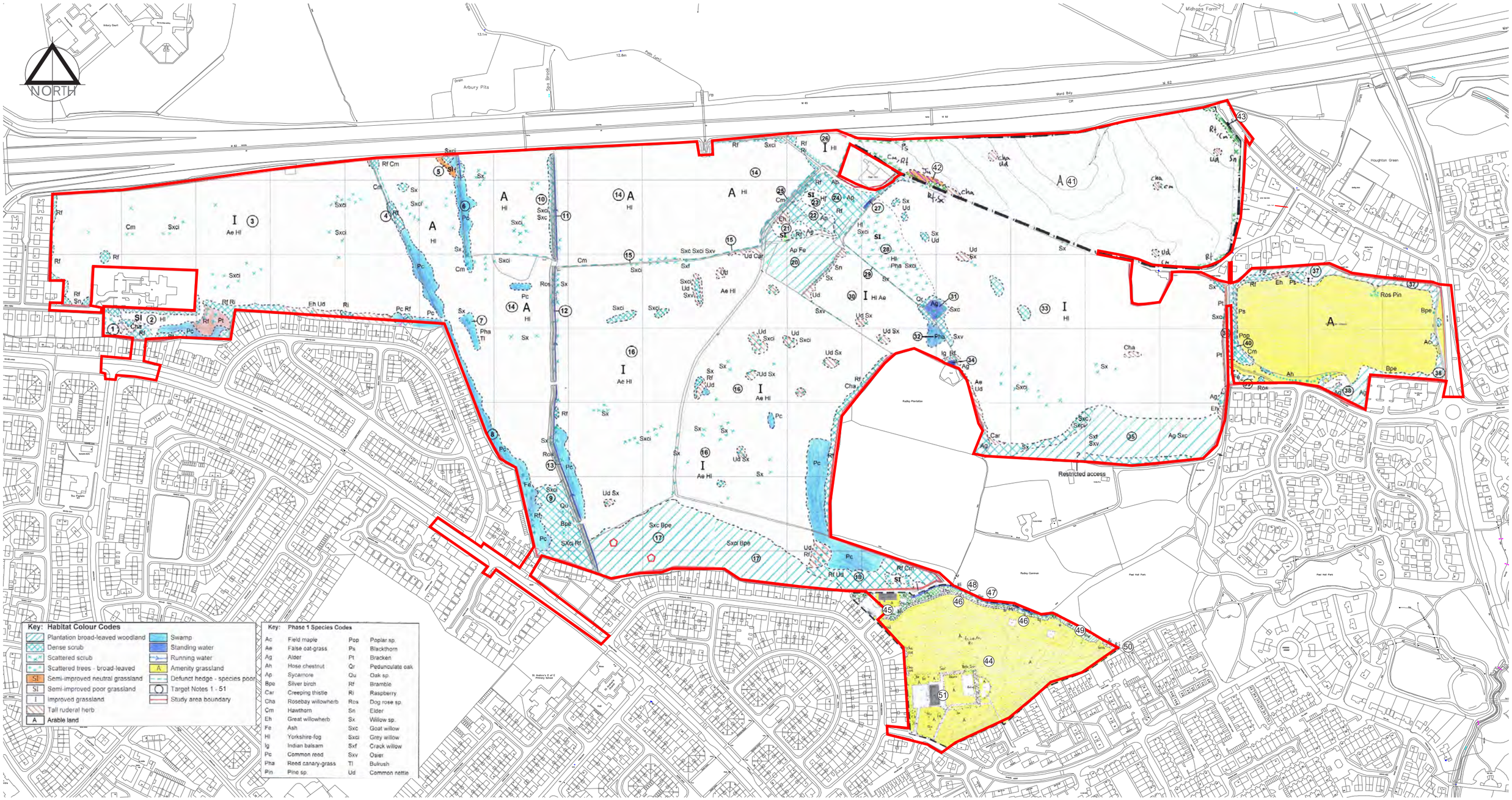
**Photograph 38: Hedgerow 1.**

**Photograph 39: Hedgerow 2.**

**Photograph 40: Hedgerow 3.**

**Photograph 41: Hedgerow 4.**

**Photograph 42: Hedgerow 5.**




# PEEL HALL, WARRINGTON

ECO 2
Phase 1 Habitat Map
Scale: See scale bar

appletons

Landscape Architecture • Ecology • Enviromental Planning & Assessment • Aboriculture

***Phase 1 Habitat survey Target Notes:***

**KEY NOTES FOR ABUNDANCE**

**D = DOMINANT**
**A = ABUNDANT**
**F = FREQUENT**
**O = OCCASIONAL**
**R = RARE**

These values can be prefixed by V (Very) or (L) Locally, to provide more subtle biogeographical data.

**Target Note 1:**

An area of semi-improved poor grassland within a mosaic of habitats indicative of the early stages of seral succession including coarse improved grassland, tall ruderal herb, dense/scattered scrub, bracken and a dry stand of common reed. The semi-improved grassland has a short grass-dominated sward and low floristic diversity. Seral succession towards tall ruderal herb ongoing in 2015.

| Species | Abundance |
|---|---|
| Yorkshire-fog | D |
| Creeping bent | LD |
| Smooth meadow-grass | VLD |
| Red fescue | A |
| False oat-grass | F |
| Field horsetail | LF |
| Meadow vetchling | VLF |
| Hoary willow herb | VLF |
| Bitter vetchling | O |
| Soft-rush | O |
| Compact rush | O |
| White clover | O |
| Ribwort plantain | O |
| Rosebay willow herb | VO |
| Ash (sapling) | VO |

**Target Note 2:**

A small area of tall/coarse improved grassland within the same mosaic of habitats described above. Seral succession was ongoing in 2015.

| Species | Abundance |
|---|---|
| False oat-grass | D |
| Yorkshire-fog | D |
| Common reed | VLD |
| Common ragwort | A |
| Cock's-foot | LA |
| Great willow herb | F |
| Dandelion agg. | F |
| Compact rush | O |
| Curled dock | O |
| Tall fescue | R |

**Target Note 3:**

An extensive field that has been disturbed by ploughing and subsequently abandoned from further management. The field is an improved grassland that has grown coarse and stands of scrub, tall ruderal herb and common reed are encroaching the field from the margins. Numerous scattered grey willow saplings are also becoming established.

Seral succession was ongoing in 2015, although more regular management appears to be applied at the westernmost end of this field.

| Species | Abundance |
|---|---|
| False oat-grass | D |
| Yorkshire-fog | D |
| Perennial rye-grass | A |
| Dandelion agg. | A |
| Oilseed rape | LA |
| Field horsetail | LA |
| Cock's-foot | LA |
| Creeping thistle | F |
| Common orache | F |
| Curled dock | F |
| Rough meadow-grass | F |
| Mayweed sp. | F |
| Field speedwell | F |
| Grey willow (sapling) | VLF |

**Target Note 4**

This is a boundary feature comprising a short section of double hedgerow dominated by hawthorn dense stands of bramble scrub and a linear dry reed bed. These habitats occur either side of the dry section of ditch. No obvious change in 2015.

**Target Note 5:**

A small patch of relic semi-improved grassland adjacent to the northern boundary of the site that is possibly indicative of an earlier grassland habitat prior to improvement.

| Species | Abundance |
|---|---|
| Yorkshire-fog | D |
| Creeping buttercup | A |
| Rough meadow-grass | A |
| Meadow vetchling | LA |
| Creeping bent | LA |
| Ribwort plantain | F |
| Silverweed | F |
| Common fleabane | LF |
| Southern marsh-orchid | O |
| Hogweed | O |
| Compact rush | O |

**Target Note 6**

A linear boundary feature that comprises an extensive narrow stand of common reed and small stands of dense scrub. These habitats enclose what appears to be a very locally wet ditch. No obvious change in 2015.

**Target Note 7**

A field depression that contains a dense stand of reed canary-grass surrounding a small stand of bulrush. Occasional grey willow are also present. The feature was dry at the time of survey but the area is subject to ephemeral flooding. No obvious change in 2015.

**Target Note 8**

An extensive linear stand of common reed adjacent to the western boundary of the site. Some clearance works have occurred along the length of this boundary in 2015.

**Target Note 9**

A complex impenetrable mosaic of common reed and dense/scattered grey willow, bramble and hawthorn scrub. Numerous immature/semi-mature trees also occur and include ash, pedunculate oak, sycamore, silver birch and cherry sp. Other species include false oat-grass, hogweed, red clover, hairy sedge, common nettle, mugwort, cleavers, common ragwort and Yorkshire-fog. No obvious change in 2015.

**Target Note 10**

A linear stand of mature grey and goat willow scrub adjacent to the northern section of Spa Brook. Occasional pedunculate oak and hawthorn also occur. The field layer is dominated by common nettle with abundant bramble, frequent red campion and cow parsley and occasional male-fern. No obvious change in 2015.

**Target Note 11**

The northernmost section of Spa Brook that contains very slow running water with a localised surface cover of common duckweed. The bankings are coarse and dominated by a mixture of reed canary-grass and false oat-grass. Other species recorded include abundant rough meadow-grass, frequent hogweed and Yorkshire-fog, and occasional wild angelica, red campion, soft-rush, rosebay willow herb and bramble. Significantly more overgrown in 2015 than in 2013, with the stream banks now very coarse and open water substantially reduced.

**Target Note 12**

A middle section of Spa Brook where the channel choked by locally dominant stands of bulrush and reed canary grass. Brooklime is occasional. The banks are composed of coarse vegetation dominated by false oat-grass and bramble with abundant common nettle and great willow herb and locally frequent tufted vetch. The channel on this section appears to be largely dry/seasonally wet.

No obvious change in 2015 other than seral succession towards scrub. Channel appears totally dry.

**Target Note 13:**

The southernmost section the Spa Brook where the channel is dry/seasonally wet and choked by a mixture of reed canary-grass and common reed which has also colonised the edge of an adjacent field. Great willow herb is also locally abundant in the channel. Bank-side vegetation is composed of coarse false oat-grass dominated communities with abundant common nettle and great willow herb, locally frequent meadow vetchling, cow parsley and hogweed. Scrub is developing along the reach and includes locally abundant bramble, locally frequent grey willow and dog rose, and occasional hawthorn.

No obvious change in 2015 other than seral succession towards scrub. Channel appears totally dry.

**Target Note 14:**

A collective target note that covers several arable fields with shared vegetative characteristics. The fields area coarsely vegetated, abandoned and have been ploughed which has given rise to a species-poor improved grassland community. Succession towards tall ruderal herb communities is present locally as are stands of common reed which are colonising the area predominantly from former boundaries.

Grey willow saplings are locally frequent and a defunct hedgerows composed of grey willow is present. The fields were partially cut in 2015 and there is a noticeable increase in rankness indicated by tall ruderal herb species.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | D |
| Common reed | VLD |
| Timothy | A |
| Meadow foxtail | LA |
| Rough meadow-grass | LA |
| False oat-grass | LA |
| Creeping bent | LA |
| Rosebay willowherb | LA |
| Silverweed | LA |
| Creeping buttercup | LA |
| Ribwort plantain | VLA |
| White clover | VLA |
| Tall fescue | LF |
| Creeping thistle | LF |
| Common ragwort | LF |
| Curled dock | LF |
| Grey willow (saplings) | LF |
| Oilseed rape | O |
| Cow parsley | O |
| Hogweed | O |
| Common fleabane | O |
| Cut-leaved crane’s-bill | O |
| Hairy tare | O |

**Target Note 15:**

A defunct hedge adjacent to a dry ditch containing very occasional bulrush. The hedgerow is dominated by overgrown hawthorn with occasional elder, while a mixture of common nettle and false oat-grass form the ground flora. The hedgerow gives way to a line of scattered grey and crack willow to the east before reforming as a hedgerow of osier, grey willow and goat willow. No obvious change in 2015.

**Target Note 16:**

An extensive area of open abandoned improved grassland that has been disturbed through ploughing. The grassland is rank and supports a range of grasses and common tall herbs as well as species associated with ground disturbance and lack of management. In addition there are several large piles of brash in this area that indicate that substantial stands of scrub have been cleared from the area. The brash piles have now succeeded to stands of tall ruderal herb and/or regenerated as willow/bramble scrub. The species list below is for the grassland areas only not the scrub or tall herb communities. The fields were partially cut in 2015 and there is a very noticeable increase in rankness indicated by tall ruderal herb species.

| **Species** | **Abundance** |
|---|---|
| False oat-grass | D |
| Yorkshire-fog | D |
| Pale persicaria | VLD |
| Creeping thistle | VLD |
| Oilseed rape | VLD |
| Common reed | VLD |
| Rough meadow-grass | A |
| Redshank | A |
| Common hemp-nettle | A |
| White clover | LA |
| Curled dock | LA |
| Perennial rye-grass | VLA |
| Spear thistle | VLA |
| Soft-rush | VLA |
| Rosebay willowherb | VLA |
| Common nettle | VLA |
| Prickly sow-thistle | VLA |
| Creeping buttercup | VLA |
| Ribwort plantain | VLA |
| Common bent | F |
| Mugwort | LF |
| Hogweed | LF |
| Creeping bent | VLF |
| Cow parsley | O |
| Cut-leaved crane’s-bill | O |
| Hairy tare | O |
| Common fleabane | VO |

**Target Note 17:**

A substantial block of uniform immature broad-leaved plantation woodland on the southern boundary of the site. The canopy is dominated by a mixture of goat willow and silver birch with locally abundant hawthorn. The under-storey is largely dominated by bramble with locally frequent hawthorn, rowan, ash, pedunculate oak, as and cherry sp. Dog rose is occasional. The ground flora is poor and dominated by common nettle with abundant wood meadow-grass and locally abundant wood avens. Several giant hogweed plants were recorded at the western end of this woodland in 2015, their approximate location is shown on the Phase 1 habitat map.

**Target Note 18:**

Nettle is the dominant tall herb with abundant large bindweed. The scrub is largely composed of dense bramble with more scattered hawthorn, dog rose, blackthorn and grey willow. Several scattered silver birch, small ash, cherry and apple species also occur. An open glade of semi-improved grassland occurs at the eastern end and is described in Target Note 19. This area has become more overgrown since the 2013 survey, otherwise no obvious change in 2015.

**Target Note 19:**

A small glade of semi-improved poor grassland that is being progressively colonised by encroaching scrub. No access possible in 2015 due to dense scrub, grassland probably lost to natural succession.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | D |
| Common bent | D |
| Cock's-foot | A |
| Common ragwort | A |
| White clover | A |
| Common couch | F |
| Field horsetail | F |
| Creeping buttercup | LF |
| Male-fern | O |
| Compact rush | O |
| Great willowherb | O |
| Mugwort | O |
| Cat's-ear | R |
| Lily (exotic) | R |

**Target Note 20:**

A mature broad-leaved plantation woodland dominated by sycamore. The woodland has a well-developed and diverse under-storey that has probably been supplemented by additional planting, however the woodland is experiencing negative pressures from vandalism including camp fires and tree damage. A typical ground flora is present and includes bluebell sp, although a lack of vegetative material prevented identification to species level. No obvious change in 2015.

| **Species** | **Abundance** |
|---|---|
| <u>Canopy:</u> | |
| Sycamore | D |
| Ash | LF |
| Pedunculate oak | O |
| Horse chestnut | VO |

| | |
|---|---|
| Lime | VO |
| Downy birch | VO |
| <u>Understorey:</u> | |
| Beech | A |
| Hazel | LA |
| Lime | F |
| Elder | F |
| Hawthorn | F |
| Ash | F |
| Rowan | LF |
| Wild cherry | O |
| Yew | R |
| Holly | R |
| <u>Ground flora:</u> | |
| Ivy | VLD |
| Bistort | VLD |
| Red campion | LA |
| Bluebell sp. | VLA |
| Common nettle | VLF |
| Male-fern | O |

**Target Note 21:**

An open area of improved grassland forming a small glade between stands of scrub and woodland. The grassland is composed of a typical tall false oat-grass community in transition to bramble scrub. The transition to scrub described in 2013 was advanced in 2015.

| **Species** | **Abundance** |
|---|---|
| False oat-grass | D |
| Yorkshire-fog | LD |
| Rosebay willow herb | VLD |
| Hogweed | A |
| Great willow herb | A |
| Hedge woundwort | A |
| Rough meadow-grass | A |
| Creeping thistle | A |
| Reed canary-grass | A |
| Creeping buttercup | F |
| Cow parsley | F |
| Red campion | LF |
| Marsh-orchid (hybrid) | VO |

**Target Note 22:**

A linear stand of semi-mature planted woodland dominated by sycamore with a sparse understorey of occasional elder and cherry sp. The ground flora is poor and dominated by common nettle with occasional male-fern and very occasional garden Solomon's-seal. The remains of a demolished pre-fabricated building are present here. No obvious change in 2015.

**Target Note 23:**

A small glade of improved grassland undergoing succession to tall ruderal herb on the site of a former building. The grassland is dominated by Yorkshire-fog with locally abundant rosebay willow herb, frequent common bent, common ragwort and common nettle. Red campion, male-fern, prickly sow thistle and cat's-ear are occasional. The successional trend described in 2013 prevails in 2015.

**Target Note 24:**

A complex and inseparable mosaic of dense scrub and tall ruderal herb containing numerous scattered juvenile trees and shrubs including ash, sycamore, elder and willow sp. This is a rosebay willow herb tall herb habitat in the advanced stages of transition to a bramble scrub community. The successional trend described in 2013 prevails in 2015.

**Target Note 25:**

A tall overgrown hedgerow dominated by hawthorn with locally frequent grey willow, goat willow and mature sycamore. No obvious change in 2015.

**Target Note 26:**

A small disturbed improved field disturbed by ploughing. No obvious change in 2015.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | D |
| Groundsel | A |
| Common bent | A |
| Ribwort plantain | A |
| False oat-grass | LA |
| Mayweed sp. | LA |
| Corn spurrey | LA |
| Creeping buttercup | VLA |
| Curled dock | F |
| Red dead-nettle | LF |
| Hogweed | O |
| Common ragwort | O |
| Oilseed rape | O |

**Target Note 27:**

This is a small linear pond located on the edge of an abandoned arable field. The pond is heavily shaded by immature willow scrub and stands of bulrush are established on the margin and in its centre. Common duckweed covers most of the pond's surface. In 2015 the pond was entirely shaded by willow scrub and there was no longer any emergent vegetation. Pond undergoing natural succession.

**Target Note 28:**

An extensive and complex mosaic of semi-improved poor grassland and scattered grey willow scrub of varying density. Stands of reed canary-grass also occur in thisarea that are very localised. The ground has been heavily disturbed in the past and the vegetation currently present appears to be the result of the partial regeneration of a pre-existing non-agricultural habitat, albeit in a 'modified' form. There is impeded drainage locally. The field was partially cut in 2015 and there is a very noticeable increase in rankness indicated by tall ruderal herb species.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | LD |
| Grey willow | VLD-A |
| Reed canary-grass | VLD |
| Creeping buttercup | A |
| Compact rush | LA |
| Soft-rush | LA |
| Bramble | LA |
| Great willowherb | VLA |
| Common fleabane | VLA |
| Toad rush | VLA |
| Ribwort plantain | F |
| Common ragwort | F |
| Hogweed | F |
| Silverweed | LF |
| Mayweed sp. | LF |
| Marsh thistle | LF |
| Creeping bent | LF |
| Hairy tare | VLF |
| Selfheal | VLF |
| Red campion | VLF |
| Alder (saplings) | VLFO |

**Target Note 29:**

A seasonally wet shaded ditch with locally abundant stands of soft-rush and great willowherb. Bulrush is locally frequent. The ditch was dry during the survey. No obvious change in 2015.

**Target Note 30:**

A heavily disturbed improved grassland dominated by a mixture of common grasses and containing locally dominant stands of common nettle and scattered willow scrub. The fields were partially cut in 2015 and there is a very noticeable increase in rankness indicated by tall ruderal herb species.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | D |
| False oat-grass | D |
| Rough meadow-grass | A |
| Curled dock | LA |
| Broad-leaved dock | LA |
| Prickly sow-thistle | VLA |
| White clover | LA |
| Common bent | F |

| | |
|---|---|
| Hogweed | F |
| Bramble | F |
| Common couch grass | LF |
| Grey willow | VLF |
| Marsh foxtail | VLF |
| Creeping bent | VLF |
| Silverweed | VLF |
| Creeping thistle | O |

**Target Note 31:**

A heavily-shaded and very shallow pond surrounded by alder and dense stands of grey willow and bramble scrub. Aquatic vegetation is absent and marginal species are restricted to locally frequent bittersweet and occasional common water-plantain, soft-rush, remote sedge, creeping buttercup and Indian Balsam. This pond was entirely dry in 2015.

**Target Note 32:**

A seasonally wet pond that was completely dry at the time of survey. Reed canary-grass dominates the area with very locally dominant creeping bent and locally abundant common bent. Bulrush and redshank are occasional and a few grey willow are beginning to colonise. The area was very dry in 2015 with no evidence of seasonal inundation.

**Target Note 33:**

An extensive area of disturbed but arable land that has been classified as a regenerated improved grassland. The sward is coarse although a few meadow herbs occur but generally at low frequency. The field was partially cut in 2015 and there is a very noticeable increase in rankness indicated by tall ruderal herb species.

| **Species** | **Abundance** |
|---|---|
| Yorkshire-fog | D |
| Oilseed rape | VLD |
| Mayweed sp. | VLD |
| False oat-grass | A |
| Creeping thistle | A |
| White clover | A |
| Field horsetail | LA |
| Creeping buttercup | LA |
| Wild radish | LA |
| Common bent | LA |
| Common ragwort | LA |
| Silverweed | LA |
| Common sorrel | VLA |
| Corn spurrey | VLA |
| Rosebay willowherb | VLA |
| Curled dock | VLA |
| Creeping bent | VLA |
| Rough meadow-grass | F |
| Hairy tare | LF |
| Cock’s-foot | LF |

| | |
|---|---|
| Smooth hawk's-beard | VLF |
| ointed rush | VLF |
| Common fleabane | VLF |
| Compact rush | VLF |
| Common hemp-nettle | VLF |
| Soft-rush | O |
| Hard rush | O |
| Common figwort | VO |
| Greater bird's-foot-trefoil | VO |
| Selfheal | VO |

**Target Note 34:**

A semi-shaded pond that lies partially within the site on the southern boundary. The pond has a virtually complete surface cover of fringed water-lily, common duckweed and ivy-leaved duckweed. Outside of the site emergent bulrush and branched bur-reed are localised. The pond has a well developed marginal/emergent flora including creeping bent, floating sweet-grass, yellow iris, soft-rush and creeping buttercup. Great willow herb and Indian balsam are present on the banks and in the marginal zone. The pond has a population of coarse fish. The 2015 reported no obvious change since 2013 except for a possible increase in emergent vegetation and silting.

**Target Note 35:**

An immature broad-leaved plantation woodland co-dominated by even-aged spindly alder and goat willow. The woodland has a developing under-storey and poor ground flora. Dense vegetation prevented access to parts of the woodland. No obvious change in 2015.

| **Species** | **Abundance** |
|---|---|
| Canopy: | |
| Alder | LD |
| Goat willow | LD |
| Grey willow | A |
| Understorey: | |
| Hawthorn | LA |
| Grey willow | LA |
| Sycamore | LF |
| Oak sp. | O |
| Ground flora: | |
| Common nettle | A |
| Hogweed | A |
| Wood meadow-grass | A |

**Target Note 36:**

A roadside verge composed of mixed tall ruderal herb, tall grasses and dense/scattered scrub adjacent to a dry ditch. The habitat's small size and micro-variation prevented accurate mapping of this area. Species recorded include bramble, great willow herb, hogweed, false oat-grass, common nettle, hedge bindweed, Yorkshire-fog, cock's-foot and rosebay willow herb. The opposite verge has a similar tall herb/grassland mixture but also has male-fern and extensive dominant stands of bracken. Again the habitats are too small and complex to accurately map. No obvious change in 2015.

**Target Note 37:**

A semi-mature 'amenity' broad-leaved plantation woodland on the northern boundary of a recreation ground/playing field. The woodland is co-dominated by ash and silver birch and there is a well-developed mixed (planted) under-storey of common broad-leaved trees and shrubs. There is no significant ground flora. No obvious change in 2015.

| **Species** | **Abundance** |
|---|---|
| Canopy: | |
| Ash | LD |
| Silver birch | LD |
| Understorey: | |
| Blackthorn | LD |
| Dogwood | A |
| Dog rose sp. | A |
| Hazel | A |
| Hawthorn | F |
| Elder | LF |
| Guelder rose | LF |
| Rowan | LF |
| Grey willow | LF |
| Bramble | LF |
| Oak sp. | O |
| Buckthorn | O |
| Osier | O |
| Ground flora: | |
| Ivy | LA |

**Target Note 38:**

An immature 'amenity' broad-leaved plantation woodland on the southern edge of a recreation ground/playing field. The woodland is locally dominated by silver birch and structurally resembles a scrub community except the species cannot be classified as scrub under the Phase 1 classification due to the species present. There is no significant ground flora. Due to the range of species and homogenous structure of the woodland there has been no attempt to separate canopy and under-storey features. No obvious change in 2015.

| **Species** | **Abundance** |
|---|---|
| Silver birch | LD |
| Blackthorn | VLD |
| Hazel | VLA |
| Dogwood | VLA |
| Cherry sp. | VLA |
| Ash | VLF |
| Dog rose sp. | VLF |
| Hawthorn | VLF |
| Holly | VLF |
| Elder | VLF |
| Guelder rose | O |
| Rowan | O |
| Sycamore | O |

| | |
|---|---|
| Field maple | VO |
| <u>Ground flora:</u> | |
| Common nettle | LA |

**Target Note 39:**

A mixed stand of 'amenity' planted woodland composed of guelder rose, hawthorn, hazel, ash, blackthorn, grey willow, cherry sp. and dog rose sp. Honeysuckle occurs in the ground flora which is otherwise floristically poor.

**Target Note 40:**

A stand of planted dense scrub dominated by a mixture of hawthorn and blackthorn with very locally frequent dog rose. Several silver birch and semi-mature poplar and white willow also occur. No obvious change in 2015.

**Target Note 41:**

An extensive arable field that has been ploughed but left fallow. Subsequently short ephemeral communities are beginning to establish and the field has an abandoned appearance.

Several large piles of brash accompanied by stands of tall ruderal herb also occur in this field.

Blackthorn 'suckers' are encroaching from the north-west motorway boundary, and small patches of scattered hawthorn and bramble occur very occasionally on the other site boundaries.

A re-check of this part of the site in 2016 confirms that the area is now a tall, coarse grassland, with a high frequency of tall ruderal herb, particularly dock species.

| **Species** | **Abundance** |
|---|---|
| Wavy bitter-cress | LA |
| Wild radish | LA |
| Mayweed sp. | LA |
| Ribwort plantain | LA |
| Yorkshire-fog | LA |
| Groundsel | LA |
| Meadow-grass spp. | LA |
| Dock spp. | LA |
| Willowherb sp. | LA |
| Rosebay willowherb | VLA |
| Common nettle | VLA |
| Blackthorn | VLF |

**Target Note 42:**

A small, linear marshy area on the south-west boundary of the site. The area is dominated by rushes, and bramble, silver birch saplings and willow sp. have also colonised. An unidentified species of the Composite family was locally abundant here. There was little vegetative material available to definitively identify this species, however the species is considered most likely to be common fleabane.

| **Species** | **Abundance** |
|---|---|
| Soft-rush | D |
| Rosebay willowherb | LD |
| Bramble | LD |
| Moss sp. (not Sphagnum) | A |
| Great willowherb | A |
| Common fleabane? | A |
| Willow sp. | LA |
| Common nettle | LF |
| Yellow iris | LF |
| Creeping buttercup | LF |
| Reed canary-grass | O |
| Silver birch | O |

**Target Note 43:**

A hedgerow forming the boundary with Mill Lane. The hedge is not stock proof and is dominated by hawthorn. A single elder is growing in the field adjacent to this feature.

The ground flora is poor and composed of patches of common nettle and garlic mustard. A narrow swathe of uncultivated land dominated by coarse grasses and bramble occurs on the field-side adjacent to this hedge.

**Target Note 44:**

An expansive area of amenity grassland composed of a mixture of perennial rye-grass, red fescue, meadow-grass sp. and creeping buttercup.

**Target Note 45:**

The habitats in the area surrounding the club house are composed of a coarse mix of neglected improved grassland, small patches of amenity grassland and areas of dense bramble/hawthorn scrub with scattered semi-mature oak trees.

**Target Note 46:**

A linear strip of coarse improved grassland dominated by cocks-foot, Yorkshire-fog and common couch. The area is punctuated by dense/scattered secondary stands of blackthorn and bramble and occasional stands of common nettle.

Immature ash and birch species have also been planted here. Occasional juvenile oak occur here which might also have been planted or are possibly self-seeded.

**Target Note 47:**

An immature hedgerow (approx. <30 years) has been planted along the edge of the boundary stream. Hawthorn is dominant throughout and immature ash are occasional. There is no significant ground flora due to the dominance of coarse species.

**Target Note 48:**

A shallow stream on the northern boundary of the site. The stream is impounded slightly due to leaf litter and rubbish and is approximately 1.2m wide by 5-20cm deep. The stream is largely devoid of vegetation due to heavy shade cast by adjacent trees and shrubs, consequently fool's water-cress is only very locally abundant.

**Target Note 49:**

An immature broad-leaved plantation woodland with a canopy composed of a mixture of species including silver birch, oak sp., field maple and poplar sp. The understorey includes hawthorn and dog rose and the ground flora ivy and cow parsley.
The woodland is approximately 15-20 years old.

**Target Note 50:**

A stand of Japanese knotweed.

**Target Note 51:**

A formal area fenced from the surrounding field and composed of a small children's playground, ball court and a community centre building with associated areas of hard-standing.

Areas of amenity grassland occur with formally planted stands of introduced shrubs and several immature-mature trees including ash, London plane, hornbeam, oak and whitebeam species.

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## Using this document

In order to navigate this document easily please enable the bookmark tool view using the bookmark icon on the left of your screen:


The bookmark functions within the pdf allow easy navigation through large reports. Bookmarks can be clicked on like hyperlinks taking the user directly to the relevant section.

Those bookmarks with a plus sign next to them (+) can be expanded by clicking on the plus sign. You can minimise these entries again by clicking on the resulting minus sign (-).

In addition you can search through the document for any particular text by using the standard Microsoft shortcut (Ctrl + F) and enter the text you are looking for.

## Interpretation of the data

- Species maps: The species map shows the location of protected, notable and Invasive non-native species. Records with a grid reference accuracy of 10m square or above are minimised to a 100m square. Where there are more than 100 grid IDs on a map, the grid references will be minimised to 1km. The numbers adjacent to the species names relate to the grid ID shown on the map. The full detailed grid reference can be found within the excel spreadsheet of raw data.
- The date in brackets following the species name or grid ID is the year of the most recent record for this species at this location.
- Species designation Status: The species designation information provided within this enquiry output is based on the best available information provided through the JNCC: *Conservation designations of UK Taxa* list. Information on the limitations to this list available here: (http://jncc.defra.gov.uk/page-3408)
- Site/habitat data: Further information on the capture and digitisation methodology used to create the NBN derived site and habitat data is available via the NBN Gateway here:
  (Natural England: http://data.nbn.org.uk/organisation/organisation.jsp?orgKey=19) (National Trust: http://data.nbn.org.uk/organisation/organisation.jsp?orgKey=187)
  (RSPB: http://data.nbn.org.uk/organisation/organisation.jsp?orgKey=10589)
  (JNCC: http://data.nbn.org.uk/organisation/organisation.jsp?orgKey=1)

## RERS (RECORD Enquiry Reporting System) Recent Changes Log

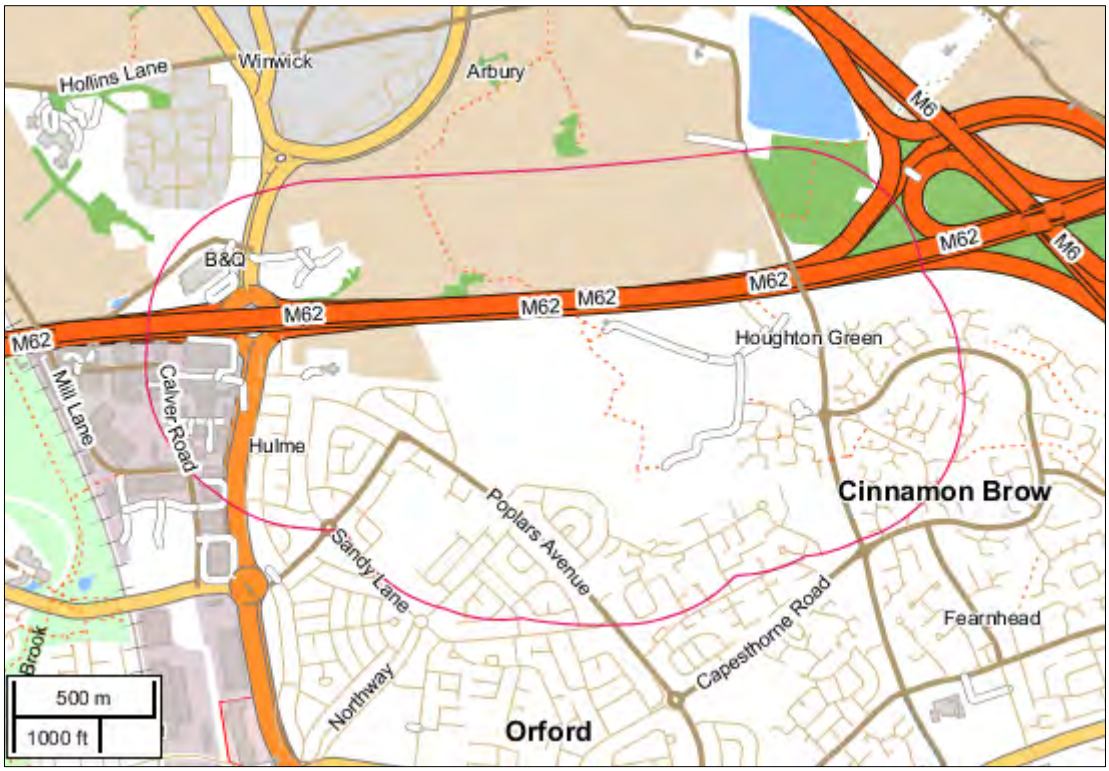
Version 1.2.x

- The percentage of RECORD coverage area tetrads a species has been recorded in has been included in the Designated Species Summary table

# 315209

# Peel Hall

# SJ6154191561



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## Designated Species Summary

| Taxa | Designation Name | Occurrence in Cheshire tetrads between 2004-2015 (%) | Occurrence in Cheshire tetrads all years (%) |
|---|---|---|---|
| **Barn Owl (Tyto alba)** | Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber, Wildlife and Countryside Act Schedule 9 | 25% | 57% |
| **Black-headed Gull (Chroicocephalus ridibundus)** | Birds of Conservation Concern [RSPB] - Amber | 22% | 40% |
| **Black-necked Grebe (Podiceps nigricollis)** | Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber | 2% | 4% |
| **Bullfinch (Pyrrhula pyrrhula)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Amber | 20% | 70% |
| **Canada Goose (Branta canadensis)** | Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9 | 25% | 51% |
| **Common Frog (Rana temporaria)** | Wildlife and Countryside Act - Schedule 5 | 33% | 62% |
| **Common Gull (Larus canus)** | Birds of Conservation Concern [RSPB] - Amber | 9% | 24% |
| **Corn Bunting (Emberiza calandra)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red | 2% | 37% |
| **Crane (Grus grus)** | Birds of Conservation Concern [RSPB] - Amber, Wildlife and Countryside Act Schedule 9 | <1% | <1% |
| **Curlew (Numenius arquata)** | Birds of Conservation Concern [RSPB] - Amber, NERC S41, UK BAP Priority Species | 15% | 52% |
| **Dunnock (Prunella modularis)** | Birds of Conservation Concern [RSPB] - Amber | 28% | 83% |
| **Eastern Grey Squirrel (Sciurus carolinensis)** | Wildlife and Countryside Act Schedule 9 | 33% | 53% |
| **Eurasian Badger (Meles meles)** | Protection of Badgers Act 1992 | 58% | 71% |
| **European Water Vole (Arvicola amphibius)** | Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species | 14% | 51% |
| **Fieldfare (Turdus pilaris)** | Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Red | 20% | 37% |
| **Golden Plover (Pluvialis apricaria)** | Birds of Conservation Concern [RSPB] - Amber | 6% | 17% |

| | | | |
|---|---|---|---|
| **Great Black-backed Gull (Larus marinus)** | Birds of Conservation Concern [RSPB] - Amber | 6% | 16% |
| **Green Woodpecker (Picus viridis)** | Birds of Conservation Concern [RSPB] - Amber | 12% | 44% |
| **Grey Partridge (Perdix perdix)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species | 8% | 59% |
| **Grey Wagtail (Motacilla cinerea)** | Birds of Conservation Concern [RSPB] - Amber | 16% | 44% |
| **Hairy Vetchling (Lathyrus hirsutus)** | Nationally Rare | <1% | <1% |
| **Herring Gull (Larus argentatus)** | Birds of Conservation Concern [RSPB] - Red | 11% | 31% |
| **Hobby (Falco subbuteo)** | Wildlife and Countryside Act - Schedule 1 | 9% | 16% |
| **House Martin (Delichon urbicum)** | Birds of Conservation Concern [RSPB] - Amber | 22% | 66% |
| **House Sparrow (Passer domesticus)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species | 33% | 84% |
| **Kestrel (Falco tinnunculus)** | Birds of Conservation Concern [RSPB] - Amber | 35% | 80% |
| **Kingfisher (Alcedo atthis)** | Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber | 16% | 44% |
| **Lapwing (Vanellus vanellus)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species | 28% | 78% |
| **Lesser Black-backed Gull (Larus fuscus)** | Birds of Conservation Concern [RSPB] - Amber | 11% | 29% |
| **Mallard (Anas platyrhynchos)** | Birds of Conservation Concern [RSPB] - Amber | 40% | 81% |
| **Marsh Tit (Poecile palustris)** | Birds of Conservation Concern [RSPB] - Red | 2% | 28% |
| **Meadow Pipit (Anthus pratensis)** | Birds of Conservation Concern [RSPB] - Amber | 14% | 45% |
| **Merlin (Falco columbarius)** | Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber | 6% | 14% |
| **Mistle Thrush (Turdus viscivorus)** | Birds of Conservation Concern [RSPB] - Amber | 23% | 81% |
| **Oystercatcher (Haematopus ostralegus)** | Birds of Conservation Concern [RSPB] - Amber | 13% | 22% |
| **Peregrine (Falco peregrinus)** | Wildlife and Countryside Act - Schedule 1 | 12% | 18% |
| **Pink-footed Goose (Anser** | Birds of Conservation Concern | 8% | 15% |

| | | | |
|---|---|---|---|
| **brachyrhynchus)** | [RSPB] - Amber | | |
| **Pipistrelle (Pipistrellus pipistrellus sensu lato)** | Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, Conservation (Habs and Sp) Regulations 2010 - Schedule 2 | 25% | 52% |
| **Pochard (Aythya ferina)** | Birds of Conservation Concern [RSPB] - Amber | 7% | 19% |
| **Redshank (Tringa totanus)** | Birds of Conservation Concern [RSPB] - Amber | 10% | 22% |
| **Redwing (Turdus iliacus)** | Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Red | 19% | 36% |
| **Reed Bunting (Emberiza schoeniclus)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Amber, NERC S41, UK BAP Priority Species | 19% | 72% |
| **Ruddy Duck (Oxyura jamaicensis)** | Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9 | 4% | 14% |
| **Skylark (Alauda arvensis)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41 | 19% | 85% |
| **Song Thrush (Turdus philomelos)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red | 32% | 87% |
| **Starling (Sturnus vulgaris)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red | 29% | 86% |
| **Stock Dove (Columba oenas)** | Birds of Conservation Concern [RSPB] - Amber | 11% | 65% |
| **Swallow (Hirundo rustica)** | Birds of Conservation Concern [RSPB] - Amber | 42% | 87% |
| **Swift (Apus apus)** | Birds of Conservation Concern [RSPB] - Amber | 22% | 81% |
| **Teal (Anas crecca)** | Birds of Conservation Concern [RSPB] - Amber | 10% | 28% |
| **Tree Sparrow (Passer montanus)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species | 8% | 71% |
| **Tufted Duck (Aythya fuligula)** | Birds of Conservation Concern [RSPB] - Amber | 12% | 30% |
| **West European Hedgehog (Erinaceus europaeus)** | NERC S41, UK BAP Priority Species | 25% | 44% |
| **Whitethroat (Sylvia communis)** | Birds of Conservation Concern [RSPB] - Amber | 17% | 70% |
| **Willow Warbler (Phylloscopus trochilus)** | Birds of Conservation Concern [RSPB] - Amber | 19% | 83% |
| **Woodcock (Scolopax rusticola)** | Birds of Conservation Concern [RSPB] - Amber | 7% | 44% |

| | | | |
|---|---|---|---|
| **Yellowhammer (Emberiza citrinella)** | Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species | 14% | 77% |

## Map


Hollins Lane
Winwick
Myddleton Lane
Arbury
Arbury Lane
M6
M62
Newton Road (A49)
B&Q
Woburn Road
Poplars Avenue
Hulme
Mill Lane
Delph Lane
Cinnamon Brow
Sandy Lane
Poole Avenue
Statham Avenue
Winwick Road
Northway
Fisher Avenue
Antrim Road
Eagle Park
A49
Long Lane (A50)
Orford Green (A50)
Hallows Avenue
Capesthorne Road
Harding Avenue
Derek Avenue
Hilden Road
Insall Road
Cinnamon Lane
200 m
1000 ft

# Species Summary Report

## Species Grid Id Summary Report

### AMPHIBIAN

| Taxon name | Grid ref. id |
|---|---|
| Common Frog | 4 (2012), 15 (2006), 20 (2004), 35 (2004) |

### BIRD

| Taxon name | Grid ref. id |
|---|---|
| Green Woodpecker | 4 (2011) |
| House Martin | 4 (2010), 28 (2012) |
| Crane | 16 (2012) |
| Marsh Tit | 36 (2007) |
| Corn Bunting | 4 (2011), 16 (2014), 17 (2012) |
| Bullfinch | 16 (2014), 17 (2012), 29 (2009), 36 (2007-2008) |
| House Sparrow | 4 (2011), 6 (2009), 15 (2006), 16 (2014), 17 (2012) |
| Golden Plover | 17 (2012) |
| Curlew | 36 (2007) |
| Kingfisher | 36 (2007-2008) |
| Great Black-backed Gull | 36 (2007-2008) |
| Grey Wagtail | 36 (2007-2008), 37 (2004) |
| Mistle Thrush | 4 (2011), 6 (2009), 16 (2014), 17 (2012), 36 (2007-2008) |
| Fieldfare | 4 (2011), 17 (2012) |
| Dunnock | 4 (2011), 16 (2014), 17 (2012), 35 (2009), 36 (2007-2008) |
| Meadow Pipit | 4 (2011), 16 (2014), 17 (2012), 37 (2004-2006) |
| Barn Owl | 4 (2011) |
| Herring Gull | 4 (2011), 16 (2014), 17 (2012), 36 (2007-2008) |
| Lesser Black-backed Gull | 4 (2011), 16 (2014) |
| Common Gull | 4 (2010-2011), 17 (2012) |
| Black-headed Gull | 4 (2011), 29 (2009), 36 (2007-2008), 37 (2005-2006) |
| Lapwing | 4 (2010-2011), 7 (2013), 11 (2011), 17 (2012), 23 (2012), 31 (2013), 36 (2007-2008), 37 (2011) |
| Hobby | 4 (2011) |
| Merlin | 4 (2011) |

| | |
|---|---|
| Grey Partridge | 4 (2011), 14 (2014), 17 (2012), 28 (2012), 36 (2008), 37 (2004-2006) |
| Kestrel | 2 (2011), 4 (2010-2011), 9 (2011), 10 (2013), 13 (2012), 16 (2014), 17 (2012), 18 (2012), 21 (2012), 24 (2011), 36 (2007-2008), 37 (2004) |
| Mallard | 4 (2011), 13 (2012), 17 (2012), 19 (2013), 29 (2009), 36 (2007-2008) |
| Black-necked Grebe | 37 (2004-2005) |
| Canada Goose | 4 (2010-2011), 36 (2007-2008), 37 (2005) |
| Song Thrush | 4 (2011), 16 (2014), 17 (2012), 29 (2009), 36 (2007-2008) |
| Redwing | 4 (2011), 36 (2007-2008) |
| Whitethroat | 4 (2005-2011), 16 (2014), 36 (2007-2008) |
| Skylark | 4 (2011), 16 (2014), 17 (2012), 27 (2011), 28 (2011) |
| Swallow | 4 (2010-2011), 13 (2012), 16 (2014), 17 (2012), 36 (2007-2008) |
| Willow Warbler | 13 (2012), 16 (2014), 17 (2012), 36 (2007-2008) |
| Oystercatcher | 36 (2008) |
| Stock Dove | 4 (2011), 17 (2012), 37 (2006) |
| Peregrine | 37 (2006) |
| Tufted Duck | 37 (2004-2006) |
| Pochard | 37 (2004-2005) |
| Pink-footed Goose | 17 (2012) |
| Ruddy Duck | 37 (2004) |
| Teal | 37 (2004-2006) |
| Swift | 4 (2011), 5 (2012), 13 (2012), 15 (2007), 16 (2014), 17 (2012), 33 (2009), 34 (2009), 36 (2007-2008) |
| Reed Bunting | 4 (2011), 17 (2012), 36 (2007-2008) |
| Yellowhammer | 4 (2011), 17 (2012) |
| Tree Sparrow | 4 (2011), 17 (2012) |
| Starling | 4 (2011), 6 (2009), 8 (2012), 12 (2013), 16 (2014), 17 (2012), 36 (2007-2008), 37 (2011) |
| Woodcock | 36 (2007) |
| Redshank | 17 (2012) |

## FLOWERING PLANT

| Taxon name | Grid ref. id |
|---|---|
| Hairy Vetchling | 13 (2012) |

## TERRESTRIAL MAMMAL

| Taxon name | Grid ref. id |
|---|---|
| **European Water Vole** | 25 (2009), 26 (2004), 32 (2009) |
| **Eurasian Badger** | 3 (2005), 22 (2013) |
| **Eastern Grey Squirrel** | 13 (2012) |
| **West European Hedgehog** | 1 (2015), 4 (2012), 16 (2012), 36 (2013) |
| **Pipistrelle** | 30 (2013) |

## Grid Id Species Summary Report

### 1 - [SJ602922]

| Taxon group | Taxon name |
|---|---|
| TERRESTRIAL MAMMAL | West European Hedgehog (Erinaceus europaeus) (2015) |

### 2 - [SJ603918]

| Taxon group | Taxon name |
|---|---|
| BIRD | Kestrel (Falco tinnunculus) (2011) |

### 3 - [SJ605919]

| Taxon group | Taxon name |
|---|---|
| TERRESTRIAL MAMMAL | Eurasian Badger (Meles meles) (2005) |

### 4 - [SJ6092]

| Taxon group | Taxon name |
|---|---|
| AMPHIBIAN | Common Frog (Rana temporaria) (2012) |
| BIRD | Green Woodpecker (Picus viridis) (2011), House Martin (Delichon urbicum) (2010), Corn Bunting (Emberiza calandra) (2011), House Sparrow (Passer domesticus) (2011), Mistle Thrush (Turdus viscivorus) (2011), Fieldfare (Turdus pilaris) (2011), Dunnock (Prunella modularis) (2011), Meadow Pipit (Anthus pratensis) (2011), Barn Owl (Tyto alba) (2011), Herring Gull (Larus argentatus) (2011), Lesser Black-backed Gull (Larus fuscus) (2011), Common Gull (Larus canus) (2010-2011), Black-headed Gull (Chroicocephalus ridibundus) (2011), Lapwing (Vanellus vanellus) (2010-2011), Hobby (Falco subbuteo) (2011), Merlin (Falco columbarius) (2011), Grey Partridge (Perdix perdix) (2011), Kestrel (Falco tinnunculus) (2010-2011), Mallard (Anas platyrhynchos) (2011), Canada Goose (Branta canadensis) (2010-2011), Song Thrush (Turdus philomelos) (2011), Redwing (Turdus iliacus) (2011), Whitethroat (Sylvia communis) (2005-2011), Skylark (Alauda arvensis) (2011), Swallow (Hirundo rustica) (2010-2011), Stock Dove (Columba oenas) (2011), Swift (Apus apus) (2011), Reed Bunting (Emberiza schoeniclus) (2011), Yellowhammer (Emberiza citrinella) (2011), Tree Sparrow (Passer montanus) (2011), Starling (Sturnus vulgaris) (2011) |
| TERRESTRIAL MAMMAL | West European Hedgehog (Erinaceus europaeus) (2012) |

### 5 - [SJ609919]

| Taxon group | Taxon name |
|---|---|
| BIRD | Swift (Apus apus) (2012) |

## 6 - [SJ612910]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | House Sparrow (Passer domesticus) (2009), Mistle Thrush (Turdus viscivorus) (2009), Starling (Sturnus vulgaris) (2009) |

## 7 - [SJ612919]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Lapwing (Vanellus vanellus) (2013) |

## 8 - [SJ613920]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Starling (Sturnus vulgaris) (2012) |

## 9 - [SJ615918]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2011) |

## 10 - [SJ616918]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2013) |

## 11 - [SJ617919]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Lapwing (Vanellus vanellus) (2011) |

## 12 - [SJ618911]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Starling (Sturnus vulgaris) (2013) |

## 13 - [SJ618913]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2012), Mallard (Anas platyrhynchos) (2012), Swallow (Hirundo rustica) (2012), Willow Warbler (Phylloscopus trochilus) (2012), Swift (Apus apus) (2012) |

| | |
|---|---|
| **FLOWERING PLANT** | Hairy Vetchling (Lathyrus hirsutus) (2012) |
| **TERRESTRIAL MAMMAL** | Eastern Grey Squirrel (Sciurus carolinensis) (2012) |

## 14 - [SJ618915]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Grey Partridge (Perdix perdix) (2014) |

## 15 - [SJ6190]

| Taxon group | Taxon name |
|---|---|
| **AMPHIBIAN** | Common Frog (Rana temporaria) (2006) |
| **BIRD** | House Sparrow (Passer domesticus) (2006), Swift (Apus apus) (2007) |

## 16 - [SJ6191]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Crane (Grus grus) (2012), Corn Bunting (Emberiza calandra) (2014), Bullfinch (Pyrrhula pyrrhula) (2014), House Sparrow (Passer domesticus) (2014), Mistle Thrush (Turdus viscivorus) (2014), Dunnock (Prunella modularis) (2014), Meadow Pipit (Anthus pratensis) (2014), Herring Gull (Larus argentatus) (2014), Lesser Black-backed Gull (Larus fuscus) (2014), Kestrel (Falco tinnunculus) (2014), Song Thrush (Turdus philomelos) (2014), Whitethroat (Sylvia communis) (2014), Skylark (Alauda arvensis) (2014), Swallow (Hirundo rustica) (2014), Willow Warbler (Phylloscopus trochilus) (2014), Swift (Apus apus) (2014), Starling (Sturnus vulgaris) (2014) |
| **TERRESTRIAL MAMMAL** | West European Hedgehog (Erinaceus europaeus) (2012) |

## 17 - [SJ6192]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Corn Bunting (Emberiza calandra) (2012), Bullfinch (Pyrrhula pyrrhula) (2012), House Sparrow (Passer domesticus) (2012), Golden Plover (Pluvialis apricaria) (2012), Mistle Thrush (Turdus viscivorus) (2012), Fieldfare (Turdus pilaris) (2012), Dunnock (Prunella modularis) (2012), Meadow Pipit (Anthus pratensis) (2012), Herring Gull (Larus argentatus) (2012), Common Gull (Larus canus) (2012), Lapwing (Vanellus vanellus) (2012), Grey Partridge (Perdix perdix) (2012), Kestrel (Falco tinnunculus) (2012), Mallard (Anas platyrhynchos) (2012), Song Thrush (Turdus philomelos) (2012), Skylark (Alauda arvensis) (2012), Swallow (Hirundo rustica) (2012), Willow Warbler (Phylloscopus trochilus) (2012), Stock Dove (Columba oenas) (2012), Pink-footed Goose (Anser brachyrhynchus) (2012), Swift (Apus apus) (2012), Reed Bunting (Emberiza schoeniclus) (2012), Yellowhammer (Emberiza citrinella) (2012), Tree Sparrow (Passer montanus) (2012), Starling (Sturnus vulgaris) (2012), Redshank (Tringa totanus) (2012) |

## 18 - [SJ619920]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2012) |

## 19 - [SJ620911]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Mallard (Anas platyrhynchos) (2013) |

## 20 - [SJ620915]

| Taxon group | Taxon name |
|---|---|
| **AMPHIBIAN** | Common Frog (Rana temporaria) (2004) |

## 21 - [SJ620920]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2012) |

## 22 - [SJ621918]

| Taxon group | Taxon name |
|---|---|
| **TERRESTRIAL MAMMAL** | Eurasian Badger (Meles meles) (2013) |

## 23 - [SJ621920]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Lapwing (Vanellus vanellus) (2012) |

## 24 - [SJ622920]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Kestrel (Falco tinnunculus) (2011) |

## 25 - [SJ623910]

| Taxon group | Taxon name |
|---|---|
| **TERRESTRIAL MAMMAL** | European Water Vole (Arvicola amphibius) (2009) |

## 26 - [SJ623920]

| Taxon group | Taxon name |
|---|---|
| **TERRESTRIAL MAMMAL** | European Water Vole (Arvicola amphibius) (2004) |

## 27 - [SJ623923]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Skylark (Alauda arvensis) (2011) |

## 28 - [SJ623925]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | House Martin (Delichon urbicum) (2012), Grey Partridge (Perdix perdix) (2012), Skylark (Alauda arvensis) (2011) |

## 29 - [SJ624915]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Bullfinch (Pyrrhula pyrrhula) (2009), Black-headed Gull (Chroicocephalus ridibundus) (2009), Mallard (Anas platyrhynchos) (2009), Song Thrush (Turdus philomelos) (2009) |

## 30 - [SJ624918]

| Taxon group | Taxon name |
|---|---|
| **TERRESTRIAL MAMMAL** | Pipistrelle (Pipistrellus pipistrellus sensu lato) (2013) |

## 31 - [SJ624924]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Lapwing (Vanellus vanellus) (2013) |

## 32 - [SJ625915]

| Taxon group | Taxon name |
|---|---|
| **TERRESTRIAL MAMMAL** | European Water Vole (Arvicola amphibius) (2009) |

## 33 - [SJ627914]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Swift (Apus apus) (2009) |

## 34 - [SJ627915]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Swift (Apus apus) (2009) |

## 35 - [SJ628917]

| Taxon group | Taxon name |
|---|---|
| **AMPHIBIAN** | Common Frog (Rana temporaria) (2004) |
| **BIRD** | Dunnock (Prunella modularis) (2009) |

## 36 - [SJ6291]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Marsh Tit (Poecile palustris) (2007), Bullfinch (Pyrrhula pyrrhula) (2007-2008), Curlew (Numenius arquata) (2007), Kingfisher (Alcedo atthis) (2007-2008), Great Black-backed Gull (Larus marinus) (2007-2008), Grey Wagtail (Motacilla cinerea) (2007-2008), Mistle Thrush (Turdus viscivorus) (2007-2008), Dunnock (Prunella modularis) (2007-2008), Herring Gull (Larus argentatus) (2007-2008), Black-headed Gull (Chroicocephalus ridibundus) (2007-2008), Lapwing (Vanellus vanellus) (2007-2008), Grey Partridge (Perdix perdix) (2008), Kestrel (Falco tinnunculus) (2007-2008), Mallard (Anas platyrhynchos) (2007-2008), Canada Goose (Branta canadensis) (2007-2008), Song Thrush (Turdus philomelos) (2007-2008), Redwing (Turdus iliacus) (2007-2008), Whitethroat (Sylvia communis) (2007-2008), Swallow (Hirundo rustica) (2007-2008), Willow Warbler (Phylloscopus trochilus) (2007-2008), Oystercatcher (Haematopus ostralegus) (2008), Swift (Apus apus) (2007-2008), Reed Bunting (Emberiza schoeniclus) (2007-2008), Starling (Sturnus vulgaris) (2007-2008), Woodcock (Scolopax rusticola) (2007) |
| **TERRESTRIAL MAMMAL** | West European Hedgehog (Erinaceus europaeus) (2013) |

## 37 - [SJ6292]

| Taxon group | Taxon name |
|---|---|
| **BIRD** | Grey Wagtail (Motacilla cinerea) (2004), Meadow Pipit (Anthus pratensis) (2004-2006), Black-headed Gull (Chroicocephalus ridibundus) (2005-2006), Lapwing (Vanellus vanellus) (2011), Grey Partridge (Perdix perdix) (2004-2006), Kestrel (Falco tinnunculus) (2004), Black-necked Grebe (Podiceps nigricollis) (2004-2005), Canada Goose (Branta canadensis) (2005), Stock Dove (Columba oenas) (2006), Peregrine (Falco peregrinus) (2006), Tufted Duck (Aythya fuligula) (2004-2006), Pochard (Aythya ferina) (2004-2005), Ruddy Duck (Oxyura jamaicensis) (2004), Teal (Anas crecca) (2004-2006), Starling (Sturnus |

vulgaris) (2011)

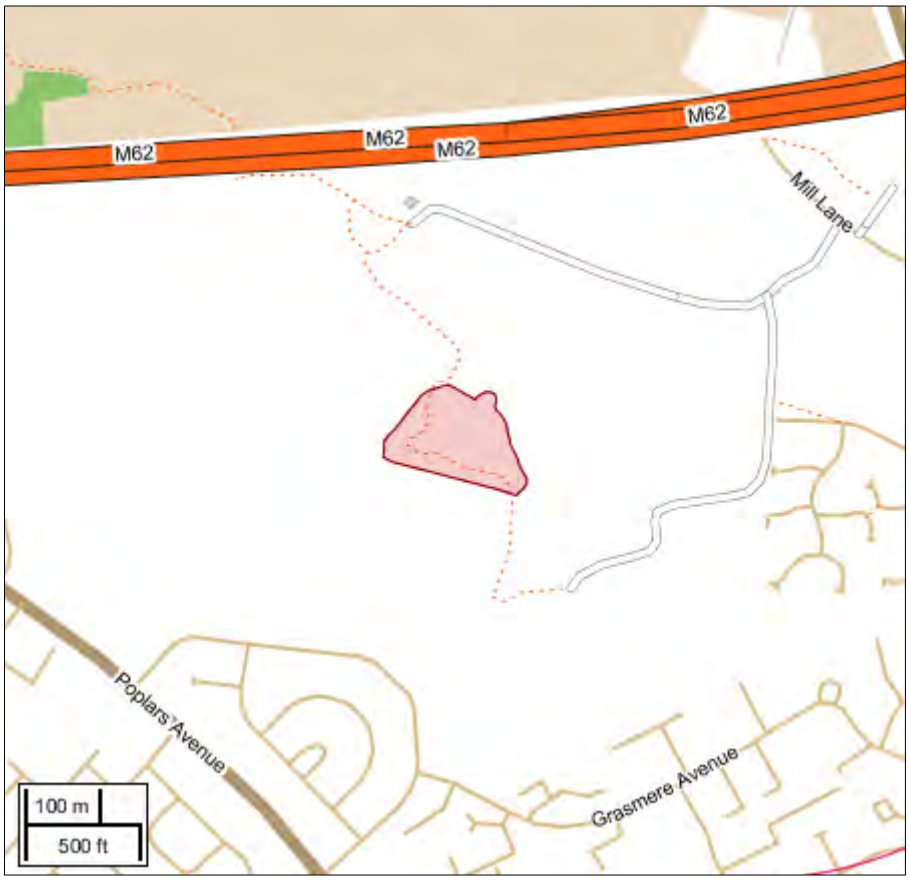
# Site Boundary Report

## Local Sites

### Local Wildlife Sites

### *Radley Plantation and Pond / WA047*

Map




| Site name | Radley Plantation and Pond |
|---|---|
| **Site code** | WA047 |
| **Authority** | Warrington Local Wildlife Sites Partnership |
| **Site centroid** | SJ6172291629 |

## Regionally Important Geodiversity Sites

There are no Cheshire Regionally Important Geodiversity Sites within this search area

## Statutory Sites

There are no Statutory Sites within this search area.

## Other Sites of Conservation Interest

There are no Other Sites of Conservation Interest within this search area.

# Priority Habitat Report

There are no Priority Habitat within this search area.

No sign of badger found in the area surveyed

**Key:**

Badger survey constrained due to dense vegetation*

Study Area Boundary

*It should be noed that the badger survey was not constrained in the rest of the site.

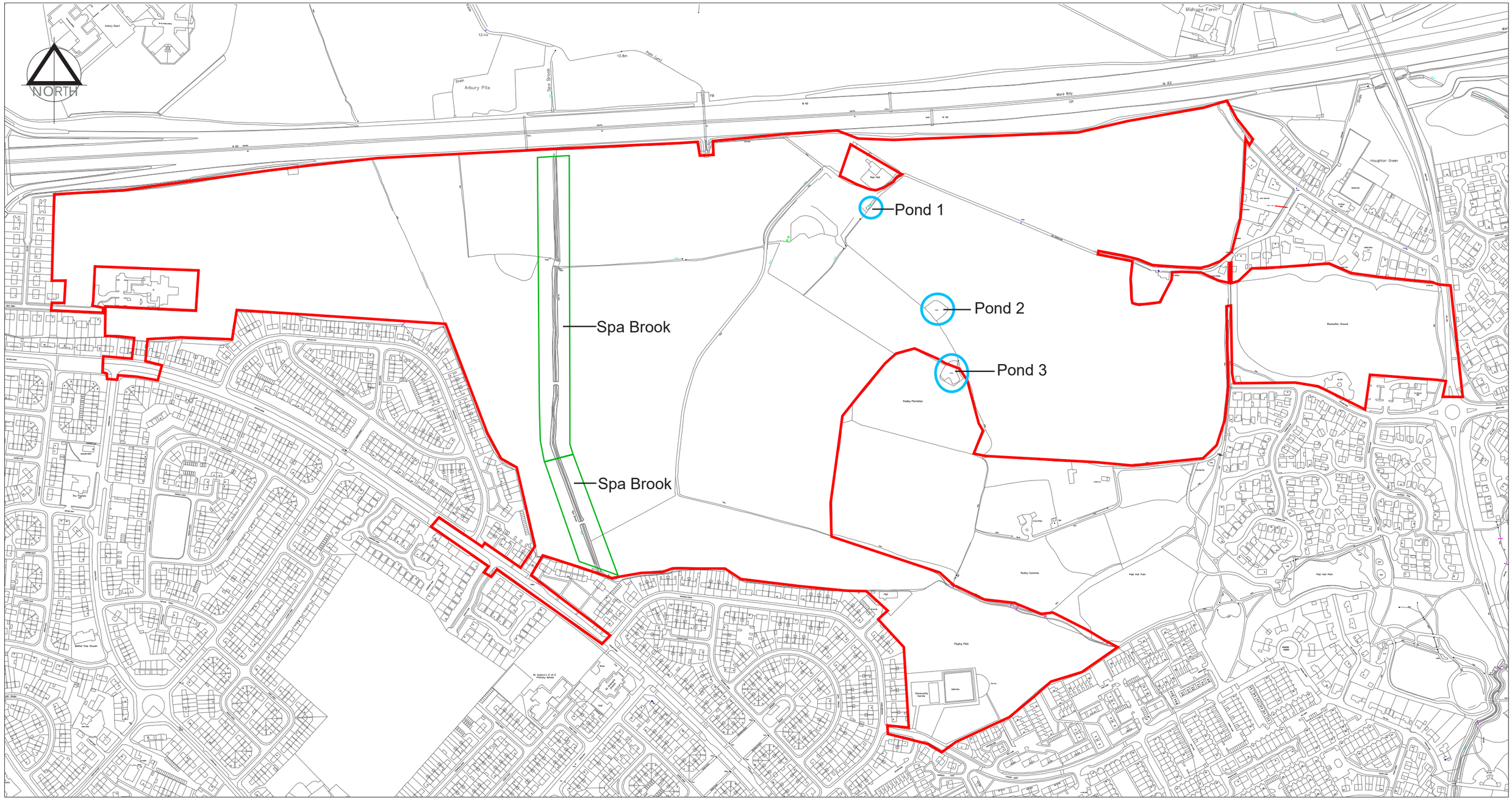
0 50m 100m 200m 300m

# PEEL HALL, WARRINGTON

ECO 5
Badger Survey Map
Scale: See scale bar

appletons

Landscape Architecture • Ecology • Enviromental Planning & Assessment • Aboriculture




**Key:**

- Water vole survey with no constraints - water vole absent
- Water voles survey constrained
- Study Area Boundary

0 50m 100m 200m 300m

# PEEL HALL, WARRINGTON

ECO 6
Water Vole Survey Map
Scale: See scale bar

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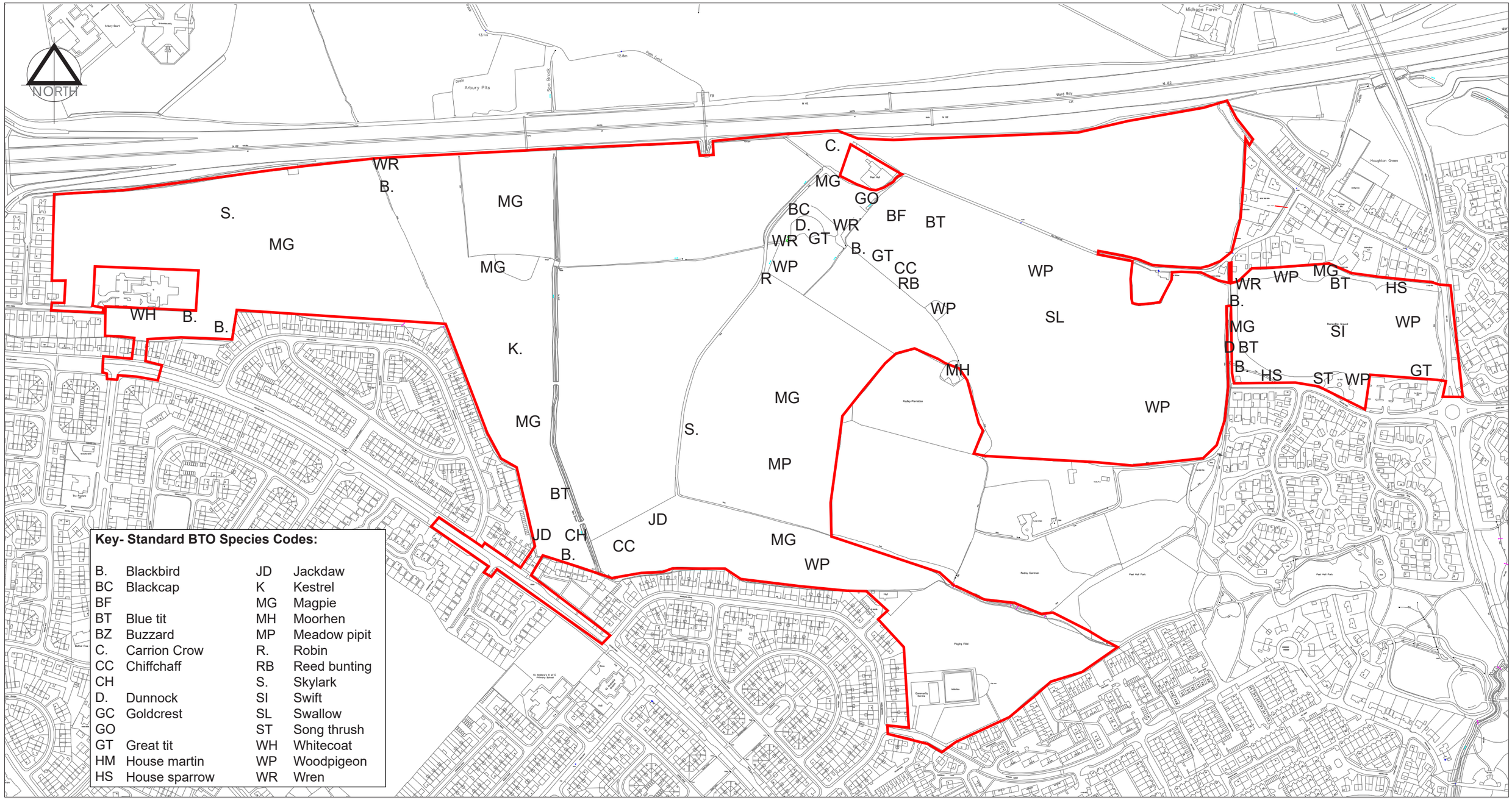


**Key:**

Study Area Boundary

0 50m 100m 200m 300m

# PEEL HALL, WARRINGTON

ECO 7
Bird Survey Map 5a (Visit 1- 21.06.13)
Scale: See scale bar

appletons

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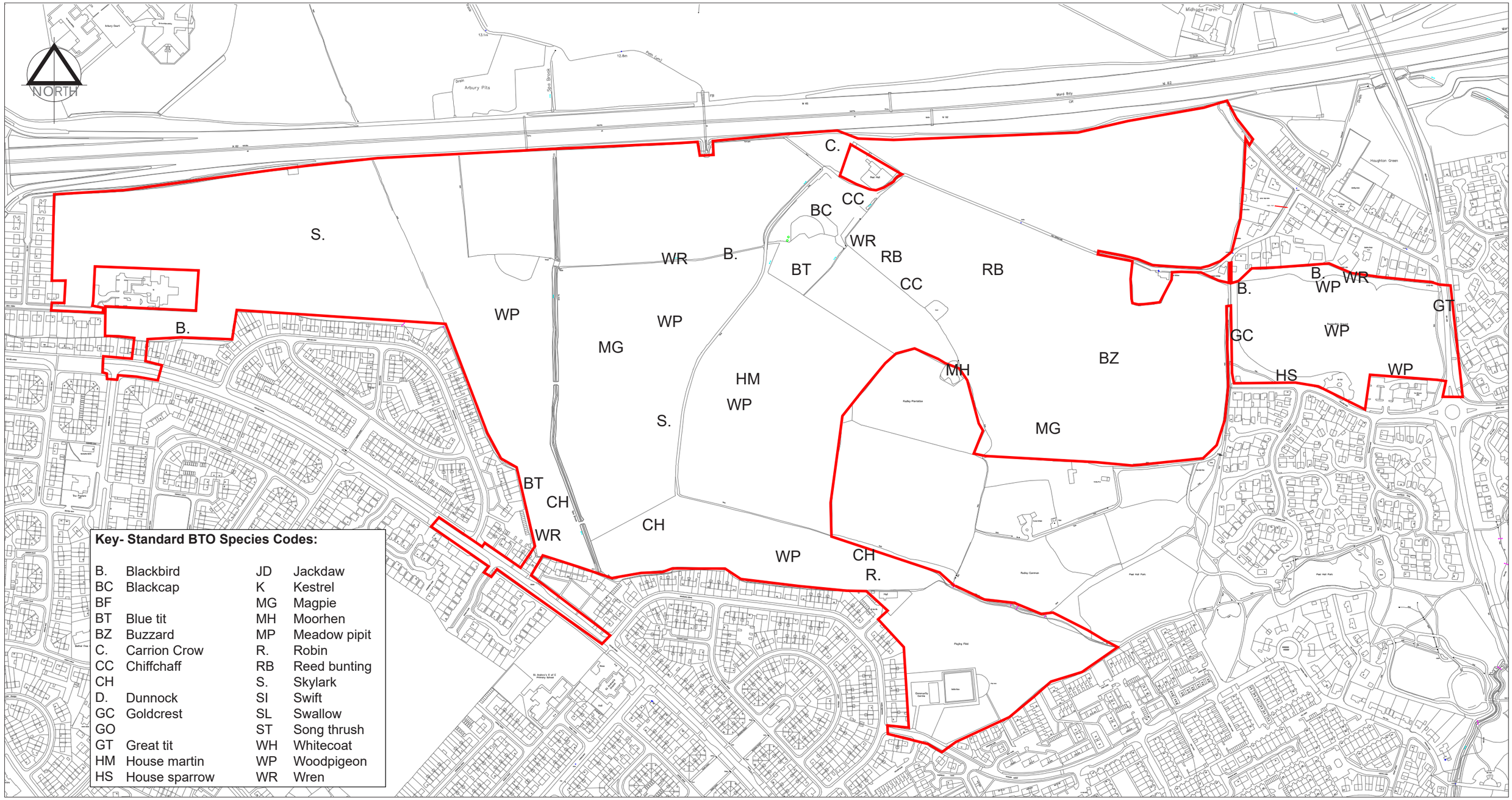


**Key:**

Study Area Boundary

0 50m 100m 200m 300m

# PEEL HALL, WARRINGTON

ECO 8
Bird Survey Map 5b (Visit 2 - 07.07.13)
Scale: See scale bar

appletons

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**TABLE 4 BAT SURVEY RECORDS**

| Date | Static point observations where bats were identified | Summary of activity during transects |
|---|---|---|
| 28.07.15 | **SP1:** 1 x C. pipistrelle commuted on to the site over Mill Lane from the direction of Dundee Close.<br><br>**SP2:** 2 x C. pipistrelle bat commuted on to the site from over Mill lane. | **Summary: Consistent activity**<br><br>C. pipistrelle bats foraging/commuting around peripheral areas of the parcel of amenity grass in the eastern area of the site, particularly where broadleaved linear tree is present.<br><br>C. pipistrelle bats were also observed consistently foraging/commuting along Radley Lane up to and including the vicinity of Peel Hall; deviation was observed from the lane when bats foraged over contiguous areas of grass/scrub mosaic. |
| 24.08.2015 | **SP3:** 2 x C. pipistrelle appeared in the vicinity, but were not seen to commute onto the site; these bats are most likely to have been roosting at Peel Cottage as they were first observed foraging in the garden of this property.<br><br>**SP4:** 1 x C. pipistrelle commuted along the lane which encircles Peel Hall.<br><br>**SP5:** 2 x C. pipistrelle came from the direction of Peel Hall; therefore, a small pipistrelle roost may be present at Peel Hall. | **Summary: Consistent activity**<br><br>Consistent foraging/commuting by C. pipistrelle bats within around the grounds of Peel Hall, and central and southern areas where woodland and grass/scrub mosaic is features; deviation to more open areas was noted in central western areas.<br><br>C. pipistrelle bats were also observed foraging/commuting close to a section of the east boundary between Spa brook and Newhaven Road. |
| 17.09.2015 | **SP6:** 1 x C. pipistrelle commuted from the direction of Peel Hall in a westerly direction.<br><br>**SP7:** 1 x C. pipistrelle commuting along woodland edge at the southern boundary; 2 x C. pipistrelle foraging in open areas over tall ruderal vegetation; 1 x C. pipistrelle commuting along hedgerow from the direction of Peel Hall. | **Summary: Consistent activity**<br><br>C. pipistrelle bats foraging/commuting around central and eastern areas; in particular around Peel Hall and along Radley Lane; bats were also observed foraging to the south and west of Peel Hall along, and with minor deviation from, hedgerow/lane.<br><br>C. pipistrelle bats were also observed foraging in more open areas, i.e. in the north and south sections contiguous to Radley Lane. |
| 23.09.2015 | **SP8 & SP9:** Commuting activity on to the site not recorded at either static point | **Summary: Some consistent activity, although some areas with sporadic activity or complete absence**<br><br>C. pipistrelle bats foraging/commuting within the grounds of Peel Hall and the adjoining/extending habitats, i.e. woodland and hedgerow/scrub to the south and west.<br><br>This activity also extended in a southerly direction along Spa Brook and towards Newhaven Road; however, activity was absent in the sites western extent. |

**Reduced foraging opportunities**

Illumination of foraging areas can potentially prevent or reduce foraging activity, causing bats to pass quickly through the lit area or avoid it completely (Polak et al., 2011). Lighting can disrupt the composition and abundance of insect prey (Davies et al., 2012). Acoustic tracking demonstrated that ***Eptesicus bottae*** failed to forage under lit conditions ( Polak et al., 2011). Artificial illumination in foraging habitats can effectively cause a loss of foraging areas for some bat species. Experiments with both captive and free-flying bats showed reduced foraging success of frugivorous bats (***Carollia sowelli***) under lit conditions. Bats harvested fewer fruits, which could have negative impacts on seed dispersal ( Lewanzik and Voigt, 2014). Currently there is a lack of empirical evidence on the impact of lighting on foraging success of insectivorous bat species

**Variable lighting regimes**

In some cases the impacts of lighting on bats may be minimised by changing the duration and timing of lighting regimes, to suit both human and wildlife use of the site. Such strategies are termed variable lighting regimes (VLRs) and involve switching off or dimming lights for part or all of the night and could be an effective strategy to minimise effects on bats. The majority of UK local authorities and councils have commenced lighting reduction strategies and are adopting VLRs with Central Monitoring Systems (CMS) which allow for remote switching off/dimming lights when human activity is low e.g. between 00.30 and 05.30 am. Lights are being switched off between midnight and 05.00 am, using remote dimming technology, on several sections of the motorway network in England, resulting in 30% reductions of carbon and electricity consumption in each section and lower numbers of road traffic accidents after VLRs were installed (Highways Agency, 2011).

CMS technology can be used to switch lights off during periods of high bat activity, such as commuting or emergence to minimise impacts, though the peak times of bat activity may occur in the early evening when lighting is necessary because traffic and human activity levels are also high then. Lights can also be dimmed e.g. to 30% power, for periods of the night to reduce illumination and spill. CMS LED lamps have been installed along a canal used by bats in London as part of the Arcadia Project. The CMS allow bespoke dimming regimes to reduce the light levels to 1 lux at times of low human activity (Fure, 2012). The appropriate lighting regime for an area will be site-specific and dependent on the nature of public use and type and amount of bat activity.

Lights can also be fitted with movement sensors that switch lights on as people approach and switch them off after people pass. Movement sensors can reduce the overall lit time for the environment, allowing for longer periods of darkness than lamps that are lit all night, potentially reducing the impact on bats and insects. However, the effectiveness of VLRs is reliant upon a good understanding of the timing and nature of bat activity in an area. Currently the impacts of VLRs on bats, both in terms of dimming and timing of lighting, are not known and further research is required.

**Reducing the intensity of light**

Reducing light intensity will reduce the overall amount and spread of illumination (Gaston et al., 2012). For some bat and insect species this may be sufficient to minimise disturbance or the magnitude of any negative impacts and disruption to circadian rhythms. However, some species may require very low light levels to have little/no impact on behaviour and circadian rhythms. Stone et al. (2012) tested the effect of LED lights on bats along commuting routes at three light intensities: mean 3.6 lux, mean 6.6 lux, and mean 49.8 lux. Activity of ***Rhinolophus hipposideros*** and ***Myotis*** spp. was reduced at all light intensities, even at 3.6 lux.

Average light levels recorded along preferred commuting routes of ***Rhinolophus hipposideros*** under natural unlit conditions were 0.04 lux across eight sites ( Stone, 2011).

When mitigating the impacts of lighting for such species, very low lux levels may not be suitable for human requirements. In such cases reducing intensity may not be appropriate and alternative strategies, such as dark corridors or physical barriers, may be preferable. Currently there is a lack of evidence regarding the light intensities below which there are no/reduced impacts on bats, and responses are likely to vary between species and behaviours. A “light threshold” below which there is little impact on bats may not exist for those species that may be light averse regardless of light intensity e.g. possibly ***Rhinolophus hipposideros***.

Light intensity can be reduced by dimming lights (e.g. using CMS technology), changing the light source (e.g. new technologies such as ceramic MH often have a lower wattage compared to old lamp types such as HPS) or creating physical barriers such as walls, or hedgerows to reduce the total amount of light reaching an area. HPS lights have been fitted with louvres to reduce light spill on the Grand Canal in Dublin, reducing light intensity on the river, allowing bats to fly in darkness (Fure, 2012). However, there is a trade-off between reduced intensity and the pattern of light distribution. Some older light types such as HPS, produce a heterogeneous light environment whereby light intensity declines steeply away from the light source. However, some new technologies such as LEDs produce a uniform light distribution resulting in a loss of dark refuges between the lamps (Gaston et al., 2012). In such cases it may be preferable to increase the spacing between the units to create dark refuges to facilitate the movement of light-averse bats.

**Changing the light type**

Light technology is developing rapidly and there is a general trend towards white light due to the increased colour rendering and perceived brightness for the human eye compared to HPS or LPS lights (Knight, 2010 and Lockwood, 2011). Emerging light types increasing in popularity include white LED, warm-white LED, and MH. Warm white (600 nm) LED street lights are being tested in the Netherlands for their potential to reduce negative impacts on bats (Fure, 2012). There is increasing concern that the shift to broad spectrum lighting could alter the balance of species interactions (Davies et al., 2013a). Few studies have compared the effects of impacts of different light types on bats across species and behaviours, although there was no difference in the nature and magnitude of the effect of LED and HPS lights on commuting ***Rhinolophus hipposideros*** ( Stone et al., 2012). Lights emitting blue, green or UV wavelengths, such as MH or mercury light sources, attract large numbers of insects and increase insect mortality ( Bruce-White and Shardlow, 2011, Frank, 2006 and Somers-Yeates et al., 2013). Some LED lamps attract fewer insects than MH and MV ( Eisenbeis and Eick, 2011). Different light types are likely to have different effects on bats, and these effects will be species- and behaviour-specific. Choice of light type, and hence its spectral distribution will inevitably be a compromise between wildlife and public requirements. However, potential negative impacts on light-averse bats and insects can be minimised by avoiding short wavelength “blue” lights ( Falchi et al., 2011).

Bat Conservation Trust

# BATS AND LIGHTING IN THE UK
## Bats and the Built Environment Series

This document is aimed at lighting engineers, lighting designers, planning officers, developers, bat workers and anyone specifying lighting. It is intended to raise awareness of the impacts of lighting on bats and mitigation is suggested for various scenarios. It also offers an explanation of the facts associated with the lighting industry for the benefit of bat workers.

This is a working document and as such the information contained will be updated in line with advances in our knowledge both into the impact on bats and also to reflect the advances in technology available in the lighting industry.

# ABOUT BATS – FOR THE LIGHTING INDUSTRY

**General Ecology**

Bats are the only true flying mammals. Like us, they are warm-blooded, give birth and suckle their young. They are also long-lived, intelligent and have a complex social life. In Britain there are 17 species, all of which are small (most weigh less than a £1 coin) and eat insects.

Bats have evolved a number of unusual features, mainly connected with their ability to fly. Their wings are formed from a web of highly elastic skin stretched over greatly elongated finger bones, the legs and tail, though their thumbs remain free to help them cling on when roosting. Bats have also developed a highly sophisticated echolocation system that allows them to avoid obstacles and catch tiny insects, which they seize in flight or pick off water, the ground or foliage, even in complete darkness. When they're flying, bats produce a stream of high-pitched calls and listen to the echoes to produce a sound picture of their surroundings.

Some bats specialise in catching large insects such as beetles or moths but others eat large numbers of very small insects, such as gnats, midges and mosquitoes. Bats gather to feed wherever there are lots of insects, so the best places for them include traditional pasture, woodland, marshes, ponds and slow moving rivers.

During the winter there are relatively few insects available, so bats hibernate. In September and October they put on weight and then, as the weather gets colder, they seek out appropriate sheltered roosts, let their body temperature drop to close to that of their surroundings and slow their heart rate to only a few beats per minute. This greatly reduces their energy requirements so that their food reserves last as long as possible. Bats don't hibernate right through the winter but may wake up and go out to feed on mild evenings when insects are active.

During the spring and summer period female bats gather together into maternity colonies for a few weeks to give birth and rear their young (called pups). Usually only one pup is born each year. This is looked after carefully and suckled for between four and six weeks until it is old enough to fly out and hunt for itself. Bats don’t build nests and don't bring food back to the roost to feed their young, so the baby lives only on its mother's milk until it is old enough to fly. Once the baby is independent, the colony breaks up and the bats generally move to other roosts. Bats may gather together from a large area to form these maternity roosts, so any disaster at the summer breeding site can affect the whole colony of bats from a wide surrounding area. Many of these maternity sites are used every summer as bats have a strong tradition of returning to the same site year after year.

**Legal Protection of bats**

Due to the decline in bat numbers, all species of bat are protected by the Wildlife & Countryside Act (1981) (as amended) and the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). This makes it illegal to: kill, injure, capture or disturb bats, obstruct access to bat roosts or damage/destroy bat roosts. Lighting in the vicinity of a bat roost causing disturbance could constitute an offence, so it is important that Natural England, Countryside Council for Wales, Scottish Natural Heritage or Environment and Heritage Service, Northern Ireland is consulted and allowed time to provide advice on lighting proposals in the vicinity of bats and roosts.

## Impacts on bats

### Roosts

Illuminating a bat roost creates disturbance and may cause the bats to desert the roost. Light falling on a roost access point will at least delay bats from emerging and this shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed.

### Insects and foraging

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions.

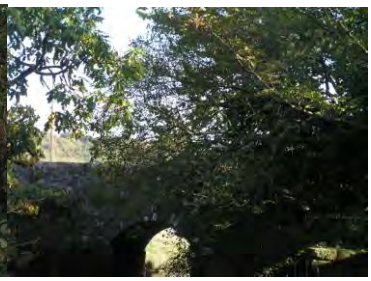
Many night flying species of insect are attracted to light, especially those lamps that emit an ultra-violet component and particularly if it is a single light source in a dark area. As well as moths a range of other insects can be attracted to light such as craneflies, midges and lacewings. Studies have shown that, although noctules, Leisler's, serotine and pipistrelle bats swarm around white mercury street lights (this would also apply to metal halide) feeding on the insects attracted to the light, this behaviour is not true for all bat species. The slower flying broad winged species such as long-eared bats, *Myotis* species (which include Brandt's, whiskered, Daubenton's, Natterer's and Bechstein's), Barbastelle and greater and lesser horseshoe bats generally avoid street lights. In addition it is also thought that insects are attracted to lit areas from further afield. This is thought to result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light avoiding bats to be able to feed. It is noticeable that most of Britain's rarest bats are among those species listed as avoiding light. Clearly, effective mitigation where there is potential for impact on bats has importance in the conservation of these species.

Artificial lighting is thought to increase the chances of bats being preyed upon. Many avian predators will hunt bats which may be one reason why bats avoid flying in the day. Observations have been made of kestrels (diurnal raptors) hunting at night under the artificial light along motorways.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or 'commuting' bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.

**Other behaviours**
Artificial lighting disrupts the normal 24-hour pattern of light and dark which is likely to affect the natural behaviour of bats. Bright light may reduce social flight activity and cause bats to move away from the light area. Studies have shown that continuous lighting along roads creates barriers which some bat species cannot cross. For example, Daubenton's bats move their flight paths to avoid street lamps. The following images indicate possible scenarios where bats' commuting routes may cross a road. They are linear features such as tree lines, river corridors, hedgerows or where tree canopies form a link over the road.





## ABOUT THE LIGHTING – FOR BAT WORKERS

**Types of lights in use**
A range of lighting equipment is available:

1) **Low pressure sodium lamps (SOX)** (typical orange lamps seen along roadsides). Light is emitted predominantly at one wavelength, contains minimal ultraviolet (UV) light and has a low attraction to insects. The lamps tend to be large which makes it more difficult to focus the light from these lamps. These are in the gradual process of being removed or replaced.
2) **High pressure sodium lamps (SON) (**brighter pinkish-yellow lamps). Commonly used as road lighting. Light is emitted over a moderate band of long wavelengths including a small UV component. Insects are attracted to the brighter light. The lamp is of medium size and the light can be more easily directed than low pressure sodium. This is the predominant lamp now in use.
3) **Mercury lamps (MBF)** (bluish-white lamps). These emit light over a moderate spectrum including a larger component of UV light to which insects are particularly sensitive. Insects are attracted in large numbers along with high densities of bat species. (Rydell & Racey 1993). They are rare now and are not used in new developments.
4) **White SON.** This is whiter than High Pressure Sodium and has a larger component of UV light.
5) **Metal Halide**. A small lamp and therefore more easy to focus light and make directional. Emits less UV light than mercury but more than high pressure sodium. It comes in three forms a) Quartz arc tube (HQI); b) Ceramic arc tube (CDM-T) and c) Cosmo which is a new ceramic form.

6) **Light Emitting Diodes** (LEDs). Predicted to compete with metal halide and high pressure sodium as a widely used light source within the next few years. The light emitted is more directional. The light is produced in a narrow beam. It is instant light.
7) **Tungsten Halogen** (more directional). It is not used in new lighting schemes but may be encountered as security light on a private household.
8) **Compact Fluorescent** Mostly in use in residential street lighting. It produces a white light; variants are available with minimal UV output. It can be used at a low wattage and therefore on a low output to achieve low lux.

**Legal requirements for lighting**

There is no legislation requiring an area or road to be lit.
The Building Regulations specify that 150 W is the maximum for exterior lighting of buildings but this does not apply to private individuals.
There are a number of British Standards that relate to various components of lighting and there are also guidelines that relate to crime prevention, prevention of vehicular accidents and amenity use.
Many County councils and less often District and Borough councils set out standards in local guidance policy documents. These are sometimes based on the advice given by the Highways Authority 'TA49 – Approval of new and replacement lighting on trunk roads and trunk road motorways'.
In assessing the need for lighting it would be beneficial to ask the local authority for their lighting policy document as this should incorporate all of the above.

**The installation of lighting and the planning system**

Domestic lighting needs no planning permission and depends on direct advice being given to the householder. Lighting associated with new development or a listed building does require planning permission. Planning officers or developers when dealing with applications for lighting in an area of suitable bat habitat eg. woodland, old pasture, linking hedgerows and water habitats) should seek information on bat roosts in the area.

If assistance is needed they can contact the BCT Bat Helpline 0845 1300 228 who may be able to suggest how best to access information on bat roosts known in the area. If bat

roosts are suspected, it may be necessary to conduct a bat survey. A survey may need to determine the species of bat affected, their population levels, the likely impact of the lighting on the bats and possible mitigation.
The need to install lighting should be questioned. Where lighting is permitted, as may be necessary for public safety, conditions should be imposed to ensure the impact of the lighting on the bats is kept to a minimum. The use of a lighting design computer program that predicts where light will fall should be used to predict the potential impact and to plan mitigation.
The consultation on the addition to PPS23 on Pollution Control of Annex 3 on lighting is on hold at the present time (July 2007) until the outcome of the Baker review is known.

# MITIGATION OF LIGHTING IMPACTS ON BATS

## 1. BAT ROOSTS

No bat roost (including access points) should be directly illuminated. If it is considered necessary to illuminate a building known to be used by roosting bats, the lights should be positioned to avoid the sensitive areas. Close offset accent lighting causes less light pollution; it is more specific and can be designed to avoid bat sensitive areas, and better highlights the features of the subject of the illumination.

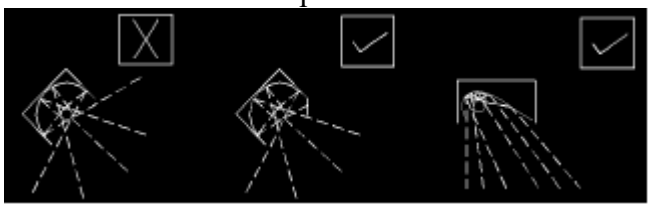
## 2. FORAGING AND COMMUTING

**Type of lamp (light source)**
The impact on bats can be minimised by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its uv filtration characteristics.
**Luminaire and light spill accessories**
Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.
**Lighting column**
The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.
**Predicting where the light cone and light spill will occur**
There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

**Light levels**
The light should be as low as guidelines permit. If lighting is not needed, don't light.
**Timing of lighting**
The times during which the lighting is on should be limited to provide some dark periods. Roads or trackways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10 metres in length either side of commuting route.

## 3. FLOODLIGHTING OF SPORTS OR EVENTS

The use of asymmetric beam floodlights (as opposed to symmetric) orientated so that the glass is parallel to the ground will ensure that the light is cast in a downward direction and avoids horizontal spill.



See the National Trust guide to 'Events, concerts and bats' at http://www.nationaltrust.org.uk/main/w-bat05_events.pdf for further advice on ways to reduce the impact of event lighting.

## 4. SECURITY LIGHTING

**Power** It is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.
**Movement sensors** Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed.
**Timers** If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
**Aim of light** The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
**Alternatives**
It may be a better solution for security lighting on domestic properties to use a porch light.

## Ongoing areas of research

- The impact of light on commuting corridors used by lesser horseshoe bats. Emma Stone, University of Bristol
- The effects of lighting on prime bat foraging areas within London, concentrating on riparian habitats and open spaces. Alison Fure.
- The effect of light and noise on British bat species. Frank Greenaway.

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## Glossary of terms
## (used in this article or that may be used by the lighting industry)

| | |
|---|---|
| Arc tube | A tube normally ceramic or quartz enclosed by the outer glass envelope of a HID lamp that contains the arc stream. |
| Asymmetric beams | Lamp is off-centre in a reflector more steeply curved at one end. |
| Candela | The intensity of a light source in a specific direction. Unit of Luminous intensity |
| Contrast | The relationship between the luminance of an object and its background. The higher |

| | |
|---|---|
| | the contrast the more likely it is an object can be seen. |
| Cowl | Physical light spill control accessory. |
| Diffuse | Term describing dispersed light distribution referring to the scattering of light. |
| Efficacy | A measure of light output against energy consumption measured in lumens per watt. |
| HID | High Intensity Discharge. Describes mercury vapour, metal halide and high pressure sodium lamps. |
| High Pressure Sodium Lamp | A HID lamp whose light is produced by radiation from high pressure sodium vapour which usually includes a small amount of UV light. |
| Hood | Physical light spill control accessory. |
| Illuminance | Illuminance is the quantity of light, or luminous flux, falling on a unit area of a surface. It is designated by the symbol E. The unit is the lux (lx). |
| Lamp | Light source. |
| Light cone | The angle at which the beam falls off to 50% of peak intensity. |
| Light Pollution | The spillage of light into areas where it is not required. Also known as obtrusive light. |
| Light spill | The light that falls outside the light cone. |
| Light Trespass (nuisance) | Light that impacts on a surface outside of the area designed to be lit by a lighting installation. The correct legal term is nuisance. |
| Louvres | Physical light spill control accessory. |
| Low Pressure Sodium | A discharge lamp in which light is produced by radiation from low pressure sodium vapour. Emits light predominantly at 589nm. |
| Lumen | The unit of light output from a lamp. |
| Luminaire | Light fitting or unit designed to distribute light from a lamp or lamps. |
| Luminance | The physical measure of the stimulus that produces the sensation of brightness measured by the luminous intensity reflected in a given direction. The unit is the candela per square metre ($cd/m^2$). |
| Lux (LX) | Illuminance is the quantity of light or |

| | |
|---|---|
| | luminous flux, falling on a unit area of a surface in the environment. It is designated by the symbol E. The unit is lux (lx). |
| Metal Halide (includes CDM-T) | A type of HID lamp in which most of the light us produced by radiation of metal halide and mercury vapours in the arc tube. Emits UV light.<br><br>UV poor variants are available.<br><br>It comes in three forms a) Quartz arc tube (HQI); b) Ceramic arc tube (CDM-T) and c) Cosmo which is a new ceramic form |
| Mercury | High pressure white light lamp that emits significant UV light. |
| Optic | The components of a luminaire such as reflectors, refractors, protectors which make up the directional light control section. |
| Photocell | A unit which senses light to control luminaires. |
| Reflector | A device used to reflect light in a given direction. |
| Refractor | A device used to redirect the light output from a lamp when the light passes through it. It is usually made from prismatic glass or plastic. |
| Shield | Physical light spill control accessory. |
| Sky glow | The brightening of the night sky caused by artificial lighting. |
| Symmetric beams | Lamp mounted in the centre of the reflector. |
| Ultra violet (UV) | Radiation that is shorter in wavelength and higher in frequency than visible violet light. |
| Voltage | The difference in electrical potential between two points of an electrical circuit. |
| Watt (W) | The unit for measuring electrical power. |

**TABLE 1 SPECIES RECORDS**

#The species records returned from the study are listed on Table 1 below.

| Table 1: Data Search Species Records: | | | | |
|---|---|---|---|---|
| **Species:** | **Grid Ref:** | **Year:** | **Source:** | **Designation:** |
| Kestrel | SJ615918 | 2011 | RECORD | |
| Kestrel | SJ61639189 | 2013 | RECORD | |
| Kestrel | SJ6191 | 2014 | RECORD | |
| Lapwing | SJ61729199 | 2011 | RECORD | Section 41 NERC Act |
| Lesser black-backed | SJ6191 | 2014 | RECORD | |
| gull | SJ6191 | 2014 | RECORD | |
| Meadow pipit | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| Dunnock | SJ6191 | 2014 | RECORD | |
| Mistle thrush | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| House sparrow | | | | |

***Table 1 Continued***

| Table 1: Data Search Species Records: | | | | |
|---|---|---|---|---|
| **Species:** | **Grid Ref:** | **Year:** | **Source:** | **Designation:** |
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| Corn bunting | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| Crane | SJ6191 | 2012 | RECORD | |
| Starling | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| Swallow | SJ6191 | 2014 | RECORD | |
| Swift | SJ6191 | 2014 | RECORD | |
| Skylark | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| Whitethroat | SJ6191 | 2014 | RECORD | |
| Song thrush | SJ6191 | 2014 | RECORD | Section 41 NERC Act |
| Willow warbler | SJ6191 | 2014 | RECORD | |
| Hedgehog | SJ6191 | 2012 | NBN | Section 41 NERC Act |

Several records of water vole were returned, however these were at considerable distance from the site boundary and the species would be unable to travel from those sites to the Peel Hall site due to major barrier effects.

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Several records of water vole were returned, however these were at considerable distance from the site boundary and the species would be unable to travel from those sites to the Peel Hall site due to major barrier effects.

**TABLE 2 BIRD SURVEY RESULTS**

**Visit 1:** 21.06.2013 – 6.00am-9.30am:

Survey Conditions: Clear with low wind (2-3 mph).

Bird activity largely centred around potential passerine nesting habitats in scrub, hedgerow and woodland areas. Open grasslands have only two pairs of skylark and one meadow pipit. Woodpigeon and magpie very common and foraging in both grassland and woodland/scrub areas. Foraging hirundines also present but possibly under-recorded during the survey. Reed bunting and blackcap singing on territory in scrub/grass mosaics and single song thrush and common whitethroat nests were found. Bullfinch and kestrel also observed foraging.

**Visit 2:** 02.07.2013 – 6.00am-9.00am:

Survey Conditions: Clear with low wind (2-3 mph).

| Species | Visit 1 | Visit 2 | Species Accounts |
|---|---|---|---|
| **Skylark** | * | * | Two singing males observed on territories during both visits. |
| **Meadow pipit** | * | | A single meadow pipit foraging in suitable nesting habitat on Visit 1 only. 1 pair estimated breeding. |
| **Blackbird** | * | * | Birds observed in and around habitat mosaics particularly close to housing including the playing field, Peel Hall Farm and at the end of Birch Avenue where a nest site was found. |
| **Song thrush** | * | | A single nest site was located in immature woodland next to the recreation area/playing field. |
| **Robin** | * | * | Birds singing in the woodland/scrub at Peel Hall Farm and scrub mosaic south of Radley Plantation. Likely to be breeding but nothing to indicate such other than in suitable habitat during the breeding season. |
| **Dunnock** | * | | Single bird singing in scrub at Peel Hall Farm and foraging along the boundary of Radley Lane. Possibly breeding but nothing to indicate such other than in suitable habitat during the breeding season. |
| **Wren** | * | * | Birds singing in suitable habitat on all visits. Possibly breeding but nothing to indicate such other than in suitable habitat during the breeding season. |
| **Goldcrest** | | * | Single foraging bird recorded on the boundary between the playing field and Radley Lane. |
| **Blue tit** | * | * | Birds, including family groups observed in and around habitat mosaics particularly close to housing including the playing field, Peel Hall Farm and to the north of Poplars Avenue. Breeding status not known. |
| **Great tit** | * | * | Birds singing and foraging in habitats surrounding the playing field. Breeding status not known. |
| **House sparrow** | * | * | Birds foraging in groups in habitats surrounding the playing field. Breeding status not known. |
| **Chiffchaff** | * | * | Birds singing in woodland and scrub habitats adjacent to Peel Hall Farm and to the north of Poplars Avenue. Probably breeding. |
| **Blackcap** | * | * | Male birds singing in woodland and scrub habitats adjacent to Peel Hall Farm on both visits. Probably breeding. |
| **Whitethroat** | * | | Male bird observed carrying food in scrub mosaic at the end of Birch Avenue. Nest located and breeding confirmed. |
| **Woodpigeon** | * | * | Ubiquitous species foraging frequently observed throughout site. Breeding. |

| | | | |
|---|---|---|---|
| **Reed bunting** | * | * | Singing males present on all visits in same area of grass/scrub mosaic. Simultaneous singing of 2 males registered. Breeding very likely. |
| **Chaffinch** | * | * | Singing males observed in habitat mosaic north of Poplars Avenue only. Probably breeding. |
| **Bullfinch** | * | | Pair observed foraging in scrub mosaic south-east of Peel Hall Farm. Breeding status not known. |
| **Goldfinch** | * | | Foraging birds present in tall herb habitat. No evidence of breeding. |
| **Magpie** | * | * | Foraging birds observed only. Probably breeds on site. |
| **Carrion crow** | * | | Single birds flew over the site. Not breeding. |
| **Jackdaw** | * | | Six birds foraging occasionally. Not breeding. |
| **Buzzard** | | * | Single bird flow over the site. Not breeding. |
| **Kestrel** | * | | Foraging bird recorded on site. Not breeding. |
| **Moorhen** | * | * | Single bird observed on pond on southern boundary. Breeding. |
| **Swift, Swallow and House martin** | * | * | These birds were observed in varying numbers foraging over the site. No attempt was made to record registrations due to the highly mobile nature of the species and the fact that they are not breeding on site. |
| **Black-headed Gull** | * | * | Transitory birds observed flying over the site on both visits. No attempt was made to record registrations as the species has no association with the site. |
| **Herring gull** | * | * | Transitory birds observed flying over the site on both visits. No attempt was made to record registrations as the species has no association with the site. |

Skylark still present in areas previously recorded and nesting is very likely although no `other supporting evidence was observed'. Common songbirds present in suitable nesting habitat as before but at lower density. Continued presence of woodpigeon, magpie and hirundines as previously recorded. New species recorded include a foraging goldcrest.

**TABLE 3: BIRD SPECIES RECORDED DURING THE SURVEY**

**Key to Table 2:** * = Recorded on visit.

Thirty one bird species were recorded during the survey, Table 3 below shows those considered to be breeding, those present in suitable habitat but with no evidence of breeding, and those not breeding.

**Table 3: Breeding Status of Birds Recorded:**

| **Birds Recorded as Breeding** | **Birds Present (no evidence of breeding)** | **Birds not Breeding (no suitable habitat, foraging/flying over or passage migrant)** |
|---|---|---|
| Skylark S41* | Dunnock S41 | Carrion crow |
| Meadow pipit | Magpie | Jackdaw |
| Reed bunting S41* | Wren | Kestrel |
| Blackbird | Blue tit | Buzzard |
| Song thrush S41* | Great tit | Swallow |
| Robin | Bullfinch S41* | House Martin |
| Chiffchaff | Magpie | Swift |
| Blackcap | | Black-headed gull |
| Whitethroat | | Herring gull S41 |
| Woodpigeon | | Goldcrest |
| Chaffinch | | Goldfinch |
| Moorhen | | House sparrow S41* |
| **Total: 12** | **Total: 7** | **Total: 12** |

**Key to Table 3:**

S41 = Section 41: Species of Principal Importance in England NERC Act 2006.

*Local Biodiversity Action Plan (LBAP) Species

**Criteria for the Assessment of Impacts:**

**Impact Assessment Consultation References:**

The *Guidelines for Ecological Impact Assessment in the United Kingdom* (IEEM 2006), the *Environment Impact Assessment; guide to procedures* (DCLG 2000) and Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes (RSPB et al 2000) were consulted in the formulation of this assessment.

The significance of the potential impacts on any given group and/or species is based on recognised criteria, these include; National and County Red Data Lists, Local Biodiversity Action Plans, The Wildlife and Countryside Act 1981 *(as amended)* and Section 41 NERC Act 2006 et al.

The significance of any impact is a measure of the magnitude of the impact and the nature conservation value of the site. There are five levels of impact magnitude.

**Impact Magnitude Definitions:**

**Very High:**

Loss of most of the site (i.e. at least 50% of the site area). Loss or severe depletion of a population of a nationally rare or protected species (i.e. equal to or more than 50% of the population), caused by loss of habitat, severance or disturbance.

**High:**

Loss affecting more than 30%, but less than 50% of the site area, or indirect adverse impacts (disturbance, pollution) affecting more than 50% of the site. Loss of depletion of protected or nationally rare species through habitat loss, severance or disturbance

**Medium:**

Loss affecting less than 30% but more than 10% of the site area, or indirect adverse impacts affecting more than 30% of the site. Significant reduction of populations of protected or nationally rare species, but not enough to affect viability, or severe reduction of populations of a regionally uncommon species through habitat loss, severance or disturbance.

**Low:**

Loss affecting less than 10% or less of the site area, or indirect adverse impacts affecting less than 30% of the site. Potential for slight reduction of a population of a protected species or nationally rare or regionally uncommon species, of minimal significance to viability.

**Negligible:**

Site and / or rare and uncommon species not perceptibly affected.

**No effect:**

No effect on any wildlife species or habitat.

**Nature Conservation Value & Geographical Sensitivity/Policy Context:**

The final significance of any potential impact is a measure of **both** the magnitude of the impact, and the nature conservation value of the site. Following the definition of the impact, it is important to consider the relative nature conservation value of the site in terms of both the geographical and policy context of the sites ecological attributes or features.

| **Table A: Nature Conservation Value & Geographical Sensitivity / Policy Context:** | |
|---|---|
| **Nature Conservation Value:** | **Table C: Geographical Sensitivity / Policy Context of Nature Conservation Features:** |
| **International**<br>***(Very High Value)*** | For example Ramsar, World Heritage Site, Special Area of Conservation, Special Protection Area or supporting nationally significant habitats or species of defined international community interest. |
| **National**<br>***(High Value)*** | For example Sites of Special Scientific Interest or supporting nationally significant habitats or species of defined national rarity or interest.<br><br>Nationally significant sites are those including significant areas of UK BAP Priority Habitats/Section 41 (S41) NERC Act 2006 habitats of principal importance in England, and sites which support significant and viable populations of UK Red Data Book species or nationally significant populations or communities of Nationally scarce protected species (other than badger) or UK BAP Priority/S41 species and habitats of principal importance in England. |
| **County**<br>***(Medium Value)*** | For example Wildlife Sites at county level or supporting examples of nationally threatened habitats or good populations of nationally scarce of protected species.<br><br>County level sites are those supporting nationally threatened habitats including smaller areas of UK BAP Priority/S41 Habitats or extensive areas of habitats which are rare or unique in the county, including LBAP key habitats and supporting good populations of Nationally scarce or protected species, smaller populations of UK BAP Priority/Section 41 Species or species which are rare in the county and uncommon or local nationally, including LBAP key species which are not also UK BAP/S41Species. |
| **District**<br>***(Low - Medium Value)*** | Sites failing to meet County Value criteria but supporting habitats or species which appreciably enrich the ecological resource of the county. District level sites are those supporting habitats uncommon in the county, small but unmodified fragments of nationally threatened habitats or comprising extensive areas or systems of semi-natural habitats. They are also sites supporting nationally scarce / protected species or strong populations or communities of regionally uncommon species, which would not otherwise be present. |
| **Local / Site**<br>***(Lower Value)*** | Habitats which fail to meet District Value Criteria, but which appreciably enrich the ecological resource of the immediate locality. |

**Estimating the Overall Impact Significance:**

The combination of the impact magnitude criteria and the nature conservation value of the site, results in degrees of impact significance. For example Very High and High impact magnitudes on sites of International and National Nature Conservation *(High)* Value would result in a Very Substantial significance of impact. These could either be beneficial or adverse depending upon the type of change resulting from the scheme.

Table B below summarises the relationship between value, magnitude and significance that has been used for this assessment.

| **Table B: Relationship Between Receptor Value, Impact Magnitude & Significance:** | | | | | |
|---|---|---|---|---|---|
| | **Nature Conservation Value of Site / Feature:** | | | | |
| **Magnitude of Potential Impact** | **International *(Very High)*** | **National *(High)*** | **County (Medium)** | **District (Low / Medium)** | **Local (Lower)** |
| **Very High** | Very substantial adverse | Very substantial adverse | Substantial adverse | Moderate adverse | Negligible |
| **High** | Very substantial adverse | Very substantial adverse | Moderate adverse | Slight adverse | Negligible |
| **Medium** | Substantial adverse | Substantial adverse | Moderate adverse | Slight adverse | Negligible |
| **Low** | Slight adverse | Slight adverse | Slight adverse | Slight adverse | Negligible |
| **Negligible** | Negligible | Negligible | Negligible | Negligible | Negligible |
| **No effect** | Neutral | Neutral | Neutral | Neutral | Neutral |
| **Positive** | Substantial beneficial | Substantial beneficial | Moderate beneficial | Slight beneficial | Negligible |

It should be noted that IEEM* have identified that this type of matrix tends to place negative impacts on a feature of local value into a 'low' significance category which can downplay local values for biodiversity. This issue has been noted by the report authors and the evaluation of impact magnitude has been adjusted where required to reflect a more accurate level of impact.

* *Guidelines for Ecological Impact Assessment in the United Kingdom* (IEEM 2006).

**Other Criteria:**

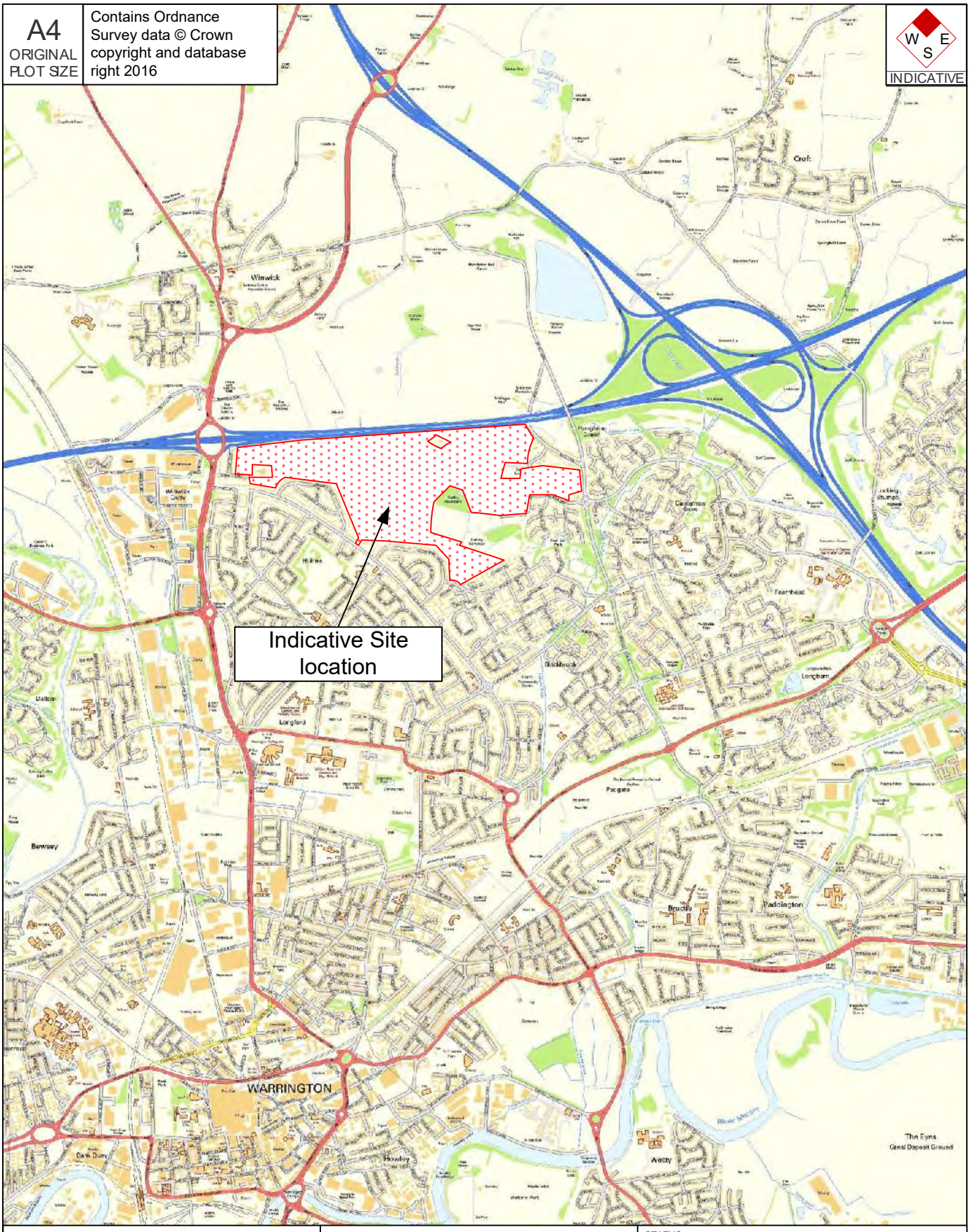
In addition, the Assessment of Potential Impacts in Table 2 assesses the duration and reversibility of the impact and whether it is capable of mitigation.

# HYD 1-5

## HYDROLOGY, DRAINAGE AND FLOOD RISK

A4
ORIGINAL PLOT SIZE



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Welwyn Garden City

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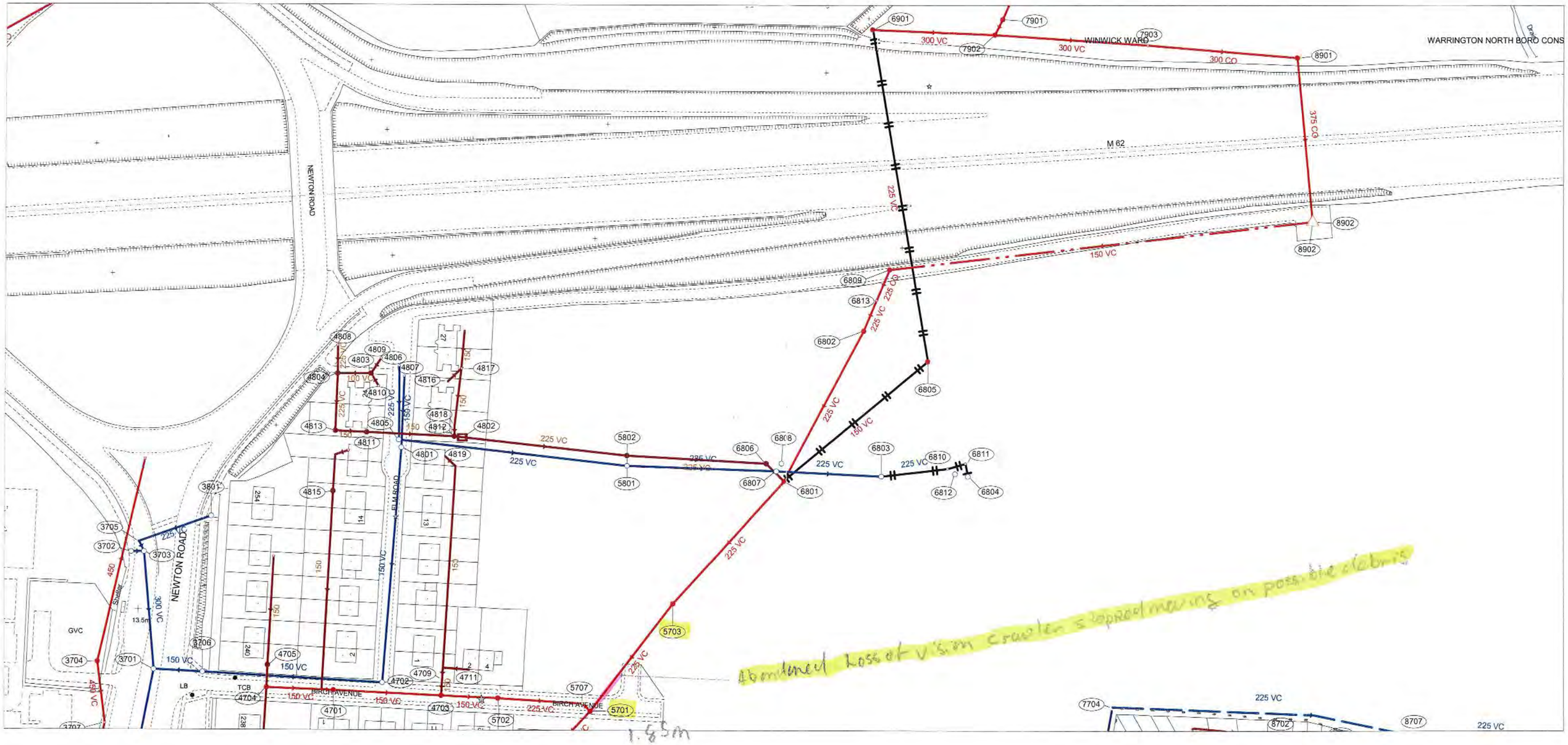
Castle Park
Cambridge
CB3 0AX

01223 370155
www.tpa.uk.com

tpa
Transport Planning Associates

| | | | | |
|---|---|---|---|---|
| PEEL HALL FARM, WARRINGTON | STATUS: INFORMATION | | | |
| SITE LOCATION PLAN | SCALE: NTS | PREPARED BY: TH | CHECKED BY: JH | APPROVED BY: JH |
| SATNAM PLANNING SERVICES LIMITED | JOB NO: 1506-45 | FIGURE NO: 2.1 | | DATE: JUNE '15 |


WINWICK WARD
WARRINGTON NORTH BORO CONS
M 62
NEWTON ROAD
ELM ROAD
BIRCH AVENUE
300 VC
300 CO
375 CO
225 VC
225 CO
150 VC
450
GVC
TCB
LB
Abandoned Loss of vision crawler spread moving on possible debris
1.85m

Lanes Group Plc

Lanes Group Plc

19661 - Land off Birch Avenue

25 November 2015

LANES GROUP PLC
LANCING HOUSE
BROUGHTON MILLS ROAD
BRETTON
CH4 0BY

# GRADE 3,4 & 5 Summary

## STRUCTURAL DEFECTS

| Structural defects | | | |
|---|---|---|---|
| Section | PLR | Grade | Fault description |
| Acceptable Structural Condition | | | |

Grade 3; Best practice suggests consideration be given to repair in the medium term
Grade 4; Best practice suggests consideration be given to a repair to avoid potential collapse
Grade 5; Best practice suggests this pipe is at risk of collapse at any time; urgent consideration should be given to a repair to avoid collapse

## SERVICE / OPERATIONAL DEFECTS

| Service defects | | | |
|---|---|---|---|
| Section | PLR | Grade | Fault description |
| 1 | MH5703 X | 3 | Attached deposits, grease, from 9 to 3 o'clock, 10% cross-section |

Grade 3; Best practice suggests consideration be given to maintenance activities in the medium term
Grade 4; Best practice suggests consideration be given to maintenance activity to avoid potential blockage
Grade 5; Best practice suggests this pipe is at immediate risk of backing up / causing flooding

## Abandoned Surveys

| Camera no access | | |
|---|---|---|
| Section | PLR | Fault description |
| 1 | MH5703 X | General remark |

## Information

These summaries are based on the SRM grading from the WRC

Lanes Group Plc
Lancing House, Broughton Mills Road
Bretton
Tel.: 01244 661691
Fax: 01244 661692
Email: northwalesops@lanesgroup.co.uk

# Table of contents

| Project Name: | Project number: | Date: | Contact: | |
|---|---|---|---|---|
| 19661 - Land off Birch Aven | PJ00206803 | 17/11/2015 | | |

Profile Report 1

SRMReport : sNameSRMEReport 2

***Inspection: 1***

Project Information 3

Section: 1, MH5703 --- MH5701 5

**Lanes Group Plc**
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*Bretton*
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*Fax: 01244 661692*
*Email: northwalesops@lanesgroup.co.uk*

# ∑∅ / Main sections

| Project name : | Project number : | Contact : | Date : |
|---|---|---|---|
| **19661 - Land off Birch Avenue** | **PJ00206803** | | **17/11/2015** |

| Nr. | US MH | DS MH | Date | Road | Tape No. | Material | m | (m) |
|---|---|---|---|---|---|---|---|---|
| 1 | MH5703 | MH5701 | 17/11/2015 | BIRCH AVENUE | | Vitrified clay | 8.89 | 8.89 |
| **Pipe size: CIRCULAR 225 = 8.89 m (8.89 m)** | | | | | | | | |

**All sections = 8.89 m (8.89 m)**

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# Structural Defects (SRM 4)

| Project name : | Project number : | Contact : | Date : |
|---|---|---|---|
| **19661 - Land off Birch Avenue** | **PJ00206803** | | **17/11/2015** |

| No. | PLR | Dir. | Use | Shape / Size | Date | Mat. | Total Length | Insp. Length | Peak HWG | Peak Score | Grade | Mean Score | Total Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MH5703X | U | F | C 225 | 17/11/2015 | VC | 8.89 | 8.89 | - | 0 | 1 | 0 | 0 |

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# Project-information

| Project name : | Project Number : | Contact : | Date : |
|---|---|---|---|
| **19661 - Land off Birch Avenue** | **PJ00206803** | | **17/11/2015** |

| | |
|---|---|
| Client: | **Satnam Millennium Limited** |
| Contact Name: | |
| Department: | |
| Road: | **17 Imperial Square** |
| Town: | **Cheltenham** |
| County: | **Gloucester, GL50 1QZ** |
| Telephone: | |
| Fax: | |
| Mobile: | |
| E-mail: | |

| | |
|---|---|
| Site: | **Land Off** |
| Contact Name: | |
| Department: | |
| Road: | **Birch Avenue** |
| Town: | **Warrington** |
| County: | **WA2 9TN** |
| Telephone: | |
| Fax: | |
| Mobile: | |
| E-mail: | |

| | |
|---|---|
| Contractor | **Lanes Group Plc** |
| Contact Name: | **Peter Knight- Gregson** |
| Department: | **North Wales Division** |
| Road: | **Lancing House, Broughton Mills Road** |
| Town: | **Bretton** |
| County: | **Flintshire, CH4 0BY** |
| Telephone: | **01244 661691** |
| Fax: | **01244 661692** |
| Mobile: | |
| E-mail: | **northwalesops@lanesgroup.co.uk** |

**Lanes Group Plc**
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*Email: northwalesops@lanesgroup.co.uk*

## *Legend of Drawing:*

| | | | |
|---|---|---|---|
| | **WATER FLOW 1** | | **Tree_Winter** |
| | **Tree_Summer** | | **CESS PIT** |
| FS | **SOAKAWAY: FOUL WATER** | | **GNDFLWC** |
| I | **SURFACE WATER** | Z | **SYPHON INTERCEPTOR** |
| | **PETROL INTERCEPTOR** | | **PIPE RUN** |
| | **RAINWATER PIPE** | | **ROAD GULLY** |
| | **RODDING EYE** | | **SEPTIC TANK** |
| | **SOIL & VENT PIPE** | | **COMBINED** |
| SS | **SOAKAWAY: SURFACE WATER** | G | **GULLY** |
| | **W.C.** | | **PUMP CH** |
| | **FOUL WATER** | | |

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Email: northwalesops@lanesgroup.co.uk

# Inspection report

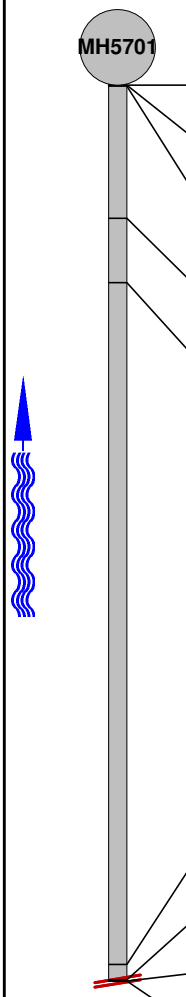
| Date : | Job number : | Weather : | Operator : | Section number : | PLR SUFFIX: |
|---|---|---|---|---|---|
| **17/11/2015** | **PJ206803** | **no rain or snow** | **PAUL TURK** | **1** | **X** |
| Weather | Vehicle : | Camera : | Preset : | Cleaned : | Operator : |
| **no rain or snow** | **PE57KFA** | **ROVVER125** | | **no** | **PAUL TURK** |

| | | | | | |
|---|---|---|---|---|---|
| Place : | **WARRINGTON** | Location details: | | U/S MH : | **MH5703** |
| Road : | **BIRCH AVENUE** | Catchment: | | U/S Depth : | **0** |
| Location | **A footway beside a road** | Tape number : | | D/S MH : | **MH5701** |
| Inspection | **MH5701 (U/S) MH5703** | Pipe Length | | D/S Depth : | **1.82** |

| | | | |
|---|---|---|---|
| Use: | **Foul** | Pipe shape : | **Circular** |
| Year laid : | **Z** | Pipe size : | **225 mm** |
| Purpose : | **Investigation of known defects** | Pipe material : | **Vitrified clay** |
| Total length : | **8.89 m** | Lining : | **Vitrified clay** |

Comment :

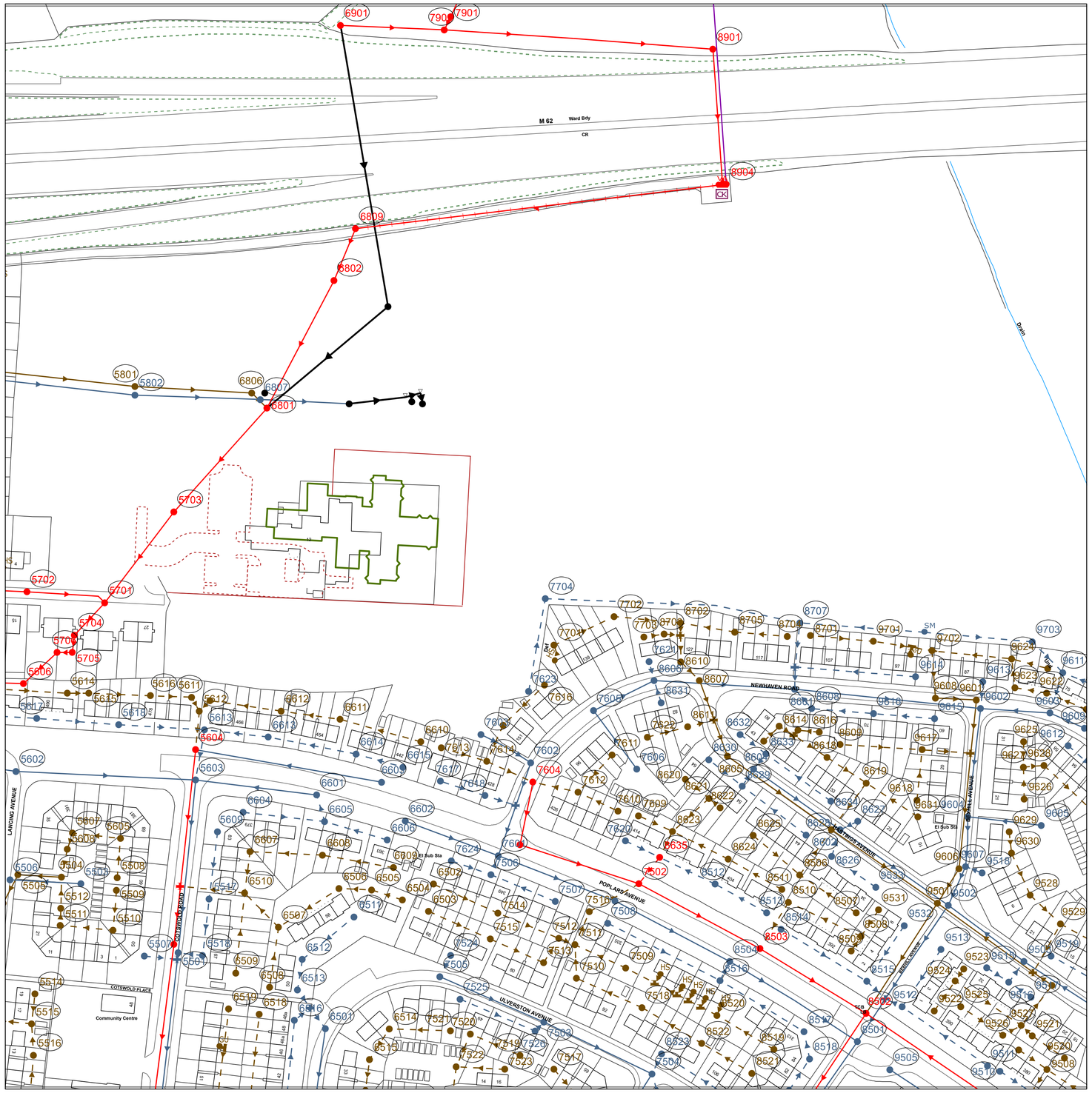
**1:75** **Depth: 1.82**




| Position | | Code | Observation | Grade |
|---|---|---|---|---|
| 0.00 | | MH | Start node type, manhole, reference number : MH5701 | (Constr) 0 |
| 0.00 | **S01** | DEG | Attached deposits, grease, from 9 to 3 o'clock, 10% cross-sectional area loss, Start | (Serv) 3 |
| 0.01 | | WL | Water level, 30% of the vertical dimension | (Serv) 0 |
| 1.32 | | WL | Water level, 70% of the vertical dimension | (Serv) 0 |
| 1.96 | **S02** | CUW | Loss of vision, camera under water, Start | (Misc) 0 |
| 8.72 | **F02** | CUW | Loss of vision, camera under water, End | (Misc) 0 |
| 8.87 | **F01** | DEG | Attached deposits, grease, from 9 to 3 o'clock, 10% cross-sectional area loss, End | (Serv) 3 |
| 8.89 | | REM | General remark Remarks: CAMERA STOPPED MOVING | (Misc) 0 |
| 8.89 | | SA | Survey abandoned Remarks: DUE TO LOSS OF VISION AND CRAWLER STOPPED MOVING REQUIRES JETTING | (Misc) 0 |

**Structural Defects** | **Constructional Features**
**Service Defects** | **Miscellaneous Features**

| STR no def | STR peak | STR mean | STR total | STR grade | SER no def | SER peak | SER mean | SER total | SER grade |
|---|---|---|---|---|---|---|---|---|---|
| **0** | **0** | **0** | **0** | **1** | **1** | **2** | **1.98** | **17.6** | **3** |




| Refno | Cover | Func | Invert | Size.x | Size.y | Shape | Matl | Length | Grad | Refno | Cover | Func | Invert | Size.x | Size.y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8902 | | CO | 0 | | | CI | VC | 1.86 | | | | | | | | | | | |

**OS Sheet No: SJ6091NE**

Printed By: Property Searches

Approximately Scale: 1: 1250 Date: 15/07/2015

## WASTE WATER SYMBOLOGY

Foul Surface Combined Overflow

Manhole
Manhole, Side Entry
MainSewer, Public
MainSewer, Private
MainSewer, S104
Rising Main, Public
Rising Main, Private
Rising Main, S104
Highway Drain, Private

Foul Surface Combined

WW Site Termination
Air Valve
Cascade
Non Return Valve
Extent of Survey
Flow Meter
Gulley
Hatch Box
Head of System
Hydrobrake / Vortex
Inlet
Inspection Chamber
Bifurcation
Catchpit
Contaminated Surface Water
WW Pumping Station
Sludge Pumping Station
Sewer Overflow
T Junction/Saddle
LampHole
OilInterceptor
PenStock
Pump
RoddingEye
Soakaway
Summit
Valve
Valve Chamber
Washout Chamber
DropShaft
WW Treatment Works
Septic Tank
Vent Column
Network Storage Tank
Orifice Plate
Vortex Chamber
Penstock Chamber
Blind Manhole

Foul Surface Combined Overflow

Screen Chamber
Discharge Point
Outfall

Sludge Main, Public
Sludge Main, Private
Sludge Main, S104

**ABANDONED PIPE**

MainSewer
Rising Main
Highway Drain
Sludge Main

Control Kiosk
Unspecified

## LEGEND

**MANHOLE FUNCTION**

| | |
|---|---|
| FO | Foul |
| SW | Surface Water |
| CO | Combined |
| OV | Overflow |

**SEWER SHAPE**

| | | | |
|---|---|---|---|
| CI | Circular | TR | Trapezoidal |
| EG | Egg | AR | Arch |
| OV | Oval | BA | Barrel |
| FT | Flat Top | HO | HorseShoe |
| RE | Rectangular | UN | Unspecified |
| SQ | Square | | |

**SEWER MATERIAL**

| | | | |
|---|---|---|---|
| AC | Asbestos Cement | DI | Ductile Iron |
| BR | Brick | PVC | Polyvinyl Chloride |
| PE | Polyethylene | CI | Cast Iron |
| RP | Reinforced Plastic Matrix | SI | Spun Iron |
| CO | Concrete | ST | Steel |
| CSB | Concrete Segment Bolted | VC | Vitrified Clay |
| CSU | Concrete Segment Unbolted | PP | Polypropylene |
| CC | Concrete Box Culverted | PF | Pitch Fibre |
| PSC | Plastic/Steel Composite | MAC | Masonry, Coursed |
| GRC | Glass Reinforced Concrete | MAR | Masonry, Random |
| GRP | Glass Reinforced Plastic | U | Unspecified |

The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available.
The actual positions may be different from those shown on
the plan and private pipes, sewers or drains may not be recorded.
United Utilities will not accept any liability for any damage caused by the actual positions being different from those shown.



OS Sheet No: SJ6091NE

Scale: 1: 1250 Date: 15/07/2015

301 Nodes

Sheet 1 of 1

United Utilities
helping life flow smoothly

**SEWER RECORDS**

ENVIRONMENTAL MANAGEMENT SOLUTIONS LTD

# Preliminary Environmental Risk Assessment (Phase I Desk Study)

for

**Peel Hall Farm, Mill lane, Warrington**

**(EMS3165)**

For

## Satnam Group

November 2011

| | |
|---|---|
| 1967 OS map | No change on site. The Orford area to the south of the site now 500 m away continues to become a more densely populated residential area. The tannery is no longer marked. |
| 1977 OS map | The M62 motorway and associated embankments are constructed running east-west against the site's northern boundary. The density of housing 500 m to the south continues to expand in the newly labelled Hulme residential area. |
| OS 1987 map | Again little change on site. However, the new residential area of Cinnamon Brow to the east of the site has developed, associated with the motorway junction 10. |
| OS map 1999-2011 | A large reservoir / wetlands lake is now present 550 m north of the site (1999 edition) just beyond the pumping station. Housing density in the surrounding area increases slightly. |

## 2.3 Geological information

Geological maps are presented within the Envirocheck report appendix C.

1: 50,000 British Geological Survey (BGS) map sheet 108 'Runcorn' indicates the site is underlain by Glaciofluvial deposits comprising sand and gravel, underlain by Wilmslow Sandstone bedrock across the majority of the site, with pebbly sandstone, of the Chester pebble bed formation in the north west area of the site. Made ground is unlikely at the site, given its recent history.

Glacial fluvial deposits are typically moderately sorted and bedded sand and gravel deposits often with good bearing capacities and low settlements. They are generally highly permeable as the fines have usually been washed out.

Coal mining area

The site lies within a coal mining area, and a Coal Authority report should be purchased and assessed to confirm the absence of mining voids below ground. However, it is noted that there was no evidence of quarrying, adits or shafts in the immediate vicinity of the site from OS historical maps.

Other geological risks

The potential for collapsible and compressible ground, land slide hazards, and shrink/swell behaviour or running sand are very low at this site.

The site is in a low risk radon area and protective measures are not required.

## 2.4 Historical BGS borehole records

BGS Historical borehole log records, within the Peel Hall Farm site and its surrounding area have been reviewed, and are summarised in the table below. The BGS borehole location plan for the area, and selected logs are reproduced in appendix D.

| Borehole location (distance in m) | BGS borehole reference No. (Envirocheck map ID in brackets) | Geology Summary | Typical SPT 'N' value range |
|---|---|---|---|
| On-site: centre | SJ69SW2041 (38) | Firm to stiff clay to 6 mbgl termination depth | Clay 11 -15 |
| On-site: east | SJ69SW2042 (39) | Soft clayey MG to 2.7 mbgl. Firm sandy clay to 5.7 mbgl. Dense gravels encountered at 5.7 mbgl. Terminated at 6.0 mbgl | MG 3 - 5<br>Clay 9-15<br>Sand and Gravel 53 |
| On-site: south | SJ69SW2030 (37) | Loose sand to 3.2 mbgl. Firm to stiff clay to 6.1 mbgl termination depth. | Sand 6 - 9<br>Clay 14 - 23 |
| Off-site: north (10) | SJ69SW112 (50) | Compact sand to 4.1 mbgl underlain by stiff clay to 5.03 mbgl termination depth. | Sand 17 – 28 increasing with depth.<br>Clay 38 |
| Off-site: south (125) | SJ69SW2028 (55) | Loose sand with trace of peat and organic clay to 2.8 mbgl underlain by stiff clay to 5.1 mbgl underlain by very dense cemented sand | Loose sand 7-12<br><br>Stiff clays 17 (Shear strength 100KN/m$^2$)<br><br>Very dense partially cemented sand 100+ |
| Off-site: west (1) | SJ69SW2040 (40) | Loose sand to 1.8 mbgl underlain by firm to stiff clay to 6 mbgl termination depth | Sand 3 – 8<br>Clay 8 – 12 (Shear strength 150KN/m$^2$) |

Notes: MG = Made Ground

Groundwater strikes were encountered in four of the six tabulated boreholes, ranging between 1.4 and 2.6 mbgl.

No visual or olfactory indication of contamination is noted within the soil descriptions. The one instance of made ground appears to be reworked natural material.

The historical boreholes tabulated above indicate ground conditions are variable across the site, often with loose sand in the upper 2 – 3 m underlain by firm to stiff stoney clays, with very dense sand and gravel or cemented sand at 5 - 6 m depth at some locations. One location encountered soft reworked clay in the east of the site (Envirocheck ID 39). Traces of peat and organic clay were noted in the sands off-site to the south (Envirocheck ID 125).

## 2.5 Hydrogeology

Groundwater vulnerability data from Envirocheck (appendix C) indicates the site is underlain by:

- A principal bedrock aquifer which is highly permeable (sandstone is typically a highly permeable, high porosity rock type with a large groundwater storage capacity); with overlying superficial soil deposits classed as secondary A aquifer type (sand and gravel).

- Soils of low leachability potential are recorded on the groundwater vulnerability map for the area;

The site is also within a groundwater drinking source protection zone III. Zone II is approximately 60 m north. Zone I is 370 m north of the site. The groundwater source itself is 560 m north of the site, this corresponds with the pumping station noted on current and historical maps.

The site's groundwater is assumed to be moderately to highly susceptible to groundwater contamination given the site's proximity to a source protection zone and potentially highly permeable underlying soils and bedrock.

## 2.6 Hydrology

The following surface water features were noted during the site walkover and from available site maps (appendix C):

- A series of field drains and small ponds are located south of the site, marked within 10 m of the site's southern boundary (OS 2011 map);

- Cinnamon brook is located 125 m east of the site;

- Spa brook is located 250 m north west of the site, Black Brook also runs 500 m south east of the site;

- A large wetland lake/reservoir is located approximately 600 m north of the site's boundary, beyond the pumping station.

Pollution incidents to controlled waters

Five pollution incidents to controlled water have been recorded within 250 m of the site, all are minor incidents typically relating to rubbish or septic tank overflows to small brooks, the nearest incident to the site was 90 m south west of the site (pollution type: ochre).

Sensitive land use

The site lies within an area of adopted 'Greenbelt' land administered by Warrington Borough Council. Typically urban development may be resisted in these areas and the council should be consulted on this at an early stage.

North of the site, beyond the M62, the land is classified as a nitrate vulnerable zone.

Flooding risk

The site is not located within an Environment agency assessed area of flood risk.

## 2.7 Landfills and waste

No current or historical landfill, or waste transfer stations are recorded within 2000 m of the site's boundary.

A4
ORIGINAL PLOT SIZE




| Rev | Date | Details | Drawn by | Checked by | Approved by |
|---|---|---|---|---|---|

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London
Welwyn Garden City

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Transport Planning Associates

21 Berkeley Square
Clifton
Bristol
BS8 1HP
0117 925 9400
www.tpa.uk.com

CLIENT:
SATNAM PLANNING SERVICES LTD

PROJECT:
Peel Hall Farm
Warrington

TITLE:
EA Flood Maps
Rivers and Sea Indicative
Flood Map

STATUS:
INFORMATION

| SCALE: | DATE: | DRAWN: | CHECKED: | APPROVED: |
|---|---|---|---|---|
| NTS | 06.07.15 | PG | RB | LF |

| JOB NO: | DRAWING NO: | REVISION: |
|---|---|---|
| 1506-45 | SK01 | - |

A4
ORIGINAL
PLOT SIZE




| Rev | Date | Details | Drawn by | Checked by | Approved by |
|---|---|---|---|---|---|

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21 Berkeley Square
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BS8 1HP
0117 925 9400
www.tpa.uk.com

CLIENT:
SATNAM PLANNING SERVICES LTD

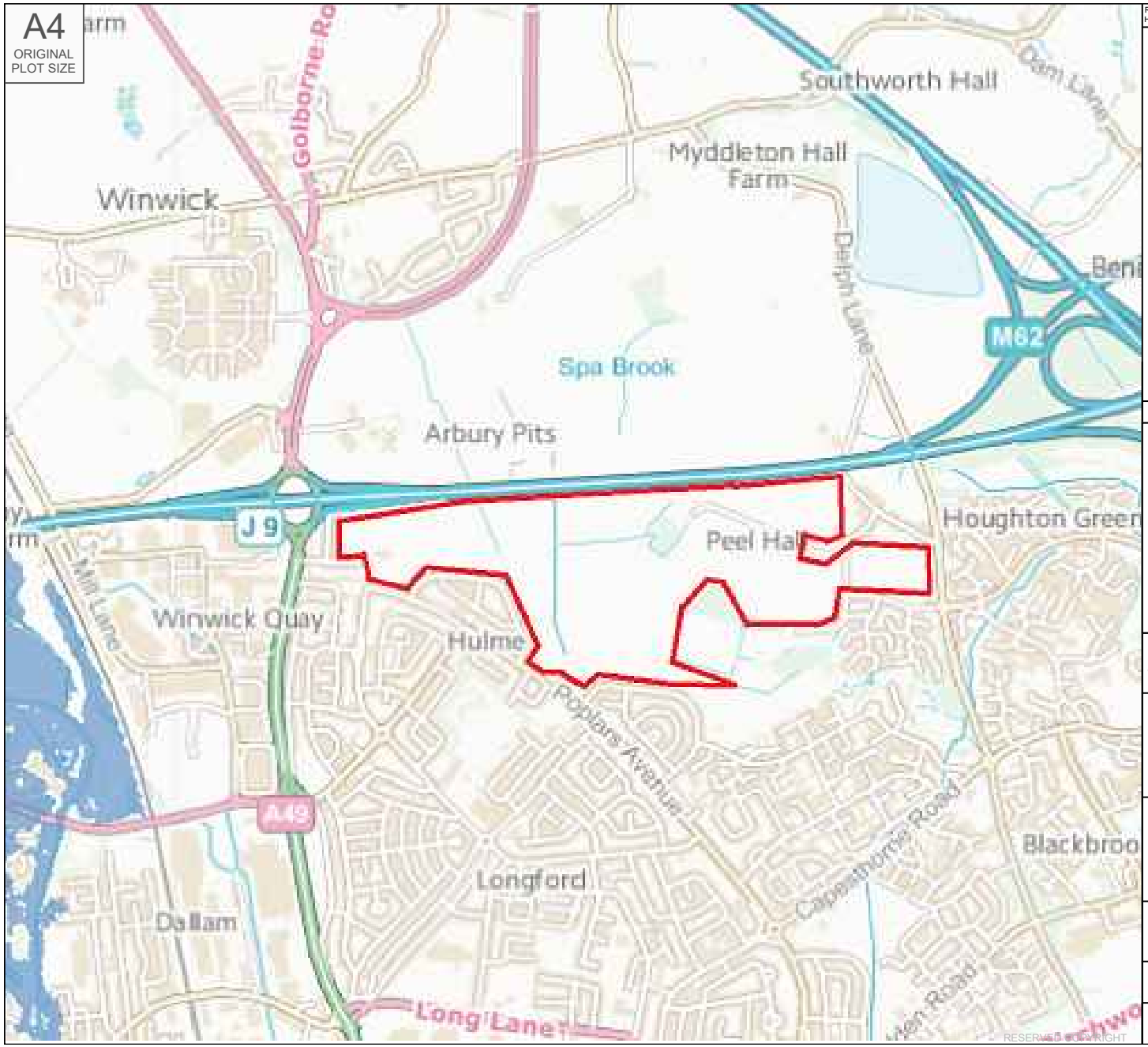
PROJECT:
Peel Hall Farm
Warrington

TITLE:
EA Flood Maps
Surface Water Indicative
Flood Map

STATUS:
INFORMATION

| SCALE: | DATE: | DRAWN: | CHECKED: | APPROVED: |
|---|---|---|---|---|
| NTS | 06.07.15 | PG | RB | LF |

| JOB NO: | DRAWING NO: | REVISION: |
|---|---|---|
| 1506-45 | SK02 | - |






| Rev | Date | Details | Drawn by | Checked by | Approved by |
|---|---|---|---|---|---|

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CLIENT:
SATNAM PLANNING SERVICES LTD

PROJECT:
Peel Hall Farm
Warrington

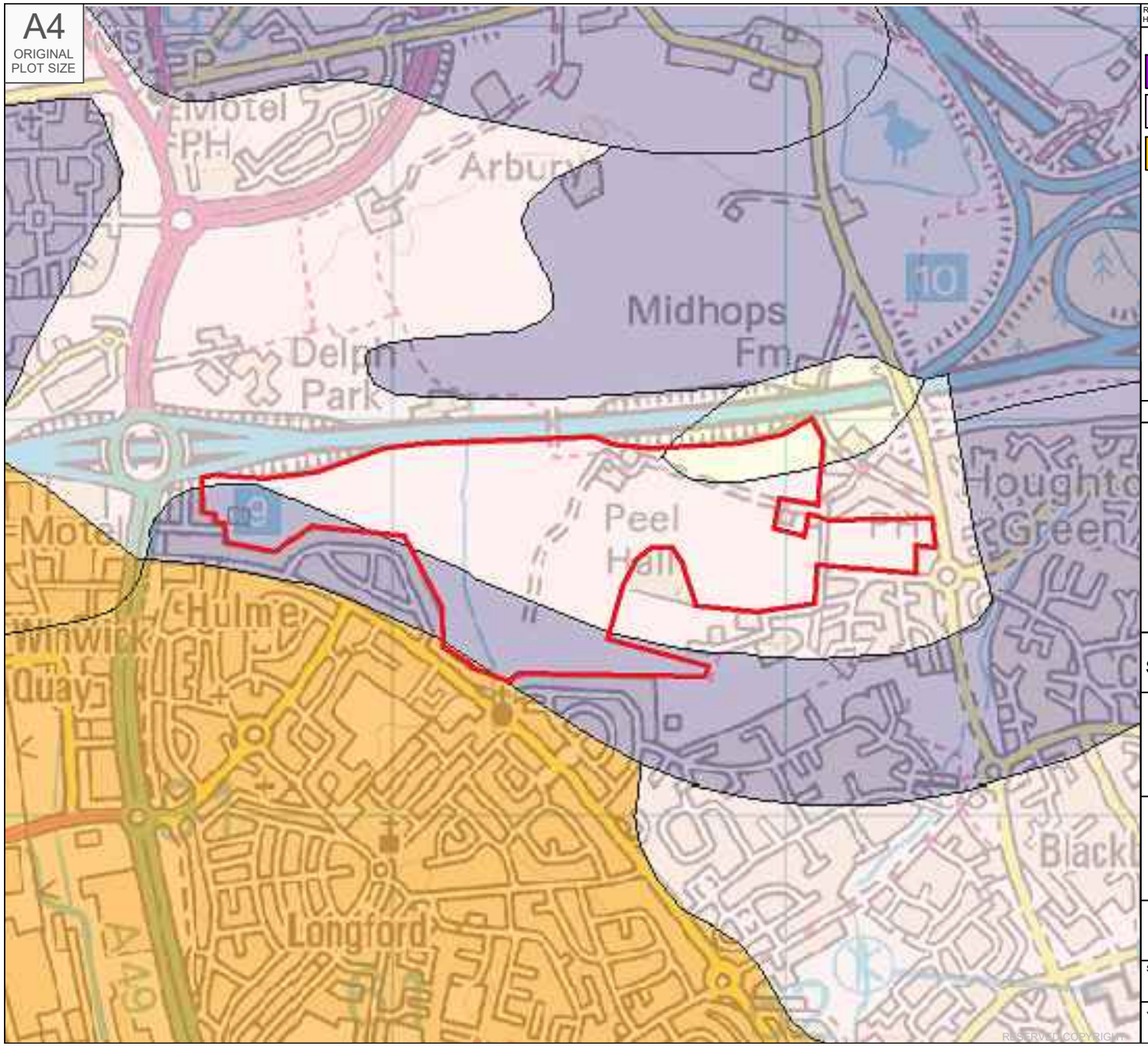
TITLE:
EA Flood Maps
Reservoir Indicative
Flood Map

STATUS:
INFORMATION

| SCALE: | DATE: | DRAWN: | CHECKED: | APPROVED: |
|---|---|---|---|---|
| NTS | 06.07.15 | PG | RB | LF |

| JOB NO: | DRAWING NO: | REVISION: |
|---|---|---|
| 1506-45 | SK03 | - |

A4
ORIGINAL PLOT SIZE






Major Aquifer High Vulnerability

Major Aquifer Intermediate Vulnerability

Minor Aquifer High Vulnerability

| Rev | Date | Details | Drawn by | Checked by | Approved by |
|---|---|---|---|---|---|

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PROJECT:
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Warrington

TITLE:
EA Flood Maps
Grounwater Vulnerability
Flood Map

STATUS:
INFORMATION

| SCALE: | DATE: | DRAWN: | CHECKED: | APPROVED: |
|---|---|---|---|---|
| NTS | 06.07.15 | PG | RB | LF |

| JOB NO: | DRAWING NO: | REVISION: |
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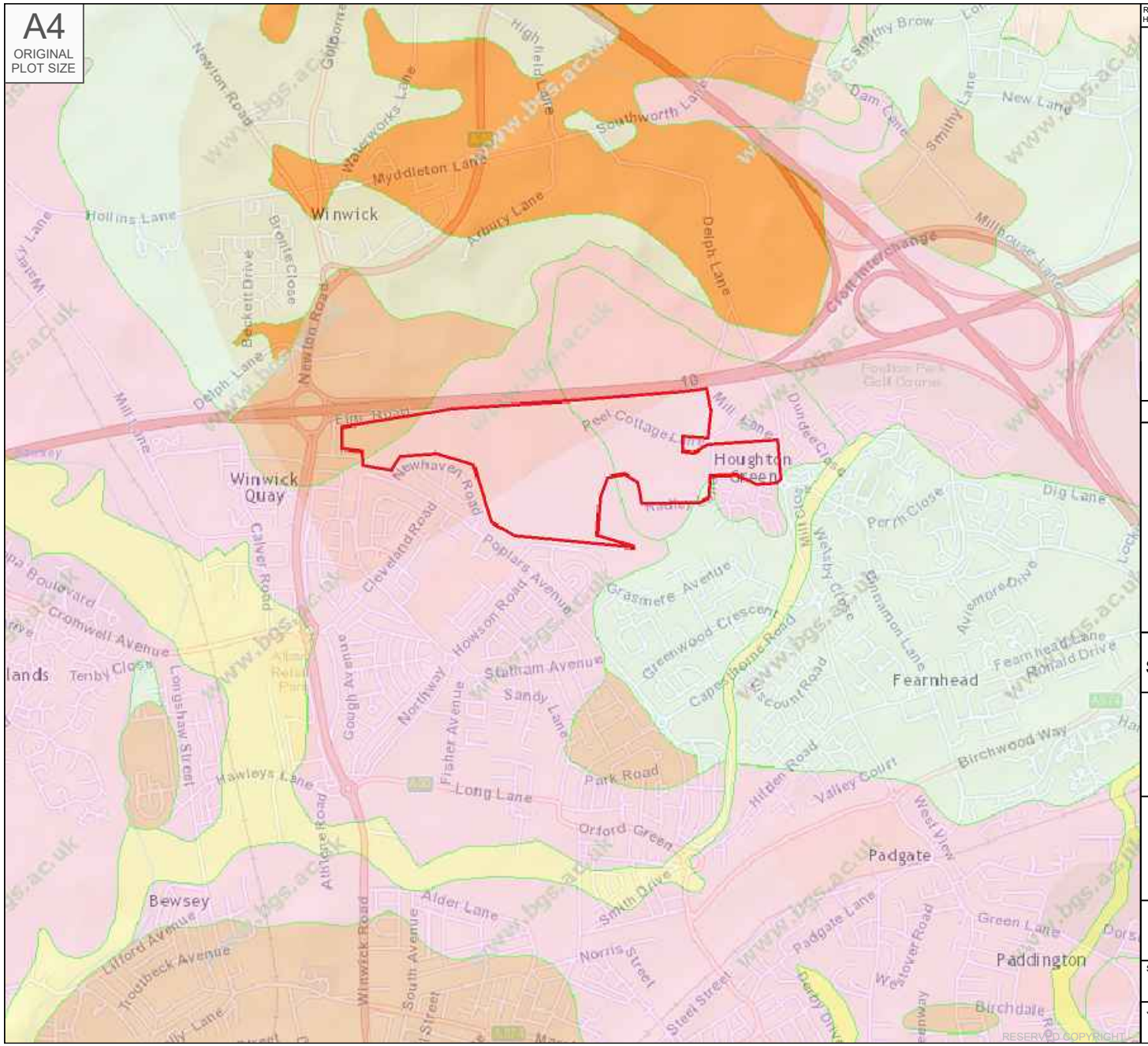




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PROJECT:
Peel Hall Farm
Warrington

TITLE:
BGS Geology Maps

STATUS:
INFORMATION

| SCALE: | DATE: | DRAWN: | CHECKED: | APPROVED: |
|---|---|---|---|---|
| NTS | 02.07.15 | PG | RB | LF |

| JOB NO: | DRAWING NO: | REVISION: |
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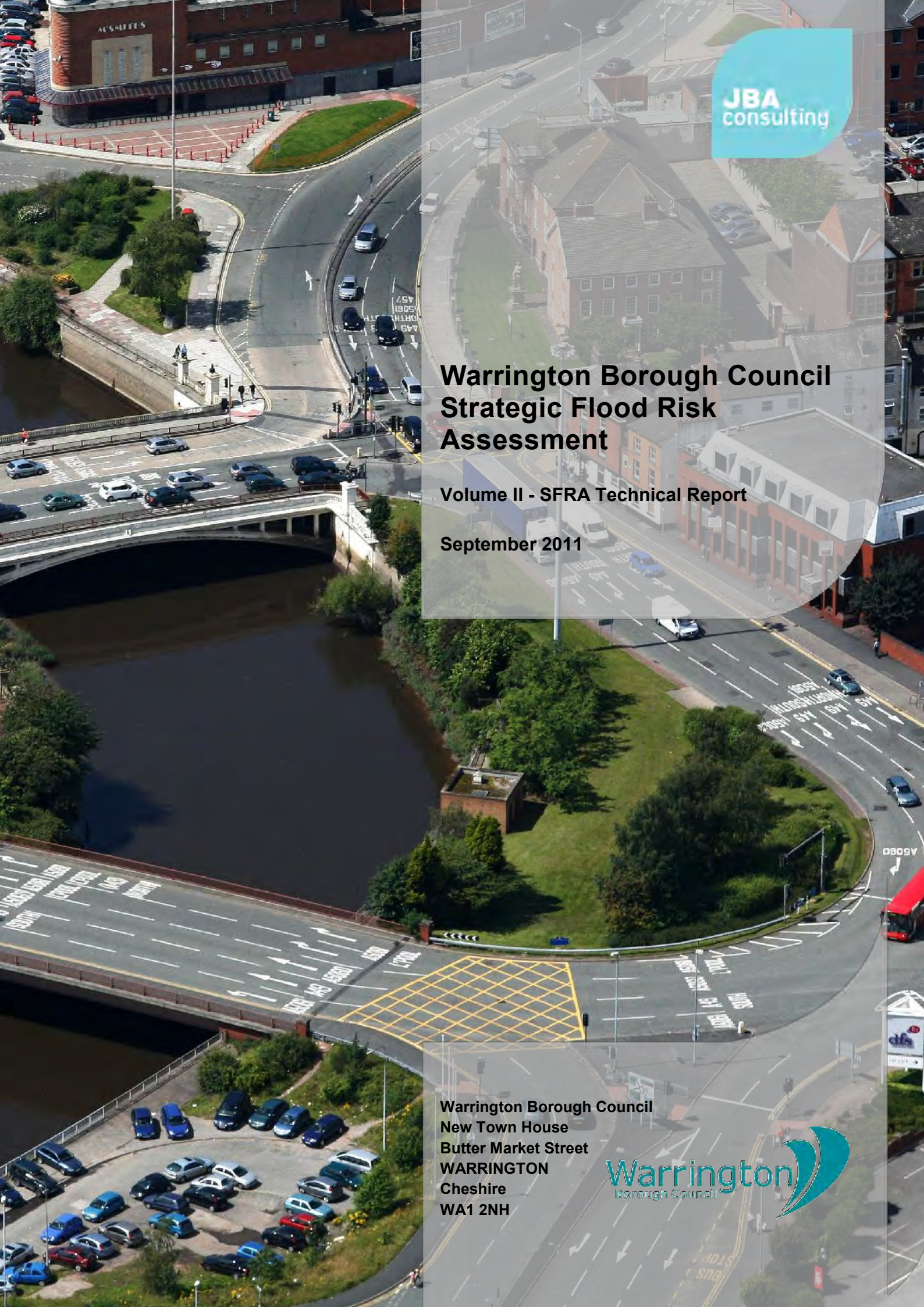


# Warrington Borough Council Strategic Flood Risk Assessment

## Volume II - SFRA Technical Report

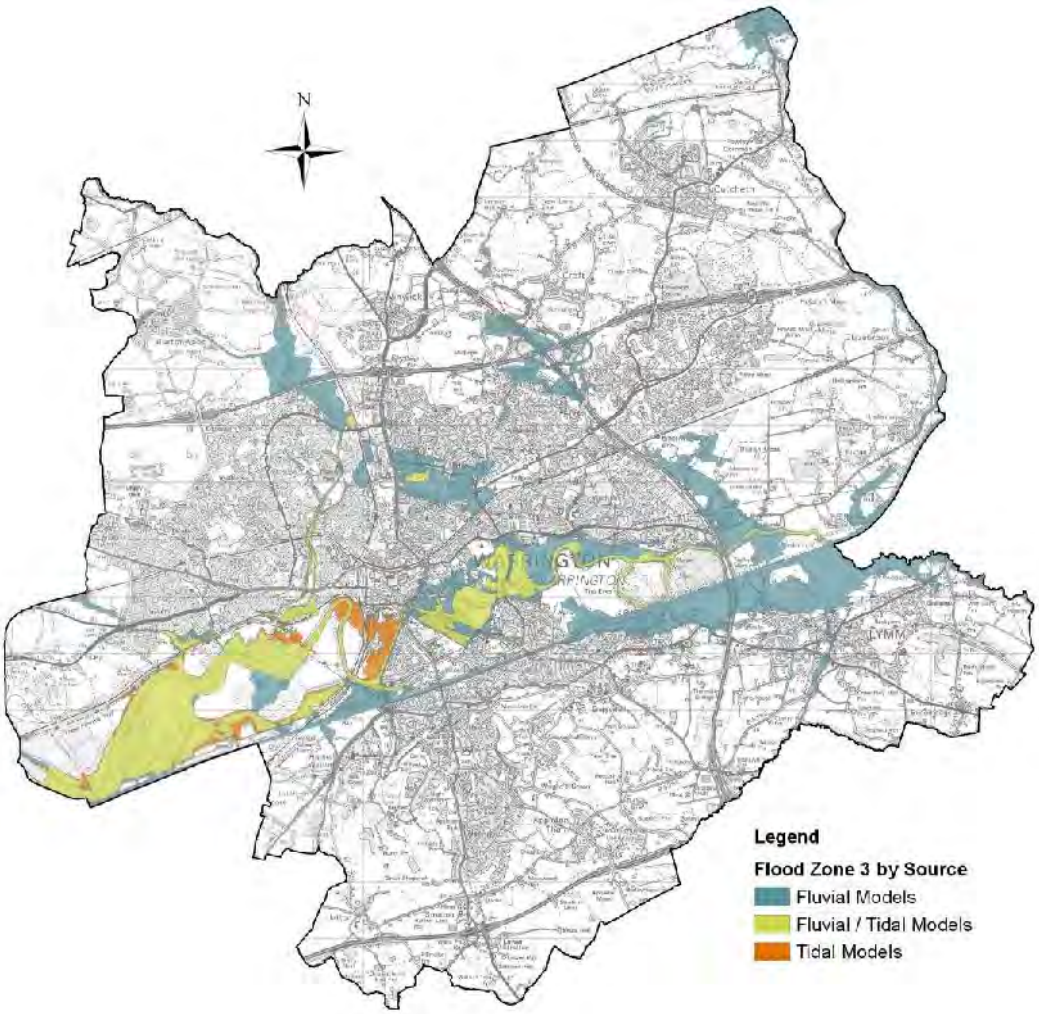
September 2011


Warrington Borough Council
New Town House
Butter Market Street
WARRINGTON
Cheshire
WA1 2NH

### 3.3.1 Environment Agency Flood Map

The Environment Agency Flood Map provides flood extents for the 1 in 100-year fluvial, 1 in 200-year tidal and the 1 in 1000-year fluvial and tidal flood events. As Warrington is at risk from fluvial and tidal flooding (or a combination of both), these flood zones can help identify the source of flooding as illustrated in Figure 3-1.

**Figure 3-1: Flood Zone 3 by Source**






Flood zones were originally prepared by the Environment Agency using a methodology based on the national digital terrain model (NextMap), derived river flows (Flood Estimation Handbook (FEH)) and two dimensional flood routing. Since their initial release, the Environment Agency has updated the zones with detailed hydraulic modelling studies. This SFRA uses the Environment Agency Flood Map issued in June 2011.

Table 3-3 identifies the modelling study and date of all main river Flood Zones through Warrington.

**Table 3-3: Main River Flood Zones by Study and Date**

| Main River | Date | Study |
|---|---|---|
| River Mersey | 2010 | Warrington Flood Risk Management Strategy - updated in late 2010 to include the failure of the Manchester Ship Canal sluice gates. The inclusion of the Manchester Ship Canal was not included until February 2011. |

| Main River | Date | Study |
|---|---|---|
| Padgate Brook | 2010 | Warrington Flood Risk Management Strategy |
| Spittle Brook | 2010 | Warrington Flood Risk Management Strategy |
| Sankey Brook (downstream of M62) | 2010 | Warrington Flood Risk Management Strategy |
| North Park Brook | 2010 | Warrington Flood Risk Management Strategy |
| Penketh Brook | 2010 | Warrington Flood Risk Management Strategy |
| Lumb Brook | 2009 | Mersey Esturary Tributaries Flood Risk Management Study |
| Longford Brook | 2010 | Warrington Flood Risk Management Strategy - the Longford/Dallam Joint Modelling outputs have not been included in the current flood zones. |
| Dallam Brook | 2010 | Warrington Flood Risk Management Strategy - the Longford/Dallam Joint Modelling outputs have not been included in the current flood zones. |
| River Glaze | 2008 | Middle and Lower Mersey Areas Benefitting from Defences and Flood Zone 2 Study |
| Carr Brook | 2008 | Middle and Lower Mersey Areas Benefitting from Defences and Flood Zone 2 Study |
| Jibcorft Brook | 2008 | Middle and Lower Mersey Areas Benefitting from Defences and Flood Zone 2 Study |
| Holcroft Lane Brook | 2008 | Middle and Lower Mersey Areas Benefitting from Defences and Flood Zone 2 Study |
| Whittle Brook | 2008 | Middle and Lower Mersey Areas Benefitting from Defences and Flood Zone 2 Study |
| Thelwall Brook | 2007 | Thelwall Brook Flood Zone Map Challenge |
| Sankey Brook (upstream of M62) | 2003 | Sankey Brook Flood Risk Mapping Study |
| Phipps Brook | 2003 | Middle and Lower Mersey Flood Risk Management Study |
| Watercourses not provided in this list are either non main rivers or do not have flood zones associated with them at the time of this SFRA. | | |

The Flood Map is precautionary in that it does not take account of flood defences (which can be breached, overtopped or may not be in existence for the lifetime of the development) and, therefore, represent a worst-case extent of flooding. They do not consider sources of flooding other than fluvial and tidal, and do not take account of climate change.

As previously mentioned, the operation of the Manchester Ship Canal significantly reduces fluvial risk along the River Mersey as the majority of water flows down the canal. However, the flood risk management element of the canal has only recently been acknowledged by the Environment Agency in their Flood Map (February 2011). The impact of the Manchester Ship Canal on flood zones through Warrington has been derived using a modelling scenario that assumes the sluice gates at Latchford Locks are closed. This approach is based on the view that the sluice gates act as a flood defence and follows PPS25 and the Environment Agency's national approach to flood zones by showing what would be at risk ignoring the presence of defences.

*Users of the Flood Map should be aware that the Environment Agency has received a judicial review challenge to the mapping of the Manchester Ship Canal at Trafford, Salford and Warrington on the ground that the preparation of the map is flawed in respect of our consideration of the role of the sluice gates in preventing flooding.*

*The Environment Agency is defending the challenge and believe and are advised that it is ill-founded. Nevertheless, pending determination of the challenge, users of the map need to consider whether the existence of the challenge, and the basis of it, affects the weight they judge may be given to the zoning of the Manchester Ship Canal within the Flood Map.*

*As such, Flood Mapping of the Manchester Ship Canal in Trafford, Salford and Warrington may be subject to revision in the Environment Agency's August 2011 update as a result of representations.*

direct overtopping from Sankey Brook. Within the Callands residential area, ground levels rise rapidly, however residential properties adjacent to the Sankey Valley Park are at risk of inundation from rising floodwaters in Sankey Brook.

The most extensive flooding of urban areas ever recorded in the catchment occurred in the lower reaches of Sankey Brook, around the Sankey Bridges area, in 1978. Tidal inundation as well as the combined effects of fluvial and tidal flooding affects this area. In the case of Sankey Bridges, the mill bridge over Liverpool Road is a known obstruction to flow and its hydraulic behaviour is highly influenced by downstream water levels in the River Mersey.

The St. Helens (Sankey) Canal acts as a bypass channel during periods of high flow, and therefore provides some flood alleviation; a series of mechanisms have been constructed to divert overflows from Sankey Brook into the canal system (flood alleviation scheme 1976). A maximum 20m³/s is estimated to be transferred from the Brook into the Canal overflow at Dallam, increasing the flow in the canal to 33m³/s. From this point, the Brook and the Canal continue to interact and exchange flow at various locations.

According to the Mersey Estuary CFMP, the onset of significant flooding is expected to occur in events just smaller than the 1 in 20-year event, where 130 houses and 56 industrial/commercial properties in the Sankey Bridges area are thought to be at risk. This rises to 313 houses and 71 industrial/commercial properties in a 1 in 75-year event.

### 3.5.2 Longford Brook and Dallam Brook

Longford Brook and Dallam Brook are two key tributaries to Sankey Brook, which drain the urban area of Orford. Both tributaries are highly urbanised and have been extensively modified during the last 50 years.

The area drained by Longford Brook is low lying with little or no gradient, water levels in both Dallam and Longford Brook are largely dominated by water levels on the Sankey Brook. A barrage was constructed on Longford Brook during the 1980s to prevent water backing up along the channel. The barrage consists of twin-flapped orifices and a duty/standby pump arrangement, which pumps Longford flows to the Dallam Brook during flood conditions.

United Utilities operates the pumping station on Longford Brook, which is an inherited asset. The condition of the pumping station is currently poor, with the exact operating rules unknown. There is significant risk of siltation and accumulation of debris upstream of the station, which may reduce/alter its efficiency.

Both United Utilities and the Environment Agency have undertaken separate modelling studies to investigate and quantify flood risk to the area in recent years, however due to the complex and urban nature of the catchment, it was considered that both the fluvial system and drainage network would have to be considered in tandem to fully understand flooding mechanisms. As such, United Utilities and the Environment Agency assessed the flood risk along Longford and Dallam Brook through a joint study[11] in 2010. The aim of the study was to produce robust flood maps for the Orford area taking account of flood risk from both surface water sewer and fluvial sources.

The modelling carried out in the study has demonstrated that the Orford area is at significant risk of flooding from a range of flood events, from both fluvial and surface water sources, and that the Longford Barrage is critical in controlling flood risk. Whilst the United Utilities and the Environment Agency study does not yet represent a base condition of the system, its probability represents the best estimate of the Longford and Dallam area and the fluvial sewer systems. An integrated approach to modelling, as used in this study, will be required to fully understand flood risk in this area.

Currently the Longford/Dallam Joint Modelling outputs have not been included in the Environment Agency Flood Map. United Utilities are currently further improving the modelling in Longford/Dallam with an Integrated Catchment Model.

[11] Halcrow (2010) Dallam and Longford Joint Study

### 3.5.3 Spittle Brook and Padgate Brook

Spittle and Padgate Brooks are located in central of Warrington and are minor tributaries of the River Mersey. Spittle Brook and Padgate Brook have catchment areas of 22km² and 6km² respectively. Both watercourses are heavily urbanised, flowing through the urban centres of Warrington before discharging into the River Mersey upstream of Howley Weir.

This whole area was farmland until the 1970s when it became urbanised as part of the New Town. During this development, Spittle Brook was realigned creating a noticeable dogleg. There are two main areas of flood risk on Spittle Brook. At Cinnamon Brow, the channel contains a sharp bend that slows the flow of water. Close to this, a pumping station owned by the Coal Board and operated for the purposes of draining and area that has subsided, transfers water from Cinnamon Brook to the channel. There is therefore a residual risk associated with the pumping station if incorrectly operated or fails.

Both watercourses were included in the Warrington Flood Risk Management Strategy modelling (2008) and the Warrington Flood Hazard Mapping project (2010). According to the Warrington Strategy, onset of significant flooding along Padgate Brook occurs between a 1 in 75-year and 1 in 100-year flood event. In the 1 in 75-year event, 42 houses are at risk. The Warrington Strategy modelling notes that there is a potential for a considerable volume of water passing between Spittle Brook and Padgate Brook via the Solway Close area (immediately south of the M62). However, as the Strategy modelling was undertaken in 1D there was a degree of uncertainty with this flooding mechanism. During the Warrington Flood Hazard mapping study, a 2D model was used to represent the area confirming the flood flow route.

On the back of the Warrington Strategy and in consideration of the September 2008 flood event, which affected upon the Solway Close area, the hydrology of Spittle Brook and Padgate Brook was re-evaluated in August 2010 for the Warrington M2 PAR. The updated hydrology reduces the flow along both Brooks (e.g. during the 1 in 100-year event flow along Spittle Brook has fallen from 15.75m³/s to 9.18 m³/s), which may alter (lower) the amount of water leaving the Brooks and entering the Longford/Dallam system.

As of yet, the hydrology calculated in this study have not been transferred into any update model and as such, the current Environment Agency Flood Map is still based on modelling carried out during the Warrington Flood Risk Management Strategy.

### 3.5.4 Penketh and Whittle Brook

Penketh and Whittle Brooks are located in the north-west of Warrington BC. Both watercourses originate outside of Warrington BC in St Helens, and flow in a southeasterly direction through farmland before entering the areas of Great Sankey and Penketh.

Whilst Whittle Brook itself has remained open, urban development and structures pose significant restrictions to flow. This is most notable at Barrow Hall Bridge, where limited capacity results in a greater extent of flooding on the Great Sankey High School sports field. Downstream of Barrow Hall Bridge the watercourse flows through an area previously subjected to a river rehabilitation scheme. Whittle Brook turns south as it flows through Penketh. There are a number of further obstructions including the railway line, A57, A582 and the St Helens Canal. Downstream of Penketh, Whittle Brook flows into Sankey Brook just upstream of the confluence of Sankey Brook and the River Mersey.

There are two distinct variations in the Flood Zones surrounding Penketh Brook marked by Brookside Farm. Upstream of the farm the Flood Zones are based on early Environment Agency broad scale modelling and are wide. They do not take account of channel capacity and obstructions such as the railway line. Downstream of the farm, Penketh Brook has been modelled in detail during the Warrington Strategy. These Flood Zones are narrower and do take into account the influence of culverts and road bridges.

Downstream of the A564, Penketh Brook is culverted below residential properties along Tragan Drive and Station Road, re-emerging within the recreation ground to the east. This culvert surcharges during the 1 in 100-year event, causing flooding to those properties along

Figure 4-4 identifies blockage as the main cause of sewer flooding (7745 incidents across Warrington as a whole from 1983 to 2008) with the highest number of incidents focused within the urban centres. However, analysing both Figure 4-4 and Figure 4-5 suggests that whilst blockage is the biggest cause of sewer related incidents, it mainly results in foul flooding of properties, gardens and highways; there are very few incidents of surface water flooding effects.

Figure 4-4 identifies hydraulic incapacity as another major cause of flooding (296 incidents across Warrington as a whole from 1983 to 2008). It could be viewed that this cause is probably more related to this SFRA, as it will have an impact on the amount of pluvial flow captured by the sewer system and how quickly the sewer system reaches its capacity and surcharges.

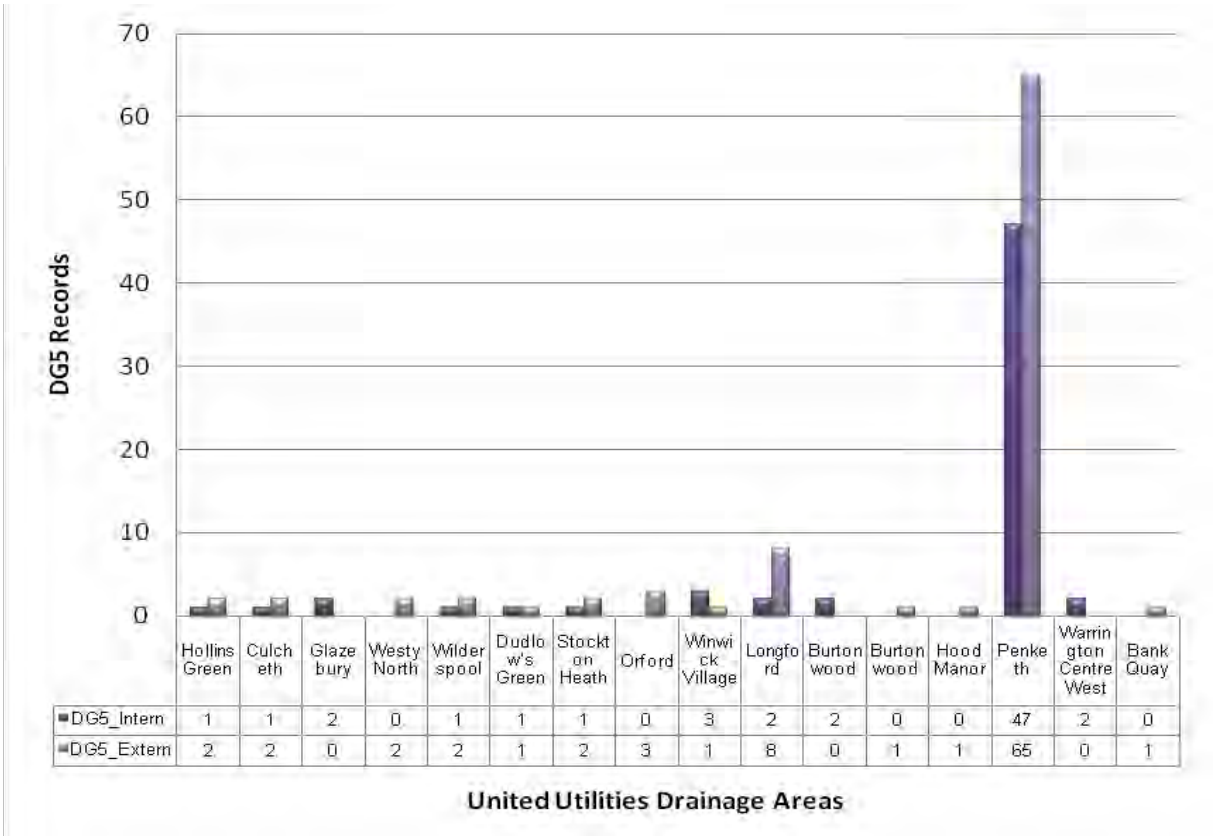
One of the largest effects identified in Figure 4-5 from the historical incidents are 'surcharged systems'. After reviewing the data and consulting with United Utilities, it is indistinguishable what the surcharged system incidents would then result in (foul or surface water flooding) as all sewer flooding will have discharged from the system in some form. It is also unlikely that only purely 'clean' flooding would occur in any event. As part of this SFRA, it is therefore assumed that 'surcharged system' could relate to either surface water or foul flooding.

### 4.3.3 United Utilities DG5 "at risk register"

United Utilities provided internal and external DG5 records at a property level for use in the SFRA. DG5 records are a dataset of all properties flooded from the drainage system, with internal records being those where sewer flooding has occurred within the property and external relating to those areas outside.

Figure 4-6 provides a comparison of the total number of properties on the internal and external DG5 register. The Penketh area has significantly more properties on the internal and external DG5 register at 47 and 65 respectively than any other area in Warrington BC. Longford is the next drainage area with the highest number of DG5 records with 10 properties.

**Figure 4-6: United Utilities Internal & External DG5 Records Graph**

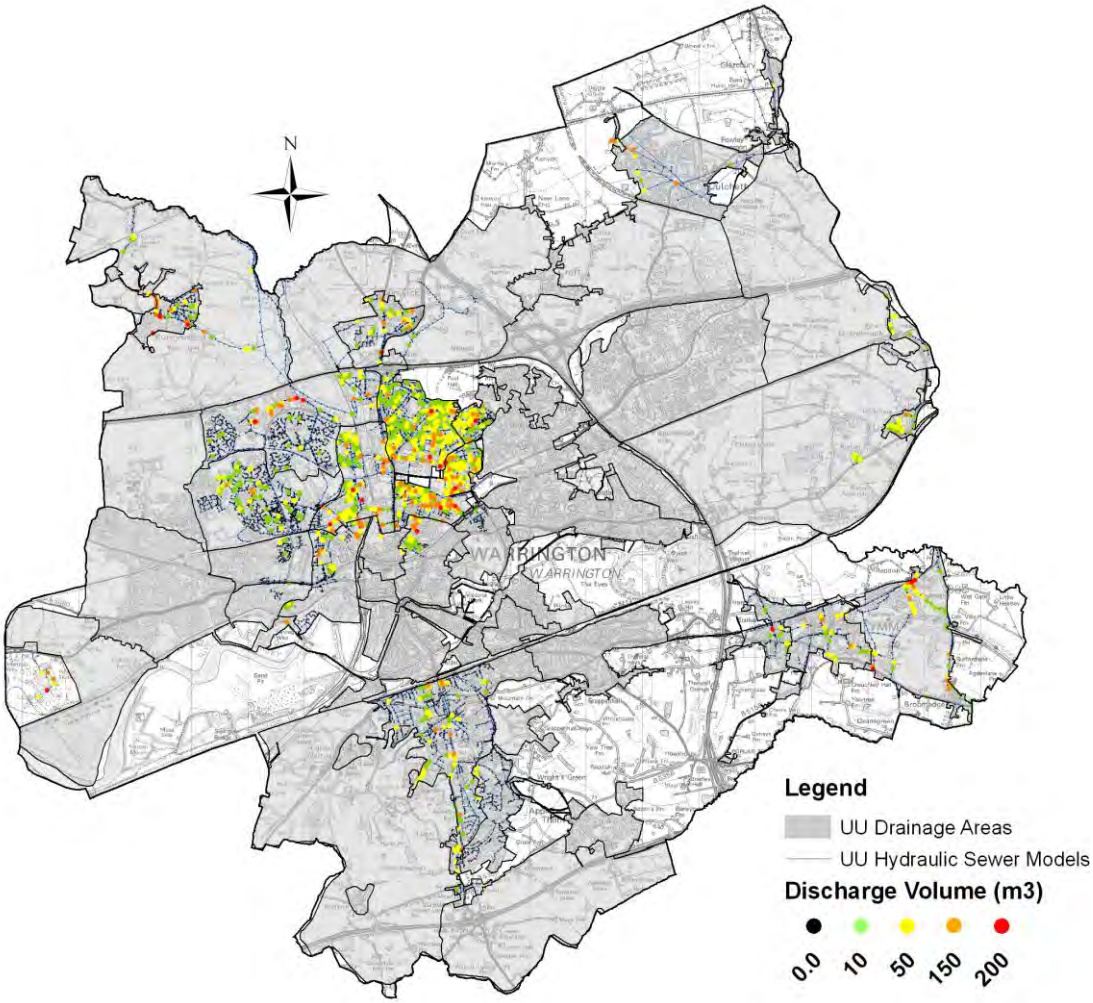



| | Hollins Green | Culcheth | Glazebury | Westy North | Wilderspool | Dudlow's Green | Stockton Heath | Orford | Winwick Village | Longford | Burtonwood | Burtonwood | Hood Manor | Penketh | Warrington Centre West | Bank Quay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG5_Intern | 1 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 3 | 2 | 2 | 0 | 0 | 47 | 2 | 0 |
| DG5_Extern | 2 | 2 | 0 | 2 | 2 | 1 | 2 | 3 | 1 | 8 | 0 | 1 | 1 | 65 | 0 | 1 |

Figure 4-8 illustrates the volume discharged ($m^3$) by each manhole during the 1 in 30 year flood event at a strategic scale. Each manhole has been colour coded to indicate the total flood volume.

Whilst this map allows a high-level analysis of sewer flood risk to be made there are a number of limitations with the data that must be acknowledged. Firstly, not all sewer networks in Warrington have been modelled; those that are identify previous high-risk areas from other sources (fluvial and surface water). United Utilities have run all models available, although age and confidence in the models are unknown. Older models may be outdated because of sewer network improvements. The data, shown as it is, does not provide an illustration of which areas would be affected once the floodwater is discharged from the system only where the discharge would occur. For example, floodwater may flow down streets, through properties, nearby watercourses or simply re-enter the sewerage systems further downstream.

**Figure 4-8: 1 in 30 years Sewer Flooding**






### 4.3.5 Sewer Flooding Conclusion

Whilst the DG5, SIRS and WIRS registers can give an idea of those areas with limited drainage capacity, or are susceptible to blockage and may result in flooding to properties, gardens or highways, it must be acknowledged that they are purely a historical register of incidents or properties that have already been flooded. They do not provide the data required to assess the current risk of flooding.

For these reasons, the historical registers obtained for the SFRA have limited usefulness in predicting future flooding locations alone. In addition to this, sewer flooding problems may have been resolved since the incident occurred or the register was compiled during ongoing sewer improvements by United Utilities. Current and future schemes are discussed in Section7.4.

What they do is provide a good starting point and useful dataset in validating alternative data sources such as the Environment Agency's Areas Susceptible to Surface Water Flooding and Flood Map for Surface Water as discussed in Section 4.2.1.

## 4.4 Groundwater Flooding

Groundwater flooding is caused by the emergence of water from underground, either at point or diffuse locations. The occurrence of groundwater flooding is usually local and unlike flooding from rivers and the sea, does not generally pose a significant risk to life due to the slow rate at which the water level rises. However, groundwater flooding can cause significant damage to property, especially in urban areas, and can pose further risks to the environment and ground stability. There are several mechanisms, which produce groundwater flooding including:

- Prolonged rainfall
- High in bank river levels
- Artificial structures
- Groundwater rebound
- Mine water rebound

### 4.4.1 Areas Susceptible to Groundwater Flooding

The Environment Agency"s national dataset, Areas Susceptible to Groundwater Flooding (AStGWF), provides the main dataset used to asses the future risk of groundwater flooding. The top two susceptibility bands of the British Geological Society (BGS) 1:50,000 Groundwater Flood Susceptibility Map derives the AStGWF map and thus covers consolidated aquifers (chalk, sandstone etc., termed 'clearwater' in the data attributes) and superficial deposits. It does not take account of the chance of flooding from groundwater rebound.

The AStGWF map uses four susceptible categories to show proportion of each 1km grid square where geological and hydrogeological conditions show that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring.

In common with the majority of datasets showing areas which may experience groundwater emergence, this dataset covers a large area of land, and only isolated locations within the overall susceptible area are actually likely to suffer the consequences of groundwater flooding.

Unless an area identified as „susceptible to groundwater flooding" is also identified as „at risk from surface water flooding", it is unlikely that this location would actually experience groundwater flooding to any appreciable depth, and therefore it is unlikely that the consequences of such flooding would be significant.

### 4.4.2 Groundwater Flooding in Warrington

As well as the national Groundwater Flood Map, there are a number other national and more local datasets and studies which contain some details about possible groundwater flooding in Warrington.

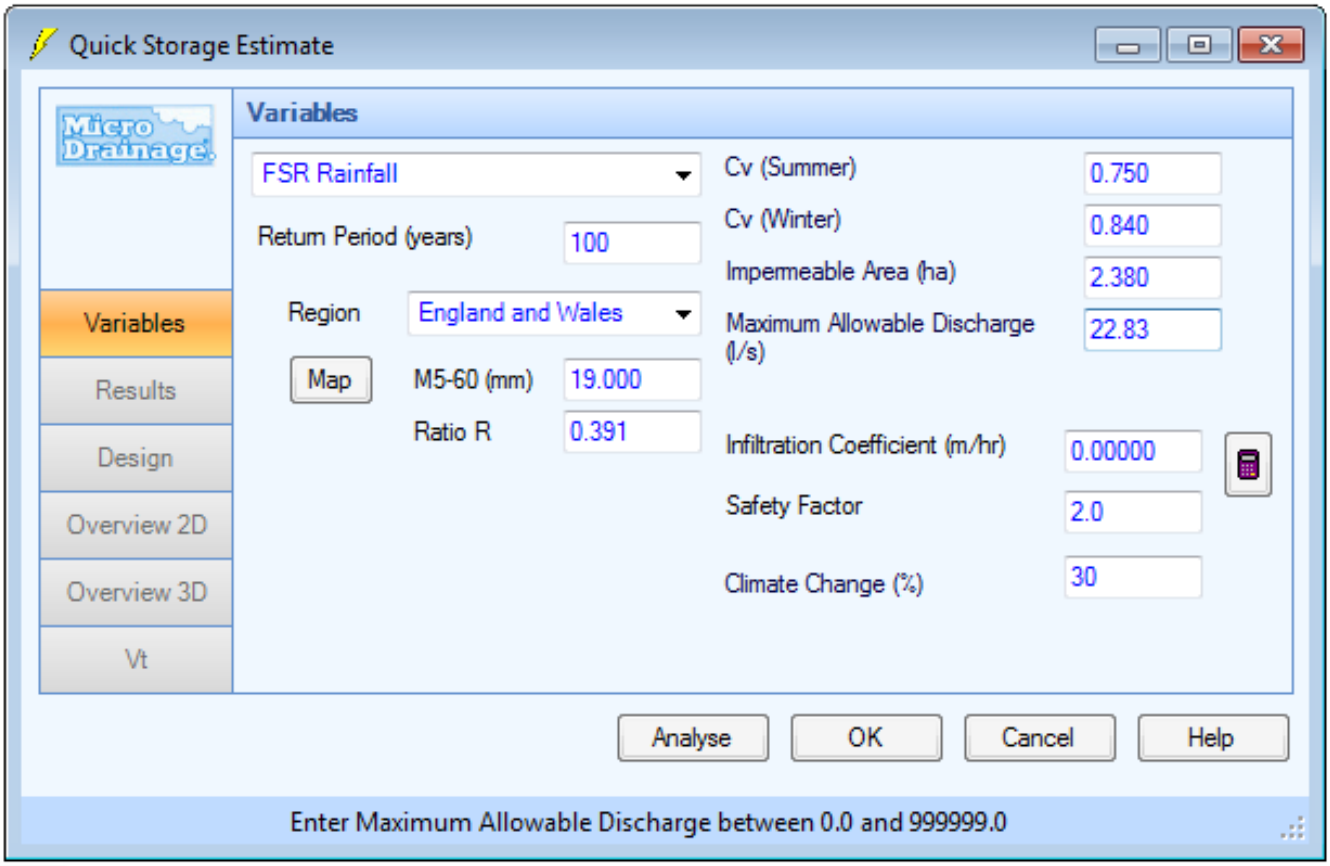
The Environment Agency's CFMPs identified a number of locations in Warrington, including significant areas of the River Glaze and Sankey Brook that are at risk of groundwater flooding

## IH 124 Mean Annual Flood

Input

| | | | |
|---|---|---|---|
| Return Period (years) | 100 | Soil | 0.450 |
| Area (ha) | 63.580 | Urban | 0.000 |
| SAAR (mm) | 836 | Region Number | Region 10 |

| **Results** | **l/s** |
|---|---|
| QBAR Rural | 334.8 |
| QBAR Urban | 334.8 |
| Q100 years | 696.5 |
| Q1 year | 291.3 |
| Q2 years | 311.9 |
| Q5 years | 398.5 |
| Q10 years | 462.1 |
| Q20 years | 526.4 |
| Q25 years | 549.1 |
| Q30 years | 567.7 |
| Q50 years | 619.4 |
| Q100 years | 696.5 |
| Q200 years | 790.2 |
| Q250 years | 820.3 |
| Q1000 years | 1017.9 |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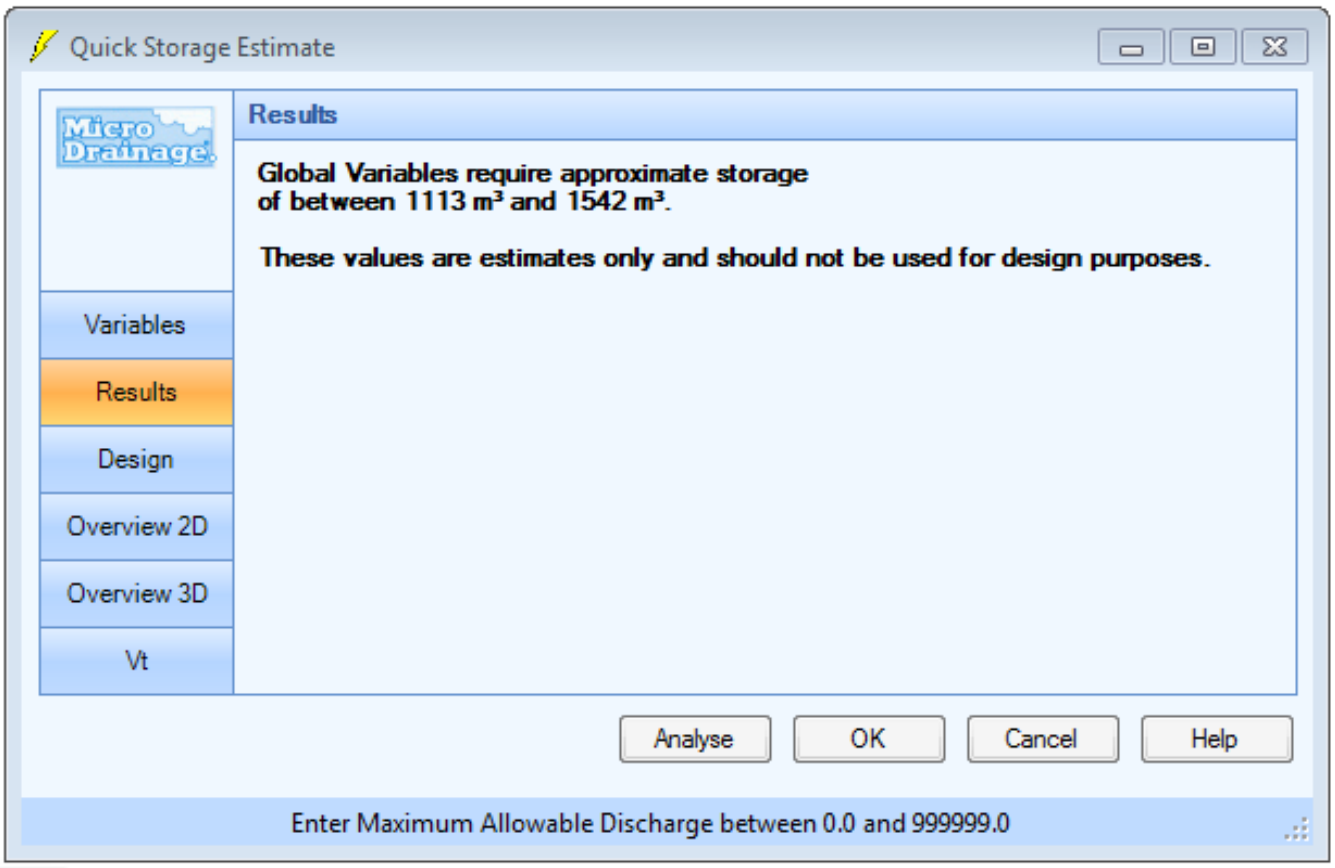
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
2.380
Maximum Allowable Discharge (l/s)
22.83
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0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Results
Global Variables require approximate storage
of between 1113 m³ and 1542 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0

Quick Storage Estimate

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 19.000

Ratio R 0.391

Cv (Summer) 0.750

Cv (Winter) 0.840

Impermeable Area (ha) 2.890

Maximum Allowable Discharge (l/s) 27.7

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 2.0

Climate Change (%) 30

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Maximum Allowable Discharge between 0.0 and 999999.0

Quick Storage Estimate

Results

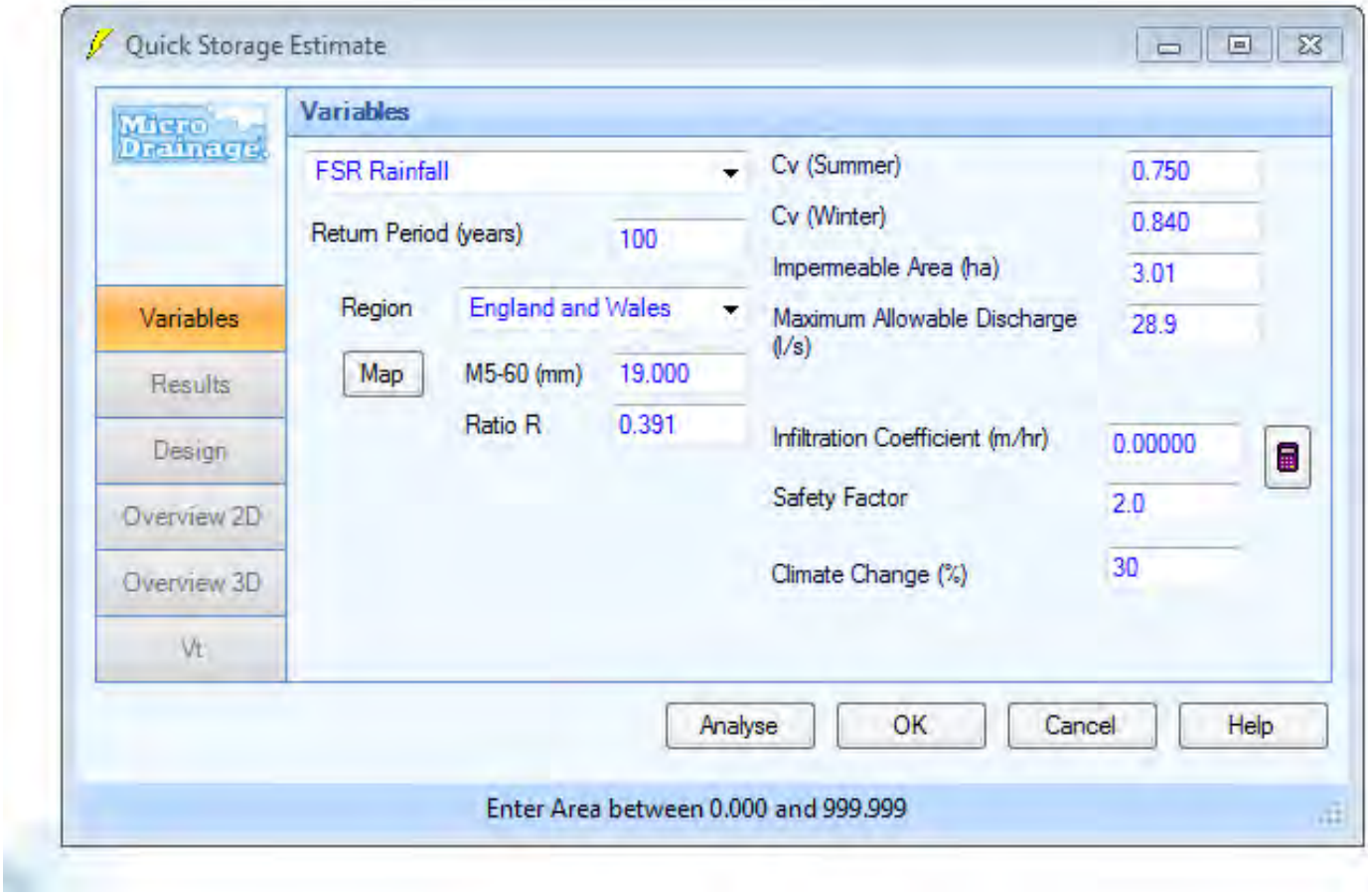
**Global Variables require approximate storage of between 1351 m³ and 1873 m³.**

**These values are estimates only and should not be used for design purposes.**

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Maximum Allowable Discharge between 0.0 and 999999.0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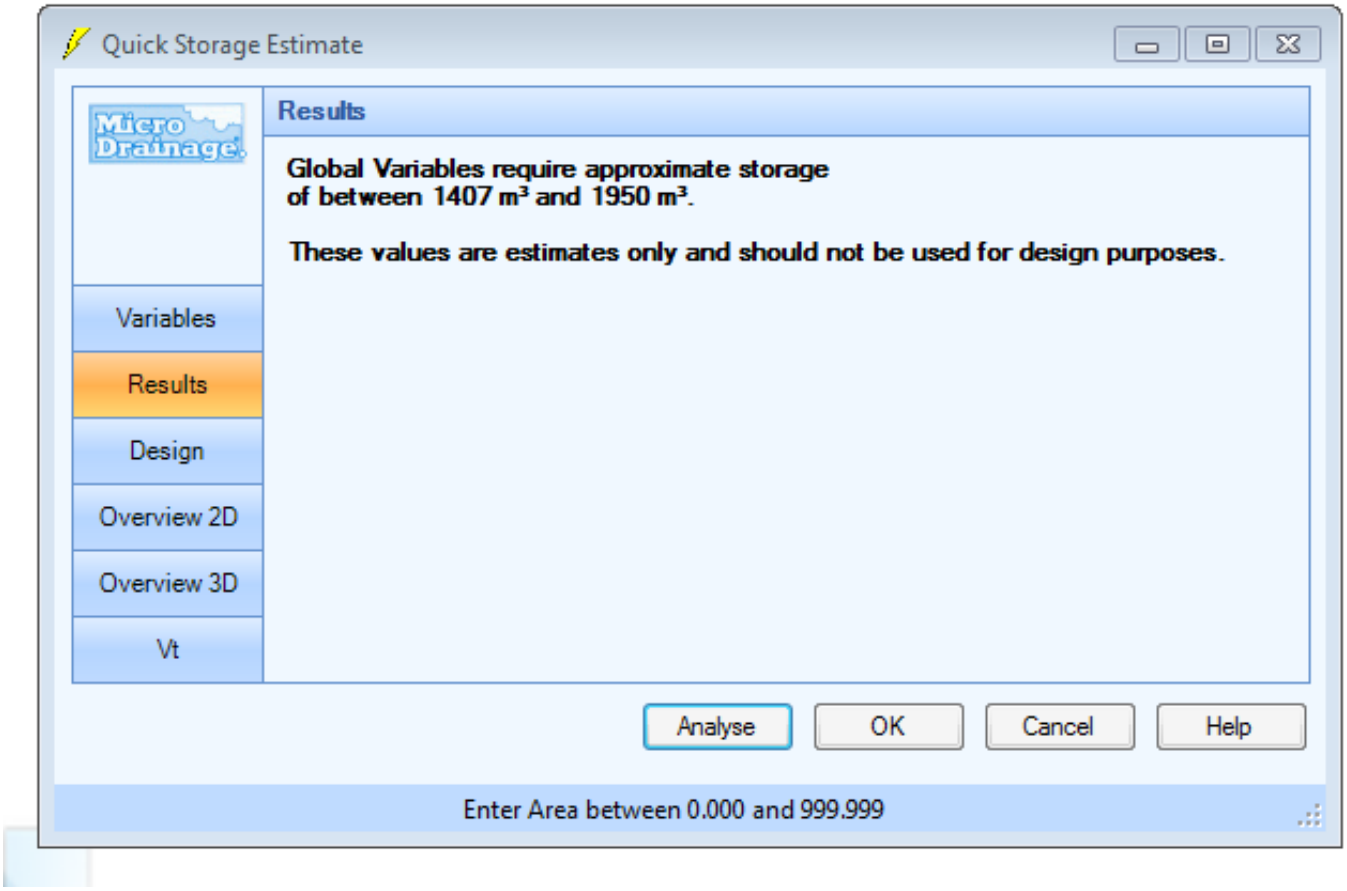
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
3.01
Maximum Allowable Discharge (l/s)
28.9
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Area between 0.000 and 999.999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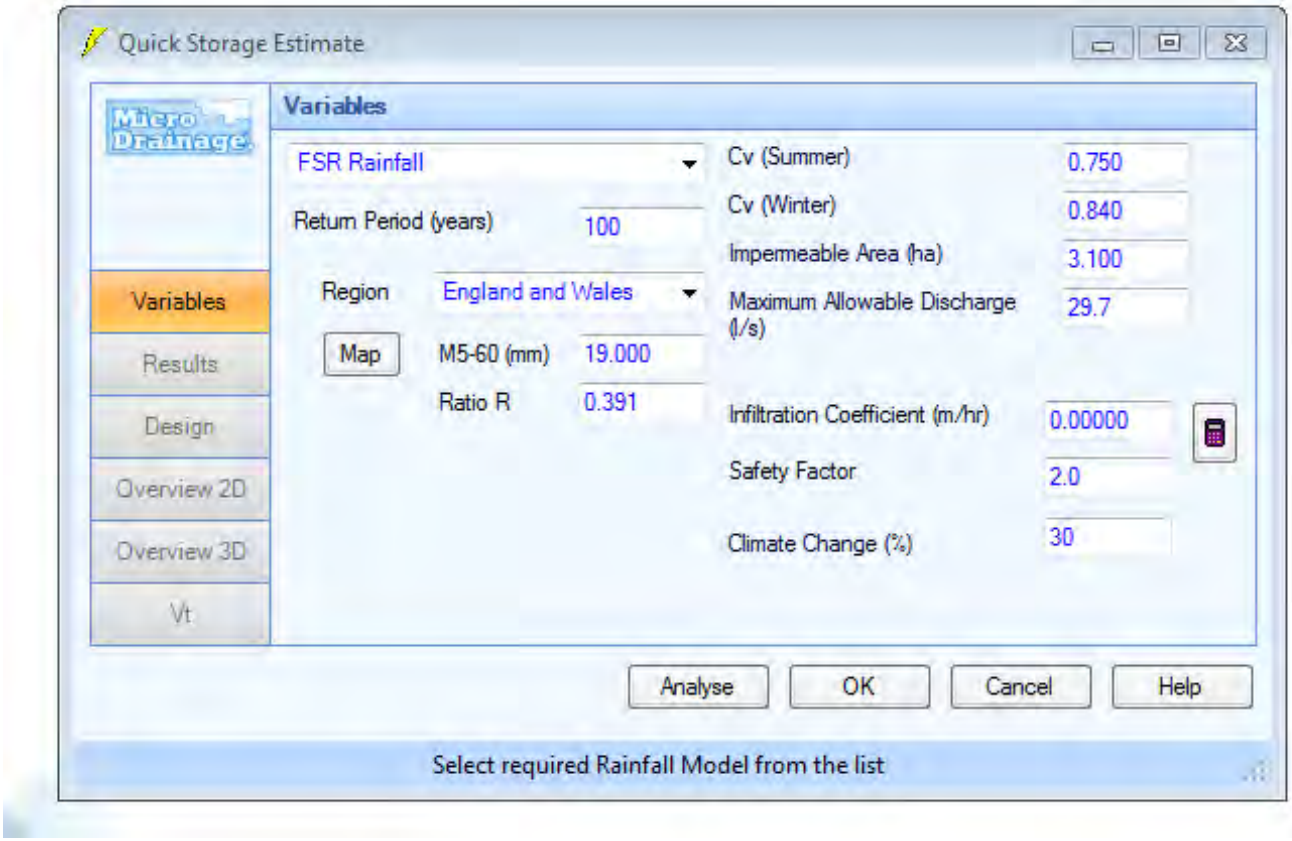
Results
Global Variables require approximate storage
of between 1407 m³ and 1950 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Area between 0.000 and 999.999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Micro Drainage
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FSR Rainfall
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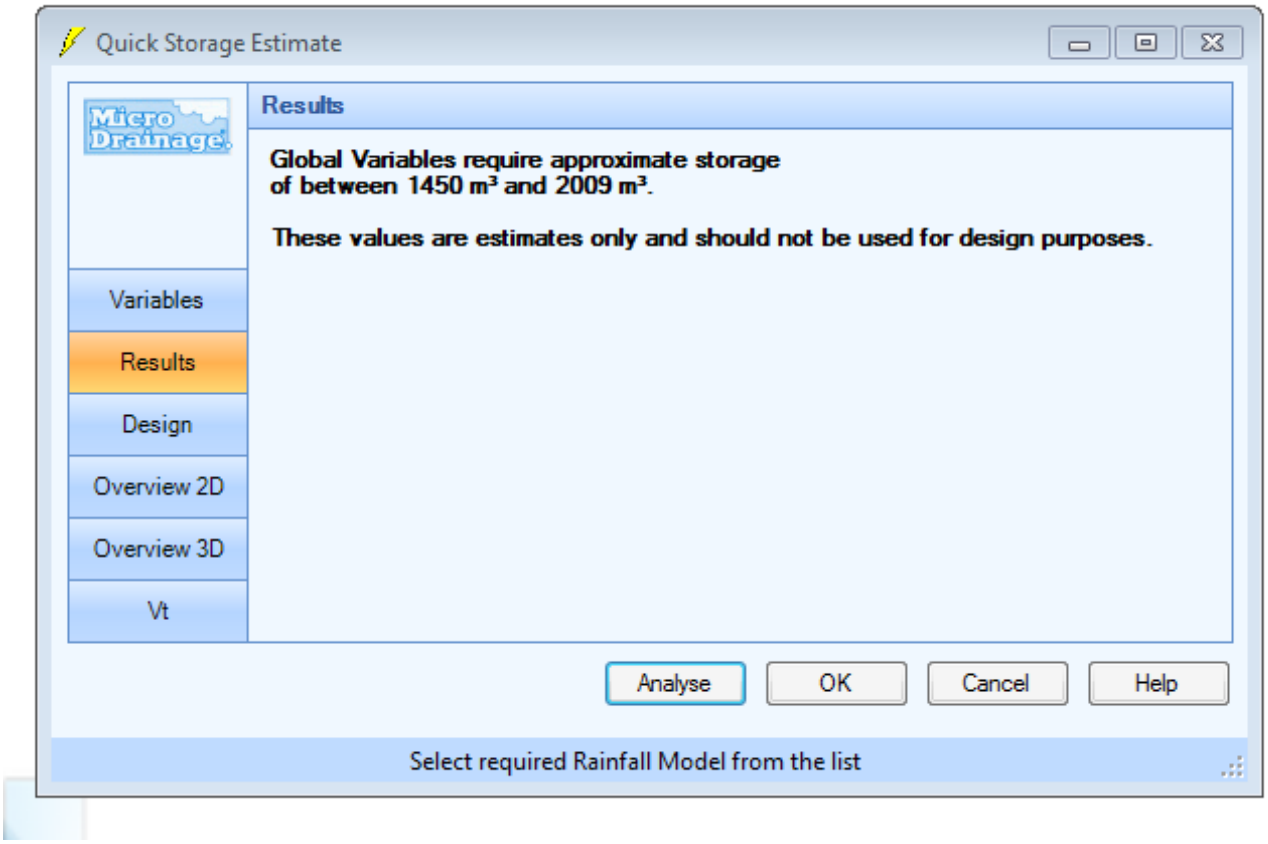
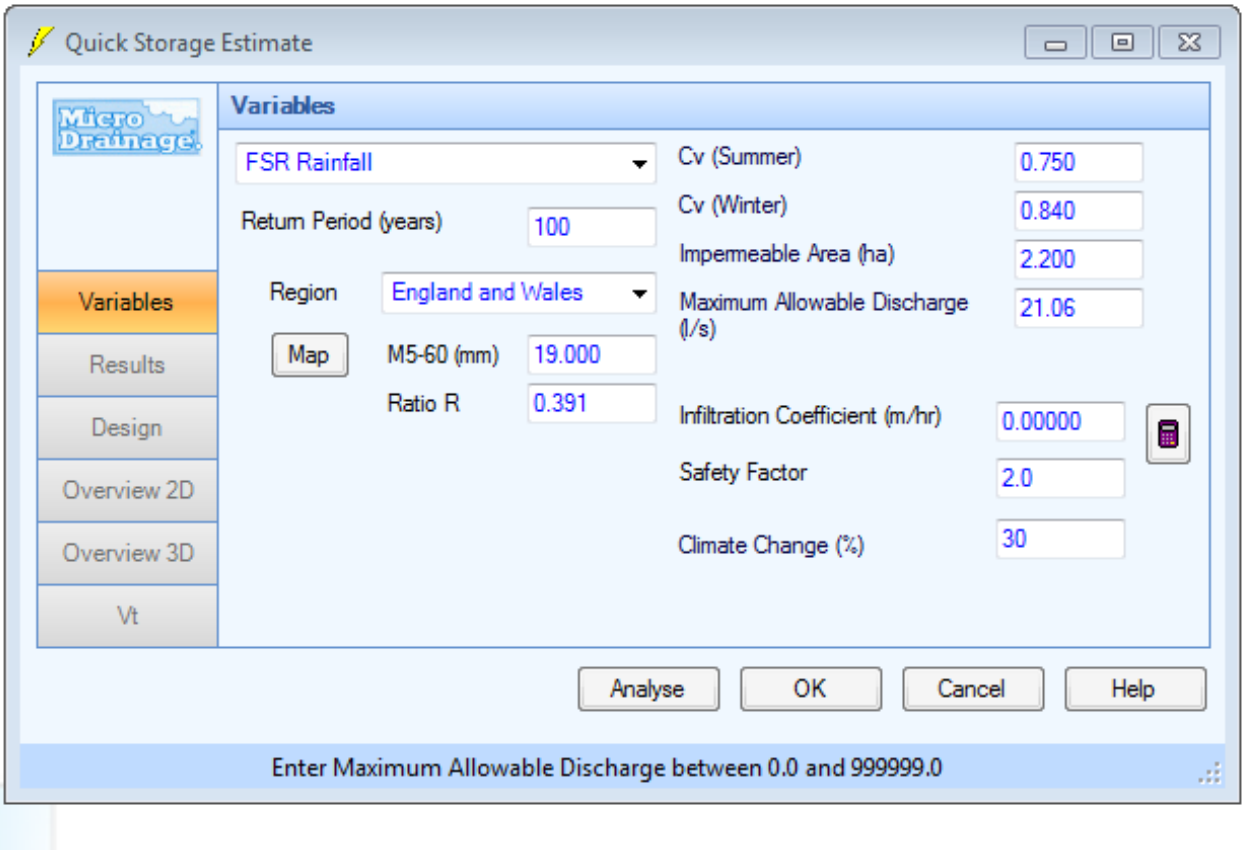
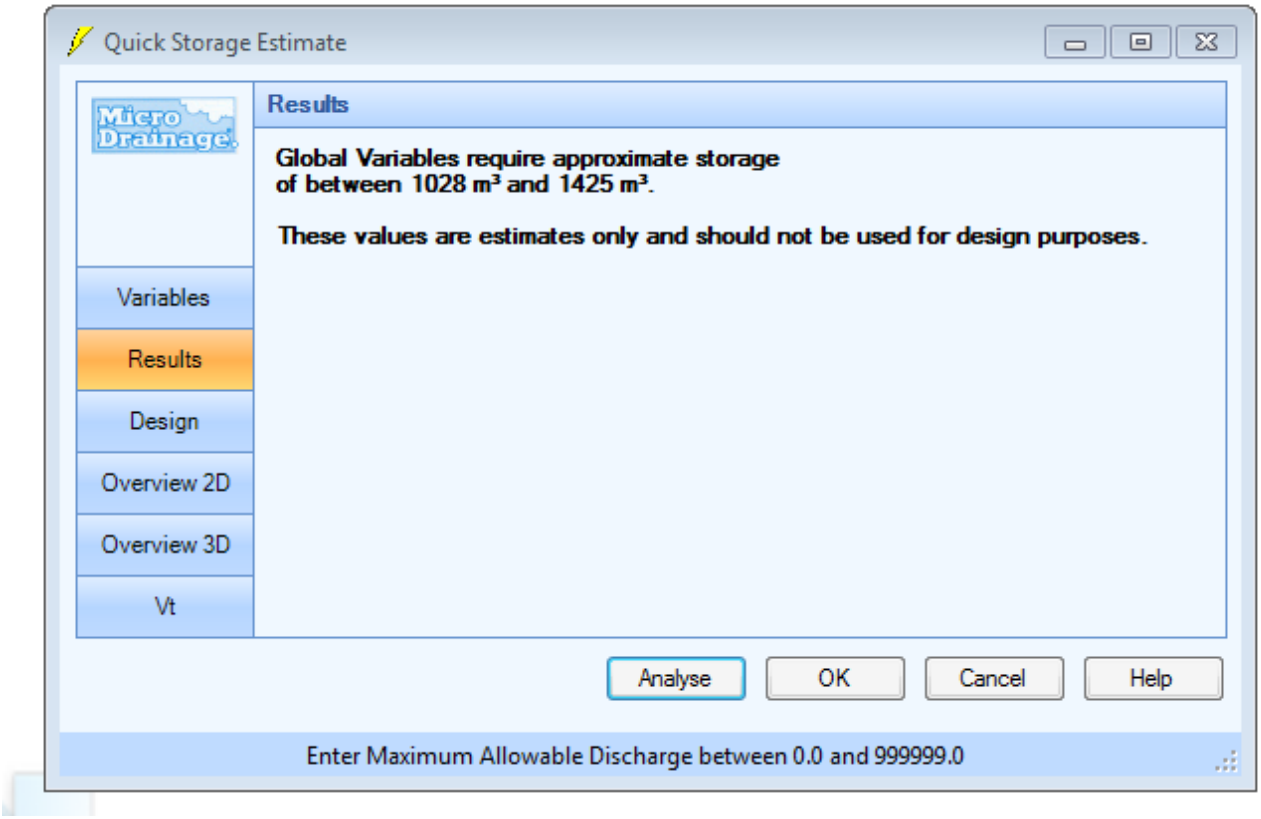
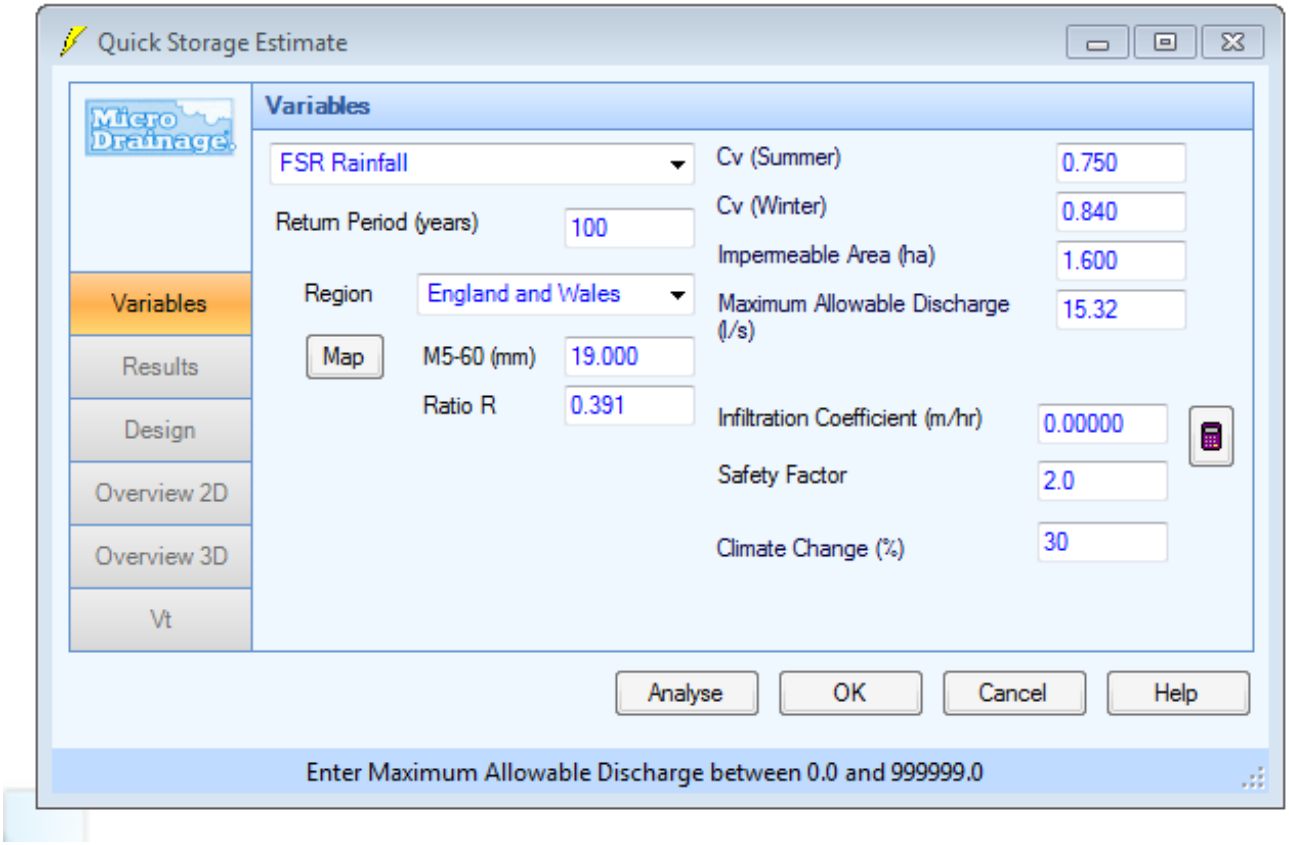
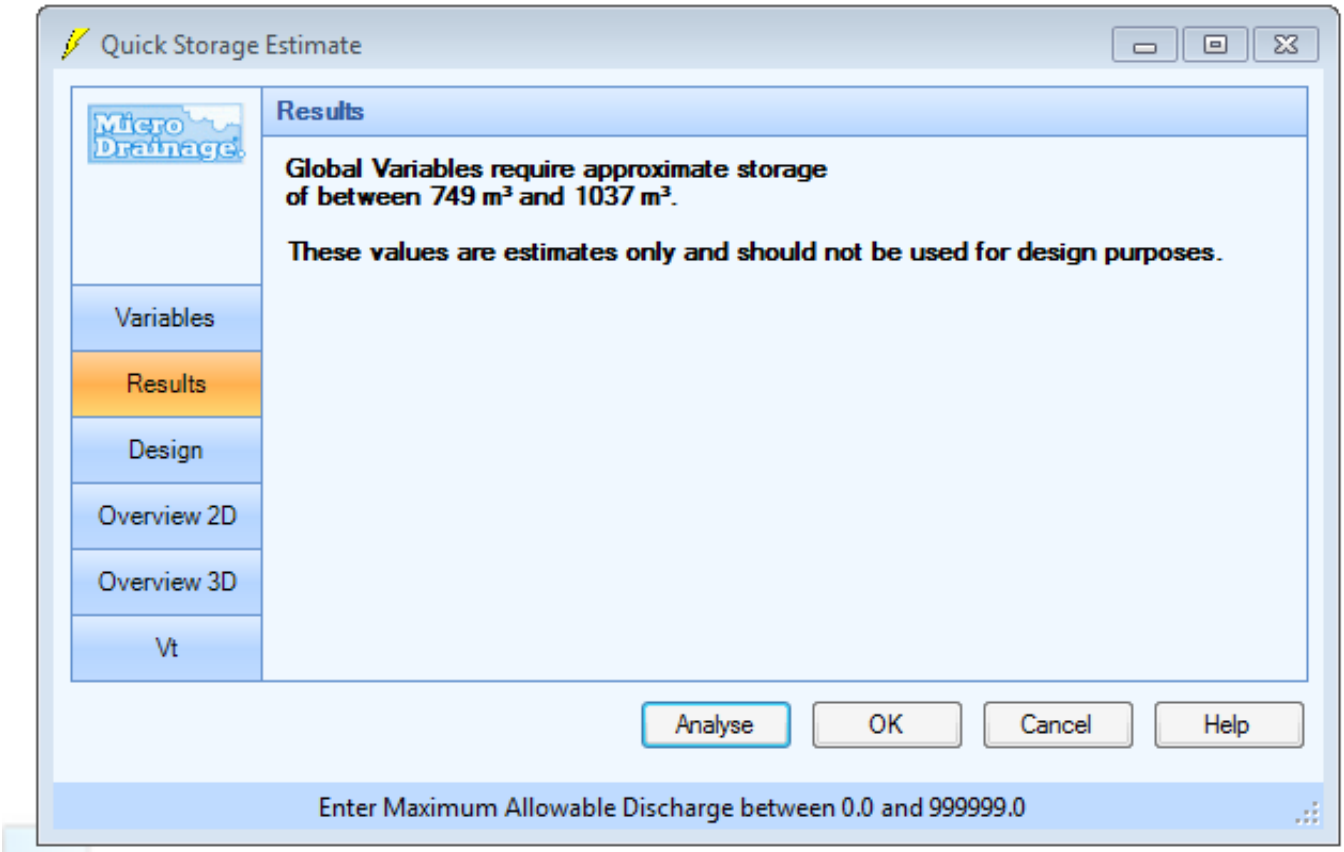
Region England and Wales
Map
M5-60 (mm) 19.000
Ratio R 0.391
Cv (Summer) 0.750
Cv (Winter) 0.840
Impermeable Area (ha) 3.100
Maximum Allowable Discharge (l/s) 29.7
Infiltration Coefficient (m/hr) 0.00000
Safety Factor 2.0
Climate Change (%) 30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Select required Rainfall Model from the list


Quick Storage Estimate
Micro Drainage
Results
Global Variables require approximate storage of between 1450 m³ and 2009 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Select required Rainfall Model from the list


Quick Storage Estimate
Variables
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
2.200
Maximum Allowable Discharge (l/s)
21.06
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0


Quick Storage Estimate
Results
Global Variables require approximate storage
of between 1028 m³ and 1425 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0


Quick Storage Estimate
Variables
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
1.600
Maximum Allowable Discharge (l/s)
15.32
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0


Quick Storage Estimate
Results
Global Variables require approximate storage
of between 749 m³ and 1037 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0

Quick Storage Estimate

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 19.000

Ratio R 0.391

Cv (Summer) 0.750

Cv (Winter) 0.840

Impermeable Area (ha) 0.460

Maximum Allowable Discharge (l/s) 4.37

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 2.0

Climate Change (%) 30

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Maximum Allowable Discharge between 0.0 and 999999.0

Quick Storage Estimate

Results

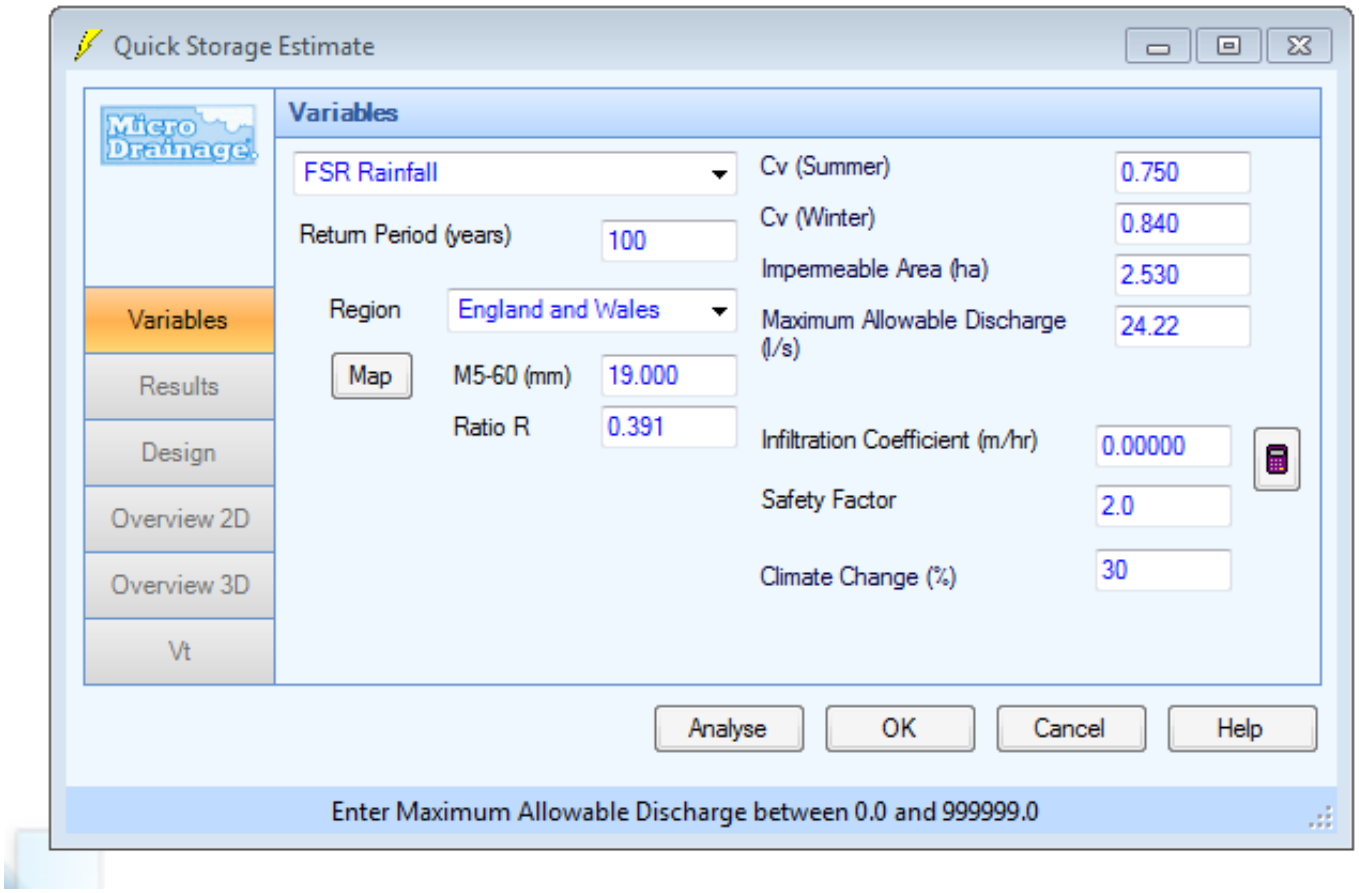
**Global Variables require approximate storage of between 215 m³ and 298 m³.**

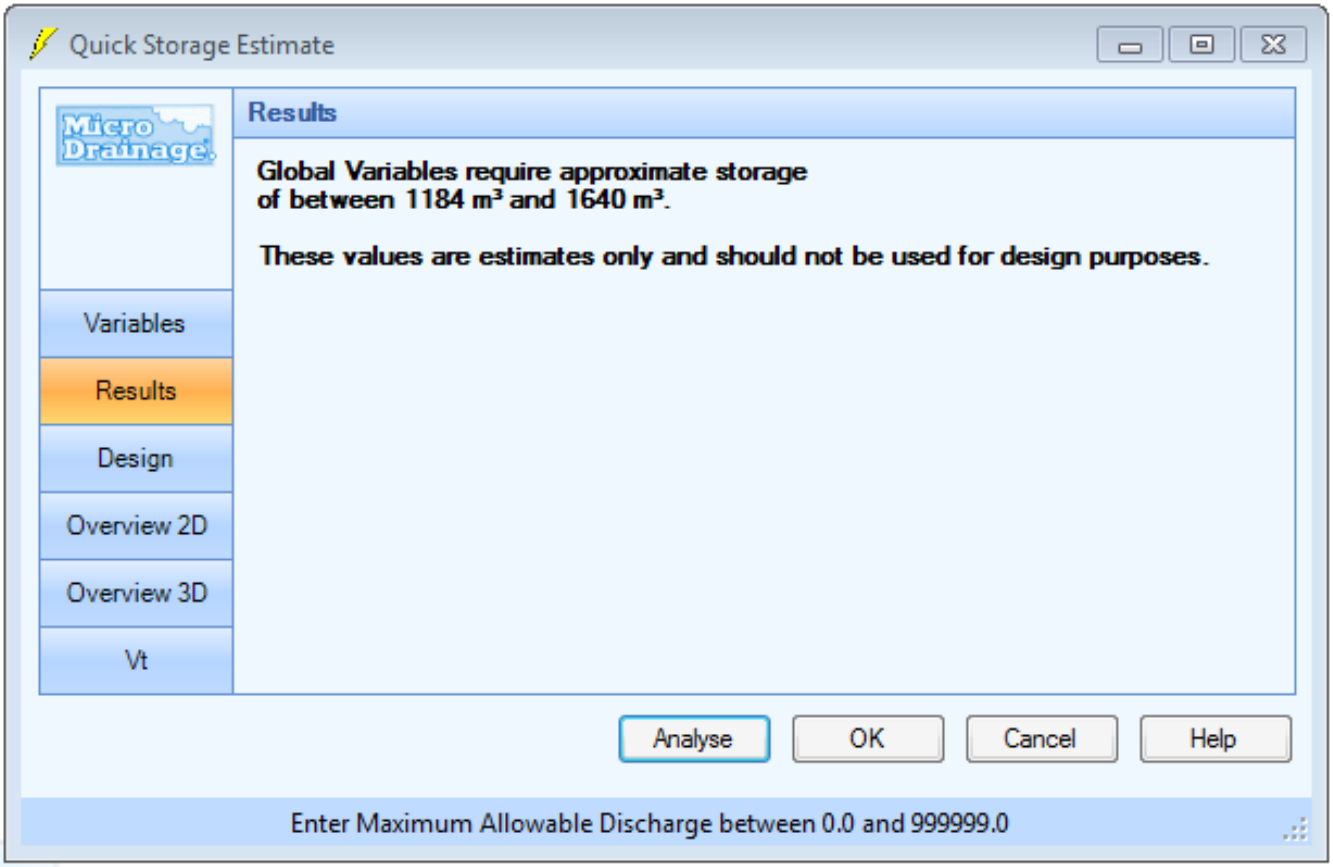
**These values are estimates only and should not be used for design purposes.**

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Maximum Allowable Discharge between 0.0 and 999999.0


Quick Storage Estimate
Micro Drainage
Variables
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
2.530
Maximum Allowable Discharge (l/s)
24.22
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0


Quick Storage Estimate
Micro Drainage
Results
Global Variables require approximate storage
of between 1184 m³ and 1640 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Maximum Allowable Discharge between 0.0 and 999999.0

Quick Storage Estimate

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 19.000

Ratio R 0.391

Cv (Summer) 0.750

Cv (Winter) 0.840

Impermeable Area (ha) 1.610

Maximum Allowable Discharge (l/s) 15.4

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 2.0

Climate Change (%) 30

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000

Quick Storage Estimate

Results

**Global Variables require approximate storage of between 753 m³ and 1044 m³.**

**These values are estimates only and should not be used for design purposes.**

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000

Quick Storage Estimate

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 19.000

Ratio R 0.391

Cv (Summer) 0.750

Cv (Winter) 0.840

Impermeable Area (ha) 2.240

Maximum Allowable Discharge (l/s) 21.5

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 2.0

Climate Change (%) 30

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Climate Change between -100 and 600

Quick Storage Estimate

Results

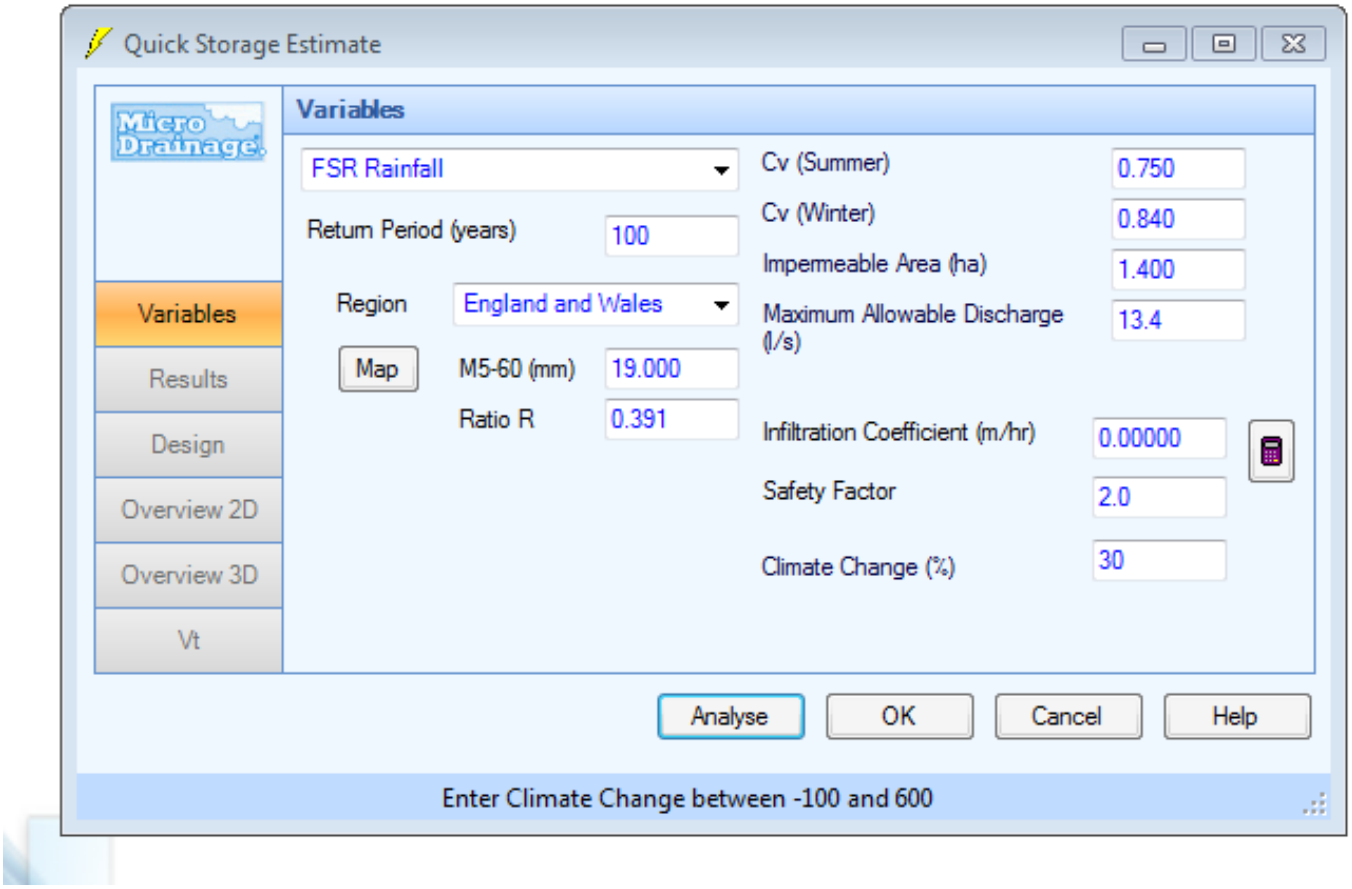
**Global Variables require approximate storage of between 1047 m³ and 1451 m³.**

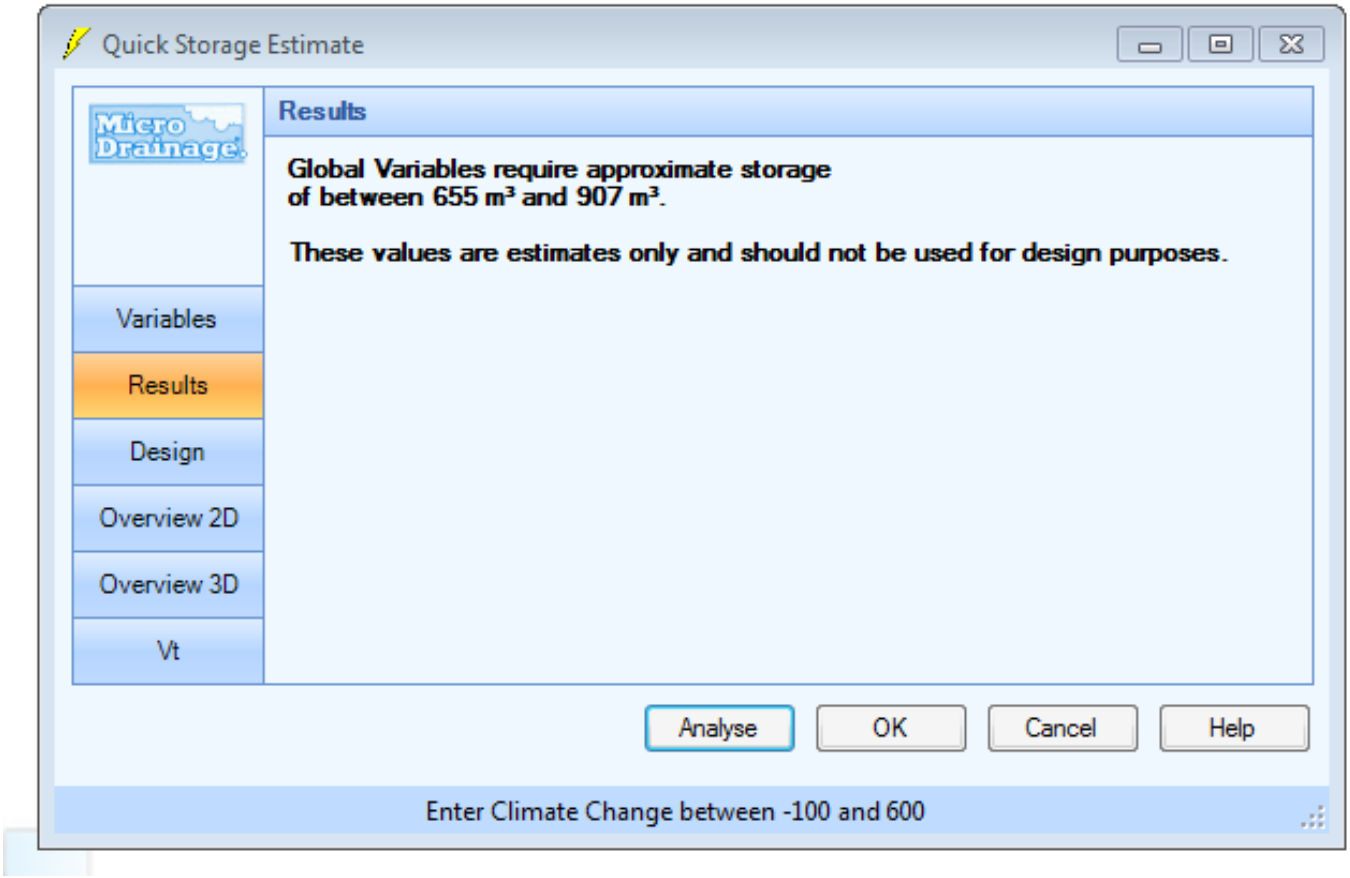
**These values are estimates only and should not be used for design purposes.**

Variables | Results | Design | Overview 2D | Overview 3D | Vt

Analyse | OK | Cancel | Help

Enter Climate Change between -100 and 600


Quick Storage Estimate
Variables
FSR Rainfall
Return Period (years)
100
Region
England and Wales
Map
M5-60 (mm)
19.000
Ratio R
0.391
Cv (Summer)
0.750
Cv (Winter)
0.840
Impermeable Area (ha)
1.400
Maximum Allowable Discharge (l/s)
13.4
Infiltration Coefficient (m/hr)
0.00000
Safety Factor
2.0
Climate Change (%)
30
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Climate Change between -100 and 600


Quick Storage Estimate
Results
Global Variables require approximate storage
of between 655 m³ and 907 m³.
These values are estimates only and should not be used for design purposes.
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Analyse
OK
Cancel
Help
Enter Climate Change between -100 and 600

From: Laithwaite, Anthony [Anthony.Laithwaite@uuplc.co.uk]
Sent: 27 October 2015 10:57
To: Graham, Paul
Cc: Wastewater Developer Services
Subject: RE: DE1530 Peel Hall Farm Predevelopment Enquiry

Good Morning Paul,

Thank you for your enquiry of 02nd October, please see my response below.

We have carried out an assessment of your application which is based on the information provided; this pre development advice will be valid for 12 months

Foul:

United Utilities would have no objection to foul flows communicating with our foul / combined public sewers. Our preference is for gravity connections rather than pumped flows, however without knowing the topography at this stage we are not in a position to comment further.

Surface Water:

Surface water from this site should drain to either soak away or directly to watercourse. Discharge rates and consents must be discussed and agreed with all interested parties.

Existing Sewers Crossing the Site

Public sewers cross this site and we will require unrestricted access to the sewers for maintenance purposes, we would ask that you maintain a minimum clearance as per table 2.1 SFA. If you cannot achieve this then you may wish to consider diverting the public sewer.

Please refer to the link below to obtain full details of the processes involved in sewer diversion.

http://www.unitedutilities.com/sewer-diversion.aspx

Sewer Adoption Agreement

You may wish to offer the proposed new sewers for adoption. United Utilities assess adoption appliation based on Sewers adoption 6th Edition and for any pumping stations our company addenda document. Please refer to link below to obtain further guidance and application pack:

http://www.unitedutilities.com/sewer-adoption.aspx

Connection Application

Although we may discuss and agree discharge points & rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimatley inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below

http://www.unitedutilities.com/connecting-public-sewer.aspx

Please be aware that on site drainage must be designed in accordance with Building Regulations, National Planning Policy, Planning Conditions and local flood authority guidelines, we would recommend that you laise and make suitable agreements with the relevant statutory bodies.

Regards

Anthony

Anthony Laithwaite
Developer Services & Planning
Operational Services
United Utilities

T: 01925 679369
unitedutilities.com

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Visit: unitedutilities.com/wow

---

From: Graham, Paul [mailto:paul.graham@tpa.uk.com]
Sent: 02 October 2015 17:23
To: Wastewater Developer Services
Subject: Peel Hall Farm Predevelopment Enquiry

Good Evening,

Please see attached wastewater predevelopment enquiry for Peel Hall Farm. I am unsure if a colleague who has now left the company has already submitted an enquiry on the 31st July for this site but I do not believe she has. If this is not the case, please can you advise.

Also attached is a site location plan, masterplan and Greenfield calcs to use for the enquiry.

If you have any issues, please do not hesitate to contact me.

Kind regards

Paul Graham (paul.graham@tpa.uk.com)
Assistant Engineer
Transport Planning Associates

029 2023 0303

32 Windsor Place
Cardiff
CF10 3BZ

www.tpa.uk.com

Bristol | Cambridge | Cardiff | London | Oxford | Welwyn Garden City

| Project | | | | Status | |
|---|---|---|---|---|---|
| **Peel Hall Farm** | | | | | |
| Date 27/01/16<br>By PG<br>Checked LF | | Job no.<br>1503-116 | Section | Sheet no. | Rev |

| Rev | Date | Details | Tel |
|---|---|---|---|
| | | Foul Drainage | Fax |

Part
Proposed Foul Flow Rates

**Proposed Foul Flow**

These foul calculations have been based upon Sewers for Adoption.
The proposed foul flow for 1300 dwellings has been calculated as:

Residential Flow – 4000l/day/dwelling
(4000x1300) = 5,200,000/86400 = 60.19 l/s

Commercial Flow –100/l/day/staff
230 x 100 = 23000 l/day
23000 x 6dwf (dry weather flow) = 138000 l/day
138000/86400 = 1.59 l/second

School Flow – 90/l/day/person
205 x 90 = 18450 l/day
18450 x 6dwf (dry weather flow) = 110700 l/day
110700/86400 = 1.28 l/second

Retirement Home Flow – 350/l/day/person
60 x 350 = 21000 l/day
21000 x 6dwf (dry weather flow) = 126000 l/day
126000/86400 = 1.46 l/second

Combined – 60.19 + 1.59 + 1.28 + 1.46 = 64.52l/s

*86400 = 24 x 60 x 60 (l/day → l/sec)*

# LND 1-9

## LANDSCAPE AND VISUAL IMPACT


## Key:

- Existing Trees and Vegetation to be retained
- Proposed Tree/ Shrub Planting
- Proposed sport pitches/ public open space
- Developable Land
- M62 Motorway
- Proposed Roads (indicative route)
- Proposed Pedestrain Pavements (indicative route)
- Public Right of Way
- Proposed footpath network
- Existing Housing
- Proposed Waterbodies
- Areas of existing vegetation to be removed

# PEEL HALL, WARRINGTON

## Indicative Landscape Components Plan

| | |
|---|---|
| Project<br>PEEL HALL, WARRINGTON | |
| Title<br>Indicative Landscape Components Plan | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>October 2015 | Scale<br>1:2,500@A1 |
| Drawn<br>SW | Drawing No.<br>1820_25 |
| Checked<br>DA/ DS | Revision<br>M |

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Fax: 01204 388792 Web: www.appletons.uk.com
Email: info@appletons.uk.com


## Key:

- Site Boundary
- Existing vegetation
- Scrub vegetation
- Wet grassland
- Arable land
- Improved grassland
- Amenity grassland

# PEEL HALL, WARRINGTON

LND 2
Site Characteristics Plan
Scale: NTS

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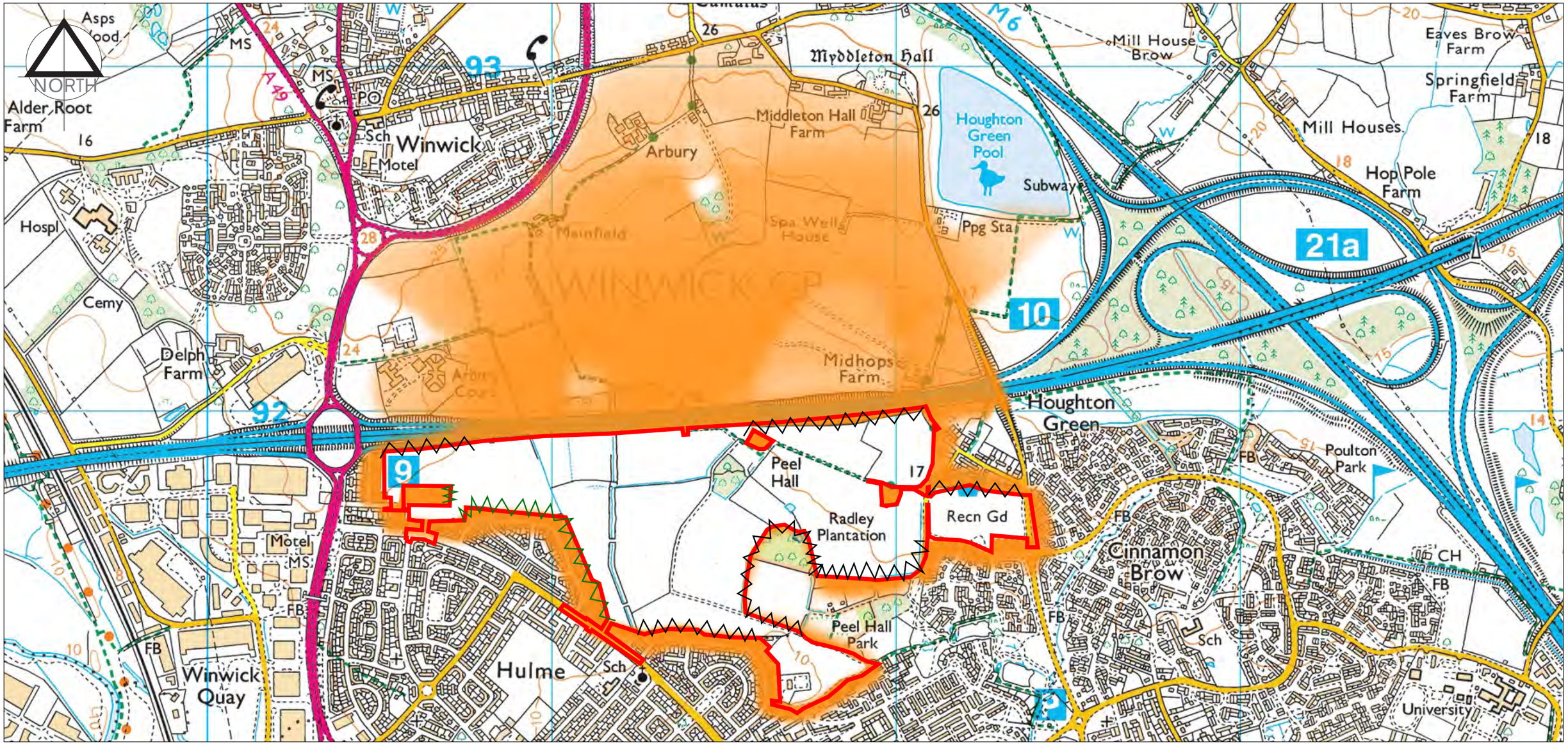


## Key:

Site Boundary

Dark
High potential visibility

Low potential visibility
Light

view is partially screened by existing vegetation

view partially screened by proposed vegetation



# PEEL HALL, WARRINGTON

LND 3

Zone of Visual i

Scale: See scale bar

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Key:

Site Boundary

00 Viewpoint Location Marker

# PEEL HALL, WARRINGTON

LND 4
Viewpoint Location Map 1
Scale: NTS

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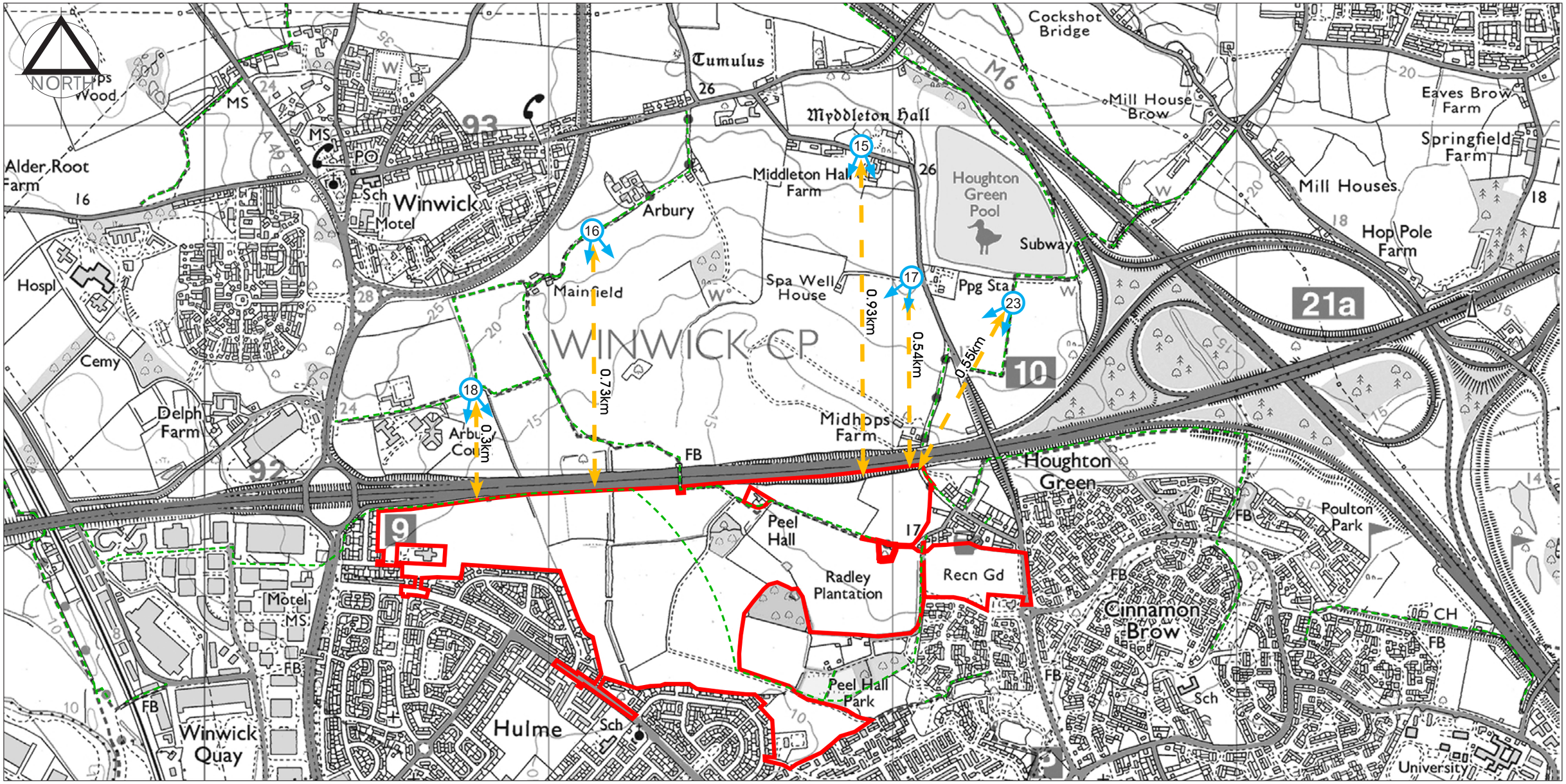


## Key:

Site Boundary

Public Right of Way (as designated in the adopted Local Plan 2014)

00 Viewpoint Location Marker



# PEEL HALL, WARRINGTON

LND 4
Viewpoint Location Map 2
Scale: See scale bar

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Photograph 1 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking east towards the Site from the end of Elm Road adjacent to property number 27. The view shows the track which links to Elm Road. The track allows access to a utilities building. The view is of the open fields, the M62 motorway and boundary vegetation. Views are partially screened by mature trees and vegetation.<br><br>Views from residential properties of Elm Road are generally views from rear gardens. Intervening boundary vegetation limits views from the ground floor of properties.<br><br>Views influenced by urban features and residential properties in the distance.<br><br>Although not currently a public right of way, the track has been proposed by the local authority to become part of the active travel greenway network. | The proposed view would see light industrial development including built form and infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene.<br><br>Some properties along Elm Road may see proposed residential development including built form and infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene and within garden curtilages<br><br>The majority of the existing vegetative screening would be retained and enhanced meaning the views to the rear of properties may be reduced in places. In addition, new planting to the boundary will mature over time and further strengthen its screening value.<br><br>Views would be seen in the context of adjacent existing dwellings. | Strengthening of existing boundary vegetation around the Site will assist in further screening views along the development edges.<br><br>The magnitude of effects would be large as the change in view is directly visible and is noticeable on account of being in the near distance.<br><br>Lighting along the edge of the development may be visible at night. |

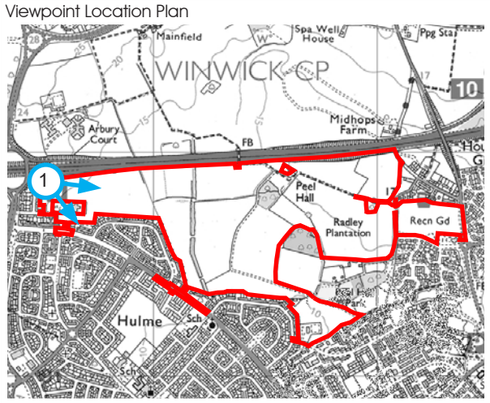
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP1**<br><br>**Representative of rear views from properties of Elm Road and Track users.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days. | **Moderate**<br>No significant scenic quality.<br><br>On site heritage asset are indistinguishable in the surrounding landscape.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Large adverse**<br>Development is close to the view and directly facing the viewpoint. View is limited by intervening factors. Change is noticeable due to the distance from the Site. | **Major adverse** | **Moderate adverse**<br>The proposed development would cause obvious alteration to an established view from a moderately sensitive receptor. However, existing and mitigation planting would partially screen the site. |

**Photograph 1**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:00 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 360527 N 391884 |
| AOD: | 17m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project | Peel Hall, Warrington |
| Title | Viewpoint 1 |
| Client | Satnam Millennium Ltd |
| Date | May 2016 |
| Scale | NTS |
| Drawn | SW |
| Drawing No. | Vp_1 |
| Checked | DS |
| Revision | - |

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Email: info@appletons.uk.com


Photograph 2 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible, currently the permitted land users are agricultural land managers and utility staff members. The access track to this view is not a designated public footpath, it is access to the utilities company building situated on Site. Although not currently a public right of way, the track has been proposed by the local authority to become part of the active travel greenway network.<br><br>The view from this location looking towards the south and south-west boundary. Properties on Newhaven Road and Elm Road can be seen. Also within this view is the Fairhaven/ the Alders (Five Borough) NHS facility with a high security fence and high pitched roof, making it prominent from the surrounding dwellings which are all primarily two storey semi-detached houses.<br><br>Mature off site trees and vegetation block view of some of the properties on both Newhaven Road and Elm road, they contain the view to primarily the Site.<br><br>To the west, running along the northern boundary of the Site, is the M62 motorway which is viewed from this location. There is little to no vegetation screen views of the carriageway, the lighting columns and the signage. | The proposed view looking towards the south and south west would see the proposed Employment Zone with small industrial units and proposed Residential Areas, which will include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing properties to Newhaven Road and Elm Road and the NHS facility.<br><br>New planting and habitat creation within the buffer zone would introduce visual interest in the form of tree and shrub planting. | The magnitude of effect would be large in relation to the current private view to the south and south-west. However, the views gained within the created buffer zone would be beneficial where there is currently no public access.<br><br>Lighting to the built form from street lighting and from windows of residential dwelling would be visible at night, however this would be seen in the context of the motorway lighting.<br><br>New landscaping to the street scene and garden curtilages would be a positive landscape and visual benefit in the longer term. |

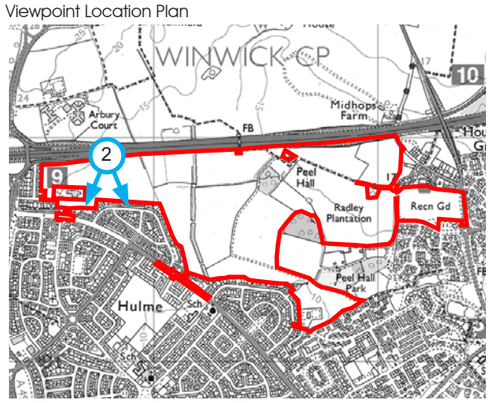
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP2- Private view within the Site from the track leading to utilities building.** | **Low-** Agricultural Land Managers. There is currently no public access to this part of the Site. | **Low-** There is currently no public access to this part of the Site. The view is a private view.<br><br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing, motorway and NHS facility). | **Low** | **Very large/ Substantial adverse-** There would a diminished view of the properties on Newhaven Road and Elm Road with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a private view from a low sensitive receptor, or perceptible damage to a view from a more sensitive receptor. However, this is seen in the context of the existing motorway and residential properties.<br><br>The establishment of the buffer zone landscaping vegetation will over time reduce the effect of the development on the view. |

**Photograph 2**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:03 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 360811 N 391918 |
| AOD: | 13m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 2 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_2 |
| Checked: DS | Revision: - |

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Photograph 3 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible. The view is looking north-west within the Site on the southern boundary with back of properties on Newhaven Road. The view is representative of what these properties would see.<br><br>The view is of open fields with intermittent vegetation, boundary vegetation and the M62 motorway. Adjacent to the view is a historic boundary with established vegetation and ditch. A number of properties on Newhaven Road have rear aspects to the Site, visual impact will vary to a degree depending on the alignment of buildings and the location of windows for main occupation during daytime hours. Some properties will experience oblique views of the Site although existing boundary fencing may limit views.<br><br>The view is heavily influenced by urbanising features, such as the M62 motorway which will be lit at night, properties on Elm Road and the NHS facility. | The proposed view looking towards the north-west would see the proposed residential areas, which will include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing properties on Newhaven Road and the M62 motorway.<br><br>The retained planting to the existing ditch/ historic boundary and additional planting in the form of tree and shrub planting will over time reduce the views towards the east and the wider development.<br><br>Proposed buffer planting between the proposed development and the existing dwellings on Newhaven Road will aid in screening views from the properties on Newhaven Road over time. | The magnitude of effect would be large in relation to the current private view from the viewpoint location and rear of the properties.<br><br>Lighting to the built form from street lighting and from windows of residential properties would be visible at night, however this is set in the context of the existing properties on Newhaven Road and the M62 motorway, which would no longer be visible from this location due to the intervening proposed development.<br><br>New landscaping to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. |

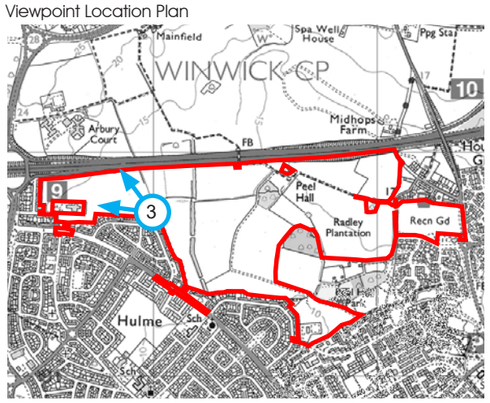
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP3- private within the Site.**<br><br>**Representative of view to the north-west from rear gardens of 73/71 Newhaven Road properties.** | **High**<br>Residents in private houses, however potentially not always at home during daylight hours on working days. | **Low-** There is currently no public access to this part of the Site. The view is a private view.<br><br>No visible relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing, motorway and NHS facility). | **Medium** | **Very large/ Substantial adverse-** There would a diminished view from properties on Newhaven Road with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Major-moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a private view from a high sensitive receptor.<br><br>The establishment of the buffer landscaping vegetation would reduce the effect of the development on the view. |

**Photograph 3**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:11 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361027 N 391706 |
| AOD: | 12m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project | Peel Hall, Warrington |
| Title | Viewpoint 3 |
| Client | Satnam Millennium Ltd |
| Date | May 2016 |
| Scale | NTS |
| Drawn | SW |
| Drawing No. | Vp_3 |
| Checked | DS |
| Revision | - |

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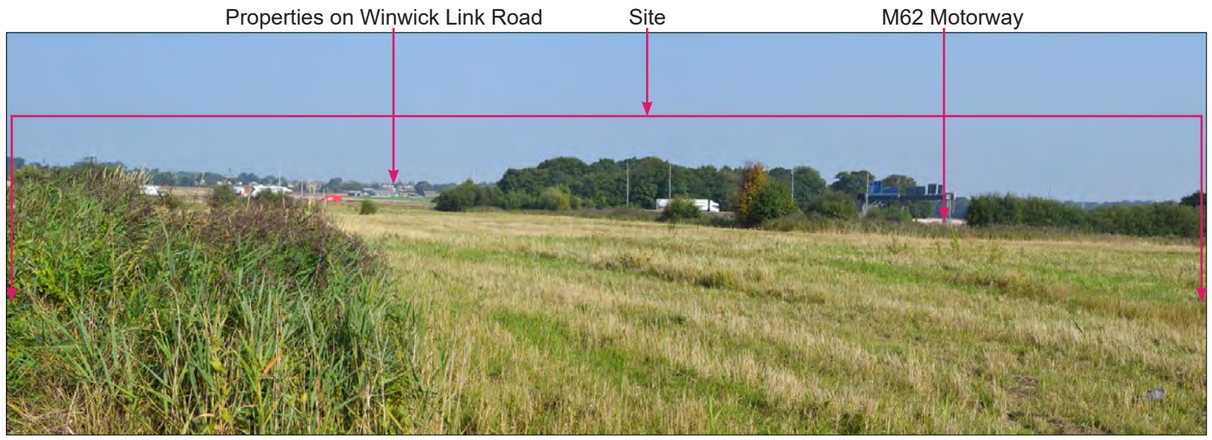



Photograph 4 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible. The view is looking north-east within the Site on the southern boundary with back of properties on Newhaven Road. The view is representative of what these properties would see.<br><br>The view is of open fields with intermittent vegetation and boundary vegetation. Adjacent to the view is a historic boundary with established vegetation and ditch. A number of properties on Newhaven Road have rear aspects to the Site, visual impact will vary to a degree depending on the alignment of buildings and the location of windows for main occupation during daytime hours. Some properties will experience oblique views of the Site although existing boundary fencing may limit views. The view is of the open field, intermittent vegetation and the M62 motorway.<br><br>The view is heavily influenced by the M62 motorway which is an urbanising feature, which will be lit at night. | The proposed view looking towards the north-east would see the proposed residential areas, which will include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing vegetation to the ditch/ historic boundary and additional proposed planting.<br><br>The retained planting to the existing ditch/ historic boundary and additional planting in the form of tree and shrub planting will over time reduce the views towards the east and the wider development.<br><br>Proposed buffer planting between the proposed development and the existing dwellings on Newhaven Road will aid in screening views from the properties on Newhaven Road over time. | The magnitude of effect would be large in relation to the current private view from the viewpoint location and rear of the properties.<br><br>Lighting to the built form from street lighting and from windows of residential properties would be visible at night, however this is set in the context of the existing properties on Newhaven Road and the M62 motorway, which would no longer be visible from this location due to the intervening proposed development.<br><br>New landscaping to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. |

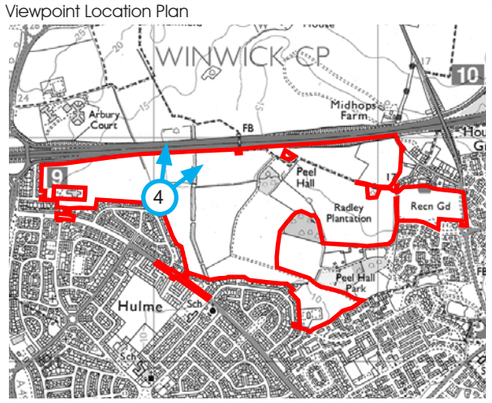
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP4- private view within the Site.**<br><br>**Representative of view to the north-east from rear gardens of 73/71/69 Newhaven Road properties.** | **High**<br>Residents in private houses, however potentially not always at home during daylight hours on working days. | **Low-** There is currently no public access to this part of the Site. The view is a private view.<br><br>No visible relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing and motorway). | **Medium** | **Very large/ Substantial adverse-** There would a diminished view from properties on Newhaven Road with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Major- moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a private view from a high sensitive receptor.<br><br>The establishment of the buffer landscaping vegetation would reduce the effect of the development on the view. |

**Photograph 4**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:12 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361031 N 391707 |
| AOD: | 12m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 4 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_4 |
| Checked<br>DS | Revision<br>- |

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Photograph 5 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible. The view is looking south-east within the Site on the southern boundary with back of properties on Newhaven Road. The view is representative of what these properties would see.<br><br>The view is of open fields with intermittent clusters of vegetation with the M62 motorway to the north-east. To the south within the Site boundary at the back of properties on Windermere Avenue is a dense section of vegetation. To the east in the far distance is Radley Plantation and to the north-east is vegetation within the property curtilage of Peel Hall farm.<br><br>A number of properties on Newhaven Road have rear aspects to the Site, visual impact will vary to a degree depending on the alignment of buildings and the location of windows for main occupation during daytime hours. Some properties will experience oblique views of the Site although existing boundary fencing may limit views.<br><br>The view is influenced by urbanising features, such as properties on Newhaven Road and the M62 motorway which will be lit at night. | The proposed view looking towards the south-east would see the proposed residential areas, which will include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing retained vegetation and additional proposed planting.<br><br>The retained planting to the existing ditch/ historic boundary and additional planting in the form of tree and shrub planting will over time reduce the views towards the east and the wider development.<br><br>Proposed buffer planting between the proposed development and the existing dwellings on Newhaven Road will aid in screening views from the properties on Newhaven Road over time. | The magnitude of effect would be large in relation to the current private view from the viewpoint location and rear of the properties.<br><br>Lighting to the built form from street lighting and from windows of residential properties would be visible at night, however this is set in the context of the existing properties on Newhaven Road and the M62 motorway, which would no longer be visible from this location due to the intervening proposed development.<br><br>New landscaping to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. |

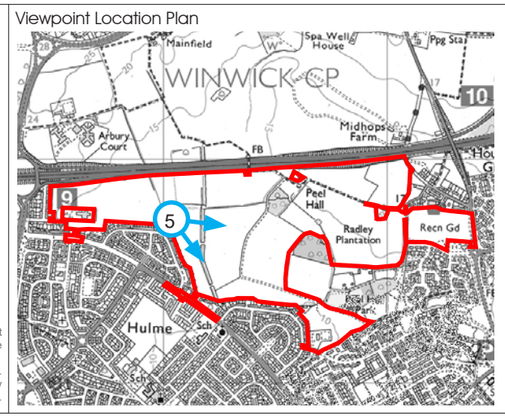
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP5- private view within the Site.**<br><br>**Representative of view to the north-east from rear gardens of 71/69/67 Newhaven Road properties.** | **High**<br>Residents in private houses, however potentially not always at home during daylight hours on working days. | **Low-** There is currently no public access to this part of the Site. The view is a private view.<br><br>No visible relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing and motorway). | **Medium** | **Very large/ Substantial adverse-** There would a diminished view from properties on Newhaven Road with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Major- moderate adverse** | **Moderate- Major adverse-** The proposed development would cause obvious alterations to a private view from a high sensitive receptor.<br><br>The establishment of the buffer landscaping vegetation would reduce the effect of the development on the view. |

**Photograph 5**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:13 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361033 N 391705 |
| AOD: | 12m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 5 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_5 |
| Checked: DS | Revision: - |

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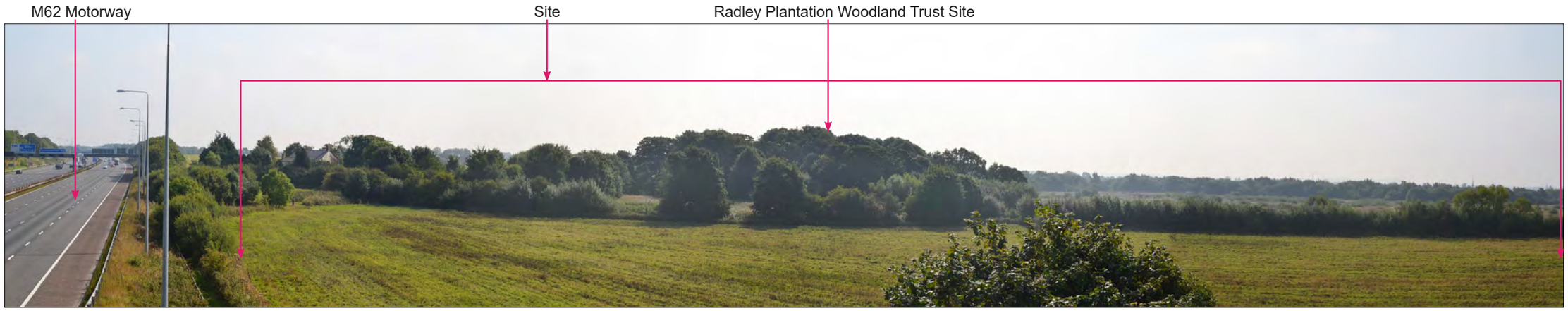



Photograph 6 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking southwest and southeast from the public right of way pedestrian footbridge over the M62 motorway.<br><br>Open long distance views are visible but filtered and interrupted by tree and hedge vegetation along field boundaries including the northern boundary of the Site. Views are seen in the context of the existing Warrington settlement. Views heavily influenced both day and night by the motorway.<br><br>M62 Users- Fleeting views may be seen by car drivers and passengers, the motorway has a National Speed Limit. The motorway has no designated footpath. The view is at 90 degrees to the receptor. | The proposed view would see the residential development including, built form and infrastructure of roads, access drives, street lighting and furniture, but set in the context of associated landscaping to the street scene and within garden curtilages.<br><br>Views would be seen in the context of adjacent existing dwellings and the M62 motorway.<br><br>The majority of the existing vegetative screening would be retained and enhanced meaning the views may be reduced in places. In addition, new planting to the motorway boundary will mature over time and further strengthen its screening value. | The magnitude of effects would be large as the change in view is directly visible and is noticeable on account of being in the near distance.<br><br>Lighting along the edge of the development may be visible at night. |

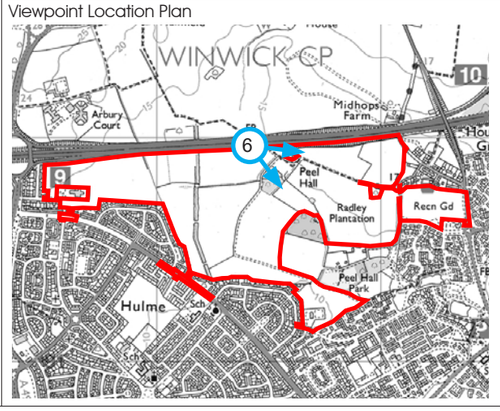
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP6**<br><br>**View looking south east from Public Right of Way FP2 M62 footbridge.**<br><br>**Representative views of pedestrians** | **High**<br>Recreational users of the footpath where their interest is likely to be focused on the landscape | **Moderate**<br>No significant scenic quality.<br><br>On site heritage asset are indistinguishable in the surrounding landscape.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium (due to context)** | **Large adverse**<br>Development is close to the view and directly facing the viewpoint. View is limited by intervening factors. Site is a notable component of the view. Change is noticeable due to the distance from the Site. | **Moderate to Major adverse** | **Moderate adverse**<br>The proposed development would cause obvious alteration to an established view from a moderately sensitive receptor. However, it is seen in the context of other urban influences. Existing and proposed mitigation planting will partially screen some areas of development. |

**Photograph 6**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:25 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 32m |
| OS Grid Reference: | E 361385 N 391961 |
| AOD: | 13m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 6 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_6 |
| Checked<br>DS | Revision<br>- |

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Photograph 7 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking southwest and southeast from the public right of way pedestrian footbridge over the M62 motorway.<br><br>Open long distance views are visible but filtered and interrupted by tree and hedge vegetation along field boundaries including the northern boundary of the Site. Views are seen in the context of the existing Warrington settlement. Views heavily influenced both day and night by the motorway.<br><br>M62 Users- Fleeting views may be seen by car drivers and passengers, the motorway has a National Speed Limit. The motorway has no designated footpath. The view is at 90 degrees to the receptor. | The proposed view would see the residential development including, built form and infrastructure of roads, access drives, street lighting and furniture, but set in the context of associated landscaping to the street scene and within garden curtilages.<br><br>Views would be seen in the context of adjacent existing dwellings and the M62 motorway.<br><br>The majority of the existing vegetative screening would be retained and enhanced meaning the views may be reduced in places. In addition, new planting to the motorway boundary will mature over time and further strengthen its screening value. | The magnitude of effects would be large as the change in view is directly visible and is noticeable on account of being in the near distance.<br><br>Lighting along the edge of the development may be visible at night. |

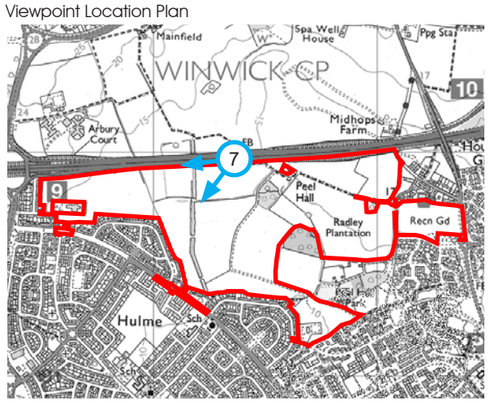
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP7**<br><br>**View looking south west from Public Right of Way FP2 M62 footbridge.**<br><br>**Representative views of pedestrians** | **High**<br>Recreational users of the footpath where their interest is likely to be focused on the landscape | **Moderate**<br>No significant scenic quality.<br><br>On site heritage asset are indistinguishable in the surrounding landscape.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium (due to context)** | **Large adverse**<br>Development is close to the view and directly facing the viewpoint. View is limited by intervening factors. Site is a notable component of the view. Change is noticeable due to the distance from the Site. | **Moderate to Major adverse** | **Moderate adverse**<br>The proposed development would cause obvious alteration to an established view from a moderately sensitive receptor. However, it is seen in the context of other urban influences. Existing and proposed mitigation planting will partially screen some areas of development. |

**Photograph 7**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:26 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 32m |
| OS Grid Reference: | E 361384 N 391961 |
| AOD: | 13m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




Project
Peel Hall, Warrington

Title
Viewpoint 7

Client
Satnam Millennium Ltd

| Date | Scale |
|---|---|
| May 2016 | NTS |
| Drawn: SW | Drawing No.: Vp_7 |
| Checked: DS | Revision: - |

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Photograph 8 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking north-west towards the property on Radley Lane. The view is taken from a single lane tarmac road, used by motorised road users, pedestrians and horse riders with mature vegetation lining the lane.<br><br>The intervening vegetation restricts and screens views particularly to the east and limited the north-west.<br><br>There are urbanising features within the view, such as a line of telegraph poles, a property on Radley Lane and the tarmac road itself. | The proposed view would be of the proposed residential plots set in context of the mature vegetation. The proposed residential areas would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing retained vegetation along Radley Lane and additional proposed planting.<br><br>The proposed view would also include a new internal spine road constructed at right angles to the single lane road the viewpoint is take on. The new spine road would open up the view to wider areas of the development, however the existing vegetation along Radley Lane would screen this from the viewpoints location. | The magnitude of effect would be large in relation to the current view from the viewpoint location as to the north-west proposed residential dwellings would be visible and a spine road to the north would also be in view.<br><br>Lighting to the built form from street lighting and from windows of residential units etc., would be visible at night, however this is set in the context of the existing light emission from the properties on Radley Lane and Ballater Drive to the south. Additional light would be visible from this viewpoint from the proposed spine road.<br><br>New landscaping to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. |

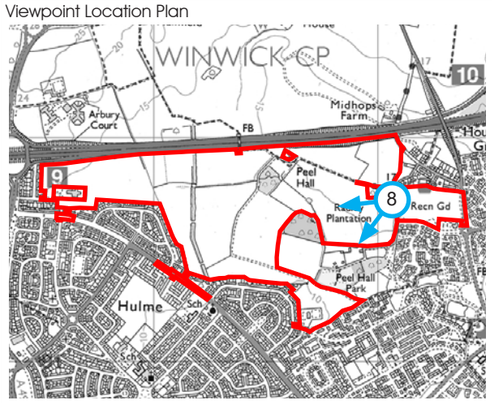
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP8- View looking north-west towards the Site from Radley Lane.**<br><br>**Representative views by motorised road users, pedestrians/ walker and horse riders of proposed new access road.** | **High-** Walkers. There is currently public access to this part of the Site. | **Moderate-** There is currently public access to this part of the Site.<br><br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing, telegraph poles and tarmac road surface). | **High** | **Large adverse-** The view would change greatly, with built form and urbanising features closer to the receptor. However, the retained existing vegetation will break up the urban form. | **Major adverse** | **Major adverse-** The proposed development would cause obvious alterations to the view from a high sensitive receptor.<br><br>The existing vegetation will mature which would reduce the effect of the development on the view over time to **Moderate adverse**. |

**Photograph 8**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:54 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 362091 N 391689 |
| AOD: | 14m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 8 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_8 |
| Checked: DS | Revision: - |

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Photograph 9 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking west towards properties on Newhaven Road across the Site. Views from within the proposed Site are private views as no public access is possible. Although not currently a public right of way, the track has been proposed by the local authority to become part of the active travel greenway network.<br><br>The view is representative of looking towards the Site at the boundary of Radley Plantation. Views from within Radley Plantation would be significantly screened by mature trees and vegetation.<br><br>Roof tops and first floors of properties on Newhaven Road can be seen along with other urbanising features such as the light columns to the M62 motorway and mobile mast on the horizon.<br><br>Night time views are significantly influenced by the lighting from the nearby properties and M62 motorway. | The proposed view would be on a proposed footpath network within the proposed residential plots set in context of the mature vegetation. The proposed residential areas would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene.<br><br>To the south-west would be proposed recreational sports area with football pitches that will not be lit at night.<br><br>To the west of the recreational sports area and within view from this viewpoint, will be a proposed primary school with associated playground, landscaping and will have some level of security lighting during the night.<br><br>This will be seen in the context of existing properties on Newhaven Road in the distance and proposed street landscaping in the residential areas. | The magnitude of effect would be large as it falls within a area of the site proposed for residential development. To the south of this viewpoint it is proposed be recreational ground and a primary school with associated infrastructure.<br><br>Lighting to the built form from street lighting and from windows of residential properties would be visible at night, however this is set in the context of existing properties on Newhaven Road and the M62 motorway lighting.<br><br>New landscaping to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. Additional to this would be the proposed recreational sports pitches which would be mown grass areas with appropriate landscaping surrounding. |

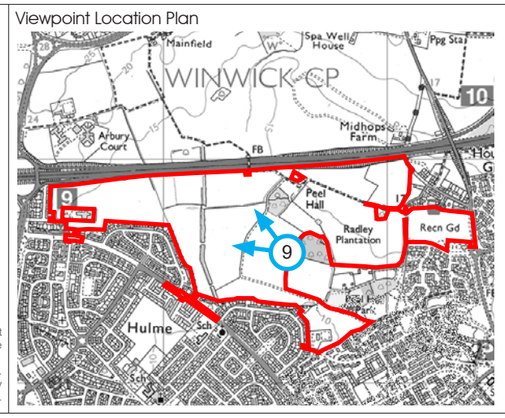
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP9- private view within the Site.**<br><br>**Representative of the boundary of Radley Plantation.** | **Low-** Walkers/ Agricultural Land Managers. There is currently no public access to this part of the Site. | **Moderate-** There is currently no public access to this part of the Site.<br><br>No visible relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing and lighting columns). | **High** | **Very large/ Substantial adverse-** There would a diminished view from Radley Plantation and this viewpoint with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a currently private view from a low sensitive receptor.<br><br>The establishment of the street landscaping vegetation would reduce the effect of the development on the view. |

**Photograph 9**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 12:40 |
| Weather conditions: | Bright, Sunny/ Cloudy |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361563 N 391560 |
| AOD: | 11m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 9 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_9 |
| Checked: DS | Revision: - |

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Photograph 10 -

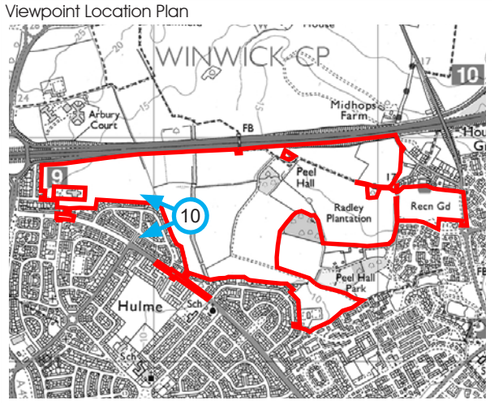
| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible, the current user of this land are agricultural land managers. The view is looking south-west towards back of properties on Newhaven Road, the dwellings are all primarily two storey semi-detached houses with some single storey bungalows.<br><br>Mature off site trees and vegetation in garden curtilage block views of some of the properties on Newhaven Road, the limited on Site vegetation does not block views of the existing housing.<br><br>The unmanaged grassland within the view forms part of the site. | The viewpoint location will be within a proposed residential area. The proposed residential areas would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing housing on Newhaven Road.<br><br>Additional buffer/ screen planting is proposed at the back of properties on Newhaven Road, with help to reduce views of the proposed development over time. | New landscaping to the street scene, garden curtilages and buffer/ screen planting between proposed residential unit and existing properties on Newhaven Road, would be a positive landscape and visual benefit in the longer term.<br><br>Lighting will be the built form, street lighting and from windows of residential properties would be visible at night, however this is set against the light emission from the existing properties on Newhaven Road. |

**Photograph 10**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 12:59 |
| Weather conditions: | Bright, Sunny/ Cloudy |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361176 N 391597 |
| AOD: | 12m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project | Peel Hall, Warrington |
| Title | Viewpoint 10 |
| Client | Satnam Millennium Ltd |
| Date | May 2016 |
| Scale | NTS |
| Drawn | SW |
| Drawing No. | Vp_10 |
| Checked | DS |
| Revision | - |

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Photograph 11 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| The view looks south-west over the current recreational ground off Mill Lane, towards properties on Ballater Drive. Mature trees and groups of vegetation partially screen the dwellings on Mill Lane.<br><br>The recreational ground consists of two full sized football pitches with permanent goal posts set in place. The view is restricted to the recreational ground by the boundary vegetation, therefore longer distance views are not possible.<br><br>The recreational ground is maintained, mown grass is the predominant aspect in the view and is used by dog walkers and other recreational activities other than football. | The viewpoint location will be within a proposed residential area on a section of the proposed spine road which forms an access point into the proposed development. The proposed residential areas would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. The spine road would also include street lighting which would be seen in the context of lighting to Mill Lane. Proposed dwellings will be seen in the context of the existing housing on Ballater Drive, particularly during winter months.<br><br>With additional tree planting proposed along the spine road and the retention of the surrounding buffer planting will help to limit views of the wider development. Some of the existing vegetation will be removed to accommodate the proposed spine road, particularly when meeting Radley Lane to the west, this will be visible from this viewpoint.<br><br>The existing recreational ground will be replaced with an enhanced facility at another location within the proposed development. | The magnitude of effect would be large in relation to the public view looking towards the west as the view will be diminished by built form and associated infrastructure.<br><br>Night time views will be influenced by street lighting and from windows of residential properties, however this is set against the lighting from the existing properties on Ballater Drive and Mill Lane road lighting.<br><br>New landscaping to the street scene, garden curtilages and retained buffer/ screen vegetation between proposed residential unit and existing properties on Mill Lane, would be a positive landscape and visual benefit in the longer term.<br><br>The recreational ground will be moved from its current location to a new location elsewhere on Site, therefore changing the current view. |

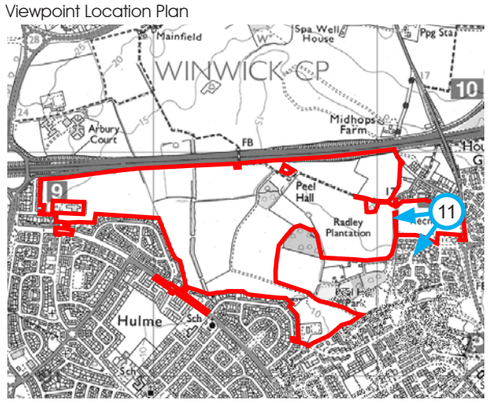
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP11- Pedestrian access to recreational ground.**<br><br>**Representative view of general public using the recreation ground.** | **High-** Recreational users. There is currently public access to this part of the Site. | **Moderate-** due to the high local use of the area/ landscape and is public accessible. Some features of local importance and a sense of place recognisable with the local area. | **High** | **Very large/ Substantial adverse-** There would a diminished view from this viewpoint with the closer proximity of built form and associated infrastructure to the receptor. The development will dominate the view and the change will be directly visible. | **Major adverse** | **Major adverse-** The proposed development would cause obvious alterations to a currently public view of a high sensitive receptor. |

**Photograph 11**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 15:23 |
| Weather conditions: | Bright, Sunny/ Cloudy |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 362360 N 391749 |
| AOD: | 18m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project | Peel Hall, Warrington |
| Title | Viewpoint 11 |
| Client | Satnam Millennium Ltd |
| Date | May 2016 |
| Scale | NTS |
| Drawn | SW |
| Drawing No. | Vp_11 |
| Checked | DS |
| Revision | - |

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Photograph 12 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking west along Ballater Drive towards the Site from the boundary adjacent to the recreation ground. The view is of the open field and boundary vegetation. Boundary defined by a post a wire fence. More open views are partially screened by mature hedgerow vegetation.<br><br>Views from residential properties of Ballater Drive are front of house views to the smaller parcel of land and gable end to the large site to the west. | The proposed view would see the residential development including built form and infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene and within garden curtilages.<br><br>The majority of the existing mature trees and vegetative screening would be retained and enhanced meaning the views from the recreation ground may be reduced in places. | Proposed planting of the boundaries will assist in screening views along the development edges.<br><br>The magnitude of effects would be medium due to partially obscured views and existing adjacent urbanising features.<br><br>Lighting along the edge of the development may be visible at night. |

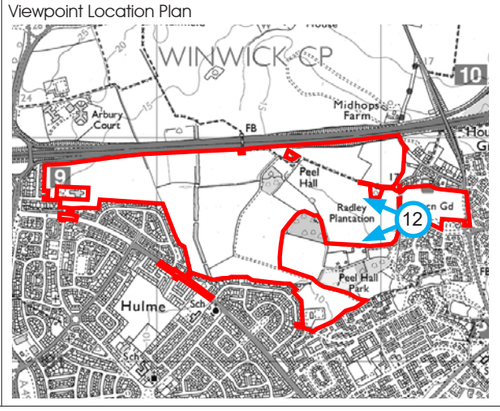
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP12 – View looking west from Ballater Drive.**<br><br>**Representative views of general public and residential properties.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days.<br><br>Walkers, horse riders possibly cyclists. | **Low**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality as views heavily restricted. | **Medium** | **Medium adverse**<br>There would be a minor loss of the baseline features. The change to the view is reduced due to screening vegetation and existing dwellings along the route. The changes to the view would be at close quarters. | **Moderate** | **Moderate adverse**<br>The proposed development would cause obvious alteration to a view from a moderately sensitive receptor. However, existing and mitigation planting would partially screen the site. |

**Photograph 12**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 15:31 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 362162 N 391628 |
| AOD: | 17m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 12 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_12 |
| Checked<br>DS | Revision<br>- |

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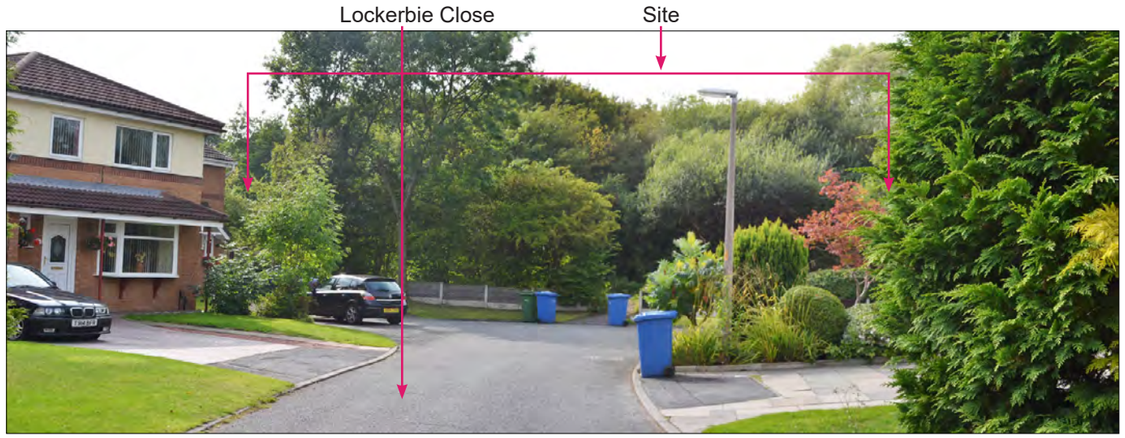



Photograph 13 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking west towards the Site from Lockerbie Close. Pedestrian access point to Radley Lane can be seen at the end of the close. Views are visible but filtered and interrupted by tree and hedge vegetation along the site boundaries.<br><br>Views from residential properties of Lockerbie Close are generally gable end views and views from rear gardens. Intervening boundary hedgerows and vegetation limits views from the ground floor of properties. | The proposed view from this viewpoint is likely the change but not to a significant degree. The current depth of screening will be reduced due to removal of vegetation therefore fileted views of residential properties through mature vegetation may be possible. It should be noted that views of the site would not dominate the vista and would be seen in the context of the existing residential properties.<br><br>The majority of the existing vegetative screening would be retained. | The magnitude of effects would be small given that the majority of the site is not visible and any view gained of the development would be in a small proportion of the overall panoramic.<br><br>Lighting along the edge of the development may to be visible at night. |

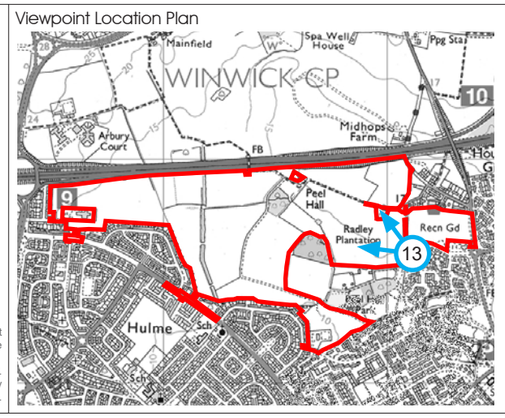
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP13 – View looking west from Lockerbie Close.**<br><br>**Representative views of general public and residential properties.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days.<br><br>Walkers, horse riders possibly cyclists. | **Low**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality as views heavily restricted. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Minor Adverse**<br>The proposed development would cause limited deterioration to a view from a receptor of medium to low sensitivity. |

**Photograph 13**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 15:35 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 36m |
| OS Grid Reference: | E 362115 N 391559 |
| AOD: | 15m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 13 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_13 |
| Checked<br>DS | Revision<br>- |

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Photograph 14 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from within the proposed Site are currently private views as no public access is possible. This view is representative of the view from the Fairhaven/ the Alders (Five Borough) NHS facility.<br><br>The view looks south and south-west towards the properties on Newhaven Road and the M62 motorway boundary. The dwellings on Newhaven Road are all primarily two storey semi-detached houses.<br><br>Mature off site trees and vegetation within garden curtilages limits views of some of the properties on both Newhaven Road. Intervening vegetation screen longer distance views to other areas of the proposed Site.<br><br>To the north, running along the northern boundary of the Site, is the M62 motorway. There is little to no vegetation screening views of the carriageway, light columns and signage.<br><br>On the horizon are larger groups of vegetation, including Radley Plantation. The historical boundary of Arbury and Winwick is within the view, however it is indistinguishable and the hedgerow is not continuous and is lost at the point where it meets the existing houses on Newhaven Road. | The proposed view looking towards the south and south west would see the proposed Residential Areas, which will include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene. This will be seen in the context of the existing properties to Newhaven Road and the M62 motorway.<br><br>New street planting and planting within garden curtilages would introduce visual interest in the form of maintained tree and shrub planting.<br><br>Retained and enhance planting to the historic boundary will also break up the view towards other areas of the proposed development. | The magnitude of effect would be large in relation to the current private view to the south and south-west as the view will be diminished by built form and associated infrastructure.<br><br>Lighting to the built form from street lighting and from windows of residential units etc., would be visible at night, however this is set against the light emission from the existing properties on Newhaven Road.<br><br>New landscaping to the street scene, garden curtilages and buffer/ screen planting between proposed residential unit and existing properties on Newhaven Road, would be a positive landscape and visual benefit in the longer term. |

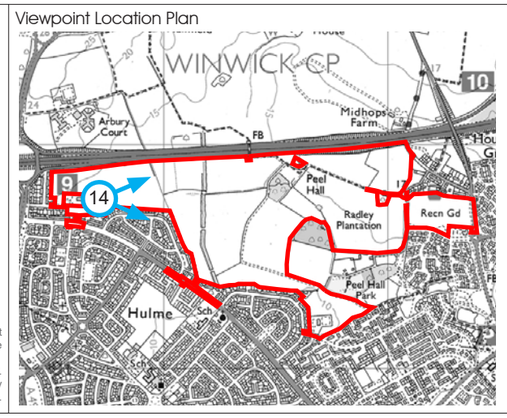
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP14- private view from within the Site.**<br><br>**Representative view from the Fairhaven/ the Alders (Five Borough) NHS facility.** | **Low-** Patients. Not currently focused on the scenic quality of the landscape and however potentially not always at the facility during daylight hours on working days. Also a large security fence blocks views out towards the Site. | **Low-** There is currently no public access to this part of the Site. The view is a private view.<br><br>No visible relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>The farmland currently viewable is influenced by urban features (e.g. housing, motorway lighting and traffic). | **High** | **Very large/ Substantial adverse-** There would a diminished view from this viewpoint with the closer proximity of built form to the receptor. The development will dominate the view and the change will be directly visible. | **Moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a currently private view from a low sensitive receptor.<br><br>The establishment of the proposed screening vegetation would reduce the effect of the development on the view in the longer term. |

**Photograph 14**

| | |
|---|---|
| Date: | 06.05.16 |
| Time: | 15:35 |
| Weather conditions: | Bright/ Sunny |
| Taken by: | SW |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 360701 N 391749 |
| AOD: | 13m |
| Viewer's Height: | 1.65m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 14 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_14 |
| Checked: DS | Revision: - |

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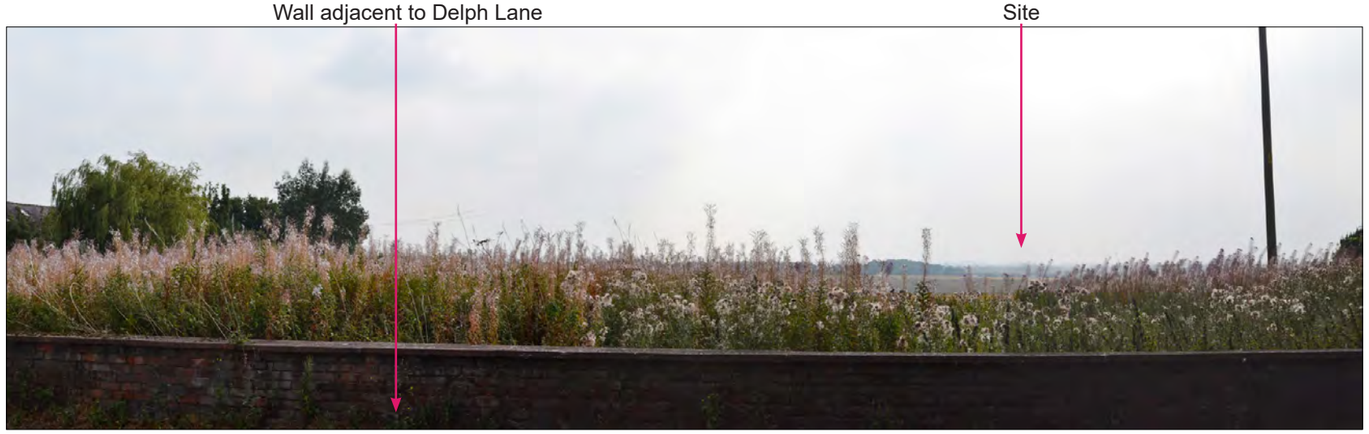


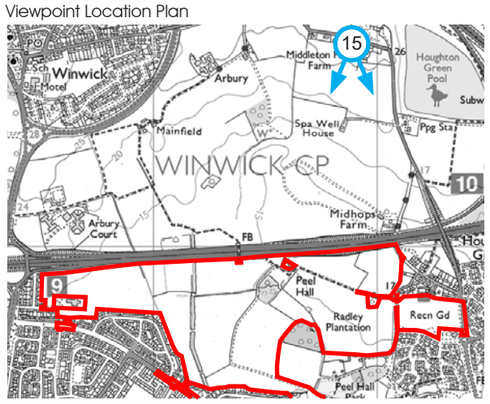

Photograph 15 -

**Photograph 15**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 14:40 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 946m |
| OS Grid Reference: | E 361895 N 392932 |
| AOD: | 30m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 15 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_15 |
| Checked: DS | Revision: - |

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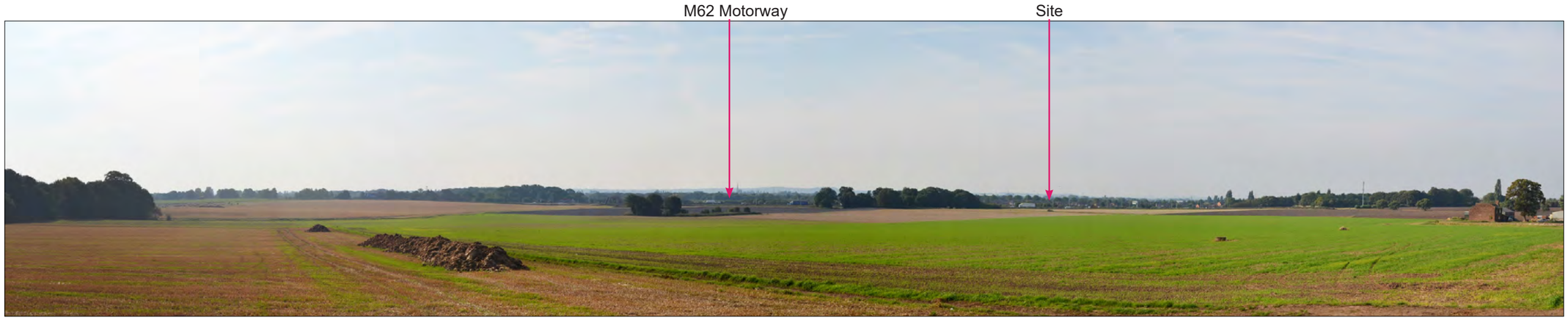
| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View from Delph Lane looking south towards the Site. Photograph taken from gap in dwellings adjacent to Middleton Hall Farm. The viewpoint is 0.93km from the site boundary<br><br>Although the majority of the view from this location is obscured by vegetation, more open views may be obtained to the rear of 11no properties fronting Delph Lane. Mature vegetation, motorway embankments and topography means more distant views towards the development are partially screened.<br><br>Views from residential properties of Delph Lane are generally rear facing and gable end views with views from rear gardens. Intervening boundary hedgerows and vegetation limits views from the ground floor of properties.<br><br>Views towards the site are heavily influenced day and night by the M62 motorway. | The view of the proposed development will not be visible from this viewpoint to vehicle users. Pedestrians and cyclists may have dispersed long distance views. New planting to the boundary will mature over time and strengthen its screening value.<br><br>From the rear of residential properties fronting Delph Lane, the proposed view is likely the change but not to a significant degree. The change will be to that of residential. From the viewpoint position rooftops and houses with landscape planting and trees to rear garden boundaries would be visible in a small portion of the panoramic and in the distance. Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>The majority of the existing vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the lane may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | The addition of the habitat creation area along the motorway will assist in further screening views along the development edges.<br><br>The magnitude of effects would be small given that views would be of a limited section of the overall panoramic across the site. The built form would be visible at a distance and would blend into the background. Views towards the site are heavily influenced by the M62 motorway.<br><br>Lighting along the edge of the development may to be visible at night. |

| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP15**<br><br>**View looking south from pavement on Delph Lane**<br><br>**Representative views by motorised road users and pedestrians using the road.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days.<br><br>Users of highways where their attention may only partially be focused on views / the scenic quality of the route.<br><br>Pedestrian users of pavements where attention may only be partially focused on the scenic quality of the route. | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Negligible**<br>There would no loss of the baseline features to the view. The proposed development is screened by existing vegetation and topography. | **Negligible** | **Negligible**<br>The proposed development would not cause an obvious alteration to an established view from a moderate to low sensitive receptor. |
| **Representative views gained by adjacent residential properties.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days.<br><br>Users of highways where their attention may only partially be focused on views / the scenic quality of the route.<br><br>Pedestrian users of pavements where attention may only be partially focused on the scenic quality of the route. | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Negligible**<br>The proposed development would not cause an obvious alteration to an established view from a moderate to low sensitive receptor. |




Photograph 16 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views looking south towards the Site from public right of way FP6. View taken from a farmers track between Arbury and Arbury Farm / Mainfield . The site is visible in the distance beyond farmland and the M62 Motorway. The viewpoint is 0.73km from the site boundary<br><br>Views from the footpath vary in degree due to existing farm buildings an established vegetation. Views are visible but filtered and interrupted by mature trees, vegetation along field boundaries and the prominent motorway.<br><br>Views are seen in the context of the existing Warrington settlement. Views heavily influenced in evenings by the lighting of the M62 Motorway. | The proposed view is likely the change but not to a significant degree. The change will be to that of residential. From the viewpoint position rear gardens and houses with landscape planting and trees to rear garden boundaries would be visible in a small portion of the panoramic. Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>The majority of the existing vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the footpath may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | The addition of the habitat creation area along the motorway will assist in further screening views along the development edges.<br><br>The magnitude of effects would be small given that views would be of a limited section of the overall panoramic across the site. The built form would be visible at a distance and would blend into the background. Views towards the site are heavily influenced by the M62 motorway.<br><br>Lighting along the edge of the development may to be visible at night. |

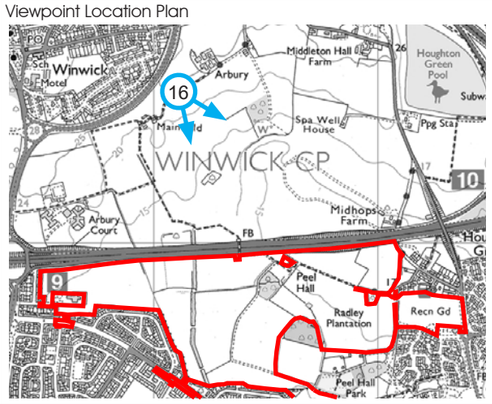
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP16**<br>**View looking south towards site from public right of way FP 6**<br><br>**Representative views by pedestrians / walkers and agricultural workers.** | **High**<br>Recreational users of the footpath/ bridleways and land where their interest is likely to be focused on the landscape | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development is at a distance and will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Minor Adverse**<br>The proposed development would cause limited deterioration to a view from a receptor of medium to low sensitivity. |

**Photograph 16**

| | |
|---|---|
| Date: | 11.09.15 |
| Time: | 9:45 |
| Weather conditions: | Bright, Sunny/ Cloud |
| Taken by: | SW |
| Distance to the appeal site: | 738m |
| OS Grid Reference: | E 361141 N 392694 |
| AOD: | 19m |
| Viewer's Height: | 1.6m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 16 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_16 |
| Checked<br>DS | Revision<br>- |

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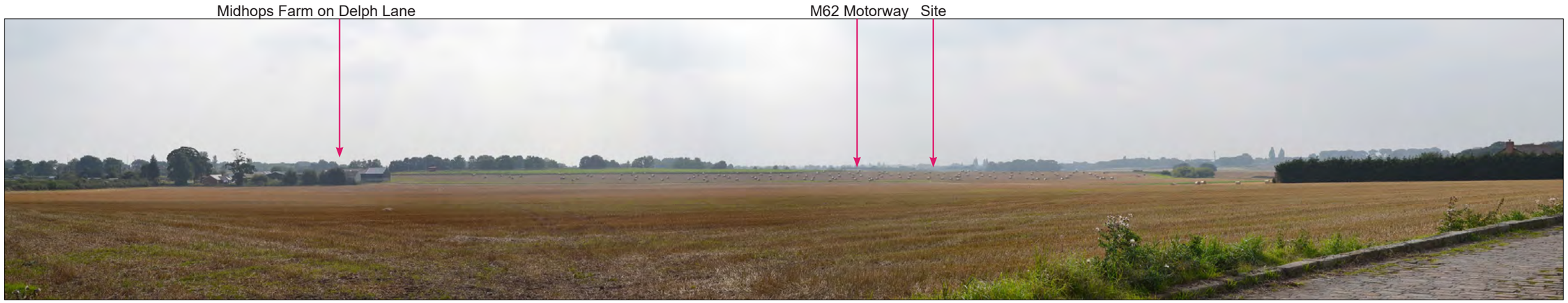



Photograph 17 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View from Delph Lane looking south-west towards the Site. Photograph taken from pavement opposite Cloverdell Kennels and a pumping station. 2no dwellings are in close proximity to this viewpoint location. The viewpoint is 0.54km from the site boundary<br><br>Open views of farmland can be observed. Mature vegetation, motorway embankments and topography means more distant views towards the development are partially screened.<br><br>Views from residential properties of Delph Lane are generally rear facing and gable end views with views from rear gardens. Intervening boundary hedgerows and vegetation limits views from the ground floor of properties.<br><br>Views towards the site are heavily influenced day and night by the M62 motorway. | The proposed view is likely the change but not to a significant degree, the change will be to that of residential in the distance beyond the motorway. From the viewpoint position rooftops of houses with landscape planting and trees to rear garden boundaries would be visible in a small portion of the photograph and in the distance. Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>Closer views of the development are prevented by the motorway embankment and mature vegetation.<br><br>The majority of the existing vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the lane may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | The addition of the habitat creation area along the motorway will assist in further screening views along the development edges.<br><br>The magnitude of effects would be small given that views would be of a limited section of the overall panoramic across the site. The built form would be visible at a distance and would blend into the background. Views towards the site are heavily influenced by the M62 motorway.<br><br>Lighting along the edge of the development may to be visible at night. |

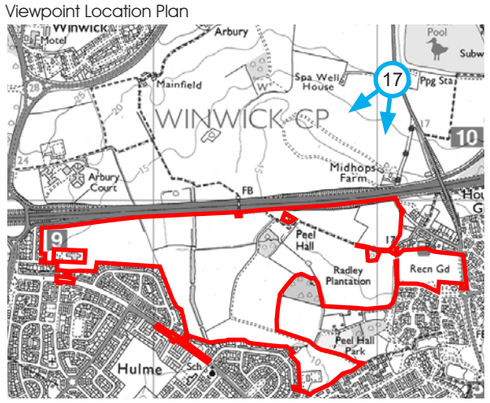
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP17**<br>**View looking south-west towards site from Delph Lane adjacent to Cloverdell Kennels**<br><br>**Representative views of general public and residential properties.** | **Medium**<br>Residents in private houses, potentially not always at home during daylight houses on working days.<br><br>Users of highways where their attention may only partially be focused on views / the scenic quality of the route.<br><br>Pedestrian users of pavements where attention may only be partially focused on the scenic quality of the route. | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Minor Adverse**<br>The proposed development would cause limited deterioration to a view from a receptor of medium to low sensitivity.<br><br>However, the establishment of the enhanced screening to the motorway boundary would reduce this to **Negligible** over the longer term. |

**Photograph 17**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 14:48 |
| Weather conditions: | Bright, Sunny/ Cloud |
| Taken by: | DS |
| Distance to the appeal site: | 552m |
| OS Grid Reference: | E 362091 N 392541 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project | Peel Hall, Warrington |
| Title | Viewpoint 17 |
| Client | Satnam Millennium Ltd |
| Date | May 2016 |
| Scale | NTS |
| Drawn | SW |
| Drawing No. | Vp_17 |
| Checked | DS |
| Revision | - |

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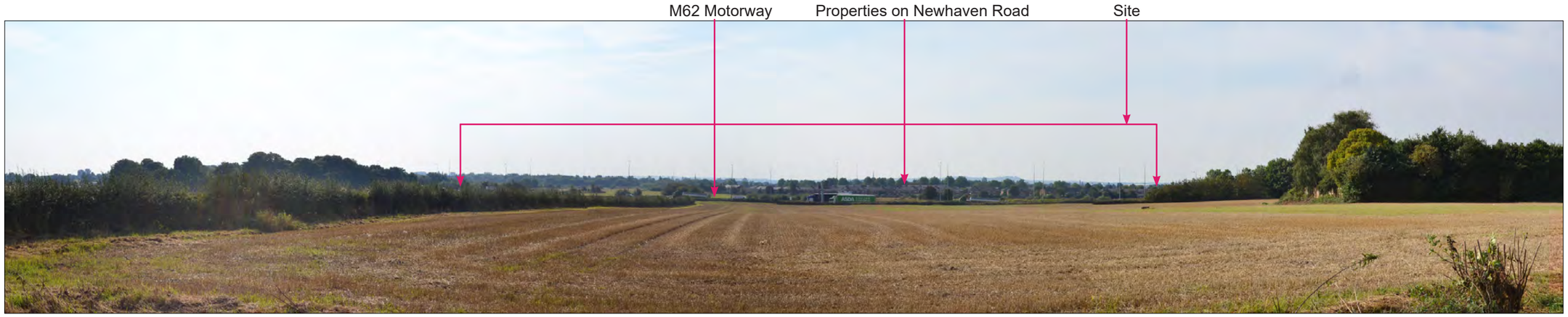



Photograph 18 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views looking south towards the Site from public right of way. View taken where public rights of way FP1 and FP1a meet east of Arbury Court. The site is visible in the middle distance beyond farmland and the M62 Motorway. The viewpoint is 0.30km to the Site boundary.<br><br>Views from the footpath vary in degree due to existing farm buildings an established vegetation. Views are visible but filtered and interrupted in places by mature trees, vegetation along field boundaries and the prominent motorway.<br><br>Views are seen in the context of the existing Warrington settlement. Views heavily influenced in evenings by the lighting of the M62 Motorway. | The proposed view would see rear gardens and houses with landscape planting and trees to rear garden boundaries in the middle distance beyond the motorway and proposed habitat creation area. Views will be visible in a small portion of the overall panoramic<br><br>Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>The majority of the existing vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the footpath may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | The addition of the habitat creation area along the motorway will assist in further screening views along the development edges.<br><br>The magnitude of effects would be medium given that views would be of a limited section of the overall panoramic across the site. The built form would be visible but would blend into the background. Views towards the site are heavily influenced by the M62 motorway and Warrington settlement beyond.<br><br>Lighting along the edge of the development may to be visible at night, however lighting from the M62 will be more prominent. |

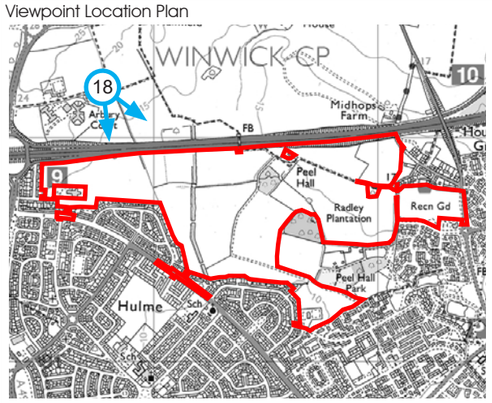
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP18**<br>**View looking south towards site from public right of way FP 1 / FP1a**<br><br>**Representative views by pedestrians / walkers and agricultural workers.** | **High**<br>Recreational users of the footpath/ bridleways and land where their interest is likely to be focused on the landscape | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Medium adverse**<br>There would be a minor loss of the baseline features. The changes to the view would be in the middle distance. | **Moderate** | **Moderate adverse** The proposed development would cause moderate alteration to an established view from a moderately sensitive receptor. However, the establishment of the enhanced screening to the motorway boundary would reduce this to **Minor adverse** during the summer months and over the longer term. |

**Photograph 18**

| | |
|---|---|
| Date: | 11.09.15 |
| Time: | 10:20 |
| Weather conditions: | Bright, Sunny |
| Taken by: | SW |
| Distance to the appeal site: | 307m |
| OS Grid Reference: | E 360793 N 392233 |
| AOD: | 19m |
| Viewer's Height: | 1.6m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 18 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_18 |
| Checked<br>DS | Revision<br>- |

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Photograph 19 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking west towards the Site from the Mill Lane. View is taken from the road bridge as Mill Lane crosses over the M62 Motorway. Open views of site obscured by intervening mature trees, vegetation, topography.<br><br>Views are seen in the context of the existing Warrington settlement. Views heavily influenced both day and night by the M62 Motorway below.<br><br>Duration of view is limited for road users and the view is at 90 degrees to the receptor. Fleeting views may be seen by car drivers and passengers. The road has a national speed limited designation. | The proposed view is likely the change but not to a significant degree. The change will be to that of residential in the distance beyond the motorway. From the viewpoint position rooftops and houses with landscape planting and trees to rear garden boundaries would be visible in a small portion of the panoramic and in the middle distance. Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>Views of the majority of the development are screened by topography and mature vegetation.<br><br>The majority of the existing vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the lane may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | The addition of the habitat creation area along the motorway will assist in further screening views along the development edges.<br><br>The magnitude of effects would be medium given that views would be of a small section of the overall panoramic across the site. The built form would be visible but would blend into the background. Views towards the site are heavily influenced by the M62 motorway.<br><br>Lighting along the edge of the development may to be visible at night, however lighting from the M62 will be more prominent. |

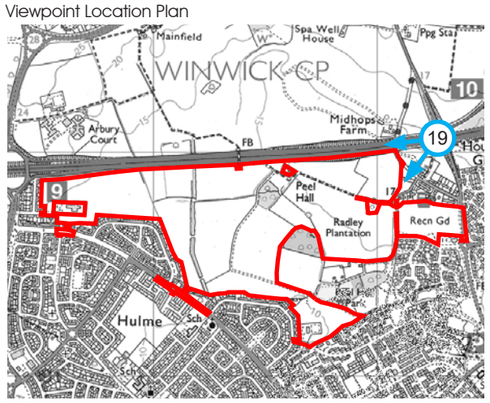
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP19 – View looking west from Mill Lane at M62 motorway bridge.**<br><br>**Representative views by motorised road users, cyclists and pedestrians using the footpath.** | **Medium**– Highway footpaths where attention may only be partially focused on the scenic quality of the route. | **Low**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality as views heavily restricted. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Moderate to Minor adverse** The proposed development would cause moderate alteration to an established view from a moderately sensitive receptor.<br>However, the establishment of the enhanced screening to the motorway boundary would reduce this to **Minor adverse** during the summer months and over the longer term. |

**Photograph 19**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 14:52 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 220m |
| OS Grid Reference: | E 362289 N 392078 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 19 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_19 |
| Checked<br>DS | Revision<br>- |

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Photograph 20 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from pavement of Mill Lane, looking north-west with the existing recreational ground to the west and Mill Lane continues north. Mature vegetation restricts views into the recreational ground, properties to the east on Shetland Close and longer distance views along Mill Lane.<br><br>Mature road side trees and vegetation within garden curtilages and on the recreational ground block longer distance views to other areas of the proposed Site and further properties to the north-west on Mill Lane.<br><br>Urbanising features are visible in the view; highways and associated structure and adjacent dwellings on Shetland Close. | The proposals include a proposed roundabout junction and associated structures on Mill Lane which will be visible in the distance from this viewpoint location. The junction will allow access to the proposed development.<br><br>Some views will be screened by the existing vegetation on Mill Lane and the surrounding the recreational ground.<br><br>The proposed residential areas would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of surrounding existing residential areas to the south (Ballater Drive) and to the east (Shetland Close). | The magnitude of effect would be moderate in relation to the current public view to the north and north-west as the view of the proposed development will be diminished by intervening retained vegetation.<br><br>Lighting to the built form from street lighting and from windows of residential units etc., would be visible at night, however this is set against the light emission from the existing properties on Ballater Drive, Shetland Close and street lighting to Mill Lane.<br><br>New landscaping to the street scene, garden curtilages and retained buffer/ screen planting between proposed residential unit and the receptors on Mill Lane, would be a positive landscape and visual benefit in the longer term. |

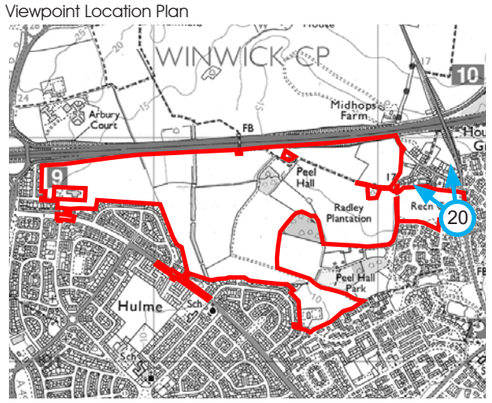
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after landscaping established) |
|---|---|---|---|---|---|---|
| **VP20- view from pavement on Mill Lane.**<br><br>**Representative views by motorised road users and pedestrians using the road.** | **Low-** Users of highway were their attention may only partially be focused on views/ the scenic quality of the route.<br><br>Pedestrian users of pavements where attention may only be partially focused on the scenic quality of the route. | **Low-** the view does not contain any significant elements of note, historic or otherwise.<br>The landscape is not distinct within the overall context and view are restricted by vegetation towards the road/ Mill Lane. | **Moderate** | **Moderate adverse-** the pedestrian user and motorised users would view the proposed development in the context of the surrounding houses and the existing vegetation being retain will also screen views of the proposed development. | **Moderate adverse** | **Moderate adverse-** The proposed development would cause obvious alterations to a currently public view from a low sensitive receptor.<br><br>The establishment of the street landscaping vegetation and existing vegetation to Mill Lane would reduce the effect of the development on the view in the longer term. |

**Photograph 20**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 15:21 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 6m |
| OS Grid Reference: | E 362395 N 391641 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 20 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_20 |
| Checked: DS | Revision: - |

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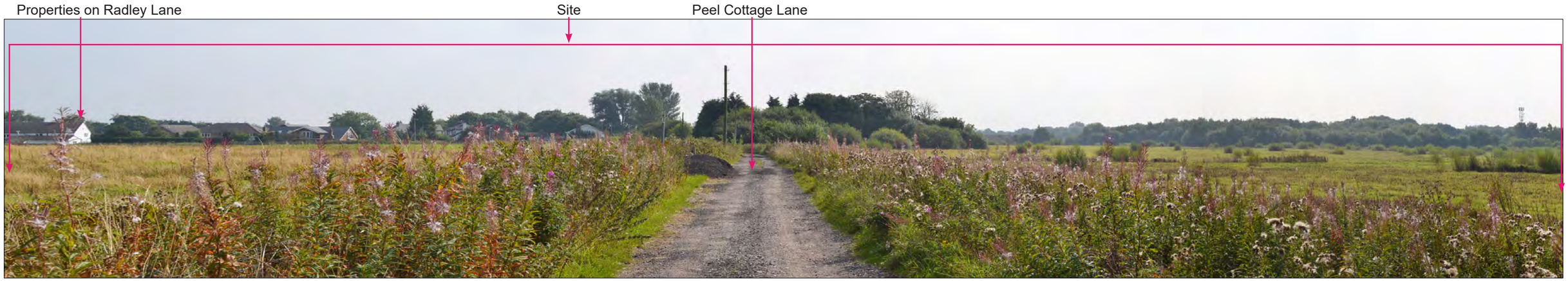



Photograph 21 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from public right of way Fp2 looking east along Radley Lane. The viewpoint falls within the Site. Large areas of the Site can be viewed although some areas obscured by intervening mature trees and vegetation.<br><br>Beyond the Site residential properties of Mill Lane and Radley Lane can be seen. | Radley Lane and FP2 will be retained in its current location. The proposed view either side of the lane would see the residential development including, built form and infrastructure of roads, access drives, street lighting and furniture, but set in the context of associated landscaping to the street scene and within garden curtilages.<br><br>Proposed planting either side of Radley Lane will mature over time and help to provide long term screening. | The magnitude of effects would be large as the change in view is directly visible and is noticeable on account of being in the near distance.<br><br>Lighting along the edge of the development may be visible at night. |

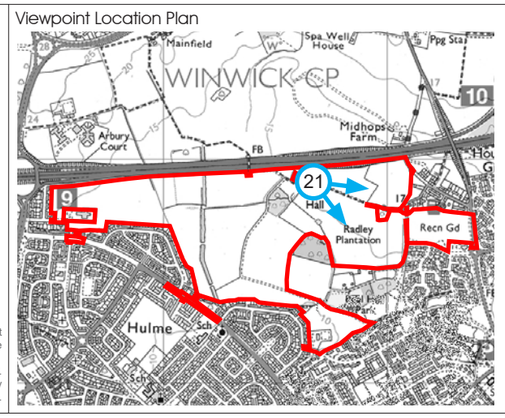
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP21 – View on site looking east along Radley Lane from public right of way FP 2**<br><br>**Representative views by motorised road users, cyclists, horse riders and pedestrians.** | **High**<br>Recreational users of the footpath where their interest is likely to be focused on the landscape | **Moderate**<br>No significant scenic quality.<br><br>On site heritage asset are indistinguishable in the surrounding landscape.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Very Large / Substantial adverse-** Development will be in close proximity. It will dominate the view and directly faces viewpoint. | **Major adverse** | **Major adverse-** The proposed development would cause obvious alterations from a high sensitive receptor.<br><br>The establishment of proposed landscaping over time would reduce the effect of the development on the view. |

**Photograph 21**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:45 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361666 N 391905 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project: Peel Hall, Warrington | |
| Title: Viewpoint 21 | |
| Client: Satnam Millennium Ltd | |
| Date: May 2016 | Scale: NTS |
| Drawn: SW | Drawing No.: Vp_21 |
| Checked: DS | Revision: - |

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Photograph 22 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views from public right of way Fp2 looking west along Radley Lane. The viewpoint falls with the Site. Large areas of the Site can be viewed although some areas obscured by intervening mature trees and vegetation.<br><br>Beyond the Site Peel Hall Farm Kennels at the end of Radley Lane can be seen.<br><br>Views heavily influenced in evenings by the lighting of the M62 Motorway. | Radley Lane and FP2 will be retained in its current location. The proposed view either side of the lane would see the residential development including, built form and infrastructure of roads, access drives, street lighting and furniture, but set in the context of associated landscaping to the street scene and within garden curtilages.<br><br>Proposed planting either side of Radley Lane will mature over time and help to provide long term screening. | The magnitude of effects would be large as the change in view is directly visible and is noticeable on account of being in the near distance.<br><br>Lighting along the edge of the development may be visible at night. |

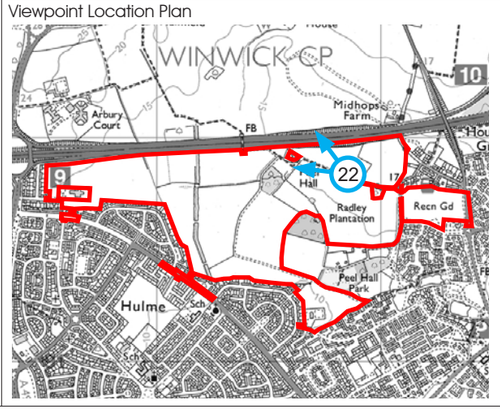
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP22 – View on site looking west along Radley Lane from public right of way FP 2**<br><br>**Representative views by motorised road users, cyclists, horse riders and pedestrians.** | **High**<br>Recreational users of the footpath where their interest is likely to be focused on the landscape | **Moderate**<br>No significant scenic quality.<br><br>On site heritage asset are indistinguishable in the surrounding landscape.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Very Large / Substantial adverse-** Development will be in close proximity. It will dominate the view and directly faces viewpoint. | **Major adverse** | **Major adverse-** The proposed development would cause obvious alterations from a high sensitive receptor.<br><br>The establishment of proposed landscaping over time would reduce the effect of the development on the view. |

**Photograph 22**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 11:45 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361817 N 391842 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 22 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_22 |
| Checked<br>DS | Revision<br>- |

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Photograph 23 -

| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| Views looking south-west towards the Site from public right of way FP23. View taken from a farm track which forms the public right of way to the south of Houhgton Green Pool. The site is visible in the distance beyond farmland, Delph Lane and the M62 Motorway.<br><br>Open views of farmland can be observed. Mature vegetation, motorway embankments and topography means more distant views towards the development are partially screened.<br><br>Views are seen in the context of the existing Warrington settlement. Views heavily influenced in evenings by the lighting of the M62 Motorway. | Following the development of the site the view will not change greatly though it may be possible for the users to see rooftops of dwellings in a small portion of the panoramic. The change will be to that of residential in the distance beyond the motorway. From the viewpoint position rooftops of houses may be visible in a small portion of the panoramic and in the distance. Views of the site would not dominate the vista and would blend in with the existing residential properties of Warrington.<br><br>Closer views of the development are prevented by the motorway embankment and mature vegetation.<br><br>The majority of the existing on site vegetative screening would be retained and the addition of the habitat creation area along the motorway means the views along the footpath may be reduced in places. In addition, the new planting to the boundary will mature over time and further strengthen its screening value. | Strengthening of existing hedgerow boundaries around the Site will assist in further screening views along the development edges.<br><br>The magnitude of effects would be small to negligible given that the majority of the site is not visible, any view gained of the would be at distance and a small proportion of the overall panoramic.<br><br>Lighting along the edge of the development may to be visible at night. |

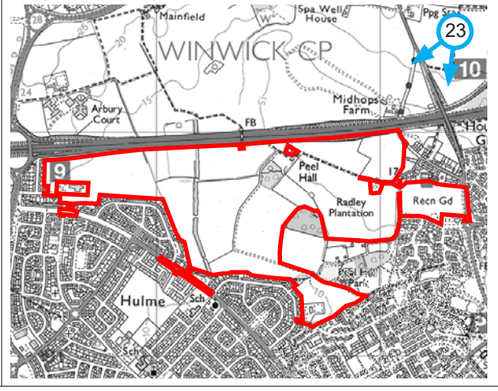
| Viewpoint and representation of view | Susceptibility of Visual Receptor | Value attached to view | Sensitivity of Visual Receptor | Magnitude of change | Significance of Visual Effects during Construction | Significance of Residual Effects (Operational and after mitigation) |
|---|---|---|---|---|---|---|
| **VP23**<br>**View looking south-west towards site from public right of way FP 23**<br><br>**Representative views by pedestrians / walkers and agricultural workers.** | **High**<br>Recreational users of the footpath/ bridleways and land where their interest is likely to be focused on the landscape. | **Moderate**<br>No relationship with heritage asset, inclusion within planning designations, no significant scenic quality.<br><br>Some features of local importance and a sense of place recognisable with the local area. | **Medium** | **Small adverse**<br>Intervening and screening factors/ intervening vegetation detract from seeing or noticing the development. Development will be indistinguishable from its surroundings or adjacent land uses. | **Minor Adverse** | **Minor Adverse**<br>The proposed development would cause limited deterioration to a view from a receptor of medium to low sensitivity. |

**Photograph 23**

| | |
|---|---|
| Date: | 08.09.15 |
| Time: | 14:58 |
| Weather conditions: | Bright, Sunny |
| Taken by: | DS |
| Distance to the appeal site: | 438m |
| OS Grid Reference: | E 362340 N 392398 |
| AOD: | 16m |
| Viewer's Height: | 1.7m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 23 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_23 |
| Checked<br>DS | Revision<br>- |

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Fax: 01204 388792 Web: www.appletons.uk.com
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Photograph 24 -

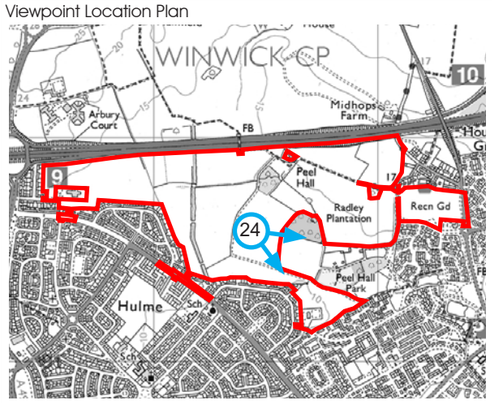
| Description of Existing View | View After Development | Visual Effect |
|---|---|---|
| View looking east towards Radley Plantation across unmanaged grassland with groups of scrub/ vegetation. Views from within the proposed Site are currently private views as no public access is possible.<br><br>Few urbanising features are visible within this view; some telegraph poles can be visible to the north-east. | The proposed view would be within the proposed primary school location with associated playground, landscaping and will have some level of security lighting during the night. To the north-west would be a proposed residential area which would include built form, infrastructure of roads, access drives, street lighting and furniture but set in the context of associated landscaping to the street scene.<br><br>To the east would be proposed recreational sports area with football pitches that will not be lit at night and will have appropriate associated landscaping surrounding which will be viewed in the context of Radley Plantation. | The magnitude of effect would be large in relation to the current view from the viewpoint location is within a proposed primary school area, to the east recreational grounds and to the north a proposed residential area with all associated infrastructure.<br><br>Lighting to the built form from street lighting and from windows of residential units etc., would be visible at night.<br><br>Proposed planting to the street scene and garden curtilage would be a positive landscape and visual benefit in the longer term. Additional to this would be the proposed recreational sports pitches which would be mown grass areas with appropriate landscaping surrounding. |

**Photograph 24**

| | |
|---|---|
| Date: | 06.05.16 |
| Time: | 15:52 |
| Weather conditions: | Bright/ Sunny |
| Taken by: | SW |
| Distance to the appeal site: | On site |
| OS Grid Reference: | E 361484 N 391541 |
| AOD: | 11m |
| Viewer's Height: | 1.65m |
| Camera: | Nikon D3100 |
| Lens: | AF-S NIKKOR 35mm |



Viewpoint Location Plan




| | |
|---|---|
| Project<br>Peel Hall, Warrington | |
| Title<br>Viewpoint 24 | |
| Client<br>Satnam Millennium Ltd | |
| Date<br>May 2016 | Scale<br>NTS |
| Drawn<br>SW | Drawing No.<br>Vp_24 |
| Checked<br>DS | Revision<br>- |

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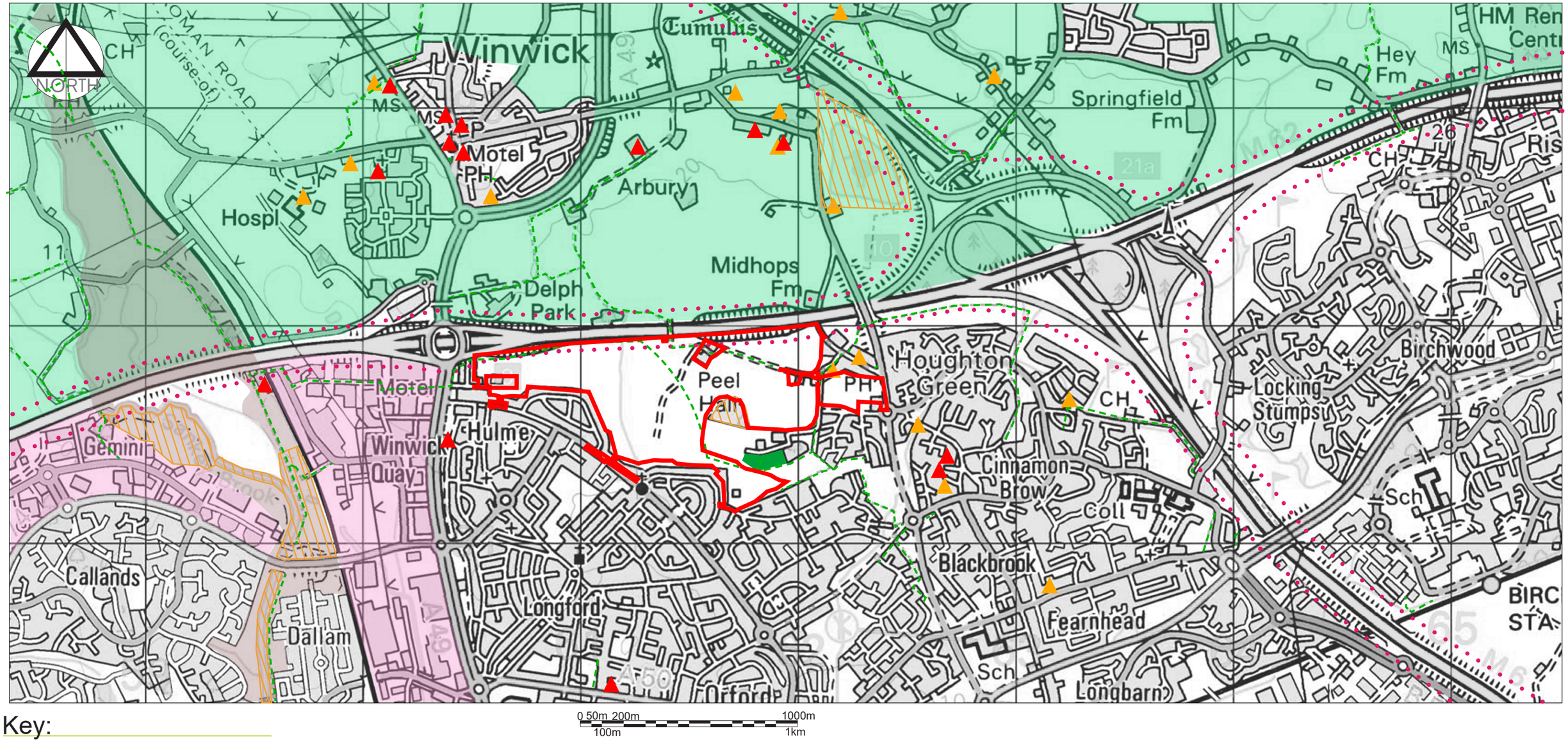


## Key:

- Site Boundary
- Common Land/ village Green
- Listed Buildings
- Local Parish Listed Buildings
- Green Belt Land
- Strategic Green Links
- Local Wildlife Sites
- Employment Land
- 50m motorway buffer (approx)
- Rights of Way/ Green Networks



# PEEL HALL, WARRINGTON

LND 5
Designations Plan
Scale: See scale bar

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# LANDSCAPE AND VISUAL ASSESSMENT METHODOLOGY

## A 1.0 Introduction

A 1.1 The format and methodology for the Landscape and Visual Impact Assessment (LVIA) has been carried out in general accordance with the recommendations contained within the

- 'The Guidelines for Landscape and Visual Impact' (GLVIA) 3rd Edition published jointly in 2013 by The Landscape Institute and The Institute of Environmental Management and Assessment
  and
- Landscape Institute Advice Note 01/2009. Use of photography and photomontage in landscape and visual assessment.

The baseline condition of the site has therefore been established and an assessment of the positive and negative impacts in terms of landscape, visual effects and landscape character has been made. Where deviance is made from the Guidelines, this will be clearly stated within the text of the report.

A 1.2 LVIA can be carried out either as part of a broader Environmental Impact Assessment (EIA) or as a stand alone appraisal of the possible landscape and visual effects of a proposed development. The overall principles are the same but there are specific and clearly defined procedures in EIA which LVIA must fit within. In standalone assessments the process is informal and there is more flexibility. The guidelines are not prescriptive but adherence to the approach is considered best practice within the industry and professional peers.

A 1.3 Effects on landscape and visual receptors are assessed separately following the steps set out in ***Figure 1*** and ***Figure 2***. The assessment seeks not to place over reliance on matrices and tables to establish significance of effects but to balance this with a clear and accessible narrative and explanation. The assessment seeks to distinguish between significant effects that are likely to influence the eventual decision making process and those of lesser concern.

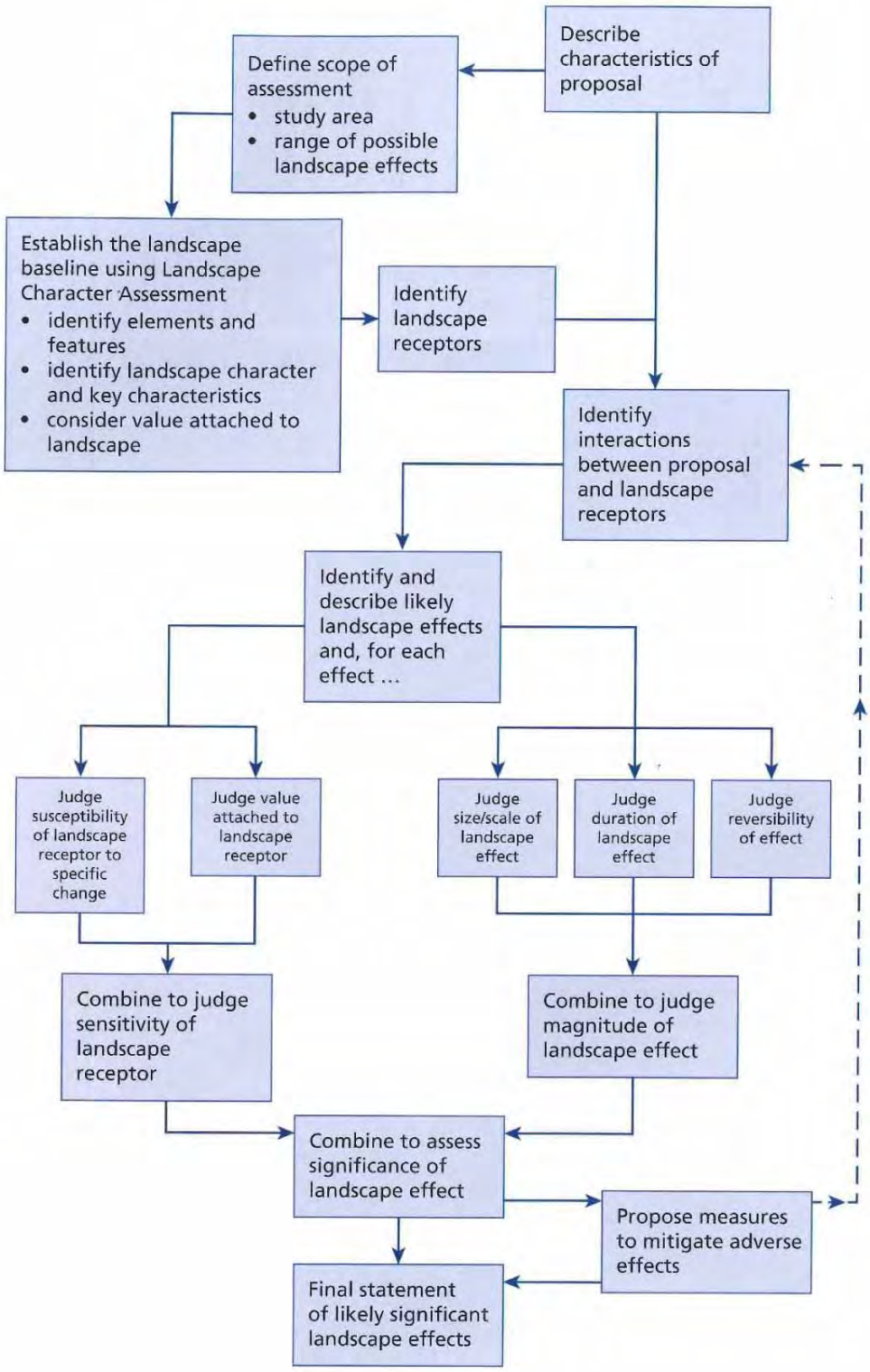
A 1.4 The assessment processes detailed are carried out for construction effects and for operational effects including the residual effects after mitigation. In some cases, particularly for EIA, the possible links between landscape and visual effects and effects identified in other topics i.e. noise effects, hydrology effects etc., may need to be considered. Special consideration may also apply in respect of cumulative effects that may result from an individual project that is being assessed interacting with the effects of other proposed development in the area.

A 1.5 Through both desktop study and site visits the landscape resource of a site and the surrounding area are assessed and principle features and characteristics identified. Desktop study is carried out to identify existing character assessments for the region or district, to locate existing designations within the development plan, to establish relevant planning policy which may influence the proposal and to any other literature which references the site and features of the surrounding locality.

A 1.6 Field work is used to confirm the physical components, structure and constraints and opportunities that give rise to patterns that are distinctive in the landscape and which may serve to limit views to and from the site. For the purposes of this report the 'surrounding area'

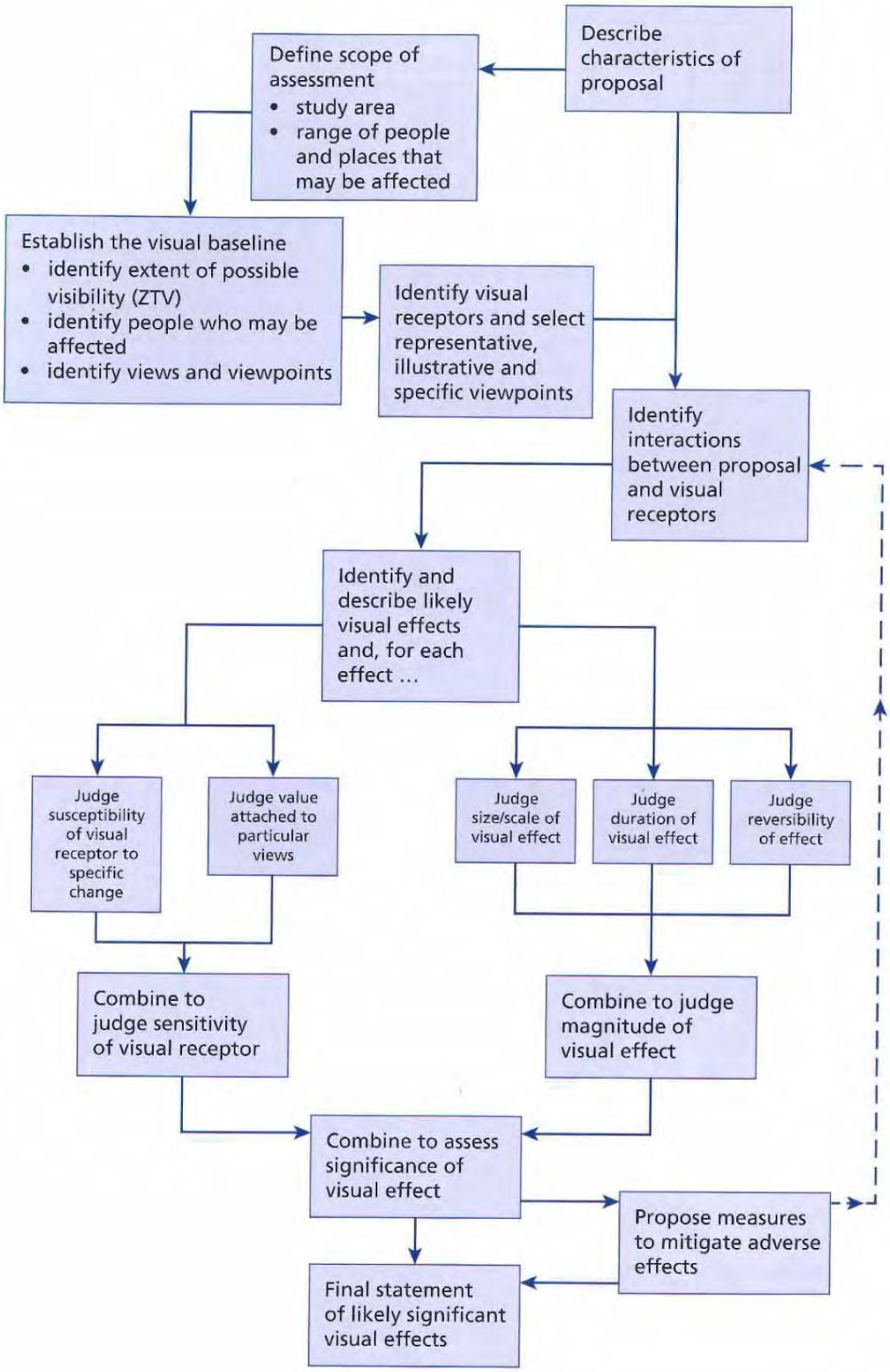
is defined as the landscape within 1.5 -2.0 kilometers of the LVIA study area, beyond which the site is deemed to be indistinguishable in the landscape with insignificant effects.

***Figure 1: Assessment of Landscape Effects***




*Reference: Fig 5.1 GVLIA, p. 71*

***Figure 2: Assessment of Visual Effects***




*Reference: Fig 6.1 GVLIA, p. 99*

## A 2.0 Description of the development proposals

A 2.1 The basic characteristics of the proposals are understood by means of assessing plans, contours and levels, structure and form of the development. Sections/cross sections are studied or generated. Where appropriate 3D modelling with on and off site landscape structure planting incorporated, and photomontages generated to reflect form, planting, materials and colours to assist in the assessment. Once the development is finalized it is described in appropriate detail and life cycle stages extrapolated.

## A 3.0 Scope of Study Area and Zone of Theoretical Visibility

A 3.1 The geographical study area is defined and an outline of the extent of landscape character and/or extent/disposition of visual receptors likely to be significantly affected either directly or indirectly. In order to identify land resources and visual receptors that may be affected by development, a 7.5 kilometres radius Zone of Theoretical Visibility (ZTV) to include the site and the surrounding landscape, can be produced to illustrate the worst case extent of the potential visibility of the proposed development. Where the built development is particularly tall, or where receptors or viewpoints or landscapes of value exist the scope may be extended according. The ZTV is usually produced using Digital Terrain Models (DTM), which is based on Ordnance Survey (OS) data at 1:50,000 scale with contours at 10 metres intervals with a viewer height of 1.6 metres. Alternatively, a manual process of drawing radiating sections through the landscape away from the proposals may be used in certain cases where a rough estimation of the ZTV is deemed sufficient. The ZTV identifies the maximum area over which it is theoretically possible to see some part of the proposed development, but does not take account of screening that may result from vegetation, localized variation in topography and built form.

## A 4.0 Zone of Visual Influence

A 4.1 It should be noted that the ZTV cannot indicate the potential visual impacts of a development, nor show the likely significance of effects. They are used as a working tool to inform assessment and do not convey the nature or magnitude of visual impacts. The actual visual effects of the proposed development are assessed through a more detailed analysis of specific viewpoints, based on field survey work. In combination with site visits, this information enables the identification of a provisional list of viewpoints and allows the determining authority to judge how representative these are and whether they include particularly sensitive vantage points. The range of landscape and the range of people and viewpoints is summarized and agreed with the Local Planning Authority (LPA). At this time the ZTV is refined and a Zone of Visual Influence (ZVI) is determined and plotted. For certain assessments a ZVI is prepared without the production of a ZTV.

## A 5.0 Site survey and field work

A 5.1 The surrounding road network driven and local public rights of way are walked. Positive and detracting elements in the landscape are recorded, including the general land use and susceptibility and value/quality of the site and surrounding area. Viewpoints are identified based on public viewpoints (public rights of way) and best effort made to establish where potential sensitive, partial and open views of the site can be observed. Private viewpoints (residential properties) and there orientation and occupancy are also considered, key distant viewpoints identified to determine the wider impact on the landscape and where development has the potential to affect the value and character of existing views.

***Photographs***

A 5.2 Photographic surveys of the site and photographic viewpoints are made using a prime lens (AF-S NIKKRO 35mm 1:1.8G) on a digital SLR camera (Nikon D3100) which allows for images to be reproduced as close to that which is generally equivalent to the focal length of the human eye. The height of the surveyor, data relating to the weather conditions, grid references and other relevant data are recorded.

## A 6.0 Baseline and Character Assessment

A 6.1 Landscape character assessments is a tool for understanding the landscape and can be used to inform baseline studies and guidance documents. The Landscape Character Assessment Guidance defines landscape character as:

*"A distinct, recognizable and distinct pattern of elements in the landscape and which makes landscapes different from one another, rather than better or worse."*

They are used to identify and describe:

- the elements that make up the landscape including:
  - physical influences which are quantifiable and include features such as hills, valleys, trees, hedges, ponds, geology, soils, land;
  - land cover, including different types of vegetation and patterns and types of tree cover;
  - the influence of human activity, including land use and management, the character of settlements and buildings, and pattern and type of fields and enclosure.
- The aesthetic and perceptual aspects of the landscape – such as, for example, its scale, complexity, openness, tranquility or wilderness;
- The overall character of the landscape in the appraisal area, including any distinctive Landscape Character Types or areas that can be identified, and the particular combinations of geology, landform, soils, vegetation, land use and human settlement. This includes the elements, aesthetics and perceptual aspects that make each landscape distinctive, usually by identification as a key characteristic of the landscape.

A 6.2 Landscape Character Assessments that are published and adopted by Local Authorities are usually the most robust and considered documents. Use should also be made of any existing historic characterisation studies to provide information on the time depth dimension of the landscape as the relationship between landscape and historic landscape matters is close.

## A 7.0 Predicting, describing, assessing Landscape Effects

***Establishing value of the landscape***

A 7.1 As part of the baseline, description of the value of the potentially affected landscape needs to be established. The 'relative value that is attached to different landscapes by society' is considered. To ascertain this value landscape designations such as National Parks, National Scenic Areas, Areas of Outstanding Natural Beauty are used as a starting point alongside other evidence such as designations on TPOs, listed buildings or registered landscapes, Village Design Statements, Conservation appraisals, recognised special historical or cultural or artistic sites or associations, tourism, promoted routes (routes, public rights of way, bridleways, cycleways) or other promotional literature, individual elements and/or aesthetic/ perceptual aspects, and/or statements relating to landscape conservation or strategic management noted in Landscape Character Assessments are taken as indicators of value. However, it should be noted that the fact that an area is not designated either nationally of locally does not mean that it does not have value. Condition of the landscape is also one determinant of value. The condition of the different landscape types or areas including evidence for change in that condition is also assessed.

A 7.2 Factors that influence value may include:

**Landscape quality (condition)** including the extent to which typical character is represented in individual areas and the intactness of the landscape;
**Scenic quality** and the appeal to the senses;
**Rarity** of features or elements;
**Representativeness** and whether the landscape contains particular characters of the wider area which are considered important examples;
**Conservation interests** such as ecological interest, archaeological or historical interest etc. which have value or protection in their own right;
Recreational value where the experience of the landscape is important;
Perceptual aspects such as wildness or tranquility
**Associations** as with artists or events in history etc.

A 7.3 Landscape value and quality is usually judged from ***Very high to low*** depending on the degree of value criteria which holds true or represented on the appraisal site and can be assessed using the judgment criteria in both **Table A and Table B**.

***Susceptibility to change***

A 7.4 Susceptibility to change needs to be considered. This is the ability of the landscape to accommodate or absorb change without undue consequences for the maintenance of the baseline situation and the achievement of planning policies or future strategies.

A 7.5 Susceptibility of the landscape to change is usually judged from ***Very high to low*** depending on the likelihood of change to occur and be perceptible based on the type of development that is proposed. Development can potentially bring about:

- A change in and/or partial or complete loss of elements, features, or aesthetic or perceptual characteristics, that have been identified as contributing to the character and distinctiveness of the landscape;

- The addition of new elements or features that could influence the character and distinctiveness of the landscape;
- A combination effect of these that could bring about changes in overall character.

The susceptibility can be assessed using the judgment criteria in **Table C**.

***Landscape sensitivity***

A 7.6 An appraisal of sensitivity is made regarding a landscape in which judgments on the susceptibility of the landscape (to the particular type of change or development proposed) and the value attached to the landscape are combined. This is usually expressed in a narrative form on a scale ranging from low, through medium, to high. The basis for the judgment shall be clear and linked back to the baseline study but information contained in **Table D** can assist in this judgment.

***Landscape Effects***

A. 7.7 Landscape effects may include:

- The degree of change in and/or partial or complete loss of elements, features, or aesthetic or perceptual characteristics that contribute to the character and distinctiveness of the existing landscape resource;
- The addition of new elements or features that will influence the character and distinctiveness of the landscape;
- The combined effect of these to changes in overall character.

A 7.8 Effects may be beneficial, neutral or adverse and a judgment is made taking account of:

- the degree to which the proposals fit with existing character;
- the contribution to the landscape the development may make in its own right, even if in contrast to that character.

***Magnitude of change***

A 7.9 *Size or Scale*

Judgements are made about the size and scale of change as a result on each effect:
The extent of existing landscape elements that will be lost, the proportion of the total extent that this area represents and the contribution of that element to the character of the landscape;

- The degree to which the aesthetic or perceptual aspects of the landscape are altered either by removal of the existing components of the landscape or by the addition of new ones;
- Whether the effect changes the key characteristic of the landscape, which are critical to its distinctiveness character.

A 7.10 *Geographical Factors*

Judgements are made in respect of extent of *geographical effect* (as distinct from the size and scale) which may occur:

- at site level, within the development site itself;
- at the level of the immediate setting of the site;
- at the scale of the landscape type of character area within which the proposal
- lies; and,
- on a larger scale, influencing several landscape types or character areas.

A 7.11 *Duration and Reversibility of the Landscape Effects*

An assessment is made as to *duration* i.e. short term (e.g. 0-5 years), medium term e.g. 5-10 years) or long term (e.g. 10-25 years). Reversibility is a judgement on the prospects and practicality of the effect(s) being reversed. Some development, like housing, is considered permanent, whereas others, of a limited life and could eventually be removed and/or land re-instated.

A 7.12 Indirect effects are considered, being effects that are a consequence of direct effects often occurring away from the site.

***Magnitude of landscape effect***

A 7.13 The magnitude of change is assessed in accordance with the criteria in **Table E**.

***Significance of landscape effect***

A 7.14 The correlation between sensitivity and magnitude of effect is determined to give the significance of landscape impact in accordance with **Table F**. Where the overall effect is considered neutral the reasons for that assessment are stated.

A 7.15 Descriptors of the significance of landscape effects which assist in the overall analysis are stated in **Table G**.

## A 8.0 Predicting, describing, assessing Visual Effects

***Baseline Visual Assessment***

A 8.1 The ZTV and/or the ZVI established at the scoping stage is reviewed and defined in more detail where information is available and/or the design has changed. The types of viewers (receptors) and likely numbers affected are considered together with the places where viewers would be affected. These are principally various forms of public access including public rights of way (PRoW) and highway transport routes. Work places are also considered and, subject to consultation with the LPA, residential receptors may also be considered although they do not have a right to a view in planning terms. The nature, composition and characteristics of the viewpoints, including the direction of the view are established together with visual characteristics such as the nature and extent of the skyline, aspects of visual scale and proportion and key foci. Elements such as land form, buildings and vegetation which may interrupt, filter or influence the setting of a view are considered. Field and desk top work will also identify particularly important views and vantage points.

***Identifying visual receptors and interactions between the proposals and the visual receptors***

A 8.2 The viewpoints from which the a proposed development will actually be seen is about assessing the responses to changes in views and visual amenity depending on the context (location, time of day, season, degree of exposure to views) and the purpose for being in a particular place (for example recreation, residence or employment, or passing through on roads or other modes of transport). During passage through the landscape, certain activities or locations may be specifically associated with the experience and enjoyment of the landscape, such as the use of public footpaths, bridleways, cycleways, long distance trails, tourist or scenic routes and associated viewpoints.

A 8.3 Viewpoints selected for the assessment fall broadly into three categories:

**Representative viewpoints** which represent a larger number of viewpoints which cannot practically be included;

**Specific viewpoints** which illustrate a promoted view, vantage point or a viewpoint with particular cultural landscape associations;

**Illustrative viewpoints** which demonstrates a particular effect or specific issue, for example, the restricted visibility at certain locations.

**Sequential views** along routes are also considered where appropriate.

A 8.4 The potential range of visual effects are considered including:

- Nature of the view of the development partial/full/glimpsed;
- Proportion of the development visible;
- Distance to development;
- Whether stationary or transient or sequential;
- Nature of changes;
- Seasonal effects.

***Susceptibility of visual receptors to change***

A 8.5 The susceptibility of different receptors to changes in views and visual amenity is mainly a function of:

- The occupation or activity of people experiencing the view at a particular location;
- The extent to which their attention or interest may be focused on the views and the visual amenity they experience at a particular location.

A 8.6 The visual receptors most susceptible to change area generally likely to include:

- Residents at home[1] (subject to agreement regarding the value of private views and the combined effect on a number of residents in one area);
- People engaged in outdoor recreation, including using public rights of way, bridleways and long distance promoted paths/trails whose attention may be focused on the landscape or particular views;
- Visitors to heritage asset or attractions where views are an important contributor to the experience;
- Communities where views contribute to the landscape setting enjoyed by residents in the area;

A 8.7 Travellers on road, rail or other modes of transport tend to fall into an immediate category of moderate susceptibility to change. Where travel involves recognised scenic routes awareness of views is likely to be particularly high.

A 8.8 Visual receptors likely to be less sensitive to change include:

- People engaged in outdoor sport or recreation which does not involve an appreciation of the views of the landscape;
- People at work whose attention is not focused on their surroundings and where views are not important to the quality of their working life.

A 8.9 Susceptibility of Visual Receptors is usually judged from ***Very high to very low*** depending on the location and activity of the receptor and can be assessed using the judgment criteria in **Table H**.

***Value attached to views***

A 8.10 Judgments are made about the value attached to the views experienced taking into account factors which can include:

- Views recognised with heritage assets;
- Inclusion within planning documents and designations (e.g. Landscape Character assessments or Village Design Statements, Neighbourhood Plans or Management Strategies);
- Views available to visitors and signified by appearance in guide books, tourist maps, provision of facilities for their enjoyment (i.e. parking places, sign boards), interpretative material;
- Views referenced in literature or art.

[1] In English law private residents cannot protect the view that they have from their house or land. However, the purpose of Visual Impact Assessment is to determine the likely principle significant effects upon views to enable both the mitigation of adverse impacts and a judgment to be made whether in aggregation the residual effects are justified by the wider outcomes of the proposals. The importance of views from either residential or any other receptors should therefore not be downplayed in the context of an LVIA on this basis.

A 8.11 Visual amenity value is usually judged from ***Very high to low*** depending on the degree of value criteria which is represented or evidenced on the appraisal site and can be assessed using the judgment criteria in **Table I**.

***Visual sensitivity***

A 8.12 An appraisal of sensitivity for each receptor is made in which judgments on the susceptibility of the receptor and the value attached to the views are combined. This is usually expressed in a narrative form on a scale ranging from low, through medium, high to very high but information contained in **Table J** can assist in this judgment. Receptor types may be grouped together to assess their relative sensitivity to the proposals.

**Magnitude of Effects**

A 8.13 Effects are assessed and described for each receptor with reference to representative and/or specific viewpoints. The size of scale, geographical extent and duration and reversibility of the change in the view are assessed. Consideration of the scale and geographical extent of change takes into account:

- The scale in change of view;
- Degree in contrast or integration within the view;
- Amount of time visible,
- Angle of view; and distance from receptor
- Extent of area over which changes visible;
- The potential for weather conditions to restrict views;
- The principle aspect of the viewpoints/viewers;
- The potential for the development to attract the eye or to become a focal point in the view.

A 8.14 Duration and reversibility of Visual Effects are considered where:

- Duration- can be judged on a scale of short (e.g. 0-5 years), medium term (e.g. 5-10 years) or long term (e.g. 10-25 years) although there is no fixed rule.
- Reversibility - a judgement is made on the prospects and practicality of the particular effect being reversed.

A 8.15 The distance from the closest visible part the proposed development has been defined as follows:

- Close distance views - less than 250m;
- Middle distance views - 250-1000 m; and
- Long distance views - over 1000m.

A 8.16 These factors are combined in order to judge the magnitude of visual effect for each individual or group of receptors. The magnitude is then categorised as Substantial to Negligible in accordance with the criteria in **Table J**.

***Significance of visual effect***

A 8.17 The correlation between sensitivity and magnitude of effects (impact) is determined to arrive at a judgment of the overall significance of landscape effect tin accordance with **Table K**. Where the overall effect is considered neutral the reasons for that assessment are stated.

A 8.19 Descriptors of the significance of visual effects categories which assist in the overall analysis are stated in **Table L**.

## A 9.0 Mitigation

A 9.1 Proposed mitigation measures may help to reduce potentially negative landscape and visual effects. All of the adverse landscape and visual effects that are considered likely to occur throughout the project life cycle, including its construction and operation) may be considered for mitigation where this is possible. Mitigating a significant adverse effect may reduce its severity or alter its nature. Where visual effects are judged significant and adverse the mitigation proposals and their management for the future as contained within the development proposals for preventing/avoiding, reducing, or offsetting or compensating for them in terms of mitigation are described. The significant visual effects remaining after mitigation are summarized.

## A10.0 Cumulative Effect

A 11.1 Cumulative effects are the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments. Cumulative landscape effects can impact on either the physical fabric or character of the landscape, or any special values attached to it. Cumulative visual effects can be caused by *combined visibility* which occurs where the observer is able to see two or more developments from one viewpoint and/or sequential effects which occur when the observer has to move to another viewpoint to see different developments. The baseline, timescale and types of developments to consider are agreed early within the assessment process with the LPA and the effects are judged in the same way as for the assessment on the landscape and visual effects of the project itself.

## A11.0 Residual Effects

A 12.1 The residual effect is the end result relating to environmental effect following mitigation at the operational stage in both landscape and visual terms.

## A12.0 Use of the Tables

A 13.1 The series of **Tables** are complied to guide the assessment of the landscape and visual receptors, the value, quality and susceptibility of the landscape and to assist the assessment of change on the landscape resource and for receptors which in turn provides a scale of *Significance of Effect.* The tables have been compiled through the experience of the company over several years of completing LVIAs within the context of current landscape policy and guidance from the Landscape Institute and from review of such assessments by peers within the profession. Attendance at masterclass workshops provided by the Landscape Institute has also assisted in the compilation of the criteria. The tables provide baseline criteria against which ‘values or judgments’ can be derived and to provide a consistent assessment of significance. The tables, however, should not necessarily provide a definitive scale of significance and are intended to support the narrative text of the report when assessing both landscape and visual impact.

## TABLE A - CRITERIA FOR SUSCEPTIBILITY OF LANDSCAPE TO CHANGE

| Landscape Susceptibility | Judgement criteria | Possible Definition | Typical Example |
|---|---|---|---|
| **Very High**<br><br>**Change very likely to occur and be perceptible to a very high degree.** | This type of development would potentially bring about:<br><br>• A change in and/or partial or complete loss of elements, features, or aesthetic or perceptual characteristics, that have been identified as contributing to the characteristic and the distinctiveness of the landscape;<br><br>• The addition of new elements of features that could influence the character and distinctiveness of the landscape;<br><br>• A combined effect of these that could bring about changes in overall character. | An iconic landscape or element(s) held in high regard both nationally, regionally and by the majority of the local community;<br>A landscape or element(s) widely used by both the local community and a broader visiting community;<br>Features of particular historical protected significance;<br>Landscape or space which defines or is closely associated with a community and its life and livelihood. | Nationally, regionally recognised e.g. parts of National Park, National Scenic Area, Special Landscape Area; Conservation or Listed status;<br>Registered Historic Garden and Designed Landscape. |
| **High**<br><br>**Change very likely to occur and be perceptible to a high degree.** | | A landscape or element(s) recognised regionally and locally as important;<br>A landscape widely used by the local community;<br>Features or elements widely used or visited and held in association with the area or community. | Part of an AGLV/AONB. |
| **Medium**<br><br>**Change very likely to occur and be perceptible to a moderate degree.** | | A landscape of local importance ;<br>A landscape widely used by the local community;<br>A sense of place recognisable and associated with the local area. | Area of local landscape importance. |
| **Low**<br><br>**Change very likely to occur and be perceptible to a low degree.** | | A landscape without particular noted significance;<br>A landscape or elements infrequently used by the local community;<br>A landscape which is not distinct and does not add to the overall context of the area. | - |

## TABLE B - CRITERIA FOR DESCRIBING LANDSCAPE VALUE

| Landscape Value | Judgement criteria | Possible Definition | Typical Example |
|---|---|---|---|
| **Very High**<br><br>**All or most criteria hold true and/or are strongly represented and are reflected by national landscape designation** | • Landscape condition is good/intact;<br><br>• High scenic value;<br><br>• Landscape characteristics, features or elements (including valued views) are important and valued examples representative of that identified in LCA/other document and/or representative of a Landscape Character Type that is particularly rare;<br><br>• Elements of conservation/historical/cultural interest are present or strongly represented;<br><br>• Recreation value evidenced e.g. promoted route;<br><br>• Valuable perceptual aspects e.g. wildness and/or tranquillity and/or remote. | An iconic landscape or element(s) held in high regard both nationally, regionally and by the majority of the local community;<br>A landscape or element(s) widely used by both the local community and a broader visiting community;<br>Features of particular historical protected significance;<br>Landscape or space which defines or is closely associated with a community and its life and livelihood. | Nationally, regionally recognised e.g. parts of National Park, National Scenic Area, Special Landscape Area;<br>Conservation or Listed status;<br>Registered Historic Garden and Designed Landscape. |
| **Good**<br><br>**All or most criteria hold true and/or are strongly represented.** | | A landscape or element(s) recognised regionally and locally as important;<br>A landscape widely used by the local community;<br>Features or elements widely used or visited and held in association with the area or community. | Part of an AGLV/AONB. |
| **Moderate**<br><br>**Some or most criteria hold true and/or are strongly represented.** | | A landscape of local importance ;<br>A landscape widely used by the local community;<br>A sense of place recognisable and associated with the local area. | Area of local landscape importance. |
| **Low**<br><br>**Few criteria hold true and/or are weakly represented.** | | A landscape without particular noted significance;<br>A landscape or elements infrequently used by the local community;<br>A landscape which is not distinct and does not add to the overall context of the area. | Gap land within/cities/ towns/villages.<br>Brown field site.<br>Urban fringe land of mixed use. |
| **Very Low**<br><br>**Single criterion represented to a limited degree.** | | A landscape without particular noted significance;<br>A landscape or elements not used or used by the local community;<br>A landscape which is degraded and in poor condition. | Derelict site. |

## TABLE C - CRITERIA FOR DESCRIBING LANDSCAPE QUALITY AND CONDITION

*Note: The definition of the component may occur across a range of typical landscapes. The scale of the component should be set against the typical landscape designation and a judgement made in terms of the weight to be applied to landscape quality and condition.*

| Landscape Quality/ Condition | Definition of Component | Typical Example in terms of designation or condition |
|---|---|---|
| **Exceptional/Very High** | Strong landscape structure, characteristics, patterns, and/or clear urban grain identifiable with a historic period or event;<br>Appropriate management for land use and land cover and/or a well maintained urban environment of distinction;<br>Distinct features worthy of conservation, historic architectural grain;<br>Sense of place exceptional local distinctiveness;<br>No detracting features. | Internationally or nationally recognised.<br>World Heritage Sites, National Parks, National Scenic Area, Special Landscape Area. |
| **High** | Strong landscape structure, characteristic patterns and/or clear urban grain;<br>Appropriate management for land use and land cover, but potentially scope to improve;<br>Distinct features worthy conservation;<br>Sense of place;<br>Occasional detracting features. | Nationally, regionally recognised e.g. parts of National Scenic Area, Conservation Area or Listed status; Registered Historic Gardens and Designed Landscapes |
| **Good/Medium** | Recognisable landscape structure and/or urban grain;<br>Scope to improve management for land use and land cover;<br>Some features worthy of conservation;<br>Sense of place;<br>Some detracting features. | Regionally recognised e.g. localised areas within National Park, National Scenic Area, ANOB. |
| **Ordinary** | Distinguishable landscape structure, characteristics, patterns of landform and land cover often masked by land use;<br>Fractured urban grain with patterns of use difficult to distinguish;<br>Scope to improve management of vegetation;<br>Some features worthy of conservation;<br>Some detracting features and diminishing condition of features. | Locally recognised landscape without specific designation.<br>Landscape often a settlement with no other designation |
| **Weak** | Weak landscape structure, characteristic patterns of landform and land cover are missing, little or no recognisable urban grain;<br>Mixed land use evident;<br>Lack of management and intervention has resulted in degradation;<br>Frequent detracting features;<br>Poor condition. | A landscape without note or one singled out as being degraded or requiring improvement. |
| **Very Weak** | Degraded landscape structure, characteristic patterns and/or urban grain missing;<br>Mixed land use or dereliction dominates;<br>Lack of management/ intervention has resulted in degradation;<br>Extensive detracting features;<br>Condition considered irreversible resulting in lost features. | A landscape likely to be singled out as needing<br>intervention or regeneration. |

## TABLE D - CRITERIA FOR DESCRIBING LANDSCAPE SENSITIVITY (NATURE)

| Landscape Type | High | Medium | Low |
|---|---|---|---|
| **Landscape designation** | A landscape of distinctive character susceptible to relatively small changes. Includes national or regionally designated landscapes e.g. Area of Great Landscape Value (AGLV), National Scenic Area. Historic Gardens and Designed Landscapes on the National Register | A landscape of moderately valued characteristics, including local landscape designations. | A landscape of relative unimportance, the nature of which is tolerant to substantial change.<br>No landscape designation. |
| **Landscape resource** | Important landscape resources or landscapes of particularly distinctive character and therefore likely to be subject to national designation or otherwise with high values to the public. Is vulnerable to minor changes. | Moderately valued characteristics reasonably tolerant of change with a gradation between High and Low | Relatively unimportant/ immature or damaged landscapes tolerant of substantial change. |
| **Scale and enclosure** | Small intimate landscape. | Medium scale landscape. | Large scale open landscape. |
| **Landform and topography** | Mountainous or large dominating hills and valleys. Intimate small scale landscapes defined through easily identifiable elements in the immediate landscape. | Rolling landform with small hills and valleys. Some intimacy and human scale through landscape elements such as hedgerows and woodland copses. | Large scale open landscape.<br>Little intimacy or human scale, few character elements or features. |
| **Settlement** | Organic land cover pattern | A gradation between High and Low | Grid like linear land cover pattern |
| **Landmarks and visible built structures** | Landscape with symbolic or important features | A gradation between High and Low | Landscape with no recognised individual features or elements |
| **Remoteness and tranquillity** | Remote location, little evidence of human activity | A gradation between High and Low | Highly developed countryside areas with continuous evidence of human activity |
| **Landscape Quality and Value** | A landscape of exceptional or high quality and/or high value. | A landscape of good or ordinary quality and /or good or moderate value | A landscape of low or poor quality and value |

## TABLE E – MAGNITUDE (NATURE OF EFFECT) OF CHANGE/IMPACT AND TYPICAL DESCRIPTORS (LANDSCAPE)

| Magnitude of Change | Judgment criteria |
|---|---|
| Very large/Substantial adverse | The development would result in a prominent and wholesale change in the balance of the landscape character (degrade) over the area in question.<br>Major alteration to significant elements or features or the removal/introduction of substantial elements that cannot be replaced within a time scale of 25 years.<br>The alteration of a landscape to substantially increase/decrease both the landscape value and quality. |
| Large adverse | The development would result in an obvious and/or perceptible change to the landscape character (degrade).<br>Alteration to elements or features or partial removal/introduction.<br>The alteration of a landscape to decrease both the landscape value and quality.<br>Medium changes to the localised area which whilst perceptible do not fundamentally change local character. |
| Medium adverse | The development would result in a slight change to the landscape character (or degrade).<br>Change that is only just perceptible/few components of the wider landscape changed or modest/unremarkable changes in a localised area.<br>Alteration to minor elements or features or the removal/introduction.<br>The alteration of a landscape to increase/decrease both the landscape value and quality. |
| Small | A very minor change which is not uncharacteristic and maintains the quality and value of the landscape or features can be readily replaced.. |
| Very small adverse/Negligible | No noticeable loss, damage or alteration to features or elements. |
| Small beneficial | Barely noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristics that are deemed acceptable to the overall character. |
| Medium beneficial | Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristics that are deemed acceptable to the overall character. |
| Large beneficial | Partial or noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristics that are deemed acceptable and an enhancement to the overall character. |
| Major beneficial | Large scale improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristics that are deemed acceptable and provides enhancement which is far reaching within the overall character of the area and surrounding landscape in question. |

## TABLE F - SUMMARY TABLE TO DETERMINE SIGNIFICANCE OF LANDSCAPE EFFECTS

| Landscape Sensitivity | Magnitude of Effect | | | | |
|---|---|---|---|---|---|
| | Substantial | Large | Medium | Small | Very small/Negligible |
| Very High | Major | Major | Moderate- Major | Moderate | Negligible |
| High | Major | Major | Moderate- Major | Moderate | Negligible |
| Medium | Moderate- Major | Moderate- Major | Moderate | Minor-Moderate | Negligible |
| Low | Moderate | Moderate | Minor-Moderate | Minor | Negligible |
| Very Low | Minor | Negligible-Minor | Negligible-Minor | Negligible | Negligible to Non |

**The summary of effects on landscape can be expressed as an adverse or beneficial effect depending on the assessor's view regarding the nature and quality of the existing resource and how this has been changed. In some circumstances the change may be described as a neutral change if the expectation of the viewer or the fundamental nature and characteristics of a landscape appear unaffected.**

**Negligible is the accepted terminology for effects that cannot be seen or distinguished.**

## TABLE G – DESCRIPTORS OF THE SIGNIFICANCE OF LANDSCAPE EFFECTS CATEGORIES

| Significance Category | Typical Descriptors of Effect |
|---|---|
| **Major beneficial (positive) effect** | The project would provide an opportunity to enhance the landscape because:<br>• It fits very well with the scale, landform, pattern and appearance of the landscape.<br>• There is potential, through mitigation or design, to create or enable the restoration of characteristic features and elements partially lost or diminished as the result of changes resulting from inappropriate management or development.<br>• It enables a sense of place to be enhanced through good design and/or well designed mitigation measures.<br>• It facilitates national and local policy objectives to regenerate degraded countryside or urban areas. |
| **Moderate beneficial (positive) effect** | The project would provide an opportunity to enhance the landscape because:<br>• It fits very well with the scale, landform and pattern of the landscape.<br>• There is potential, through mitigation, to enable the restoration of characteristic features and elements, partially lost or diminished as the result of changes resulting from intensive farming or inappropriate development.<br>• It will enable a sense of place to be restored or enhanced through beneficial mitigation and sensitive design.<br>• It furthers national and local policy objectives to regenerate degraded countryside or urban areas. |
| **Minor beneficial (positive) effect** | The project would:<br>• Fit well with the scale, landform and pattern of the landscape by maintaining or enhancing the existing character.<br>• Enable some sense of place to be restored through well designed mitigation measure.<br>• Maintain or enhance existing landscape character.<br>• Avoid conflict with national and local policy towards protection of the countryside or protection/enhancement of urban areas. |
| **Neutral effect** | The project would:<br>• Complement the scale, landform and pattern of the landscape.<br>• Incorporate measure for mitigation to ensure that the project will blend in well with surrounding landscape features and elements.<br>• Avoid having an adverse effect on the current level of tranquillity of the landscape.<br>• Maintain existing landscape character and enable a sense of place to be retained though beneficial and sensitive design.<br>• Avoid conflict with national and local policy towards protection of the countryside or protection/enhancement of urban areas. |
| **Minor adverse (negative) effect** | The project would:<br>• Not quite fit the landform, scale and pattern of the landscape.<br>• Be unable to be completely mitigated because of the nature of the project itself or the character of the landscape.<br>• Affect an area of recognized landscape quality.<br>• Conflict with local authority policies for protecting the local character of the countryside of the protection/enhancement of urban environments. |
| **Moderate adverse (negative) effect** | The project would:<br>• Be out of scale with the landscape or conflict with the local pattern and landform.<br>• Be unable to be fully mitigated (i.e. mitigation will not prevent the scheme from damaging the landscape in the longer term).<br>• Have an adverse impact on a landscape of recognized quality or on vulnerable and important character feature or elements.<br>• Be in conflict with national and local policies to protect open land and nationally recognized countryside, or to protect/enhance the urban environment. |
| **Major adverse (negative) effect** | The project would be very damaging to the landscape because it:<br>• Is at considerable variance with the landform, scale, pattern and appearance of the landscape.<br>• Is likely to degrade, diminish or even destroy the integrity of a range of characteristic features and elements.<br>• Will be substantially damaging to a high quality or highly valued landscape, causing it to change and be considerable diminished in quality.<br>• Cannot be adequately mitigated.<br>• Is in serious conflict with national and local policy for the protection of nationally recognized countryside or for the protection/enhancement of the urban environment. |
| **Very large adverse (negative) effect** | The project would result in exceptionally severe adverse impact on the landscape because it:<br>• Is at complete variance with the landform, scale, pattern and appearance of the landscape.<br>• Would permanently damage or degrade, badly diminish or even destroy the integrity of characteristic feature and elements.<br>• Would cause a very high quality or highly valued landscape to be permanently changed and its quality very considerably diminished.<br>• Cannot be mitigated (i.e. there are no measure that would protect or replace the loss of a nationally important landscape).<br>• Cannot be reconciled with national and local policy for the protection of nationally recognized countryside or for the protection/enhancement of the urban environment. |

## TABLE H – CRITERIA FOR SUSCEPTIBILITY OF VISUAL RECEPTORS TO CHANGE

| Susceptibility | Possible Place | Typical Receptor |
|---|---|---|
| Very High | Observers whose attention or interest may be focused on the landscape and recognised views in particular e.g. heritage assets/attractions/special landscapes. | Visitors to a promoted/recognised/designated viewpoint from where notable and recorded views are available. |
| | Private residential dwelling. | Residents at home and in gardens where their views are likely to be focused on the landscape. |
| | Public rights of way (PRoW).<br>Bridleways<br>Open Access land.<br>National Trust Land. | Pedestrians of footpaths/horse riders/cyclists on promoted national/regional/purpose built recreational routes. |
| High | Tourist spots, Country Parks, documented viewpoint locations. | Visitors to heritage, tourist assets and other attractions where views of the landscape setting are important. |
| | Private residential dwelling. | Residents at home. |
| | Public rights of way (PRoW).<br>Open Access land.<br>National Trust Land. | Recreational users of footpaths/bridleways and land where their interest is likely to be focused on the landscape. |
| | Public road network/highway/water courses. | Walkers/horse riders/cyclists/boat users using roads and lanes where their interest is likely to be focused on the landscape. |
| | Public road network/highways. | Motor borne users of highways where their attention may be particularly focused on the special or high scenic quality of the route or with clear open views across the landscape. |
| Medium | Highway footpaths. | Pedestrian users of pavements where attention may only be partially focused on the scenic quality of the route. |
| | Highways | Users of highways where their attention may only partially be focused on views/the scenic quality of the route. |
| | Private residential dwelling. | Residents without direct views. |
| Low | Fast speed transport/highway routes generally. | Drivers and passengers of motor borne vehicles, trains where the focus of attention is on driving, traffic conditions and the road rather than the scenic quality or landscape. |
| | Private residential dwelling. | Residents not generally at home in daylight hours. |
| | Public rights of way (PRoW).<br>Open Access land.<br>National Trust Land. | Infrequently occupied. |
| | Places of employment including hospitals and schools. | Workers, pupils, teachers, staff where attention is not readily focused on views. |
| | Highways and paths. | Pedestrians and cyclists whose attention is not likely to be focused on the scenic quality of the route. |
| | Sports and recreational facilities. | People engaged in outdoor sport or recreation and not dependant on view or focus of attention solely on activity. |
| | Public rights of way (PRoW).<br>Open Access land.<br>National Trust Land. | Walkers/horse riders/cyclists/boat users using roads and lanes where their interest is likely not to be focused on the landscape. |
| | Workplace | People at their place of work whose attention is not focused on their surroundings. |
| | Agricultural and farming land. | Agricultural workers whose activity is of a nature which is potentially tolerant of visual change. |
| Very Low | Motorways and rapid transit trainlines/routes | Motor borne users of highways where their attention is not focused on the quality of the route and views. |

## TABLE I - CRITERIA FOR VALUE ATTACHED TO A VIEW

| Landscape Value | Judgement criteria | Possible Definition | Typical Example |
|---|---|---|---|
| **Very High**<br><br>Criteria very strongly represented and evidenced. | Value of views recognised through:<br>• Relationship with heritage asset;;<br>• Inclusion within or protected by planning documents e.g. including Landscape Character Assessments, Village design Statements, Neighbourhood Plans or Management plans.<br><br>Value attached to views available to visitors signified by:<br>• Iconic views or skylines;<br>• Spectacular panoramic views over far distances;<br>• Appearance in guidebooks;<br>• Provision of facilities for enjoyment e.g. parking places, sign boards;<br>• Interpretive material, promotional material.<br><br>Value attached to views through reference to art or literature. | An iconic landscape or element(s) held in high regard both nationally, regionally and by the majority of the local community;<br>A landscape or element(s) widely used by both the local community and a broader visiting community;<br>Features of particular historical protected significance or distinctiveness;<br>Landscape or space which defines or is closely associated with a community and its life and livelihood.<br>Views which are not interrupted and in full view. | Nationally, regionally recognised e.g. parts of National Park, National Scenic Area, Special Landscape Area; Conservation or Listed status;<br>Registered Historic Garden and Designed Landscape. |
| **High**<br><br>Criteria strongly represented and evidenced. | | A landscape or element(s) recognised regionally and locally as important;<br>A landscape widely used by the local community;<br>Features or elements widely used or visited and held in association with the area or community.<br>Views which are sometimes interrupted but where full views can be gained. | Part of an AGLV/AONB. |
| **Moderate**<br><br>Criteria represented and evidenced. | | A landscape of local importance ;<br>A landscape widely used by the local community;<br>A sense of place recognisable and associated with the local area.<br>Views which are partially interrupted | Area of local landscape importance. |
| **Low**<br><br>No criteria represented. | | A landscape without particular noted significance;<br>A landscape or elements infrequently used by the local community;<br>A landscape which is not distinct and does not add to the overall context of the area.<br>Views which are restricted. | - |

## TABLE J – *MAGNITUDE (NATURE OF EFFECT) OF CHANGE/IMPACT (VISUAL)*

| Magnitude | Typical Justification |
|---|---|
| Very large/Substantial adverse | ▪ Total loss or major alteration to key or primary elements/features/characteristics of the baseline existing) landscape or view, and/or the introduction of totally uncharacteristic elements with the receiving landscape.<br>▪ Development will dominate view or directly faces viewpoint.<br>▪ Development fills whole of site or a substantial proportion of it.<br>▪ Site is within an open view with few or no intervening factors.<br>▪ Very close proximity to view – less than 0.5 kilometres.<br>▪ 24 hour use of lighting.<br>▪ Change directly visible, over a long duration and/or particularly noticeable on account of being in very near distance.<br>▪ Development at construction phase, and of a temporary but lengthy duration, i.e. over 5 years. |
| Large adverse | ▪ Partial loss of or alteration to one or more key elements/features/characteristics of the existing landscape or view and/or the introduction of elements that may be prominent but not uncharacteristic within the receiving landscape.<br>▪ Development is moderately close to views – 0.5 to 1.5 kilometres away.<br>▪ Site is a notable component of the view.<br>▪ View in general direction of development.<br>▪ Approximately 50-75% of development can be viewed.<br>▪ View is limited by intervening factors.<br>▪ Use of lighting for part of the night.<br>▪ Change directly visible, over a long duration and/or particularly noticeable on account of being in near distance.<br>▪ Development at construction phase, therefore of a moderate temporary duration, i.e. between 2-5 years. |
| Medium adverse | ▪ Minor loss or alteration to one or more key elements/features/characteristics of the existing landscape or view and/or the introduction of elements that are not uncharacteristic within the receiving landscape.<br>▪ The development is a small part of a wider or panoramic view.<br>▪ Development is over 1.5 kilometres away.<br>▪ Development fills half to a small proportion of the site.<br>▪ Change visible in oblique views and/or of limited duraction.<br>▪ View of development is largely obscured by intervening factors.<br>▪ Development blends well with its surroundings.<br>▪ Occasional use of lighting. |
| Small | ▪ Very minor loss or alteration to one or more key elements/features/characteristics of the existing landscape or view and/or the introduction of elements that are not uncharacteristic within the receiving or adjacent landscape – approximating to 'no change' situation.<br>▪ Site is over 3-4 kilometres away.<br>▪ Development is only identified by one or two of its components.<br>▪ Intervening and screening factors/intervening vegetation detract from seeing or noticing development – view severely restricted.<br>▪ Change of very limited duration.<br>▪ Development will be indistinguishable from its surroundings or adjacent land uses.<br>▪ No use of lighting. |
| Very small/Negligible | ▪ Site is barely visible to views.<br>▪ Virtually imperceptible<br>▪ Changes to composition and balance of elements within view9S0. |

## TABLE K - SUMMARY TABLE TO DETERMINE SIGNIFICANCE OF VISUAL EFFECTS

| Receptor Sensitivity | Magnitude of Effect | | | | |
|---|---|---|---|---|---|
| | Substantial | Large | Medium | Small | Very small/Negligible |
| Very High | Major | Major | Moderate- Major | Moderate | Negligible |
| High | Major | Major | Moderate- Major | Moderate | Negligible |
| Medium | Moderate- Major | Moderate- Major | Moderate | Minor-Moderate | Negligible |
| Low | Moderate | Moderate | Minor-Moderate | Minor | Negligible |
| Very Low | Minor | Negligible-Minor | Negligible-Minor | Negligible | Negligible to Non |

**The summary of effects can be expressed as an adverse or beneficial effect depending on the assessor's view regarding the nature and quality of the existing resource and how this has been changed. In some circumstances the change may be described as a neutral change if the expectation of the viewer or the fundamental nature and characteristics of a view appear unaffected.**
**Negligible is the accepted terminology for effects that cannot be seen or distinguished.**

## TABLE L - DESCRIPTORS OF THE SIGNIFICANCE OF VISUAL EFFECT CATEGORIES

| Significance | Typical Criteria |
|---|---|
| Major Beneficial | The project would lead to a major improvement in a view from a highly sensitive receptor. |
| Moderate Beneficial | The proposals would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor. |
| Minor Beneficial | The project would cause limited improvement to a view from a receptor of medium sensitivity, but would still be a noticeable element within the view, or would cause greater improvement to a view from a receptor of low sensitivity. |
| Negligible Beneficial | The project would not significantly change the view but would still be discernible, and the effect would be beneficial. |
| Neutral/Non | No change in the view. |
| Negligible Adverse | The project would not significantly change the view but would still be discernible, and the effect would be adverse. |
| Minor Adverse | The project would cause limited deterioration to a view from a receptor of medium sensitivity, or cause greater deterioration to a view from a receptor of low sensitivity, and would be a noticeable element in the view. |
| Moderate Adverse | The project would cause obvious deterioration to a view from a moderately sensitive receptor, or perceptible damage to a view from a more sensitive receptor. |
| Major Adverse | The project would cause major deterioration to a view from a highly sensitive receptor, and would constitute a major discordant or dominant element in the view. |

National Character Area profile:

# 60. Mersey Valley

Supporting documents

NATURAL ENGLAND

www.naturalengland.org.uk

# Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper[1], Biodiversity 2020[2] and the European Landscape Convention[3], we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

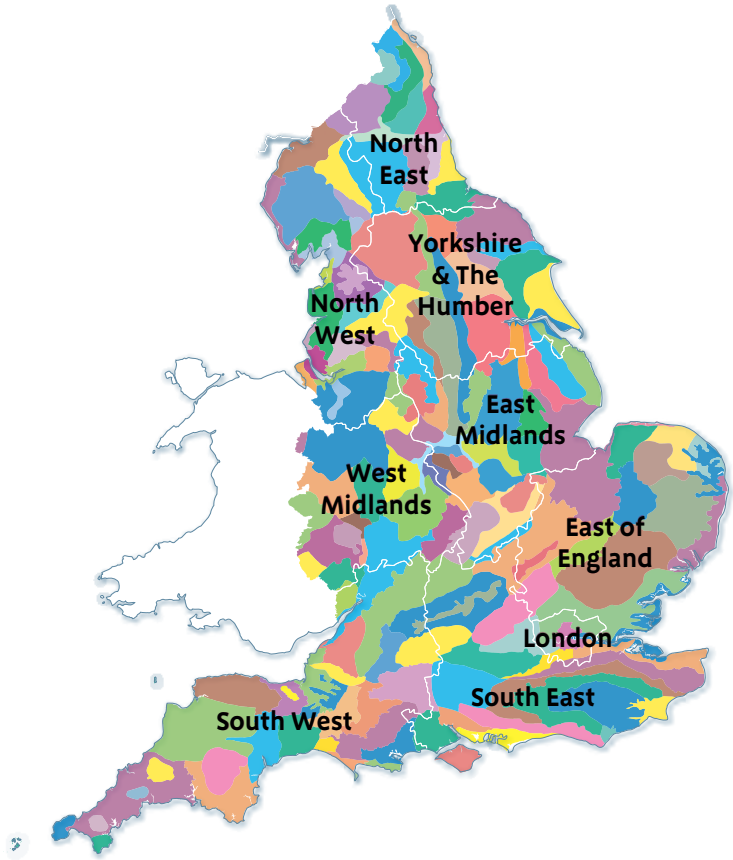
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing **ncaprofiles@naturalengland.org.uk**

## National Character Areas map




[1] The Natural Choice: Securing the Value of Nature, Defra (2011; URL: **www.official-documents.gov.uk/document/cm80/8082/8082.pdf**)
[2] Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: **www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf**)
[3] European Landscape Convention, Council of Europe (2000; **URL: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm**)

# Summary

The Mersey Valley National Character Area (NCA) consists of a wide, low-lying river valley landscape focusing on the River Mersey, its estuary, associated tributaries and waterways. It is a varied landscape that extends from the mosslands near the Manchester Conurbation NCA in the east, to the Merseyside Conurbation NCA and the wide estuary with intertidal mudflats/sand flats and salt marsh in the west. The River Mersey is tidal from Howley Weir in Warrington. The area encompasses a complex mix of extensive industrial development and urban areas, with high-quality farmland in between.

Farmland in the north of the Mersey Valley NCA is predominantly arable, while in the south there is a mix of arable and pasture. Field pattern is regular and large scale, often defined by degraded hedgerows with isolated hedgerow trees. In the east, open, flat farmland is found on the rich, dark peaty soils of the former mosses, with a complex network of drainage ditches.

Urban and industrial developments line the banks of the River Mersey. Industrial infrastructure is often prominent, with large-scale, highly visible development including chemical works and oil refineries. The Manchester Ship Canal links the estuary to the heart of Manchester, perpetuating the industrial development of the area. There is a dense communication network of major roads, railways, canals and transmission lines. The urban and suburban areas provide housing for those working in neighbouring conurbations, as well as in the industries of the Mersey Valley.

The Mersey Estuary's extensive intertidal mudflats/sand flats and fringing salt marshes sustain internationally significant bird populations. There are remnant pockets of lowland raised bog, including the Manchester Mosses Special Area of Conservation, centring on a once extensive area of mossland. Rixton Clay Pits are a mosaic of pools and other habitats, with an internationally designated population of great crested newts.

The habitats around the rivers and the estuary provide a natural defence against flooding. Positive management of the area's organic soils and wetlands such as lowland raised bogs could result in significant gains in carbon sequestration. Local Nature Reserves and country parks offer opportunities for people to enjoy the natural environment.

Key challenges include integrating the development pressures associated with the towns, industry and transport, with the protection and enhancement of the landscape and the internationally significant habitats. Understanding, planning for and adapting to climate change, particularly in the dynamic estuary and river environment, is a further challenge. There are opportunities for providing accessible greenspace and recreational provision, as well as improving habitat quality and distribution. Other benefits could include providing better water quality and storage, minimising soil erosion and increasing carbon storage. All these can strengthen landscape resilience and adaptation to climate change.

Click map to enlarge; click again to reduce.

Part of a relict mossland on a farm in Glazebury, which has been restored under environmental stewardship.

## Statements of Environmental Opportunity

- **SEO 1**: Conserve and enhance the Mersey Valley's rivers, tributaries and estuary, improving the ability of the fluvial and estuarine systems to adapt to climate change and mitigate flood risk while also enhancing habitats for wildlife and for people's enjoyment of the landscape.
- **SEO 2**: Promote the Mersey Valley's historic environment and landscape character and positively integrate the environmental resource with industry and development, providing greenspace within existing and new development, to further the benefits provided by a healthy natural environment, as a framework for habitat restoration and for public amenity.
- **SEO 3**: Manage the arable and mixed farmland along the broad linear Mersey Valley, and create semi-natural habitats, woodlands and ecological networks, to protect soils and water, enhance biodiversity, increase connectivity and improve the character of the landscape, while enabling sustainable food production.
- **SEO 4**: Manage and enhance the mossland landscape in the east, safeguarding wetlands including the internationally important lowland raised bogs, to conserve peat soils, protect and enhance biodiversity, conserve archaeological deposits, contribute to landscape character and store carbon.

# Description

## Physical and functional links to other National Character Areas

The Mersey Valley and Merseyside Conurbation National Character Areas (NCAs) lie within the same river basin and share a similar ecological character. The River Mersey forms a central, low-lying area and a corridor of movement for wildlife. The Mersey Estuary, an area of transition from marine to freshwater habitats, supports marine, subtidal and terrestrial maritime species. The significant mosaic of remnant mosses to the west of Manchester forms an important corridor of wetland habitats, linking with the Lancashire Coal Measures NCA in the north.

The River Mersey starts at the confluence of the River Tame and the River Goyt in the Manchester Conurbation NCA. It flows west, passing through Warrington where the river becomes tidal. It widens to form the upper Mersey Estuary between Warrington and Runcorn. The Mersey Estuary continues towards the Merseyside Conurbation NCA, and flows into Liverpool Bay in the Irish Sea. The Mersey Estuary Special Protection Area (SPA) and Ramsar site crosses both the Mersey Valley and the Merseyside Conurbation NCAs.

There are expansive views available from open and elevated land and the Mersey Estuary. In the west of the NCA, the Mersey is estuarine in character with intertidal mudflats/sand flats, salt marsh and low exposed cliffs. This creates an almost flat landscape with broad panoramic views. The vast industrial developments at Runcorn dominate views from across the Shropshire, Cheshire and Staffordshire Plain and the Cheshire Sandstone Ridge NCAs and from the M56 motorway. To the west of Runcorn, the valley widens out and intertidal areas, along with neighbouring NCAs, become more evident. In contrast, views from urban areas are typically limited by the relative flatness of the flood plain.

The Mersey Valley and Merseyside Conurbation NCAs share a number of major communication routes, with roads, rail and electricity power lines crossing the area. Motorway and mainline railway networks are dominant features of the landscape as major east–west and north–south infrastructure routes cross, for example the M6, M56 and M62. There a number of significant waterways, including the Manchester Ship Canal. Many of the settlements provide housing for those working in the Merseyside and Manchester conurbations, as well as in the industries of the Mersey Valley.

**Expansive views from open and elevated land, including intertidal mud/sand flats and saltmarsh in the Mersey Estuary. The vast industrial developments at Runcorn dominate many views.**

## Key characteristics

- The landscape is low-lying, focusing on the broad linear valley of the River Mersey; it is estuarine in the west and has extensive areas of reclaimed mossland in the east.
- Underlain by Triassic sandstone, the surface geology is principally drift material: marine and river alluvium in the valley bottom, extensive areas of till, pockets of glacial sands and gravels, with peat in some drainage hollows.
- The Mersey Estuary is a defining element in the landscape, with expansive intertidal mudflats/sand flats and low exposed cliffs.
- The River Mersey flows from east to west, joined by associated tributaries, although the Mersey itself is often obscured from view.
- Trees and woodland are mainly associated with settlements, occasional parkland and isolated woodland blocks; and in recent years new community woodlands have been planted.
- Large-scale, open, predominantly flat, high-quality farmland occurs between developments, with primarily arable farming to the north of the valley and a mixture of arable and dairying to the south.
- The field pattern is regular and large scale, often defined by hedgerows with isolated hedgerow trees; many hedgerows are intermittent and have been replaced by post-and-wire fencing, while field boundaries on the mosses are marked by ditches.
- A range of important wetland habitats remain, including estuarine mudflats/sand flats and fringing salt marshes in the west, remnants of semi-natural mosslands and pockets of basin peats in the east, with the broad river valley in between.
- The predominant building material is red brick though some sandstone construction remains, and some survival of earlier timber frame.
- There are densely populated urban and suburban areas, with major towns particularly at the river crossings, including Runcorn, Widnes and Warrington.
- There is large-scale, highly visible industrial development, with docks, chemical works and oil refineries.
- The river valley has a dense communication network with motorways, roads, railways and canals running east–west, and power lines are also prominent.

## The Mersey Valley today

The Mersey Valley NCA consists of a wide, low-lying river valley landscape focusing on the River Mersey, its estuary, associated tributaries and waterways, although the Mersey itself is often obscured from view. It is a varied landscape that extends from the Merseyside Conurbation NCA and the wide Mersey Estuary in the west, to the flat mosslands near the Manchester Conurbation NCA in the east. The area encompasses a complex mix of extensive industrial development and urban areas, with high-quality farmland in between.

This is an area defined largely by its generally low-relief topography, with an average elevation of just 23 m, rising locally to 144 m towards the Cheshire Sandstone Ridge NCA. The south side of the valley slopes more steeply than the north. The River Mersey flows from east to west, forming a central, low-lying area.

The River Mersey is a defining element in the landscape, having created the valley landform and contributed to the area's industrial and settlement history. Throughout the area the river is heavily controlled with high levee banks and course straightening. Downstream of Howley Weir in Warrington, the Mersey is tidally influenced, flowing into a large sheltered estuary on the Irish Sea coast. The Mersey Estuary has extensive intertidal mudflats and sand flats, which are exposed at low tide, and fringing salt marshes. The rising and falling of the tide make this a dynamic landscape, as the nature of views is constantly changing. The River Mersey itself, however, is often obscured, inaccessible, and blocked from view by industry. In Ellesmere Port, for example, it is barely obvious at all that the town is situated on the Mersey.

**The Mersey Valley has a dense communication network, crossed by roads, motorways and power lines.**

Areas of generally high-quality agricultural land are intermixed between urban and industrial development. Two substantial bands of farmland follow the slopes of the Mersey Valley, though these are often fragmented at the periphery of urban and industrial developments. To the north of the Mersey, the farmland has a large-scale, open character dominated by arable fields. To the south, the area is a mix of arable and dairying. In the east of the Mersey Valley, open, flat farmland occurs on the rich, dark peaty soils of the former mosses. A few small remnants of semi-natural mossland vegetation remain, but in general this is a highly cultivated landscape dissected by a complex network of drainage ditches. The diversity of farmland provides a significant habitat for farmland birds.

**Large-scale, open, predominantly flat farmland is interspersed between development and densely populated urban and suburban areas.**

The field pattern is generally regular and large-scale, but within an inherited framework of earlier irregular boundaries. Fields are often defined by hedges with isolated hedgerow trees. Many of the hedgerows are intermittent and have been replaced by post-and-wire fencing. Ditches form the field boundaries on the mosses.

Trees and woodland are mainly associated with settlements. There are some trees along field boundaries and watercourses, and isolated woodland blocks particularly in the east. In recent years new community woodlands have been created, adding to the greenspace resource for local people and improving the image of the area. The area is covered by Mersey Forest and Red Rose Forest community forests, together providing a network of green spaces, woodlands and street trees and creating high-quality environments.

The Mersey Valley NCA is particularly important for the concentration of lowland fens and lowland raised bogs. While most mossland has been converted to agriculture or lost to development, several examples have survived as degraded raised bog on the Mersey flood plain. This centres on the once extensive area of mossland known as Chat Moss. Risley Moss, Astley and Bedford Mosses and Holcroft Moss form the internationally recognised Manchester Mosses Special Area of Conservation (SAC). The intertidal mudflats/sand flats, salt marshes and rocky shores of the Mersey Estuary provide feeding and roosting sites for internationally significant bird populations, with extensive areas designated as a Ramsar site and an SPA. The Atlantic salmon has begun to return to the River Mersey and its tributaries. There are large areas of flood plain grazing marsh habitat in the area, notably at Frodsham, Helsby, Ince Marshes and Gowy Meadows, providing habitats for wading birds, amphibians and mammals.

Rixton Clay Pits are parts of an extensive disused brickwork quarry excavated in glacially derived clay deposits. Extraction of clay has left a mosaic of pools surrounded by diverse habitats including species-rich grassland, scrub and woodland. Here, among the amphibians common frog, common toad and smooth newt, is an internationally important breeding population of great crested newts, and the area has been designated as an SAC. Other wetland sites include Woolston Eyes Site of Special Scientific Interest (SSSI), where lagoons set aside to receive dredging from the Manchester Ship Canal form large areas of open water, reedbed and scrub vegetation. The site is nationally important for wintering wildfowl and supports a diverse breeding bird assemblage.

The character of this landscape has been highly influenced by the urban and industrial developments lining the banks of the River Mersey. The high density of urban areas has led to landfill developments appearing in the landscape. Artificial deposit grounds are also visible, such as ash lagoons at Fiddlers Ferry. Industrial infrastructure is often prominent, with large-scale, highly visible development including docks, chemical works and oil refineries. Notable landmarks are typically represented by infrastructure such as Runcorn Bridge, the Manchester Ship Canal, expansive industrial sites and Fiddlers Ferry Power Station. The cumulative effect is a complex mix of industrial and urban areas, intermingled with high-quality farmland and the estuary.

The area is densely populated with the towns of Warrington, Widnes, Runcorn, Ellesmere Port, Frodsham and Irlam, as well as some extensive villages such as Culcheth and Lymm, often providing housing for commuters to Liverpool and Manchester. Urban areas are often interspersed with greenbelt. The predominant building material is brick, although traditional red sandstone construction survives in limited areas, as well as extremely rare examples of timber-framed construction. Welsh slate and clay tile roofs can be found. While the older housing stock is characterised by red brick building materials, with some earlier timber frame, the proliferation of materials in more recent development has created an overall disjointed character associated with a mix of building styles.

The majority of the NCA has low levels of tranquillity, with the comparatively highest tranquillity levels being found in the Mersey Estuary, and around the mosslands towards Manchester.

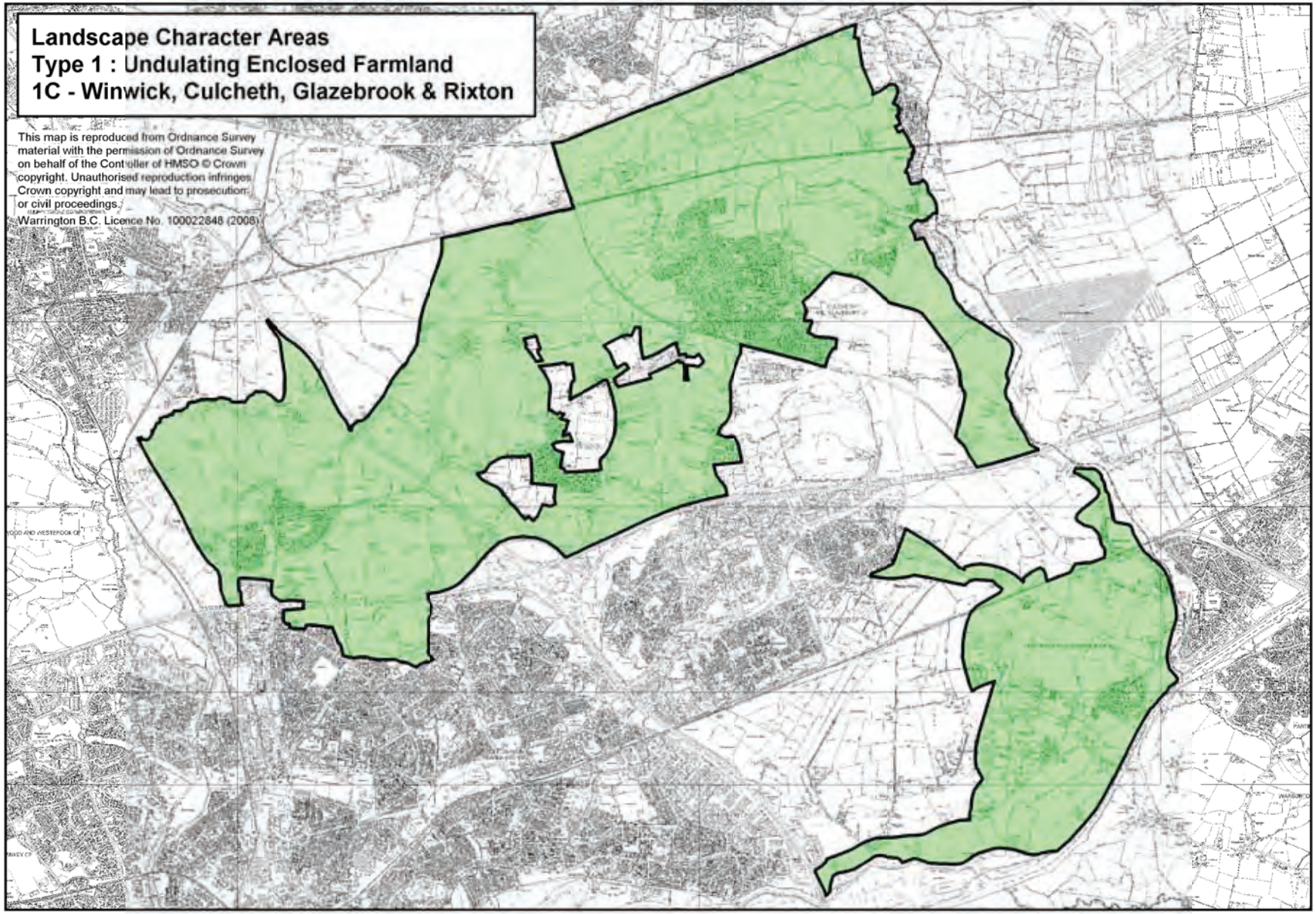
The Mersey Valley has a dense communication network running both east to west and north to south, with major motorways, roads, railways and canals. The Manchester Ship Canal runs roughly parallel with the Mersey from Eastham, on the southern shore of the Mersey Estuary, almost to the centre of Manchester. The Bridgewater Canal crosses the Mersey Valley, creating a recreational link with the neighbouring urban areas of Manchester to the east and Leigh to the north, and meets with the Manchester Ship Canal at Runcorn Dock. The Shropshire Union Canal and Leeds and Liverpool Canal also pass through this NCA, while the route of the former Sankey Canal runs through Warrington to the Mersey Estuary at Runcorn. The River Weaver is navigable in its lower reaches. The area is crossed by transmission lines such as those radiating out from Fiddlers Ferry Power Station. A number of major roads cross the area, including the M6, M56 and M62 motorways. The West Coast Main Line crosses this NCA, while a large part of this area is occupied by Liverpool Airport. Recreational trails also serve to connect people, including the long-distance footpaths of the Trans Pennine Trail, Sandstone Trail and Mersey Way.

Recreation is supported by the area's rights-of-way network. The large populations locally, both within the towns of the Mersey Valley and the two adjacent conurbations, have access to the canal network, local nature reserves and country parks, as well as more formal facilities such as golf courses. There are also parklands such as Dunham Massey Park, Castle Park (Frodsham) and Walton Hall Gardens.

# WARRINGTON: A LANDSCAPE CHARACTER ASSESSMENT

**Agathoclis Beckmann**
**Landscape Architects**
Onion Farm
Warburton Lane
Lymm
Cheshire
WA13 9TW

Prepared 2007


Landscape Character Areas
Type 1 : Undulating Enclosed Farmland
1C - Winwick, Culcheth, Glazebrook & Rixton
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# TYPE 1. UNDULATING ENCLOSED FARMLAND

## AREA 1.C WINWICK, CULCHETH, GLAZEBROOK AND RIXTON

### Description

These areas typify undulating enclosed farmland with a medium to large-scale field pattern. The area stretches in an arc from the River Mersey in the south, through Glazebrook to Culcheth in the north and finally wrapping around Winwick in the west.

The agriculture predominantly consists of arable fields, intensely cropped, with poorly maintained remnant hedgerows with few hedgerow trees. Small deciduous woodlands form backdrops to views within the landscape.

Areas of heavy clay soils have necessitated comprehensive land drainage systems although these are not always effective, leading to ephemeral areas of standing water in low areas at times of heavy rainfall. Other areas of lighter soils, particularly those just east of the village of Winwick, around Southworth, are better drained and heavily cultivated.

The area contains three significant knolls to the north-west of this area, one is the large knoll on which Winwick Church stands; a second to the north, is defined by Cop Halt Farm and the third is at Wood Head Farm just west of the Parkside Road crossing of the M6. The A49 road north from Warrington runs just to the west of Winwick Church over the larger knoll and then just to the east of Cop Halt Farm before crossing Oswald's Brook at Red Bank. It therefore follows the line of higher ground.

Associated with these knolls is another unusual feature, Oswald's Brook, forming an anomaly within the gently undulating landscape. The Borough boundary to the north of Winwick follows the line of Oswald's Brook, a fairly deeply incised stream running from the east and discharging into Newton Brook which in turn discharges into Sankey Brook. The valley of Oswald's Brook is narrow, wooded and contains low exposed red sandstone cliffs.

West of Hollins Green are the Rixton Clay Pits, an area of disused clay pits, some flooded, some partially flooded and some partially filled; these pits have been colonised by native species, creating a rich melange of habitats and a visually complex series of intimate spaces.

Immediately north of Rixton Clay Pits and abutting Risley Moss to the west is Rixton Landfill Site. This is a domestic refuse facility, which currently presents a whaleback form with a high

ridge running north – south. The landfill site is visually very prominent in the landscape, particularly dominating Rixton Moss to the west. Views from the south however are screened by Rixton Clay Pits. There appears to be little or no mitigation works to reduce the impact of the site.

North of Southworth Hall is a large sand quarry, screened by mounding and planting. This sand pit adjoins an old colliery tip to the north and to the west, part of which (adjacent to the M6) has been reclaimed.

**Key Characteristics:**

- Sweeping views to the north and east from the areas of Culcheth and Glazebrook
- Sweeping views to the south from the Winwick area
- Medium to often large-scale mainly arable fields
- Lack of hedgerow trees
- Hedgerows between fields often fragmented
- Deciduous wooded backdrops
- Rixton Clay Pits
- Rixton Landfill Site

## Cultural History

Two important roads pass north-south through this area, the A49 through Winwick and the B5212 Holcroft Lane / A574 through Glazebury. Winwick Road was a former Roman Road of great strategic importance leading down to the bridge over the Mersey in Warrington. Holcroft Lane, to the east, was of lesser strategic importance, but took people through the relatively narrow gap between the mosses of the north side of the Mersey occupied by the River Glaze. This was the route taken by the Duke of Cumberland in December 1745 in pursuit of the retreating army of Bonnie Prince Charlie. Holcroft Lane is to the west of the River Glaze valley leading from Wigan down to the ford of the River Mersey at Warburton. Both roads were also important from ancient times for the movement of salt northwards from the Cheshire saltpans.

A third important road runs east-west through the south of the area, the A57 Manchester Road. This road follows the high ground north of the River Mersey flood plain and to the south of the great basin formed by Rixton Moss. The road connects with the M6 to the west and with the B5212 to the east. It is a long-established road and has some important historic sites along it. Rixton Old Hall is just south of the road at the edge of the Mersey flood plain; Rixton New Hall is just to the east. Hollins Green, a small village just north of the road contains a churchyard on an ancient circular-plan site with a footpath called 'The Weint' running around it –suggestive of a pre-Roman origin. The lowest ford on the Mersey was at Warburton and the road from Warburton joins the A57 just west of Hollins Green.

A fourth, locally important road runs east – west to the north of the area, connecting Winwick, Croft, Culcheth and Glazebury. Although classed today as a minor road, it connects with the more important north-south roads referred to above and is significant in that a number of moated or high status sites are located either at the roadside or close to the route. These include Winwick Church, Myddleton Hall, Southworth Hall and the former sites of Old Kingnall Hall and Kingnall Hall. A tumulus is sited just north of the road near Myddleton Hall. This evidence suggests that the road is probably ancient.

Winwick, the local high point, has clearly been the site of habitation for some time. A group of five barrows or burial mounds have been discovered at Winwick, two in the late C19th and two in modern times. One of these barrows, much disturbed, revealed Beaker pottery.

Another barrow was discovered at Southworth Hall Farm, Croft, east of Winwick, comprising a more extensive cemetery of over 800 burials possibly focused on the Bronze Age burial mound.

There are also a number of medieval manors scattered throughout this area, based on local halls. These include Culcheth, Holcroft, Peasfurlong, Risley, Kenyon and Southworth, of which Culcheth was the principal manor. Parts of these manorial holdings reached into the adjacent mosslands and it is probable that the mosses were exploited for hunting and for fuel. There are references to Culcheth having four plough-lands in 1212. Holcroft and Hurst appear to have had a number of water mills, implying a fairly substantial area of cereals. The site of at least one mill is probably close to Holcroft Hall - to the south of the Hall in the southern arm of Crow Wood. The 1832 Tithe Map records the name of this arm of woodland as Mill Ground. The picture of medieval Glazebrook, Culcheth and Winwick appears to be of mixed farmland, as now, with cereals being grown on the lighter soils such as around Southworth and grazing being practised on the heavier clay soils.

Holcroft Hall is one of a chain of probably early medieval sites (many of the others being moated) which stood along the line of Pennington Brook / Glaze Brook and running north – south along the road between Wigan and the Mersey ford at Warburton. These building complexes would have had some strategic value as is confirmed by the recent discovery of a Bronze Age promontory fort and settlement at nearby Little Woolden Hall on the eastern side of the River Glaze (just outside the Borough boundary).

T 1-9

TRANSPORTATION AND HIGHWAYS


NOTES:



KEY:

Study Area

| ISSUE | REASON FOR REVISION | DATE |
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TITLE:

## ASSESSMENT STUDY AREA

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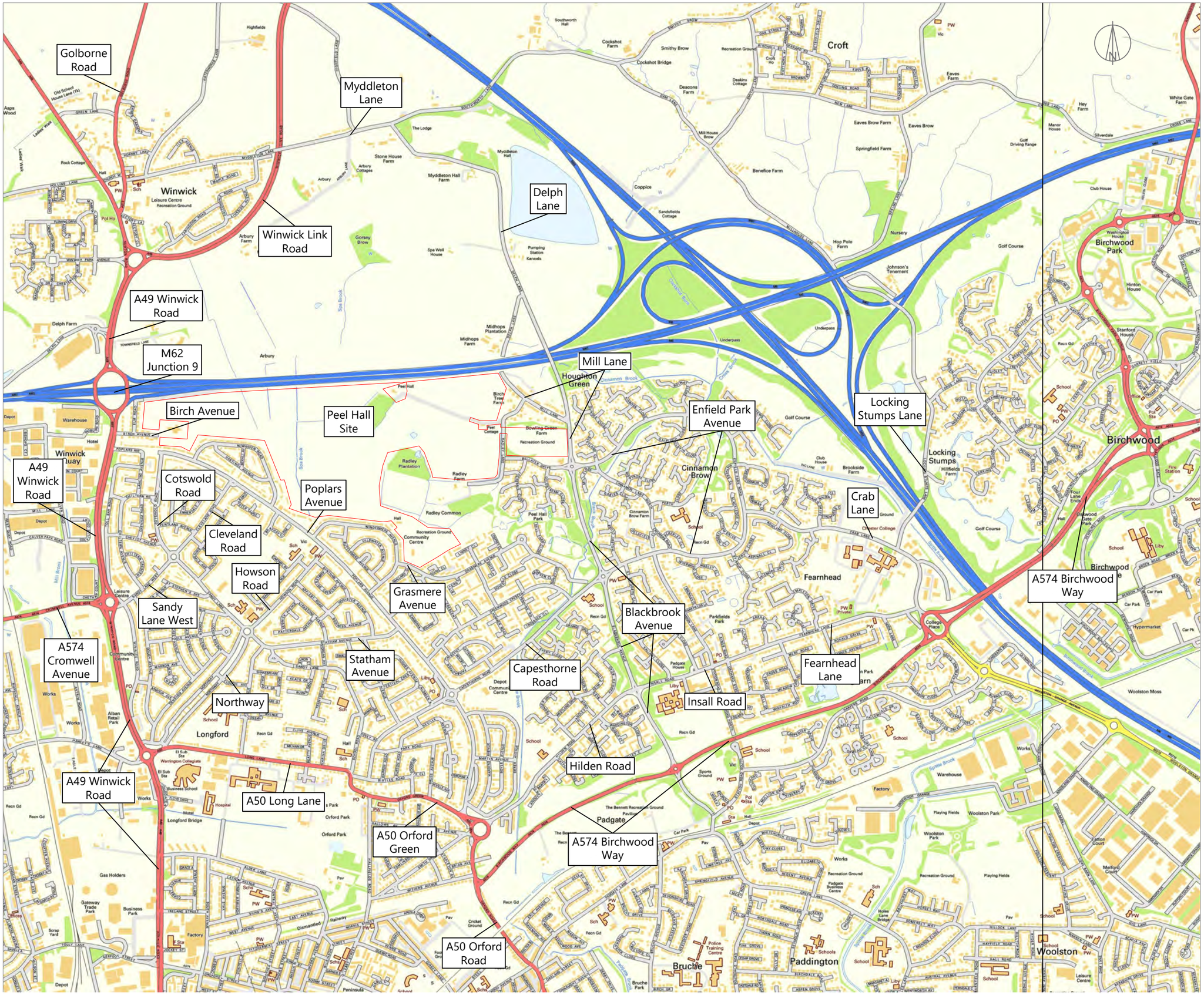


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EXISTING HIGHWAY NETWORK WITHIN STUDY AREA

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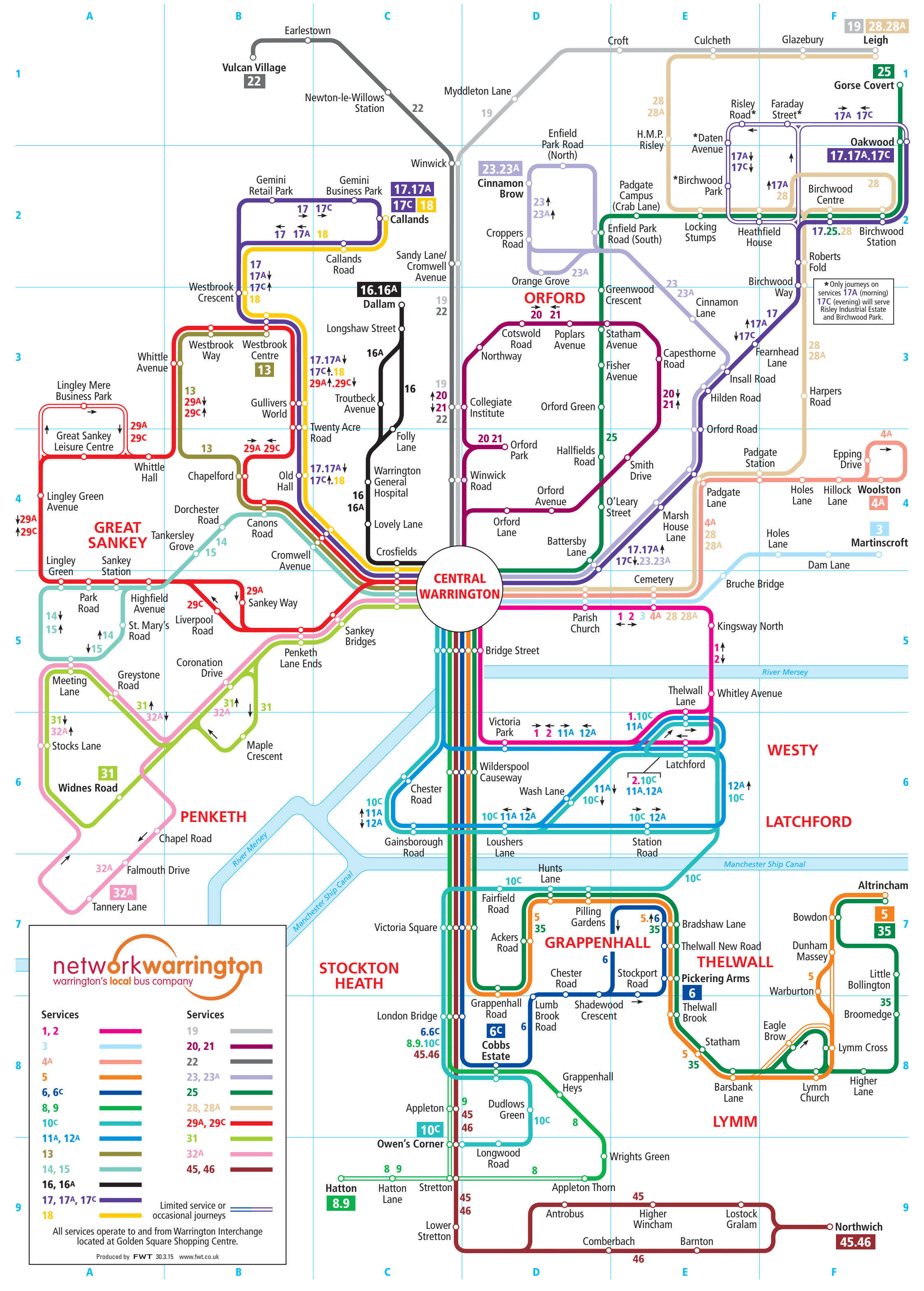
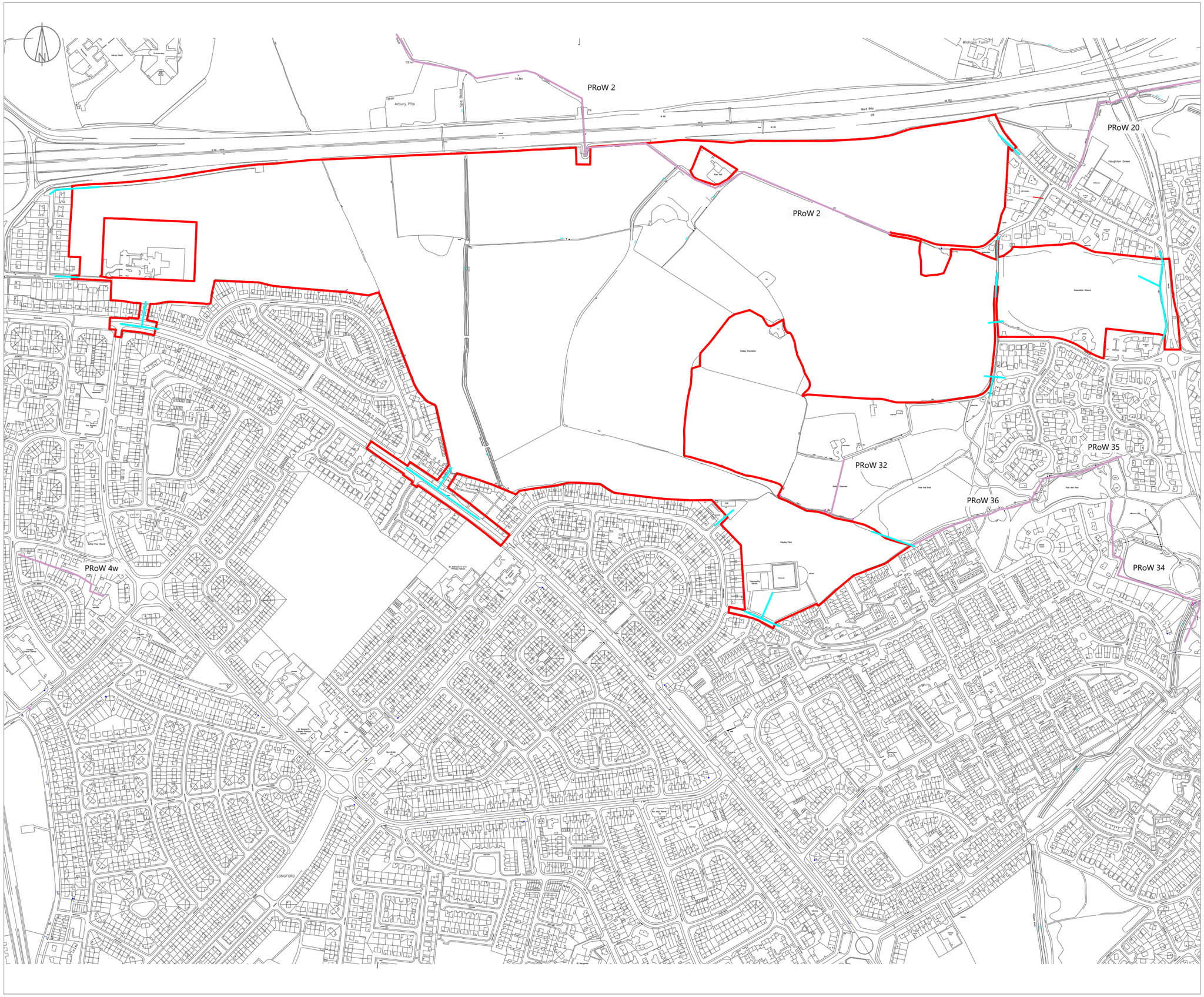
**This map shows services that operate on Monday to Saturday between 7am and 7pm. We operate a number of other services not shown, these are either infrequent or run only during the mornings, evenings or on Sundays.**






NOTES:
Reproduced from Appletons Peel Hall Parameters Plan (Rev.W).

KEY:

Proposed Linkages

Existing PRoW

Site Boundary

| ISSUE | REASON FOR REVISION | DATE |
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EXISTING PRoW NETWORK AND PROPOSED LINKAGES

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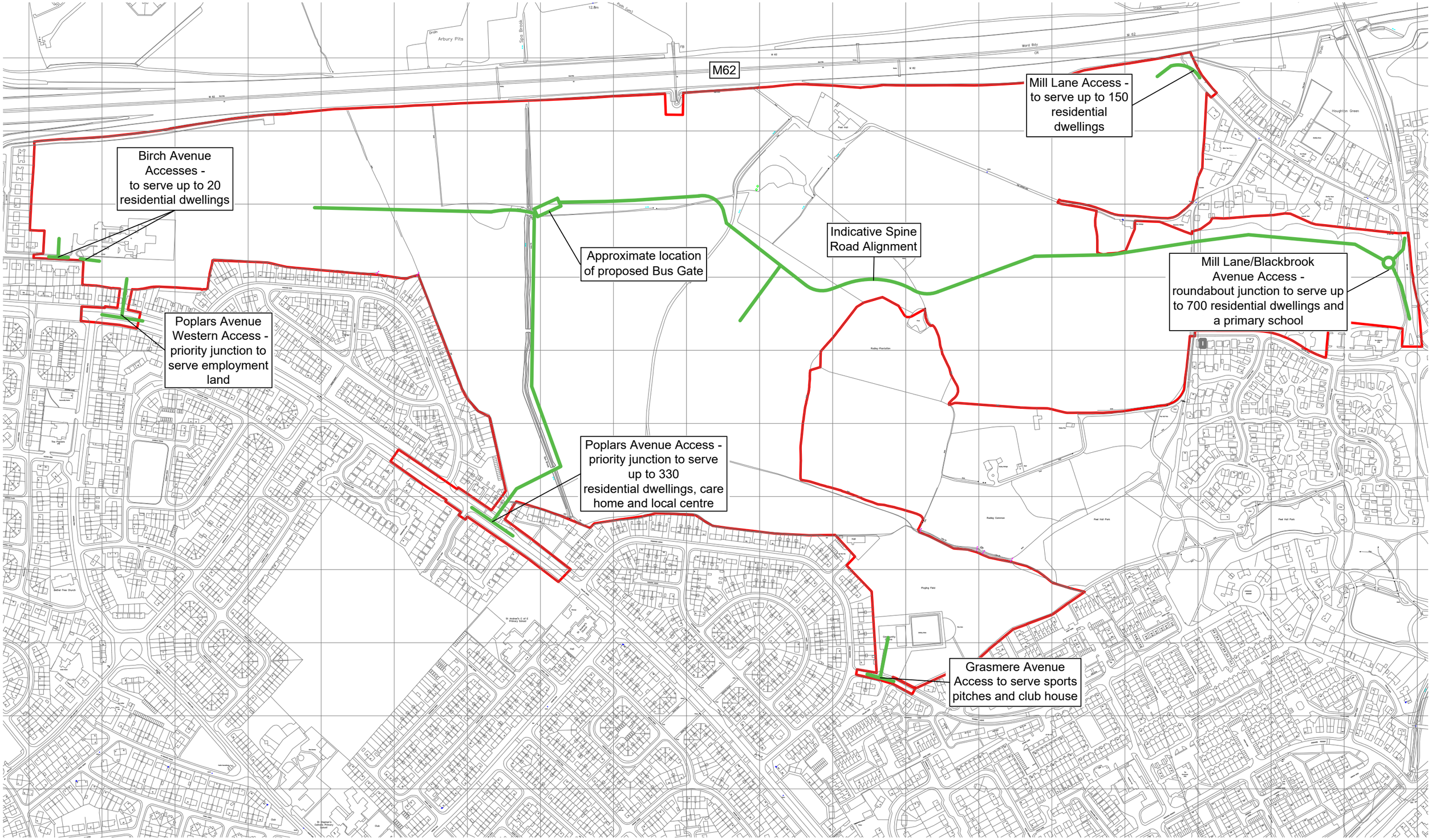


NOTES:



| ISSUE | REASON FOR REVISION | DATE |
|---|---|---|
| E | Amendment to annotations | 10/05/16 |
| D | Amendment to bus gate location | 04/05/16 |
| C | Amendment to dwelling numbers at access points | 12/04/16 |
| B | Alteration to dwelling numbers at access points | 04/03/16 |
| A | Reduction in number of dwellings shown off Birch Avenue | 19/02/16 |

| DATE: | DRAWN BY: | CHECKED: |
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PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM

TITLE:

PROPOSED ACCESS POINTS AND INDICATIVE SPINE ROAD

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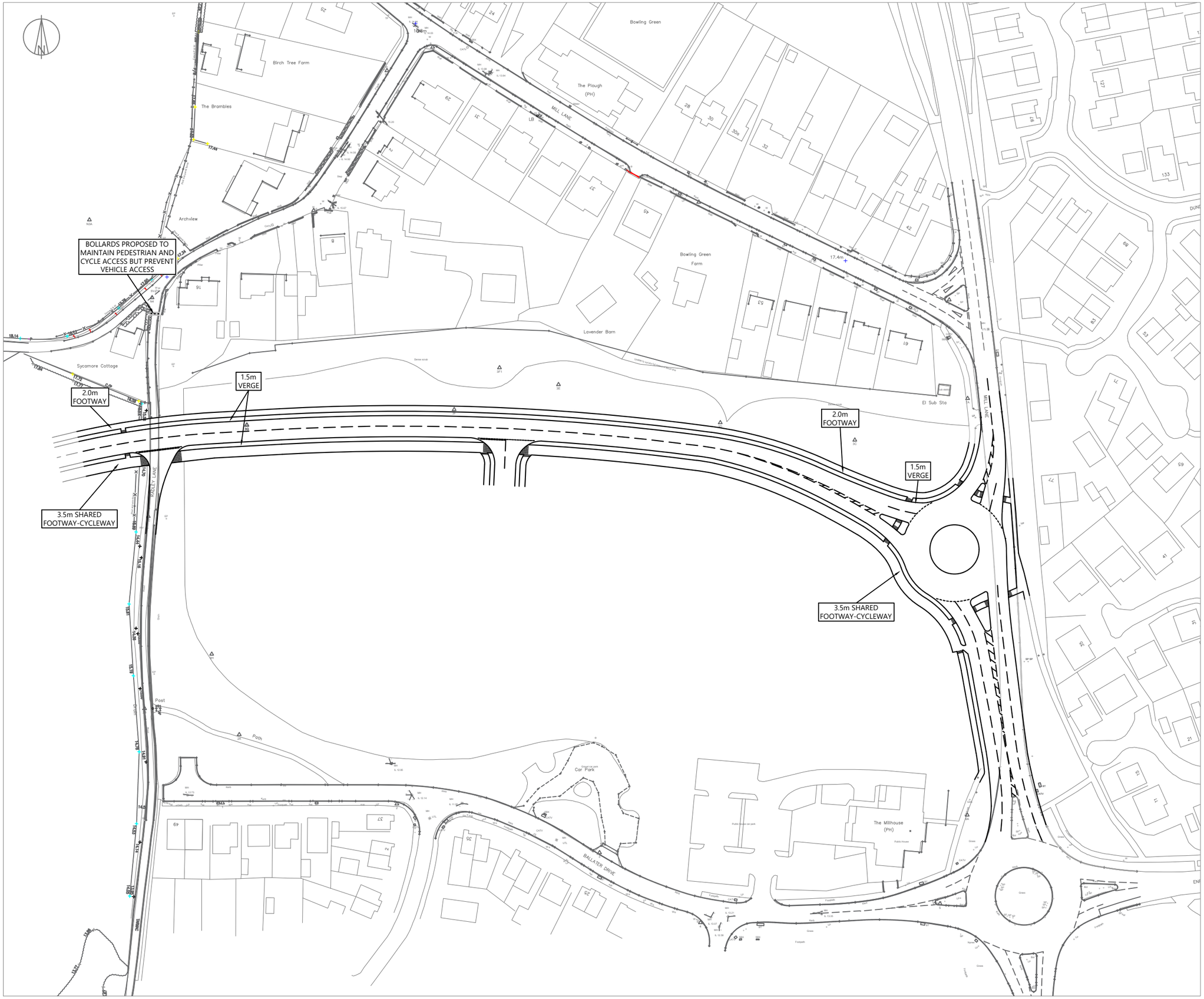


NOTES:
Drawing based on Powers & Tiltman topographical survey 6297/01 dated 25/07/11 and Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.



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TITLE:

PROPOSED MAIN SITE ACCESS AT BLACKBROOK AVENUE

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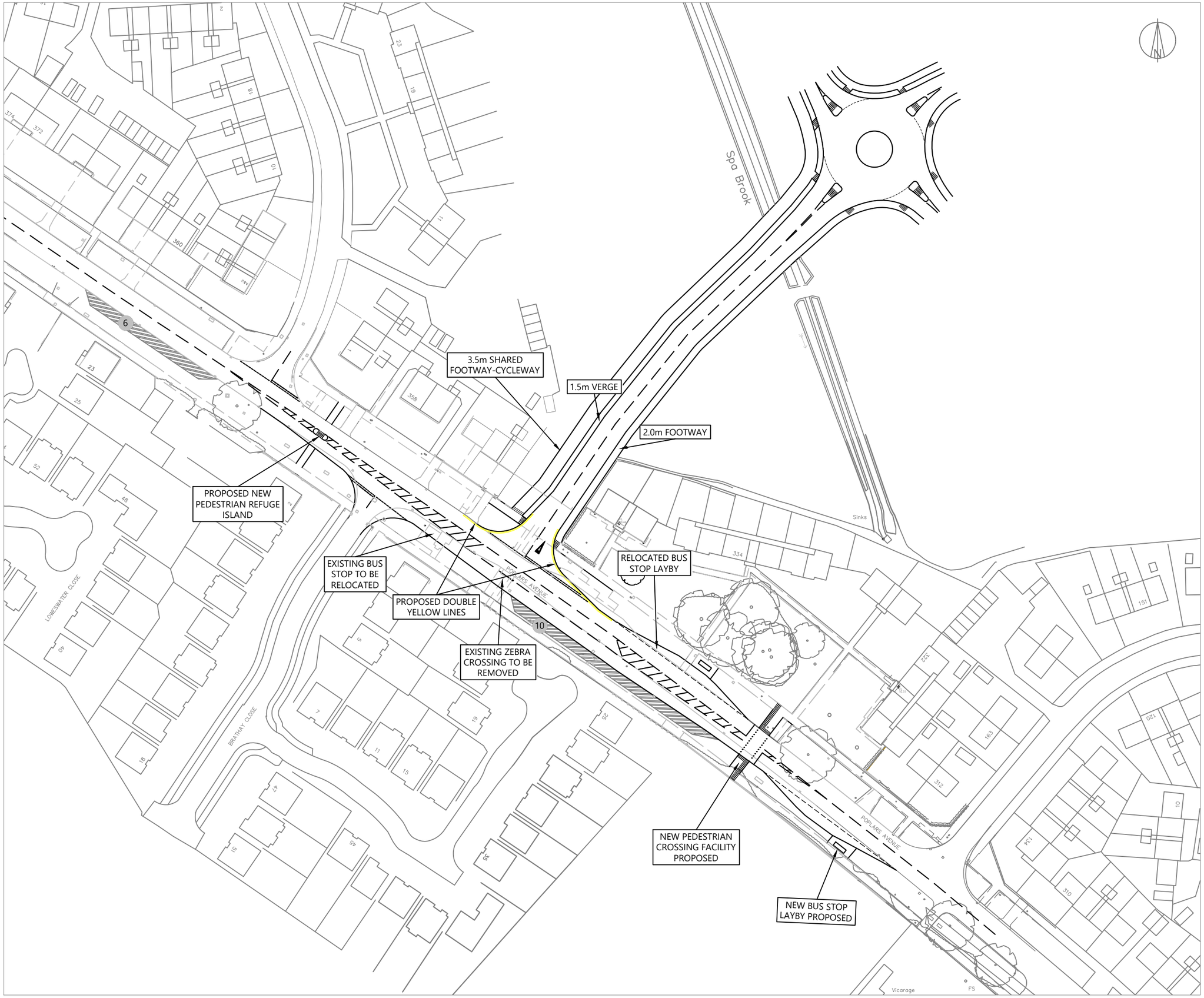


NOTES:

Drawing based on Appletons plan 140367-B-001G dated January 2016.



KEY:

Parking Areas (number of cars that can be accommodated) 6

| ISSUE | REASON FOR REVISION | DATE |
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TITLE:

PROPOSED ACCESS FROM POPLARS AVENUE TO RESIDENTIAL LAND AND LOCAL CENTRE

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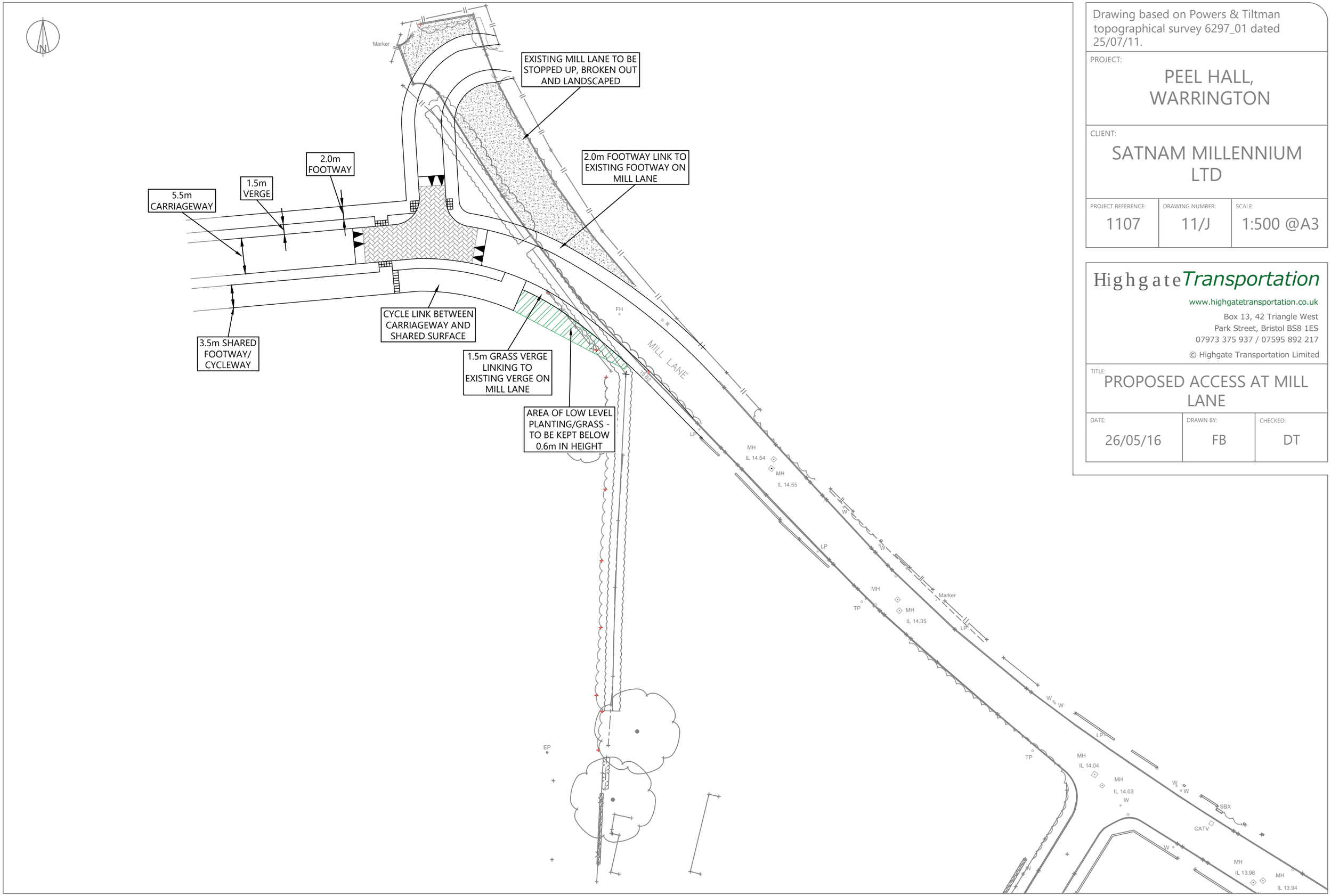


Drawing based on Powers & Tiltman topographical survey 6297_01 dated 25/07/11.

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PEEL HALL, WARRINGTON

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TITLE:

PROPOSED ACCESS AT MILL LANE

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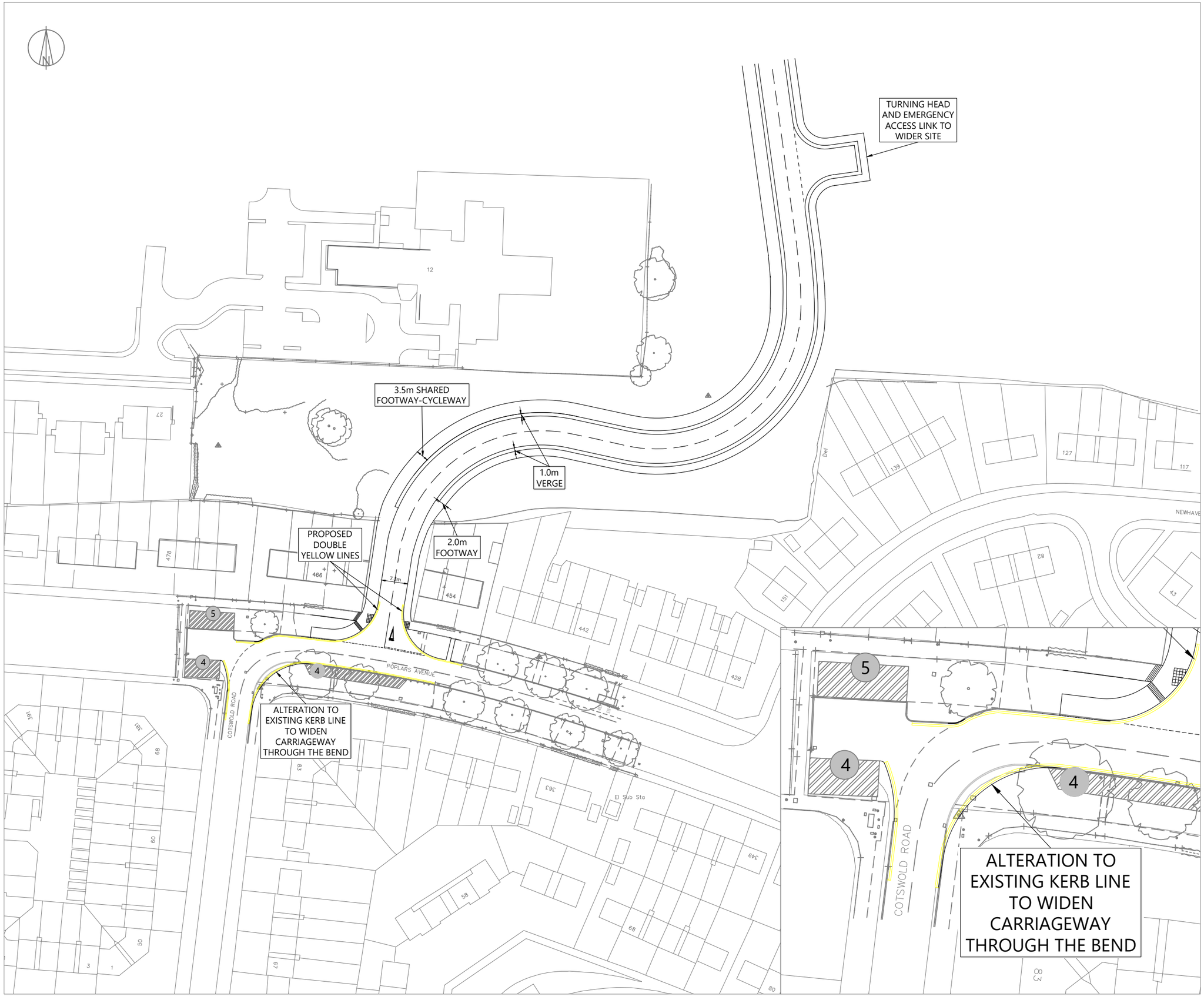


NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.



KEY:

Parking Areas (number of cars that can be accommodated) 6

| ISSUE | REASON FOR REVISION | DATE |
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PROJECT:

PEEL HALL, WARRINGTON

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TITLE:

PROPOSED ACCESS TO EMPLOYMENT LAND AT POPLARS AVENUE

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NOTES:

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PROJECT:

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CLIENT:

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TITLE:

PROPOSED ACCESS TO RESIDENTIAL LAND AT BIRCH AVENUE

| DATE: | DRAWN BY: | CHECKED: |
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| 26/05/16 | FB | DT |


NOTES:

Drawing based on Appleton's plan Survey 2/2 drawing number 1820/02 dated January 2012.



| ISSUE | REASON FOR REVISION | DATE |
|---|---|---|
| | | |

PROJECT:

# PEEL HALL, WARRINGTON

CLIENT:

## SATNAM MILLENNIUM LTD

| PROJECT REFERENCE: | DRAWING NUMBER: | SCALE: |
|---|---|---|
| 1107 | 30/E | 1:500 @ A4 |

HighgateTransportation

www.highgatetransportation.co.uk

Box 13, 42 Triangle West
Park Street, Bristol BS8 1ES
07973 375 937 / 07595 892 217



TITLE:

PROPOSED ACCESS TO SPORTS FACILITIES AT GRASMERE AVENUE

| DATE: | DRAWN BY: | CHECKED: |
|---|---|---|
| 26/05/16 | FB | DT |

networkwarrington
warrington's local bus company

# LATER PHASES

## Post - Spine Road


NOTES:
Reproduced from Appletons Peel Hall Indicative Landscape Components Plan (Rev.M).

KEY:

Existing PRoW

Proposed Pedestrian Links

Proposed Shared Footway/Cycleway

| ISSUE | REASON FOR REVISION | DATE |
|---|---|---|

PROJECT:
PEEL HALL, WARRINGTON

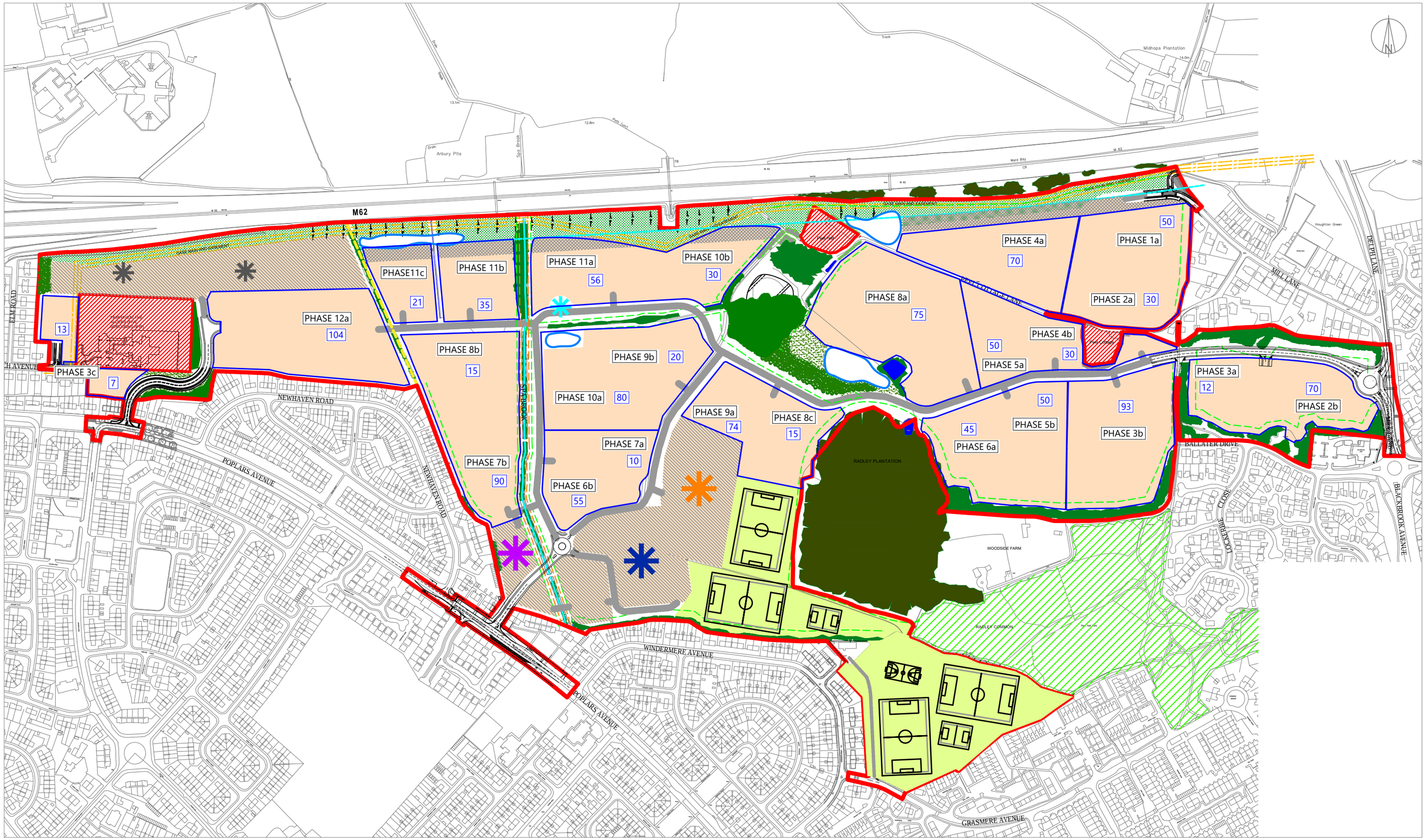
CLIENT:
SATNAM MILLENNIUM LTD

| PROJECT REFERENCE: | DRAWING NUMBER: | SCALE: |
|---|---|---|
| 1107 | ES T8 | NOT TO SCALE |

HighgateTransportation
www.highgatetransportation.co.uk
Box 13, 42 Triangle West
Park Street, Bristol BS8 1ES
07973 375 937 / 07595 892 217


TITLE:
ILLUSTRATIVE PLAN SHOWING PROPOSED PEDESTRIAN AND CYCLE LINKAGES

| DATE: | DRAWN BY: | CHECKED: |
|---|---|---|
| 28/06/16 | FB | DT |




NOTES:
Reproduced from Appletons Peel Hall Parameters Plan (Rev.W).
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KEY:
Indicative Phase Numbering — PHASE 8b
Indicative Number of units Completed at Year End — 12

**Phasing subject to detailed phasing plan to be submitted at Reserved Matters stage**

| ISSUE | REASON FOR REVISION | DATE |
|---|---|---|
| | | |

| DATE: | DRAWN BY: | CHECKED: |
|---|---|---|
| 28/06/16 | FB | FB |

PROJECT: PEEL HALL, WARRINGTON

CLIENT: SATNAM MILLENNIUM LTD

TITLE: INDICATIVE PHASING PLAN

| PROJECT REFERENCE: | DRAWING NUMBER: | SCALE: |
|---|---|---|
| 1107 | 27/B | NOT TO SCALE |

HighgateTransportation
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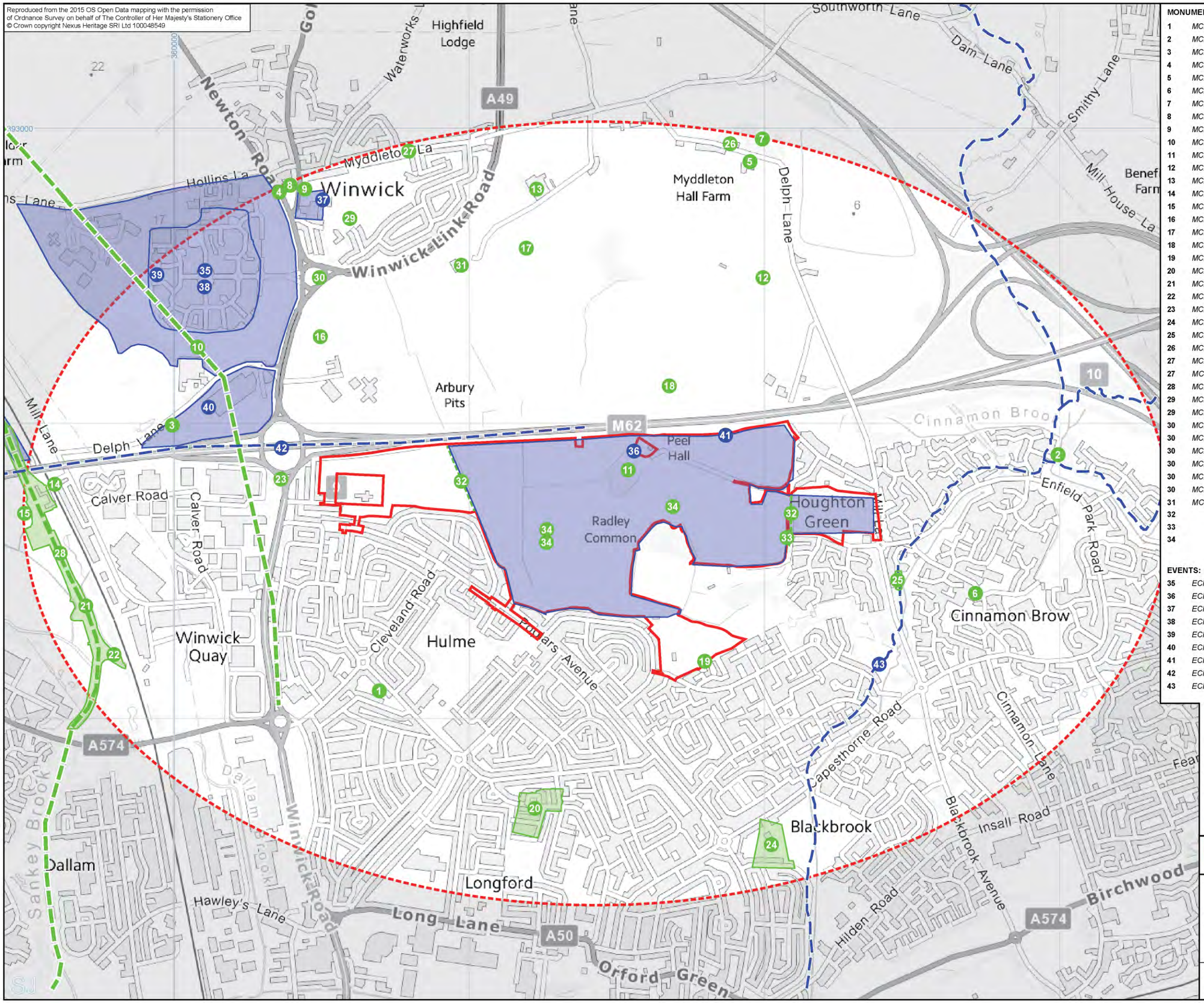
Box 13, 42 Triangle West
Park Street, Bristol BS8 1ES
07973 375 937 / 07595 892 217

# ARC 1-20

## CULTURAL, HERITAGE AND ARCHAEOLOGY




**MONUMENTS:**

| | | |
|---|---|---|
| 1 | *MCH8505* | Throstle Nest Farm, Longford |
| 2 | *MCH8506* | Prehistoric arrowhead |
| 3 | *MCH8508* | Battle of Maserfelth |
| 4 | *MCH8510* | Medieval pot |
| 5 | *MCH8530* | Myddleton Hall Farmhouse |
| 6 | *MCH8531* | 17th century barn at Cinnamon Lane |
| 7 | *MCH8555* | Myddleton Hall |
| 8 | *MCH8620* | Part of Saxon cross |
| 9 | *MCH8622* | Church House Farmhouse |
| 10 | *MCH8653* | Roman road - Wigan to Wilderspool section |
| 11 | *MCH8680* | Peel Hall, Winwick |
| 12 | *MCH8682* | Middleton |
| 13 | *MCH8716* | Arbury Farmhouse |
| 14 | *MCH8840* | St.Helens Canal/Sankey Navigation - Winwick Quay |
| 15 | *MCH8841* | St.Helens Canal/Sankey Navigation - Swing Bridge |
| 16 | *MCH8900* | A49 Junction |
| 17 | *MCH8901* | Cropmark at Arbury |
| 18 | *MCH9611* | Midhops Farm |
| 19 | *MCH9865* | Royal Observer Corps Monitoring Post in Warrington |
| 20 | *MCH10134* | Orford Tannery |
| 21 | *MCH10529* | St.Helens Canal/Sankey Navigation - Hulme Lock |
| 22 | *MCH10530* | St.Helens Canal/Sankey Navigation - Sankey Brook |
| 23 | *MCH10697* | Blacksmiths Workshop, Newton Road |
| 24 | *MCH10698* | Brickfield, Capesthorne Road |
| 25 | *MCH10699* | Houghton Mill |
| 26 | *MCH12500* | Mound SW of Myddleton Hall, Winwick |
| 27 | *MCH12800* | Portable Antiquity Scheme (PAS) Findspot |
| 27 | *MCH13025* | Portable Antiquity Scheme (PAS) Findspot |
| 28 | *MCH8842* | St.Helens Canal/Sankey Navigation |
| 29 | *MCH21362* | Portable Antiquity Scheme (PAS) Findspot |
| 29 | *MCH21374 - 375* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22658 - 659* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22667 - 668* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22685 - 709* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22711 - 719* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22721 - 724* | Portable Antiquity Scheme (PAS) Findspot |
| 30 | *MCH22726 - 737* | Portable Antiquity Scheme (PAS) Findspot |
| 31 | *MCH22738* | Portable Antiquity Scheme (PAS) Findspot |
| 32 | | Trackway (Shown on 1840 Tithe Map) |
| 33 | | Cottage and Garden (Shown on 1840 Tithe Map) |
| 34 | | Ponds / Marl pit / Turbary pit (Shown on 1840 Tithe Map) |

**EVENTS:**

| | | |
|---|---|---|
| 35 | *ECH3812* | Winwick Hospital (Watching Brief) |
| 36 | *ECH3799* | Peel Hall, Warrington (Desk-based Assessment) |
| 37 | *ECH3783* | The Swan Public House (Watching Brief) |
| 38 | *ECH3785* | Winwick Hospital (Evaluation) |
| 39 | *ECH3754* | Hollins Park Hospital, Winwick (Desk-based Assessment) |
| 40 | *ECH3720* | Delph Lane, Winwick Quay (Desk-based Assessment) |
| 41 | *ECH3873* | Peel Hall, Warrington (Evaluation) |
| 42 | *ECH3655* | M62 Junction 8 and Junctions 8-9 widening (Watching Brief) |
| 43 | *ECH3892* | Mersey Bollin Catchment: Rapid Archaeological Survey |

Site
Assessment Area
Archaeological Monument
Archaeological Event

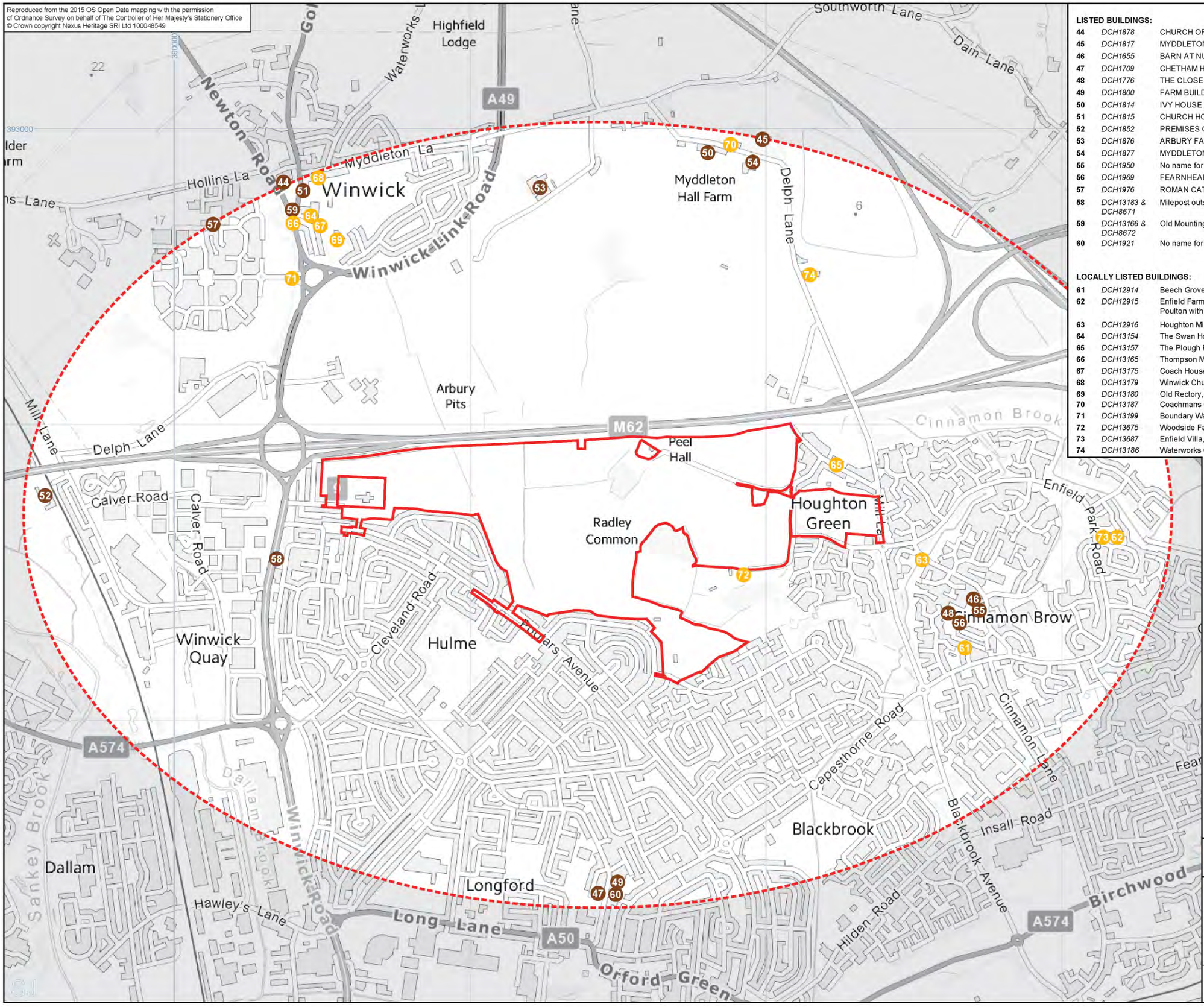
0 200 m

NEXUS HERITAGE

*TITLE:*
**Land at Peel Hall, Warrington, Cheshire**

*DRAWING TITLE:*
*Location of Archaeological Monuments and Events*

| *DATE:* | *DRAWN BY:* | *APPENDIX No:* |
|---|---|---|
| 04/07/16 | ECMG | **50** |




**LISTED BUILDINGS:**

| | | |
|---|---|---|
| 44 | *DCH1878* | CHURCH OF ST OSWALD (Grade I) |
| 45 | *DCH1817* | MYDDLETON HALL (Grade II*) |
| 46 | *DCH1655* | BARN AT NUMBER 103 (TO NORTH) (Grade II) |
| 47 | *DCH1709* | CHETHAM HOUSE ENTRANCE GATES AND GATE PIERS (Grade II) |
| 48 | *DCH1776* | THE CLOSE (Grade II) |
| 49 | *DCH1800* | FARM BUILDING TO NORTH OF NOS 57A AND 59 (De-Listed) |
| 50 | *DCH1814* | IVY HOUSE (Grade II) |
| 51 | *DCH1815* | CHURCH HOUSE FARMHOUSE (Grade II) |
| 52 | *DCH1852* | PREMISES OF GORDAN SHEDS (Grade II) |
| 53 | *DCH1876* | ARBURY FARMHOUSE (Grade II) |
| 54 | *DCH1877* | MYDDLETON HALL FARMHOUSE (Grade II) |
| 55 | *DCH1950* | No name for this Entry (Grade II) |
| 56 | *DCH1969* | FEARNHEAD HOUSE (Grade II) |
| 57 | *DCH1976* | ROMAN CATHOLIC CHURCH AT WINWICK PSYCHIATRIC HOSPITAL (Grade II) |
| 58 | *DCH13183 & DCH8671* | Milepost outside No.87, Winwick Road, Winwick (Grade II) |
| 59 | *DCH13166 & DCH8672* | Old Mounting block outside St.Oswalds Church, Newton Road, Winwick (Grade II) |
| 60 | *DCH1921* | No name for this Entry (De-Listed) |

**LOCALLY LISTED BUILDINGS:**

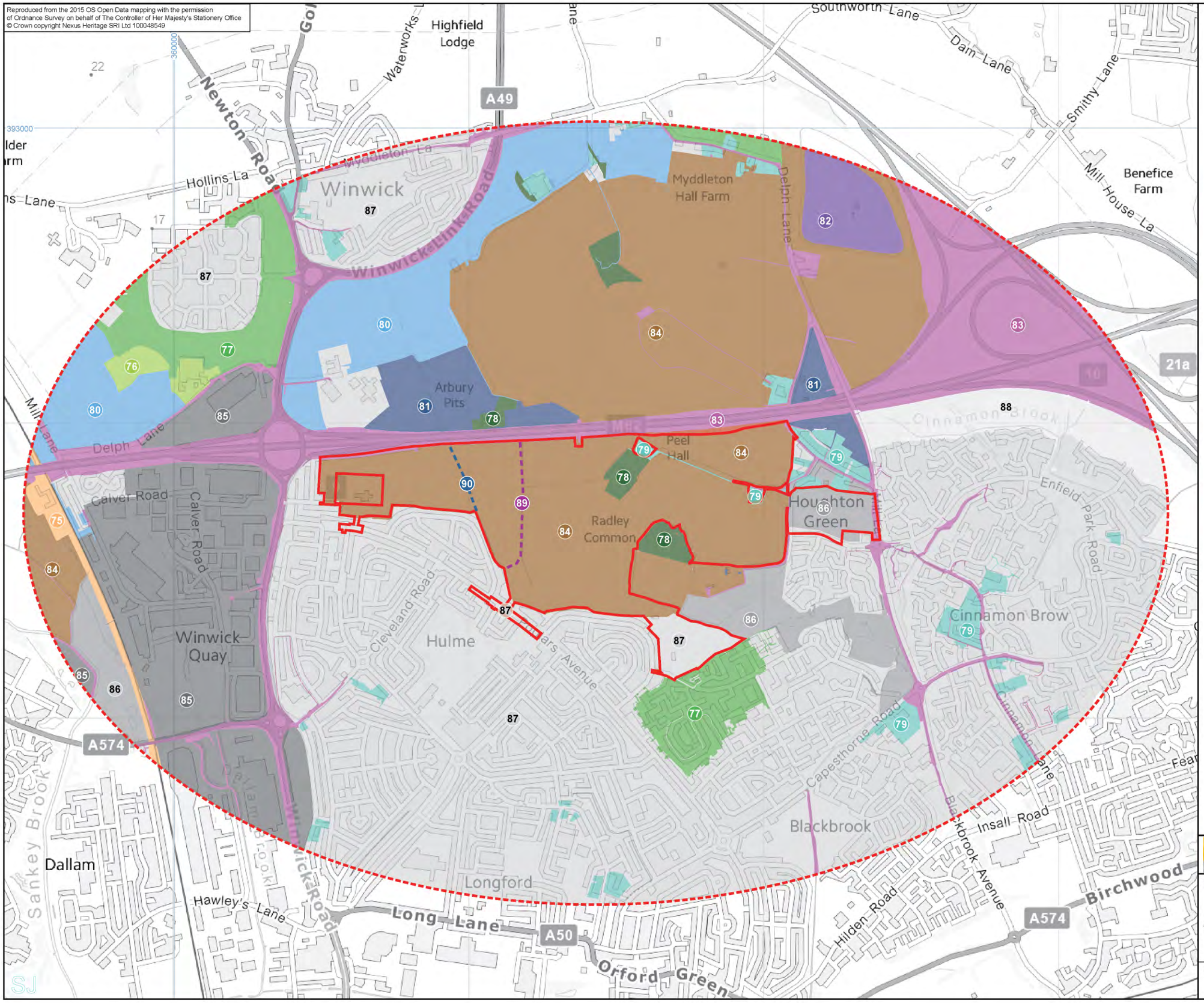
| | | |
|---|---|---|
| 61 | *DCH12914* | Beech Grove House and Grove House, Newton Grove, Poulton with Fearnhead |
| 62 | *DCH12915* | Enfield Farmhouse, Enfield Cottage and Adjoining Barn, St Andrew's Close, Poulton with Fearnhead |
| 63 | *DCH12916* | Houghton Mill Bridge, Cinnamon Lane North, Cinnamon Brow |
| 64 | *DCH13154* | The Swan Hotel, Golborne Road, Winwick |
| 65 | *DCH13157* | The Plough Public House, Mill Lane, Winwick |
| 66 | *DCH13165* | Thompson Memorial Fountain, Newton Road, Winwick |
| 67 | *DCH13175* | Coach House to the rear of The Swan Hotel, Golborne Road, Winwick |
| 68 | *DCH13179* | Winwick Church of England Primary School (part), Myddleton Lane, Winwick |
| 69 | *DCH13180* | Old Rectory, Rectory Lane, Winwick |
| 70 | *DCH13187* | Coachmans Cottage, Delph Lane, Winwick |
| 71 | *DCH13199* | Boundary Walls and Gate Piers to Winwick Park, Winwick Road, Winwick |
| 72 | *DCH13675* | Woodside Farm, Radley Lane, Winwick |
| 73 | *DCH13687* | Enfield Villa, Tweedsmuir Close, Poulton with Fearnhead |
| 74 | *DCH13186* | Waterworks Cottages, 1 and 2, Delph Lane, Winwick |

NEXUS HERITAGE

*TITLE:*
**Land at Peel Hall, Warrington, Cheshire**

*DRAWING TITLE:*
*Location of Listed Buildings and Locally Listed Buildings*

| *DATE:* | *DRAWN BY:* | *APPENDIX No:* |
|---|---|---|
| 04/07/16 | ECMG | **51** |




NEXUS HERITAGE

TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Location of Historic Landscape Character (HLC) Parcels*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **52** |

N

ASHTON-IN-MAKERFIELD
GOLBORNE
HAYDOCK
ST HELENS
NEWTON-LE-WILLOWS
355000
390000

93 Landscape associated with the former Pilkington Headquarters Complex (Registered Park/Garden - Grade II)

Bowl Barrow West of Highfield Lane (DCH387 / SAM No. 1011124) 91

94 WA Winwick Street Conservation Area


Site Area
0 Scheduled Ancient Monument
0 Registered Battlefield
0 Registered Parks and Gardens
0 Conservation Area
0 UNESCO World Heritage Site

0 5 km

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Location of Scheduled Ancient Monuments, Conservation Areas, Registered Battlefields, Registered Parks and Gardens and UNESCO*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | 53 |


Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Bowen's Map, 1753*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **54** |

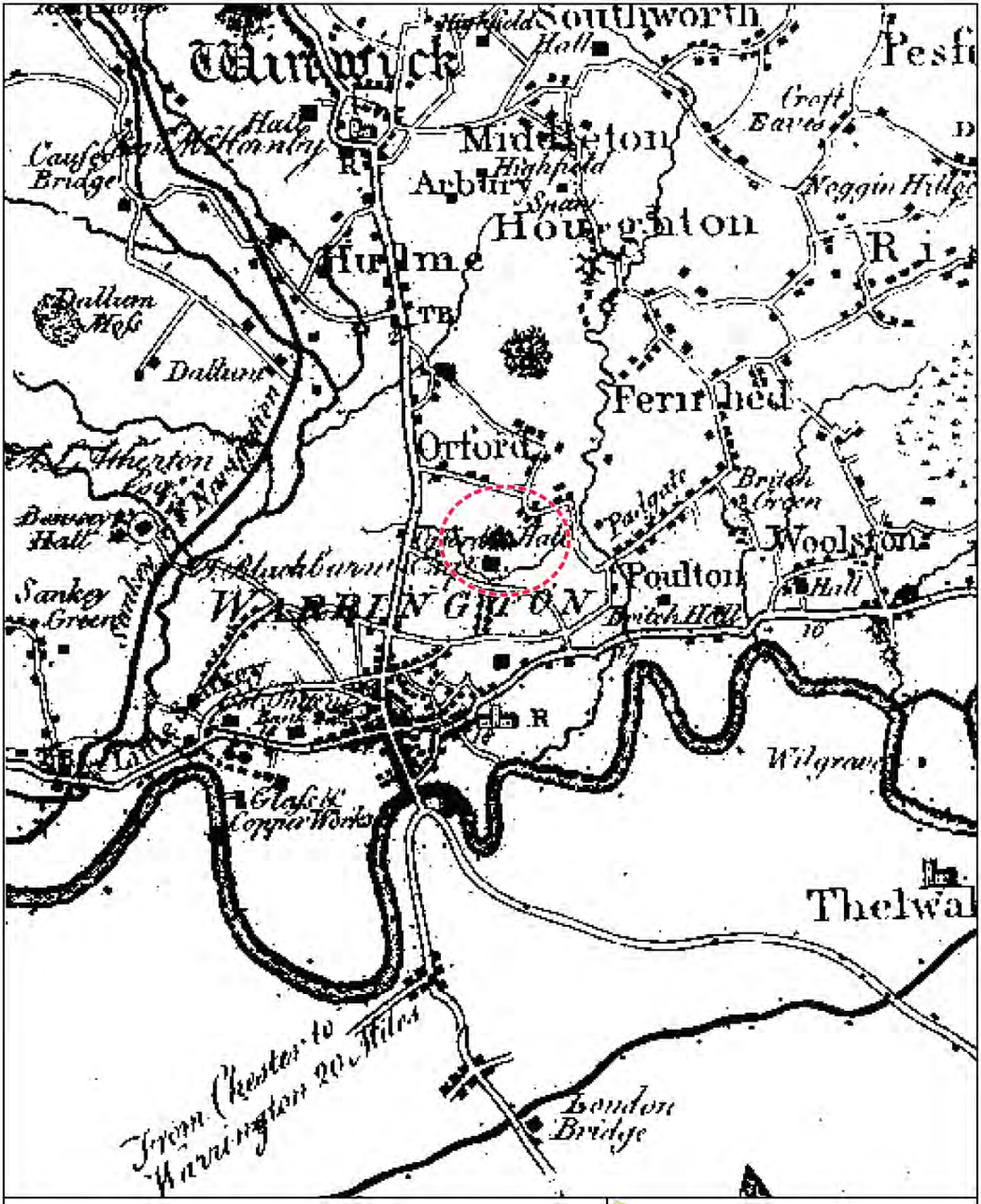

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Burdett's Map, 1777*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **55** |




Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Yates' Map of Lancashire, 1786*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **56** |

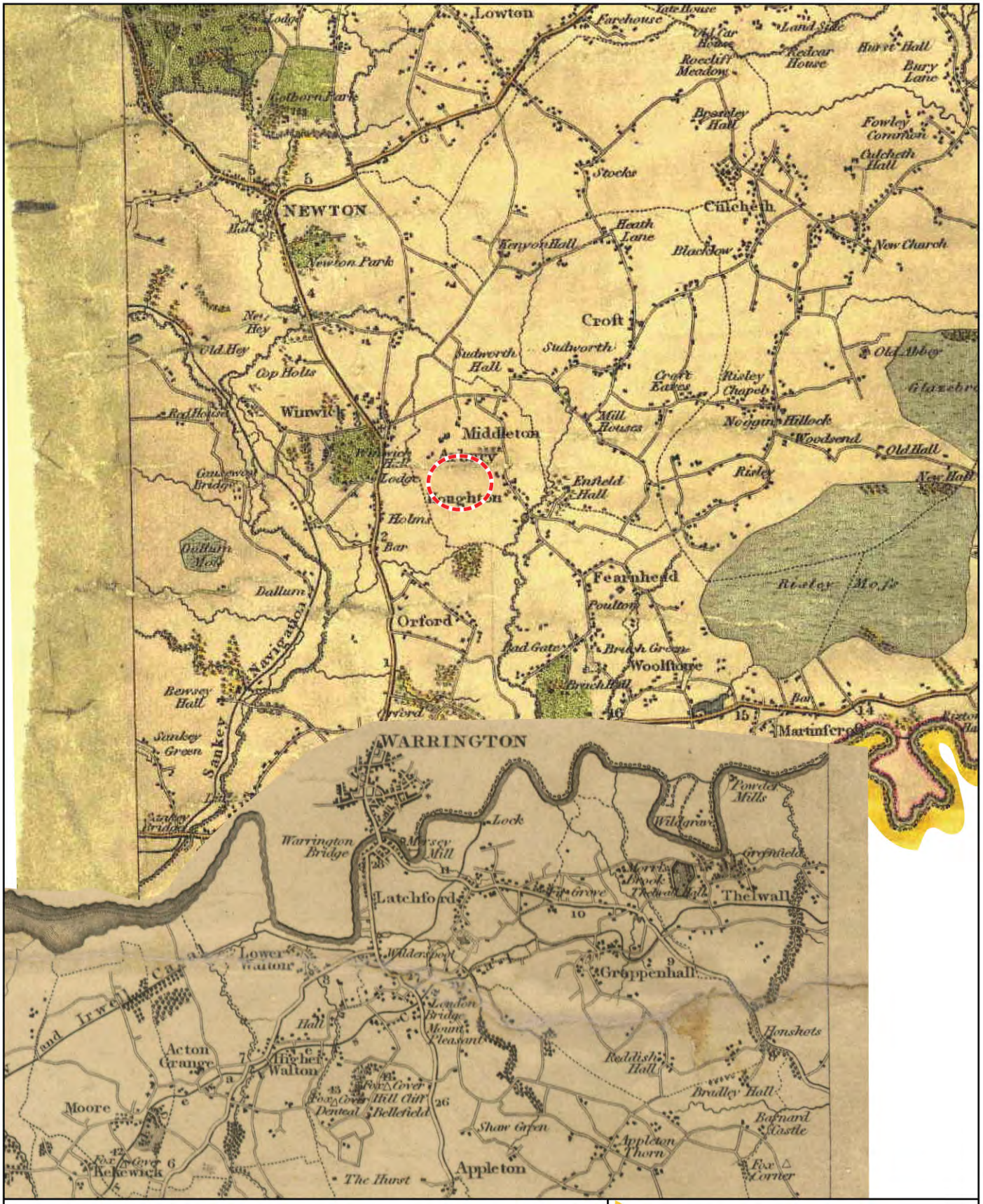

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Cary's Map, 1789*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **57** |



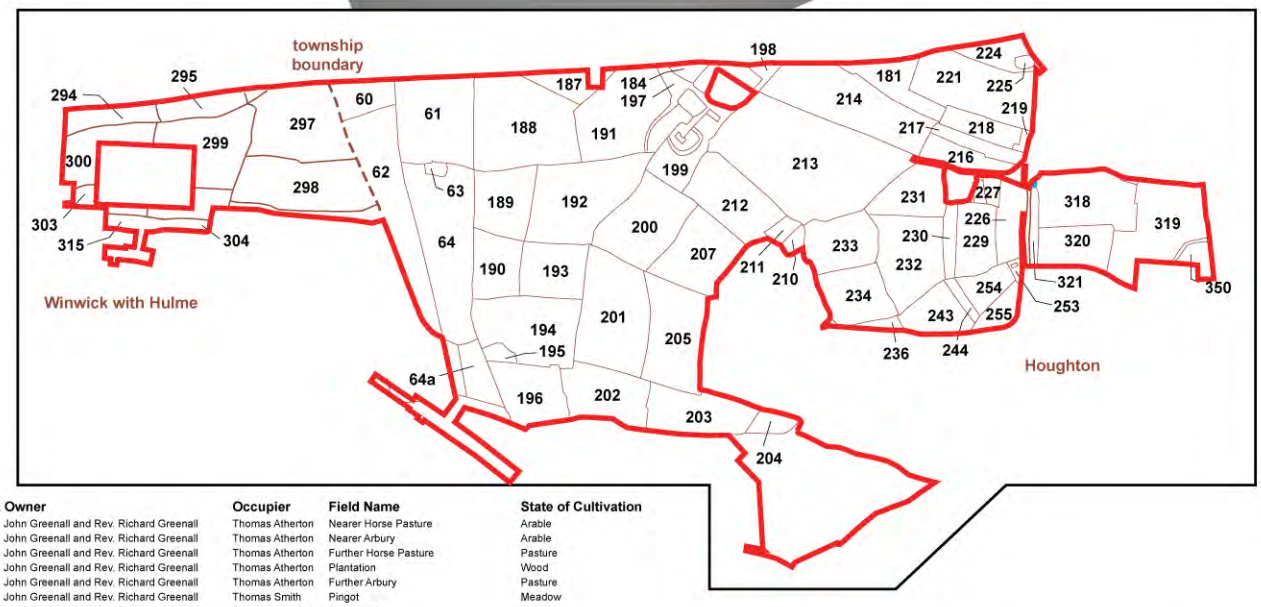

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Greenwood's Map, 1818*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **58** |




| Field No. | Owner | Occupier | Field Name | State of Cultivation |
|---|---|---|---|---|
| 60 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Nearer Horse Pasture | Arable |
| 61 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Nearer Arbury | Arable |
| 62 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Further Horse Pasture | Pasture |
| 63 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Plantation | Wood |
| 64 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Further Arbury | Pasture |
| 64a | John Greenall and Rev. Richard Greenall | Thomas Smith | Pingot | Meadow |
| 181 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Town Field | Arable |
| 184 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Plantation | Wood |
| 187 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Four Acres | Meadow |
| 188 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Stubble Field | Arable |
| 189 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Nearer Wheat Field | Pasture |
| 190 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Further Wheat Field | Pasture |
| 191 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Kitchen Meadow | Arable |
| 192 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Great Warrington Field | Arable |
| 193 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Warrington Field | Arable |
| 194 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Reedy Field | Arable |
| 195 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Plantation and Pits | Wood |
| 196 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Brook Field | Arable |
| 197 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Lane | |
| 198 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Lane | |
| 198a | John Greenall and Rev. Richard Greenall | Thomas Atherton | Barn Croft | Arable |
| 198b | John Greenall and Rev. Richard Greenall | Thomas Atherton | Saw Pit Meadow | Arable |
| 199 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Plantation | Wood |
| 200 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Nearer Hop Yard | Pasture |
| 201 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Cave Pit Field | Arable |
| 202 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Cabin Field | Arable |
| 203 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Large Stockley | Pasture |
| 204 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Little Stockley | Pasture |
| 205 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Peters Common | Arable |
| 207 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Further Hop Yard | Pasture |
| 210 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Croft adj. Platt's Field | Basket Willows |
| 211 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Part of Platt's Field | Basket Willows |
| 212 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Hyde Park | Pasture |
| 213 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Platt's Field | Arable |
| 214 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Haltstead | Meadow |
| 216 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Black Croft | Meadow |
| 217 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Lowes Croft | Arable |
| 218 | John Greenall and Rev. Richard Greenall | Thomas Atherton | Barn Croft | Arable |
| 219 | John Greenall and Rev. Richard Greenall | James Grice | Cottage, Garden and Barn Croft | Arable |
| 221 | John Greenall and Rev. Richard Greenall | George Wood | Birch Tree Farm | Meadow |
| 224 | John Greenall and Rev. Richard Greenall | George Wood | Well Meadow | Meadow |
| 225 | John Greenall and Rev. Richard Greenall | Thomas Pomphrett | Cottage and Garden | Arable |
| 226 | John Greenall and Rev. Richard Greenall | Thomas Smith | Simms Croft | Meadow |
| 227 | John Greenall and Rev. Richard Greenall | John Taylor | Cottage, Garden and Croft | Arable |
| 229 | John Greenall and Rev. Richard Greenall | Thomas Smith | Coopers Land | Arable |
| 230 | John Greenall and Rev. Richard Greenall | Thomas Smith | Coopers Land | Arable |
| 231 | John Greenall and Rev. Richard Greenall | Thomas Smith | Higher Bank Croft | Meadow |
| 232 | John Greenall and Rev. Richard Greenall | Thomas Smith | Lower Bank Croft | Arable |
| 233 | John Greenall and Rev. Richard Greenall | Thomas Smith | Further Field | Meadow |
| 234 | John Greenall and Rev. Richard Greenall | Thomas Smith | Nearer Field | Arable |
| 236 | John Greenall and Rev. Richard Greenall | Thomas Smith | Long Croft | Arable |
| 243 | John Greenall and Rev. Richard Greenall | Thomas Smith | Therwell's Croft | Pasture |
| 244 | John Greenall and Rev. Richard Greenall | Thomas Smith | Plantation | Wood |
| 253 | James Barrett | Ann Halton | Cottage and Garden | Arable |
| 254 | James Barrett | Ann Halton | Intake | Arable |
| 255 | James Barrett | Ann Halton | Croft | Meadow |
| 318 | James Barrett | Elizabeth Taylor | Smith's Croft | Arable |
| 319 | James Barrett | Elizabeth Taylor | Great Meadow | Meadow |
| 320 | James Barrett | Elizabeth Taylor | Great Meadow | Arable |
| 321 | James Barrett | Elizabeth Taylor | Part of Radley Common | Pasture |
| 350 | | | | |

| Field No. | Owner | Occupier | Field Name | State of Cultivation |
|---|---|---|---|---|
| 294 | - | - | - | - |
| 295 | - | - | - | - |
| 297 | illeg | George Aspinall | Further Field | Arable |
| 298 | illeg | George Aspinall | Illeg | Arable |
| 299 | illeg | George Aspinall | Pasture Field | Meadow |
| 300 | illeg | George Aspinall | Little Meadow | Meadow |
| 303 | illeg | George Aspinall | Long Houghtons Wood | Arable |
| 304 | illeg | George Aspinall | Big Houghtons Wood | Arable |
| 306 | illeg | William Warburton | Lane | - |
| 315 | - | - | - | - |

Approximate Site Area

NEXUS HERITAGE

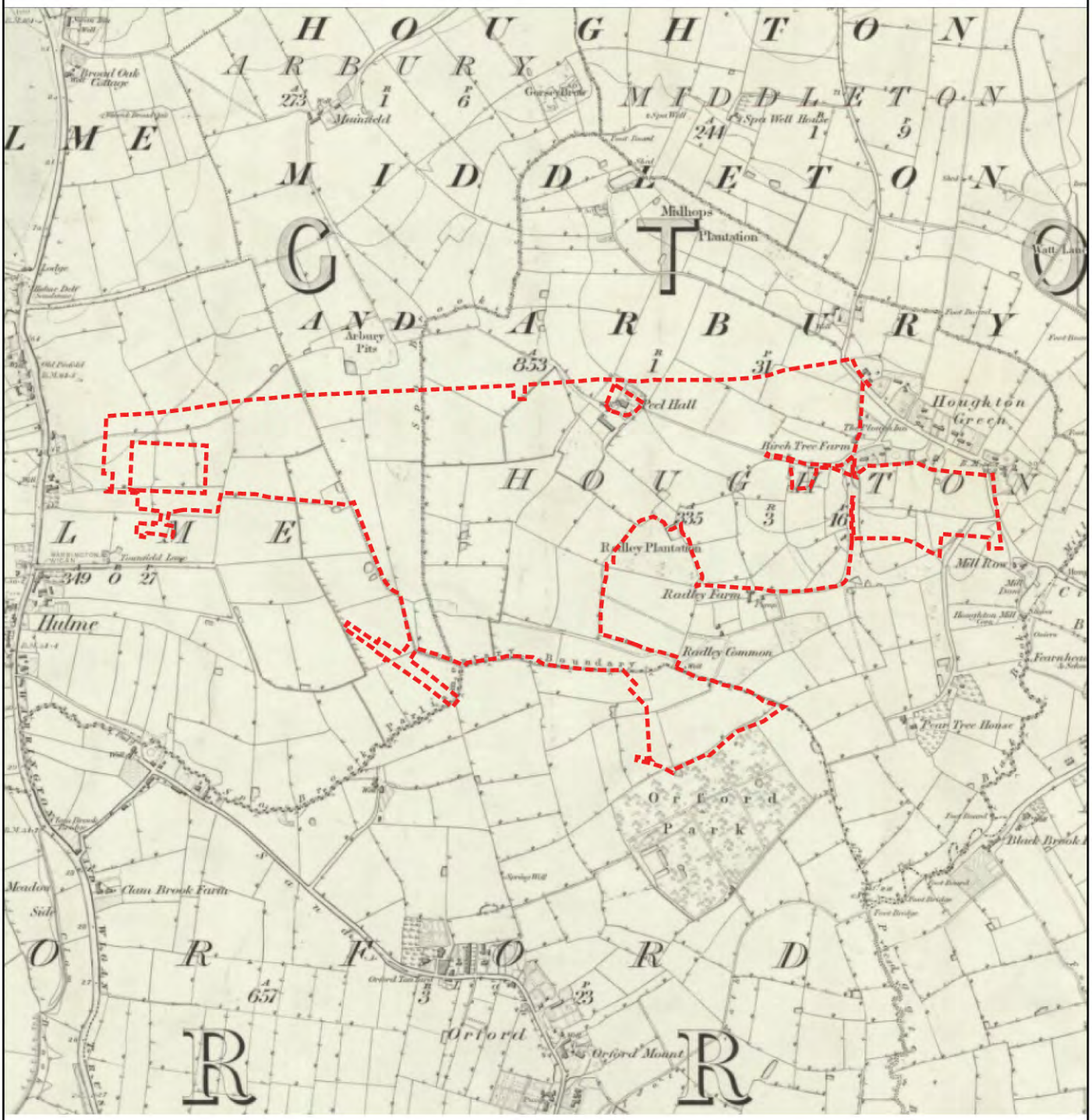
*PROJECT TITLE:*

**Land at Peel Hall, Warrington, Cheshire**

*DRAWING TITLE:*

*Map of the Townships of Middleton, Houghton and Arbury; 1840*

| *DATE:* | *DRAWN BY:* | *APPENDIX No:* |
|---|---|---|
| 04/07/16 | ECMG | **59** |



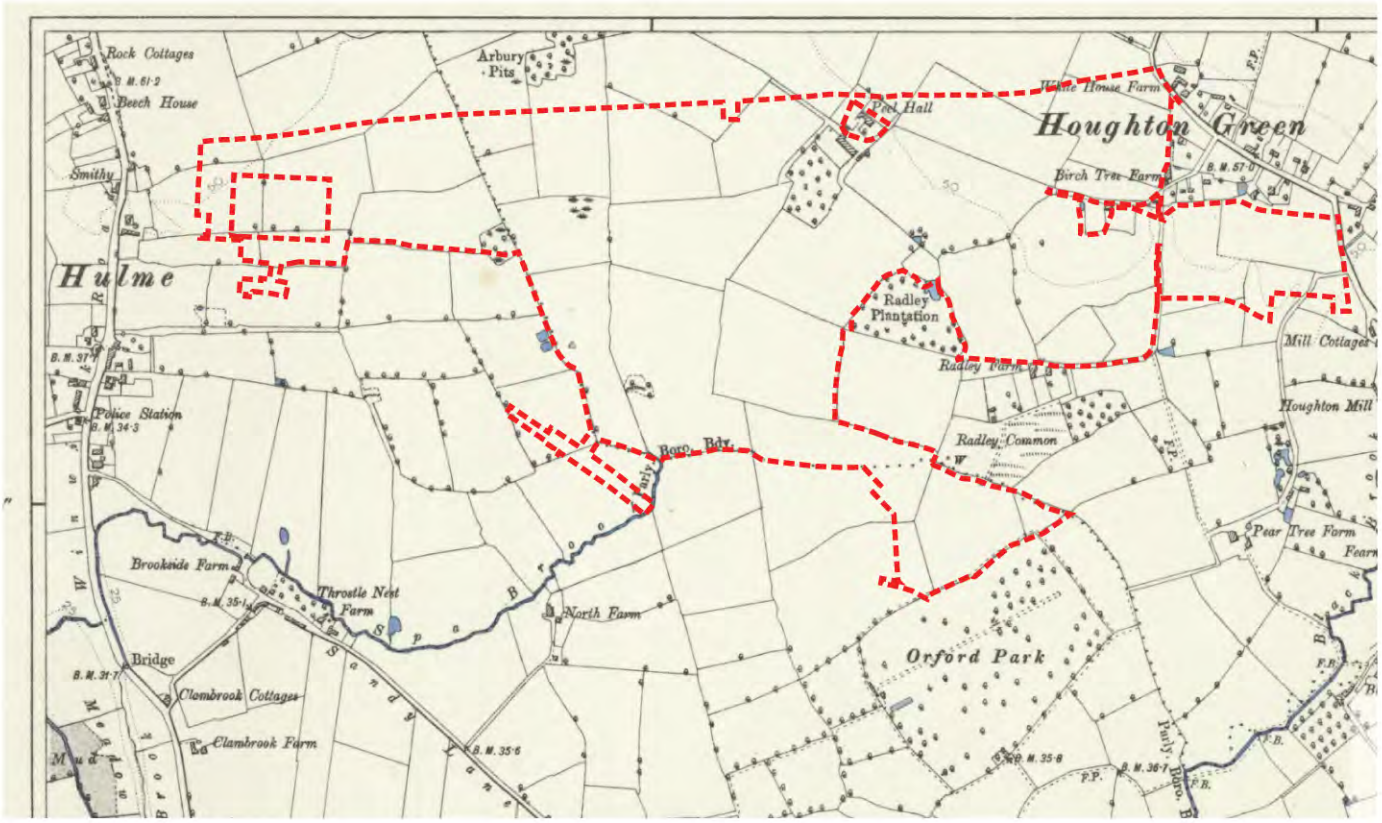

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Ordnance Survey 1:10,560 (6 inches to 1 mile) 1849*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **60** |



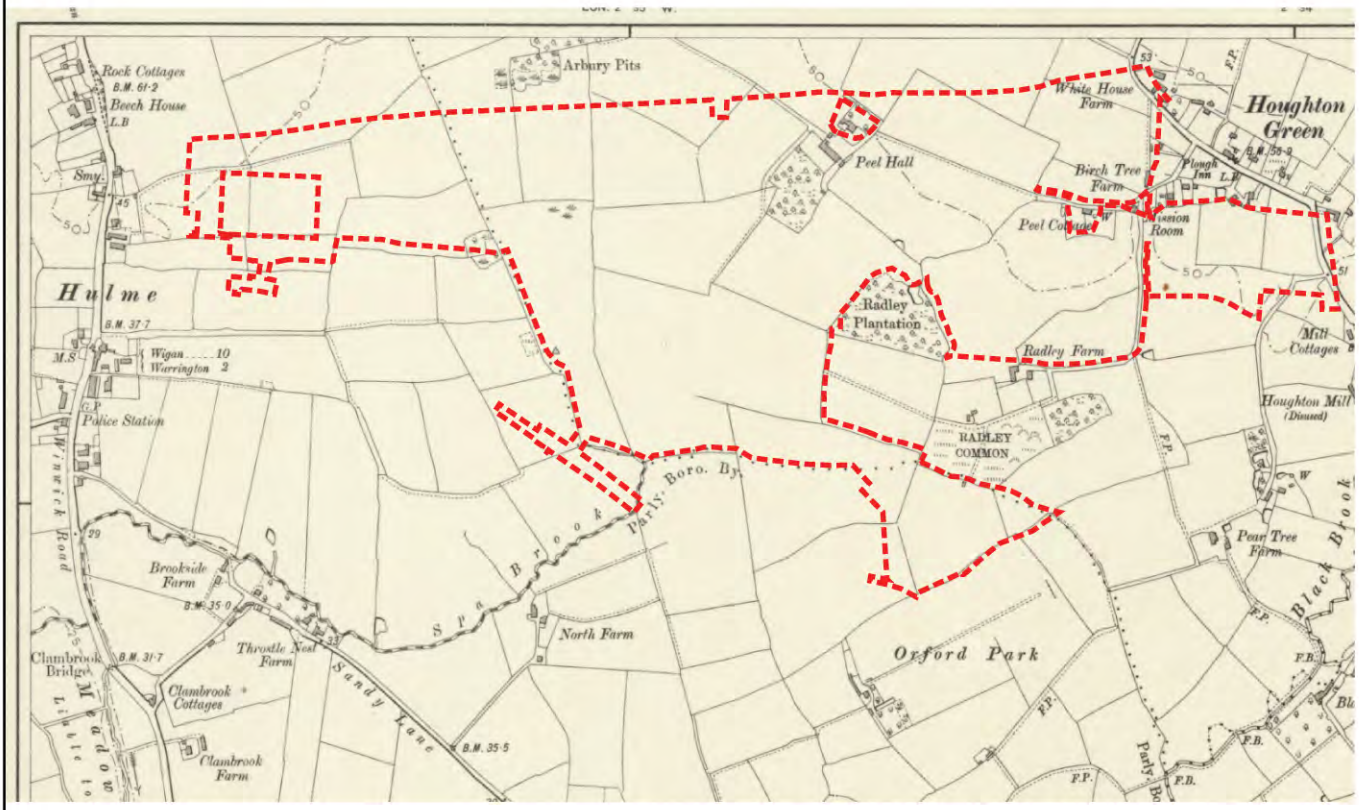

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Ordnance Survey 1:10,560 (6 inches to 1 mile) 1894*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **61** |



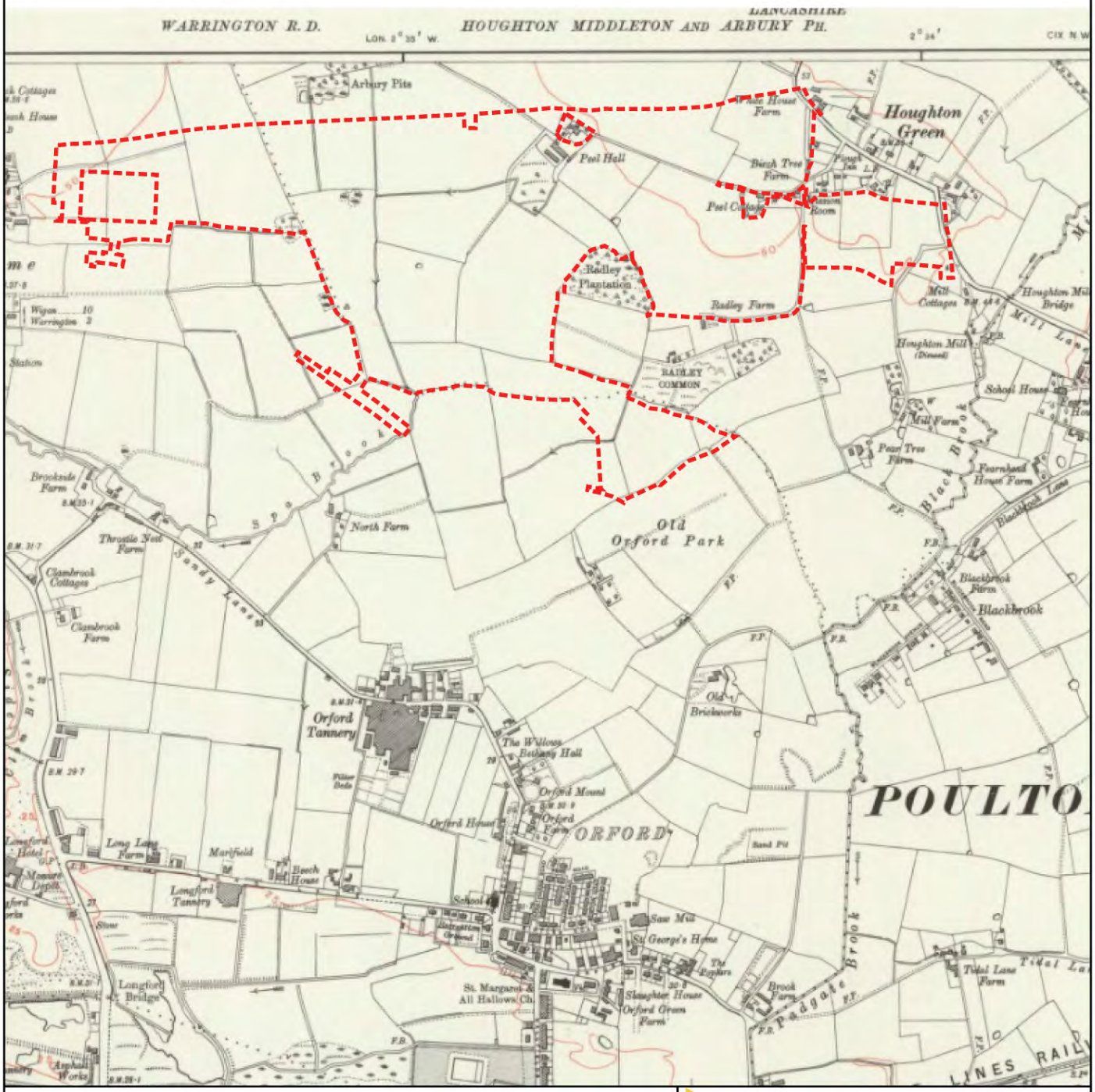

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Ordnance Survey 1:10,560 (6 inches to 1 mile) 1908*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **62** |



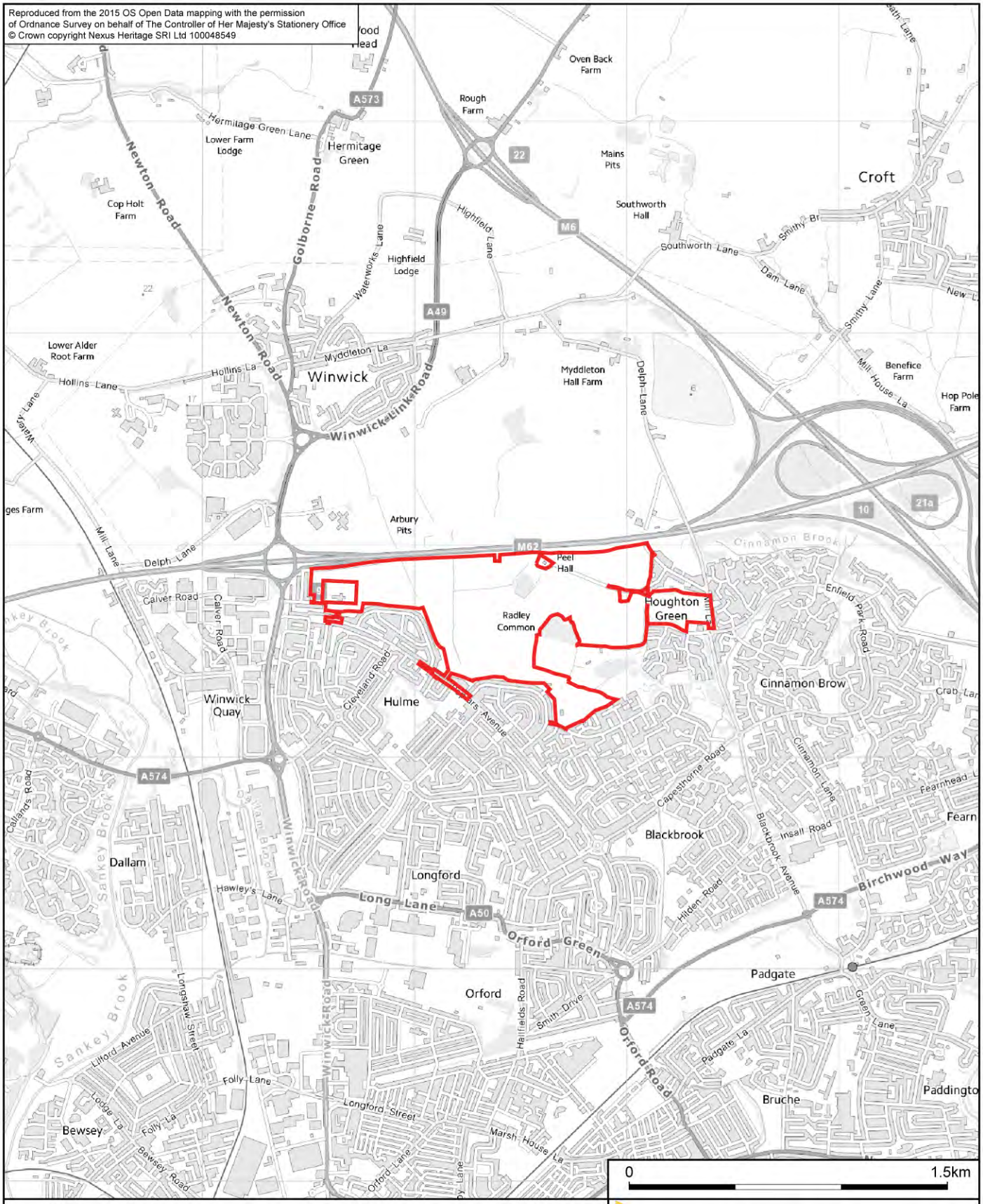

Approximate Site Area

NEXUS HERITAGE

PROJECT TITLE:
**Land at Peel Hall, Warrington, Cheshire**

DRAWING TITLE:
*Ordnance Survey 1:10,560 (6 inches to 1 mile) 1926*

| DATE: | DRAWN BY: | APPENDIX No: |
|---|---|---|
| 04/07/16 | ECMG | **63** |




Site Area

NEXUS HERITAGE

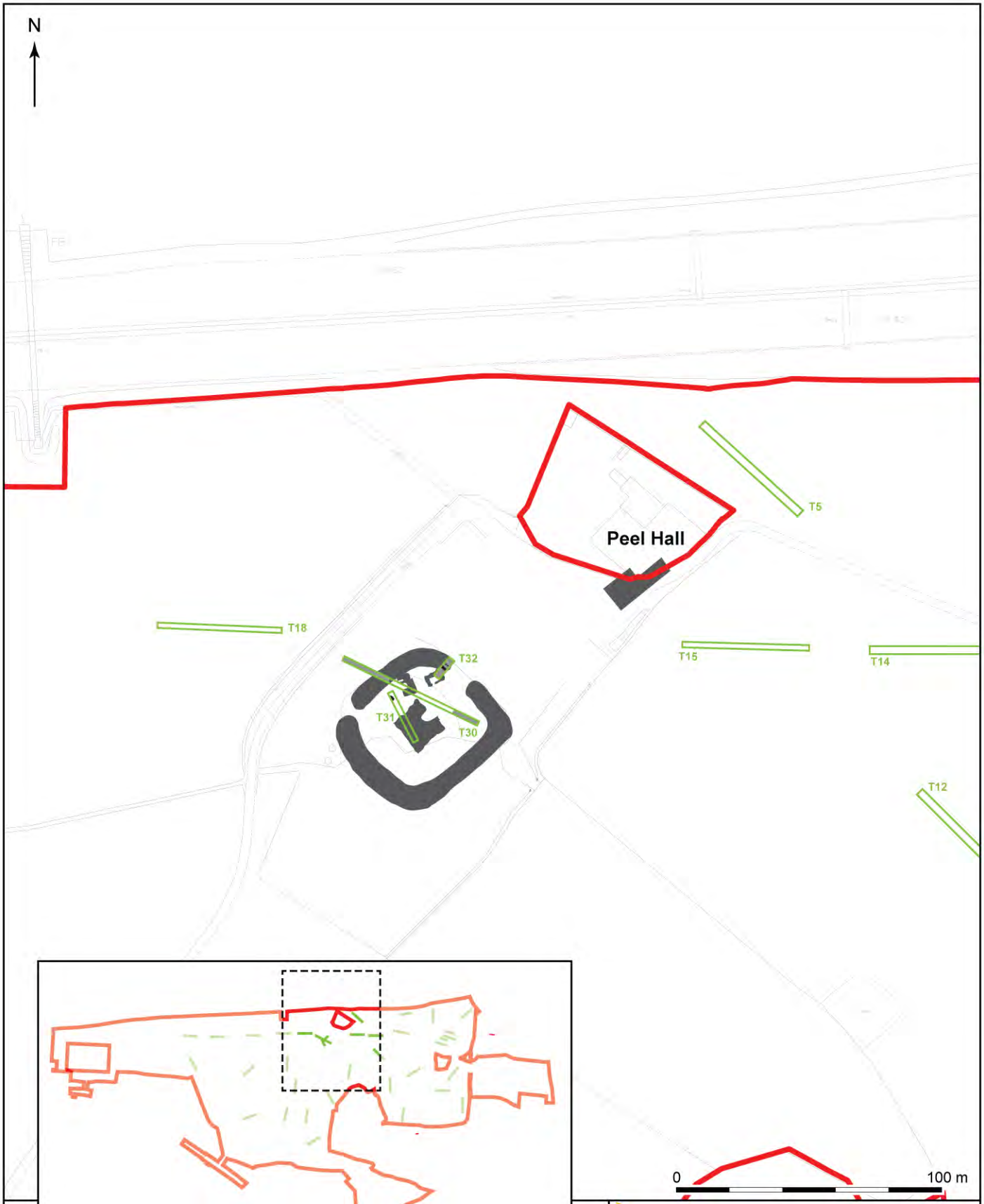
*PROJECT TITLE:*

**Land at Peel Hall, Warrington, Cheshire**

*DRAWING TITLE:*

*Ordnance Survey, 1:10,000, 2015*

| *DATE:* | *DRAWN BY:* | *APPENDIX No:* |
|---|---|---|
| 04/07/16 | ECMG | **64** |




site area

evaluation trench

from Tithe Map

observed sections of moat

other archaeological features

NEXUS HERITAGE

*PROJECT TITLE:*

**Land at Peel Hall, Warrington, Cheshire**

*DRAWING TITLE:*

*Detailed plan of evaluation trenches around Peel Hall Farm 2001 by Lancaster University Archaeology Unit*

| *DATE:* | *DRAWN BY:* | *APPENDIX No:* |
|---|---|---|
| 04/07/16 | ECMG | **65** |

**Appendix 66: Gazetteer**

| Gaz. No | Name | Type | CHER Ref. | Importance | Magnitude of Direct Impact | Significance of Effect | Magnitude of Indirect Impact on Setting | Significance of Effect |
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| **Undesignated heritage and archaeological sites (monuments)** | | | | | | | | |
| 1 | Throstle Nest Farm, Longford | Findspot | MCH8505 | Low | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 2 | Prehistoric arrowhead | Findspot | MCH8506 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 3 | Battle of Maserfelth | Battlefield? | MCH8508 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 4 | Medieval pot | Findspot | MCH8510 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 5 | Myddleton Hall Farmhouse (same as Gaz. No. 51) | Farmhouse | MCH8530 | Medium | No direct impact | Neutral | The proposed development is *c.* 375m to the south of the asset. However, as a consequence of the confining and isolating nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no impact to the asset | Neutral |
| 6 | 17th century barn at Cinnamon Lane | Barn | MCH8531 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 7 | Myddleton Hall (same as Gaz. No. 42 below) | Manor House | MCH8555 | High | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 8 | Part of Saxon Cross | Findspot | MCH8620 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 9 | Church House Farmhouse | Farmhouse | MCH8622 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 10 | Roman road - Wigan to Wilderspool | Communication Route | MCH8653 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 11 | Peel Hall | Manor House and Moat | MCH8680 | Low | No direct impact | Neutral | The proposed development would entirely surround the asset and change the current agricultural land to an urban form. The elements of significance that the asset draws from the landscape setting would be eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse | Slight negative. |
| 12 | Middleton | Manor | MCH8682 | Low | No direct impact | Neutral | The proposed development is *c.* 200m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the | Neutral. |

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| | | | | | | | south of the M62 carriageway and given the detractors in the existing setting the proposed development would cause no impact to the asset | |
| 13 | Arbury Farmhouse | Manor House | MCH8716 | Low | No direct impact | Neutral | The proposed development is *c.* 375m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting (such as the Arbury Centre) the proposed development would cause no impact to the asset. | Neutral |
| 14 | St. Helens Canal/Sankey Navigation - Winwick Quay | Communication Route | MCH8840 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 15 | St. Helens Canal/Sankey Navigation - Swing Bridge | Bridge | MCH8841 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 16 | Cropmark at A49 Junction | Ring Ditch | MCH8900 | Low | No direct impact | Neutral | The proposed development is *c.* 215m to the south-east of the asset and although within the immediate and wider setting of the asset the setting is so compromised by the M62 carriageway that the proposed development would cause no impact to the asset. | Neutral |
| 17 | Cropmark at Arbury | Enclosure | MCH8901 | Low | No direct impact | Neutral | The proposed development is *c.* 300m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and the proposed development would cause no impact to the asset. | Neutral |
| 18 | Cropmark at Midhops Farm | Enclosure | MCH9611 | Low | No direct impact | Neutral | The proposed development is *c.* 75m to the south of the asset and although within the immediate and wider setting of the asset the setting is so compromised by the M62 carriageway that the proposed development would cause no impact to the asset. | Neutral |
| 19 | Royal Observer Corps Monitoring Post in Warrington | Military Infrastructure | MCH9865 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 20 | Orford Tannery | Industrial Site | MCH10134 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 21 | St. Helens Canal/Sankey Navigation - Hulme Lock | Canal Lock | MCH10529 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 22 | St. Helens Canal/Sankey Navigation - Sankey Brook | Communication Route | MCH10530 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no | Neutral |

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| | | | | | | | impact on setting. | |
| 23 | Blacksmiths Workshop, Newton Road | Industrial Site | MCH10697 | Low | No direct impact | Neutral | Due to the characteristics of the landform in the immediate vicinity of the asset, and the unproven nature of the asset it is concluded that there would be no impact on setting. | neutral |
| 24 | Brickfield, Capesthorne Road | Industrial Site | MCH10698 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 25 | Houghton Mill | Industrial Site | MCH10699 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 26 | Mound SW of Myddleton Hall | Mound | MCH12500 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 27 | An Early Medieval Finger Ring | Findspot | MCH12800 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 27 | An Early Roman Military Brooch | Findspot | MCH13025 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 28 | St. Helens Canal/Sankey Navigation | Communication Route | MCH8842 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 29 | A post-medieval cast lead alloy figurine of Madonna-and-child | Findspot | MCH21362 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 29 | An incomplete late-medieval buckle | Findspot | MCH21374 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 29 | Cast copper alloy derivative trumpet or Wirral brooch dating to the 2nd century AD | Findspot | MCH21375 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | Silver halfpenny of Henry VI, (1422-1461) | Findspot | MCH22658 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | Silver halfpenny of Henry VI, (1422-1461) | Findspot | MCH22659 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A cast copper alloy spearhead of Early Bronze Age date | Findspot | MCH22667 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver groat of Edward III, (1327-1377) | Findspot | MCH22668 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval copper alloy rose and orb jetton | Findspot | MCH22685 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver penny of Edward I, (1272-1307) | Findspot | MCH22686 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver penny of Edward I (1272-1307) | Findspot | MCH22687 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver penny of Edward I (1272-1307) | Findspot | MCH22688 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |

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| 30 | A silver groat of Henry VI (1422-1461) | Findspot | MCH22689 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver voided long cross cut half penny of Henry III (1216-1272) | Findspot | MCH22690 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver groat of Edward III (1327-1377) | Findspot | MCH22691 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A late Medieval / early Post Medieval cast copper alloy vessel lid handle | Findspot | MCH22692 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A late-medieval / early post-medieval cast copper alloy vessel lid handle | Findspot | MCH22693 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A cast copper alloy Roman pin head dating from c. AD 43-410 | Findspot | MCH22694 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A cast copper alloy pin possibly dating to the Roman period | Findspot | MCH22695 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast lead alloy musket ball | Findspot | MCH22696 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy mount | Findspot | MCH22697 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy thimble | Findspot | MCH22698 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy thimble | Findspot | MCH22699 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A medieval cast copper alloy book clasp | Findspot | MCH22700 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An 18th century carved bone or antler gaming piece for dominoes | Findspot | MCH22701 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An incomplete post-medieval cast copper alloy hooked mount | Findspot | MCH22702 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | One half of a post-medieval cast copper alloy double looped oval buckle | Findspot | MCH22703 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22704 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22705 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22706 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22707 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22708 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22709 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22711 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |

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| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22712 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast copper alloy buckle | Findspot | MCH22713 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast lead alloy musket ball | Findspot | MCH22714 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A post-medieval cast lead alloy musket ball | Findspot | MCH22715 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An undated cast lead alloy spindle whorl | Findspot | MCH22716 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An undated cast lead alloy spindle whorl | Findspot | MCH22717 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An undated cast lead alloy spindle whorl | Findspot | MCH22718 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An undated cast lead alloy spindle whorl | Findspot | MCH22719 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | An undated cast lead alloy spindle whorl | Findspot | MCH22721 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver half groat of Henry VI (AD1422-1461) | Findspot | MCH22722 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver groat of Edward IV (AD 1461-1470) | Findspot | MCH22723 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver groat of Henry VI (AD 1422-1461) | Findspot | MCH22724 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver cut groat of Philip and Mary (1554-1558) | Findspot | MCH22726 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver shilling of Charles I (AS 1625-49) | Findspot | MCH22727 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver three pence of Elizabeth I (1558-1603) | Findspot | MCH22728 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver groat of Mary (AD 1553-54) | Findspot | MCH22729 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver sixpence of Elizabeth I (AD 1558-1603) | Findspot | MCH22730 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver sixpence of William III (1694-1702) | Findspot | MCH22731 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver half-crown of Charles II (1660-85) | Findspot | MCH22732 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver sixpence of William III (1694-1702) | Findspot | MCH22733 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver cut groat of Henry VIII (AD 1504-1547) | Findspot | MCH22734 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver sixpence of Elizabeth I (1558-1603) | Findspot | MCH22735 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |

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| 30 | A silver Scottish twenty pence of Charles I (AD1625-1649) | Findspot | MCH22736 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 30 | A silver half groat of Charles I (AD1625-1649) | Findspot | MCH22737 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 31 | A medieval cast copper alloy sword pommel | Findspot | MCH22738 | Negligible | No direct impact | Neutral | No permanent or temporary change. The artefact was removed from its original setting | Neutral |
| 32 | Trackway | Communication Route | - | Low | Minor Adverse | Slight Negative/Neutral | The proposed development would entirely surround the asset and change the current agricultural land to an urban form. The elements of significance that the asset draws from the landscape setting would be eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse | Slight Negative. |
| 33 | Cottage and Garden | Settlement | - | Low | Major Adverse | Slight Negative/Moderate Negative | The asset would be lost as a consequence of the proposed development and would therefore have no setting | Neutral |
| 34 | Ponds/ Marl Pits/Turbary Pits | Agricultural Feature | - | Negligible | Major Adverse | Slight Negative | The asset would be lost as a consequence of the proposed development and would therefore have no setting | Neutral |
| **Events** | | | | | | | | |
| 35 | Watching Brief | - | ECH3812 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 36 | Desk-Based Assessment | - | ECH3799 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 37 | Watching Brief | - | ECH3783 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 38 | Evaluation | - | ECH3785 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 39 | Desk-Based Assessment | - | ECH3754 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 40 | Watching Brief | - | ECH3720 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 41 | Evaluation | - | ECH3873 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 42 | Watching Brief | - | ECH3655 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| 43 | Survey | - | ECH3892 | Event – no requirement for impact assessment | | | Event with no setting –- no requirement for setting assessment | |
| **Listed Buildings** | | | | | | | | |
| 44 | Church of St. Oswald | Grade I | DCH1878 | High | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 45 | Myddleton Hall (same as Gaz. No. 7 above) | Grade II* | DCH1817 | High | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 46 | Barn at No. 103 | Grade II | DCH1655 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 47 | Cheltenham House Entrance Gates and Gate Piers | Grade II | DCH1709 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no effect on the significance of the asset. | Neutral |
| 48 | The Close | Grade II | DCH1776 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment | Neutral |

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| | | | | | | | it is concluded that there would be no impact on setting. | |
| 49 | Farm Building to the North of Nos. 57a and 59 | De-Listed | DCH1800 | Negligible | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 50 | Ivy House | Grade II | DCH1814 | Medium | No direct impact | Neutral | Although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting the proposed development would cause no impact to the asset. | Neutral |
| 51 | Church House Farmhouse | Grade II | DCH1815 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 52 | Premises of Gordan Sheds | Grade II | DCH1852 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 53 | Arbury Farmhouse | Grade II | DCH1876 | Medium | No direct impact | Neutral | The proposed development is *c.* 375m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting (such as the Arbury Centre) the proposed development would cause no impact to the asset. | Neutral |
| 54 | Myddleton Hall Farmhouse | Grade II | DCH1877 | Medium | No direct impact | Neutral | The proposed development is *c.* 375m to the south of the asset. However, as a consequence of the confining and isolating nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no impact to the asset. | Neutral |
| 55 | Un-named | Grade II | DCH1950 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 56 | Fearnhead House | Grade II | DCH1969 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 57 | Roman Catholic Church at Winwick Psychiatric Hospital | Grade II | DCH1976 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 58 | Milepost outside No. 87 Winwick Road | Grade II | DCH13183 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 59 | Old Mounting Block outside St. Oswald's Church | Grade II | DCH13166 | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment | Neutral |

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| | | | | | | | it is concluded that there would be no impact on setting. | |
| 60 | Un-named | De-Listed | DCH | Negligible | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| **Locally Listed Buildings** | | | | | | | | |
| 61 | Beech Grove House and Grove House, Newton Grove. | Locally Listed | DCH12914 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 62 | Enfield Farmhouse, Enfield Cottage and Adjoining Barn, St Andrew's Close. | Locally Listed | DCH12915 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 63 | Houghton Mill Bridge, Cinnamon Lane North. | Locally Listed | DCH12916 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 64 | The Swan Hotel, Golborne Road. | Locally Listed | DCH13154 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 65 | The Plough Public House, Mill Lane. | Locally Listed | DCH13157 | Low | No direct impact | Neutral | Due to the characteristics of the landform of the immediate vicinity of the asset, it is concluded that there would be no impact on setting. | Neutral |
| 66 | Thompson Memorial Fountain, Newton Road. | Locally Listed | DCH13165 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 67 | Coach House to the rear of The Swan Hotel, Golborne Road. | Locally Listed | DCH13175 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 68 | Winwick Church of England Primary School (part), Myddleton Lane. | Locally Listed | DCH13179 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting.. | Neutral |
| 69 | Old Rectory, Rectory Lane. | Locally Listed | DCH13180 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 70 | Coachmans Cottage, Delph Lane. | Locally Listed | DCH13187 | Low | No direct impact | Neutral | Although within the wider setting of the asset, the proposed development is within a topographically discrete location to the south of the M62 carriageway and the proposed development would cause no impact to the asset. | Neutral |
| 71 | Boundary Walls and Gate Piers to Winwick Park, Winwick Road | Locally Listed | DCH13199 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 72 | Woodside Farm, Radley Lane | Locally Listed | DCH13675 | Low | No direct impact | Neutral | The proposed development is to the north immediately adjacent to the asset. | Neutral |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | However, as a consequence of the confining and isolating nature of the immediate setting, the proposed development would not adversely influence the immediate or wider setting and there would be no impact to the asset. | |
| 73 | Enfield Villa, Tweedsmuir Close | Locally Listed | DCH13687 | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 74 | Waterworks Cottages. 1 and 2 Delph Lane | Locally Listed | DHC13186 | Low | No direct impact | Neutral | The proposed development is *c.* 250m to the south of the asset However, as a consequence of the confining nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no impact to the asset. | Neutral |
| **Historic Landscape Character** | | | | | | | | |
| 75 | Post-Medieval Communications | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 76 | Post-Medieval Industry | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 77 | Post-Medieval Ornamental parkland | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 78 | Post-Medieval Plantation | Historic Landscape | - | Low | The proposed development is coincident with this parcel of landscape and the development would equate to a magnitude of Major Adverse as the impact would result in total loss of the asset. | Slight/Moderate Adverse | The proposed development would enclose the asset on three sides and alter the landscape pattern fundamentally. The current agricultural land would be changed to an urban form. The elements of significance that the asset draws from the landscape setting would be entirely eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse. | Slight Negative |
| 79 | Post-Medieval Settlement | Historic Landscape | - | Low | No direct impact | Neutral | The proposed development would entirely surround Peel Hall and Birch Tree Farm and change the current agricultural land to an urban form. The elements of significance that the post-medieval settlement draws from the landscape setting would be entirely eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse and the significance of effect slight negative.<br><br>Due to the current setting of the post medieval settlement along Mill Lane the proposed development would not adversely influence the immediate or | Slight Negative<br><br>Neutral |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | wider setting and there would be no change to the asset and the significance of effect would be neutral. | |
| 80 | Late Post-Medieval Agricultural Improvement | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 81 | 20th Century Agricultural Improvement | Historic Landscape | - | Low | The proposed development is coincident with this parcel of landscape and the development would equate to a magnitude of Major Adverse as the impact would result in total loss of the asset. | Slight/Moderate Adverse | The proposed development would lead to the loss of the entire asset and it would no longer have a setting to be impacted upon. No change | Neutral |
| 82 | 20th Century Artificial Water Bodies | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 83 | 20th Century Communications | Historic Landscape | - | Low | No direct impact | Neutral | The proposed development would lead to an increase in the urban edge on the southern side of the M62, replacing the current, open, undeveloped character of the land. This is not considered to represent a detrimental impact to the setting of the motorway | Neutral |
| 84 | 20th Century Field Systems | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 85 | 20th Century Industry | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 86 | 20th Century Recreation | Historic Landscape | - | Low | Moderate Adverse | Slight Negative | Although within the wider setting of the asset the proposed development is visually isolated from much of the asset and its approaches. Given the character of the landscape which forms the setting of the asset and the existing screening the proposed development would cause no impact to the asset. | Neutral |
| 87 | 20th Century Settlement | Historic Landscape | - | Low | No direct impact | Neutral | The proposed development would be similar in form, function, scale and massing to the exiting expanses of this landscape parcel and therefore there would be no impact on setting. | Neutral |
| 88 | Golf Course | Historic Landscape | - | Low | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| **Hedgerows** | | | | | | | | |
| 89 | Boundary between the historic Townships of Arbury and Houghton | Land Division | - | Medium | Negligible Adverse | Slight Negative/Neutral | The proposed development would entirely surround the asset and change the current agricultural land to an urban form. The elements of significance that the asset draws from the landscape setting would be eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate | Moderate Negative. |

| | | | | | | | | |
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| | | | | | | | adverse | |
| 90 | Boundary between the historic Townships of Arbury and Winwick | Land Division | - | Medium | Negligible Adverse | Slight Negative/Neutral | The proposed development would entirely surround the asset and change the current agricultural land to an urban form. The elements of significance that the asset draws from the landscape setting would be eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse | Moderate Negative. |
| **Designated Heritage Assets** | | | | | | | | |
| 91 | Bowl barrow west of Highfield Lane (National Heritage List ref. 1011124) | Scheduled Ancient Monument | DCH 387 | High | No direct impact | Neutral | Due to the incidental nature of the sightlines to, from, into and across the setting of this heritage asset upon which the proposed development may have a visual influence and also taking into account the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 92 | Battle of Rowton Heath (National Heritage List ref. 1000031) | Registered Battlefield | | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 93 | Landscape of the former Pilkington Glass HQ complex (National Heritage List ref. 1412004) | Registered Park/Garden – Grade II | - | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 94 | Winwick Street, Warrington | Conservation Area | - | Medium | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |
| 95 | Liverpool Maritime/Mercantile City | UNESCO World Heritage Site | - | Very High | No direct impact | Neutral | Due to the separation distance, the intervening characteristics of the landform, built and natural environment it is concluded that there would be no impact on setting. | Neutral |

# LAND AT PEEL HALL, WARRINGTON CHESHIRE

## An Archaeological Assessment

*September 1999*

CPM

INSTITUTE OF ENVIRONMENTAL ASSESSMENT

Registered Environmental Impact Assessor

QUALITY ASSURED FIRM ISO 9001

# LAND AT PEEL HALL, WARRINGTON, CHESHIRE

## An Archaeological Assessment

*September 1999*



.....20/9/99.....

***Authorised By***

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|---|---|---|
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# 1.0 INTRODUCTION

1.1 This archaeological assessment has been prepared by **CPM** on behalf of Satnam Investments Limited. The report sets out the results of an archaeological desk-top study of land centred on Peel Hall to the north of Warrington, Cheshire. The location of the study area is shown on **Plan CPM 1**.

1.2 The aim of the report is to provide a summary of known archaeological information for the area, based on existing data. Archaeological assessment represents the first stage of archaeological investigations recommended in PPG16 *Archaeology and Planning* (DoE 1990). PPG16 refers to the need to identify the likely presence and significance of archaeological deposits at an early stage in the planning process. Structure and Local Plan policies tend to reflect the guidance given in PPG16.

1.3 The Warrington Borough Council Local Plan Deposit Draft 1994 deals with archaeology in policies ENV12, ENV13 and ENV14 (see **Appendix CPM 1**).

1.4 Archaeological assessment therefore forms the basis for any further archaeological work such as field evaluation, should this be appropriate.

## 2.0 REPORT STRUCTURE AND SCOPE

2.1 Archaeological assessment is primarily a desk-top exercise. The sources consulted include information in the Cheshire County Council Sites and Monuments Record (SMR) and consist of records relating to sites and findspots in the area, as well as sites identified from air photographs.

2.2 The Cheshire and Lancashire County Record Offices, Warrington Local Studies Library and the National Monuments Record (NMR) at Swindon (English Heritage) were consulted for further records relating to the area. Information noted consists of early maps, documents and air photographs held by the NMR and Cheshire County Council SMR. Warrington Borough Council was also consulted as to listed buildings within the area.

2.3 Archaeological information is presented in Section 4 of this report together with listed building information in Section 5. The record numbers used in the text are those used by Cheshire County Council and Warrington Borough Council. The locations of the archaeological sites, historic buildings and findspots are presented on **Plan CPM 1**. Full SMR and listed building information is presented in **Appendix CPM 2**.

2.4 Information from early maps and other historic records and secondary sources is presented in Section 6 and Section 7 discusses air photographs and the site visit. **Plan CPM 2** reproduces the second edition Ordnance Survey 6 inch map dating to 1891 together with information from other historic maps. **Appendix CPM 3** contains an extract from a recent PhD thesis relating to Peel Hall moat.

## 3.0 THE SITE AREA

3.1 The study area is centred on land to the north of Warrington, at about NGR (National Grid Reference) SJ 6150 9165 (see **Plan CPM 1**). The site lies mainly within the civil parish of Winwick. The site lies between 10 and 15 metres AOD (Above Ordnance Datum) and slopes from the north down to the built up area of Warrington. Suburbs, fields and Radley Plantation form the western, eastern and southern boundaries of the site, whilst the M62 forms the northern border of the site.

3.2 Published information on soils indicates that the land is underlain by reddish till/boulder clay, deposited during the Pleistocene Glaciation (SSEW 1983). Some glaciofluvial deposits (i.e. materials deposited by glacial water channels) occur locally. This gives rise to mainly clay loam soils overlying slowly permeable sandy soils developed on glaciofluvial sands and gravels (e.g. Blackwood Series). Due to the relatively high annual rainfall in the area (i.e. 825mm/32.5 inches), the slowly permeable nature of the subsoil and the low altitude of the site, the soils are seasonally waterlogged.

# 4.0 ARCHAEOLOGICAL INFORMATION IN THE STUDY AREA

4.1 Within the area of the site itself there are no archaeological sites scheduled as ancient monuments under the Ancient Monuments and Archaeological Areas Act 1979. The site area does not contain any parks and gardens of special historic interest on the English Heritage register nor any registered battlefields. Full SMR details are presented in **Appendix CPM 2**.

## Archaeology within the Site Area

4.2 The only site record on the Cheshire County Council SMR which lies within the site itself is Peel Hall (SMR 595) (see **Plan CPM 1** and **Appendix CPM 3**). This is listed as the site of Houghton Peel and a medieval moated manor house.

## Archaeology within the Study Area

4.3 The earliest archaeology recorded by Cheshire County Council SMR is the find of a Neolithic axe (SMR 569) made in 1851. Unfortunately, the location of this find is not specific, but was somewhere in the area of Orford, south of the site.

4.4 Bronze Age sites are located more precisely, with a round barrow (SMR 571/1/3) having been excavated in 1980 slightly over a kilometre north of the site. A second probable round barrow, located from air photographs, lies only 400 metres to the north east of the site (SMR 2412).

4.5 Roman features have also been recorded in the area of the site, with SMR 614/1 recording the course of a Roman road located at a number of points by fieldwork. The road runs from north to south and passes 500 metres to the west of the site. To the south of the site, SMR 580 records the discovery of at least one Roman coin in Hulme. Air photographic and place name evidence also suggests a Roman settlement 500 metres north of the site close to Arbury (SMR 2411).

4.6 The Cheshire County Council SMR records the 19th century discovery of several inhumations in Winwick, beneath the Church of St. Oswald, covered by sandstone blocks, but the date of these burials is uncertain (SMR 570/1/2). Also of uncertain date is a rectangular enclosure observed on recent air photographs and not yet entered on to the SMR (SITE 1: J. Collens, pers. comm.). This feature lies west of Midhops Farm, less than 100 metres north of the site and may relate to similar prehistoric and Roman cropmarks photographed nearby.

4.7 Excavation near the Bronze Age round barrow a kilometre north of the site also located a substantial Saxon cemetery (SMR 625/1). Several hundred graves were located over an area of 1500 square metres and the site of a contemporary church was inferred. SMR 570/0/1 records the unearthing of remains of a Saxon cross last century within Winwick churchyard a kilometre north east of the site. Far less certain is the location of the Battle of Maserfield in 642 AD (SMR 582). Although this has been ascribed to 'Makerfield' in the parish of Winwick, other sources locate the battle in Shropshire.

4.8 A number of medieval sites are recorded on the Cheshire County Council SMR for the general study area. Winwick's Church of St. Oswald is a Grade I listed building with early 13th century and later parts which may lie on the site of an earlier, possibly Saxon, church (SMR 570/1/1). A fine medieval terra cotta vessel was found within the churchyard in 1840 (SMR 570/0/2). A less certain record relating to a religious site is SMR 589, noting a reference to an oratory chapel for private worship in the Burtonwood area in 1368. SMRs 583/0 and 585/1 both relate to the site of medieval manor houses at Myddleton Hall and Arbury respectively. Both sites now contain post-medieval buildings (see below). In the case of Myddleton Hall, it is inferred that there may have been contemporary settlement around the manor itself.

4.9 Other records on the Cheshire County Council SMR within the study area relate to post-medieval listed buildings. SMRs 570/0/3, 583/0/1 and 585/1 all record Grade II listed 17th century farmhouses with later alterations. SMR 583/1 records the current Myddleton Hall, 17th century and Grade II* listed, whilst SMR 594 records a 17th century barn at Cinnamon Lane in Poulton-with-Fearnhead.

## 5.0 LISTED BUILDING INFORMATION IN THE STUDY AREA

5.1 17th century buildings are recorded on the Cheshire County Council SMR and those falling within the study area have been mentioned in Section 4 above.

5.2 Information provided by Warrington Borough Council also records 'The Manor House', a Grade II listed building close to Winwick church (2/17) north of the site and three further Grade II buildings on Cinnamon Lane in Poulton-with-Fearnhead parish to the east of the site (3/22, 3/24 and 3/25).

5.3 There would seem to be some confusion as to the status of buildings at Peel Hall. Lewis has a '...Listed Buildings description of Peel Hall...' stating that it is of 17th century origin with alterations in 1828 (Lewis 1991). However, the Cheshire County Council SMR makes some reference to possible confusion over location in the 1962 list which mentions Peel Hall as listed. Information correct for January 1999 supplied by Warrington Borough Council's Conservation Officer makes no mention of any listed buildings at Peel Hall.

# 6.0 HISTORIC MAPS AND OTHER RECORDS

6.1 The Cheshire and Lancashire County Record Offices, Warrington Local Studies Library and the National Monuments Record have been visited and their collections of historic maps, documents and secondary sources checked. Although the parish of Winwick, within which the site is located, now lies within Cheshire, it was formerly part of Lancashire.

## Map Sources

6.2 The earliest maps available for the site are Tithe maps dating to the 1830's held by Lancashire County Record Office. These show a similar landscape to that which exists at present, with a small number of buildings, woodland, fields and lanes (LCRO refs. DRL 1/90 and DRL 1/38). Far more fields are shown than there are now within the site. The land is listed as a mixture of meadow, pasture and arable (see **Plan CPM 2**).

6.3 Several sub-rectangular ponds/pits lie within the site which may be the result of turbaries (peat cutting sites - peat areas are known as 'moss' in the north west of England) (see **Plan CPM 2**). This landscape is reflected in a number of the field names including; 'Pit Fields', 'Moss and Marsh Pit Field' and 'Reedy Field' (Field 1972). Of most interest, in terms of archaeology, is the depiction on the map of the moat at Peel Hall showing as a wide sub-circular moat with the northern third open and a building in the centre (see **Plan CPM 2**). The field to the north east of the Peel Hall complex is noted as 'Saw-pit Field' and suggests a saw-pit once lay in this area (Field 1972, 193).

6.4 The 1st edition Ordnance Survey 6 inch map of 1849 shows a similar patchwork of fields, together with smaller pits/ponds (LCRO ref. CIX SW). The large-scale map of 1843, relating to the Church Building Act, has Peel Hall noted as 'Peel Hall Manor Farm' (CCRO ref. DWW 1/227). Later Ordnance Survey maps show a rationalising of fields across the site, with fewer, larger fields and most of the pits evident on earlier maps no longer marked.

## Documentary Sources

6.5 Most of the sources consulted note the long history and size of Winwick parish, with origins before Oswald in the 7th century. Opinion is divided as to the location of 'Makerfield' battlefield and Oswald's resting place. Other references to antiquities by Beamont have obviously been fed into the Cheshire County

Council SMR (Beamont 1876). Andrews mentions the Roman road running to the west of the site between Roman Warrington (Veratinum) and Wigan (Cuccium) together with a post-medieval turnpike road, also lying to the west (Andrews 1977).

6.6 More specific to the site, Baines mentions the granting of three manors, Houghton, Middleton and Arbury, to the Southworth family (Baines 1835). The Victoria County History has Peel Hall as the site of the manor for Houghton (VCH 1966). Baines, writing in the early 19th century, notes that all that remained of Peel Hall was a moat and deep well (Baines 1891, 368).

# 7.0 AIR PHOTOGRAPHS AND SITE VISIT

## Air Photographs

7.1 The collections of air photographs held by the NMR in Swindon and those held by Cheshire County Council SMR were consulted for this assessment. The NMR collection contained a total of 38 vertical and oblique photographs taken between 1945 and 1975, whilst the Cheshire SMR holds photographs and slides from the 1970's, 1980's and 1990's.

7.2 A number of photographs showed fields within the site with possible traces of ridge and furrow cultivation. Other anomalies were visible, but seemed likely to represent natural sub-surface features. A crop and soilmark clearly visible throughout the photographs could represent a trackway, but corresponds to the course of a field boundary shown on 19th century maps and may well represent a ploughed out ditch or bank.

7.3 The air photographs provide evidence of the changes in land use on and surrounding the site over the last 50 years. There has been little change within the site area, with agricultural use predominant. In the 1990's the area seems to have been colonised by rough grassland/scrub. The post-war spread of Warrington together with the construction of the M62 can be seen. Much of the area south of the site seems to have been in use as a military base in the 1940's.

7.4 As mentioned above, the Cheshire County Council SMR holds a number of slides of air photographs taken recently which show a possible rectangular enclosure west of Midhops Farm, immediately north of the M62. This site has yet to be entered on the SMR (see **Plan CPM 1** [SITE 1]).

## Site Visit

7.5 The site was visited in February 1999 to ascertain ground conditions. Most of the site has been colonised by rough scrub including young birch and hazel. The site is generally poorly drained, with evidence of peat deposits apparent and a number of ponds lying within its boundaries. Remains of the Peel Hall moat were not observed.

## 8.0 ASSESSMENT AND CONCLUSIONS

8.1 This assessment has identified one archaeological site lying within the proposed area of development. This is the site of a medieval moat and manor house at Peel Hall and 19th century maps reveal that a sub-circular moat survived at this time in the area of woodland to the south west of the current buildings. This site would rate as being of county importance.

8.2 Within the general study area, a range of sites dating from prehistory onwards have been recorded. Indeed, the area presents some of the best evidence of continuous occupation and activity in Cheshire (J. Collens, pers. comm.). An important Saxon cemetery and Bronze Age barrows lie less than a mile to the north and the site lies within the parish of Winwick which has a rich history from Saxon times. New sites have been located this decade by air photographic work. The area can therefore be assessed to have a medium to high potential for further archaeological discoveries.

8.3 Although some listed buildings are located within the general study area, these are separated from the site by modern roads and development and any new development would not affect their settings.

8.4 Documentary sources, maps and air photographs confirm the location and extent of the Peel Hall moat. No other significant archaeology is suggested by these sources within the site itself other than possible ridge and furrow cultivation. Any evaluation could be expected to locate cultivation boundaries and pits across the site.

8.5 Given the potential of the surrounding area it is likely that further evaluation will be required prior to determination. Ideally, any development will also preserve the Peel Hall site *in situ* or by record (i.e. full excavation). This will accord with policies ENV13 and ENV14 of the Warrington Borough Council Local Plan.

## 9.0 REFERENCES AND SOURCES

(LCRO = Lancashire County Record Office, CCRO = Cheshire County Record Office)

Andrews, P 1977 *Discovering Old Winwick*, Warrington (LCRO ref. 611/77/1321)

Baines, E 1891 *The History of the County Palatine and Duchy of Lancaster*, vol. 4, (reprint of earlier edition of ?1835, ed. J Croston) London

Beamont, W 1876 *Winwick: its History and Antiquities*, Warrington (LCRO ref. E02 W125)

DoE 1990 *Planning Policy Guidance Note 16: Archaeology and Planning*, London

Field, J 1972 *English Field Names: A Dictionary,* Guernsey

Lewis, J 1991 *Medieval Earthworks of the Hundred of West Derby*, Nottingham (PhD thesis, University of Nottingham)

Victoria County History 1911 *History of the County of Lancashire*, vol. 4, London (reprinted in 1966)

### Map Sources

*Plan of Township of Winwick with Hulme in the Parish of Winwick and County of Lancaster, 1835* (LCRO ref. DRL 1/90)

Tithe Apportionment accompanying above plan (LCRO ref. DRL 1/90)

*Plan of Townships of Middleton, Houghton and Arbury in the Parish of Winwick, County of Lancaster, 1840* (LCRO ref. DRL 1/38)

Tithe Apportionment accompanying above plan (LCRO ref. DRL 1/38)

Winwick: 'unfinished' impression of townships for tithe purposes, based on O.S. 1st Edition 6 Inch, 1849 (CCRO ref. DWW1/339)

Plan of part of Winwick with new divisions to be created under Church Buildings Act, 1843 (CCRO ref. DWW1/227)

Ordnance Survey 1st Edition 25 Inch Map of 1907 (CCRO ref. CIX 9)

Ordnance Survey 1st Edition 6 Inch Map of 1849 (LCRO ref. CIX SW)

Ordnance Survey 2nd Edition 6 Inch Map of 1891 (CCRO ref. CIX SW)

Ordnance Survey 3rd Edition 6 Inch Map of 1929 (LCRO ref. CIX SW)

Ordnance Survey 1:25,000 Pathfinder 723 1992

Soil Survey of England and Wales 1983 *Map of Soils of England and Wales*, sheet 3, at 1:250,000, Southampton

**Requested, but unavailable as being conserved:**

Tithe Apportionment and Plan for Warrington, 1837 (LCRO ref. DRL 1/82)

**Personal communications referred to in text:**

Dr. J. Collens is SMR Officer for Cheshire County Council

# APPENDIX CPM 1

## Warrington Borough Council Policies

## (Warrington Borough Council Local Plan Deposit Draft 1994)

# A1.0 WARRINGTON BOROUGH COUNCIL POLICIES (WARRINGTON BOROUGH COUNCIL LOCAL PLAN DEPOSIT DRAFT 1994)

## Ancient Monuments/Archaeological Sites

### ENV12

Development proposals which would adversely affect scheduled ancient monuments and other nationally important archaeological sites and monuments or their settings will normally be refused.

## Other Sites of Archaeological Importance

### ENV13

Development proposals which could adversely affect other known sites and monuments of archaeological significance will not normally be allowed. Permission may be granted if it can be demonstrated that the particular site or monument will be preserved in situ or by record.

## Archaeological Evaluations

### ENV14

Where development affects sites of known or suspected archaeological importance, the Council will normally require the applicant to submit a professional archaeological evaluation prior to the determination of the planning application, as the basis of assessing the effects of the development on the archaeological resource.

# APPENDIX CPM 2

## Cheshire County Council Sites and Monuments Record and Warrington Borough Council Listed Building Information

# A2.0 CHESHIRE COUNTY COUNCIL SITES AND MONUMENTS RECORD AND WARRINGTON BOROUGH COUNCIL LISTED BUILDING INFORMATION

| SMR No. | NGR (SJ Prefix) | Description |
|---|---|---|
| 569 | 6100 9000 | Neolithic flint axe findspot - found at Orford in 1851, exact location uncertain |
| 570/0/1 | 6039 9280 | Saxon cross - fragment found in 1843 in Winwick churchyard |
| 570/0/2 | 6039 9280 | Medieval pottery - part of vessel found in 1840's in Winwick churchyard |
| 570/0/3 | 6044 9280 | Farmhouse - 17th century listed Grade II, much altered (2/16 on list) |
| 570/1/1 | 6037 9283 | St Oswald's Church - 14th century and later, listed Grade I, may lie on site of Saxon church (2/18 on list) |
| 570/1/2 | 6038 9283 | Burials - undated skeletons in church vault covered with sandstone blocks found in 1828 |
| 571/1/3 | 6189 9358 | Bronze Age round barrow - excavated in 1980 |
| 580 | 6070 9110 | Roman coin - findspot, others found in area |
| 582 | 6000 9200 | Battlefield - possible site of battle in parish of Winwick in 642 AD |
| 583/0 | 6200 9250 | Settlement - possible site of medieval village of Middleton |
| 583/0/1 | 6196 9289 | Farmhouse - 17th century with alterations, listed Grade II (2/14 on list) |
| 583/1 | 6200 9297 | Manor house - Myddleton Hall, 17th century listed Grade II* (2/15 on list) |
| 585/1 | 6127 9280 | Manor house - Arbury Farm, 17th century with alterations, listed Grade II (2/12 on list) |
| 589 | 6000 9000 | Chapel - site of medieval oratory in Burtonwood area |
| 594 | 6272 9143 | Barn - 17th century listed Grade II (3/23 on list) |
| 595 | 6160 9180 | Moat/manor house - Peel Hall, site of medieval manor house and moat |
| 614/1 | 6037 9100 | Roman road - fieldwork has identified course of road |

| | | |
|---|---|---|
| 625/1 | 6189 9358 | Saxon cemetery - extensive Christian burials and possible church revealed around Bronze Age barrow (571/1/3) during 1980 excavation prior to quarrying |
| 2411 | 6120 9260 | Cropmark - probable Romano-British enclosure revealed by air photography in 1992 and suggested by nearby place name evidence |
| 2412 | 6050 9230 | Cropmark - probable Bronze Age round barrow revealed by air photography in 1991 |
| 'SITE 1' | 6192 9208 | Cropmark - possible enclosure revealed by air photograph west of Midhops Farm (not entered on SMR at 9/2/99) |
| **Listed Building No.** | **NGR (SJ Prefix)** | **Description** |
| 2/13 | 6180 9290 | House - Ivy House, listed Grade II |
| 2/17 | 6040 9290 | House - The Manor House, listed Grade II |
| 3/22 | 6270 9130 | Building - listed Grade II |
| 3/24 | 6260 9130 | House - Fearnhead House, listed Grade II |
| 3/25 | 6260 9130 | Building - listed Grade II |

# APPENDIX CPM 3

## Peel Hall Information (after J. Lewis, 1991)

| | |
|---|---|
| No. | 70 |
| SMR | CCC 595 |
| Site | Peel Hall Manor Farm |
| Township | Houghton |
| Parish | Winwick |
| Hundred | Newton |
| Estate | Thanage/fee farm |
| NGR | SJ 6150 9180 |
| Location | peripheral |
| Solid geology | Pebble Beds |
| Drift geology | Glacial sands and gravels |
| Soil | Clive Association |
| Altitude | 15m |
| Topography | south-west facing |
| Plan | single |
| Form | square |
| Area | c40 x 40m/1600m$^2$ |
| Moat width | c5-10m |
| Moat depth | not known |
| Wet/dry | wet 1840 |
| Water supply | not known |
| Entrance | north-east |
| Access | not known |
| Enclosure banks | not known |
| Platform height | not known |
| Excavation | |
| Survey | |
| Moat condition | traces |
| Buildings | |
| Use | semi-derelict farm |

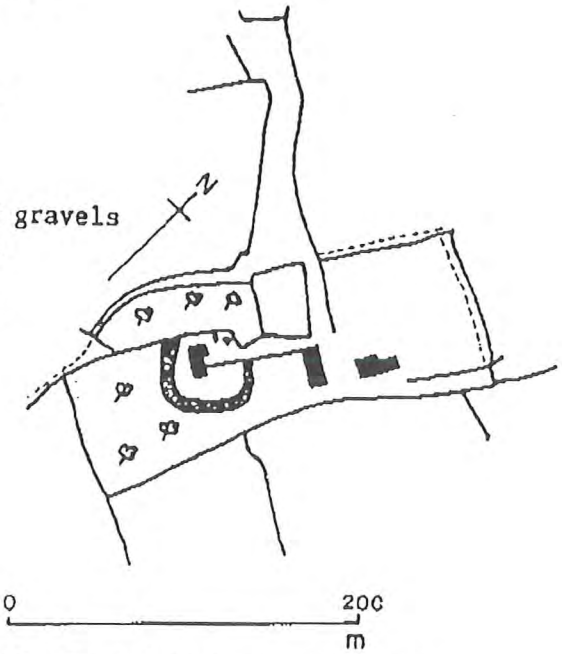



**Fig 93.22b:** Peel Hall Manor Farm 1840 (Lancs RO DRL 1/38)

Almost certainly this site belonged to the Southworth family; William, son of Robert de Winwick, granted Peel Croft to Gilbert, son of Gilbert de Southworth in the 13th century (Farrer & Brownbill eds 1911, 167 n8). Matthew de Southworth held the capital messuage in 1329; Gilbert de Southworth was one of the four lords of Houghton and Middleton in 1334. The 1332 Lay Subsidy does not record their presence in Houghton or the neighbouring vill of Southworth but members of the family were in Newton (qv) and Burtonwood (Rylands 1896) at this time. In 1430 John de Southworth and his wife, Ellen, held the manor of Houghton Peel for life (Farrer & Brownbill 1911, 167 n8). Ellen, widow of John de Southworth, leased the manor of Peel to James de Langton, rector of Wigan in 1437 (Farrer & Brownbill eds 1911, 167 n8). In 1436 the Stall, adjoining Peel, was granted by John Houghton to Simon Pierpoint; this was first noted in a (?)13th-century grant by Robert, son of Molle, to Peter de Middleton, chaplain (Farrer & Brownbill eds 1911, 166, n6). In 1520 Peel was sold to Thomas Southworth of Southworth by Margaret, widow of James Carr (Farrer & Brownbill eds 1911, 167 n9).

In 1835 all that remained of the site were a moat and a deep well; in 1955 the Ordnance Survey Inspector found no trace of a moat (OS SD 69 SW 3). Present buildings seem to date from no earlier than the 18th century but the Listed Buildings description of Peel Hall states that it is 17th century with alterations in 1828. Traces of the moat can still be seen in an overgrown ditch on the south side of the farmyard.

| | |
|---|---|
| Plans: | Lancs RO DRL 1/38, 1840 @ 10 chains=2" |
| Photos/illustrations: | |
| Publication: | Farrer & Brownbill eds 1911; Rylands 1896 |

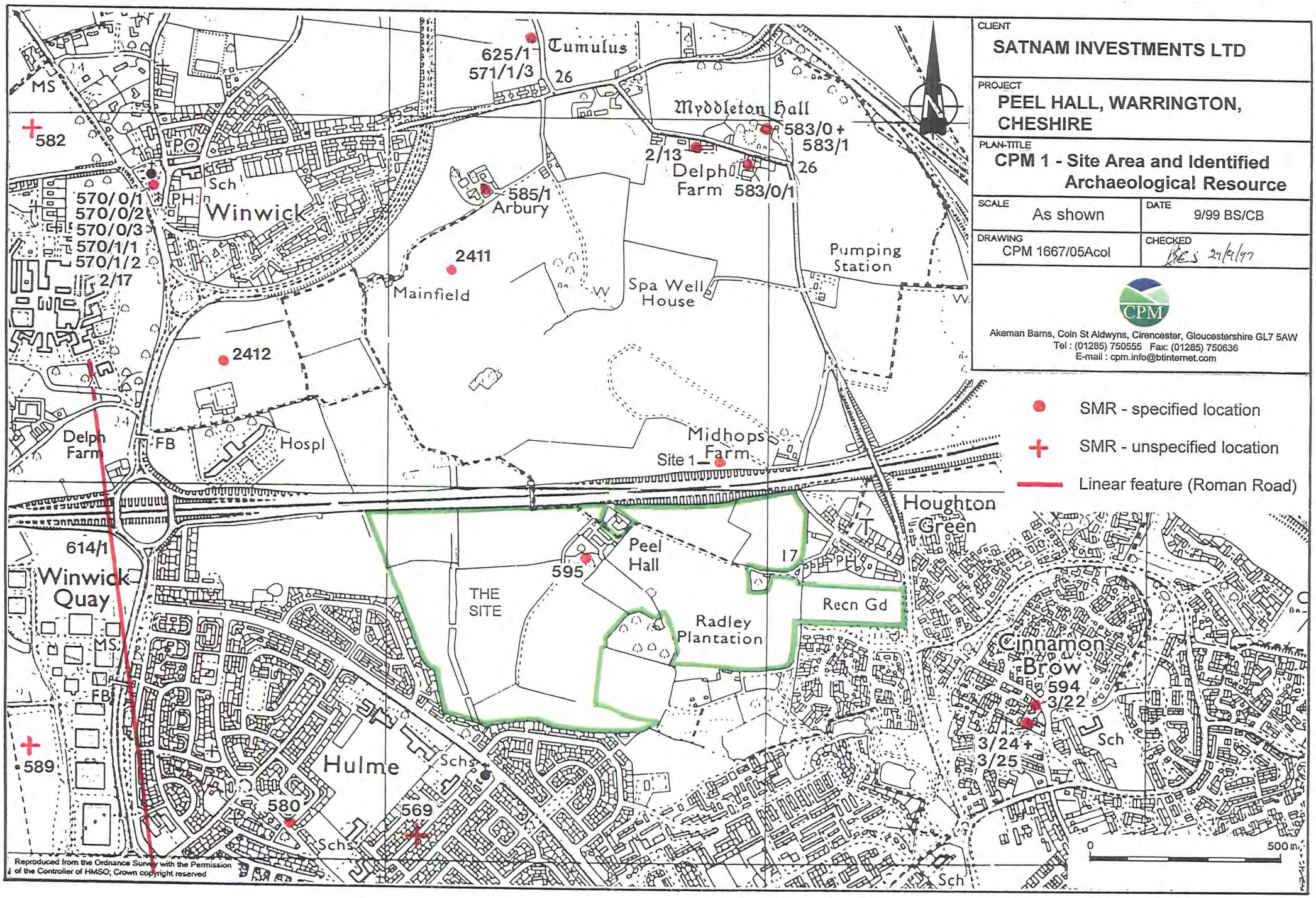
# PLANS

**Plan CPM 1 : Site Area and Identified Archaeological Resource**

(CPM1667/05Acol 9/99 BS/CB)

**Plan CPM 2 : Historic Map Information, Based on 2nd Edition Map of 1891**

(CPM1667/06Acol 9/99 BS/CB)


CLIENT
SATNAM INVESTMENTS LTD
PROJECT
PEEL HALL, WARRINGTON, CHESHIRE
PLAN-TITLE
CPM 1 - Site Area and Identified Archaeological Resource
SCALE
As shown
DATE
9/99 BS/CB
DRAWING
CPM 1667/05Acol
CHECKED
BES 24/9/99
CPM
Akeman Barns, Coln St Aldwyns, Cirencester, Gloucestershire GL7 5AW
Tel : (01285) 750555 Fax: (01285) 750636
E-mail : cpm.info@btinternet.com
SMR - specified location
SMR - unspecified location
Linear feature (Roman Road)
Tumulus
625/1
571/1/3
26
Myddleton Hall
583/0 +
583/1
2/13
Delph Farm
583/0/1
26
582
MS
PO
Sch
PH
Winwick
570/0/1
570/0/2
570/0/3
570/1/1
570/1/2
2/17
585/1
Arbury
2411
Mainfield
Spa Well House
Pumping Station
2412
Delph Farm
FB
Hospl
Midhops Farm
Site 1
Houghton Green
614/1
Winwick Quay
MS
FB
Peel Hall
595
17
THE SITE
Radley Plantation
Recn Gd
Cinnamon Brow
594
3/22
3/24 +
3/25
Sch
589
Hulme
Schs
580
569
Schs
Sch
0
500 m.
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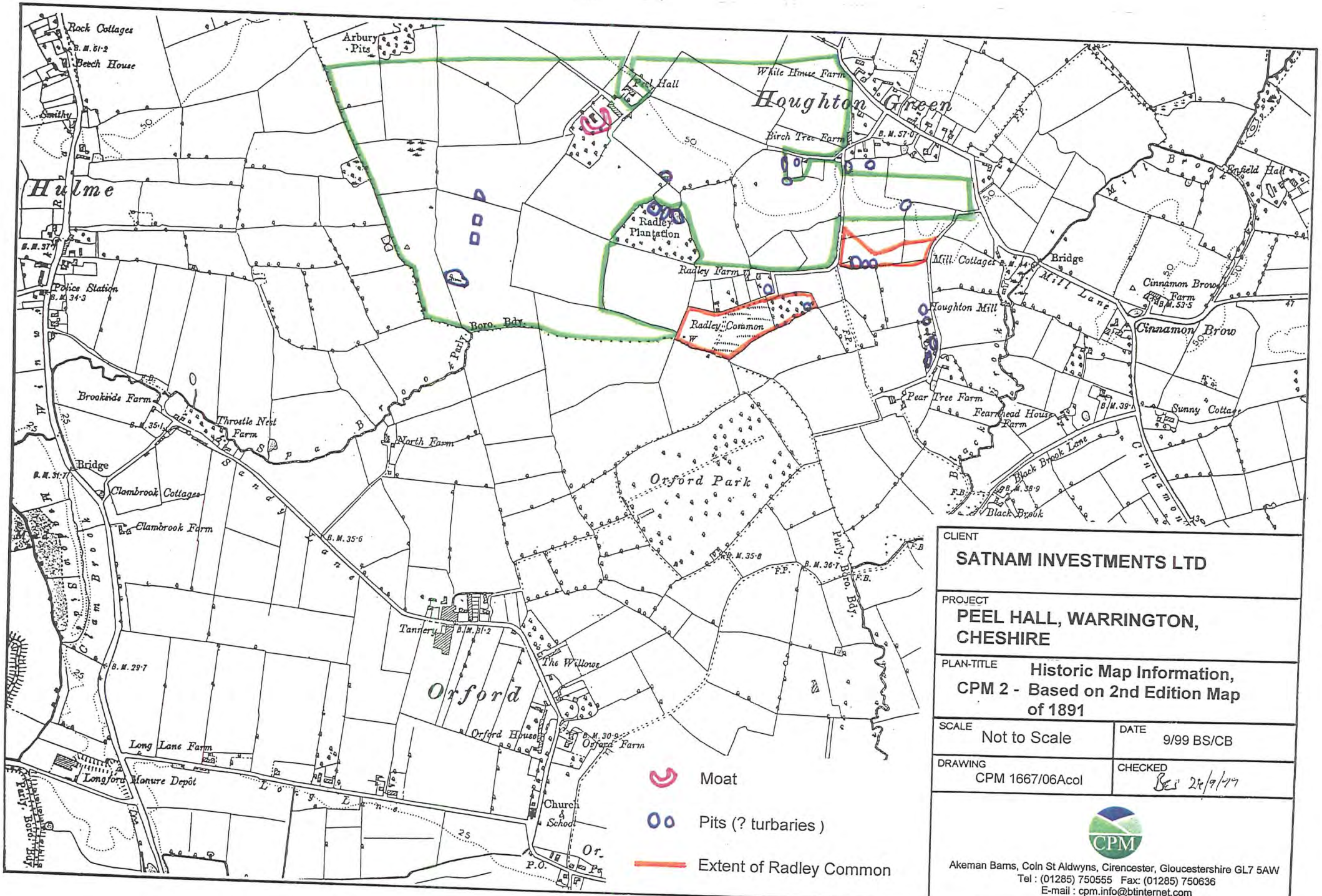


CLIENT
**SATNAM INVESTMENTS LTD**

PROJECT
**PEEL HALL, WARRINGTON, CHESHIRE**

PLAN-TITLE
**Historic Map Information, CPM 2 - Based on 2nd Edition Map of 1891**

| SCALE | DATE |
|---|---|
| Not to Scale | 9/99 BS/CB |
| DRAWING | CHECKED |
| CPM 1667/06Acol | BES 28/9/17 |

CPM
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LANCASTER
UNIVERSITY
ARCHAEOLOGICAL
UNIT

October 2001

# PEEL HALL, WARRINGTON
# CHESHIRE

## Evaluation Report

Commissioned by: CPM and Satnam Millennium Ltd

# Peel Hall, Warrington, Cheshire

---

## Archaeological Evaluation Report

Report no 2000-2001/101/AUA8152

| |
|---|
| Checked by Project Manager. |
| ..... Date 25/10/01 |
| Passed for submission to client. |
| ..... Date 25/10/01. |


Storey Institute
Meeting House Lane
Lancaster
LA1 1TF

October 2001

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# SUMMARY

An archaeological evaluation was undertaken in July 2001 of the area around Peel Hall, Warrington, Cheshire (centred at NGR SJ 6150 9165), by Lancaster University Archaeological Unit, on behalf of CPM Planning and Design Ltd for Satnam Millennium Ltd. The work comprised a programme of trial trenching to determine the character and extent of the archaeological resource within the area. The evaluation involved the excavation of 0.5% of the site and comprised 36 trenches, mostly 50m in length. The trenches were targeted to give maximum coverage of the area, and within areas of greatest archaeological potential, as informed by the desk-based assessment undertaken by CPM. Several areas within the site, however, were not evaluated because of ecological constraints.

The principal known site within the development area was a moat which was first documented in the thirteenth century when the manor of Houghton (as then called) was granted by Robert de Winwick to the Southworth family. On the Tithe map of 1840 a 'U'-shaped building is shown within a sub-rectangular moat, but by the time of the OS first edition (1849) the structure was no longer depicted and had presumably been demolished.

The evaluation revealed significant remains of the moated site associated with the demolished Peel Hall, identifying the existence and position of three large ditches, presumably the sides of the moat, although one does not coincide with evidence from the 1840 tithe map. In addition, the remains of a post-built structure set into the northern section of moat were identified, which was presumably a bridge. It has also shown that the moat fill was waterlogged, and contained quantities of preserved timber, probably relating to the former Peel Hall. The evaluation discovered dressed sandstone footings within the platform of the moat which may have been a component of the former Peel Hall.

A series of deep cut features, of unclear date and function, was identified in the north-eastern part of the site. Whilst later post-medieval pottery was recovered from the upper fills of several of the features, that recovered towards the base of the fills was of medieval / early post-medieval date.

# ACKNOWLEDGEMENTS

Lancaster University Archaeological Unit (LUAU) would like to thank Ben Stephenson, Archaeology Consultant, CPM Environmental Planning and Design, Colin Griffiths, Satnam Millennium Ltd, and Mark Leah, Archaeology Officer, Cheshire County Council, for their interest and support during the project. Thanks also go to Mark Olly for his interest and useful local knowledge. LUAU would also like to thank Dr Allan Hall of the Environmental Archaeology Unit at the University of York for his advice about the archaeobotanical record in Cheshire.

The fieldwork was undertaken by Chris Wild, Neil Wearing and Sean Jackson. The report was written by Chris Wild, the finds analysis was by Chris Howard-Davis, the environmental analysis was by Elizabeth Huckerby, and the drawings were by Emma Carter; the report was edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

# 1. INTRODUCTION

## 1.1 CIRCUMSTANCES OF PROJECT

1.1.1 An archaeological evaluation has been undertaken of the study area at Peel Hall, Warrington (centred at NGR SJ 6150 9165; Fig 1) by Lancaster University Archaeological Unit (LUAU), on behalf CPM Environmental Planning and Design, for Satnam Millennium Ltd, in advance of the proposed development of the site for housing and other uses. The programme of work was undertaken during July 2001, and comprised the excavation of 36 trial trenches, the results of which are presented within this report.

1.1.2 This report sets out the results of the work in the form of a short document which outlines the findings, followed by a statement of the archaeological potential of the area, and an evaluation of the impact of the proposed development.

## 1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

1.2.1 ***Topography:*** the site lies on the north-eastern outskirts of Warrington, flanked by housing developments on the eastern, southern and western sides; the M62 motorway forms the northern boundary of the study area. The topography comprises a gentle slope from the western edge of the study area (*c*18m OD) to the central part, around Peel Hall. To the east the land is almost flat. The site is former arable field with some dense scrub cover on the edges and has in the past been deep ploughed.

1.2.2 ***Geology:*** the area lies within the Mersey Valley and comprises Triassic red sandstone beneath deep superficial deposits of alluvial silts and wind blown sand. There are also large deposits of glacial boulder clay with pockets of gravels and sand (Countryside Commission 1998). There is also a slight occurrence of peat within the site, particularly towards the west, but it is very shallow and patchy.

## 1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

1.3.1 ***Prehistoric:*** the earliest archaeological evidence recorded by the documentary study (CPM 1999) is a Neolithic axe (CSMR 569; approx SJ 610 900), found at an unspecified location, somewhere near Orford to the south of the site. A Bronze Age round barrow (CSMR 571/1/3) lies *c*1km to the north of the site (SJ 6189 9358), with a second possible round barrow (CSMR 2412; SJ 6050 9230) located only 400m to the north-east of the present site.

1.3.2 ***Roman:*** Roman activity has been demonstrated within the environs of the site; the Roman road between Warrington (*Veratinum*) and Wigan (*Cuccium*) (CSMR 614/1; SJ 6037 9100) passes *c*500m to the west of the site, and Roman coins have been found at Hulme (CSMR 580; SJ 6070 9110) at *c*1km to the south-west of the site. Aerial photographs suggest a settlement (CSMR 2411; SJ 6120 9260) *c*500m to the north of the site, which is potentially of Roman date. Similarly, the cropmark of a rectangular enclosure has been identified at Midhops Farm (SJ 6192 9208),

which is no more than 100m from the present site; though undated it has the potential to be of Roman or prehistoric date (CPM 1999).

1.3.3 ***Early Medieval:*** excavation near the Bronze Age round barrow (SMR 571/1/3; SJ 6189 9358) revealed a substantial pre-Norman cemetery (SMR 625/1; SJ 6189 9358), with several hundred graves identified from an area of only 1500m$^2$; although such a structure has not been identified, the presence of such a large cemetery would suggest the existence of an associated church or at least a cross at the site. A pre-Norman cross was, however, recovered in the last century, from the churchyard of St Oswald's Church at Winwick (SMR 570/1/1; SJ6039 9280), *c*1km to the north-east of the site (CPM 1999) and *c*1.7km from the cemetery. Although the earliest fabric of St Oswald's church is from the thirteenth century, this may have been established on the site of an earlier church.

1.3.4 ***Medieval and Post-medieval:*** three manors, Houghton, Middleton and Arbury, were granted by Robert de Winwick to the Southworth family in the thirteenth century (Baines 1891; Farrer and Brownbill 1911, 167), and Matthew de Southworth held the capital messuage by 1329 (*ibid*). Myddleton Hall (SMR 583/1; SJ 6200 9297) is to the north of the site, Arbury (SMR 585/1; SJ 6127 9280) to the north-west of the site, and Houghton (formerly Houghton Peel) corresponds to the site of the present day Peel Hall (SMR 585) and lies within the study area. The building within the moat was still depicted on the Tithe map of 1840 (LRO DRL 1/38), had a 'U'-shaped outline, and was in the centre of a sub-rectangular moat with surviving western, northern and southern sides. Extending eastwards from the site was the principal road across a causeway over the moat in the direction of the present farm buildings, where a barn structure was shown. By the time of the OS first edition (1849) the whole area of the moat and original farm had become absorbed into an area of woodland and was not depicted at all.

1.3.5 Cartographic evidence shows that by the time of the earliest maps (LRO DRL 1/38; 1840) the area was in exclusively agricultural use with small fields radiating out from Peel Hall Farm to the south and west; to the east are larger fields which have been enlarged by the removal of field boundaries.

# 2. METHODOLOGY

## 2.1 PROJECT SPECIFICATION

2.1.1 A project specification (*Appendix 1)* was supplied to LUAU in February 2001 by CPM, for an archaeological evaluation of the site around Peel Hall, Warrington, which was in accordance with a verbal brief by Mark Leah, Archaeology Officer for Cheshire County Council.

2.1.2 The project specification provided for a 0.5% area of trial trenching, consisting of 36 trenches, to determine the nature of possible archaeological features within the extent of the study area, yet concentrating on the moated site at Peel Hall. Parts of the site are of ecological importance, notably Radley Plantation, an area of rough grassland to the south of it, and also an area of rush pasture in the western part of the study area. All these areas were excluded from the trenching programme as defined within the project specification.

2.1.3 Following completion of the trial trenching programme, and the recovery of potentially significant environmental samples from the fill of the moat and of ditches elsewhere on the site, the Archaeology Officer for Cheshire County Council required a programme of macrofossil assessment on the samples. The results of this assessment are presented in this report (*Section 3.6*). In all other respects the evaluation has been carried out in accordance with the project specification.

## 2.2 EVALUATION TRENCHING

2.2.1 ***Excavation Methodology:*** the excavation trenching was undertaken by a mechanical excavator (a 13 ton tracked 360° excavator) fitted with a 2.1m toothless ditching bucket, followed by hand cleaning for the purposes of examining archaeological detail. All excavation was carried out stratigraphically, whether by machine or by hand. The depth and character of the natural subsoil was identified in all trenches, and on completion the trenches were mechanically backfilled, laying the topsoil on top of subsoils.

2.2.2 ***Recording:*** the recording methods employed by LUAU accord with those recommended by English Heritage's Centre for Archaeology (CFA). Recording was principally in the form of *pro forma* Trench Sheets for each trench, which recorded the orientation, length, and depth of machining, and described the nature of the topsoil, subsoil (where applicable), and geological deposits. Where there were anticipated significant archaeological features, such as in the area of the moated site, or where significant features were identified, the features and deposits were recorded using *pro forma* context sheets based on those designed by MoLAS and English Heritage's Centre for Archaeology (CFA). A full textual, drawn, and photographic record was maintained for all deposits and features.

2.2.3 The positions of the trenches were recorded using a Global Positioning System (GPS) which provides for accuracies of +- 0.2m. The locational information was

incorporated with digital map data within a CAD system to create the location map (Fig 2).

## 2.3 FINDS

2.3.1 All finds recovered were bagged and recorded by context number; all finds were retained for analysis and were recorded and have been processed and temporarily stored according to standard practice (following current Institute of Field Archaeologists guidelines). The finds have been analysed by the LUAU in-house finds specialist (*Section 3.5*).

## 2.4 PLANT MACROFOSSIL ASSESSMENT

2.4.1 ***Quantification:*** three bulk samples, one from moat fill ***3001*** and the other two from ditch fills ***1609*** and ***1604,*** were assessed for plant macrofossils.

2.4.2 ***Preparation:*** a one litre subsample from moat fill ***3001*** was wet sieved through sieves of 2mm and 500μ mesh sizes. The samples from ditch fills ***1609*** (10 litres) and ***1604*** (8 litres) were floated and the flot retained on a 500μ mesh and dried. A small representative sample of the residue from fill ***3001*** and the flots from ditch fills ***1609*** and ***1604*** were examined with a low power Wild/ Leitz stereozoom microscope to assess for plant macrofossils. The nature of the matrices of the flots from the ditch fills was also recorded. The heavy mineral fraction was rapidly scanned to supplement the information about each matrix. In both samples the carbonised and uncarbonised seeds were recorded as a presence or absence, and other material was recorded on a scale of 1-5 (where 1 = rare and 5 = very abundant); the results are presented in Tables 1 and 2 (*Section 3.6*).

## 2.5 ARCHIVE

2.5.1 A full professional archive has been compiled in accordance with the project design and in accordance with current IFA and EH guidelines (English Heritage 1991). The paper, finds and digital archive will be deposited, as appropriate, with Cheshire Museums Service and a copy to the Cheshire Record Office, in agreement with the Client.

# 3. EVALUATION RESULTS

## 3.1 INTRODUCTION

3.1.1 Over the majority of the site, the evaluation produced evidence typical of an agricultural landscape within the region, revealing evidence of ditches, drains and ploughing. The stratigraphy of the site as a whole was very shallow, with modern disturbance along the motorway corridor at the northern edge. Two parts of the site, however, revealed features of archaeological significance; the north-eastern part of the study area produced evidence of relatively deep ditches, potentially similar to those identified within the putative late prehistoric / Romano-British enclosure to the north of the site at Midhops Farm (SJ 6192 9208; M Leah pers comm). The area around the site of Peel Hall also revealed significant features relating to the moat and probable structures on the moat platform.

3.1.2 In total, 36 trenches were excavated. Initially these were positioned to provide a good general coverage of the study area, with the exception of the ecologically sensitive area in the east, which had a reduced amount of trenching, and the area of the moated site which had a greater density of trenching. Following discussions with Mark Leah (Archaeology Officer, Cheshire County Council) and Ben Stephenson (Archaeology Consultant, CPM) it was decided to increase the concentration of trenching in the north-eastern part of the study area to investigate the extent of a ditch identified in Trench 02. The detailed descriptions of the individual trenches is presented in *Appendix 2*, and the significant results are summarised below.

## 3.2 NORTH-EASTERN AREA

3.2.1 Four trenches (Trenches 01, 02, 03 and 6) were initially excavated in the north-eastern part of the site (Figs 2 and 6). Trenches 01 and 03 revealed up to 1.5m of dumped hardcore and clay, associated with the construction of the motorway to the north, which overlay natural sands; no archaeological features were identified in either trench. The excavation of Trench 06 revealed natural silty sands at a depth of *c*0.3m, disturbed only by an occasional root-bole. Trench 02, however, revealed the butt-end of a steep-sided, and relatively deep (0.96m) ditch (***202***), which was cut into the natural silty sands and clay. The ditch was 1.9m wide, aligned approximately north-east / south-west (Figs 5 and 6), and was filled with a dark grey silty-sand, ***201***, containing occasional charcoal flecks. One sherd of abraded medieval pottery was also recovered from the feature (*Section 3.5.8*).

3.2.2 Subject to discussions with the Archaeology Officer for Cheshire County Council, it was agreed that additional trenches be excavated on either side of Trench 02 to investigate the extent of the steep-sided ditch, ***202***. Trench 17, to the north, revealed some tree-bole disturbance to the natural silty sands, and a very shallow (0.1m deep), probably truncated, linear feature, ***1702***. This contained nineteenth century pottery in its base, and probably represents the base of a field boundary ditch. Trench 16, to the south of Trench 02, revealed the sub-rounded southern termini of three features, ***1605***, ***1607*** and ***1608***, which were probably ditches, and a possible post-hole, ***1614***, cut into the natural sands and clay (Figs 5 and 6). The three

features were sectioned, to examine the relationship between them, but the similarity of the leached silty sand fills, and seasonal waterlogging of the soil, made distinctions between them almost impossible. It was apparent, however, that the central feature, ***1607***, was cut into the outer features, ***1605*** and ***1608*** (Fig 5). The relationship was further complicated by a nineteenth century land drain, the butt-end of which had been cut into the centre of the central ditch, ***1607***. Two sherds of medieval pottery were recovered from the lower part of the eastern fill (***1604***) of feature ***1605***, dating to the fourteenth to sixteenth centuries (*Section 3.5.7*). The possible post hole, ***1614***, was roughly square, with vertical sides and a flat base, and was only 0.08m deep. No finds were recovered from the feature, which appeared to have been truncated.

3.2.3 Following further discussion with the Archaeology Officer, Cheshire County Council, it was decided to excavate a further trench (Trench 36) to the south to investigate the southern extent of these archaeologically significant features (***1605***, ***1607*** and ***1608)***. The trench was opened purely to establish the presence or absence of features similar to those in Trenches 02 and 16, and there was no requirement to excavate any archaeological remains fully. Excavation and manual cleaning of the trench revealed a wide linear feature, aligned roughly north-west / south-east, which was cut by modern land drains, a sub-circular feature, potentially similar to those in Trench 16, and a smaller linear feature, cutting the eastern edge of the trench. Medieval pottery was recovered from surface cleaning of the eastern two features (*Section 3.5.7*).

## 3.3 MOATED AREA

3.3.1 Three trenches (30, 31 and 32) were excavated in the area of the moat (Fig 3). Trench 30 was a 53m long trench across the area of the moated site, which identified two deep ditches, one at each end of the trench; these were potentially parts of the moat. The western ditch, ***3002***, was 19m wide and at least 3.2m deep; it approximately corresponds to the position of the moat, as abstracted from the Tithe map (LRO DRL 1/38 (1840)) and superimposed on the OS 1:10,000 base (Fig 3), although it is substantially wider than that shown on the Tithe map. The eastern ditch, ***3011***, was at least 10m wide and was greater than 2.1m deep; by contrast with ditch ***3002***, it does not coincide with the position of the eastern moat section as depicted on the Tithe map, being *c*16m short of the depicted moat edge. Trench 30, as defined within the specification, did not extend sufficiently to the east in order to examine the plotted position of the eastern line of the moat (as shown on the Tithe map) (Fig 3); in addition, at the time the fieldwork was undertaken the map analysis was not available and therefore the potential significance was not fully understood. The eastern ditch, as identified in Trench 30, is either not the moat in its final form or the depiction on the Tithe map is severely inaccurate. The Tithe map in other respects appears to correspond relatively closely to the modern 1:10,000 OS map and does not appear to have sufficient errors to create this level of discrepancy; however, the possibility exists that this discrepancy reflects survey error on the Tithe map. Alternatively, it is possible that this ditch is not that depicted on the nineteenth century map, and potentially it may be an earlier line of the moat.

3.3.2 Between ditches ***3002*** and ***3011*** there was a substantial deposit of redeposited clay, apparently forming a building platform, and large quantities of this clay, ***3003,*** had been pushed into the moat, sealing it on the western side; this was a late event in the filling of the moat and possibly occurred following the demolition of the Hall. The northern return of the moat, ***3203***, was observed in Trench 32, but only its southern edge was identified; it was, however, at least 6.8m wide and was deeper than 1.9m. The position of this ditch approximately correlated with the moat shown on the Tithe map (LRO DRL 1/38 (1840); Fig 3). The three identified ditches were all deep, wide, and flat-bottomed, with relatively gently sloping sides, and each had peaty organic primary silts that were about 1.8m below the surface and at least 1.4m thick (Fig 4). A relatively large amount of mid-seventeenth century pottery (*Section 3.5.7*) was recovered from the lower fills of the ditches in both Trenches 30 and 32, with large quantities of nineteenth and twentieth century pottery and debris in the upper parts. The mid-seventeenth century pottery probably indicates a *terminus post quem* for the date when the moat was last cleaned, and the nineteenth / twentieth century ceramics potentially indicate when it was finally backfilled and levelled.

3.3.3 Also revealed in Trench 32 was evidence of timber supports, possibly for a bridge, ***3201***; these comprised two vertically set posts, probably of oak, observed at a depth of 1.9m below present ground level set within the primary fill of the moat. Both posts were sub-circular in cross-section and measured *c*0.3m diameter; they were set only *c*0.2m apart and their alignment was orientated north-west/south-east, along the line of the moat. A third post, ***3202***, was 1.6m to the south of the other two, and appeared to be set at an angle, about 30$^{o}$ from the horizontal. A detailed record of the posts was not possible as there was a risk of collapse of the trench sides, limiting access to the trench for both cleaning and surveying; the plan in Figure 4 is thus schematic, being drawn from outside the trench. Adjacent to the third upright was a *c*2m long, 0.25m wide timber set in the base, and along the line, of the moat, with a series of seven *c*0.2m x 0.1m small elongated timbers set horizontally, in part beneath the large timber; these short timbers were roughly dressed, of rectangular cross-section, and were set 0.2m apart with struts set between them. The timbers were probably not *in-situ*; they do, however, form a coherent unit, perhaps the remains of a timber structure that had collapsed into the ditch. Alternatively, they may have been deliberately placed in this position, thereby reusing the material for some secondary purpose.

3.3.4 Trench 31, positioned in the centre of the moated platform (Fig 2), revealed a clay subsoil with small sub-circular features cut into it. These were all shallow (<0.1m deep) and were filled with exclusively nineteenth and twentieth century material. The clay layer itself probably formed part of a built-up moat platform. At the north-western end of the trench a sub-rectangular red sandstone wall foundation, ***3101***, cut into the clay, at a height of 10.27m OD (Fig 3; Plate 2). The feature comprised a single course of roughly dressed red sandstone blocks, up to 0.72m x 0.30m in size, which apparently formed the northern end of a north-east / south-west aligned structure, faced to the east; it was 1.6m wide at its north-eastern end. The feature extended into the south-western section of the trench, and was partially overlain by further sandstone rubble. Behind the facing was loose silty clay and sand, containing numerous sandstone pieces.

3.3.5 Trench 24, situated *c*120m to the south-east of the moated area, revealed a possible boundary or hollow way orientated towards the moated site. This comprised a gently sloping 'U'-shaped feature, ***2402***, 5.7m wide, which was cut into the natural silty clay. The feature was 0.7m deep, was waterlogged in the base, and was filled with a dark-brown wet silty loam, containing a fragment of sandstone against its southern side. It was aligned approximately north-west / south-west and, even with the height of vegetation at the time of the evaluation, it corresponded to a slight surface hollow that extended north-west, towards the moated site. Parallel to ***2402*** was a similarly aligned, ditched field boundary, ***2401***. This was 2.5m wide and 0.19m deep, and was 10.5m to the south of the larger feature.

## 3.4 General Features

3.4.1 ***Field Boundaries / Ditches:*** several trenches produced features typical of post-medieval agricultural activity. A linear feature, shown as a field boundary on the Tithe map (LCRO DRL 1/38; 1840) and on the OS first edition map (1849), was observed within Trench 5 (Fig 2), measuring 1.3m wide and up to 0.8m deep. A large modern pit, *c*2m deep and *c*4m in diameter, was observed to the north, filled with modern brick, wood and plastic. Shallow field boundary / ditch features were also observed in Trenches 08, 09, 10, 11, 13, 19, and 20 (Fig 2). Most contained nineteenth/twentieth century pottery, although one sherd of early post-medieval pottery was recovered from the fill of the ditch in Trench 11, ***1101*** (*Section 3.5.7*).

3.4.2 ***Drainage Features:*** ceramic land drains were observed in nearly all the trenches. Most appear to be of late nineteenth century origin or later, and there was no typical alignment for drainage; in several trenches the drains intersected each other at oblique angles. A soakaway, filled with sandstone fragments, was observed in Trench 27 (Fig 2). Given the boggy nature of the site, it would appear that drainage was a constant problem, with many attempts to improve the land.

3.4.3 ***Structures:*** evidence of a structure was observed in Trench 35, in the south-western part of the study area (Fig 2). It comprised a concrete foundation, 0.6m wide on a roughly north-east / south-west alignment, with a south-eastern return. The exposed interior of the feature was filled with rubble, and it appears to have had an associated pit, that was larger than 1.5m$^2$, and was served by at least two ceramic drains.

## 3.5 Finds

3.5.1 A total of 129 fragments of artefacts or ecofacts was recovered, of which, the majority derived from ceramic vessels. Small amounts of glass, animal bone, wood, leather, and ironwork were also present, but none in significant quantities. Material was recovered from Trenches 02, 08, 11, 16, 30, 31, 32, and 36, with most being recovered from Trenches 30 and 32, associated with the moated site.

3.5.2 ***Pottery:*** a small amount of medieval pottery was recovered, in small fragments and badly abraded. None was particularly diagnostic and no date more refined than the fourteenth to sixteenth centuries is possible, although the material concentrates towards the later part of that period. The amount of medieval material is not large

enough to be able to make any confident assertion with regard to activity of that period on the site, and the abraded nature of the fragments would imply that they have been considerably disturbed, possibly reaching their place of deposition as a result of agricultural activity.

3.5.3 Later pottery, typically of later sixteenth and seventeenth century date, survived in greater quantity and in larger fragments than the medieval material. It was unabraded, and had clearly been recovered from archaeological deposits which had remained relatively undisturbed since deposition. The preponderance of this material is probably mid-seventeenth century in date and its presence within the moat fills could potentially reflect a recutting / cleaning of the moat in a period of upheaval associated with the Civil War. An increase in deposition at this time has been noted at a number of moated sites in the locality, including Old Abbey Farm, Risley (Howard-Davis forthcoming a) and Bewsey Old Hall (Lewis forthcoming). Indeed, the material from Trench 30, moat fill ***3001***, bears a strong resemblance to material from a pit cut through the floor of the Friary Church at Warrington (Howard-Davis forthcoming b) and parallels can be found with the large assemblage of sixteenth/seventeenth century pottery from Norton Priory (Vaughan forthcoming). The vessels probably derive from a number of local potteries, not least amongst them Prescot (Holgate 1982-3) which was known to have been producing during the seventeenth century. Activity around this date can be confirmed by the recovery of a clay pipe bowl dated 1640-1670, from Trench 32, ***3203***, although it should be noted that this was residual amidst material of considerably later date. It is likely that pottery and other objects continued to be deposited within the moat into the twentieth century, when it was finally backfilled.

3.5.4 ***Glass:*** all glass recovered from the evaluation was modern, with the exception of a single fragment of window quarry from Trench 30, ***3001,*** of seventeenth to eighteenth century date, which was probably contemporary with the group of seventeenth century pottery, although it could be later.

3.5.5 ***Metalwork:*** a single fragment of industrial residue, a typically plano-convex hearth bottom, is indicative of blacksmithing on site, but, as it was recovered in isolation in Trench 16, ***1609***, no date can be offered. Fragments of hand-forged nail recovered from Trench 11, ***1105***, also cannot be dated.

3.5.6 ***Leather:*** the fill of the moat, ***3203***, in Trench 32 produced a small amount of waterlogged wood and leather. A poorly-preserved leather shoe sole could be as early as the seventeenth century, but, as the material from this context includes pottery likely to be of early twentieth century date, this cannot be stated with confidence.

3.5.7 ***Timbers:*** two complete timbers, and several fragments of further timbers, were recovered from the moat, ***3203***, within Trench 32; three additional upright timber posts were identified, set into the lower sediments of the moat, but these were left *in-situ* and have not been subject to detailed examination. The two complete timbers appear to be wall panel staves, most probably of medieval or early post-medieval date. Both were roughly fashioned with blade tooling, rather than a saw, having crude wedge tapers at both ends; this is somewhat unusual for staves, which usually have a point at the upper end. Both timbers have nail holes in each face, and one has a surviving lath *in-situ*, nailed with a moulded, rather than a hand drawn,

nail. A maximum of eight nail holes were observed on any one face, with one nail head surviving. The timbers themselves appear much earlier than the laths, with the laths probably being added during a later phase of the structure from which the timbers originated.

3.5.7 ***Animal Bone:*** small amounts of animal bone were recovered from Trench 30, ***3001***, and Trench 32, ***3203***, and seem likely to represent domestic waste.

3.5.8 ***Trench Summaries:*** the following list the assemblage from each trench:

3.5.9 ***Trench 2:*** one fragment of medieval pottery was recovered from the fill of ditch ***202***.

3.5.10 ***Trench 8:*** a single fragment of late field drain was recovered from the silty-sand sub-soil, ***801***.

3.5.11 ***Trench 11:*** several hand-forged nails (five fragments) and a fragment of possibly early post-medieval pottery were recovered from the trench; these suggest a seventeenth century date for activity in this area.

3.5.12 ***Trench 16:*** eight fragments of pottery were recovered from this trench, which included two fragments of medieval pottery. One from the subsoil, ***1601***, is very similar in fabric to the small piece from Trench 36, and the other, from ditch ***1604***, is in an incompletely reduced fabric; this provides a general date in the fourteenth-sixteenth century. It is of significance that the same contexts, ***1601*** and ***1604***, also produced fragments of possibly sixteenth/seventeenth century date, perhaps suggesting activity in this area during the transition between the medieval and post-medieval periods, with activity continuing into the mid-seventeenth century. A large fragment of hearth-bottom slag, from the fill (***1609***) of ditch ***1608***, implies some blacksmithing in the vicinity, although this cannot be dated accurately.

3.5.13 ***Trench 30:*** substantial amounts of pottery were found in this trench. The material from the putative moat, fill ***3001***, is of significance, providing an approximate date for its last cleaning. The majority of the vessels date from the mid-seventeenth century, and can be paralleled with material from the Civil War deposits at Beeston Castle in Cheshire (Noake 1993) and from a number of sites at Prescot (Holgate 1982-3; Cowell and Chitty 1982-3), thought to have been a producer of Black-glazed redwares during this period. What appears to be small fragments of modern brick from this context may be intrusive, or equally could potentially be of earlier date; a fragment of window glass, however, would appear to be contemporary with the pottery. Material from ***3006***, a fill of ditch ***3011,*** is mixed, with a ceramic pan handle of possibly sixteenth/seventeenth century date associated with a complete mineral water bottle of mid-twentieth century date. A range of material was also recovered from ***3016,*** an upper fill of ***3011,*** the majority of which is of later nineteenth to earlier twentieth century date, but it incorporated an element of residual seventeenth century material.

3.5.14 ***Trench 31:*** the small group (nine fragments) from a layer, ***3102***, overlying structure ***3101,*** is similar in composition to that from Trench 30, ditch fill ***3001***. It cannot, however, be dated with precision, and might be slightly later.

3.5.15 ***Trench 32:*** a relatively substantial assemblage, was recovered, predominantly from the fill of moat ***3203.*** The material is varied in date, ranging from the seventeenth

to the twentieth century; if, however, the single fragment of twentieth century bottle glass is disregarded, the date range is narrowed to the mid-seventeenth to late eighteenth centuries and could be seen as predominantly deriving from the earlier part of that range. Wood from structure ***3202*** appears to represent structural elements deposited subsequent to a period of demolition or refurbishment and there is evidence to suggest some of the wood had been reused. The shoe sole could be seventeenth century in date, but this cannot be stated with confidence.

3.5.16 ***Trench 36:*** three sherds of medieval pottery, in an orange sandy fabric with splashes of glaze, were recovered from the fill of ditch ***3602***.

## 3.6 PALAEOENVIRONMENTAL ASSESSMENT

3.6.1 ***Results from ditch fills 1609 and 1604 (Trench 16):*** these two samples from the north-eastern part of the site contained some well preserved plant remains of weed taxa of both damp ground (Rush, *Juncus*) and waste, open or arable land, including Corn Marigold (*Chrysanthemum segetum*), Common Sorrel (*Rumex acetosa*), Small Nettle (*Urtica urens*), and Blackberry (*Rubus fructicosa*). Both samples contained amorphous plant material, charcoal and wood fragments, and insect remains, with abundant sand and silt and some coal pieces. There was a single sherd of medieval pot in ditch fill ***1604*** *(Section 3.5.7)*.

3.6.2 ***Results from moat fill 3001 (Trench 30):*** the moat fill, ***3001,*** was waterlogged and as a result contained excellently preserved plant and insect remains. The sample contained abundant wood, amorphous plant material and insect remains with some charcoal, monocotyledon fragments, and coal. It was very rich in well-preserved seeds, with assemblages of aquatic taxa, shrubs, weeds of open, waste or arable land and plants of wet ground.

3.6.3 The assemblage of weed taxa from open, waste or arable land includes Corn Marigold (*Chrysanthemum segetum*), Black Bindweed (*Polygonum convolvulus*), Common Sorrel (*Rumex acetosa*), Chickweed (*Stellaria media*), and both Stinging (*Urtica dioica*) and Small Nettle (*Urtica urens*). Woody plants are represented by large numbers of Elderberry (*Sambucus nigra*), some Blackberry (*Rubus fruticosus*), and alder (*Alnus glutinosa*) seeds. The former, together with the Nettles, suggest a nitrogen-rich soil near to the moat. Pondweed (*Potamogeton* sp), Bulrush (*Typha*), sedges (*Carex*), Rush (*Juncus*) and *Chara/Nitella* are either aquatic or wet ground plants and suggest that the moat was still partly filled with water as the deposit was forming.

3.6.4 ***Conclusions:*** the three samples, in particular the moat fill, ***3001***, contained well-preserved plant and animal remains and therefore provide some evidence of the environment and landuse in the environs of Peel Hall. The plant assemblages from the three samples are indicative of communities from wet, open, waste and cultivated ground. The very large numbers of elderberry and nettle seeds in the sample from the moat fill, ***3001,*** are indicative of nitrogen-rich conditions adjacent to the moat area, which is to be expected close to habitation. The aquatic plants recorded from moat fill ***3001*** indicate the continuing presence of at least shallow water as the fill accumulated. The presence of seventeenth century material within the lower fill of the moat and the nineteenth century ceramics associated with the

final backfilling (*Section 3.5*) suggest that the deposits were formed between these dates.

| **Context no** | | **3001** | **1604** | **1609** |
|---|---|---|---|---|
| Sample no | | 300 | 301 | 302 |
| Volume processed litres | | 1 | 8 | 10 |
| Amorphous organic matter | | 5 | 2 | 2 |
| Monocot frags | | 3 | | |
| Bryophyte remains | Moss | 1 | | 1 |
| Wood fragments | | 5 | 2 | 1 |
| Charcoal fragments | | 2 | 2 | 4 |
| Fly puparia | | 1 | | |
| Insect fragments | | 5 | 2 | 3 |
| Silt and clay | | 2 | 5 | 5 |
| Sand and gravel | | 3 | 5 | 5 |
| Coal | | 3-4 | | 1 |
| Clinker/cinder | | | 1 | |
| Modern roots | | 2 | 2 | 1 |
| Brick/tile | | 1 | | 1 |
| Clay pipe | | 1 | | |
| Medieval pot | | | 1 | |
| Nineteenth century pot | | 1 | | |
| Fabric frags | | | | 1 |
| Earthworm cases | | 3 | | 1 |
| Fungal sclerotia | | 1 | 1 | |

Table 1: Palaeoenvironmental assessment of three samples (***3001***, ***1604*** and ***1609***): matrix components recorded on a scale of 1-5 (1=rare and 5=very abundant)

| | | | | |
|---|---|---|---|---|
| *Alnus glutinosa* seed | Alder | + | | |
| *Brassica* sp | Cabbage family | + | + | |
| *Chara/Nitella* oospores | Aquatic alga | + | | |
| *Carex* lenticular | Sedge | + | | |
| *Carex* trigynous | Sedge | + | | |
| *Chenopdium album* | Fat Hen | + | | |
| *Chrysanthemum segetum* | Corn Marigold | | | + |
| *Conium maculatum* | Hemlock | + | | |
| Gramineae<2mm | Grass | + | | |
| *Juncus* | Rush | + | | + |
| *Polygonum convolvulus* | Black Bindweed | + | | |
| *Potamogeton* sp | Pondweeds | + | | |
| *Potentilla erecta*-type | Cinquefoils | | + | + |
| *Prunella* sp | Selfheals | + | | |
| *Ranunculus repens*-type | Creeping buttercup | + | | |

| | | | | |
|---|---|---|---|---|
| *Rubus fruticosus* agg | Blackberry | + | + | |
| *Rumex acetosa* | Common Sorrel | + | | + |
| *Rumex acetosella* | Sheep's Sorrel | + | | |
| *Rumex* sp | Sorrels | + | | + |
| *Sambucus nigra* | Elderberry | + | | |
| *Stellaria media* | Chickweed | + | | |
| *Typha* sp | Bulrush | + | | |
| *Urtica dioica* | Common Nettle | + | | |
| *Urtica urens* | Small Nettle | + | | + |
| Unknowns | | + | | + |

Table 2: Seeds recorded as present or absent from the palaeoenvironmental assessment of three samples (***3001***, ***1604*** and ***1609***).

# 4. DISCUSSION

## 4.1 CONCLUSIONS

4.1.1 The evaluation has revealed significant archaeological deposits within the study area, concentrated in the area of the Peel Hall moated site, and also in the north-eastern part of the site. Elsewhere the trenching revealed occasional archaeological features of lesser significance, principally relating to drainage.

4.1.2 ***Peel Hall Moated Site:*** although the layout of a sub-rectangular moat was depicted on the Tithe map (LRO DRL 1/38 1840), subsequent to this date much of the moat was backfilled and only the southern section survives as an earthwork. The evaluation, however, has confirmed the existence of three sides of the moat, of which only one side has had a complete profile recorded, ***3002***, from Trench 30. This has revealed a relatively shallow, but an extremely broad (19m wide) ditch, which is unusually wide for a moat. Within the northern section was a series of structural timber posts, probably forming a bridge; its position broadly corresponds to the line of the principal access route to the site and with a causeway shown on the Tithe map (LRO DRL 1/38 (1840)). The primary fill of this moat section was waterlogged, within which were large upright timber posts, and a possibly collapsed timber structure, which has been interpreted as wall panel staves with associated studs and laths (*Section 3.5.7*). This structure does not have any direct relationship with the large uprights and was potentially an *ex-situ* section of wall, from a nearby structure, which had been cast into the base of the moat. There is, however, some possibility that it may have had some, perhaps *ad hoc*, secondary use within the moat and as such the timbers may have been placed there. Also within the moat were well-preserved organic deposits which have the potential to give a picture of the ecology of the site and its environs during the post-medieval occupation of the site.

4.1.3 Significant stone-founded structural remains, ***3101***, were observed on the moat platform; this feature was very small (only 1.6m wide), and was probably a projection from a wall face, such as a chimney stack or an outshut. Despite its small size, it provides a strong indication that other structural remains are likely to survive on the platform. The discovery of dressed sandstone footings are of some importance as they give an indication of the structural components of at least part of Peel Hall, about which little substantial is known. The timbers observed in the moat, ***3203***, within Trench 32, suggest that a structure, incorporating timber-framed components, once stood on the site prior to the infilling of the moat, and the stone structure suggests that such buildings may have had stone foundations. This is similar in character to the building on the moated site at Risley, *c*5km to the east (LUAU 1999).

4.1.4 The ditch-like feature in Trench 24 , 110m to the south-east of the moat, appears to be orientated on Peel Hall, and possibly represents a hollow way extending south-east out from the Hall. No trenches, however, were excavated between Trench 24 and the moated site and thus this speculation cannot be confirmed.

4.1.5 ***North-Eastern Area:*** the series of deep cut features, identified in the north-eastern part of the site, are of unclear date and function. Whilst later post-medieval pottery

was recovered from the upper fills of several of the features, that recovered towards the base of the fills was of medieval / early post-medieval date (*Section 3.5.8*). Despite the presence of medieval material within the ditch fills, there are noted parallels of form between this site and the nearby prehistoric / Roman enclosure site at Midhops Farm (SJ 6192 9208) (M Leah pers comm) and there is consequently a degree of uncertainty as to the date and form of the complex. The presence of comparable features in Trenches 02, 16 and 36 would suggest that these were components of an interrelated complex, and the lack of features in Trench 17 does not preclude features lying elsewhere in the environs. Given the configuration of the trenches it is not possible to provide a precise indication of the extent of the complex. To the north any continuation of the complex has been lost as a result of disturbance from the construction of the M62 motorway, as identified in Trenches 01 and 03, and to the west and south it does not appear to have extended as far as Trenches 06 and 07, given the absence of related features in these trenches.

4.1.6 ***Drainage:*** the evaluation revealed that the whole site has been subject to repeated attempts at drainage, although several marshy patches and ponds still remain.

# 5. IMPACT

## 5.1 IMPACT

5.1.1 ***Moated Site:*** the sub-surface preservation of the moat appears to be good; the evaluation has demonstrated the survival of structural remains on the moat platform and also within the moat which was found to contain *in-situ* timbers. Although moated sites are not uncommon in this region, given the good sub-surface survival of the site, it can be regarded as being of high archaeological significance.

5.1.2 ***North-East Area:*** the ditch complex in the north-eastern area comprises substantial, deep and steep-sided ditches, containing medieval pottery, although potentially being of earlier date. The complex is potentially archaeologically sensitive and would warrant further investigation.

5.1.3 ***Conclusions:*** the proposed development will result in extensive disturbance in the areas of proposed housing and also in adjoining lands to accommodate the landscaping of the site. The two main areas of archaeological sensitivity, the moated site and the north-eastern area, are vulnerable to any ground works during construction and landscaping in their vicinity, and, given the anaerobic survival of organic deposits within the moat fills, the alteration of the drainage pattern in the area has the potential to result in the decay of such deposits.

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# APPENDIX 1
# PROJECT SPECIFICATION

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**PLANS**


| | | |
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| Plan CPM 1 | : | Site Area and Identified Archaeological Resource (CPM 1667/05acol 12/00 RC/CB) |
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# Section 1
## Introduction

1.1 This Archaeological Specification has been prepared by CPM on behalf of Satnam (Millenium) Limited. It sets out a strategy for an archaeological field evaluation. This work is recommended by the Archaeology Section of Cheshire County Council, who provide archaeological planning advice to Warrington Borough Council. This Specification will present a detailed methodology of the required work, as agreed by Cheshire County Council. The document will also form the basis for costing the necessary fieldwork.

1.2 This Specification refers to an area of land proposed for housing on the northern outskirts of Warrington. The site is currently scrubland, which is of some nature conservation value, together with areas of agricultural land.

1.3 Previous work, in the form of archaeological assessment, has demonstrated that remains of archaeological interest exist in the general area. Peel Hall is located in the northern part of the site and it is considered that there is potential for further archaeological deposits to survive.

1.4 The evaluation report resulting from the fieldwork will present a digest of information on the character and significance of any archaeological deposits located. The report will form the basis of any proposals for further archaeological mitigation works, should this be considered appropriate.

# Section 2
## Archaeological Background

2.1 A CPM assessment has consulted all available archaeological and historical records. Plan CPM 1shows the records held by the Cheshire SMR and the main sites are outlined below.

2.2 Peel Hall is located in the northern part of the site area (SMR 595). This is listed in the SMR as the site of Houghton Peel and as a medieval moated manor house. Nineteenth century maps reveal that a sub-circular moat survived at this time in the area of woodland to the south-west of the present buildings.

2.3 Two Bronze Age round barrows are located to the north of the site. SMR 571/1/3 is approximately 1km away from the site. This barrow was excavated in 1980 and also revealed a large Saxon cemetery (SMR 625/1). A second possible barrow (SMR 2412) is located c.400m away from the site.

2.4 A Roman road is recorded to the west of the site running in a north-south direction (SMR 614/1) and air photographic and place name evidence suggest a Roman settlement 500m north of the site close to Arbury (SMR 2411).

2.5 A more recent cropmark of a possible rectangular enclosure is located less than 100m north of the site and may be of prehistoric or Roman origin. This is shown as Site 1 on Plan CPM 1.

2.6 A copy of the archaeological assessment will be made available to the retained archaeological contractor.

# Section 3

## Specification for Archaeological Field Evaluation (Trial Trenching)

**Trial Trenching**

3.1 A total of 34 50m and 2 30m (trenches 1 and 2) trenches are required (see Plan CPM 2). The trenches will provide information to determine the nature of possible archaeological features. The trenches should be a minimum of 1.5 metres wide.

3.2 The trenches are required to:

(a) determine the thickness, depth and depositional history of any archaeological deposit encountered;

(b) characterise the nature of the main stratigraphic units encountered in terms of their physical composition (stone, sand, gravel, organic materials etc) and their archaeological formation (primary deposits, secondary deposits etc);

(c) assess the overall presence and survival of structural remains relating to the main periods of occupation revealed and the potential for the recovery of additional structural information given the nature of the deposits encountered (e.g. extent of later disturbance etc);

(d) assess the overall presence and survival of the main kinds of artefactual evidence (including pottery, brick, tile, stone, glass, metal, bone, small finds, industrial residues etc), its condition and potential given the nature of the deposits encountered;

(e) assess the overall presence and survival of the main kinds of ecofactual and environmental evidence (including animal bone, human bone, plant remains, pollen, charcoal, mollusca, soils etc), its condition and potential given the nature of the deposits encountered;

(f) appraise the relative value of the main stratigraphic units revealed in terms of their importance for preservation and conservation.

3.3 Due to the nature conservation value of parts of the site, it will be necessary to allow for some flexibility in terms of the positioning of the trench locations. This is due to the need to avoid any ecologically sensitive areas. As a general rule, destruction of any upstanding scrub or saplings should be avoided. Trenches 3 -12 all lie within areas of rough grassland with scattered scrub and in these areas, trenches should be laid out to avoid damaging scrub.

3.4 Plant and contractor vehicles should not enter the area of rush pasture marked on Plan CPM 2. At the same time, every effort should be made to

reduce damage to the existing ground cover in rough grassland areas by having one access route for plant (trenches 3-12).

# Section 4
## Techniques for Trenching

4.1 Where trenches are opened by mechanical excavator, all undifferentiated topsoil or modern overburden should be removed down to the first significant archaeological horizon using a ditching bucket or similar, with no teeth.

4.2 The machine should remove a level spit of no more than 0.20 m in depth moving along the length of the trench. Successive spits may be similarly removed until the first significant horizon is reached. That level should be cleaned in plan. If the machine has to re-enter the trench care should be taken to ensure that it does not damage underlying remains, particularly in soft conditions. The machine must not be used to cut arbitrary trial trenches down to natural deposits, without regard to the archaeological stratification and leaving a section record only. All machine work must be under archaeological supervision and should cease immediately if significant evidence is revealed. The spoil should be observed for any archaeological finds.

4.3 The machine used should be powerful enough for a clean job of work and able to mound spoil neatly at a safe distance from trench edges.

4.4 All archaeological evaluation is by hand with cleaning, examination and recording both in plan and section. The objective is to define remains rather than totally remove them. Full excavation should be confined to the least significant remains (e.g. dumped layers), which may allow underlying stratigraphy and features to be exposed and recorded. Within significant deposits partial excavation, half-sectioning, the recovery of dating evidence, sampling and the cleaning and recording of features is preferable to full excavation. There is no requirement to totally excavate each evaluation trench to natural levels.

4.5 Archaeological excavation may require work by pick and shovel or occasionally further use of the machine. Such techniques are only appropriate for the removal of homogeneous or low-grade deposits, which may give a 'window' into underlying levels. They must not be used on complex stratigraphy and the deposits to be removed must have been properly recorded first.

4.6 Particular care should be taken not to damage any areas containing significant remains. Such evidence would normally include deep or complex stratification, settlement evidence and structures. Such areas should be protected and not left open.

4.7 Any human remains must also be left in situ, covered and protected. If removal is essential it can only taken place under appropriate Home Office

and environmental health regulations. Prior written notice is also to be given to the Local Planning Authority.

4.8 It should not be assumed that the most recent levels are the least important and due weight should be given to their perceived importance.

and environmental health regulations. Prior written notice is also to be given to the Local Planning Authority.

4.8 It should not be assumed that the most recent levels are the least important and due weight should be given to their perceived importance.

# Section 5
## Recording Systems

5.1 The recording system must be fully compatible with the most widely used elsewhere in the region and in accordance with the guidelines of the Institute of Field Archaeologists. Context sheets should include all relevant stratigraphic relationships and for complex stratigraphy a separate matrix diagram should be employed. The following plans and sections are required:

(a) site location plan: general plan (e.g. OS 1:1250) showing investigation area and development site in relation to surrounding locality and street pattern;

(b) trench plan: trenches in relation to investigation area and OS grid (e.g. 1:100 or 1:200);

(c) archaeological plans: some record of the full extent in plan of all archaeological deposits must be made. All significant deposits should be formally planned in relation to the trench and OS grid;

(d) sections containing significant deposits, including half sections, should be drawn as appropriate. Upon completion of each evaluation trench containing archaeological deposits, at least one long section is to be drawn, including a profile of the top of natural deposits (extrapolated from cut features etc if the trench has not been fully excavated). Section drawing should include heights OD;

(e) all archaeological plans and sections should be on drawing film and at a scale of 1:10 or 1:20 and should include context numbers and OD spot heights for all principal strata and features;

(f) an adequate photographic record of any significant archaeological remains is required, in both plan and section.

# Section 6
## Finds and Samples

6.1 A high priority should be given to dating any remains and so all artefacts and finds are to be retained. Consideration should also be given to the recovery of specialist samples for scientific analysis, particularly samples for absolute dating, structural materials and cultural/environmental evidence.

6.2 All finds and samples are to be treated in a proper manner to prevent deterioration. This will involve cleaning and conservation where necessary and labelling, cataloguing and secure storage in appropriate containers.

6.3 The archaeological organisation will need to demonstrate that arrangements are in hand to cover all necessary processing, conservation and specialist analysis of finds and samples, including if necessary the conservation of organic and composite materials and dendrochronological and environmental analysis of samples.

6.4 Every effort should be made to ensure that finds analysis is consistent with existing local systems.

# Section 7
## Monitoring and Access

7.1 The County Archaeological Officer at Cheshire County Council, or his representative, will monitor progress and standards throughout the project. To facilitate this a projected timetable for site work will be agreed between Cheshire County Council, the developers and their archaeological consultants (CPM) and the contracting archaeological organisation.

7.2 The office of the County Archaeological Officer at Cheshire County Council will be notified of the start giving at least one weeks notice in writing.

# Section 8
## Health and Safety

8.1 All relevant health and safety regulations must be followed. In particular the machine should be kept away from unsupported trench edges and public access should be restricted. Barriers, hoardings and warning notices should be installed as appropriate. Safety helmets are to be used by all personnel as necessary.

8.2 No personnel are to work in deep unsupported excavations.

8.3 The archaeological organisation must be satisfied that the applicant or developer has provided all information reasonably obtainable on contamination and the location of live services before any site work takes place.

8.4 All archaeological trenches should be backfilled upon completion of works.

# Section 9
## Evaluation Report

9.1 The evaluation report should include:

(a) a review of the aims and methods used in the field evaluation;

(b) a table summarising the descriptive text showing per trench the features, classes and numbers of artefacts and their interpretation;

(c) spot dates must be given for all finds and these must be cross referenced to the archaeological features;

(d) illustrative material including plans and sections of actual archaeological deposits with any predicted extents of these deposits. This would include a plan at an appropriate scale showing trench layout (as dug) and features located;

(e) the nature, extent, date, condition and significance of the archaeological findings with specialist opinions and parallels from other sites in the area;

(f) the anticipated degree of survival of archaeological deposits across the site;

(g) a reconsideration of the methodology used, including a confidence rating of the strategy and the results;

(h) the report should not give an opinion on whether preservation or investigation is considered appropriate.

# Section 10
## Archiving and Curation

10.1 An archive of the evaluation is to be prepared for all the work undertaken.

10.2 The post excavation work will include the processing and primary research, analysis and investigative conservation necessary to prepare the site archive for future uses and to produce a report for dissemination.

10.3 The full site archive, including all finds (other than gold and silver declared by a Coroner's Inquest to be Treasure Trove – see the Treasure Act 1996 – Cod of Practice for full details) shall, with the agreement of the landowners, be deposited after completion of post-excavation work with the local Museums Service.

10.4 The archaeological organisation will ensure that the fully integrated site archive is deposited with the local Museums Service (Warrington Museum) and that the Museum Collections Manager is notified and liaised with at an early stage.

# Section 11
## Dissemination of the Results

11.1 The Archaeological Field Evaluation report will be submitted to CPM for their verification and approval. The report will be the property of Satnam Planning Services Limited and it will represent a confidential document. This document will be submitted by the developers and CPM to the County Archaeological Officer at Cheshire County Council, for approval and assessment.

11.2 After an appropriate length of time, normally not exceeding six months from the completion of fieldwork, one copy of the report will be deposited in the County Sites and Monuments Record and will become a public document. This timescale to be agreed with the developers.

11.3 In terms of wider dissemination, the archive should contain a summary report and if the evaluation results are of regional and national importance, it will be necessary to publish the results in an appropriate journal. This will consist of a factual report of the findings. A short note should be published in a local archaeology journal in the next issue after fieldwork has taken place, even if the results are negative.

# APPENDIX 2
# TRENCH DESCRIPTIONS

**Trench No:** 1
**Alignment:** North-east / south-west
**Length:** 50.2m
**Depth:** 1.50m (max)
Dark-brown topsoil, 0.4m in depth, overlay up to 1.0m of mixed silty clays intermixed with much modern backfill (brick debris and plastics). The exception to this was the north-eastern 4.0m of the trench where the same depth of topsoil overlay 0.50m of mid to pale brown silty sand subsoil, with occasional patches of mid-brown plastic clay. This subsoil deposit contained charcoal and brick flecking, and overlay less mixed, mottled pale reddish brown natural sands.

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**Trench No:** 2
**Alignment:** East/west
**Length:** 51.0m
**Depth:** 1.05m
A dark-brown topsoil (0.3m in depth) overlay 0.4m of mid-brown silty sand subsoil, which was much disturbed by roots and contained charcoal flecks. This overlay natural orange/brown silty sands with occasional clay patches. The presence of iron panning and leaching was noted. The butt-end of a ditch, ***201/202,*** was observed towards the western end of the trench; a large tree bole was also noted in the central part of the trench.

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**Trench No:** 3
**Alignment:** North/south
**Length:** 50m
**Depth:** 1.35m (max)
A dark-brown topsoil (0.35m in depth) overlay 0.6-0.7m of hardcore backfill consisting of brick, tarmac, concrete kerbstone and rubble stone, contained in a matrix of mid-brown silty sand. This overlay reddish-brown silty sand 0.4m in depth. This had occasional inclusions of brick, sandstone, charcoal, glass and tarmac, and was probably a make-up layer related to the construction of the nearby M62 motorway. No archaeological features were observed.

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**Trench No:** 4
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.4m
Turf and topsoil, to a depth of 0.4m, overlay varying deposits of rubble hardcore, mixed with redeposited natural sands. No archaeological features were observed.

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**Trench No:** 5
**Alignment:** North-west/south-east
**Length:** 50m
**Depth:** 2.5m
At the north-west end of the trench was a 0.3m deep topsoil which overlay natural pale grey silty sands. In the south-western part of the trench (32m from south-west end) was a deposit of modern debris, which was 4m x 1.75m in extent. At 2m to the south-west of the modern debris a ditch, ***501/502,*** ran across the width of the trench. No finds were recovered from the ditch and no date could be assigned.

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**Trench No:** 6
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.85m
A dark-brown topsoil, 0.35m in depth, overlay 0.5m of mixed brown / grey silty sand subsoil. Much root disturbance and occasional to moderate charcoal flecking were noted. There were no archaeological features.

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**Trench No:** 7
**Alignment:** South-west/north-east
**Length:** 50m
**Depth:** 0.55m
A dark-brown topsoil (0.15m in depth) overlay 0.4m of mid-brown sandy clay subsoil. Having noted the presence of twelve post-medieval ceramic pipe drains, crossing the trench at regular intervals over a length of 45.5m, only the north-eastern 4.5m was examined in detail. This revealed one more ceramic drain and an area of iron panning.

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**Trench No:** 8
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.9m
A dark-brown topsoil (0.3m in depth) overlay 0.3m of orange / brown silty sand subsoil. This overlay mixed orange / brown / yellow natural sands, in which areas of iron panning were noted. At the western end of the trench a modern ditch, ***804/805,*** which was 2.4m wide, ran across the width of the trench. A distinct second backfill and recut, ***801/802,*** were recorded.

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**Trench No:** 9
**Alignment:** North/south
**Length:** 50m
**Depth:** 0.7m
A dark-brown topsoil, 0.3m in depth, overlay 0.3–0.4m of a dark-brown medium clay sand subsoil. This overlay mottled yellowish brown / pale grey natural fine sands. Near the north and south ends of the trench were two post-medieval ceramic pipe drains, which both ran across the trench. At 15m from the south end was a linear feature, ***901/902***, which extended across the trench at an angle of 45°. This was partially excavated to reveal a ditch 1.1m wide and 0.5m maximum depth, containing modern (transfer printed) pottery.

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**Trench No:** 10
**Alignment:** North/south
**Length:** 50m
**Depth:** 0.9m (at sondage)
A dark-brown topsoil, 0.2m in depth, overlay 0.2m-0.3m of mid-brown medium clay sand subsoil, which then overlay natural mixed sands. Three ceramic pipe drains crossed the trench at regular intervals. The extreme ends of the trench exposed areas of redeposited natural clay which contained brick and charcoal flecking throughout.

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**Trench No:** 11
**Alignment:** North-west/south-east
**Length:** 51.3m
**Depth:** 0.55m
A dark-brown topsoil, 0.28m in depth, overlay natural sands and clays. Root disturbance, mineralisation and iron panning were noted throughout. Two ceramic pipe drains ran almost parallel to the line of the trench.

Extending across the north-west end of the trench was a ditch, ***1106/1102/1103/1104/1105***, which was 2.6m wide and had a maximum depth of 1.0m. This was cut by the drains and contained two sherds of seventeenth century? pottery, one from the upper fill, ***1101***, and one from ***1104***. The basal/primary fill, ***1105***, contained a length of extruded metal cable running parallel to the ditch.

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**Trench No:** **12**
**Alignment:** North-west/ south-east
**Length:** 50m
**Depth:** 0.75m

A dark-brown topsoil, 0.33m in depth, overlay a mixed subsoil, ranging from 0.05m to 0.2m in depth, and varying from a mid-brown silty clay subsoil to a dark grey sandy silt. This overlay a natural mottled yellowish brown silty sand with mid-brown and pale grey banding. No archaeological features were observed within this trench.

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**Trench No:** **13**
**Alignment:** North-east/ south-west
**Length:** 50m
**Depth:** 0.84m

Natural mixed yellow and white sands were exposed along the entire length of the trench. Into these were cut three drainage ditches, ***1304***, ***1306*** and ***1307***, running across the trench. These contained clay pipe and white glazed pottery. A tree bole was noted at the south-west end of the trench, with a damaged modern ceramic pipe drain at the north-west end.

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**Trench No:** **14**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.6-0.7m

Dark-brown topsoil, 0.18m in depth, overlay 0.4–0.5m of a mid-brown medium clay sand subsoil. This overlay a mottled yellowish brown / pale grey silty sand. At the approximate centre of the trench a sub-square deposit was noted, 1.5 x 1.5m, of very dark fine grey sand. No defined cut could be established and no finds were recovered; it was assumed to be natural variation in the sands.

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**Trench No:** **15**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.65m

A dark-brown topsoil, 0.2m in depth, overlay 0.35-4m of a mid-brown medium clay sand subsoil. This overlay mottled yellowish brown natural silty sands, and was cut by two modern ceramic pipe drains.

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**Trench No:** **16**
**Alignment:** East/west
**Length:** 21m
**Depth:** 1.6m

A dark-brown topsoil, 1.1m in depth, overlay 0.1m to 0.5m of a mid-brown medium clay sand subsoil. This overlay banding of yellow clay and orange natural sands. The terminae of three ditches (***1605***, ***1607*** and ***1608***) were located along the northern section of the trench, beginning 4.4m from the western end and running for 5.6m to the east. The two westerly ditch fills were very similar and a relationship was difficult to discern, further compounded by a ceramic pipe drain cutting both features. The ditch to the east, ***1604/1605***, yielded two sherds of medieval green glazed pottery.

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**Trench No:** **17**
**Alignment:** East/west
**Length:** 30m
**Depth:** 0.4m
Excavation revealed a dark orange natural sand with early stages of iron pan formation and evidence of much root activity. The eastern end of the trench contained three tree boles, filled with a mixed grey-brown silty sand, and a north-west / south-east aligned linear feature, ***1701/1702***, running across the trench. This is probably the remains of a field boundary.

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**Trench No:** **18**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.65m
A dark-brown topsoil, 0.25m in depth, overlay 0.3-0.4m of a mid-brown medium clay sand subsoil. This overlay natural mottled yellowish mid-brown / pale grey sands. A single feature, ***1801***, 27m from the east end of the trench, was probably the butt end of a boundary ditch. Running north-east / south-west for 4m, with a maximum exposed width of 1.7m, the feature was no deeper than 0.2m and had no associated finds.

---

**Trench No:** **19**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.55m
A dark-brown topsoil, 0.2m in depth, overlay 0.35m of mixed topsoil and plastic clay. This overlay mottled orangey brown / pale grey natural silty sands. The remains of two probable hedgerows, ***1901*** and ***1902***, evidenced by uneven linear features with irregular profiles showing root activity, were seen in the central part of the trench. A 0.75m diameter sub-circular feature was seen at the western end and determined to be a tree bole.

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**Trench No:** **20**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.65m
A dark-brown topsoil, 0.2m in depth, overlay 0.45m of mid-brown medium clay sand subsoil. This overlay a yellow / orange fine sandy natural subsoil. At the east end of the trench was a linear feature, ***2001***,of undetermined date, 0.34 x 5.5m in observed extent, 0.2m deep, and irregular in profile. It yielded no finds and was thought to be a probable hedgerow. At the centre of the trench was a butt end of a ditch, ***2002***, (1.5m x 0.9m in extent and 0.7m thick) which ran beyond the southern section. It was fully excavated to the limit of the trench, but no finds were recovered from the firm clay fill. At the west end a ceramic pipe drain crossed the trench, and a tree bole and area of iron pan were also noted.

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**Trench No:** **21**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.4m
A dark-brown topsoil, 0.25m in depth, overlay 0.15m of yellowish-brown silty sand. This overlay a reddish brown undulating natural subsoil interspersed with infrequent occurrences of plastic clay.

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**Trench No:** **22**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.35m

A dark-brown topsoil, 0.3m in depth, overlay 0.05m of pale greyish brown silty sand. Five ceramic pipe drains ran across this trench. Three lenses of peat were determined to be of natural origin.

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**Trench No:** **23**
**Alignment:** North-west / south-east
**Length:** 50m
**Depth:** 0.5m
Excavation revealed 0.5m of root-disturbed topsoil overlying pale brown plastic silty clay. A modern dump of plastic, brick and glass was contained within blackish topsoil at the southern end.

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**Trench No:** **24**
**Alignment:** East/west
**Length:** 50m
**Depth:** 1.3m
A dark-brown topsoil, 0.5-0.6m in depth, overlay natural clay into which was cut a large ditch, ***2402***, 18.4m from the north-east end of the trench. The ditch measured 5.7m long, running the width of the trench, and was a maximum of 1.2m deep; it contained two distinct fine silty sand fills, ***2403*** and ***2404***, and rapidly filled with water, thus limiting the recording. Further to the north-east a shallow linear feature, ***2401***, ran across the trench from which no finds were recovered. At the south-west was an area of disturbed natural subsoil.

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**Trench No:** **25**
**Alignment:** North-north-east / south- south-west.
**Length:** 50m
**Depth:** 0.45m
A 0.35m deep humic black topsoil overlay pale brown mottled silty sand with occasional clay and gravel patches. It was cut by one ceramic drain pipe which was aligned north-east / south-west.

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**Trench No:** **26**
**Alignment:** East/west
**Length:** 50m
A 0.35m deep humic black topsoil overlay pale brown mottled silty sand with occasional clay and gravel patches. Two east/west aligned ceramic pipe drains were seen.

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**Trench No:** **27**
**Alignment:** East/west
**Length:** 50m
**Depth:** 0.5m
A 0.35m deep humic black topsoil overlay pale brown mottled silty sand with occasional clay and gravel patches. One ceramic pipe drain and one sandstone soakaway, both east / west aligned, were noted.

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**Trench No:** **28**
**Alignment:** South-west / north-east
**Length:** 50m
**Depth:** 0.55m
A 0.35m deep humic black topsoil overlay pale brown mottled silty sand with occasional clay and gravel patches. Two ceramic pipe drains were identified at the south-west end and one brick-lined drain 25m from the south-east end.

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**Trench No:** **29**
**Alignment:** South-east / north-west

**Length:** 50m
**Depth:** 0.65m
A 0.35m deep humic black topsoil overlay pale brown mottled silty sand with occasional clay and gravel patches. No archaeological features were seen.

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**Trench No:** **30**
**Alignment:** East/west
**Length:** 57m
**Depth:** 3.2m at base of moat
The south-east end of the trench exposed ditch cut ***3011,*** which flooded during machining and was bottomed at 2.1m. The section, beyond the area that was drawn, flooded and collapsed, thus limiting further recording. Four main fills were observed in the ditch: ***3006/3007/3008/3009***, all of which were seen to extend to the east end of the trench, with no sign of a return for the cut. Post-medieval pottery was found within the fills of the ditch. Six 0.25 x 0.25 x 0.2m deep square shallow features, ***3012 - 3017***, were spaced relatively evenly around the central part of the trench; they appeared to be of modern date, and were of unknown function. Two ceramic pipe drains and one stone-lined drain crossed this central area. The western end of the trench, exposed a further section through a ditch, ***3002***, which was found to be some 19m long (though this section may be at an oblique angle) with a maximum depth of 3.2m. The unstable fills were found to have been buried under a deposit of clay, ***3003***, that was 1.8m thick. The lower fills, ***3002*** and ***3010***, contained early post-medieval pottery. The wide ditch at the western end of the trench approximately coincided with the line of the moat, as depicted on the Tithe map (LRO DRL 1/38).

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**Trench No:** **31**
**Alignment:** North-north-west / south-south-east
**Length:** 21m
**Depth:** 1.2m
Two irregular linear features, ***3103*** and ***3104***, were seen to be cutting disturbed or redeposited natural subsoils, both yielding transfer printed pottery. Four features (***3105-3108***), identical to the six small squares features in Trench 30, were also noted. At the north-north-west end of the trench were the remains of the return for an unmortared sandstone wall, and several other large fragments of sandstone, thought to be tumble, were also present. This was overlain by a dark silty deposit, including burnt material (***3102***).

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**Trench No:** **32**
**Alignment:** North-east / South-west
**Length:** 9m
**Depth:** 2.3m
The trench was machine-excavated in order to expose a profile through approximately half of the putative moat, ***3203***, identified in Trench 30. Three stubs of vertical timbers, ***3201***, could be seen, two in line across the trench at 2.9m from north-east end of trench, and one 4.5m from north-east end of trench. The features could not be recorded to any degree of accuracy, as the trench was at risk of collapse and it was not possible to enter the trench safely; the archaeological features were, therefore, recorded from the top of the trench. One large timber, thought not to be *in-situ,* also rested at 4.5m from the north-east end of the trench at a depth of 2.3m from the current ground surface; it had a series of struts and laths associated with it, ***3202***. A deposit of clay, ***3204***, 0.8-1.0m thick, capped the ditch and acted as consolidation for the unstable deposits.

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**Trench No:** **33**
**Alignment:** East / west
**Length:** 30m
**Depth:** 0.45m
A dark-brown humic topsoil, 0.35m in depth, overlay 0.15m of natural pale grey silty sand. No features were seen.

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**Trench No:** **34**
**Alignment:** North / south
**Length:** 50m
**Depth:** 0.5m

A dark-brown topsoil, 0.35m in depth, overlay 0.2m of pale-brown silty sand. At the north-east end was a 'U'-shaped linear feature, ***3401***, which cut this deposit, and was probably a modern drain. This feature was 0.7m wide, running the width of the trench and was no deeper than 0.27m; it was filled with mottled mid-brown and grey plastic clay, and yielded no finds. A ceramic pipe drain extended across the trench to its south.

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**Trench No:** **35**
**Alignment:** South-west / north-east
**Length:** 50m
**Depth:** 0.6m

Topsoil, to a depth of 0.35m, overlay a mixed reddish brown natural clay with occasional silty sand patches similar to those seen in Trench 34. A north-east / south-west aligned land drain, at 7.3m from the south-west, was cut by a north-west / south east aligned modern brick-filled linear feature, which was 0.7m wide. A concrete base of a structure, north-east / south-west aligned and 0.6m wide, cut the trench and returned to the south-east; modern brick and rubble was found inside. A similarly aligned clinker, brick and glass-filled land drain was identified at 28.2m from the south-west end.

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**Trench No:** **36**
**Alignment:** East/west
**Length:** 36m
**Depth:** 0.9m

A large linear feature, 3601, ran across the trench at 45° for at least 8.7m, from a point 6.1m from the western end of the trench. The feature was not fully excavated. The central part of the trench was waterlogged and disturbed by modern activity. East of this, two features were noted, and were probably the butt ends of two ditches, ***3602*** and ***3603***; they were seen in plan as having a dark-brownish grey mix of silty sands and firm clay. Two sherds of pot were found on the surface. A third discrete feature was seen to the east of these, which in plan was probably also a butt end of a ditch. Post-medieval pottery was recovered from the topsoil.

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# APPENDIX 3
# FINDS CATALOGUE

| Trench | Context | Material | Category | Frags | Description | Date |
|---|---|---|---|---|---|---|
| 08 | 801 | Ceramic | drain | 1 | Fragment of land drain. | Post-medieval/Modern |
| 11 | 1101 | Ceramic | vessel | 1 | Strap handle fragment, very hard-fired oxidised sandy fabric, with mixed inclusions. | Seventeenth century? |
| 11 | 1105 | Iron | nail | 5 | Fragments of large hand-forged nails? | |
| 16 | Subsoil | Ceramic | vessel | 1 | Body fragment, black-glazed redware. | Seventeenth-eighteenth century |
| 16 | Subsoil | Ceramic | vessel | 1 | Strap handle fragment, in a sandy orange oxidised fabric, very similar to body fragment from Trench 36. | Medieval |
| 16 | Subsoil | Ceramic | vessel | 1 | Body fragment, in a similar fabric to slip-decorated vessel from the same context, but ostensibly undecorated. | Post-medieval |
| 16 | Subsoil | Ceramic | vessel | 1 | A small fragment of slip-decorated dish, pinkish fabric. | Seventeenth century? |
| 16 | Subsoil | Ceramic | vessel | 1 | A base fragment, in a very hard-fired reduced or incompletely reduced gritty fabric. | Sixteenth-seventeenth century? |
| 16 | 1604 | Ceramic | vessel | 1 | A body fragment, in a hard-fired incompletely reduced green glazed fabric. | Fourteenth to sixteenth century? |
| 16 | 1604 | Ceramic | vessel | 1 | A body fragment, in a fully reduced green glazed fabric. | Sixteenth-seventeenth century? |
| 16 | 1609 | Ind. debris | smithing | 1 | Hearth-bottom slag? | |
| 30 | 3001 | Bone | animal | 1 | Fragment. | |
| 30 | 3001 | Ceramic | vessel | 14 | A joining rim and body fragments, very hard-fired coarse purplish fabric. Handled jar. | mid-seventeenth century |
| 30 | 3001 | Ceramic | vessel | 1 | Rim fragment, laminated, relatively fine fabric, thick black glaze. | Eighteenth century? |
| 30 | 3001 | Ceramic | vessel | 1 | A complete profile (half vessel) three-handled mug. Hard-fired purplish fabric with ill-sorted sand temper. Thick black glaze with brownish opaque patches. Flaring rim. Similar to vessels in mid seventeenth century contexts at Beeston Castle (Period 7). | Mid-seventeenth century |
| 30 | 3001 | Ceramic | vessel | 2 | Joining rim fragments, very coarse red fabric with numerous large (up to *c* 4mm) irregular inclusions, mainly white. Thin black glaze. | Post-medieval |
| 30 | 3001 | Ceramic | vessel | 1 | A rim fragment, in a coarse red fabric with thin, brownish-black glaze. It has a flaring jar rim. | Mid-late seventeenth century |
| 30 | 3001 | Ceramic | building material | 3 | Small fragments of modern brick. | Eighteenth-twentieth century |
| 30 | 3001 | Ceramic | vessel | 9 | Joining fragments of a slip-decorated dish, complete profile. Cream-pink fabric with ill-sorted inclusions, mainly red and probably grog. Thrown and knife-trimmed. Pattern geometric. Similar to examples from the Civil War deposits at Beeston Castle (Period 7). | Mid-seventeenth century |
| 30 | 3001 | Glass | window | 1 | A pane-edge fragment, cylinder-blown glass. Square quarry. Diamond-cut and grozed. Minimum dimensions 66mm x 55+mm x 1.5mm thick. | Late seventeenth-eighteenth century |
| 30 | 3001 | Stone | coal | 1 | Small fragment. | |
| 30 | 3006 | Ceramic | vessel | 1 | A handle fragment, in a fully reduced green-glazed fabric. It was from a shallow pan. | Sixteenth-seventeenth century? |
| 30 | 3006 | Ceramic | building material | 2 | Brick. | |
| 30 | 3006 | Glass | vessel | 1 | A complete colourless mineral water bottle. | Mid-twentieth century |
| 30 | 3006 | Stone | roofing tile | 1 | Fragment. | |
| 30 | 3016 | Ceramic | vessel | 3 | One rim, two body fragments in a pale orange laminated, coarse sandy fabric, dark-brown-black glaze. | Nineteenth century? |
| 30 | 3016 | Ceramic | vessel | 3 | Body fragments, dark-brown glaze. | Nineteenth century? |

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| 30 | 3016 | Ceramic | vessel | 1 | Base fragment, fine red fabric, colourless glaze. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 1 | Rim and body fragments, in a fine red fabric, with a thick and lustrous black glaze. Storage vessel/jug with narrow neck and at least one horizontal handle. | Eighteenth century? |
| 30 | 3016 | Ceramic | vessel | 2 | Body fragments, in a fine red fabric, colourless-brown glaze. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 1 | A neck fragment, brown stoneware with slight metallic sheen. A jug? | Sixteenth-seventeenth century? |
| 30 | 3016 | Ceramic | vessel | 1 | A rim fragment of a Mocha-ware bowl. | Nineteenth century |
| 30 | 3016 | Ceramic | vessel | 1 | A body fragment, in a cream fabric, with a brown mottled glaze. | Seventeenth-eighteenth century |
| 30 | 3016 | Ceramic | vessel | 1 | A body and base fragment, in a late brown stoneware. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 1 | A body fragment, in a coarse red fabric with very large inclusions (up to *c*5mm), and irregularly sorted. | Modern? |
| 30 | 3016 | Ceramic | vessel | 1 | A rim fragment, in a coarse red fabric, black glaze. A large bowl. | Eighteenth-nineteenth century? |
| 30 | 3016 | Ceramic | vessel | 1 | A body fragment of a large vessel, in a redware, brown glaze. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 3 | Body and base fragments, of a whiteware jug, under-glaze transfer printed decoration. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 6 | Rim and body fragments, of a whiteware jug, under-glaze transfer printed decoration. | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | vessel | 1 | A rim fragment, in a hard-fired purplish fabric, brownish-black glaze. Jug? | Seventeenth century? |
| 30 | 3016 | Ceramic | vessel | 2 | Rim fragments of a Mocha-ware mug. | Nineteenth century |
| 30 | 3016 | Ceramic | vessel | 1 | A base fragment, in a fine red fabric with white internal slip and bronze metallic glaze. Teapot? The same as in Trench 32, ***3203***. | Modern |
| 30 | 3016 | Ceramic | vessel | 1 | A complete profile, white earthenware with thick yellow glaze. A coffee can? | Nineteenth-twentieth century |
| 30 | 3016 | Ceramic | building material | 1 | Brick. | |
| 31 | 3102 | Ceramic | vessel | 1 | A body fragment, in a cream fabric, self glaze. A thrown plate or dish. | Post-medieval? |
| 31 | 3102 | Ceramic | vessel | 3 | Body and base fragments, in a medium-soft red fabric, brownish purple glaze. | Seventeenth-eighteenth century |
| 31 | 3102 | Ceramic | vessel | 1 | Rim fragment, orange sandy fabric, self glaze. A small jar. | Post-medieval |
| 31 | 3102 | Ceramic | vessel | 4 | Body and base fragments, hard-fired purplish fabric, black glaze. | Seventeenth-eighteenth century |
| 32 | 3203 | Bone | animal | 2 | Two fragments, no evidence of butchery. | |
| 32 | 3203 | Ceramic | vessel | 1 | A body fragment, in a fine red fabric with white internal slip and bronze metallic glaze. Teapot? The same as in Trench 30, ***3016***. | Modern |
| 32 | 3203 | Ceramic | clay pipe | 1 | A bowl fragment. Bulbous with short, ill-formed spur, no rouletting. Oswald's type 17. | AD 1640-1670 |
| 32 | 3203 | Ceramic | vessel | 3 | Rim and body fragments (two joining) cream fabric, brown mottled glaze. Chamber pot. | Late eighteenth century |
| 32 | 3203 | Ceramic | vessel | 1 | A body fragment, in a hard-fired purplish fabric, with a patchy glaze. | Seventeenth century? |
| 32 | 3203 | Ceramic | vessel | 2 | Body fragments, in a red, fine fabric, black-glazed. | Post-medieval |
| 32 | 3203 | Ceramic | vessel | 1 | Body fragment, greyish paste porcelain, blue-painted. | Eighteenth century? |
| 32 | 3203 | Ceramic | vessel | 1 | Rim fragment, hard-fired laminated, bichrome fabric with black glaze. Very large open form - pancheon? | Late seventeenth-nineteenth century |
| 32 | 3203 | Ceramic | vessel | 1 | Rim fragment, coarse red fabric, poor and patchy black glaze, firing cracks. Storage vessel with horizontal handles. | Seventeenth-eighteenth century |
| 32 | 3203 | Ceramic | vessel | 2 | Body fragments ?Pearlware jug with under -glaze transfer printed decoration. | Late eighteenth century? |
| 32 | 3203 | Ceramic | vessel | 1 | Body fragment, hard-fired purplish fabric, black-glazed. | Seventeenth century |
| 32 | 3203 | Ceramic | vessel | 1 | Rim fragment, fine, laminated bichrome fabric. Slip decorated mug. | Seventeenth century |
| 32 | 3203 | Ceramic | vessel | 2 | Base fragments, laminated irregular, coarse fabric, black-glazed. Distinctive jutting foot. Very drippy glaze and firing faults. | Post-medieval |

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| 32 | 3203 | Ceramic | vessel | 4 | Three rims, one body fragment, fine red fabric, thick black glaze, open vessels. | Eighteenth century? |
| 32 | 3203 | Ceramic | vessel | 1 | Body fragment, cream sandy fabric, brown streaky glaze, applied decoration similar to mottled ware vessel from Beeston Castle (Period 8). | AD 1690-1780 |
| 32 | 3203 | Ceramic | vessel | 2 | Joining rim fragments, laminated bichrome, in a coarse fabric, black glazed. Storage vessel. | Seventeenth century? |
| 32 | 3203 | Glass | vessel | 1 | A mould-blown bottle fragment, pale green. | Late nineteenth-early twentieth century |
| 32 | 3203 | Leather | shoe | 1 | A shoe sole in thick leather, nailed sole, ?clump heel. | |
| 32 | 3203 | Wood | structural | 2 | Structural timbers, possibly from a wall. | |
| 32 | 3203 | Wood | structural | 1 | Small fragment. | |
| 36 | 3601 | Ceramic | vessel | 1 | A small and very abraded body fragment of an oxidised orange sandy fabric. The surfaces have been lost. | Medieval? |
| 36 | 3601 | Ceramic | vessel | 2 | Small body fragments, in a pale sandy oxidised orange fabric with small splashes of glaze. | Medieval |

# ILLUSTRATIONS

Fig 1 Peel Hall - Location Map
Fig 2 Trench Location Plan
Fig 3 Detail of Moated Site - Trenches 30-32
Fig 4 Moated Site: Plan of Trench 32 and Section of Trench 30
Fig 5 Detailed Trench Location Plan of North-Eastern Area
Fig 6 North-Eastern Area: Plans and Sections of Trenches 2 and 16


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Fig 1: Peel Hall - Location Map

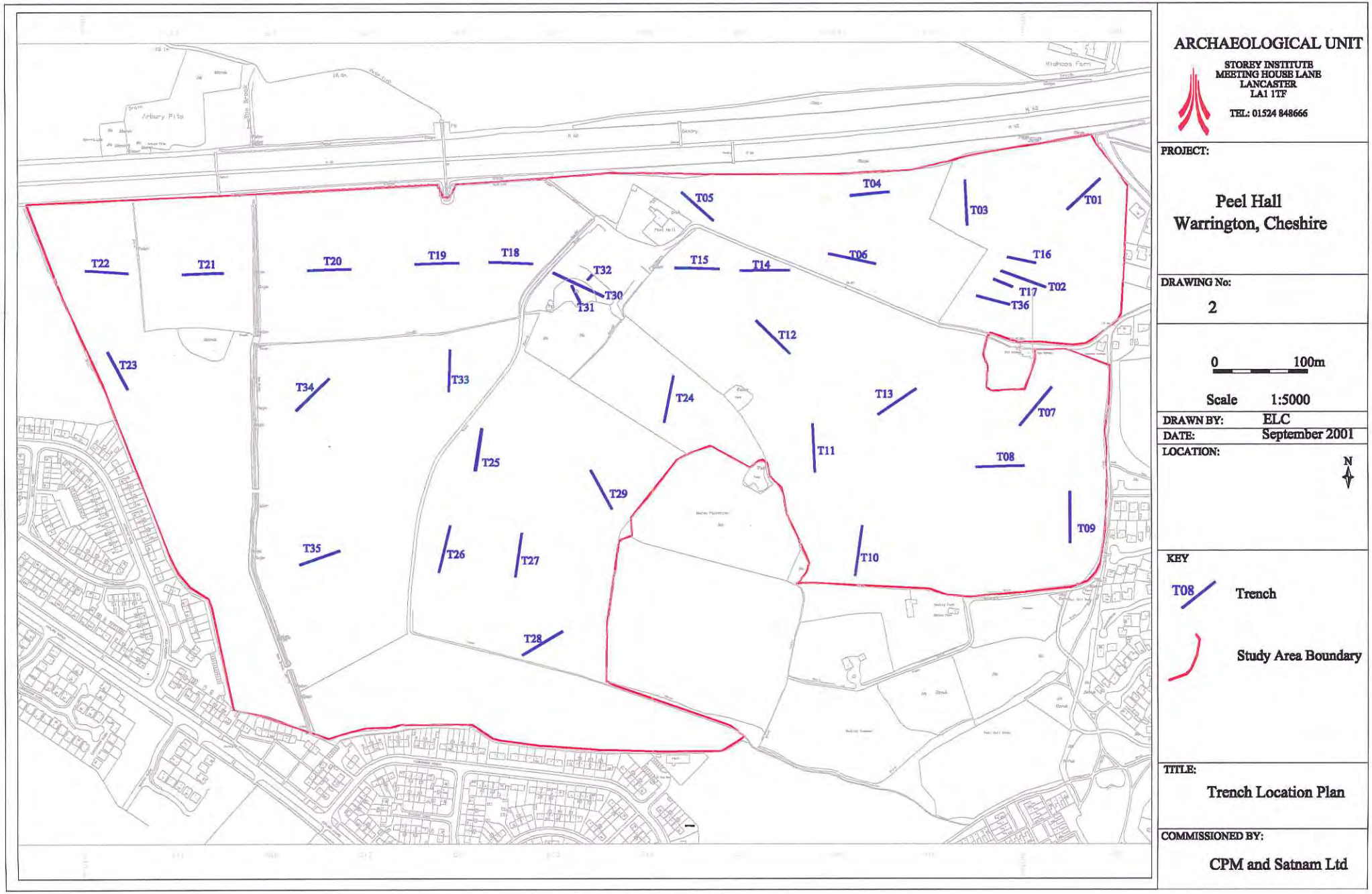
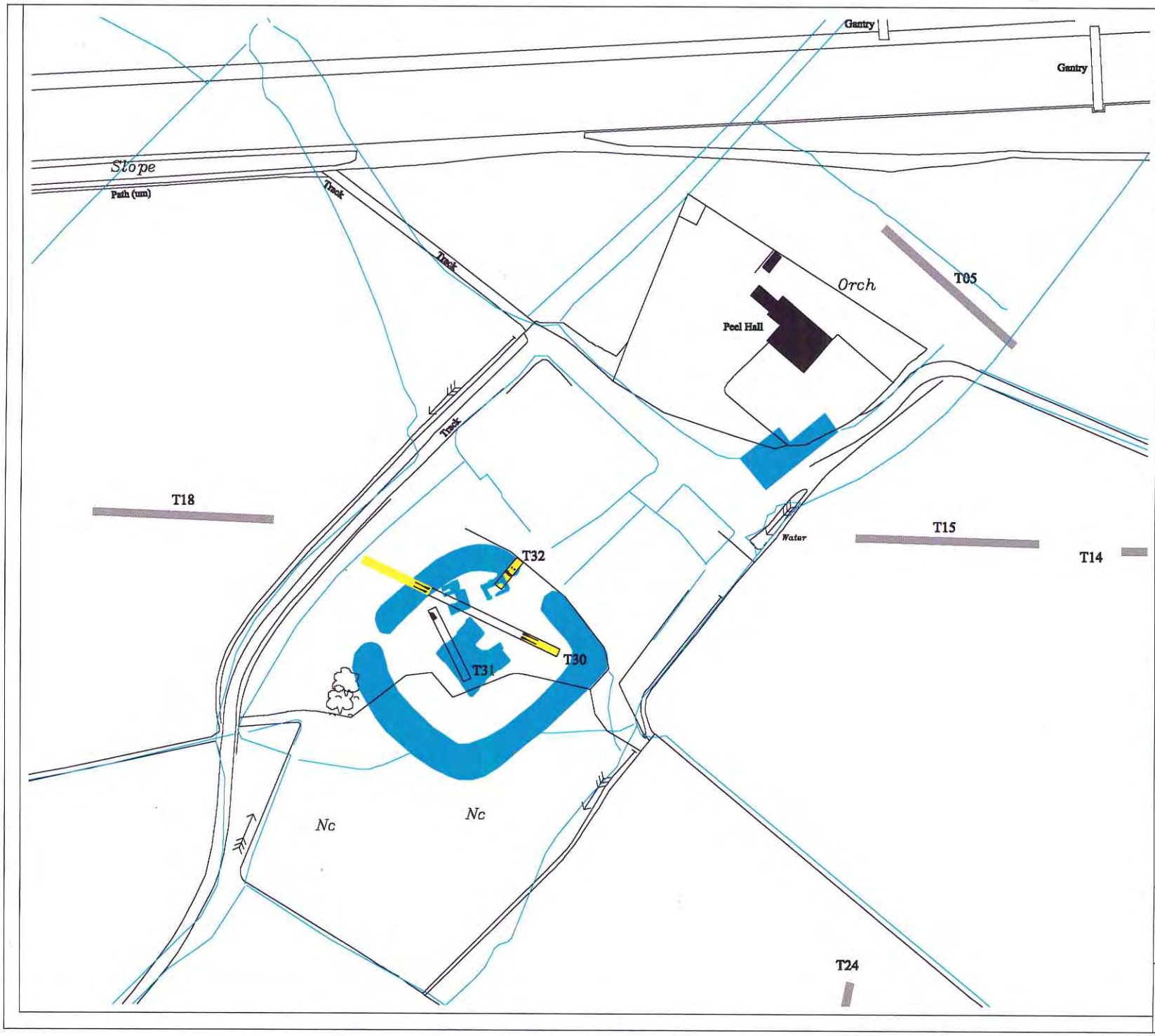



Figure 2 : Trench Location Plan

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TEL: 01524 848666

PROJECT:

Peel Hall
Warrington, Cheshire

DRAWING No: 3

0 25m

Scale 1:1000

DRAWN BY: ELC

DATE: September 2001

LOCATION:

N

KEY

- modern map data
- From Tithe Map (LRO DRL 1/38)
- Sections of Moat

TITLE:

Detail of Moated Site
Trenches 30-32

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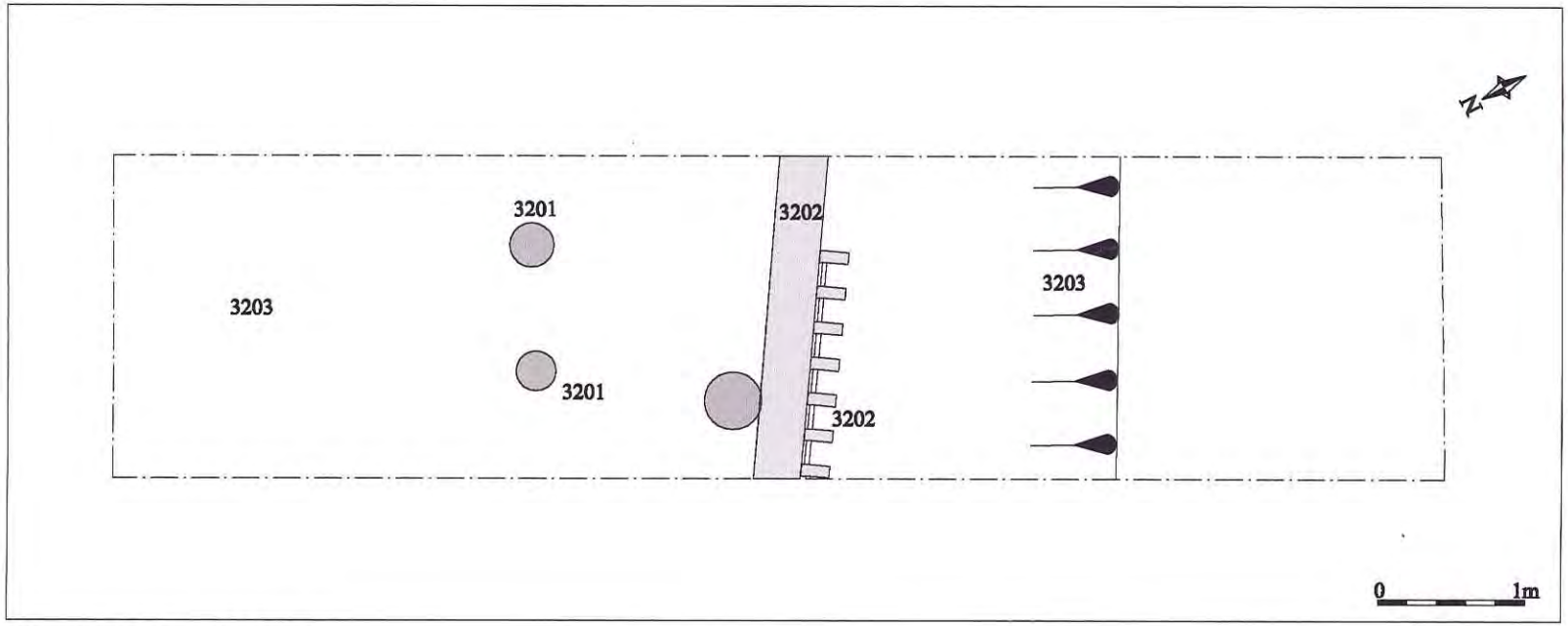
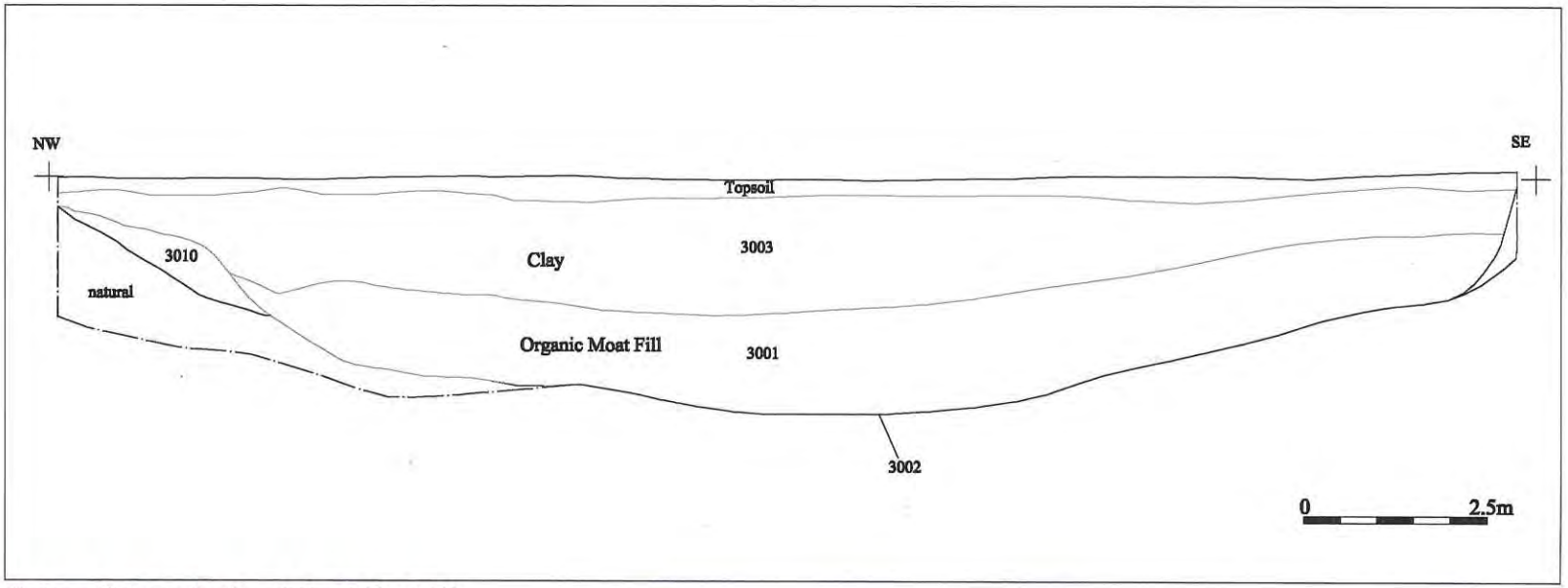
Figure 3: Detail of Moated Site - Trenches 30 - 32




Schematic Plan of Trench 32 at 1:50




North-east facing section through Trench 30 at 1:100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PROJECT:

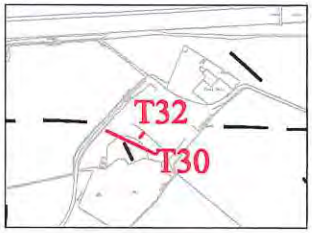
Peel Hall
Warrington, Cheshire

DRAWING No:
4

DRAWN BY: ELC

DATE: August 2001

LOCATION:




KEY

vertical timbers

horizontal timber

TITLE: Moated Site
Plan of Trench 32
Section through Trench 30

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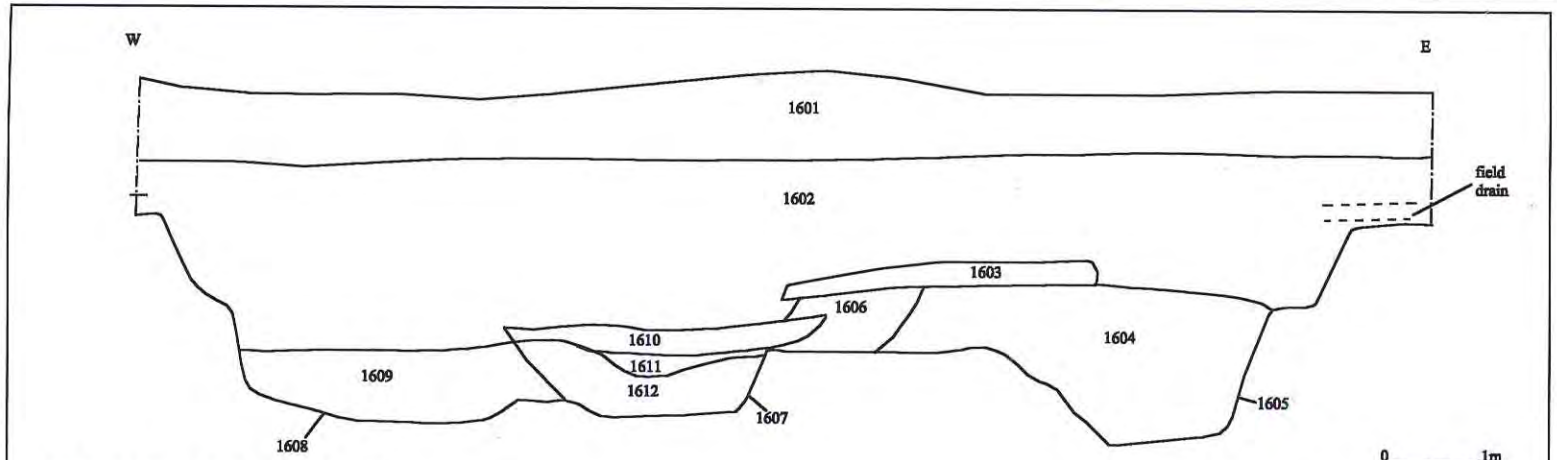
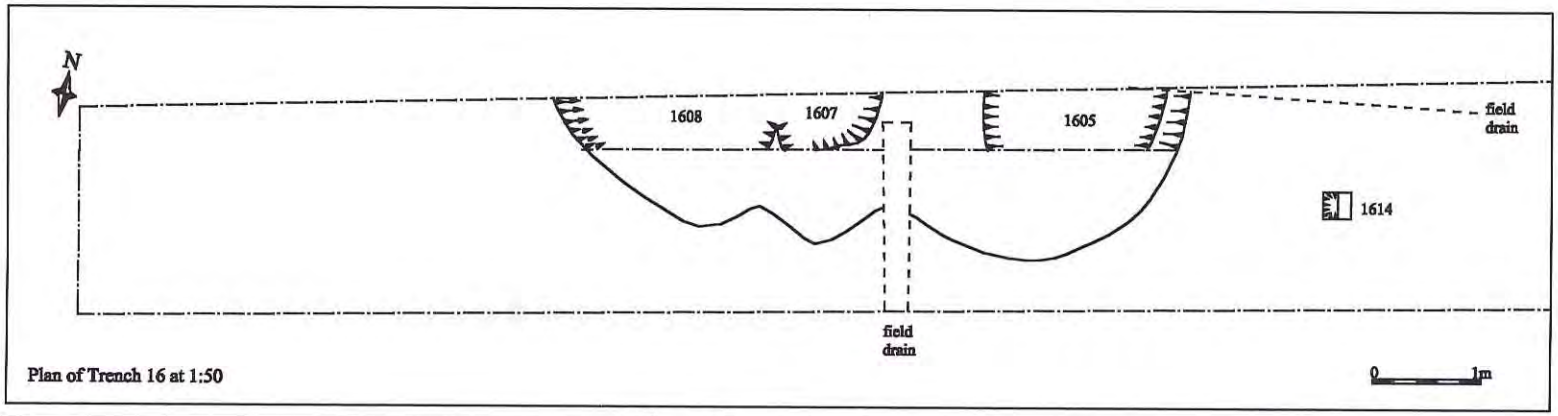
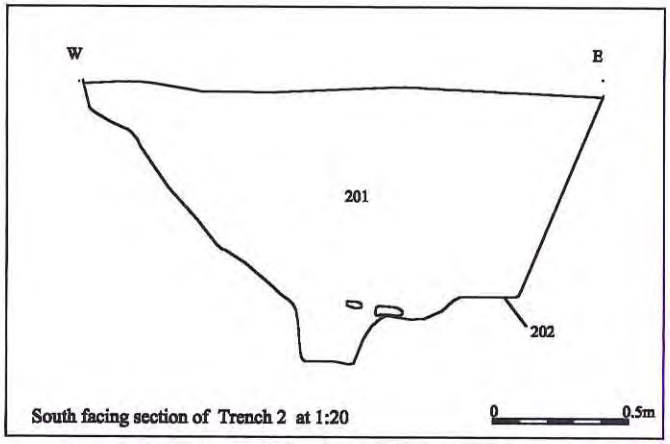
Figure 4: Moated Site: Plan of Trench 32 and Section Through Trench 30



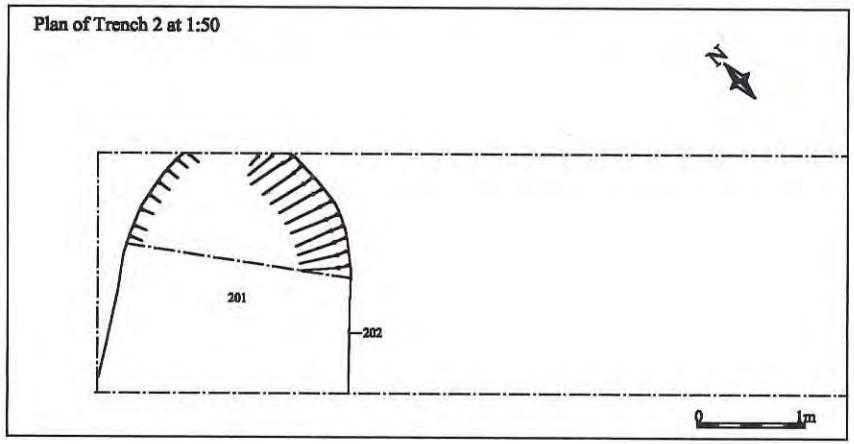

South facing section through Trench 16 at1:25




Plan of Trench 16 at 1:50




South facing section of Trench 2 at 1:20





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PROJECT:

Peel Hall
Warrington, Cheshire

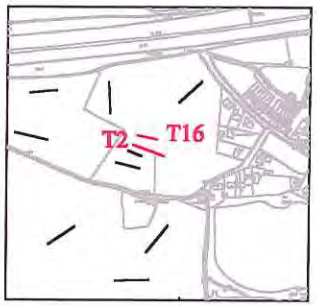
DRAWING No:
6

Scale 1:20 and 1:50

DRAWN BY: ELC

DATE: August 2001

LOCATION:




KEY

TITLE:
North Eastern Area - Plans and Sections of Trenches 2 and 16

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Figure 6: North Eastern Area: Plans and Sections of Trenches 2 and 16

# PLATES

Plate 1 Butt end of steep ditch, ***202***, in Trench 2, looking north-east
Plate 2 Wall foundation, ***3101***, in Trench 31, looking west

Plate 1: Butt end of steep ditch, ***202***, in Trench 2, looking north-east

Plate 2: Wall foundation, ***3101*** (Trench 31), looking west

**Appendix 69: Indirect Impacts on Settings of Heritage Assets**

The effect of development on the significance of the setting of heritage assets is a material consideration.

Setting is defined as the surroundings in which a cultural heritage asset is experienced and all heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not. Therefore all the assets identified during this assessment have settings and it is right and proper for this assessment to identify the key attributes of the heritage assets and their settings and the potential impact upon the settings occasioned by proposed development within the Site. In order to identify these key attributes it is necessary to consider the physical surroundings of the assets, including relationships with other heritage assets, including the way the assets are appreciated and the assets' associations and patterns of use.

A consideration of these attributes allows an estimation to be made of whether, how and to what degree setting makes a contribution to the heritage assets.

Development is capable of affecting the settings of heritage assets and the ability to understand experience and appreciate them. An assessment of the scope of the magnitude and effect of any impact on settings is part of the remit of this assessment and has been undertaken with reference to the Historic England document *The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning: 3* (2015). It is noted that Historic England states that while heritage assets such as battlefields or archaeological sites which consist solely of buried remains may not be readily understood by a casual observer, they nonetheless retain a presence in the landscape (in terms of their location, topographical position, and spatial relationship with other heritage assets) and so, like all heritage assets, have a setting. While the form of survival of an asset may influence the contribution its setting makes to its significance, it does not follow that the invisibility of the asset necessarily reduces that contribution.

The value of a heritage asset can be harmed or lost through alteration within or destruction of its setting. Current policy states that the extent of a setting is not fixed and may change as the asset and its surroundings evolve. It is acknowledged that a setting may make a positive or negative contribution to the value of a cultural heritage asset, it may affect the ability to appreciate that value or it may be neutral.

Setting is most commonly framed with reference to visual considerations and so lines of sight to or from a cultural heritage site will play an important part in considerations of setting. However, non-visual considerations also apply, such as spatial associations and an understanding of the historic relationship between places. In order to undertake an assessment of significance of the settings to a level of thoroughness proportionate to the relative importance of the assets, the settings of which may be affected by development on the Assessment Site, this assessment has sought to describe the setting for each significant cultural heritage site and provide a measure of the contribution that the setting plays in the value of the asset.

The overall objective of the assessment of setting is to provide a realistic assessment of any indirect effects with reference to cultural heritage assets and their settings and allow for an informed decision-making process. The broad approach adopted has followed the English Heritage guidance and takes the form of a series of steps:

Step 1: identify heritage assets and their settings

Step 2: assessment of, whether how and to what degree these settings make a contribution to the significance of the heritage assets

Step 3: assessment of the effects of the proposed development, whether beneficial or harmful, on that significance

Step 4: Identify measures to mitigate harm and provide enhancement

Step 5: identify residual effects

Figure 1, 2, 3, and 4 illustrate the location of all known designated and undesignated cultural heritage assets in the Assessment Area and the nearest designated Conservation Area, Registered Battlefield, Scheduled Ancient Monument, Registered Parks/Garden and UNESCO World Heritage Site in the wider environment. In order to assess the cultural heritage assets and their settings a suitable area of land extending around the assets has been utilised which represents the likely distances at which it was anticipated that a perceptible measure of magnitude of change to settings might bring about an adverse impact to the settings of heritage

assets, and therefore their significances. Beyond the area considered it is judged that the general sweep and interest within any given sightline across the landscape would be such that any impact upon the setting of any undesignated cultural heritage asset arsing from development within the densely developed urban-rural fringe around Warrington and Winwick and along the M62 corridor would be sufficiently diluted so as to render the impact immaterial. However, in order that potential impacts to settings beyond the chosen assessment area were not inadvertently discounted without proper consideration, certain designated heritage assets (the nearest Scheduled Ancient Monument, Registered Battlefield, Registered Parks/Gardens and UNESCO World Heritage Site) which are beyond the Assessment Area have also been identified and taken into account.

Many heritage assets within any given landscape may be visible from a number of locations – publically accessible areas such as footpaths, streets and the open countryside and also private spaces such as dwellings and private land. The majority of sightlines from to, into and across heritage assets are, therefore, incidental and are not intrinsically or intimately associated with the significances assigned to any given heritage asset. However, there are instances where the characteristics of sightlines may be have been intentionally designed and as part of the setting are integral to the significance. Taking into account these considerations many of the assets identified in the Gazetteer do not require a detailed setting assessment. In addition, a degree of inherent landscape mitigation has been designed into the proposed development which, in critical boundary zones, softens the incorporation of the development into the surrounding articulation zones with the existing environment.

Taking the above into account it is considered a total of 17 heritage assets was located in such a manner relative to the proposed development that a formal setting assessment is justified.

| Gaz. No | Name | Importance | Setting Description | The Contribution of Setting to the Significance of the Asset | Effects of the proposed development, on significance | Measures to mitigate harm and provide enhancement | Residual effects |
|---|---|---|---|---|---|---|---|
| | **STEP 1** | | | **STEP 2** | **STEP 3** | **STEP 4** | **STEP 5** |
| 5 | Myddleton Hall Farmhouse | Medium | The immediate setting is provided by the frontage to Delph Lane to the north (beyond which is a belt of woodland surrounding Myddleton Hall) hardstanding and gardens to the south, west and east and agricultural buildings further to the south. The wider setting is provided by open expanses of arable land to the south, Spa Well Cottage is back-clothed against the flat landscape beyond which the spire of St. Elphin's Church in Warrington is visible. The southern horizon is provided by the high ground at Hill Cliffe and High Warren. The carriageway of the M62 motorway is not visible from the immediate setting of the asset | The setting makes positive contribution to the significance of the asset in that the farmland to the south of the asset provides a historic and functional resonance to the domestic accommodation of the farmstead. | The proposed development is *c.* 375m to the south of the asset. However, as a consequence of the confining and isolating nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 11 | Peel Hall | Low | The manor house and moat are surrounded by agricultural land and rough pasture, with a shelter belt of trees to the south-west providing the immediate and wider setting. However, the carriageway of the M62 motorway is in close proximity to the asset, acting as a detractor. | The setting makes marginally positive contribution to the significance of the asset in that the agricultural and open character of the landscape to the south survives, providing a historic and functional resonance to the domestic accommodation of the farmstead. However, the setting has been adversely impacted upon by the M62 motorway, which divorces the asset form the landscape to the north. | The proposed development would entirely surround the asset and change the current agricultural land to an urban form. The elements of significance that the asset draws from the landscape setting would be entirely eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse and the significance of effect slight negative. | Inherent mitigation in the design and landscaping | Neutral / Slight Negative |
| 12 | Middleton | Low | Middleton was an ancient manor originally part of the medieval administrative area of Makerfield centred on Middleton Hall. The boundaries of the manor can be estimated form the Tithe Map of 18 **. The setting of the manor encompasses large swathes of landscape taking in agricultural land, dwellings and communication routes. | The setting makes neutral contribution to the significance of the asset in that the remnants of historic landscape and the historic buildings are neutralised by the numerous landscape detractors such as the M62 motorway, the results of 20th and 21st century agricultural processes and the suburban-rural fringe of north Warrington. | The proposed development is *c.* 200m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 13 | Arbury Farmhouse | Low | This immediate setting of the asset is a garden bounded to the north and north-east by a shelterbelt of trees. To the south and west are agricultural buildings adding to the separateness of the asset from the wider setting. The wiser setting | The setting makes neutral contribution to the significance of the asset in that the remnants of historic landscape and the historic buildings are neutralised by the numerous landscape detractors such as the M62 motorway, the results of 20th and 21st | The proposed development is *c.* 375m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |

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| | | | wider setting of a field system is categorised as late post-medieval agricultural improvement to the north and 20th century field systems to the south., separated by Arbury Lane | century agricultural processes and the suburban-rural fringe of eastern Winwick. | the detractors in the existing setting (such as the Arbury Centre) the proposed development would cause no change to the asset and the significance of effect would be neutral. | | |
| 16 | Cropmark at A49 Junction | Low | The immediate setting of the cropmark is an arable field, set within a wider setting of a field system categorised as late post-medieval agricultural improvement. To the north is the settlement of Winwick, to the south is Arbury Court – a psychiatric centre, to the south west is Junction 9 of the M62, where it intersects with the A49 Winwick Road. | The setting makes neutral contribution to the significance of the asset in that the current landscape is fundamentally different to that which would have been in existence during the period when the feature represented by the cropmark was in use. | The proposed development is *c.* 215m to the south-east of the asset and although within the immediate and wider setting of the asset the setting is so compromised by the M62 carriageway that the proposed development would cause no change to the asset and the significance of effect would be neutral | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 17 | Cropmark at Arbury | Low | The immediate setting of the cropmark is an arable field, set within a wider setting of a 20th century field system. To the north is Arbury Lane and Arbury Farmhouse (Gaz. No. 13 and 50 – a Grade II Listed Building). To the east and west and south there are open fields which, to the south extend to the M62 motorway. | The setting makes neutral contribution to the significance of the asset in that the current landscape is fundamentally different to that which would have been in existence during the period when the feature represented by the cropmark was in use. | The proposed development is *c.* 300m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 18 | Cropmark at Midhops Farm | Low | The immediate setting of the cropmark is an arable field, set within a wider setting of a 20th century field system. To the north is a wide expanse of fields and to the south is the M62 motorway. | The setting makes neutral contribution to the significance of the asset in that the current landscape is fundamentally different to that which would have been in existence during the period when the feature represented by the cropmark was in use. | The proposed development is *c.* 75m to the south of the asset and although within the immediate and wider setting of the asset the setting is so compromised by the M62 carriageway that the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 50 | Ivy House | Medium | The immediate setting is provided by the garden frontage to Delph Lane to the north beyond which is hedgerow bounding an open field the northern boundary of which is provided by a line of sky-lined trees. To the east and west are further residential premises on the southern side of Delph Lane. The wider setting is provided by open expanses of arable land to the south, Spa Well Cottage is back-clothed against the flat landscape beyond which the spire of St. Elphin's Church in Warrington is visible. The southern horizon is provided by the high ground at Hill Cliffe and High Warren. The carriageway of the M62 motorway is not visible from the | The setting makes a marginally positive contribution to the significance of the asset in that the farmland to the south of the asset provides a historic resonance to the domestic accommodation built c. 1940. However, the original isolation of the house has been compromised by construction of residences to the west. | Although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | immediate setting of the asset | | | | |
| 53 | Arbury Farmhouse (Same as Gaz. No. 13) | Medium | This immediate setting of the asset is a garden bounded to the north and north-east by a shelterbelt of trees. To the south and west are agricultural buildings adding to the separateness of the asset from the wider setting. The wiser setting wider setting of a field system is categorised as late post-medieval agricultural improvement to the north and 20th century field systems to the south., separated by Arbury Lane | The setting makes neutral contribution to the significance of the asset in that the remnants of historic landscape and the historic buildings are neutralised by the numerous landscape detractors such as the M62 motorway, the results of 20th and 21st century agricultural processes and the suburban-rural fringe of eastern Winwick. | The proposed development is *c.* 375m to the south of this asset and although within the wider setting of the asset the proposed development is within a topographically discrete location to the south of the M62 carriageway and given the detractors in the existing setting (such as the Arbury Centre) the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 54 | Myddleton Hall Farmhouse | Medium | The immediate setting is provided by the frontage to Delph Lane to the north (beyond which is a belt of woodland surrounding Myddleton Hall) hardstanding and gardens to the south, west and east and agricultural buildings further to the south. The wider setting is provided by open expanses of arable land to the south, Spa Well Cottage is backclothed against the flat landscape beyond which the spire of St. Elphin's Church in Warrington is visible. The southern horizon is provided by the high ground at Hill Cliffe and High Warren. The carriageway of the M62 motorway is not visible from the immediate setting of the asset | The setting makes positive contribution to the significance of the asset in that the farmland to the south of the asset provides a historic and functional resonance to the domestic accommodation of the farmstead. | The proposed development is *c.* 375m to the south of the asset. However, as a consequence of the confining and isolating nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 70 | Coachmans Cottage, Delph Lane. | Low | The immediate setting is provided by the frontage to Delph Lane and some open ground laid to rough hardstanding, outbuildings and an shelterbelt of trees to the east, west and north The wider setting is provided by the secluded grounds of Myddleton Hall to the north-east and open expanses of arable land to the south. Spa Well Cottage is backclothed against the flat landscape beyond which the spire of St. Elphin's Church in Warrington is visible. The southern horizon is provided by the high ground at Hill Cliffe and High Warren. The carriageway of the M62 motorway is not visible from the immediate setting of the asset | The setting makes a positive contribution to the significance of the asset in that the landscape relationship of the cottage to Myddleton Hall is maintained providing a historic resonance to the domestic accommodation. | Although within the wider setting of the asset, the proposed development is within a topographically discrete location to the south of the M62 carriageway and the proposed development would cause no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 72 | Woodside Farm, Radley | Low | The immediate setting of this asset is an open area of rough ground with no apparent garden or other landscaping. | The current, immediate setting makes a negative contribution to the significance of the asset and the wider setting, where many | The proposed development is to the north immediately adjacent to the asset. However, as a consequence of the | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |

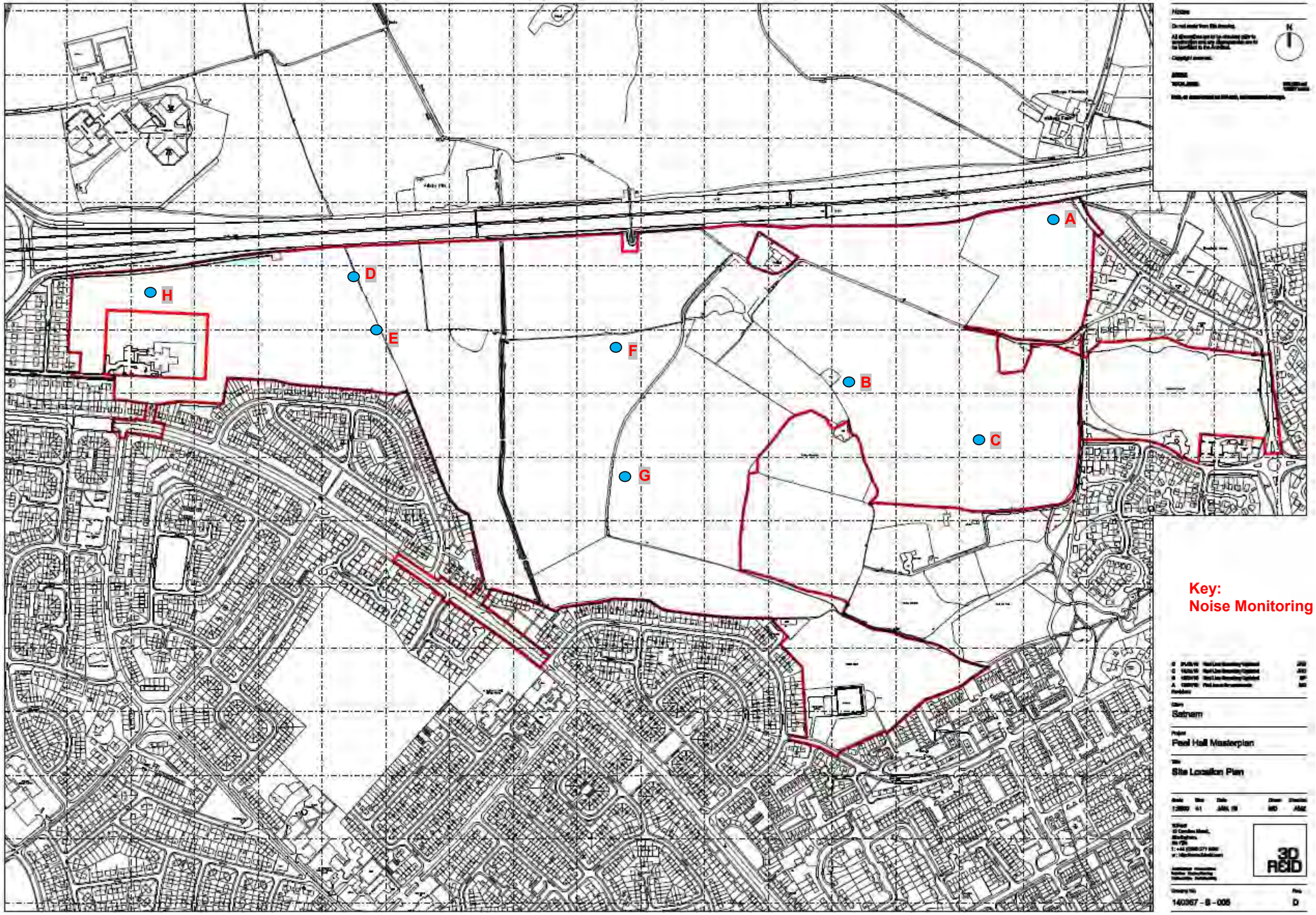
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Lane | | This setting is surrounded by shelterbelts of trees and woodland in all directions. The wider setting is characterised as 20th century field systems. | field boundaries have been lost makes a neutral contribution. | confining and isolating nature of the immediate setting, the proposed development would not adversely influence the immediate or wider setting and there would be no change to the asset and the significance of effect would be neutral. | | |
| 74 | Waterworks Cottages, 1 and 2 Delph Lane | Low | These cottages are within a now larger complex of buildings and were originally built in the first decade of the 20th century as part of the Houghton Green Pumping Station operated by Warrington Corporation. The current setting is an area enclosed by a shelterbelt of trees, with Delph Lane to the west. The immediate setting in turn is surrounded by 20th century field systems. | The setting makes neutral contribution to the significance of the asset in that the remnants of historic landscape and the addition of buildings into the immediate setting neutralises any positives. | The proposed development is *c*. 250m to the south of the asset However, as a consequence of the confining nature of the immediate setting the proposed development would not adversely influence the immediate or wider setting and there would be no change to the asset and the significance of effect would be neutral. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |
| 78 | Post Medieval Plantation | Low | A discrete post-medieval plantation - Radley Plantation would be surrounded on 3 sides by the proposed development. Its current setting is 20th century fields to the north, east and west and a more modern plantation to the south. | The current setting makes a neutral contribution to the significance of the asset in that the landscape pertaining during the inception and growth of the plantation has been subject to multiple changes, most of them in the second half of the 20th century.. | The proposed development would enclose the asset on three sides and alter the landscape pattern fundamentally. The current agricultural land would be changed to an urban form. The elements of significance that the asset draws from the landscape setting would be entirely eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse and the significance of effect slight negative. | Inherent mitigation in the design and landscaping | Neutral / Slight Negative |
| 79 | Post-Medieval Settlement | Low | Two detached parcels of this type of settlement at Peel Hall and Birch Tree Farm would be entirely surrounded by the development. These assets are surrounded by agricultural land and rough pasture, with a shelterbelts of trees providing some screening. However, the carriageway of the M62 motorway is in close proximity to the asset, acting as a detractor. There is also some post-medieval settlement at Houghton Green, along Mill Lane, to the east of the proposed development the setting of which includes 20th century field systems, 20th century agricultural improvement, 20th century recreation (football pitches) and 20th century communication (the M62 motorway) | The setting makes marginally positive contribution to the significance of the asset in that the agricultural and open character of the landscape to the south of Peel Hall and Birch Tree Farm survives, providing a historic and functional resonance to the domestic accommodation of the farmsteads. However, the setting of these assets has been adversely impacted upon by the M62 motorway, which divorces the asset form the landscape to the north. The setting of the post-medieval settlement along Mill Lane however, has been compromised by 20th century infill development and changes to the road communications. | The proposed development would entirely surround Peel Hall and Birch Tree Farm and change the current agricultural land to an urban form. The elements of significance that the assets draw from the landscape setting would be entirely eroded by the proposed development. The magnitude of impact of the proposed development on the asset would be moderate adverse and the significance of effect slight negative.<br><br>Due to the current setting of the post medieval settlement along Mill Lane the proposed development would not adversely influence the immediate or wider setting and there would be no change to the asset and the significance of effect would be neutral. | Inherent mitigation in the design and landscaping | Neutral / Slight Negative |
| 86 | 20th Century | Low | Peel Hall Park lies to the south of the | The setting makes neutral contribution to the | Although within the wider setting of the | None required beyond the inherent | No adverse effect |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Recreation | | proposed development and part of its northern boundary is close to the southern boundary of the proposed development. The setting of the park is firmly sub-urban bounded as it is by residential developments to the north and south. To the east is Blackbrook Avenue and to the west there is some woodland | significance of the asset | asset the proposed development is visually isolated from much of the asset and its approaches. Given the character of the landscape which forms the setting of the asset and the existing screening the proposed development would cause no change to the asset and the significance of effect would be neutral. | mitigation in the design and landscaping | |
| 87 | 20th Century Settlement | Low | There is a swathe of 20th century settlement to the west, south and east of the proposed development at Hulme. Blackbrook, Houghton Green and Cinnamon Brow. At Hulme the 20th century development shares a long boundary with the proposed development. The setting of the 20th century settlement at Hulme is the urban-rural fringe of the M62 corridor to the north of Warrington | The setting makes a positive contribution to the asset as the current landscape exhibits many characteristics typical of the 20th century with which the settlement shares a resonance | The proposed development would be similar in form, function, scale and massing to the exiting expanses of this landscape parcel and therefore there would be no impact on setting and the significance of this asset would not be harmed. | None required beyond the inherent mitigation in the design and landscaping | No adverse effect |

# NI 1-2

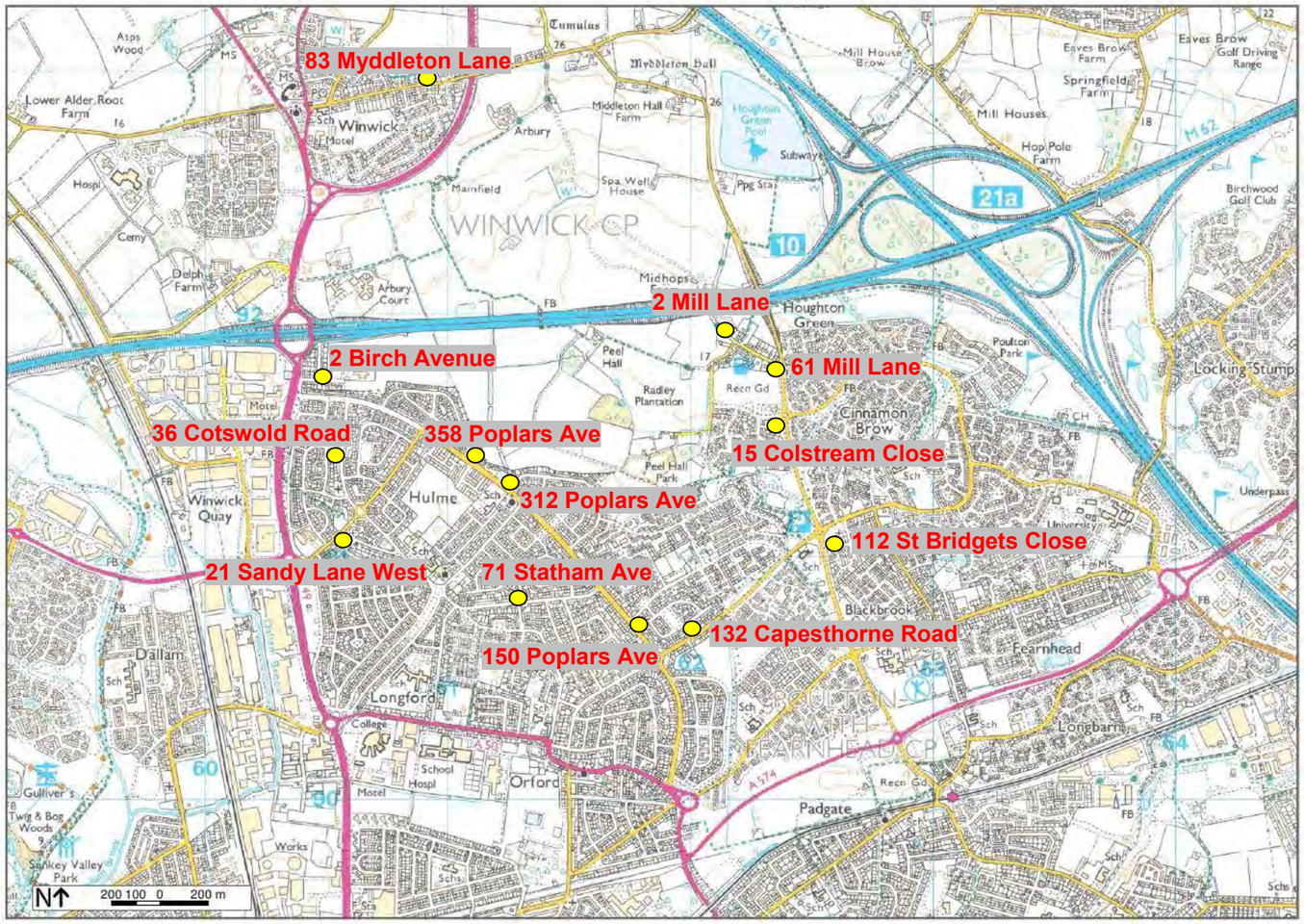
## NOISE POLLUTION

## Appendix 1: Site Location Plan



## Appendix 2: Receptor Locations

The site plan below shows the locations of the sample sensitive receptor locations used within the modelling:




**Map Information**

| | |
|---|---|
| Scale | 1:25000 |
| Date: | 23/05/16 |
| Reference | H1960 |
| Order No: | 1681731 |

Map data



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# AI 1-6

## AIR POLLUTION

## Appendix 1: Glossary of Terms

**National Air Quality Objective:** The concentrations of pollutants in the atmosphere, which can broadly be taken to achieve a certain level of environmental quality. The standards are based on assessment of the effects of each pollutant on human health including the effects on sensitive sub groups.

**Annual mean:** The average of the concentrations measured for each pollutant for one year. In the case of the Air Quality Objectives this is for a calendar year.

**Air Quality Management Area (AQMA):** An area that a local authority has designated for action, based upon predicted exceedences of Air Quality Objectives.

**oncentration:** The amount of a (polluting) substance in a volume (of air), typically expressed as a mass of pollutant per unit volume of air (for example, microgrammes per cubic metre, $\mu g/m^3$) or a volume of gaseous pollutant per unit volume of air (parts per million, ppm).

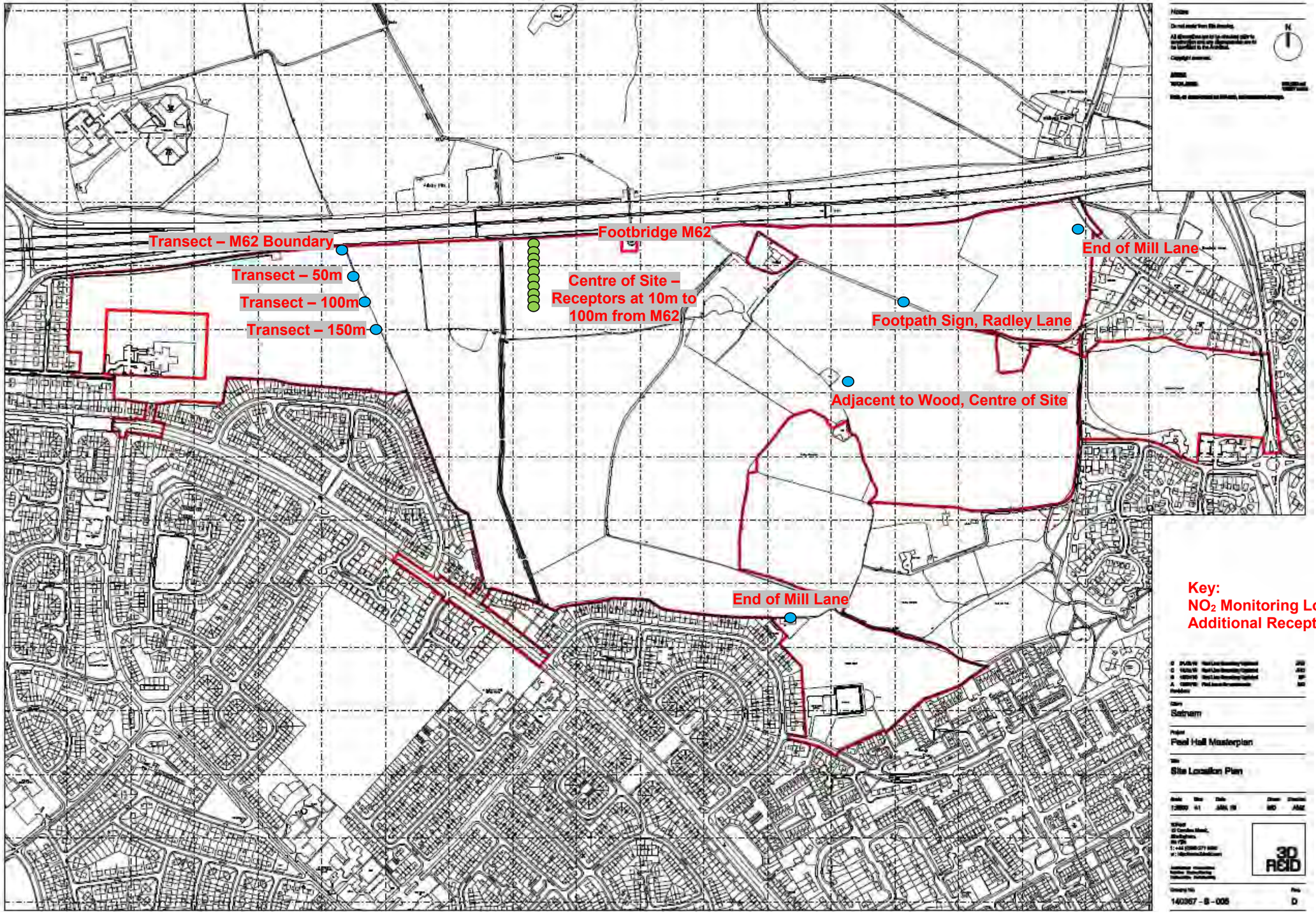
**Exceedance:** A period of time where the concentration of a pollutant is greater than the appropriate Air Quality Objective.

**Nitrogen Oxides:** Nitric oxide (NO) is mainly derived from road transport emissions and other combustion processes such as the electricity supply industry. NO is not considered to be harmful to health. However, once released to the atmosphere, NO is usually very rapidly oxidised to nitrogen dioxide ($NO_2$), which is harmful to health. $NO_2$ and NO are both oxides of nitrogen and together are referred to as nitrogen oxides ($NO_x$).

**Particulate Matter:** Fine Particles are composed of a wide range of materials arising from a variety of sources including combustion sources (mainly road traffic), and coarse particles, suspended soils and dust from construction work. Particles are measured in a number of different size fractions according to their mean aerodynamic diameter. Most monitoring is currently focused on $PM_{10}$ (less than 10 microns in diameter), but the finer fractions such as $PM_{2.5}$ (less than 2.5 microns in diameter) is becoming of increasing interest in terms of health effects.

**$\mu g/m^3$** microgrammes per cubic metre of air: A measure of concentration in terms of mass per unit volume. A concentration of 1 $\mu g/m^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

## Appendix 2: Site Location Plan



## Appendix 3: Air Quality Monitoring

Overview

Since Warrington Borough Council did not have any air quality monitoring equipment on or in the vicinity of the proposed development site, it was considered that there was no suitable data that could be used for verification purposes, or that would be representative of the development site. As a consequence, this air quality assessment was accompanied by four months Nitrogen Dioxide monitoring.

Nitrogen Dioxide ($NO_2$) is commonly the most prevalent pollutant emanating from road traffic; therefore to determine whether air pollution is a problem in a particular area, it is common to measure $NO_2$. Palmes-type diffusion tubes are widely used in the UK for indicative measurement of ambient concentrations of $NO_2$, as they are relatively inexpensive. Diffusion tubes are passive samplers: they consist of small plastic tubes containing a chemical reagent to absorb the pollutant to be measured directly from the air. In the case of Palmes-type nitrogen dioxide diffusion tubes, the absorbent used is triethanolamine (TEA). Stainless-steel mesh grids at the closed end of the tube are coated with a water-based or acetone-based solution of this absorbent.

Diffusion Tube Placement

Nine diffusion tubes were utilised for four months from the beginning of September 2014 to the beginning of January 2015. The nine tubes were located around the development site to characterise pollutant concentrations on the development site at present. The locations of the tubes can be seen in Appendix 22.

Raw Data

The diffusion tubes were processed in the laboratories of Gradko, one of the main manufacturers of diffusions tubes in the UK. Gradko provided the raw results for the tubes which are displayed in the Table below.

**Unbias Corrected Results of the $NO_2$ Diffusion Tubes – September 2014 to January 2015**

| Site No. | Location | $NO_2$ (µg/m$^3$) Annual mean | | | | | |
|---|---|---|---|---|---|---|---|
| | | Month 1 | Month 2 | Month 3 | Month 4 | 4 Month Ave | NAQO |
| 1 | End of Mill Lane | 37.10 | 25.11 | 38.77 | 35.28 | 34.06 | 40 |
| 2 | Footpath Sigh, Radley Lane | Missing | 25.59 | 48.29 | 37.84 | 37.24 | 40 |
| 3 | Footbridge M62 | Missing | 31.50 | Missing | 49.43 | 40.47 | 40 |
| 4 | Transect - M62 boundary | 60.24 | 35.86 | 59.48 | 52.98 | 52.14 | 40 |
| 5 | Transect - 50m | 36.19 | 25.71 | 34.19 | 35.03 | 32.78 | 40 |
| 6 | Transect - 100m | 31.94 | 23.04 | 32.46 | 34.48 | 30.48 | 40 |
| 7 | Transect - 150m | 34.55 | 23.52 | 36.02 | 38.25 | 33.08 | 40 |
| 8 | 1st/14th Warrington West Scout Hut | 25.19 | 18.83 | Missing | 26.37 | 23.46 | 40 |
| 9 | Adjacent to wood in middle of site | 29.60 | 19.78 | 34.42 | 26.83 | 27.66 | 40 |

Bias Adjustment

Diffusion tubes are useful low-cost method for indicative monitoring of ambient nitrogen dioxide ($NO_2$) concentrations. However, diffusion tubes are affected by several sources of interference which can cause substantial under or overestimation (often referred to as "bias") compared to the more accurate and much more expensive chemiluminescent analysers. Clearly, any such "bias" is a problem in any situation where diffusion tube results are to be compared with air quality objectives. As a result, local authorities using $NO_2$ diffusion tubes in their Review and Assessment are required to quantify the "bias" of their diffusion tube measurements and apply an appropriate bias adjustment factor to the annual mean if required.

Bias adjustment factors are normally either locally-derived (in which the accuracy of the diffusion tubes is quantified by exposure alongside an automatic chemiluminescence analyser), or nationally-derived based on the result of many co-location studies (using the same laboratory and tube preparation method).

In the case of this diffusion tube survey, a nationally derived bias adjustment factor of 0.92 has been applied to the results. The adjustment factor was taken from the National Diffusion Tube Bias Adjustment Factor Spreadsheet (March 2016) published by Defra for Gradko 20% TEA diffusion tubes. The adjustment factor was based on 22 studies.

Seasonal Adjustment Factor

Since the air quality measurements were only conducted over four months, but the National Air Quality Objective is an annual mean, the four month mean must be converted to an annual mean. Since pollutant concentrations vary according to season, a seasonal adjustment factor has been applied to the air pollution measurements based on the seasonal relationship at the closest air quality monitoring station. Warrington Borough Council's Updating and Screening Assessment (2015) provides short term adjustment ratios to convert September to December means to annual means. A ratio of 0.82 has been applied to determine an annual mean.

# Appendix 4: Air Quality Model

Breeze Roads & CAL3QHCR

In the UK, the Department for Environment, Food & Rural Affairs (Defra) provides guidance on the most appropriate methods to estimate pollutant concentrations for use in Local Air Quality Management (LAQM). Defra regularly updates its Technical Guidance, with the latest LAQM Technical Guidance TG(09) published in February 2009[6].

The methodology in TG(09) directs air quality professionals to a number of tools published by Defra to predict and manage air quality. One of the main tools for modelling air pollutants is Breeze Roads, which is a refined air dispersion model produced by Trinity Consultants in the USA.

Breeze Roads is an air dispersion modelling suite that predicts the air quality impacts of nitrogen dioxide, particulate matter and other inert pollutant concentrations from moving and idling motor vehicles at or alongside roads and junctions.

The model includes the CALINE4, CAL3QHC and CAL3QHCR line source dispersion models and a traffic algorithm for estimating vehicular queue lengths at signalized intersections. CAL3QHC and CAL3QHCR are enhanced versions of the CALINE3 model that incorporates methods for estimating queue lengths and the contribution of emissions from idling vehicles.

Breeze Roads incorporates three modules; two for modeling a single hour of user-defined meteorological data (CAL3QHC and CALINE4) and a third for modeling historic, hourly meteorological data (CAL3QHCR). The latter module has the capability of processing a year of hourly meteorological data, carbon monoxide (CO), particulate matter (PM), or nitrogen dioxide ($NO_2$) emissions, traffic, and signalization data. In addition, the CAL3QHCR module incorporates the Industrial Source Complex (ISC) mixing height algorithm. These enhancements are based on the algorithms in the CALINE4 model.

For the purposes of this assessment, as the assessment requires the determination of the annual concentrations of pollutants, the CAL3QHCR module is used, as this can use a year of hourly meteorological data to determine the annual concentration of the pollutants of concern.

[6] Part IV of the Environment Act 1995, Local Air Quality Management Technical Guidance (TG09), Defra, February 2009.

Unlike the commonly used 'DMRB Screening Method', Breeze Roads can take into account annualised meteorological data; it can take into account source, receiver and terrain heights; canyon effects can be modelled; and the model can calculate hourly concentrations.

Annex 3 of TG(09) provides detailed guidance on the modelling of air pollutants and in particular highlights a procedure to validate models. The procedure discusses the comparison of modelled results against measured levels, either from diffusion tubes (for $NO_2$) or continuous monitors (for $NO_2$ or $PM_{10}$).

Model verification and subsequent adjustment for oxides of nitrogen is undertaken based upon $NO_X$ as most models (including Breeze Roads) predict $NO_2$ based upon its relationship to $NO_x$. Consequently, the verification process requires conversion to $NO_x$ of any measurements of $NO_2$ in order to compare against modelled levels of $NO_x$.

Defra has published in 2009 a methodology to calculate $NO_x$ from $NO_2$ and as part of its LAQM toolkit[7]. The calculation method allows local authorities and air quality consultants to derive $NO_2$ and $NO_x$ wherever $NO_x$ is predicted by modelling emissions from roads. The calculation method incorporates the impact of expected changes in the fraction of $NO_x$ emitted as $NO_2$ (f – $NO_2$) and changes in regional concentrations of $NO_x$, $NO_2$ and $O_3$.

Background concentrations for various pollutants are published and updated regularly by Defra, so it is possible to calculate the contribution of $NO_x$ from road traffic at a particular location. If the ratio of the monitored road traffic contribution to the modelled road traffic contribution of $NO_x$ is calculated, this factor can be applied to the component derived from road traffic emissions for any predictions of $NO_x$ in the area. Therefore, it is possible to validate the model such that predictions should be within 10% of air quality measurements.

[7] http://laqm.defra.gov.uk/tools-monitoring-data/no-calculator.html

## Appendix 5: Modelling Procedure and Input Data

The following Appendix summarises the input data and assumptions used in the modelling of air pollutants.

Model Input Data

Highgate Transportation, who are the Transport Consultants on the scheme, have provided traffic data for four separate scenarios for the air quality modelling: the baseline 2014; baseline 2019; baseline 2019 + committed development; and baseline 2019 + committed development + development flows.

Using the traffic flow data, it has been possible to calculate the emission factors using Defra's Emission Factor Toolkit Version 6.0.2, published in 2014 in accordance with the latest guidance. $NO_x$ Emission Factors are taken from the European Environment Agency (EEA) COPERT 4 (v10) emission calculation tool, with emission factors for other pollutants are those published by the Department for Transport combined with information on fleet composition on different road types collected as part of the National Atmospheric Emissions Inventory. The traffic information and emission factors are detailed in the tables below for the four scenarios.

**Model Input Data – Baseline 2014**

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Poplars Avenue | 6528 | 0.547348 | 0.042598 | 0.026036 |
| Mill Lane (Blackbrook Av - site access) | 9762 | 0.376587 | 0.035648 | 0.021529 |
| Mill Lane (Radley Lane - Delph Lane) | 840 | 0.370877 | 0.035416 | 0.021379 |
| Mill Lane (site access - Delph Lane) | 9762 | 0.376587 | 0.035648 | 0.021529 |
| Delph Lane | 9246 | 0.438687 | 0.02991 | 0.02016 |
| Blackbrook Av (Mill Ln - Capesthorne Rd) | 8244 | 0.681907 | 0.048075 | 0.029588 |
| Blackbrook Av (Capesthorne Rd - Insall Rd) | 9804 | 0.406886 | 0.036881 | 0.022329 |
| Blackbrook A (Insall Rd - Birchwood Way) | 10626 | 0.419838 | 0.037408 | 0.022671 |
| Birch Avenue | 570 | 0.450222 | 0.036506 | 0.022415 |
| Cotswold Road | 2256 | 0.560308 | 0.043126 | 0.026378 |
| Cleveland Road | 4944 | 0.434767 | 0.038016 | 0.023065 |
| Sandy Lane West | 12810 | 0.417292 | 0.037305 | 0.022604 |

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Sandy Lane | 4854 | 0.481886 | 0.039934 | 0.024308 |
| Winwick Road (M62 - Sandy Ln West) | 37362 | 0.501416 | 0.043018 | 0.026086 |
| Winwick Rd (Sandy Ln W - Hawleys Ln) | 38046 | 0.479837 | 0.041966 | 0.025419 |
| Winwick Road (south of Hawleys Lane) | 34392 | 0.473803 | 0.041672 | 0.025233 |
| Capesthorne Road | 11082 | 0.4195 | 0.037395 | 0.022662 |
| Enfield Park Road | 6906 | 0.38433 | 0.035963 | 0.021734 |
| Crab Lane | 10266 | 0.488522 | 0.040204 | 0.024484 |
| Birchwood Way (A50 - Blackbrook Av) | 16026 | 0.419572 | 0.037398 | 0.022664 |
| Birchwood Way (Blackbrook Av - Crab Ln) | 16524 | 0.428225 | 0.03775 | 0.022892 |
| Birchwood Way (Crab Ln - Birchwood) | 17592 | 0.380383 | 0.035803 | 0.02163 |
| Howson Road | 3648 | 0.605173 | 0.044952 | 0.027562 |
| A50 Long Lane | 14682 | 0.463262 | 0.039176 | 0.023817 |
| Statham Avenue | 2094 | 0.388624 | 0.036138 | 0.021847 |
| Northway | 3438 | 0.511394 | 0.041135 | 0.025087 |
| Hilden Road | 6882 | 0.438374 | 0.038163 | 0.02316 |
| Insall Road/Fernhead Lane | 7692 | 0.453007 | 0.038758 | 0.023546 |
| Cromwell Avenue | 4944 | 1.10749 | 0.065397 | 0.04082 |
| Myddleton Lane | 2448 | 0.400783 | 0.027547 | 0.017901 |
| Winwick Link Road | 18078 | 0.561021 | 0.043155 | 0.026397 |
| Winwick Road (north of M62) | 33474 | 0.45323 | 0.040669 | 0.024598 |
| M62 west | 113484 | 0.766743 | 0.036986 | 0.026995 |
| M62 west off slip | 11262 | 0.814729 | 0.039691 | 0.028789 |
| M62 west on slip | 10854 | 0.814313 | 0.039667 | 0.028773 |
| M62 east | 110028 | 0.77254 | 0.037313 | 0.027212 |
| M62 east off slip | 8952 | 0.837556 | 0.040977 | 0.029642 |
| M62 east on slip | 9696 | 0.876345 | 0.043163 | 0.031092 |

**Model Input Data – Baseline 2019**

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Poplars Avenue | 6966 | 0.322232 | 0.037497 | 0.021069 |
| Mill Lane (Blackbrook Av - site access) | 10056 | 0.261903 | 0.032128 | 0.018057 |
| Mill Lane (Radley Lane - Delph Lane) | 900 | 0.259885 | 0.031949 | 0.017956 |
| Mill Lane (site access - Delph Lane) | 10056 | 0.261903 | 0.032128 | 0.018057 |
| Delph Lane | 9870 | 0.307023 | 0.024245 | 0.01469 |
| Blackbrook Av (Mill Ln - Capesthorne Rd) | 8802 | 0.369771 | 0.041728 | 0.023442 |
| Blackbrook Av (Capesthorne Rd - Insall Rd) | 10518 | 0.272607 | 0.033081 | 0.018591 |
| Blackbrook A (Insall Rd - Birchwood Way) | 11400 | 0.277183 | 0.033488 | 0.01882 |
| Birch Avenue | 612 | 0.321398 | 0.032364 | 0.01835 |
| Cotswold Road | 2418 | 0.326811 | 0.037905 | 0.021297 |
| Cleveland Road | 5304 | 0.282457 | 0.033957 | 0.019083 |
| Sandy Lane West | 13740 | 0.276284 | 0.033408 | 0.018775 |
| Sandy Lane | 5208 | 0.299105 | 0.035439 | 0.019914 |
| Winwick Road (M62 - Sandy Ln West) | 40074 | 0.286334 | 0.038062 | 0.021258 |
| Winwick Rd (Sandy Ln W - Hawleys Ln) | 40806 | 0.279372 | 0.037224 | 0.020794 |
| Winwick Road (south of Hawleys Lane) | 36888 | 0.277425 | 0.03699 | 0.020664 |
| Capesthorne Road | 11886 | 0.277064 | 0.033477 | 0.018814 |
| Enfield Park Road | 7242 | 0.264638 | 0.032372 | 0.018193 |
| Crab Lane | 10764 | 0.301449 | 0.035648 | 0.020031 |
| Birchwood Way (A50 - Blackbrook Av) | 17106 | 0.277089 | 0.03348 | 0.018815 |
| Birchwood Way (Blackbrook Av - Crab Ln) | 17724 | 0.280146 | 0.033752 | 0.018968 |
| Birchwood Way (Crab Ln - Birchwood) | 18450 | 0.263244 | 0.032247 | 0.018124 |
| Howson Road | 3912 | 0.342661 | 0.039315 | 0.022089 |
| A50 Long Lane | 15744 | 0.292524 | 0.034853 | 0.019586 |
| Statham Avenue | 2232 | 0.266155 | 0.032507 | 0.018269 |
| Northway | 3690 | 0.30953 | 0.036367 | 0.020435 |
| Hilden Road | 7386 | 0.283732 | 0.034071 | 0.019147 |
| Insall Road/Fernhead Lane | 8250 | 0.288902 | 0.034531 | 0.019405 |
| Cromwell Avenue | 11070 | 0.520128 | 0.055109 | 0.030949 |

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Myddleton Lane | 2508 | 0.279508 | 0.02375 | 0.014205 |
| Winwick Link Road | 16992 | 0.327063 | 0.037927 | 0.02131 |
| Winwick Road (north of M62) | 35904 | 0.270788 | 0.036191 | 0.020222 |
| M62 west | 121716 | 0.436851 | 0.027067 | 0.017516 |
| M62 west off slip | 12079 | 0.43764 | 0.029221 | 0.018792 |
| M62 west on slip | 11641 | 0.437618 | 0.029202 | 0.018781 |
| M62 east | 118008 | 0.436946 | 0.027327 | 0.01767 |
| M62 east off slip | 9601 | 0.437994 | 0.030245 | 0.019398 |
| M62 east on slip | 10399 | 0.438633 | 0.031986 | 0.02043 |

**Model Input Data – Baseline 2019 + Committed Development**

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Poplars Avenue | 7326 | 0.322232 | 0.037497 | 0.021069 |
| Mill Lane (Blackbrook Av - site access) | 10932 | 0.261903 | 0.032128 | 0.018057 |
| Mill Lane (Radley Lane - Delph Lane) | 912 | 0.259885 | 0.031949 | 0.017956 |
| Mill Lane (site access - Delph Lane) | 10896 | 0.261903 | 0.032128 | 0.018057 |
| Delph Lane | 10680 | 0.307023 | 0.024245 | 0.01469 |
| Blackbrook Av (Mill Ln - Capesthorne Rd) | 9870 | 0.369771 | 0.041728 | 0.023442 |
| Blackbrook Av (Capesthorne Rd - Insall Rd) | 10728 | 0.272607 | 0.033081 | 0.018591 |
| Blackbrook A (Insall Rd - Birchwood Way) | 11412 | 0.277183 | 0.033488 | 0.01882 |
| Birch Avenue | 612 | 0.321398 | 0.032364 | 0.01835 |
| Cotswold Road | 2418 | 0.326811 | 0.037905 | 0.021297 |
| Cleveland Road | 5328 | 0.282457 | 0.033957 | 0.019083 |
| Sandy Lane West | 13806 | 0.276284 | 0.033408 | 0.018775 |
| Sandy Lane | 5232 | 0.299105 | 0.035439 | 0.019914 |
| Winwick Road (M62 - Sandy Ln West) | 40260 | 0.286334 | 0.038062 | 0.021258 |
| Winwick Rd (Sandy Ln W - Hawleys Ln) | 41016 | 0.279372 | 0.037224 | 0.020794 |
| Winwick Road (south of Hawleys Lane) | 36984 | 0.277425 | 0.03699 | 0.020664 |

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Capesthorne Road | 12606 | 0.277064 | 0.033477 | 0.018814 |
| Enfield Park Road | 8988 | 0.264638 | 0.032372 | 0.018193 |
| Crab Lane | 12828 | 0.301449 | 0.035648 | 0.020031 |
| Birchwood Way (A50 - Blackbrook Av) | 17850 | 0.277089 | 0.03348 | 0.018815 |
| Birchwood Way (Blackbrook Av - Crab Ln) | 19062 | 0.280146 | 0.033752 | 0.018968 |
| Birchwood Way (Crab Ln - Birchwood) | 21942 | 0.263244 | 0.032247 | 0.018124 |
| Howson Road | 3942 | 0.342661 | 0.039315 | 0.022089 |
| A50 Long Lane | 15942 | 0.292524 | 0.034853 | 0.019586 |
| Statham Avenue | 2334 | 0.266155 | 0.032507 | 0.018269 |
| Northway | 3714 | 0.30953 | 0.036367 | 0.020435 |
| Hilden Road | 7542 | 0.283732 | 0.034071 | 0.019147 |
| Insall Road/Fernhead Lane | 8646 | 0.288902 | 0.034531 | 0.019405 |
| Cromwell Avenue | 11814 | 0.520128 | 0.055109 | 0.030949 |
| Myddleton Lane | 3114 | 0.279508 | 0.02375 | 0.014205 |
| Winwick Link Road | 17166 | 0.327063 | 0.037927 | 0.02131 |
| Winwick Road (north of M62) | 36186 | 0.270788 | 0.036191 | 0.020222 |
| M62 west | 121908 | 0.436851 | 0.027067 | 0.017516 |
| M62 west off slip | 12098 | 0.437638 | 0.029221 | 0.018792 |
| M62 west on slip | 11660 | 0.437642 | 0.029203 | 0.018782 |
| M62 east | 118236 | 0.436946 | 0.027327 | 0.01767 |
| M62 east off slip | 9617 | 0.438033 | 0.030247 | 0.0194 |
| M62 east on slip | 10416 | 0.438658 | 0.031988 | 0.020431 |

**Model Input Data – Baseline 2019 + Committed Development + Development Traffic**

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Poplars Avenue | 11706 | 0.322232 | 0.037497 | 0.021069 |
| Mill Lane (Blackbrook Av - site access) | 16380 | 0.261903 | 0.032128 | 0.018057 |
| Mill Lane (Radley Lane - Delph Lane) | 2310 | 0.259885 | 0.031949 | 0.017956 |

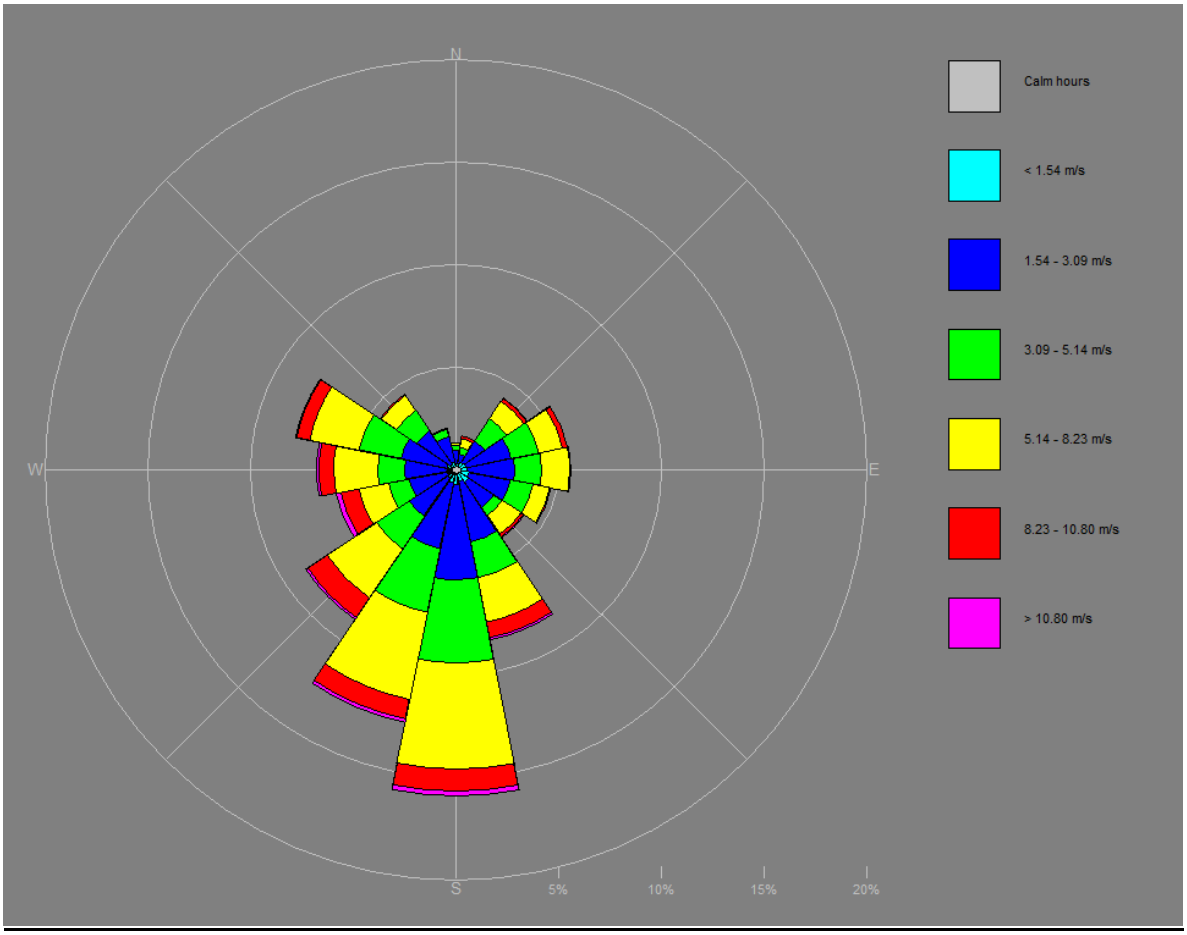
| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Mill Lane (site access - Delph Lane) | 12684 | 0.261903 | 0.032128 | 0.018057 |
| Delph Lane | 12336 | 0.307023 | 0.024245 | 0.01469 |
| Blackbrook Av (Mill Ln - Capesthorne Rd) | 15150 | 0.369771 | 0.041728 | 0.023442 |
| Blackbrook Av (Capesthorne Rd - Insall Rd) | 13632 | 0.272607 | 0.033081 | 0.018591 |
| Blackbrook A (Insall Rd - Birchwood Way) | 14478 | 0.277183 | 0.033488 | 0.01882 |
| Birch Avenue | 804 | 0.321398 | 0.032364 | 0.01835 |
| Cotswold Road | 3390 | 0.326811 | 0.037905 | 0.021297 |
| Cleveland Road | 6354 | 0.282457 | 0.033957 | 0.019083 |
| Sandy Lane West | 15810 | 0.276284 | 0.033408 | 0.018775 |
| Sandy Lane | 5508 | 0.299105 | 0.035439 | 0.019914 |
| Winwick Road (M62 - Sandy Ln West) | 41646 | 0.286334 | 0.038062 | 0.021258 |
| Winwick Rd (Sandy Ln W - Hawleys Ln) | 41544 | 0.279372 | 0.037224 | 0.020794 |
| Winwick Road (south of Hawleys Lane) | 37590 | 0.277425 | 0.03699 | 0.020664 |
| Capesthorne Road | 13938 | 0.277064 | 0.033477 | 0.018814 |
| Enfield Park Road | 10632 | 0.264638 | 0.032372 | 0.018193 |
| Crab Lane | 14346 | 0.301449 | 0.035648 | 0.020031 |
| Birchwood Way (A50 - Blackbrook Av) | 18696 | 0.277089 | 0.03348 | 0.018815 |
| Birchwood Way (Blackbrook Av - Crab Ln) | 19566 | 0.280146 | 0.033752 | 0.018968 |
| Birchwood Way (Crab Ln - Birchwood) | 22746 | 0.263244 | 0.032247 | 0.018124 |
| Howson Road | 4608 | 0.342661 | 0.039315 | 0.022089 |
| A50 Long Lane | 17238 | 0.292524 | 0.034853 | 0.019586 |
| Statham Avenue | 2910 | 0.266155 | 0.032507 | 0.018269 |
| Northway | 4086 | 0.30953 | 0.036367 | 0.020435 |
| Hilden Road | 9408 | 0.283732 | 0.034071 | 0.019147 |
| Insall Road/Fernhead Lane | 8796 | 0.288902 | 0.034531 | 0.019405 |
| Cromwell Avenue | 13218 | 0.520128 | 0.055109 | 0.030949 |
| Myddleton Lane | 4482 | 0.279508 | 0.02375 | 0.014205 |
| Winwick Link Road | 17844 | 0.327063 | 0.037927 | 0.02131 |
| Winwick Road (north of M62) | 37086 | 0.270788 | 0.036191 | 0.020222 |
| M62 west | 122460 | 0.436851 | 0.027067 | 0.017516 |

| Road | AADT | Emission Factor g /veh km | | |
|---|---|---|---|---|
| | | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| M62 west off slip | 12153 | 0.437646 | 0.029222 | 0.018793 |
| M62 west on slip | 11712 | 0.437612 | 0.029201 | 0.01878 |
| M62 east | 118878 | 0.436946 | 0.027327 | 0.01767 |
| M62 east off slip | 9660 | 0.438009 | 0.030246 | 0.019399 |
| M62 east on slip | 10463 | 0.438651 | 0.031988 | 0.020431 |
| New Mill Lane Access | 1278 | 0.265356 | 0.032435 | 0.018229 |
| New Mill Lane/Blackbrook Avenue Access | 5646 | 0.265356 | 0.032435 | 0.018229 |
| New Poplars Ave Access (Central) | 4494 | 0.265356 | 0.032435 | 0.018229 |
| New Poplars Ave Access (West) | 1050 | 0.265356 | 0.032435 | 0.018229 |

Meteorological Data

TG(09) suggests that a single year's meteorological data will be sufficient to predict air pollution concentrations. Meteorological data was obtained for the nearest meteorological station to the proposed development site, which is situated at Manchester Airport. The meteorological data consists of hourly sequential data of wind speed, wind direction, surface temperature, precipitation rate and cloud cover data. This data was used for both model verification and future year scenarios. The figure below shows the wind rose data used in the modelling.

**Wind Rose – Manchester Airport**

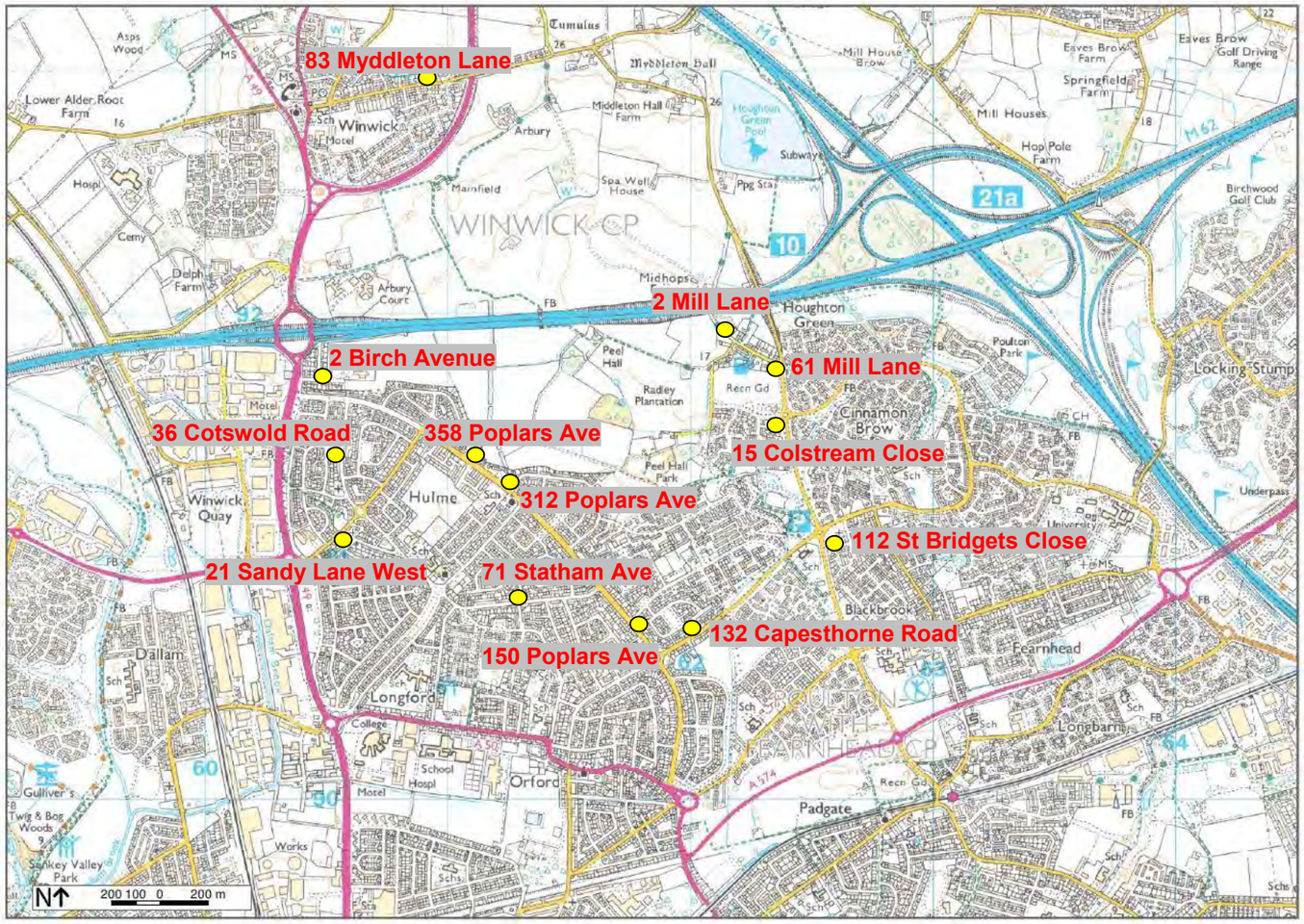



Background Concentration of Air Pollutants

Discussions with Richard Moore in the Environmental Protection Team at Warrington Borough Council have indicated that there is a preference for any modelling to utilise monitored background concentrations from the Selby Street Urban Background Monitoring Station for 2013 and use these data for all baseline and future predictions. Warrington Borough Council's 2015 Updating and Screening Assessment indicates that the annual mean background concentration of $NO_2$ was 25.6 µg/m$^3$, 18 µg/m$^3$ for $PM_{10}$ and 14 µg/m$^3$ for $PM_{2.5}$.

Receptor Locations

The site plan below shows the locations of the sample sensitive receptor locations used within the modelling:




**Map Information**

| | |
|---|---|
| Scale | 1:25000 |
| Date: | 23/05/16 |
| Reference | H1960 |
| Order No: | 1681731 |

Map data



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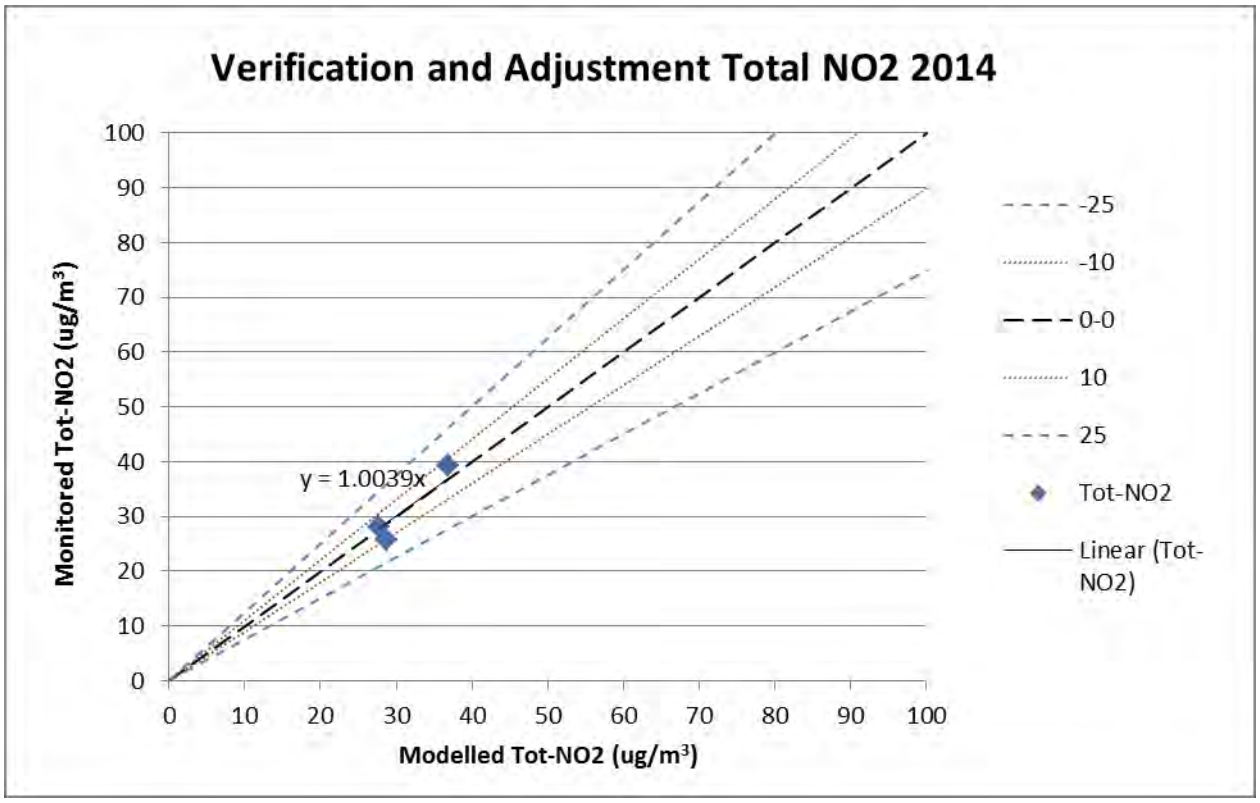
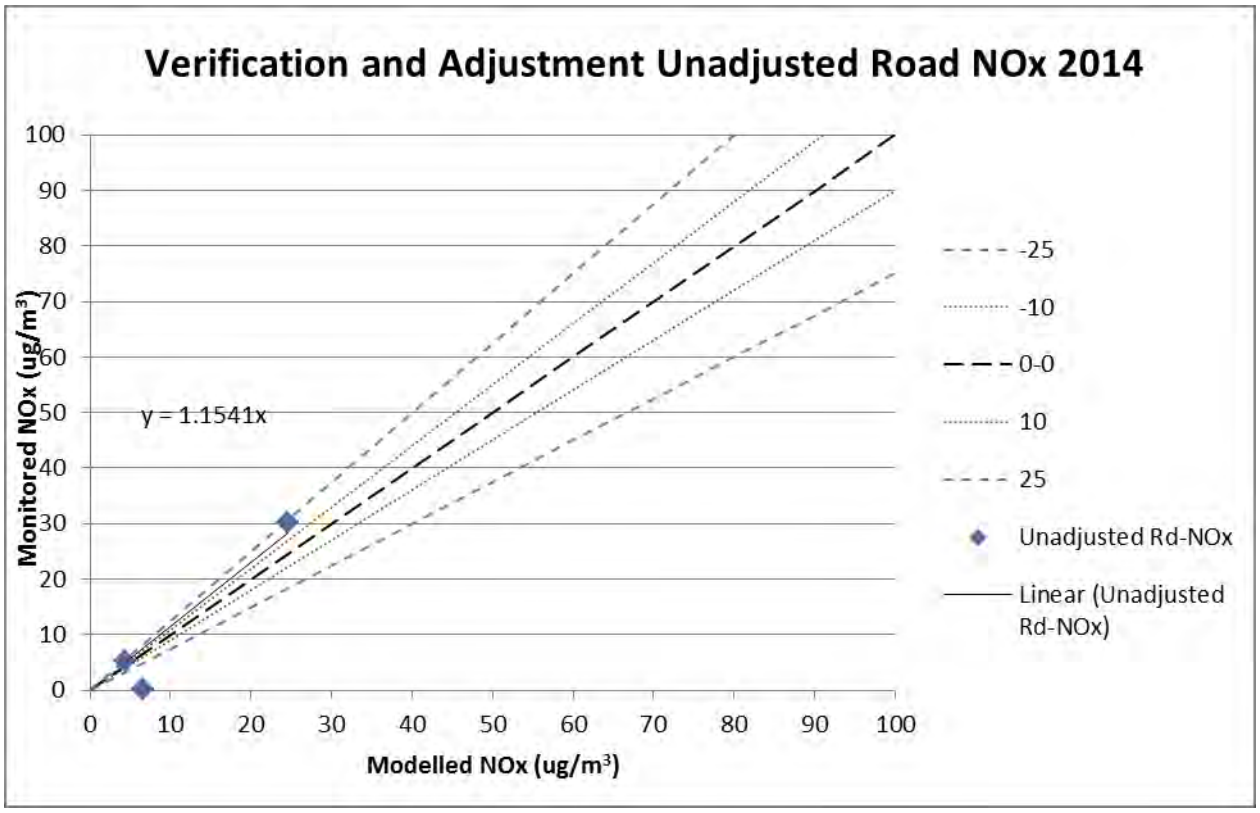
Verification and Adjustment

Verification of the air pollutant model was carried out in accordance with LAQM Technical Guidance TG(09) using the data from the diffusion tubes located on the development site during 2014. Of the nine tubes on the site, only three where deemed suitable for verification. Of the others, the tube adjacent to the footbridge was seen as unreliable as it only contained two months of data, with the remaining five locations recorded annual means below the measured background levels for the area. The exercise required the modelling of the diffusion tube location for 2014 and comparing the modelled results with the monitoring results. The verification data is summarised below and shows that pollutant concentrations where under predicted using the model; therefore an adjustment factor of 1.1541 was applied to the model contribution of $NO_x$.

| | **Modelled Rds NOx** | **Modelled Tot-NO2** | **Monitored Tot-NO2** | **%Diff Mod/ Mon Tot-NO2** | **Modelled Rd-NOx** | **Monitored Rd-Nox** | **NOx ADJ Corr1** | **Adj Mod Rd-NOx** | **Adj Mod Tot-NO2** | **Monitored Tot-NO2** | **%Diff Mod/ Mon Adj Tot-NO2** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| End of Mill Lane | 6.52 | 28.76 | 25.7 | 12 | 6.52 | 0.2 | 0.03 | 7.52 | 29.24 | 25.7 | 14 |
| Footpath Sigh, Radley Lane | 4.37 | 27.73 | 28.1 | -1 | 4.37 | 5.12 | 1.17 | 5.04 | 28.06 | 28.1 | 0 |
| Transect - M62 boundary | 24.51 | 36.91 | 39.3 | -6 | 24.51 | 30.22 | 1.23 | 28.29 | 38.52 | 39.3 | -2 |

Regression **1.1541**


Verification and Adjustment Total NO2 2014
Monitored Tot-NO2 (ug/m³)
Modelled Tot-NO2 (ug/m³)
y = 1.0039x
0
10
20
30
40
50
60
70
80
90
100
-25
-10
0-0
10
25
Tot-NO2
Linear (Tot-NO2)


Verification and Adjustment Unadjusted Road NOx 2014
Monitored NOx (ug/m³)
Modelled NOx (ug/m³)
y = 1.1541x
0
10
20
30
40
50
60
70
80
90
100
-25
-10
0-0
10
25
Unadjusted Rd-NOx
Linear (Unadjusted Rd-NOx)

$PM_{10}$ Exceedences

The number of exceedences of 50 µg/m$^3$ as a 24-hour mean $PM_{10}$ concentration has been calculated from the modelled total annual mean concentration following the relationship advised by Defra:

$A = -18.5 + 0.00145\ B^3 + 206/B$

where A is the number of exceedences of 50 µg/m$^3$ as a 24-hour mean $PM_{10}$ concentration and B is the annual mean $PM_{10}$ concentration.

# Appendix 6: IAQM Construction Dust Guidance

The Institute of Air Quality Management's *Guidance on the assessment of dust from demolition and construction (February 2014)* contains a complex methodology for determining the significance of construction impacts on air quality. The assessment is summarised in Section 8 of this report. However, depending on the outcome of the Risk Assessment, mitigation is recommended. The following summarises the various mitigating measures that may be required:

Step 3 – Site Specific Mitigation

### 8.2 Dust and Air Emissions Mitigation Measures

The mitigation measures have been divided into general measures applicable to all site and measures applicable specifically to demolition, earthworks, construction and trackout, for consistency with the assessment methodology. The following tables detail the mitigation required for high, medium and low risk sites, as determined in **STEP 2C.**

For those mitigation measures that are general, the highest risk category should be applied. For example, if the site is medium risk for earthworks and construction, but a high risk for demolition and track-out, the general measures applicable to a high risk site should be applied.

It should be noted that it is difficult to provide generic guidance, as each site and its location will be different and professional judgement is required.

**Key to tables:**

**H** Highly recommended
**D** Desirable
**N** Not required

**Mitigation for all sites: Communications**

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 1. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. | N | H | H |
| 2. Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. | H | H | H |
| 3. Display the head or regional office contact information | H | H | H |

### Mitigation for all sites: Dust Management

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 4. Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, real-time PM10 continuous monitoring and/or visual inspections. | D | H | H |
| **Site Management** | | | |
| 5. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. | H | H | H |
| 6. Make the complaints log available to the local authority when asked. | H | H | H |
| 7. Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book. | H | H | H |
| 8. Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes. | N | N | H |
| **Monitoring** | | | |
| 9. Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary. | D | D | H |
| 10. Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked | H | H | H |
| 11. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. | H | H | H |
| 12. Agree dust deposition, dust flux, or real-time $PM_{10}$ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. | N | H | H |
| **Preparing and maintaining the site** | | | |
| 13. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. | H | H | H |
| 14. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. | H | H | H |
| 15. Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period | D | H | H |
| 16. Avoid site runoff of water or mud. | H | H | H |
| 17. Keep site fencing, barriers and scaffolding clean using wet methods. | D | H | H |

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 18. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. | D | H | H |
| 19. Cover, seed or fence stockpiles to prevent wind whipping. | D | H | H |
| **Operating vehicle/machinery and sustainable travel** | | | |
| 20. Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable | H | H | H |
| 21. Ensure all vehicles switch off engines when stationary - no idling vehicles. | H | H | H |
| 22. Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. | H | H | H |
| 23. Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate) | D | D | H |
| 24. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. | N | H | H |
| 25. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) | N | D | H |
| **Operations** | | | |
| 26. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. | H | H | H |
| 27. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. | H | H | H |
| 28. Use enclosed chutes and conveyors and covered skips. | H | H | H |
| 29. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. | H | H | H |
| 30. Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. | D | H | H |
| **Waste management** | | | |
| 31. Avoid bonfires and burning of waste materials. | H | H | H |

### Measures specific to demolition

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 32. Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). | D | D | H |
| 33. Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. | H | H | H |
| 34. Avoid explosive blasting, using appropriate manual or mechanical alternatives. | H | H | H |
| 35. Bag and remove any biological debris or damp down such material before demolition. | H | H | H |

### Measures specific to earthworks

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 36. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.. | N | D | H |
| 37. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable | N | D | H |
| 38. Only remove the cover in small areas during work and not all at once | N | D | H |

### Measures specific to construction

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 39. Avoid scabbling (roughening of concrete surfaces) if possible | D | D | H |
| 40. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. | D | H | H |
| 41. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. | N | D | H |
| 42. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. | N | D | D |

### Measures specific to trackout

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| 43. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. | D | H | H |
| 44. Avoid dry sweeping of large areas. | D | H | H |
| 45. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. | D | H | H |
| 46. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. | N | H | H |
| 47. Record all inspections of haul routes and any subsequent action in a site log book. | D | H | H |
| 48. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. | N | H | H |
| 49. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). | D | H | H |
| 50. Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. | N | H | H |
| 51. Access gates to be located at least 10m from receptors where possible. | N | H | H |

# S 1
## SOCIO-ECONOMIC

## Appendix 1: Education, Healthcare, Sports and Open Space Baseline Provision

Table 1 Education Provision

| | 2016/17 | 2021/22 | 2026/27 | 2029/30 | Under / Over Capacity (2029/30) |
|---|---|---|---|---|---|
| **PRIMARY EDUCATION** | | | | | |
| Number on Roll | 6,011 | 6,455 | 6,455 | 6,455 | -5% |
| Total Capacity | 5,960 | 6,150 | 6,150 | 6,150 | |
| Total Primary Education Capacity | -51 | -305 | -305 | -305 | |
| **SECONDARY EDUCATION (INC.SIXTH FORM)** | | | | | |
| Number on Roll | 5,280 | 6,408 | 6,821 | 6,821 | -8% |
| Total Capacity | 6,370 | 6,300 | 6,300 | 6,300 | |
| Total Secondary Education Capacity | 1,090 | -108 | -521 | -521 | |

Source: Warrington Borough Council (2015)

Table 2 Healthcare Provision

| Health Centre | Distance from site (km) | Number of Full Time Equivalent (FTE) GPs | Patients | Surplus / Deficit (versus typical provision of 1,600 patients per GP |
|---|---|---|---|---|
| Fearnhead Cross Medical Centre | 1.9 | 7.5 | 14,057 | -274 |
| Padgate Medical Centre | | 2.5 | 6,779 | -1,112 |
| Eric Moore Partnership - Orford Park Branch Medica | 2.4 | 5 | 7,994 | 1 |
| Longford St Surgery | 2.1 | 9 | 14,057 | 38 |
| Helsby Street Medical Centre | 2.7 | 4 | 8,459 | -515 |
| Dr Napier JE and Partners | 3.1 | 3 | 2,846 | 651 |
| Fairfield Surgery | 3 | 3 | 2,934 | 622 |
| Dr Plumb E A & Partners | 2.9 | 6 | 10,367 | -128 |
| Dr Wadsworth M R & Partners | 3.2 | 6 | 10,660 | -177 |
| Dallam Lane Medical Centre | 3.4 | 2 | 2,887 | 157 |
| Eric Moore Partnership - Bewsey Street | 3.5 | 5 | 8,459 | -92 |
| Dr Whitenburgh M | 3.5 | 1.5 | 3,004 | -403 |
| Dr Redfearn S W & Partners | 3.5 | 7 | 11,357 | -22 |
| Woolston Surgery | 3.5 | 4.5 | 6,923 | 62 |
| Dr Winter S M & Partners | 3.9 | 6 | 10,150 | -92 |
| Dr M A Kerr & Partners | 3.9 | 8 | 9,604 | 400 |
| Dr Burke S L & Partners | 3.9 | 4 | 6,124 | 69 |
| Newton Cottage Practice | 3.9 | 2 | 2,869 | 166 |
| Great Sankey Health Centre | 4.5 | 2 | 6,671 | -1,736 |
| **TOTAL** | **-** | **88** | **146,201** | **-** |

| Hospital | Distance from site (km) | Inpatient Beds | NHS |
|---|---|---|---|
| Warrington Hospital | 6.3 | 500[1] | Y |

Source: NHS Choices (2015)

[1] 'Facts and Figures', http://www.whh.nhs.uk/page.asp?fldArea=1&fldMenu=1&fldSubMenu=1&fldKey=132

Table 3 Dentist Provisions

| Dentist | Distance from site (km) | Number of Dentists | Accepting new patients? |
|---|---|---|---|
| Cotswold Dental Care | 1.2 | 2 | N |
| Fearnhead Dental Surgery | 1.9 | 5 | Y |
| Oasis Dental Care Ltd | 2.6 | 8 | N |
| Padgate (No 1) Limited | 2.6 | 3 | Y |
| Birchwood Dental Practice | 3.5 | 6 | N |
| Victoria House Orthodontic Practice | 3.5 | 2 | N |
| The Smile Clinic | 3.5 | 8 | Y |
| IDH- Westbrook | 3.7 | 4 | Y |
| Warrington NHS Dental Clinic | 3.9 | N/A | Y |
| Clayton & Scott | 3.9 | 3 | Y |
| **TOTAL** | **-** | **41** | **6 / 10** |

Source: NHS Choices (2015)

Table 4 Sporting Facilities in Warrington

| Facilities | Warrington | North West | |
|---|---|---|---|
| | Number | Number | Proportion of North West's Facilities in Warrington |
| Athletics Tracks | 1 | 45 | 2.2% |
| Golf | 9 | 4,704 | 0.2% |
| Grass Pitches | 166 | 4,704 | 3.5% |
| Health & Fitness Suite | 26 | 954 | 2.7% |
| Ice Rinks | 0 | 6 | 0.0% |
| Indoor Bowls | 0 | 9 | 0.0% |
| Indoor Tennis Centre | 2 | 33 | 6.1% |
| Ski Slopes | 0 | 21 | 0.0% |
| Sports Hall | 36 | 1,345 | 2.7% |
| Squash Courts | 8 | 248 | 3.2% |
| Swimming Pool | 15 | 585 | 3.2% |
| Artificial Grass Pitch | 18 | 543 | 2.6% |
| Tennis courts | 10 | 384 | 3.3% |
| **Total** | **321** | **9,989** | **3.2%** |
| **% of North West Population in Warrington** | | | **2.9%** |
| **% split between public / private facilities** | **84% / 16%** | **83% / 17%** | |

Source: Active Places Power, compiled by Sport England (2014)

Table 5 Open Space and Recreation Facilities in Warrington Borough (2012)

| Facility | Number | Area (ha) |
|---|---|---|
| Allotments | 16 | 16 |
| Cemeteries & Churchyards | 7 | 22 |
| Equipped Children's Play | 165 | 10 |
| Green Corridors | 109 | 137 |
| Incidental Space | 164 | 47 |
| Informal Children's Play | 231 | 102 |
| Natural / Semi Natural Green Space | 112 | 417 |
| Outdoor Sports | 184 | 468 |
| Parks & Gardens | 81 | 392 |
| Other | 4 | 2 |
| **Total** | **1,073** | **1,613** |

Source: Warrington Borough Council (2012) Open Space Audit Position Statement

Table 6 Community Centres in Warrington Borough

| Name | Distance from the Peel Hall Farm (km) |
|---|---|
| Burtonwood | 7.9 |
| Bewsey Gym | 6 |
| Capesthorne | 2.1 |
| College Close Community House | 4.2 |
| Cotswold Road | 2.3 |
| Croft | 5 |
| Culcheth | 8.5 |
| Dallam Community House | 4.3 |
| Fearnhead Cross | 1.4 |
| Greenwood | 1 |
| Longshaw Street Community House | 6.6 |
| Meeting Lane | 10.5 |
| Nora Street Community House | 4.7 |
| Oakwood Community House | 5.8 |
| Padgate | 1.9 |
| Radley Common | 1.6 |
| Sandy Lane | 6.6 |
| Sankey Bridges Community House | 6 |
| Westy | 4.2 |
| Whitecross | 4.8 |

Source: https://www.warrington.gov.uk/info/201085/leisure_culture_and_community/113/community_centres